CONTRATTI ENEA CON LA **COMMISSIONE EUROPEA**

DATI RIASSUNTIVI 2022

**AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE,
L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE**
Direzione Innovazione e Sviluppo
Servizio Supporto Tecnico e Pianificazione operativa

CONTRATTI DELL'ENEA CON LA COMMISSIONE EUROPEA

Dati Riassuntivi 2022

Maggio 2023

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NOTA INTRODUTTIVA

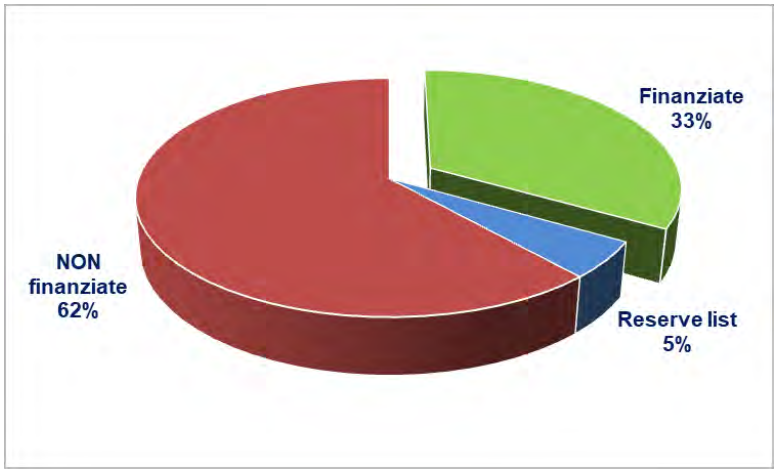
Come ogni anno il rapporto 'Contratti dell'ENEA con la Commissione Europea' presenta il quadro delle attività in corso in cui è coinvolta l'Agenzia, finanziate da programmi, di ricerca e non, dell'Unione Europea (UE).
L'ENEA, infatti, partecipa da anni con successo a programmi e iniziative dell'UE, in particolare i Programmi Quadro Ricerca e Innovazione e il Programma Quadro Euratom, che costituiscono un'importante fonte di finanziamento esterno per l'Agenzia.
Nel presente rapporto sono stati considerati tutti i contratti stipulati dall'Agenzia, in vigore nel corso del 2022 relativi sia a progetti finanziati attraverso la precedente programmazione europea (2014-2020) non ancora conclusi e sia a progetti finanziati attraverso la nuova programmazione europea (2021-2027) i cui primi bandi sono stati pubblicati nel 2021. L'ENEA ha partecipato con numerose proposte ai nuovi bandi, confermando e migliorando gli eccellenti risultati già ottenuti nella programmazione 2014-2020.
Il rapporto annuale contiene dati di sintesi aggregati e informazioni di dettaglio su progetti cofinanziati dall'UE e formalizzati attraverso specifici contratti. I dati sono elaborati sulla base dei contenuti della banca dati progetti UE (progettiue.enea.it) dell'ENEA, di recente completamente rinnovata. La banca dati è disponibile su web dal 2009, raccogliendo e rendendo omogenee le informazioni sui contratti stipulati dall'ENEA con la Commissione Europea (CE) e completandole con dati ricavati dai documenti contrattuali. Tale strumento, gestito dalla Direzione Innovazione e Sviluppo dell'Agenzia, ha l'obiettivo di favorire la diffusione di informazioni all'interno e all'esterno dell'Agenzia, costituendo anche uno strumento a supporto della progettualità dei ricercatori.
Ad oggi sono presenti nella banca dati più di 1100 contratti e per ciascuno di questi sono disponibili, ad esempio, informazioni dettagliate relative a: programma di finanziamento dell'UE, acronimo, titolo, date di inizio e fine, abstract e attività ENEA, sito web del progetto, coordinatore e partenariato, responsabile ENEA.
Ciò rende possibile la realizzazione di report complessi come l'analisi del partenariato nazionale ed internazionale dell'ENEA per tipologia, per area geografica e per progetto. Possono essere prodotte anche elaborazioni ad hoc relative all'esperienza specifica dell'Agenzia in determinate aree geografiche e/o ambiti di ricerca, da utilizzare, ad esempio, come 'referenze' dell'ENEA, indispensabili nel caso della partecipazione a tender della CE e a *call of proposals* di specifici programmi nazionali, europei e internazionali.
La banca dati, quindi, oltre ad essere uno strumento per l'analisi e la condivisione delle informazioni sui progetti in corso, rende disponibili elementi utili alla formulazione di strategie e alla definizione di accordi con partner nazionali e internazionali.
I dati sono organizzati in quattro diverse sezioni: i risultati di partecipazione dell'ENEA alla programmazione 2021-2027, i contratti stipulati nel 2022, i contratti in corso nel 2022. Infine, una sezione è dedicata alla partecipazione dell'ENEA al Consorzio EUROfusion che, per l'entità del finanziamento e le modalità di aggiudicazione e funzionamento, non è assimilabile agli altri progetti ed è oggetto di approfondimento specifico nella sezione 2; per questi motivi il co-finanziamento riconosciuto a ENEA non è incluso nei dati di sintesi elaborati.
La pubblicazione è completata dall'allegato relativo alle schede sintetiche di ciascuno dei 179 progetti in corso.

Maggio 2023

1. La partecipazione dell'ENEA ai bandi della programmazione europea 2021-2027 (dati aggiornati al 31 dicembre 2022)

L'analisi è elaborata sulla base della lista delle proposte presentate dall'ENEA in risposta ai bandi della programmazione europea 2021-2027, pubblicata sull'EC *funding and tenders portal* a cui accedono il designato LEAR e l'Account Administrator dell'Agenzia.
I dati elaborati sono aggiornati al 31 dicembre 2022 e si riferiscono ai soli programmi e proposte presenti nel portale della Commissione e, in particolare, quelli finanziari potrebbero leggermente differire dal finanziamento accordato in fase contrattuale.
Relativamente ai primi bandi della nuova programmazione, in particolare quelli di Horizon Europe pubblicati a giugno 2021 con scadenze a partire da settembre, l'ENEA ha presentato 79 proposte nel 2021 e 119 nel 2022, per un totale di 198 proposte, relative ai bandi dei programmi Horizon Europe, Euratom2027, LIFE2027, Digital, EU Defence Fund, ERASMUS2027, SMP, ISF e I3. Al 31 dicembre 2022 risultano valutate 159 proposte, di cui 53 (33%) sono state dichiarate finanziabili per un ammontare totale riconosciuto all'ENEA di circa 16 milioni di euro (***Figura 1***).
L'Agenzia assume il ruolo di coordinatore nel 13% (25/198) delle proposte presentate e nel 6% di quelle finanziate (3/53). Il tasso di successo delle proposte a coordinamento, calcolato su quelle finora valutate, è pari al 18% (3/17).[1] Le tre proposte a coordinamento ENEA sono finanziate dai programmi Euratom (fissione), *Research Infrastructure* e dal *Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture. & Environment.*
Con riferimento al solo H2020, la percentuale di proposte presentate a coordinamento dell'ENEA è stata del 20% (170/839) che hanno rappresentato il 15,5% del totale di quelle finanziate (27/174). Complessivamente, il tasso di successo delle proposte a coordinamento dell'Agenzia in H2020 è stato pari al 16%.

Figura 1: Programmazione europea 2021-2027, tasso di successo dell'ENEA delle proposte valutate al 31/12/2022



Fonte: EC funding and tenders portal

[1] *Fonte: EC funding and tenders portal, 31 dicembre 2022*

2. La partecipazione dell'ENEA a Eurofusion

EUROfusion - *European Consortium for the Development of Fusion Energy* è il Consorzio europeo a cui l'Euratom, dal 2014, ha affidato il programma fusione**.**
Dopo la prima fase di attività di EUROfusion nel corso del programma quadro Horizon 2020, nel 2021 è stato sottoscritto il Grant Agreement (n. 101052200) di Horizon Europe relativo alle attività con arco temporale fino al 2025, salvo successivi atti aggiuntivi.
EUROfusion deve attuare la *Road Map* europea sulla fusione; in particolare, l'attività di ricerca del Consorzio è mirata alla prosecuzione delle attività del progetto ITER (*International Thermonuclear Experimental Reactor*), alla gestione delle ultime fasi dell'operazione di JET (*Joint European Thorus*) e al supporto della realizzazione del reattore dimostrativo DEMO (*Demonstration Fusion Power Reactor*) intorno al 2050.
Al Consorzio aderiscono organizzazioni di 25 Stati Membri più Norvegia, Regno Unito, Svizzera e Ucraina, coordinati dal Max-Plank Institute fur Plasmaphysik[2].
Partecipano alle attività di ricerca del Consorzio EUROfusion anche *'affilitated entities'* collegate a un '*Programme Manager'* che coordina le attività delle organizzazioni del proprio Paese.
Come *'Programme Manager'* per l'Italia è stata designata l'ENEA che coordina venti partner:

- ANN, Ansaldo Nucleare S.p.a.
- CINECA Consorzio
- CNR, Consiglio Nazionale delle Ricerche
- Consorzio Create
- Consorzio per l'attuazione del progetto "Divertor Tokamak Test" (DTT S.c.a.r.l.)
- Consorzio RFX
- INFN, Istituto Nazionale di Fisica Nucleare
- LT Calcoli
- Politecnico di Milano
- Politecnico di Torino
- RINA Consulting - Centro Sviluppo Materiali S.p.A.
- Università degli Studi della Tuscia
- Università degli Studi di Cagliari
- Università di Catania
- Università di Milano Bicocca
- Università di Palermo
- Università di Pisa
- Università di Roma La Sapienza
- Università Roma Tre
- Università Tor Vergata

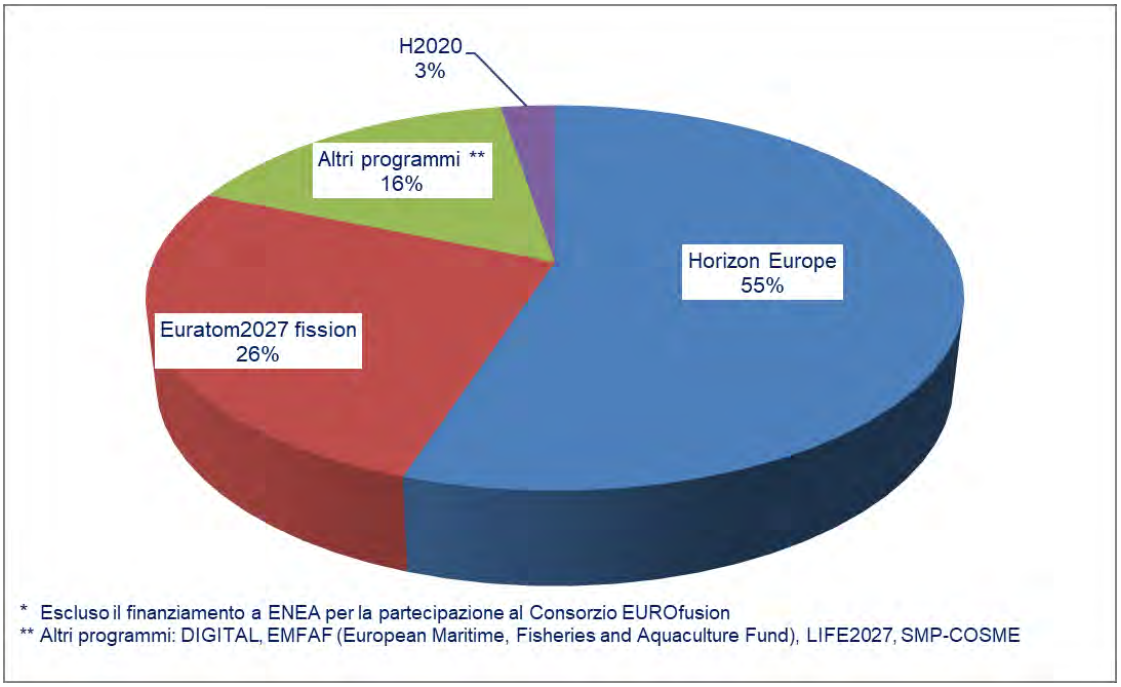
Per il 2022, il bilancio del Grant Agreement assegna complessivamente ai partecipanti italiani un contributo complessivo massimo di 19 milioni di euro circa, di cui 7,9 milioni di euro circa previsti per le attività dell'ENEA.

[2] https://www.euro-fusion.org

3. Contratti stipulati nel 2022

Il 2022, con la stipula dei contratti relativi ai progetti finanziati dai primi bandi pubblicati nel 2021, ha costituito l'anno di avvio delle attività finanziate dalla nuova programmazione europea 2021-2027. Complessivamente, i contratti stipulati dall'ENEA con la Commissione Europea (CE) sono 45, relativi ad altrettanti progetti cofinanziati nell'ambito di programmi diversi, per un contributo totale assegnato all'ENEA di circa 12,7 milioni di euro, da ripartire nell'arco di validità pluriennale di ciascun contratto. Tale importo risulta superiore ai contributi medi acquisiti dall'Agenzia relativi agli ultimi tre cicli di programmazione europea: 10,1 milioni di euro/anno nel periodo 2014-2021, 9,5 milioni di euro/anno nella programmazione 2007-2013 e 5,9 milioni di euro/anno in quella 2000-2006.
Il contributo acquisito dall'ENEA nel 2022 deriva dai programmi Horizon Europe per il 55% e da Euratom 2027 fissione per il 26% (***Figura 2***). Un ulteriore 16% è stato acquisito dall'ENEA per progetti finanziati da altri programmi diversi da Horizon Europe (DIGITAL, EMFAF, LIFE2027, SMP-COSME). Infine il 3% deriva da due diversi contratti H2020, gli ultimi stipulati a valere sui fondi della programmazione 2014-2020.

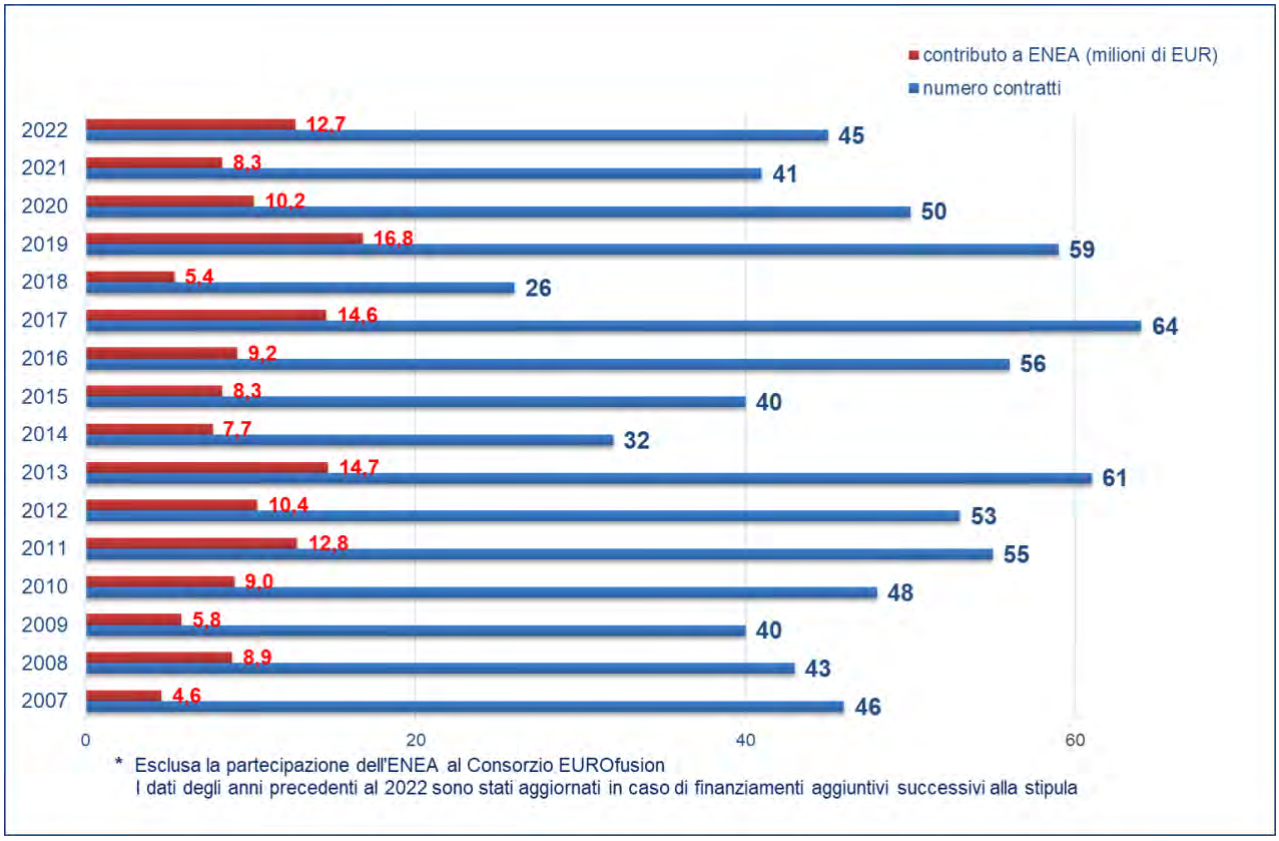
Figura 2: **Contratti stipulati nel 2022, ripartizione percentuale per programma del contributo acquisito dall'ENEA per l'intero periodo di validità contrattuale**



Fonte: progettiue.enea.it

La ***Figura 3*** mostra complessivamente il numero di progetti stipulati ed il contributo acquisito dall'ENEA dal 2007 al 2022; il numero di progetti finanziati e l'entità del contributo all'ENEA per anno sono influenzati anche dal susseguirsi delle scadenze dei bandi e dal budget stanziato dai singoli programmi.

Figura 3: Numero di contratti stipulati dal 2007 al 2022 e relativo contributo all'ENEA



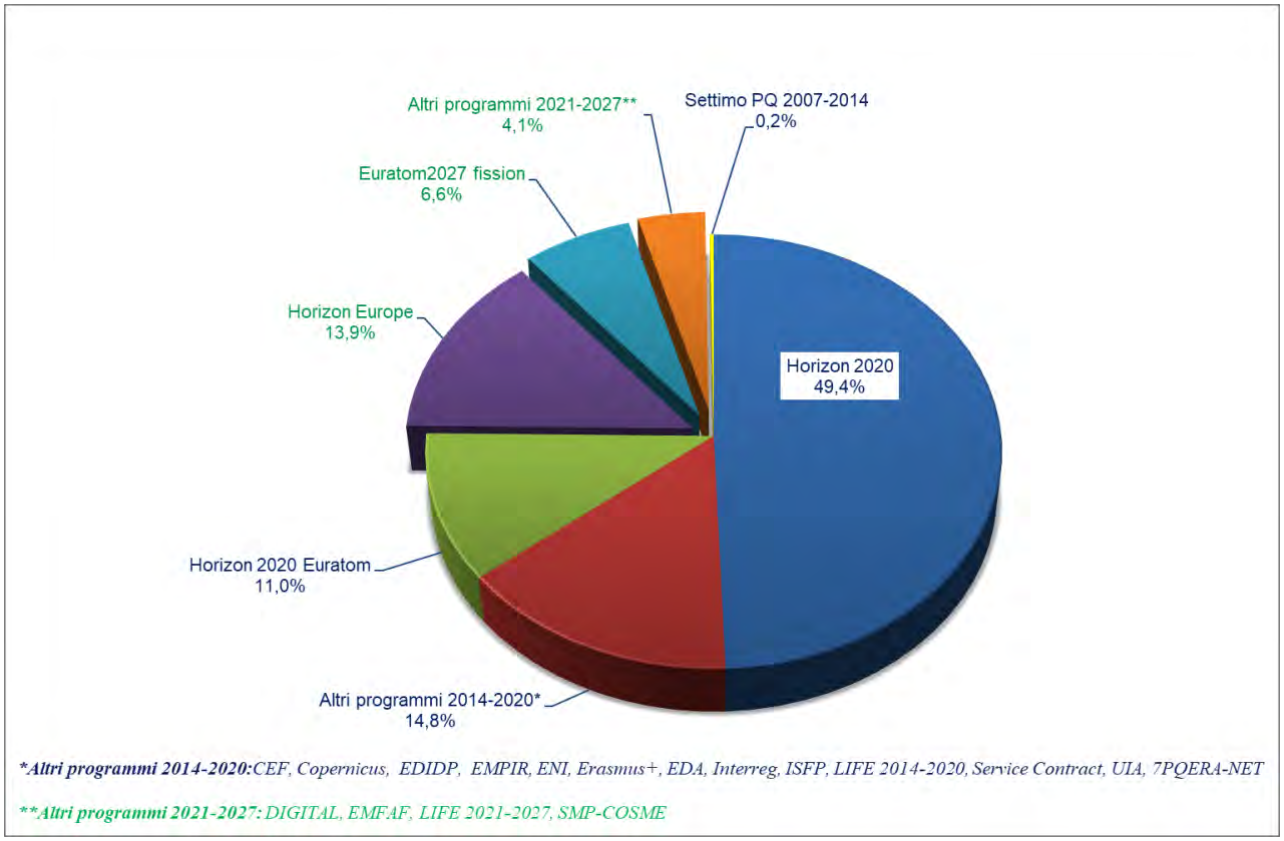
Fonte: progettiue.enea.it

4. Contratti in corso nel 2022

Le attività dell'ENEA in corso nel 2022, cofinanziate da programmi dell'UE, sono riconducibili a 179 contratti, di cui 45 stipulati nello stesso anno. Il co-finanziamento comunitario totale assegnato all'Agenzia è di circa 50,3 milioni di euro, da ripartire nell'arco pluriennale di validità di ciascun contratto.

Nel corso del 2022 le attività ancora in corso finanziate dalla programmazione europea 2014-2020 sono state affiancate da quelle finanziate attraverso la nuova programmazione 2021-2027 (Horizon Europe, Euratom2027 e altri programmi) rappresentando quest'ultima il 24,6% del contributo totale assegnato all'ENEA (***Figura 4***).

Figura 4: Contratti in corso nel 2022, ripartizione percentuale del contributo per programma



Fonte: progettiue.enea.it

4.1 Aree tematiche

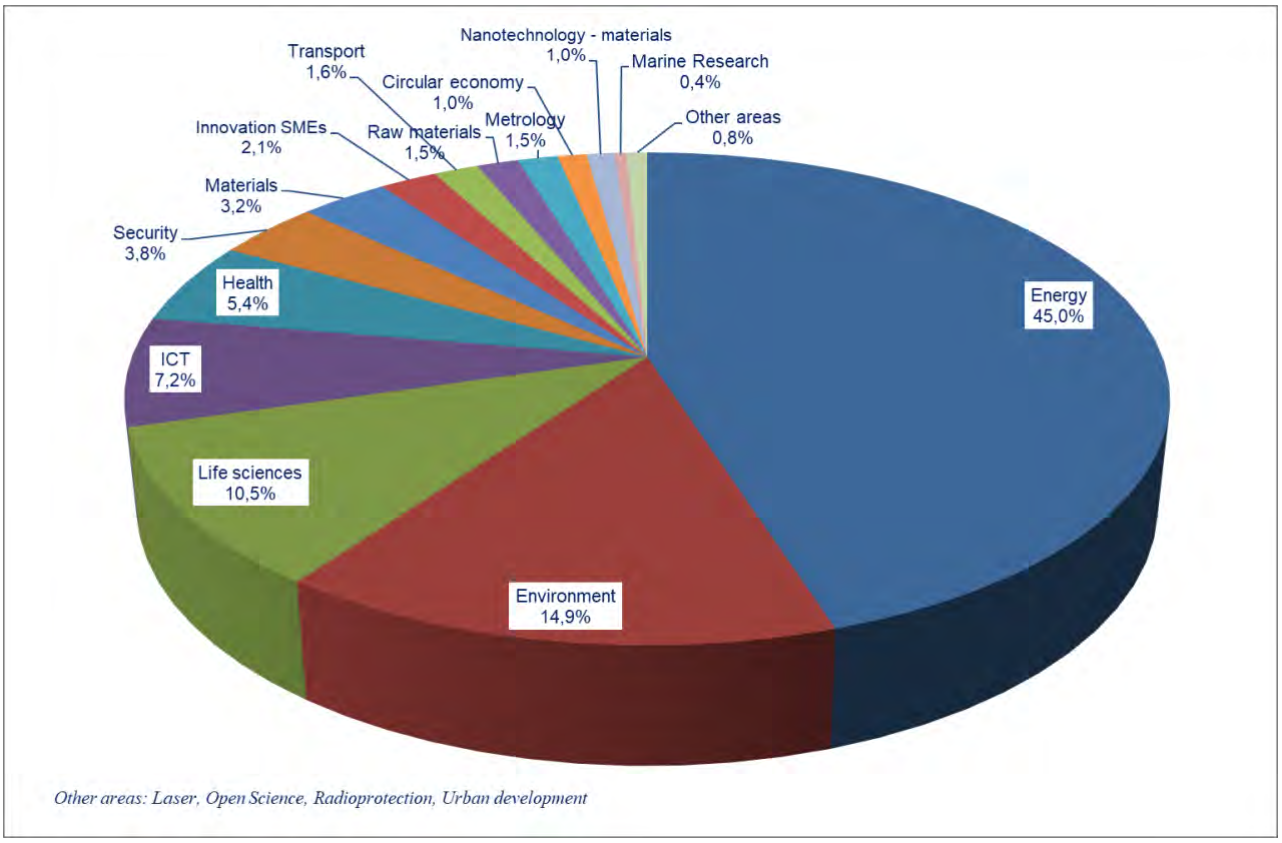
Allo scopo di fornire ulteriori elementi di analisi, tutti i progetti presenti nella banca dati sono stati classificati anche in base all'area tematica in cui ricade l'attività progettuale, identificata indipendentemente dallo strumento di finanziamento.

La ***Figura 5*** mostra l'aggregazione per aree tematiche dei progetti in corso nel 2022 ed evidenzia che il 45% del contributo ottenuto dall'Agenzia deriva da progetti ricadenti nell'area energia, a cui seguono le aree ambiente e scienze della vita, rispettivamente con quote del 14,9% e del 10,5%.

Per quanto attiene alla sola area energia, oltre il 30% del relativo contributo ricevuto dall'ENEA proviene da progetti nei settori delle rinnovabili, circa il 27% dal settore della fissione e quasi il 20% dal settore efficienza energetica (***Figura 6***).

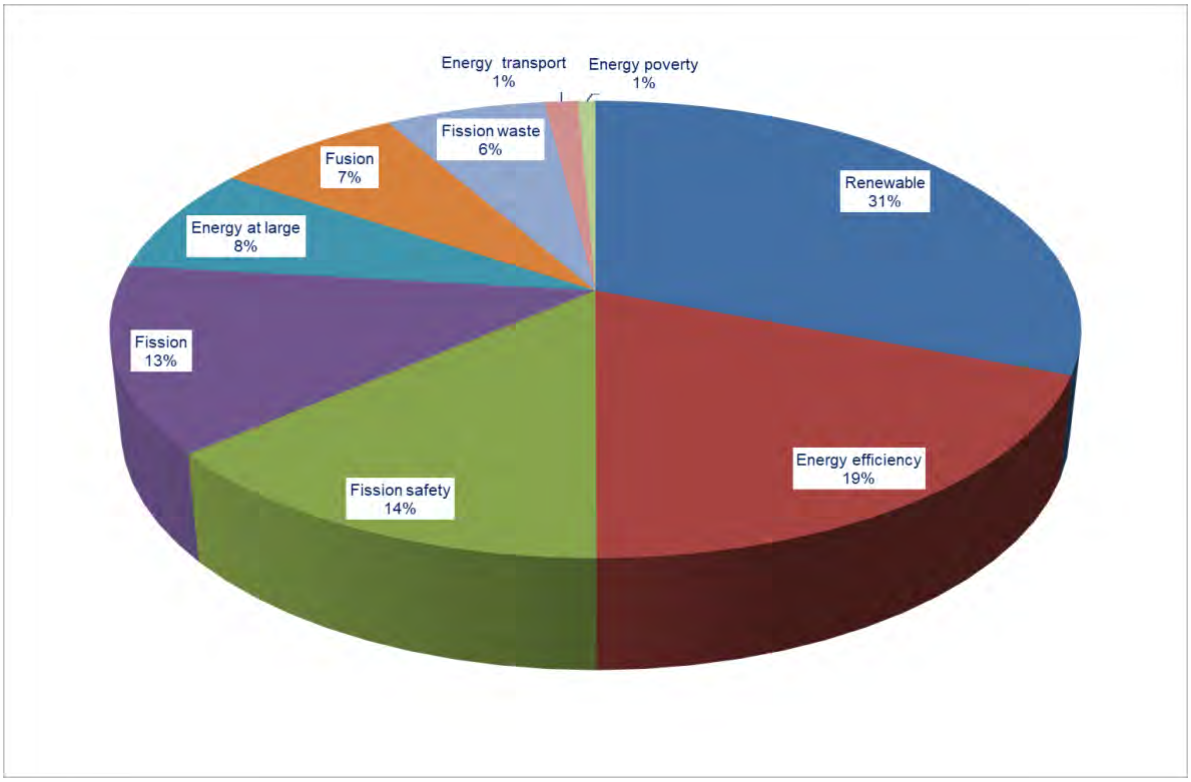
Con riferimento all'area tematica ambiente oltre la metà del contributo assegnato all'Agenzia deriva da progetti nel settore del cambiamento climatico e per quasi un quarto da quelli relativi alla qualità dell'aria (***Figura 7***).

Figura 5: Contratti in corso nel 2022, ripartizione percentuale del contributo per aree tematiche



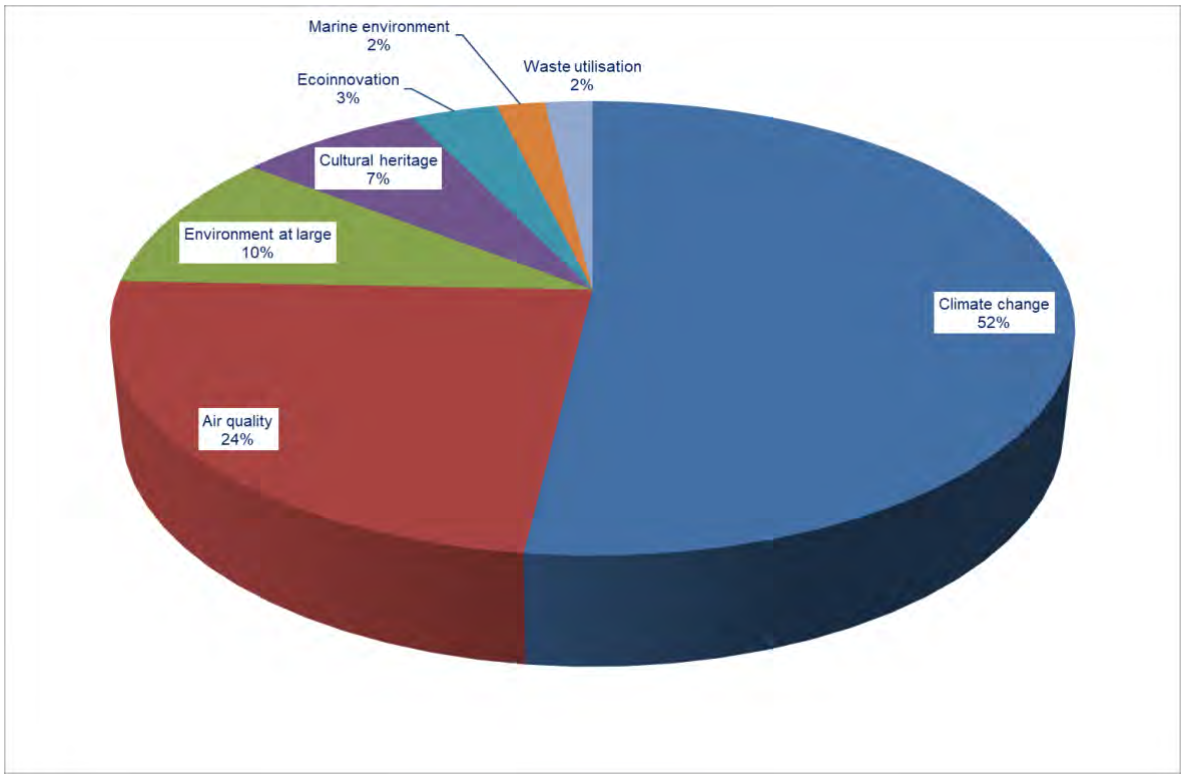
Fonte: progettiue.enea.it

Figura 6: Contratti in corso nel 2022, ripartizione percentuale del contributo, area tematica Energy



Fonte: progettiue.enea.it

Figura 7: Contratti in corso nel 2022, ripartizione percentuale del contributo, area tematica Environment



Fonte: progettiue.enea.it

4.2 Partenariato

I progetti finanziati da programmi dell'Unione Europea sono tipicamente multi-partner e transnazionali e, nei Programmi Quadro, i requisiti minimi di partecipazione prevedono almeno tre partner di tre diversi Stati membri o Stati associati, con alcune eccezioni per azioni specifiche.
Le organizzazioni di Paesi membri dell'Unione Europea ricevono dall'UE il co-finanziamento previsto dalla tipologia di azione, così come i partecipanti dei Paesi che hanno concluso un accordo di associazione al Programma Quadro[3]. Un partner di un Paese Terzo non associato, invece, non accede al finanziamento UE ma, in alcuni casi, sono i governi dei Paesi Terzi a sostenerne la partecipazione. Inoltre, un Paese Terzo può essere finanziato dall'UE soltanto se è considerato a reddito medio-basso, se è stato previsto nel programma di lavoro e se la partecipazione del soggetto è considerata dalla CE essenziale per l'esecuzione del progetto.
Nel 2022 l'ENEA ha partecipato a 179 progetti che hanno coinvolto complessivamente circa 1500 partner di 58 diversi Paesi e organizzazioni internazionali per più di 2700 partecipazioni (***Tabella*** **1**) e le mappe mostrano la distribuzione geografica dei partner dell'ENEA nei progetti in corso nel 2022 (***Figura 8***, ***Figura 9***, ***Fonte: progettiue.enea.it, Figura 10, Figura 11***).

La ***Tabella*** **1** riporta il numero di contratti, di partner e di partecipazioni per Paese; i Paesi con il maggior numero di partecipazioni, dopo l'Italia, sono la Francia, la Germania, la Spagna e il Belgio. Tra i Paesi candidati all'adesione all'UE, e già associati a Horizon Europe, Ucraina e Turchia sono quelli con cui l'ENEA collabora maggiormente (15 partecipazioni); la Serbia ha 9 partecipazioni, 3 ciascuno Albania e Montenegro, una ciascuno Macedonia e Moldavia.
Nell'area mediterranea non UE, 6 diversi partner di Israele partecipano a 5 progetti, per un totale di 8 partecipazioni; la Tunisia ha 6 partecipazioni, l'Algeria e il Marocco 4 ciascuno, seguiti da Giordania e Libano (2 partecipazioni); un progetto in collaborazione, infine, con partner della Siria. In quest'area è attivo in particolare il progetto meetMED iniziato nel 2018 e che prosegue fino al 2024 con meetMEED II. Il progetto è coordinato dall'Associazione MEDENER di cui l'ENEA ha la Presidenza, ed ha l'obiettivo di facilitare la transizione energetica nei Paesi euro-mediterranei attraverso un sensibile incremento delle fonti rinnovabili e dell'efficienza energetica nel mix energetico dell'area entro il 2040.
Tra i Paesi europei extra UE le collaborazioni più numerose (120) sono con il Regno Unito, Paese Terzo da febbraio 2020 e, ad oggi, non ancora associato a Horizon Europe, seguito dalla Svizzera (associata a H2020 ma non ancora a Horizon Europe) e dalla Norvegia, associata a entrambi i Programmi Quadro (rispettivamente 73 e 45 partecipazioni); seguono Bosnia-Erzegovina e Islanda (due partecipazioni) e la Russia con un progetto.
Numerose anche le collaborazioni con il resto del mondo: Stati Uniti d'America (6 partecipazioni) Corea del Sud (5 partecipazioni) e Cina (4); Canada 3 partecipazioni, Australia, Giappone e Taiwan (2 partecipazioni), Cile, Colombia, Perù e Sudafrica un progetto ciascuno.
Per quanto riguarda invece la ripartizione geografica dei partner italiani dell'ENEA è il Lazio la regione con il maggior numero di partecipazioni, seguita da Lombardia, Emilia-Romagna, Toscana, Piemonte, Puglia e Campania (***Figura 12***).
Con riferimento alla tipologia dei partner, tra quelli italiani dell'ENEA le industrie rappresentano il 19,2%, seguiti dai centri di ricerca (18,8%) e dalle università e dagli istituti di alta formazione (15,2%).

[3] Updates on the association of third countries to Horizon Europe

Secondo i requisiti stabiliti dalla UE[4], le piccole e medie imprese (PMI) costituiscono circa il 4,4% dei partner italiani.
La rete di relazioni che l'ENEA ha stabilito a livello internazionale è significativa anche riguardo alla tipologia di attività dei partner: le organizzazioni di ricerca rappresentano il 29% del partenariato internazionale, seguiti dalle università e istituti di alta formazione (20%), dalle industrie (13,6%) e dai partner pubblici (11,9%) (***Figura 13***).

Tabella 1: Contratti in corso nel 2022, numero di contratti, partner e partecipazioni per Paese

Paesi		numero contratti	numero partner	numero partecipazioni
Membri dell'Unione Europea	Austria	46	43	67
	Belgio	92	90	159
	Bulgaria	23	17	25
	Cipro	15	11	16
	Croazia	18	14	20
	Danimarca	26	15	32
	Estonia	14	11	17
	Finlandia	53	28	75
	Francia	106	137	279
	Germania	121	130	271
	Grecia	52	44	78
	Irlanda	21	16	23
	Italia (escluso l'ENEA)	130	250	428
	Lettonia	15	8	15
	Lituania	24	15	26
	Lussemburgo	8	6	8
	Malta	9	6	9
	Paesi Bassi	65	60	110
	Polonia	44	36	58
	Portogallo	43	43	66
	Repubblica Ceca	48	29	69
	Romania	42	30	57
	Slovacchia	20	18	23
	Slovenia	31	17	39
	Spagna	103	146	243
	Svezia	48	32	68
	Ungheria	29	29	41

Paesi		numero contratti	numero partner	numero partecipazioni
Candidati adesione all'UE	Albania *	3	3	3
	Macedonia *	1	1	1
	Moldavia *	1	1	1
	Montenegro *	3	3	3
	Serbia *	9	5	9
	Turchia *	14	11	15
	Ucraina *	11	9	15
Area mediterranea non UE	Algeria	3	4	4
	Giordania	2	2	2
	Israele *	5	6	8
	Libano	2	2	2
	Marocco	3	4	4
	Siria	1	1	1
	Tunisia *	5	6	6
Europei extra UE	Bosnia-Erzegovina	2	2	2
	Islanda *	2	2	2
	Norvegia *	34	27	45
	Regno Unito	64	76	120
	Russia	1	1	1
	Svizzera	51	27	73
Resto del mondo	Australia	2	1	2
	Canada	3	3	3
	Cile	1	1	1
	Cina	3	4	4
	Colombia	1	1	1
	Corea del Sud	4	4	4
	Giappone	2	2	2
	Perù	1	1	1
	Stati Uniti D'america	5	6	6
	Sudafrica	1	1	1
	Taiwan	1	2	2
Organ. Internazionali		32	12	43

** Paesi Terzi associati a Horizon Europe*

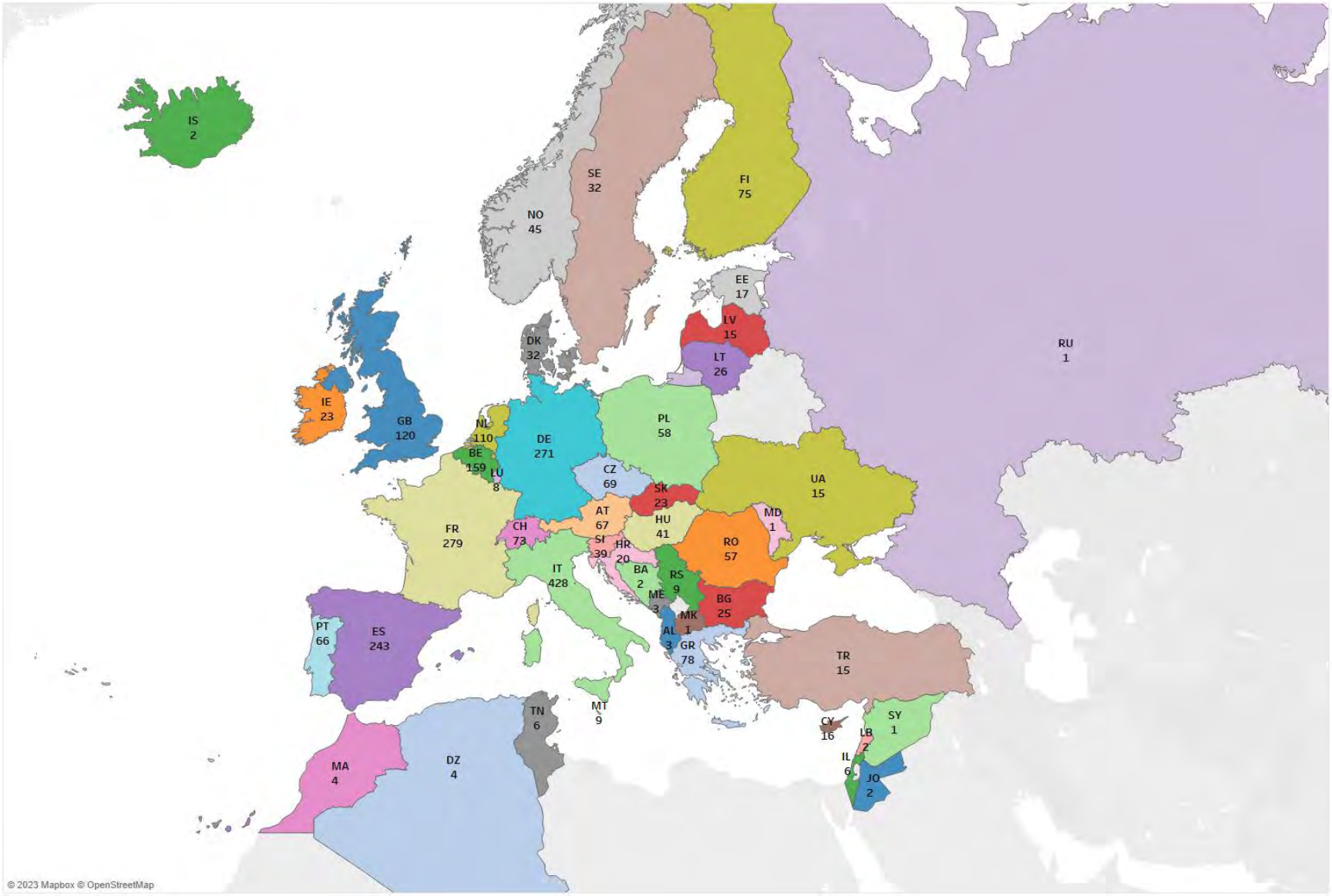
Fonte: progettiue.enea.it

[4] La categoria delle microimprese, delle piccole imprese e delle medie imprese (PMI) è costituita da imprese che occupano meno di 250 persone, il cui fatturato annuo non supera i 50 milioni di EUR e/o il cui totale di bilancio annuo non supera i 43 milioni di EUR (estratto dell'articolo 2 dell'allegato alla raccomandazione 2003/361/CE).

Figura 8: Contratti in corso nel 2022, partner del continente europeo e dell'area mediterranea

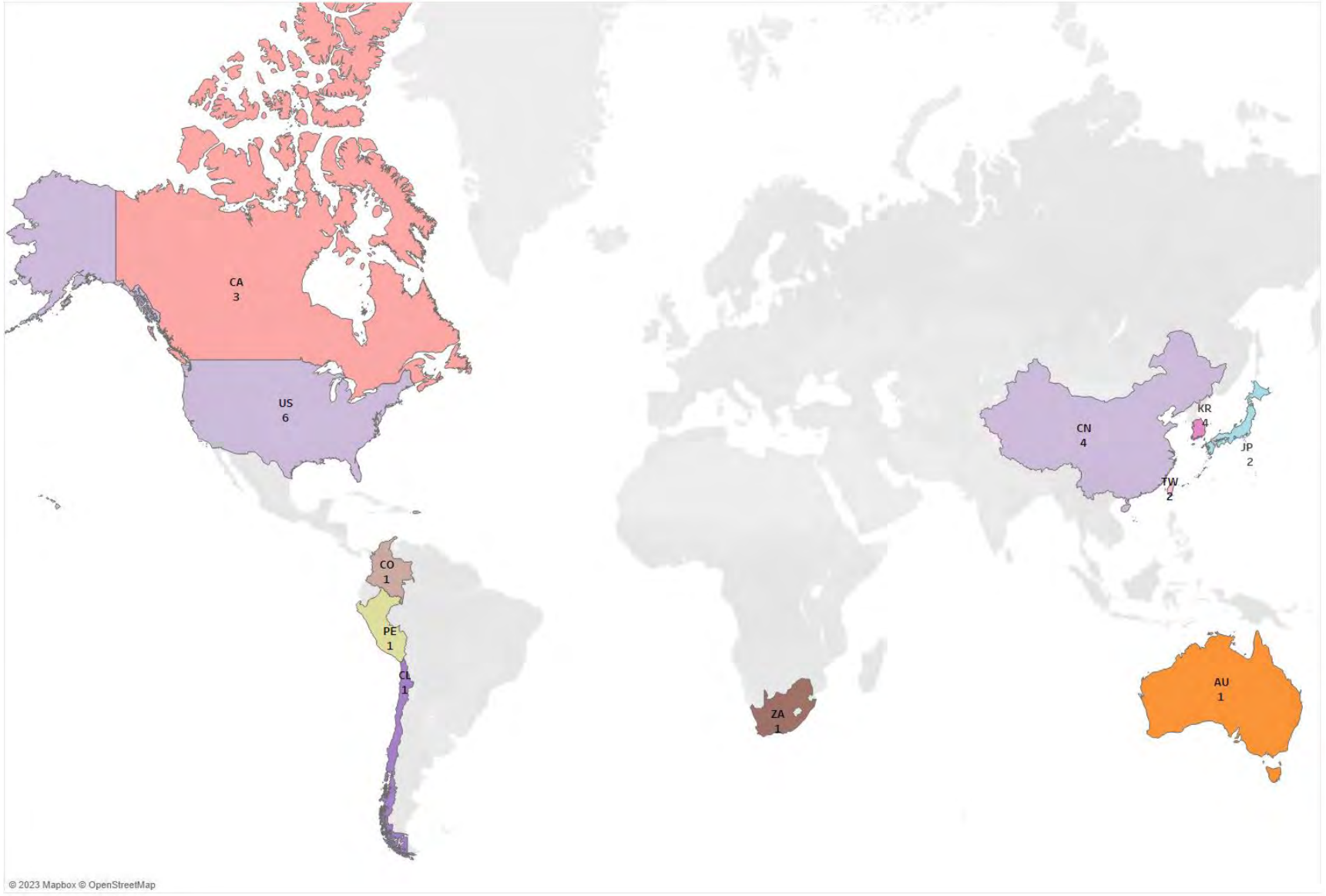
Fonte: progettiue.enea.it

Figura 9: Contratti in corso nel 2022, partecipazioni di partner del continente europeo e dell'area mediterranea



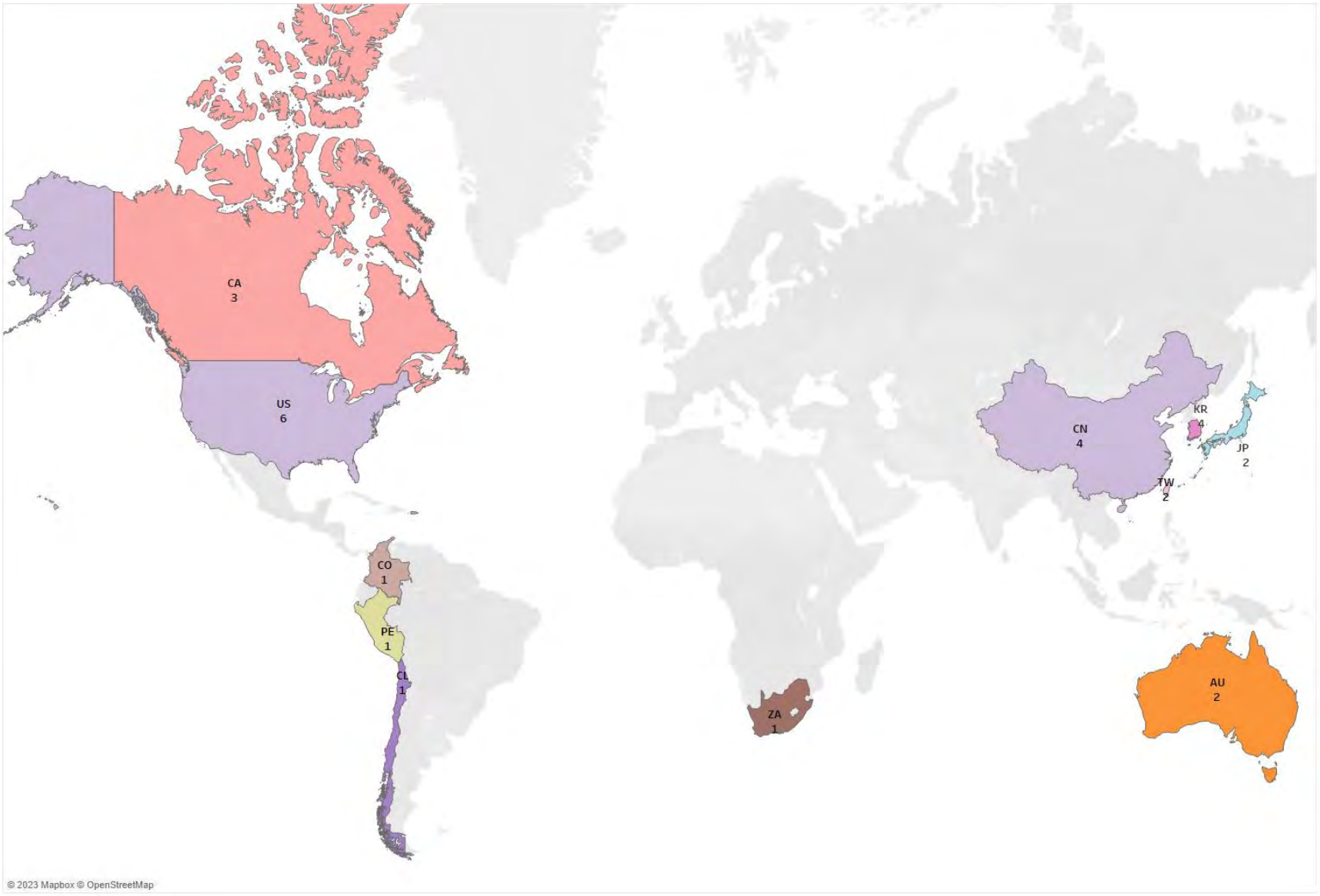
Fonte: progettiue.enea.it

Figura 10: Contratti in corso nel 2022, partner del resto del mondo



Fonte: progettiue.enea.it

Figura 11: Contratti in corso nel 2022, partecipazioni di partner del resto del mondo

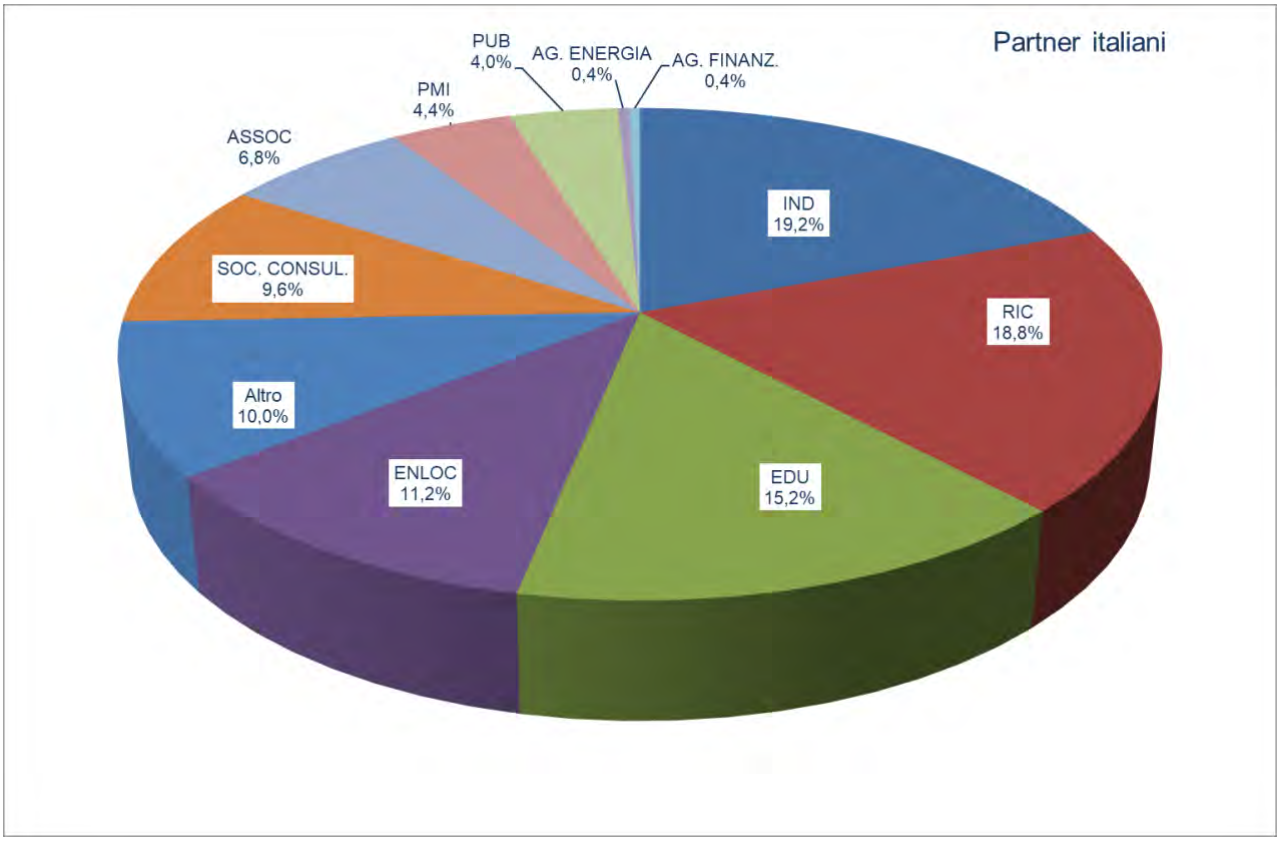


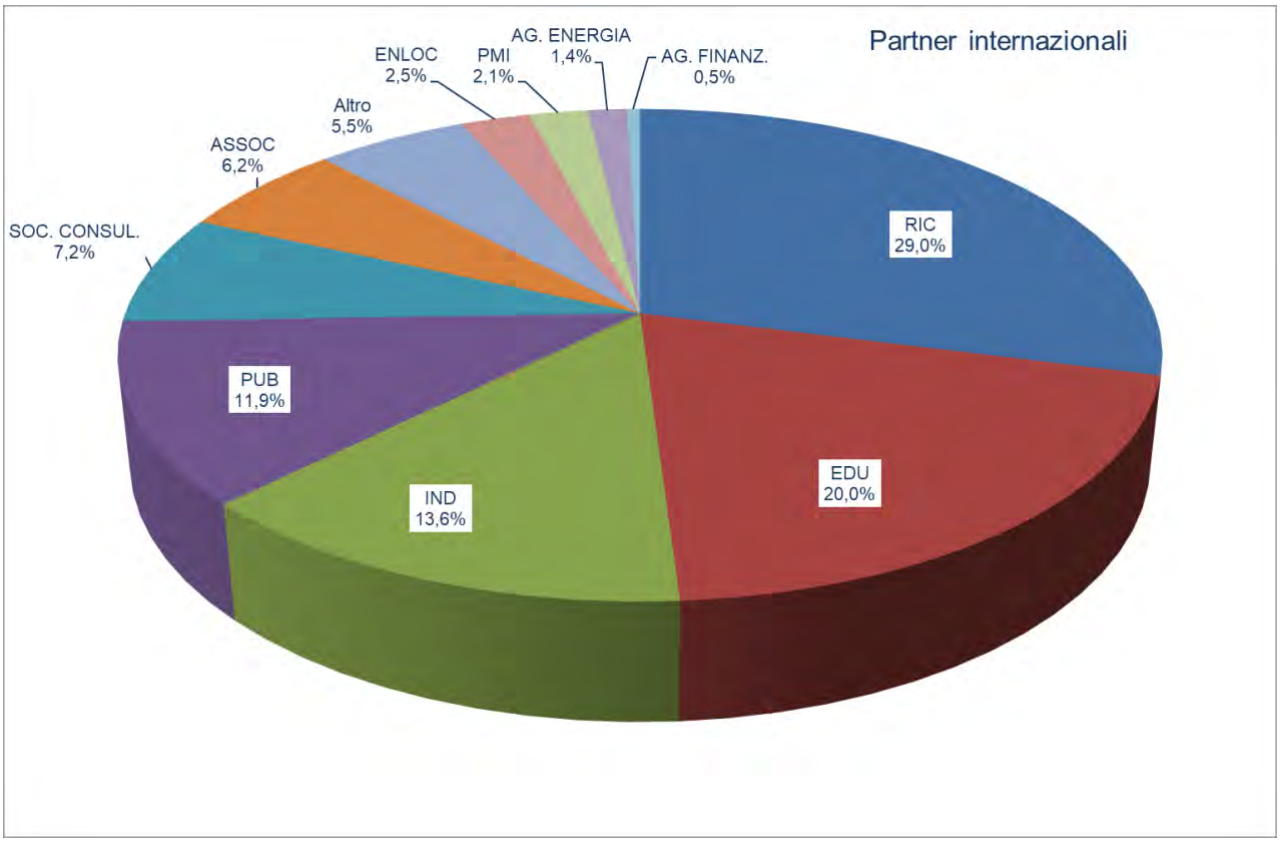
Fonte: progettiue.enea.it

Figura 12: Contratti in corso nel 2022, partecipazioni e partner italiani per regione

Fonte: progettiue.enea.it

Figura 13: Contratti in corso nel 2022, tipologia dei partner italiani e internazionali dell'ENEA





Fonte: progettiue.enea.it

4.3 Coordinamento

Nel 2022 i progetti coordinati dall'ENEA sono stati 24, pari al 13% dei 179 in corso nell'anno a cui l'Agenzia partecipa. Il budget complessivo dei progetti coordinati è attorno ai 64 milioni di euro, di cui circa 11 milioni di euro assegnati all'ENEA.
La tabella 2 mostra l'elenco dei progetti in corso nel 2022 a coordinamento dell'Agenzia, indicando per ciascuno il programma di finanziamento e l'area tematica in cui ricade l'attività. Ulteriori informazioni sono disponibili nelle schede sintetiche di ciascun progetto (Allegato 1).

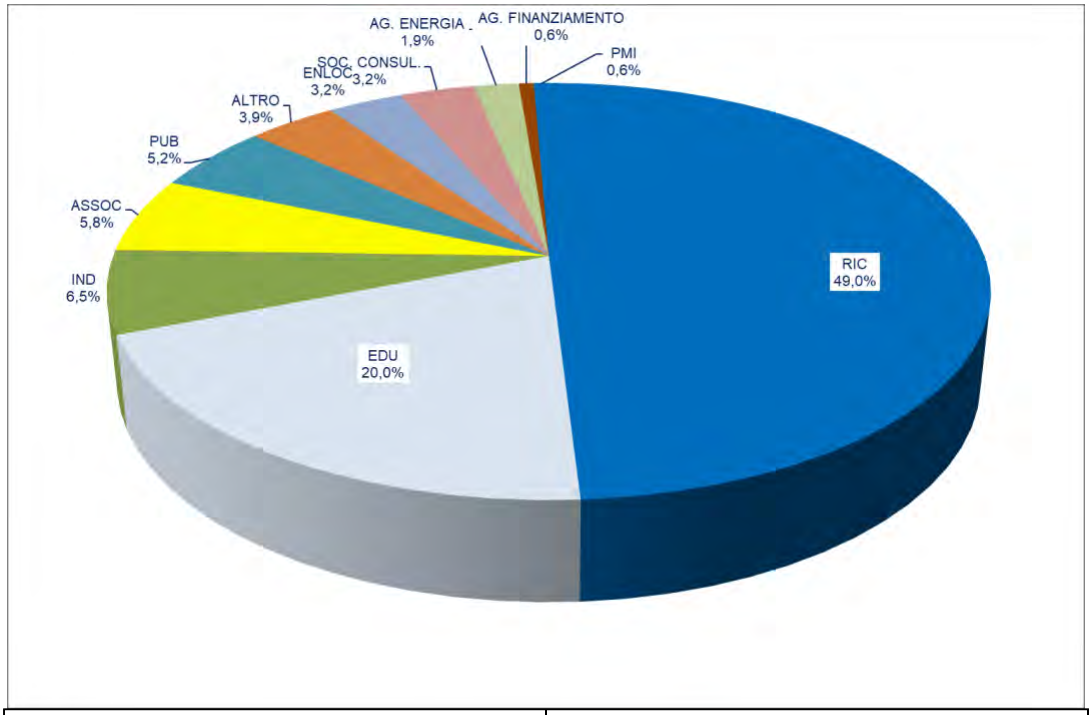
Tabella 2: Contratti in corso nel 2022 a coordinamento ENEA

Programma	Anno di stipula	Scadenza	Acronimo progetto	Area tematica	Programma	Costo totale del progetto	Contributo totale al progetto
						(EUR)	
Horizon Europe	2022	31-08-2025	REPRODIVAC	Life sciences	Cluster 6 - Food, Bioeconomy, Natural Resources, Agric.& and Env.	3.136.284	3.125.324
	2022	31-12-2022	EIT Raw Materials FENICE	Raw materials	EIT - Raw Materials KIC	531.024	365.750
Euratom 2027	2022	30-09-2026	SASPAM-SA	Energy - fission	Euratom fissione	4.276.039	2.991.694
HORIZON 2020	2017	31-05-2022	MED-GOLD	Environment - climate change	Climate Action, Environment, Resource Efficiency and Raw Mat	4.990.968	4.990.968
	2019	31-12-2022	EIT Raw Materials HUB - Regional Centre South Italy	Raw materials	EIT - Raw Materials KIC	207.000	207.000
	2020	31-10-2024	eNeuron	Energy	Energy	6.319.693	5.731.118
	2021	29-02-2024	GREENROAD	Energy - efficiency	Energy	1.186.126	1.186.126
	2020	31-08-2023	LEAP4SME	Energy - efficiency	Energy	1.895.028	1.895.028
	2019	31-05-2022	METROFOOD-RI	Metrology	European Research Infrastructures	3.999.890	3.999.890
	2021	31-10-2024	RISEUP	Health	Future and Emerging Technologies (FET)	2.999.836	2.999.836
	2018	30-06-2022	MILEDI	ICT	ICT	4.130.041	4.130.041
	2021	31-03-2024	TEXTAROSSA	ICT	JTI - EuroHPC	6.012.709	2.051.376
	2019	31-08-2022	AD ASTRA	Energy - hydrogen	JTI - Hydrogen	3.008.426	3.008.426
	2021	30-06-2024	PROMETEO	Energy - renewable	JTI - Hydrogen	2.765.206	2.499.531
	2021	31-08-2024	SO-FREE	Energy - renewable	JTI - Hydrogen	3.045.355	2.739.094
	2019	31-07-2024	INCLUDING	Energy - fission safety	Secure societies	3.585.529	3.585.529
	2020	30-06-2024	RISEN	Security	Secure societies	6.995.876	6.995.876
Euratom	2020	31-10-2024	PASCAL	Energy - fission safety	Euratom fissione	4.610.189	3.799.238
	2019	31-05-2022	PIACE	Energy - fission safety	Euratom fissione	3.210.440	2.247.230
	2020	13-04-2024	F4E-FPA-327 SG07	Energy - fusion	F4E - Fusion for energy	4.155.088	1.819.126
Altri programmi 2014-2020	2020	30-09-2022	B-BLUE	Marine research	Interreg MED	1.499.916	1.274.928
	2021	30-06-2022	PEFMED PLUS	Life sciences - food industry	Interreg MED	398.400	398.400
	2019	30-04-2023	LIFE MAGIS	Environment - ecoinnovation	LIFE (2014-2020)	2.624.168	1.385.942
	2018	03-05-2022	VEG-GAP	Environment - air quality	LIFE (2014-2020)	1.673.668	1.000.000

Fonte: progettiue.enea.it

Con riferimento, invece, ai progetti a cui l'ENEA partecipa come partner, di questi quasi la metà sono coordinati da organizzazioni di ricerca, il 20% da università e istituti di alta formazione e il 6,5% da industrie (***Figura 14***).

Figura 14: Contratti in corso nel 2022, ripartizione percentuale per tipologia dei coordinatori



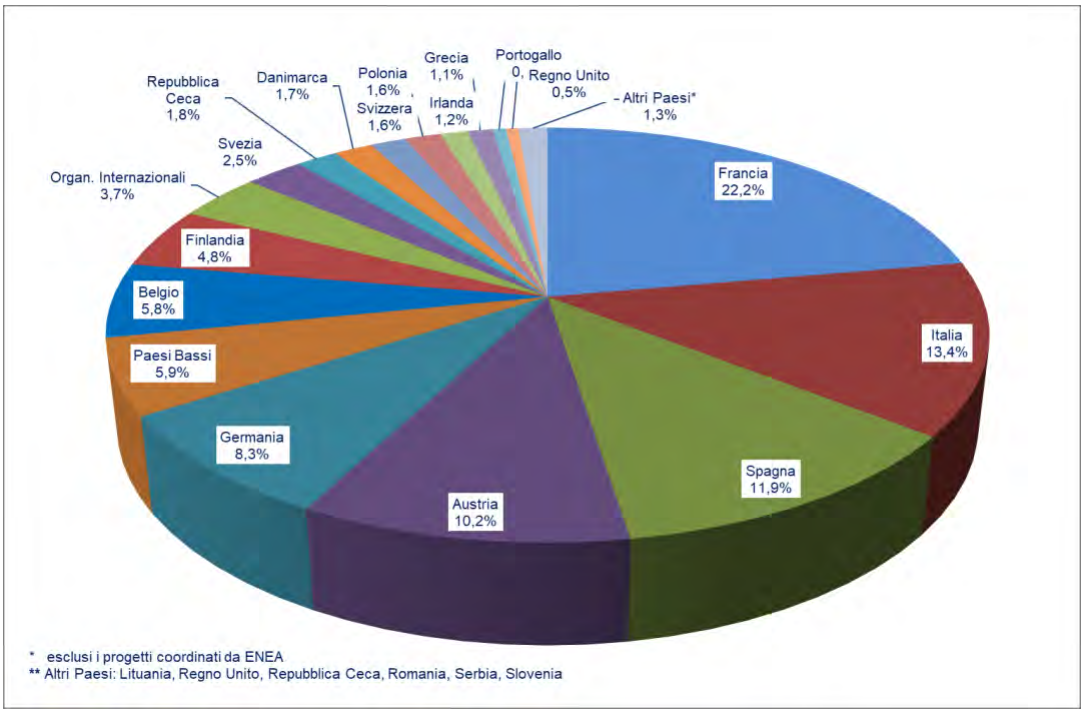
AG. ENERGIA	*Agenzie per l'energia Naz., Reg. o Locale*	***IND***	*Industrie*
Altro	*Altra tipologia di partner o non identificata*	***PMI***	*Piccole e medie imprese*
Assoc	*Associazioni*	***PUB***	*Organismi pub. non di ricerca*
EDU	*Università e istituti di alta formazione*	***RIC***	*Organizzazioni di ricerca*
ENLOC	*Enti locali*	***SOC. CONSUL.***	*Società di consulenza*

Fonte: progettiue.enea.it

Riguardo al contributo totale assegnato ai progetti, i coordinatori francesi gestiscono il budget maggiore (22,2%), seguiti da italiani (13,4%), spagnoli (11,9%), austriaci (10,2%) e tedeschi (8,3%) ***(Figura 15).***

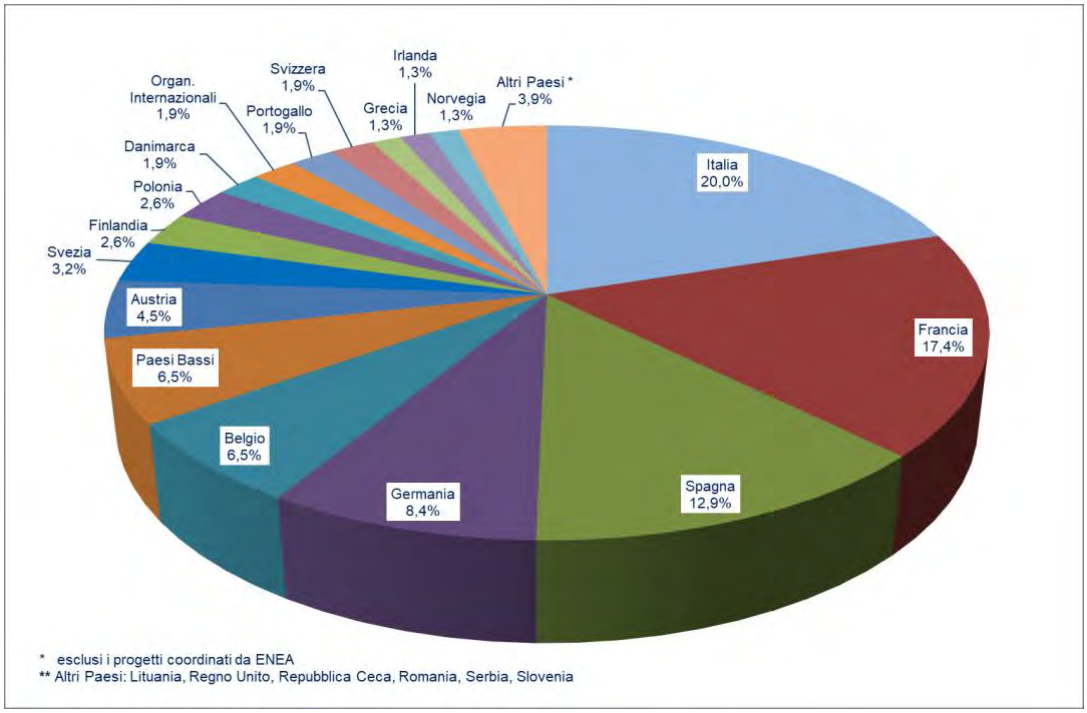
In termini di numero di progetti, le organizzazioni italiane ne coordinano la quota maggiore (20%), seguite dai partecipanti francesi (17,4%), spagnoli (12,9%), tedeschi (8,4%) e da quelli dei Paesi Bassi (6,5%) ***(Figura 16)***. Da segnalare la costante discesa, dal 2016, del numero di progetti a coordinamento britannico a causa del compimento della 'Brexit': nel 2016 l'11% dei progetti a partecipazione ENEA in corso nell'anno erano coordinati da organizzazioni del Regno Unito e nel 2019 e nel 2020 tale percentuale è scesa al 4%, arrivando al 2% nel 2021. Nel 2022 è rimasto un unico progetto ad essere coordinato da parte di un soggetto del Regno Unito.

Figura 15: Contratti in corso nel 2022, ripartizione percentuale del contributo totale per Paese dei coordinatori



Fonte: progettiue.enea.it

Figura 16: Contratti in corso nel 2022, ripartizione percentuale del numero di progetti per Paese dei coordinatori



Fonte: progettiue.enea.it

Si osserva pertanto che l'ammontare medio del contributo ai progetti gestiti da coordinatori italiani, nonostante questi siano al primo posto per numero di progetti coordinati, risulta considerevolmente inferiore rispetto a quello dei progetti a coordinamento francese.
Nella ***Tabella 3*** sono elencati i coordinatori per Paese ed esclusione dell'ENEA e i relativi progetti.

Tabella 3: Contratti in corso nel 2022, coordinatori per Paese (ENEA escluso)

Nazione	Nome	Tipologia	AreaTematica	Acronimo	Programma UE	
Austria	AIT AUSTRIAN INSTITUTE OF TECHNOLOGY	RIC	Energy - transport	3beLiEVe	HORIZON 2020	Energy
		RIC	Environment - climate change	KNOWING	HORIZON EUROPE	Cluster 5 - Climate Science
	AUSTRIAN FEDERAL MINISTRY FOR CLIMATE ACTION, ENVIRONMENT, ENERGY, MOBILITY,	PUB	Urban development	DUT	HORIZON EUROPE	Cluster 5 - Cross-cutting solutions
	AVL LIST GMBH	IND	Energy - renewable	FuelSOME	HORIZON EUROPE	Cluster 5 - Cross-cutting solutions
	IIASA - INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS	RIC	Environment - climate change	ForestNavigator	HORIZON EUROPE	Cluster 5 - Climate Science
	RTDS ASSOCIATION	SOC. CONSUL.	Life sciences	FNS-CLOUD	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
	UNIV. TECHNICAL WIEN	EDU	Energy	X-tendo	HORIZON 2020	Energy
Belgio	ASSOCIATION EUROPEENNE DE L'ENERGIE DE L'OCEAN	ASSOC	Energy - renewable	SEETIP	HORIZON EUROPE	Cluster 5 - Energy supply
	ESTELA EUROPEAN SOLAR THERMAL ELECTRICITY ASSOCIATION	ASSOC	Energy - solar	CST4ALL	HORIZON EUROPE	Cluster 5 - Energy supply
		ASSOC	Energy - solar	HORIZON-STE	HORIZON 2020	Energy
	EUROPEAN TURBINE NETWORK A.I.S.B.L	ASSOC	Energy - renewable	CO2OLHEAT	HORIZON 2020	Energy
	IBF - INTERNATIONAL CONSULTING SA	SOC. CONSUL.	Energy - efficiency	Algeria	Other programmes	ENI - European Neighbourhood Instruments (2014-2020)
	SCK CEN - CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE	RIC	Energy - fission	PATRICIA	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission safety	ANSELMUS	Euratom2027	Euratom fissione
		RIC	Energy - fission waste	HARPERS	Euratom2027	Euratom fissione
	TWINDS	Altro	Life sciences - food safety	DRG4Food	HORIZON EUROPE	Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
	VITO - FLEMISH INSTITUTE FOR TECHNOLOGICAL RESEARCH	RIC	Energy - efficiency	AMBIENCE	HORIZON 2020	Energy
Danimarca	DEA DANISH ENERGY AUTHORITY	PUB	Energy - efficiency	CAV_EPBD	HORIZON 2020	Energy
		PUB	Energy - efficiency	LIFE21-CET-CA-CAEPBD6	Other programmes 2021-2027	LIFE (2021-2027)
	UNIV. AALBORG	EDU	Energy - efficiency	E-DYCE	HORIZON 2020	Energy
Finlandia	LUKE - NATURAL RESOURCES INSTITUTE FINLAND	RIC	Life sciences - food industry	SIMBA	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
	VTT TECHNICAL RESEARCH CENTRE OF FINLAND	RIC	Energy - fission	ELSMOR	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission waste	PREDIS	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Life sciences	InnCoCells	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy

Francia	ADEME	RIC	Energy - efficiency	LIFE21-CET-POLICY-OdysseeMure fit-4-55	Other programmes 2021-2027	LIFE (2021-2027)
	ANDRA - AGENCE NATIONALE POUR LA GESTION DES DECHETS RADIOACTIFS	PUB	Energy - fission waste	CHANCE	HORIZON 2020 - Euratom	Euratom fissione
	ARGANS LTD	IND	Environment - air quality	LIFE AIRFRESH	Other programmes	LIFE (2014-2020)
	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES	RIC	Environment - climate change	CoCliCo	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
	CEA	RIC	Energy - fission	CLEANDEM	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission	ESFR-SIMPLE	Euratom2027	Euratom fissione
		RIC	Energy - fission	INSPYRE	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission	PUMMA	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission	TANDEM	Euratom2027	Euratom fissione
		RIC	Energy - fission	TITANS	Euratom2027	Euratom fissione
		RIC	Energy - fission safety	NARSIS	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission safety	OperaHPC	Euratom2027	Euratom fissione
		RIC	Energy - fission waste	TRANSAT	HORIZON 2020 - Euratom	Euratom fissione
		RIC	ICT	EoCOE-II	HORIZON 2020	European Research Infrastructures
		RIC	Metrology	19NET04 MIRA	Other programmes	EMPIR
		RIC	Raw materials	PHOTORAMA	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
		RIC	Raw materials	SCRREEN2	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
	CITY OF NICE	ENLOC	Energy - efficiency	EFFICIENT BUILDINGS	Other programmes	Interreg MED
	CNRS	RIC	Life sciences	AgroServ	HORIZON EUROPE	Research Infrastructures (2021-2027)
	EDF - ELECTRICITE DE FRANCE SA	IND	Energy - fission	PASTELS	HORIZON 2020 - Euratom	Euratom fissione
	INERIS Institut National de l'Environnement Industriel e des Risques	RIC	Environment - air quality	CAMS_63	Other programmes	Copernicus
	INRAE - INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET	RIC	Life sciences - sustainable development	EJP SOIL	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
	IRSN INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE	RIC	Energy - fission	ASSASS	Euratom2027	Euratom fissione
		RIC	Energy - fission safety	R2CA	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Radioprotection	PIANOFORTE	Euratom2027	Euratom fissione
	METEO FRANCE CENTRE NATIONAL DE RECHERCHES METEOROLOGIQUES	RIC	Environment - air quality	CAMS2_40	Other programmes	Copernicus
	NucAdvisor	SOC. CONSUL.	Energy - fission safety	ENER/20/NUCL/SI2.838109	Other programmes	Service contract

Germania	DESY - DEUTSCHES ELEKTRONEN SYNCHROTRON DESY	RIC	FEL - Free Electron Lasers	LEAPS-INNOV	HORIZON 2020	European Research Infrastructures
	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	RIC	Environment - cultural heritage	ARCH	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
	HELMHOLTZ-ZENTRUM BERLIN FUR MATERIALIEN UND ENERGIE GMBH	RIC	Energy - photovoltaic	VIPERLAB	HORIZON 2020	European Research Infrastructures
	HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV	RIC	Energy - fission	ARIEL	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Materials	ReMade-at-ARI	HORIZON EUROPE	Research Infrastructures (2021-2027)
	KIT KARLSRUHER INSTITUT FUER TECHNOLOGIE	EDU	Energy	StoRIES	HORIZON 2020	European Research Infrastructures
		EDU	Materials	INNUMAT	Euratom2027	Euratom fissione
	PTB PHYSIKALISCH TECHNISCHE BUNDESANSTALT	RIC	Metrology	19ENV01 traceRadon	Other programmes	EMPIR
		RIC	Metrology	19NET03 Support BSS	Other programmes	EMPIR
		RIC	Radioprotection	PRISM-eBT	Other programmes	EMPIR
	SCAPOS AG	IND	ICT	FocusCoE	HORIZON 2020	European Research Infrastructures
	UNIV. FREIE BERLIN	EDU	Energy - renewable	COME RES	HORIZON 2020	Energy
	UNIV. TECHNICAL MUNICH (TUM)	EDU	Life sciences - food industry	PROVIDE	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
Grecia	MONOLITHOS CATALYSTS LTD.	IND	Materials	CHemPGM	HORIZON 2020	MSCA Marie Skl. Curie Actions
	UNIV. THESSALY	EDU	Health	SEAWave	HORIZON EUROPE	Cluster 1 - Health
Irlanda	SEAI - SUSTAINABLE ENERGY AUTHORITY IRELAND	AG. ENERGIA	Energy - renewable	OCEANSET	HORIZON 2020	Energy
	UNIV. LIMERICK	EDU	Nanotechnology - materials	Si-DRIVE	HORIZON 2020	NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
Italia	AESS - AGENZIA PER L'ENERGIA E LO SVILUPPO SOSTENIBILE	AG. ENERGIA	Environment	EIT CLIMATE-KIC GECO	HORIZON 2020	EIT - Climate KIC
	ARMA DEI CARABINIERI - Comando Unità Forestali, Ambientali e Agroalimentari (CUFAA)	PUB	Environment - air quality	LIFE MODERn (NEC)	Other programmes	LIFE (2014-2020)
	ASSOCIAZIONE ETHIC SAFE	ASSOC	Security	RESIST	Other programmes	ISFP - Internal Security Fund Police
	ASSOCIAZIONE SAFE	ASSOC	Security	VERTIgO	Other programmes	EDIDP (2019-2020)
	C.A.E.N. SPA COSTRUZIONI APPARECCHIATURE ELETTRONICHE NUCLEARI	IND	Energy - fission waste	MICADO	HORIZON 2020 - Euratom	Euratom fissione
	CETMA - Centro di Ricerche Europeo di Tecnologie, Design e Materiali	RIC	ICT	CETMA-DIHSME	Other programmes 2021-2027	DIGITAL
	CNIT - CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI	RIC	ICT	I-NEST	Other programmes 2021-2027	DIGITAL
	CNR - CONSIGLIO NAZIONALE DELLE RICERCHE	RIC	Environment - climate change	Beyond EPICA	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
		RIC	Life sciences - food safety	FOODSAFETY4EU	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
		RIC	Materials	PULSE-COM	HORIZON 2020	Future and Emerging Technologies (FET)
		RIC	Open Science	NET2	HORIZON 2020	MSCA Marie Skl. Curie Actions

Italia	COMUNE DI BARLETTA	ENLOC	Energy - efficiency	EFFECTS	Other programmes	Interreg-IPA-CBC Italy-Albania-Montenegro
	COMUNE DI PORTICI	ENLOC	Environment - air quality	AIR-HERITAGE	Other programmes	UIA - Urban Innovative Actions
	COMUNE DI RAVENNA	ENLOC	ICT	DARE	Other programmes	UIA - Urban Innovative Actions
	FEM - FONDAZIONE EDMUND MACH	RIC	Life sciences - food industry	PROMEDLIFE	HORIZON 2020	PRIMA (2018-2028)
	FRATELLI PIACENZA SPA	IND	Circular economy	TRICK	HORIZON 2020	Climate Action, Environment, Resource Efficiency and Raw Materials
	FRATELLO SOLE SCARL	Altro	Energy - efficiency	GreenAbility	Other programmes	Erasmus +
	ICU - ISTITUTO PER LA COOPERAZIONE UNIVERSITARIA ONLUS	Altro	Energy - renewable	REESTART	Other programmes	ENI - European Neighbourhood Instruments (2014-2020)
	INFN	RIC	Laser	EuPRAXIA	HORIZON EUROPE	Research Infrastructures (2021-2027)
	ISIS - ISTITUTO DI STUDI PER L'INTEGRAZIONE DEI SISTEMI	PMI	Energy - renewable	BIOMETHAVERSE	HORIZON EUROPE	Cluster 5 - Energy supply
	KEY2 - KEY TO BUSINESS SRL	SOC. CONSUL.	ICT	DYDAS	Other programmes	CEF (Connecting Europe Facility) - TELECOM
	LEGAMBIENTE ONLUS	Altro	Environment	LIFE BLUE LAKES	Other programmes	LIFE (2014-2020)
	POLITECNICO DI MILANO	EDU	Energy - hydrogen	e-SHyIPS	HORIZON 2020	JTI - Hydrogen
	S.I. IMPRESA - SERVIZI INTEGRATI IMPRESA	ENLOC	Innovation - SME	BRIDGeconomies 2022-2025	Other programmes 2021-2027	SMP - COSME
	UNIV. CAGLIARI	EDU	Life sciences - food industry	SUPREME	Settimo Programma Quadro Euratom (2007-2013)	ERA-NET
	UNIV. GUGLIELMO MARCONI	EDU	Energy - renewable	BLAZE	HORIZON 2020	Energy
		EDU	Energy - renewable	GICO	HORIZON 2020	Energy
	UNIV. PISA	EDU	Materials	CEM-WAVE	HORIZON 2020	NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
	UNIV. SALENTO	EDU	Open Science	ERN-APULIA3	HORIZON 2020	MSCA Marie Skl. Curie Actions
	UNIV. SIENA	EDU	Energy - renewable	BLUE DEAL	Other programmes	Interreg MED
	UNIV. TUSCIA	EDU	Life sciences	IMPRESA	HORIZON 2020	PRIMA (2018-2028)
Lituania	LEI LITHUANIAN ENERGY INSTITUTE	RIC	Energy - fission	HARMONISE	Euratom2027	Euratom fissione
Norvegia	UNIV. NORWEGIAN OF SCIENCE AND TECHNOLOGY - NTNU	EDU	Materials	EIT Raw Materials SisAl	HORIZON 2020	EIT - Raw Materials KIC
	UNIV. WESTERN NORWAY OF APPLIED SCIENCES	EDU	ICT	EERADATA	HORIZON 2020	Energy
Organ. Internazionali	EMBL - EUROPEAN MOLECULAR BIOLOGY LABORATORY	RIC	Environment - marine	BIOcean5D	HORIZON EUROPE	Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
	ENEN - European Nuclear Education Network	ASSOC	Energy - fission	ENEN2plus	Euratom2027	Euratom fissione
	MEDENER - MEDITERRANEAN ASSOCIATION OF NATIONAL AGENCIES FOR ENERGY MANAGEMENT	ASSOC	Energy	meetMED II	Other programmes	ENI - European Neighbourhood Instruments (2014-2020)

Paesi Bassi	IEECP - INSTITUTE FOR EUROPEAN ENERGY AND CLIMATE POLICY STICHTING	RIC	Energy - poverty	ENPOR	HORIZON 2020	Energy
	KIC INNOENERGY SE	Altro	Energy - batteries	BEST	HORIZON EUROPE	Cluster 5 - Cross-cutting solutions
	MARIS MARINE INFORMATION SERVICE B.V.	IND	Marine research	EMODNET Data Ingestion n. 3	Other programmes 2021-2027	EMFAF - European Maritime, Fisheries and Aquaculture Fund (2021-2027)
	MINISTRY OF ECONOMIC AFFAIRS, FARM AND INNOVATION	PUB	Energy - efficiency	CA EED3	HORIZON 2020	Energy
		PUB	Energy - efficiency	CA-EED 2	HORIZON 2020	Energy
	NKI - NATIONAL CANCER INSTITUTE	RIC	Life sciences	iNEXT-Discovery	HORIZON 2020	European Research Infrastructures
	NWO - NETHERLANDS ORGANISATION FOR SCIENTIFIC RESEARCH	RIC	Urban development	EXPAND II	HORIZON 2020	Spreading Excellence and Widening Participation - WIDESPREAD
	PROSAFE - THE PRODUCT SAFETY ENFORCEMENT FORUM OF EUROPE	ASSOC	Energy - efficiency	EEPLIANT 3	HORIZON 2020	Energy
	TNO - NETHERLANDS ORGANISATION FOR APPLIED SCIENTIFIC RESEARCH	RIC	Energy - efficiency	GEAR-at-SME	HORIZON 2020	Energy
	UNIV. UTRECHT	EDU	Health	POLYRISK	HORIZON 2020	Health
Polonia	EIT Raw Materials CLC East Sp	Altro	Raw materials	EIT Raw Materials RIS	HORIZON 2020	EIT - Raw Materials KIC
	IETU - INSTITUTE FOR ECOLOGY OF INDUSTRIAL AREAS	RIC	Environment	LIFEproETV	Other programmes	LIFE (2014-2020)
	LUKASIEWICZ - POZNAN INSTITUTE OF TECHNOLOGY	RIC	Transport	CRISTAL	HORIZON EUROPE	Cluster 5 - Transport and Smart Mobility services
	NCBJ - NATIONAL CENTER FOR NUCLEAR RESEARCH	RIC	Energy - fission	SECURE	Euratom2027	Euratom fissione
Portogallo	ADENE AGENCIA PARA A ENERGIA	AG. ENERGIA	Energy - efficiency	HARP	HORIZON 2020	Energy
	INSTITUTO POLITECNICO DE PORTALEGRE	EDU	Energy - hydrogen	WASTE2H2	HORIZON 2020	Spreading Excellence and Widening Participation - TWINNING
	UNIV. EVORA	EDU	Energy - renewable	SALTOpower	HORIZON EUROPE	Widening participation and spreading excellence
Regno Unito	UNIV. SHEFFIELD	EDU	Environment - circular economy	RETRACE	HORIZON 2020	MSCA Marie Skl. Curie Actions
Repubblica Ceca	UNIV. CZECH OF LIFE SCIENCES PRAGUE	EDU	Life sciences	ECO-READY	HORIZON EUROPE	Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
Romania	UEFISCDI - UNIT EXECUTIVE FOR FUNDING HIGHER EDUCATION, RESEARCH DEVELOPMENT AND	PUB	Environment - climate change	CapaCITIES	HORIZON EUROPE	Mission 3 Climate neutral and smart cities
Serbia	VINCA INSTITUTE OF NUCLEAR SCIENCES	RIC	Environment - air quality	VIDIS	HORIZON 2020	Spreading Excellence and Widening Participation - WIDESPREAD
Slovenia	JSI - JOZEF STEFAN INSTITUT	RIC	Energy - renewable	REACTT	HORIZON 2020	JTI - Hydrogen

Spagna	CIEMAT	RIC	Energy - fission	ORIENT-NM	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission	SANDA	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - fission	SEAKNOT	Euratom2027	Euratom fissione
		RIC	Energy - fission safety	MUSA	HORIZON 2020 - Euratom	Euratom fissione
		RIC	Energy - solar	SFERA III	HORIZON 2020	European Research Infrastructures
	CSIC SPANISH NATIONAL RESEARCH COUNCIL	RIC	Life sciences	NEWCOTIANA	HORIZON 2020	NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
		RIC	Life sciences - food genetic	HARNESSTOM	HORIZON 2020	Food Security, Sustainable Agriculture and the Bioeconomy
		RIC	Metrology	MINKE	HORIZON 2020	European Research Infrastructures
	CTAG - Automotive Technology Center of Galicia	IND	Transport	EIT KIC Urban Mobility CELESTE	HORIZON 2020	EIT Urban Mobility
	ETRA INVESTIGACION Y DESAROLLO SA	IND	Transport	USER-CHI	HORIZON 2020	Transport
	FUNDACIO ENT	RIC	Circular economy	BIOCIRCULARCITIES	HORIZON 2020	JTI - Bio Based Industries
	FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA	RIC	Energy - photovoltaic	CUSTOM-ART	HORIZON 2020	Energy
	FUNDACION CARTIF	RIC	Energy - efficiency	REHOUSE	HORIZON EUROPE	Cluster 5 - Energy demand
	FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS	RIC	Energy - hydrogen	H2PORTS	HORIZON 2020	JTI - Hydrogen
	GNE - GLOBAL NEW ENERGY FINANCES SL	AG. FINANZ.	Energy	SER	HORIZON 2020	Energy
	R2M SOLUTION SPAIN SL	SOC. CONSUL.	Energy - renewable	LIGHTNESS	HORIZON 2020	Energy
	UNIV. CARLOS III MADRID	EDU	ICT	OpenIACS	Other programmes	CEF (Connecting Europe Facility) - TELECOM
	UNIV. DA CORUNA	EDU	Energy	ENTRANCES	HORIZON 2020	Energy
	UNIV. POLITECNICA VALENCIA	EDU	Environment - waste utilisation	CONDEREFF	Other programmes	Interreg Europe
	UNIV. TECHNICAL OF CATALONIA	EDU	Transport	EIT KIC Urban Mobility E+ Mobility	HORIZON EUROPE	EIT Urban Mobility
Svezia	FOI SWEDISH DEFENCE RESEARCH AGENCY	RIC	Security	EXERTER	HORIZON 2020	Secure societies
		RIC	Security	STYX	Other programmes	European Defence Agency CAPTECH
	KTH - ROYAL INSTITUTE OF TECHNOLOGY	EDU	Energy - renewable	BRISK II	HORIZON 2020	European Research Infrastructures
	UNIV. TECHNOLOGY CHALMERS	EDU	Energy - fission safety	FREDMANS	Euratom2027	Euratom fissione
	UNIV. UPPSALA	EDU	Energy - batteries	BATTERY 2030PLUS	HORIZON 2020	Energy
Svizzera	CERN - EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH	RIC	Energy - fusion	RADNEXT	HORIZON 2020	European Research Infrastructures
	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	EDU	Energy - hydrogen	WASTE2WATTS	HORIZON 2020	JTI - Hydrogen
	PAUL SCHERRER INSTITUT	RIC	Energy - fission safety	ESFR-SMART	HORIZON 2020 - Euratom	Euratom fissione

Fonte: progettiue.enea.it

Allegato 1 - Schede sintetiche dei progetti

(in ordine alfabetico di acronimo)

Elenco delle schede sintetiche dei progetti

19ENV01 traceRadon	ELSMOR	OCEANSET
19NET03 Support BSS	EMODNET Data Ingestion n. 3	OpenIACS
19NET04 MIRA	ENEN2plus	OperaHPC
3beLiEVe	ENER/20/NUCL/SI2.838109	ORIENT-NM
AD ASTRA	eNeuron	PASCAL
AgroServ	ENPOR	PASTELS
AIR-HERITAGE	ENTRANCES	PATRICIA
Algeria	EoCOE-II	PEFMED PLUS
AMBIENCE	ERN-APULIA3	PHOTORAMA
ANSELMUS	ESFR-SIMPLE	PIACE
ARCH	ESFR-SMART	PIANOFORTE
ARIEL	e-SHyIPS	POLYRISK
ASSASS	EuPRAXIA	PREDIS
BATTERY 2030PLUS	EXERTER	PRISM-eBT
B-BLUE	EXPAND II	PROMEDLIFE
BEST	F4E-FPA-327 SG07	PROMETEO
Beyond EPICA	FNS-CLOUD	PROVIDE
BIOcean5D	FocusCoE	PULSE-COM
BIOCIRCULARCITIES	FOODSAFETY4EU	PUMMA
BIOMETHAVERSE	ForestNavigator	R2CA
BLAZE	FREDMANS	RADNEXT
BLUE DEAL	FuelSOME	REACTT
BRIDGeconomies 2022-2025	GEAR-at-SME	REESTART
BRISK II	GICO	REHOUSE
CA EED3	GreenAbility	ReMade-at-ARI
CA-EED 2	GREENROAD	REPRODIVAC
CAMS_63	H2PORTS	RESIST
CAMS2_40	HARMONISE	RETRACE
CapaCITIES	HARNESSTOM	RISEN
CAV_EPBD	HARP	RISEUP
CEM-WAVE	HARPERS	SALTOpower
CETMA-DIHSME	HORIZON-STE	SANDA
CHANCE	IMPRESA	SASPAM-SA
CHemPGM	INCLUDING	SCRREEN2
CLEANDEM	I-NEST	SEAKNOT
CO2OLHEAT	iNEXT-Discovery	SEAWave
CoCliCo	InnCoCells	SECURE
COME RES	INNUMAT	SEETIP
CONDEREFF	INSPYRE	SER
CRISTAL	KNOWING	SFERA III
CST4ALL	LEAP4SME	Si-DRIVE
CUSTOM-ART	LEAPS-INNOV	SIMBA
DARE	LIFE AIRFRESH	SO-FREE
DRG4Food	LIFE BLUE LAKES	StoRIES
DUT	LIFE MAGIS	STYX
DYDAS	LIFE MODERn (NEC)	SUPREME
ECO-READY	LIFE21-CET-CA-CAEPBD6	TANDEM
E-DYCE	LIFE21-CET-POLICY-OdysseeMure fit-4-55	TEXTAROSSA
EEPLIANT 3	LIFEproETV	TITANS
EERADATA	LIGHTNESS	TRANSAT
EFFECTS	MED-GOLD	TRICK
EFFICIENT BUILDINGS	meetMED II	USER-CHI
EIT CLIMATE-KIC GECO	METROFOOD-RI	VEG-GAP
EIT KIC Urban Mobility CELESTE	MICADO	VERTIgO
EIT KIC Urban Mobility E+ Mobility	MILEDI	VIDIS
EIT Raw Materials FENICE	MINKE	VIPERLAB
EIT Raw Materials HUB-Regional Centre South Italy	MUSA	WASTE2H2
EIT Raw Materials RIS	NARSIS	WASTE2WATTS
EIT Raw Materials SisAl	NET2	X-tendo
EJP SOIL	NEWCOTIANA	

N. Contratto: 19ENV01

19ENV01 traceRadon

Radon metrology for use in climate change observation and radiation protection at the environmental level

Coordinatore: PTB PHYSIKALISCH TECHNISCHE BUNDESANSTALT (Germania) N. Partner: 18

Abstract:

Radon gas is the main source of natural radiation exposure to the public and its environmental distribution must be known. It is emitted almost evenly from ice-free land allowing its use as a tracker for quantifying and pin-pointing the sources of greenhouse gas (GHG) emissions using the Radon Tracer Method (RTM). Improved quantification measurements are required to locate Radon Priority Areas (RPA) and for validating GHG emission models. The project will develop traceable measurements for low-level atmospheric radon along with a reference-standard radon monitor, with results validated using long-term, field-based inter-comparisons. For the first time, a standard methodology for the RTM will be developed together with a validated, high-resolution radon flux map. RPAs will also be identified which has never been attempted before due to a lack of quality data. The results will support radiation protection measures and GHG emission models, leading to increased safety and a better identification of the sources of damaging pollutants.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes EMPIR
Data inizio:	01-06-2020
Data scadenza:	31-05-2023
Contributo totale:	€ 2.245.357
Costo eleggibile totale:	€ 2.255.607
Contributo a ENEA:	€ 150.938
Costo eleggibile ENEA:	€ 150.938
Doc. approvazione:	066/2020/FSN
Codice atto:	PF5AAH
Resp. scientifico ENEA:	CAPOGNI MARCO
Unità:	FSN-INMRI

Attività ENEA:

L'ENEA-INMRI, oltre alla partecipazione ai work package di impatto/comunicazione (WP5) e gestionale (WP6), parteciperà attivamente a tre dei quattro work package tecnici previsti ovvero: WP1: Misure tracciabili di concentrazione di attività di radon outdoor In tale work package l'ENEA-INMRI sarà impegnato nei tre obiettivi del progetto fornendo il proprio contributo allo sviluppo di sorgenti di radon di bassa concentrazione di attività (inferiore a 100 Bq/m3), di un campione di trasferimento per tarare strumenti per la misura di radon in accordo con la norma tecnica IEC 61577 e di taratura di sistemi di misura del radon alla concentrazione su indicata con basso livello di incertezza. WP2: Misure di flusso di radon In tale work package l'ENEA-INMRI sarà impegnato per sviluppare capacità di misure di radon in campo basate su campioni di riferimento e sistemi campione di trasferimento e per armonizzare tali sistemi attraverso interconfronti. Anche in questo caso l'Istituto sarà impegnato nei 4 obiettivi del WP. WP3: Validazione dei modelli e basi di dati per il flusso di radon In questo work package l'ENEA-INMRI contribuirà a validare modelli e dati riguardanti il flusso di radon sulla base di misure e sistemi di riferimento/trasferimento sviluppati nei work package precedenti. Tale lavoro supporterà tecniche RTM e la modellizzazione di dispersioni atmosferiche anche in relazione al problema dei gas serra e per applicazioni di radio-protezione.

N. Contratto: 19NET03

19NET03 Support BSS

Support for a European Metrology Network on reliable radiation protection regulation

Coordinatore: PTB PHYSIKALISCH TECHNISCHE BUNDESANSTALT (Germania) N. Partner: 16

Abstract:

Radiation protection legislation has been overhauled to better protect European citizens. A revision of the EURATOM Directive broadened its scope to cover all radiation sources and categories of exposure. Occupational, medical, public and environmental risks are now all included, partly in response to lessons learned from the Fukushima nuclear accident. Radiation protection measurement (dosimetry) will need to become more responsive to changing needs, by supporting new technologies such as pulsed doses in nuclear medicine, more harmonised worker protection measures, and digitalisation trends. As there is no comprehensive facility capable of supporting all these requirements, a European Metrology Network for reliable radiation protection regulation is being considered, to help introduce a legally enforceable European quality assurance system. The project will formulate a defining scope and organisational basis for a network. After engaging with stakeholders, it will produce a research agenda designed to ensure that suitable reference fields and standards can be developed to support radiation protection regulations. Knowledge-sharing requirements and input to international standards will also be addressed. Facilities established by the project will support quality assessment in all radiation protection issues. On completion of the project, a network could be called upon to support the development of more harmonised procedures and capabilities in service provision and research, so the quality of radiation protection dosimetry can support better radiation protection measures for all European citizens.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes EMPIR
Data inizio:	01-06-2020
Data scadenza:	31-05-2024
Contributo totale:	€ 476.467
Costo eleggibile totale:	€ 525.152
Contributo a ENEA:	€ 10.500
Costo eleggibile ENEA:	€ 10.500
Doc. approvazione:	184/2020/PRES
Codice atto:	PF5AAG
Resp. scientifico ENEA:	PINTO MASSIMO
Unità:	FSN-INMRI

Attività ENEA:

INMRI ENEA partecipa a tutti work package.

N. Contratto: 19NET04

19NET04 MIRA

Support for a European Metrology Network on the medical use of ionising radiation

Coordinatore: CEA (Francia) N. Partner: 10

Abstract:

Radiation therapies are expected to continue to be in the front line for providing effective cancer treatment and diagnoses. Europe has a strong record of developing medical applications of ionising radiation, and demands for improved treatments are expected to drive further innovation. For example, technologies are being developed that combine imaging and radiation, radio-pharmaceuticals and applications of pulsed radiation. Access to such devices is uneven across Europe as some metrology institutes are disadvantaged through lack of access to state-of-the-art research facilities, while the complexity, costs, evolving regulatory requirements, and discrepancies in knowledge and capability each act to compromise the provision of effective metrological infrastructure. Demand for new technologies imposes requirements for new measurement techniques, informed by the best research. Understanding of adverse side-effects is also essential. However, no single body exists specifically to coordinate solutions, so Europe's metrology institutes are not able to serve some important measurement needs of equipment manufacturers, academics, standards organisations, and bodies representing radiation oncology, medical physics, pre-clinical research, and medical staff. This four-year project will enable facilities to be shared and a dialogue initiated between stakeholders. A Strategic Research Agenda for the coming decade will be proposed, regulatory needs defined, and knowledge-sharing offered. Within 12 months, a specific plan for a metrology research infrastructure will be presented via a European Metrology Network. These actions are expected to support enhanced research reproducibility and standards development, enabling safer, more efficient treatments and diagnoses. Improved understanding will also speed the development of new therapies and diagnostic tools, while increased understanding of risk factors will improve patient safety.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes EMPIR
Data inizio:	01-06-2020
Data scadenza:	31-05-2024
Contributo totale:	€ 396.963
Costo eleggibile totale:	€ 454.024
Contributo a ENEA:	€ 18.900
Costo eleggibile ENEA:	€ 18.900
Doc. approvazione:	070/2020/FSN
Codice atto:	PF5AAI
Resp. scientifico ENEA:	CAPOGNI MARCO
Unità:	FSN-INMRI

Attività ENEA:

Il progetto è finalizzato alla realizzazione di reti metrologiche a supporto della comunità scientifica europea. Risulta strategico il contributo che INMRI-ENEA può apportare alla definizione delle Network sopra menzionate. Inoltre, la definizione e l'appartenenza ad una rete metrologica europea offrirà all'Istituto la possibilità di attivare nuovi e rilevanti servizi metrologici avanzati alla comunità medica nazionale.

N. Contratto: 875033 ***3beLiEVe***

Delivering the 3b generation of LNMO cells for the xEV market of 2025 and beyond

Coordinatore: AIT AUSTRIAN INSTITUTE OF TECHNOLOGY (Austria) N. Partner: 21

Abstract:
The development of better materials for use in rechargeable batteries is vital for the future of the electric vehicle market. One of these materials is lithium nickel manganese oxide (LNMO), a cobalt-free cathode material that's a cost-effective alternative to current lithium-ion (Li-ion) battery materials. Using LNMO, the EU-funded 3beLiEVe project aims to produce the next generation of Li-ion rechargeable batteries for electric vehicles in 2025 and beyond. Along with the next-gen battery cells, the project will also develop and integrate internal and external sensors for the cell. The data obtained from these sensors will provide a more timely and accurate view of the state of the cell and will be used to implement smart operating strategies that extend the life of the cell and improve its safety. The smart battery management system will process this data and manage an adaptive liquid cooling system. Manufacturing, second life and recycling aspects are also considered. The project's innovations will play a role in strengthening the European battery and automotive industry.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-01-2020
Data scadenza:	30-06-2023
Contributo totale:	€ 10.833.760
Costo eleggibile totale:	€ 10.833.760
Contributo a ENEA:	€ 298.500
Costo eleggibile ENEA:	€ 298.500
Doc. approvazione:	01/2020/FSN
Codice atto:	PF7AAV
Resp. scientifico ENEA:	MANNORI SIMONE
Unità:	FSN-TECFIS-DIM

Attività ENEA:
L'ENEA contribuisce alle attività del work package 4 'Battery sensors, cooling, BMS, modules and packaging. In particolare ENEA è responsabile dell'integrazione di tutti i sensori (interni ed esterni) installati a livello della singola cella. Oltre all'integrazione hardware/software con il BMS (Battery Management System) ENEA è responsabile del collaudo 'in condizioni reali' del sottoinsieme cella/sensori.

N. Contratto: 825027

AD ASTRA

HArnessing Degradation mechanisms to prescribe Accelerated Stress Tests for the Realization of SOC lifetime prediction Algorithms

Coordinatore: ENEA (Italia) N. Partner: 10

Abstract:

AD ASTRA aims to define Accelerated Stress Testing (AST) protocols deduced from a systematic understanding of degradation mechanisms of aged components in solid oxide cell (SOC) stacks, operating in both fuel cell and electrolysis modes. In particular, fuel and oxygen electrode issues and interconnect contact loss will be tackled. The project will build upon relevant information harvested in FCH JU projects, as well as make use of many samples taken from stacks operated in the field for thousands of hours, supplied by leading European SOC manufacturers across the two application areas CHP and P2X (combined heat&power generators and power-to-commodity energy storage). The approach to harnessing the intricate phenomena causing critical performance degradation will be based upon a methodical analysis of inservice performance data correlated with post-operation states, augmented by a dual-focus campaign targeting macroscopic stack testing Procedures as well as specific component ageing tests. The probabilistic nature of degradation will be captured by slimming down deterministic simulation models through conception and integration of stochastic correlations between (nominal/accelerated) operating conditions and degradation effects, based on statistically significant data obtained from field-tests and purposely generated experiments. Stochastic interpretation will thus serve the physical description of dominant SOFC degradation mechanisms in CHP and P2X operation, but allowing rapid estimation of remaining useful stack life. The combined results will be translated to validated test protocols that allow quantifying and predicting degradation in SOCs as a function of test aggravation, defining appropriate transfer functions between stress-accelerating and real-world conditions. The overall project approach will be formalized for adoption by the relevant standards-developing organisations.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2019
Data scadenza:	31-08-2022
Contributo totale:	€ 3.008.426
Costo eleggibile totale:	€ 3.008.426
Contributo a ENEA:	€ 399.250
Costo eleggibile ENEA:	€ 399.250
Doc. approvazione:	69/E72018/DTE
Codice atto:	PT4AAU
Resp. scientifico ENEA:	MC PHAIL STEPHEN JOHN
Unità:	DTE-PCU-SPCT

Attività ENEA:

L'ENEA coordina il progetto (WP1) ed è l'interfaccia tra il consorzio e la Fuel Cells and Hydrogen Joint Undertaking (FCH JU). Partecipa inoltre ai seguenti WP: WP2: creazione di un databse con dati interni ed esterni al progetto, sviluppo campagne sperimentali. Elaborazione di protocolli per test accelerati; WP3: attività sperimentali volte a monitorare sia le prestazioni di stack operati in condizioni critiche in situ sia le prestazioni di stack composti da componenti invecchiati artificialmente ex situ; WP4: analisi post mortem con diversi tipi di spettroscopia; WP5: in questo WP l'ENEA è il tramite tra il consorzio e la IEA e contribuisce allo sviluppo di un modello a parametri concentrati per simulare i meccanismi di degrado sui singoli componenti; WP6: gestione del piano di disseminazione e valorizzazione del know-how e del prodotto generato nel progetto, diffusione nei mercati e promozione del prodotto facendo leva sulle piattaforme dedicate europee, mediante l'organizzazione di workshop e la pubblicazione di articoli.

N. Contratto: 101058020

AgroServ

Integrated SERVices supporting a sustainable AGROecological transition

Coordinatore: CNRS (Francia) N. Partner: 73

Abstract:

Developing a resilient and sustainable agriculture system, and the agroecological transitions requires a deep understanding of agroecosystems, their interactions with the environment, and management practices. AgroServ features a large consortium of research infrastructures, most of them being on the EU roadmap, and a vast offer of services at all scales, from the molecule to the organism, to the ecosystem, to the society. AgroServ will facilitate a systemic and holistic approach to understand the threats and challenges agriculture is facing, towards the implementation of a resilient and sustainable agri-food system. We propose a transdisciplinary offer of services, integrating the actors of the agriculture system in the research process, of which the farmers are the first, thanks to a wide offer of living labs across Europe. Most of the relevant field of sciences are represented in AgroServ, from natural to social sciences. We will develop a wider catalogue of integrated and customized services, thanks to a specific approach of service pipelines designed from a gap analysis, stakeholder and user demands. A strong community building and training program for access managers and users will be implemented to facilitate multi- and transdisciplinary research with all relevant actors. Results from the research performed under AgroServ will be synthetized to be used in the scope of evidence-based policy making. Data from AgroServ will be open and compliant with FAIR practices, and made available on the long-term to the communities, and be linked with the main European initiatives, as the EOSC. Strong links will be established with existing or future programs under H2020 and Horizon Europe, such as the partnerships agroecology, living labs and research infrastructures, and agriculture of data, as well as the two CSA AE4EU and ALL-READY, and the missions soil and plant health, and waters. AgroServ will collaborate with other relevant initiative in the Pillar II to of HE.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Research Infrastructures (2021-2027)
Data inizio:	01-09-2022
Data scadenza:	31-08-2027
Contributo totale:	€ 14.252.873
Costo eleggibile totale:	€ 14.252.873
Contributo a ENEA:	€ 493.245
Costo eleggibile ENEA:	€ 493.245
Doc. approvazione:	141/2022/SSPT-BIOAG
Codice atto:	PS1ACS
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

ENEA è à coinvolto in 6 dei 9 WPs “tecnici” nei quali si articola il progetto e nella fornitura di servizi integrati per il TNA. In particolare, ENEA partecipa ai seguenti WP: WP2 - AgroServ integration and customisation of services WP5 - Community building and user’s engagement WP6 - Open innovation hub (WP Leader) WP7 - Developing a roadmap for long-term sustainability beyond 2027 WP8 - Outreach, dissemination, exploitation of results WP9 - Project management and monitoring WP14 - TA METROFOOD-RI

N. Contratto: UIA03-322

AIR-HERITAGE

Improving the environmental quality of the City of Portici: Monitoring, Modelling, and Mitigating Air Pollution through participated and efficient Policies

Coordinatore: COMUNE DI PORTICI (Italia) N. Partner: 5

Abstract:

AIR-HERITAGE foresees the development of an innovative, pervasive and versatile way of monitoring air quality that is integrated with the ordinary institutional monitoring. Through the modeling of the data collected with respect to the context and the preparation of a decision support tool that can be used by both public administrators and citizens, they will be able to adopt the most appropriate choices and behaviours. Citizens themselves will be able to compete directly in monitoring using portable detectors. Local communities, in a complementary and synergic way, will be sensitized to adopt virtuous behaviour. AIR-HERITAGE aims to obtain a change in the way the components of the City of Portici assess and react to air quality issues, reducing the distances and barriers among them. In particular, AIR-HERITAGE success will impact on citizens mobility choices and policy engagement as well as UA policy decision making. Through the new pervasive monitoring stations network, the city AQ measuring, hi-res mapping, and remediation design capability will be established. Trough enhanced awareness of personal exposure, AIR-HERITAGE will define a new level of social cohesion for fighting environmental threats. Citizenship, Regulatory Monitoring Agencies, Research centers and Economical actors will enhance their support and engagement in AQ knowledge building, Policy making and implementation. As a final result, Air quality will improve in the areas most affected by car traffic. Most of the results will be transferable to cities that are subjected to the same forces at political, environmental, social, technical level.

Anno di stipula:	2018
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes UIA - Urban Innovative Actions
Data inizio:	01-11-2018
Data scadenza:	30-04-2022
Contributo totale:	€ 3.274.476
Costo eleggibile totale:	€ 4.093.095
Contributo a ENEA:	€ 557.510
Costo eleggibile ENEA:	€ 693.500
Doc. approvazione:	12/E/2019/DTE
Codice atto:	PT2AAV
Resp. scientifico ENEA:	DE VITO SAVERIO
Unità:	DTE-FSN-DIN

Attività ENEA:

Le attività ENEA riguardano principalmente il monitoraggio diffuso e pervasivo della qualità dell'aria cittadina attuato con l'utilizzo del dispositivo MONICA.

N. Contratto: ENI/2018/404-536

Algeria

ASSISTANCE TECHNIQUE AU PROGRAMME D

Coordinatore: IBF - INTERNATIONAL CONSULTING SA (Belgio) N. Partner: 4

Abstract:

Ce marché concerne la composante Assistance Technique du Programme d'Appui au secteur des énergies renouvelables principalement électriques et de l'efficacité énergétique en Algérie, dont les principales parties prenantes sont le Ministère de l'Énergie, le Ministère de l'Environnement et des Énergies Renouvelables, le Ministère de l'Habitat, de l'Urbanisme et de la Ville, les Ministères de l'Industrie et du Commerce, la Commission de Régulation de l'Électricité et du Gaz (CREG), l'Agence Nationale pour la Promotion et la Rationalisation de l'Utilisation de l'Énergie (APRUE), les sociétés du groupe SONELGAZ (y compris GRTE, OS, SKTM et sociétés de distribution), ainsi que le Centre National d'Études et de Recherches Intégrées du Bâtiment (CNERIB) et le Centre de Développement des Énergies Renouvelables (CDER). Il vise à fournir de l'expertise de haut niveau sur trois axes stratégiques : Axe 1 - Institutionnel, politique et règlementaire Axe 2 - Energies renouvelables Axe 3 - Efficacite énergétique

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes ENI - European Neighbourhood Instruments (2014-2020)
Data inizio:	08-04-2019
Data scadenza:	27-04-2023
Contributo totale:	€ 8.243.455
Costo eleggibile totale:	€ 8.243.455
Contributo a ENEA:	€ 2.060.864
Costo eleggibile ENEA:	€ 2.171.935
Doc. approvazione:	59/E/2019/DTE
Codice atto:	PT0AAG
Resp. scientifico ENEA:	DE IULIIS SIMONA
Unità:	DTE

Attività ENEA:

L'ENEA svolge le attività necessarie al conseguimento degli obiettivi tramite l'Unità Studi Analisi e Valutazioni e i Dipartimenti "Tecnologie Energetiche", "Unità per l'Efficienza Energetica", "Sostenibilità dei sistemi produttivi e territoriali". L'ENEA ha un ruolo chiave nell'indirizzo delle politiche energetiche dell'Algeria sui temi dello sviluppo economico sostenibile in ambito energetico, ricoprendo un ruolo di primo piano anche con le aziende che in Algeria operano nel settore.

N. Contratto: 847054

AMBIENCE

ambience

Active managed Buildings with Energy performaNce Contracting

Coordinatore: VITO - FLEMISH INSTITUTE FOR TECHNOLOGICAL RESEARCH (Belgio) N. Partner: 7

Abstract:

The AmBIENCe project aims at extending the concept of Energy Performance Contracting to Active Buildings and making it available and attractive to a wider range of buildings. AmBIENCe will provide new concepts and business models for performance guarantees of Active Buildings, combining savings from energy efficiency measures with additional savings and earnings resulting from the active control of assets leveraging for instance price based incentive contracts (Implicit Demand Response). The willingness to invest in additional sensorisation, ICT an IoT will be increased by offering adjacent other-than-energy services, e.g. related to comfort, security or maintenance. Within the course of AmBIENCe, we will leverage the experience of the project's business and research partners, and extend this through regional workshops where we will bring together various stakeholders to make an assessment of best practices and learnings. Based on this, an integrated modular concept will be proposed, and a proof-of-concept platform will be developed, to support the creation of Active Building Performance Contracts.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-06-2019
Data scadenza:	30-05-2022
Contributo totale:	€ 1.999.875
Costo eleggibile totale:	€ 1.999.875
Contributo a ENEA:	€ 196.625
Costo eleggibile ENEA:	€ 196.625
Doc. approvazione:	45/E/2019/DTE
Codice atto:	PT7AAL
Resp. scientifico ENEA:	DI SOMMA MARIALAURA
Unità:	DTE-STSN-SGRE

Attività ENEA:

L'ENEA è impegnato nei seguenti work package: WP1 - Assessment of (enhanced) energy performance contracts and building demand response services in Europe, con il ruolo di leader; WP2 - Development of an active building energy performance contract concept and business model in two pilots; WP3 - Implementation and validation of the active building epc concept and business model in two pilots; WP5 - Economic evaluation, exploitation and replication WP6 - Market actors engagement through communication and dissemination WP7 - Project management

N. Contratto: 101061185

ANSELMUS

Advanced Nuclear Safety Evaluation of Liquid Metal Using Systems

Coordinatore: SCK CEN - CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE (Belgio) N. Partner: 17

Abstract:

The importance of low carbon energy sources in the efforts against rapid climate change makes nuclear energy part of a sustainable energy mix. Although there have been years of experience feedback with water cooled reactors, fundamental improvement, particularly regarding intrinsic safety and reduced nuclear waste generation is possible using advanced nuclear designs. Heavy metal cooled systems such as the lead fast reactor (LFR) combine the advantages of a fast reactor system that reduces waste with the intrinsic safety related properties such as the high boiling point, chemical inertia and improved heat transfer. ANSELMUS responds to the Horizon-Euratom -2021-NRT-01-02 call Safety of advanced and innovative nuclear designs and fuels. Its objective is to contribute significantly to the safety assessment of heavy-liquid-metal (HLM) systems, in particular ALFRED and MYRRHA as these are included in the roadmap for the development of advanced systems in Europe. It will use the maturity of both designs to create two detailed phenomena identification and ranking tables (PIRT) that identify all verification and validation needs and are used for further safety evaluation. The project will also experimentally validate key safety related sub-systems including the safety rods, failed fuel pin detection and the coolant chemistry control system. We also will improve the validation of numerical models describing the fuel assembly through experiments and simulations and work on reactor safety monitoring and inspection of HLM systems focusing on high temperature vessel inspection. Moreover, ANSELMUS will look into the societal impact of HLM reactors by assessing the integration of LFR in a mixed energy landscape, including economical aspects, and by addressing social and ethical considerations of advanced nuclear technologies. Finally, a dedicated effort will be put into education and dissemination towards all stakeholders including policy makers and the general public.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-09-2022
Data scadenza:	31-08-2026
Contributo totale:	€ 3.464.443
Costo eleggibile totale:	€ 4.509.865
Contributo a ENEA:	€ 682.969
Costo eleggibile ENEA:	€ 921.875
Doc. approvazione:	081/2022/FSN
Codice atto:	PF0AAR
Resp. scientifico ENEA:	TARANTINO MARIANO
Unità:	FSN-PROIN

Attività ENEA:

ENEA è coinvolta nei seguenti work package (WP): - WP1 PIRT on HLM systems; - WP2 Fuel assembly safety (12 PM) - WP3 Validation of safety systems (30 PM) - WP4 Reactor safety monitoring & inspection

N. Contratto: 820999

ARCH

Advancing Resilience of Historic Areas against Climate-related and other Hazards

Coordinatore: FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V. (Germania)

N. Partner: 16

Abstract:

ARCH will develop a unified disaster risk management framework for assessing and improving the resilience of historic areas to climate change-related and other hazards. This will be achieved by developing tools and methodologies that will be combined into a collaborative disaster risk management platform for local authorities and practitioners, the urban population, and (inter)national expert communities. To support decision-making at appropriate stages of the management cycle, different models, methods, tools, and datasets will be designed and developed. These include: technological means of determining the condition of tangible and intangible cultural objects, as well as large historic areas; information management systems for georeferenced properties of historic areas and hazards; simulation models for what-if analysis, ageing and hazard simulation; an inventory of potential resilience enhancing and reconstruction measures, assessed for their performance; a risk-oriented vulnerability assessment methodology suitable for both policy makers and practitioners; a pathway design to plan the resilience enhancement and reconstruction of historic areas; and an inventory of financing means, categorised according to their applicability in different contexts. The project ensures that results and deliverables are applicable and relevant by applying a co-creation process with local policy makers, practitioners, and community members. This includes the pilot cities Bratislava, Camerino, Hamburg, and Valencia. The results of the co-creation processes with the pilot cities will be disseminated to a broader circle of other European municipalities and practitioners. ARCH includes a European Standardisation organization (DIN) as a partner in order to prepare materials that ensure that resilience and reconstruction of historic areas can be progressed in a systematic way, through European standardisation, which will ensure practical applicability and reproducibility.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-06-2019
Data scadenza:	31-08-2022
Contributo totale:	€ 5.999.963
Costo eleggibile totale:	€ 6.249.963
Contributo a ENEA:	€ 548.531
Costo eleggibile ENEA:	€ 548.531
Doc. approvazione:	46/E/2019/DTE
Codice atto:	PT5AAZ
Resp. scientifico ENEA:	GIOVINAZZI SONIA
Unità:	DTE-SEN-APIC

Attività ENEA:

L'ENEA è responsabile del Work package 5 'Impact & Risk Assessment' nel quale dovrà customizzare il sistema di analisi e previsione del rischio sui vari test sites. ENEA è coinvolta anche in altri Work package per la realizzazione della valutazione del 'Resilience Scorecard', della identificazione dei rischi di varia natura in particolare sul test site nazionale, lo sviluppo di strategie per la formulazione di piani di resilienza e di conservazione dei beni.

N. Contratto: 847594

ARIEL

Accelerator and Research reactor Infrastructures for Education and Learning

Coordinatore: HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV (Germania) N. Partner: 23

Abstract:

For the continuing improvement of the safety of current and planned nuclear facilities accurate and precise nuclear data are required to simulate the ongoing processes on the atomic level. In order to maintain the transfer of knowledge to the younger generation and to countries with less advanced nuclear programs the most modern and state of the art neutron beam facilities based on accelerators and research reactors will unite in this project international experts with interested early stage researchers (ESR) and technicians to work on the most challenging problems. Experimental work in international teams at these facilities will be the most effective training and competence building tool. The project will provide at least 3000 additional beam time hours for external users groups at the neutron facilities of the consortium. Up to 90 ESR and technicians will be able to receive full mobility and logistical support to participate in these experiments at 23 different accelerator or reactor based neutron facilities. The training of ESR in the field of nuclear physics and nuclear engineering will be complemented by up to 30 research stays of up to 12 weeks duration for extended work at the participating facilities. These activities, which are also open to senior scientists and now also to technical and professional staff, will continue to foster the exchange of knowledge that has grown in earlier EURATOM work programmes, e.g. within CHANDA, or ERINDA. The scientific proposals for experiments and training of ESR will be selected by a Project Advisory Committee consisting of high-level experts based on scientific excellence and relevance to improve nuclear safety and support of current nuclear data needs as addressed by IAEA and NEA. In order to increase the visibility and attractiveness at the university level four summer schools with about 80 participants shall be organized, where the wider target group should be students with physics and engineering backgrounds.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2019
Data scadenza:	31-08-2023
Contributo totale:	€ 1.998.670
Costo eleggibile totale:	€ 1.998.670
Contributo a ENEA:	€ 36.500
Costo eleggibile ENEA:	€ 36.500
Doc. approvazione:	111/2019
Codice atto:	CF3AAM
Resp. scientifico ENEA:	FIORE SALVATORE
Unità:	FSN-FUSTEC-TEN

Attività ENEA:

ENEA sarà coinvolta nello svolgimento di misure di sezioni d'urto nucleari, verifica di dati nucleari esistenti e caratterizzazione di rivelatori per misure di fisica nucleare, attraverso campagne sperimentali con il generatore di neutroni FNG di Frascati (FSN-FUSTEC-TEN).

N. Contratto: 101059682

ASSASS

Artificial intelligence for the Simulation of Severe AccidentS

Coordinatore: IRSN INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE (Francia) N. Partner: 14

Abstract:

The ASSAS project aims at developing a proof-of-concept SA (severe accident) simulator based on ASTEC (Accident Source Term Evaluation Code). The prototype basic-principle simulator will model a simplified generic Western-type pressurized light water reactor (PWR). It will have a graphical user interface to control the simulation and visualize the results. It will run in real-time and even much faster for some phases of the accident. The prototype will be able to show the main phenomena occurring during a SA, including invessel and ex-vessel phases. It is meant to train students, nuclear energy professionals and non-specialists. In addition to its direct use, the prototype will demonstrate the feasibility of developing different types of fast-running SA simulators, while keeping the accuracy of the underlying physical models. Thus, different computational solutions will be explored in parallel. Code optimisation and parallelisation will be implemented. Beside these reliable techniques, different machine-learning methods will be tested to develop fast surrogate models. This alternate path is riskier, but it could drastically enhance the performances of the code. A comprehensive review of ASTEC's structure and available algorithms will be performed to define the most relevant modelling strategies, which may include the replacement of specific calculations steps, entire modules of ASTEC or more global surrogate models. Solutions will be explored to extend the models developed for the PWR simulator to other reactor types and SA codes. The training data-base of SA sequences used for machine-learning will be made openly available. Developing an enhanced version of ASTEC and interfacing it with a commercial simulation environment will make it possible for the industry to develop engineering and full-scale simulators in the future. These can be used to design SA management guidelines, to develop new safety systems and to train operators to use them.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-11-2022
Data scadenza:	31-10-2026
Contributo totale:	€ 3.008.132
Costo eleggibile totale:	€ 3.008.132
Contributo a ENEA:	€ 160.875
Costo eleggibile ENEA:	€ 247.500
Doc. approvazione:	078 /2022/FSN
Codice atto:	PF6AAU
Resp. scientifico ENEA:	MASCARI FULVIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA è coinvolta nei seguenti work package: . WP1 dedicato alla definizione della strategia di modellazione ed al supporto degli altri WPs. . WP2 dedicato alla generazione del database necessario per il training degli algoritmi di machine learning per i modelli surrogati . WP3 dedicato all'esplorazione dell'applicabilità di diverse metodologie di machine learning e sviluppo di modelli surrogati . WP6 dedicato alla comunicazione ed alla disseminazione dei risultati del progetto, all'organizzazione delle attività di training e alle conclusioni del progetto.

N. Contratto: 957213

BATTERY 2030PLUS

BATTERY 2030+ large-scale research initiative: At the heart of a connected green society

Coordinatore: UNIV. UPPSALA (Svezia) N. Partner: 23

Abstract:

Batteries are one key technology enabling a climate-neutral Europe by 2050. A pan-European research and innovation action is necessary to tackle the challenges preventing batteries to reach ultrahigh performance and to rapidly find new sustainable battery materials. The BATTERY 2030+ large-scale research initiative aims to invent the batteries of the future by providing breakthrough technologies to the European battery industry throughout the value chain and enable long-term European leadership in both existing markets (road transport, stationary energy storage), and future emerging applications (robotics, aerospace, medical devices, internet of things). This application for a Coordination and Support Action, with the acronym BATTERY 2030PLUS, will lead to the continued development of the BATTERY 2030+ large-scale research initiative. It kick-starts a European long-term research initiative on batteries. The main objectives are to develop the BATTERY 2030+ R&I roadmap and facilitate its implementation by coordinating and monitoring the consortia winning the calls LC-BAT-12, 13, 14 -2020. In addition, this consortium will in collaboration with the LC-BAT projects, propose guidelines for data sharing, standardization of protocols, and modelling methods/tools. The consortium will also prepare a common strategy for the protection and commercial exploitation of the results, as well as building competence by new European curricula and facilitate the communication, dialogue, and cooperation on cross-cutting topics. Together with the ETIP Batteries Europe the consortium will develop the SET-Plan for batteries and establish links to national and international battery stakeholder networks.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	31-08-2023
Contributo totale:	€ 2.098.703
Costo eleggibile totale:	€ 2.098.703
Contributo a ENEA:	€ 21.650
Costo eleggibile ENEA:	€ 21.650
Doc. approvazione:	75/2020/DTE
Codice atto:	PT4ABC
Resp. scientifico ENEA:	MORENO MARGHERITA
Unità:	DTE-PCU-SPCT

Attività ENEA:

L'ENEA è coinvolta in numerose task: 1.2: Organise meetings with LC-BAT 12, 13 and 14 projects 1.4: contribute to standardisation of protocols for experimental data and for modelling methods/tools 2.1: science and innovation roadmap 2.2: mapping of current activities contributin to identified R&I areas 2.3: proposition of future R&I actions 4.1: communication and dissemination 4.2: stakeholder engagement 4.3: annual conferences 5.1: strategic decision making 5.2: operational management

N. Contratto: 8MED20_4.1_SP_001

B-BLUE

Building the Blue Biotechnologies Community in the Mediterranean

Coordinatore: ENEA (Italia) N. Partner: 10

Abstract:

Dieci paesi del Mediterraneo rappresentati, 23 tra partner di progetto e partner associati e l'obiettivo di coinvolgere oltre 300 organizzazioni della Bioeconomia Blu nella sua Med Blue Biotechonology (BBt) community, sia attraverso una piattaforma digitale dedicata che tramite l'attivazione di laboratori multistakeholders a livello territoriale in 5 aree pilota. Nei suoi 22 mesi di attività, B-Blue vuole supportare la creazione di un meccanismo di governance a livello Mediterraneo volto a superare la frammentazione del settore delle biotecnologie applicate alle risorse marine per favorire un più agevole accesso all'innovazione sostenibile grazie alla collaborazione tra università, centri di ricerca, autorità pubbliche locali e nazionali, piccole e medie imprese e organizzazioni di supporto alle stesse. Le biotecnologie rappresentano un formidabile strumento per la chiusura dei cicli produttivi e per la valorizzazione degli scarti in prodotti ad alto valore aggiunto e la loro applicazione alle risorse biotiche marine ha un potenziale enorme e per gran parte inespresso, sia in termini economici che di innovazione. L'ENEA ed i partner di B-Blue vogliono sbloccare questo potenziale creando una community che sia in grado di definire strategie condivise e attività sinergiche per la transizione verso una crescita blu sostenibile ed inclusiva.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg MED
Data inizio:	01-09-2020
Data scadenza:	30-09-2022
Contributo totale:	€ 1.274.928
Costo eleggibile totale:	€ 1.499.916
Contributo a ENEA:	€ 202.521
Costo eleggibile ENEA:	€ 238.260
Doc. approvazione:	161/2020/SSPT-USER
Codice atto:	PS6ADB
Resp. scientifico ENEA:	CHIAVETTA CRISTIAN
Unità:	SSPT-USER-RISE

Attività ENEA:

ENEA coordina il progetto e riveste il ruolo di leader dei seguenti WP: WP1 - Management WP6 - Capitalization

N. Contratto: 101069676

BEST

Batteries Europe Secretariat

Coordinatore: KIC INNOENERGY SE (Paesi Bassi) N. Partner: 15

Abstract:

Batteries Europe Secretariat (BEST) proposal aims to enrich, strengthen and extend the key role of Batteries Europe by gathering academia, industry and research expertise within the Secretariat to consolidate the Battery R&I community and assist the existing platform in the achievement of their ambitious goals. BEST consortium will engage in its experts working groups industry stakeholders, academia, policy makers, researchers and citizens from all the value chain, especially broadening involvement on underrepresented domains and countries. BEST will contribute to gain synergies among battery R&I stakeholders' landscape, consolidate the workflow among the initiatives, facilitate free and inclusive access to information, strength industry-research collaboration to push technology developments to reduce time to market of new solutions, reinforce European talent attraction capacity and provide fact-based orientations to policy makers. The Secretariat will gather expertise to develop Strategic R&I agenda, design updated roadmaps, establish KPIs per application (transport, stationary, portable, etc.) to nurture the SET Plan, contribute to standards and reporting methodologies harmonization, promote education on battery fields and rise social awareness. The Secretariat will organize workshops per objectives, complemented with experts' interviews, discussion forums, scientific papers review, etc. to confront current state of the art with future trends, considering international tendencies. BEST is formed by 11 partners and 4 affiliated entities, led by Innonergy, with ZABALA, CLERENS SINTEF, VDI/VDE INNOVATION, CICenergiGUNE INSTM (UNIMIB, UNIPV, POLITO), EERA, EASE and ENEA. The partners are promoters of main European initiatives related to batteries that has facilitated the establishment of collaboration flows to bring Batteries Europe Platform to next stage in 36 months.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Cluster 5 - Cross-cutting solutions
Data inizio:	01-05-2022
Data scadenza:	30-04-2025
Contributo totale:	€ 2.999.886
Costo eleggibile totale:	€ 2.999.976
Contributo a ENEA:	€ 263.588
Costo eleggibile ENEA:	€ 263.588
Doc. approvazione:	104/2022/TERIN
Codice atto:	PK4AAQ
Resp. scientifico ENEA:	AURORA ANNALISA
Unità:	TERIN-PSU-ABI

Attività ENEA:

L'ENEA è coinvolta con peso differente in tutti i WP ad eccezione del secondo. Il maggior e considerevole contributo è nel WP3 (R&I for European Industrial Competitiveness) in cui fornirà supporto nella stesura della (i) SRIA (Strategic Research and Innovation Agenda), (ii) delle Roadmaps dei singoli WG di Batteries Europe, (iii) nella definizione delle KPI (Key Performance Indicators) e nella definizione delle linee guida per uniformare gli standard e le metodologie di reporting nell'ambito della letteratura scientifica inerente alle batterie. In quest'ultima task l'ENEA svolge il ruolo di coordinamento.

N. Contratto: 815384

Beyond EPICA

Beyond EPICA Oldest Ice Core: 1,5 Myr of greenhouse gas – climate feedbacks

Coordinatore: CNR - CONSIGLIO NAZIONALE DELLE RICERCHE (Italia) N. Partner: 12

Abstract:

To better constrain the long-term response of Earth's climate system to continuing greenhouse gas emissions, it is essential to turn to the past. A key advance would be to understand the shift in Earth's climate response to orbital forcing during the 'Mid-Pleistocene transition' [MPT, 900,000 (900 kyr) to 1.2 million years (1.2 Myr) ago], when a dominant 40 kyr cyclicity gave way to the current 100 kyr period. It is critical to understand the role of forcing factors and especially of greenhouse gases in this transition. Unravelling such key linkages between the carbon cycle, ice sheets, atmosphere and ocean behaviour is vital, assisting society to design an effective mitigation and adaptation strategy for climate change. Only ice cores contain direct and quantitative information about past climate forcing and atmospheric responses. However, the longest (EPICA) ice core record available to date covers only the last 800 kyr. The RIA Topic LC-CLA-08-2018 empowers the European ice core community to perform such an oldest ice core drilling and the project 'Beyond EPICA' is taking on this unique challenge and opportunity. The overarching scientific objective driving 'Beyond EPICA' is to obtain quantitative, high-resolution ice- core information on climate and environmental changes over the last 1.5 Myr. The cause and effect relationship that led to the enigmatic MPT change in the climate system is not understood yet, as important information on global changes in the climate system is still missing. Most of this information, including the phasing of these changes in the Earth System can only be derived from a continuous ice core from Antarctica covering the last 1.5 Myr. This proposal uses the planning derived during the recent BE-OI CSA, and offers an excellent team (the only team globally that could at present accept the challenge of the call), underpinned by excellent infrastructure and capacity, and is currently ensuring it has an excellent location for the core.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-06-2019
Data scadenza:	31-05-2025
Contributo totale:	€ 10.999.942
Costo eleggibile totale:	€ 10.999.942
Contributo a ENEA:	€ 2.610.000
Costo eleggibile ENEA:	€ 2.610.000
Doc. approvazione:	96/2019/PRES
Codice atto:	PA0AAK
Resp. scientifico ENEA:	FREZZOTTI MASSIMO
Unità:	SSPT-PROTER-OAC

Attività ENEA:

L'ENEA è impegnata nel progetto attraverso l'Unità Tecnica Antartide che ha il compito di attuare le attività logistiche, integrandole nella più ampia e generale gestione delle spedizioni antartiche e della stazione concordia. Per gli aspetti scientifici del progetto l'Unità Tecnica Antartide si avvale del supporto del Dipartimento Sostenibilità dei sistemi produttivi e territoriali.

N. Contratto: 101059915 ***BIOcean5D***

MARINE BIODIVERSITY ASSESSMENT AND PREDICTION ACROSS SPATIAL, TEMPORAL AND HUMAN SCALES

Coordinatore: EMBL - EUROPEAN MOLECULAR BIOLOGY LABORATORY (Organ. Internazionali) N. Partner: 31

Abstract:

Marine biodiversity sustains ecosystem services for planetary and human health. Recent surveys of marine ecosystems have unveiled our ignorance of the richness and functioning of marine life, which is changing in the Anthropocene at a faster pace than terrestrial life. BIOcean5D unites major European centers in molecular/cell biology (EMBL), marine biology (EMBRC), and sequencing (Genoscope), together with 26 partners from 11 countries, to build a unique suite of technologies, protocols, and models allowing holistic re-exploration of marine biodiversity, from viruses to mammals, from genomes to holobionts, across multiple spatial and temporal scales stretching from pre-industrial to today. A focus is to understand pan-European biodiversity land-to-sea gradients and ecosystem services, including marine exposomes, notably with an expedition (TREC, 2023/24) that will deploy mobile labs, research vessels including the Tara schooner, and innovative citizen science tools, across 21 coastal countries and 35 marine labs from the Mediterranean to Arctic seas. New data will be harmonized with existing data into an open-access data hub, leveraging international infrastructures, and generating transformative, crosstechnologies/cross-scales standard marine biodiversity knowledge at the socio-ecosystem level. Knowledge will inform and constrain (i) new theories and models of marine biodiversity ecological and evolutionary dynamics and drivers, at both taxonomic and functional scales, (ii) a portfolio of novel holistic indicators of marine ecosystem health, (iii) innovative methods and protocols for economic and legal valuations of marine biodiversity and services integrating the dynamical and functional complexity of marine life. BIOcean5D will create a unique opportunity to bridge molecular/subcellular biology to organismal biology, theoretical ecology and econometrics, and marine complex systems to social sciences, toward the sustainable preservation of our oceans and seas.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
Data inizio:	01-12-2022
Data scadenza:	30-11-2026
Contributo totale:	€ 15.449.903
Costo eleggibile totale:	€ 15.449.903
Contributo a ENEA:	€ 141.945
Costo eleggibile ENEA:	€ 141.945
Doc. approvazione:	126/2022/SSPT-MET
Codice atto:	PS2ACJ
Resp. scientifico ENEA:	NAPOLITANO ERNESTO
Unità:	SSPT-MET-CLIM

Attività ENEA:

Le attività ENEA prevedono la produzione di una simulazione di tipo hindcast (ricostruzione del clima passato) ad altissima risoluzione spaziale per il Mar Mediterraneo che tenga conto non solo delle variabili fisiche ma anche di tutte le variabili biogeochimiche. In particolare sono previste le seguenti attività: costruzione del modello fisico; implementazione della componente biogeochimica; produzione dei forzanti meteorologici; realizzazione della simulazione di hindcast.

N. Contratto: 101023516

BIOCIRCULARCITIES

Exploring the circular bioeconomy potential in cities. Proactive instruments for implementation by policy makers and stakeholders

Coordinatore: FUNDACIO ENT (Spagna) N. Partner: 8

Abstract:

BIOCIRCULARCITIES aims at supporting the development of innovative and comprehensive regulatory frameworks and roadmaps aligned with circular bioeconomy principles, centred on 'bio-based waste' and based on feedback from multi-actor participatory processes. The project has been designed to i) explore the circular economy potential of unexploited bio-based waste streams generated in 3 European urban contexts around the cities of Barcelona (ES), Naples (IT) and Pazardzhik (BG); ii) identify and analyse circular bioeconomy best practices across the EU that could be used as successful example to use in the pilot areas; iii) detect regulatory and business opportunities and shortcomings for the introduction of bio-based processes and products into local and international markets, and iv) propose proactive instruments and policy roadmaps for supporting the circular bioeconomy and expand it to the European context. The strength of the project lies in the capability to bring together multiple actors belonging to the quadruple helix (businesses, research institutions, public authorities and civil society) to build the collaborative knowledge needed to map the different perspectives about legal and market limits/potentials for developing circular bioeconomy. Having a holistic picture of the legal and market opportunities and barriers in the 3 case study areas will make it possible to check the applicability of the identified best practices and other feasible solutions. The fiscal and economic impact due to the introduction of specific regulations will be considered to foresee the investments needed to support industry in making changes towards a more circular use of bioresources. Results obtained at local level will be a source of contents to develop generic guidelines to be exploited and further developed through communication, dissemination and exploitation actions at local and international levels.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 JTI - Bio Based Industries
Data inizio:	01-10-2021
Data scadenza:	30-09-2023
Contributo totale:	€ 999.894
Costo eleggibile totale:	€ 999.894
Contributo a ENEA:	€ 154.139
Costo eleggibile ENEA:	€ 154.139
Doc. approvazione:	69/2021/SSPT/USER
Codice atto:	PS6ADI
Resp. scientifico ENEA:	ZUCARO AMALIA
Unità:	SSPT-USER-T4RM

Attività ENEA:

ENEA contribuisce a tutti i workpackage, con un ruolo di leadership per il workpackage 2 "Exploring the sustainability of bioeconomy supply chains in a Life Cycle Thinking perspective".

N. Contratto: 101084200

BIOMETHAVERSE

Demonstrating and Connecting Production Innovations in the BIOMETHAne uniVERSE

Coordinatore: ISIS - ISTITUTO DI STUDI PER L'INTEGRAZIONE DEI SISTEMI (Italia) N. Partner: 22

Abstract:

BIOMETHAVERSE (Demonstrating and Connecting Production Innovations in the BIOMETHAne uniVERSE) aims to diversify the technology basis for biomethane production in Europe, to increase its cost-effectiveness, and to contribute both to the uptake of biomethane technologies and to the priorities of the SET Plan Action 8. To this aim five innovative biomethane production pathways will be demonstrated in five European countries: France, Greece, Italy, Sweden, and Ukraine. The project is based on the following founding pillars: Demonstration of innovative biomethane pathways; Technology optimisation and upscaling by technoeconomic flowsheeting; Environmental and social sustainability assessment; Replicability, market penetration, support to planning decisions of other investors and project developers, policy recommendations to policy makers; Dissemination, exploitation and communication of project results. BIOMETHAVERSE relates, within the Work Program 2021-2022 on Climate, Energy and Mobility, to the Call “Sustainable, secure and competitive energy supply”, specifically to the topic HORIZON-CL5-2021-D3-03-16: Innovative biomethane production as an energy carrier and a fuel. The project production routes cover one or a combination of the following production pathways: thermochemical, biochemical, electrochemical, and biological. As a starting point, four demonstration plants use conventional anaerobic digestion (AD), and one uses conventional gasification. In the BIOMETHAVERSE demonstrators, CO2 effluents from AD or gasification and other intermediate products are combined with renewable hydrogen or renewable electricity directly to increase the overall biomethane yield. All demonstrated production routes go beyond conventional technologies, with a circular approach for energy and material, while aiming at reducing the overall biomethane production costs and increasing the biomethane production. The demonstrated technologies will reach TRL 6-7 at the end of the project.

Anno di stipula:	2022
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Energy supply
Data inizio:	01-10-2022
Data scadenza:	31-03-2027
Contributo totale:	€ 9.871.769
Costo eleggibile totale:	€ 11.489.961
Contributo a ENEA:	€ 595.325
Costo eleggibile ENEA:	€ 595.325
Doc. approvazione:	196/2022/TERIN
Codice atto:	PK4AAS
Resp. scientifico ENEA:	AGOSTINI ALESSANDRO
Unità:	TERIN-PSU-ABI

Attività ENEA:

Le attività di pertinenza ENEA sono di natura modellistica pertanto non richiedono l’utilizzo di laboratori e prevedono come prodotti rapporti, pubblicazioni e databases. 1 - Supporto al coordinamento (WP1) 1.1 leadership task 1.2 ed elaborazione e aggiornamento Data Management Plan (Task 1.2) (6 PM) 3 – leadership della valutazione e ottimizzazione dei casi studio (WP3) 3.1 definizione della metodologia e strategia di raccolta dati (task 3.1) 3.2 modellazione dei casi studio e valutazione tecnoeconomica (task 3.2)

N. Contratto: 815284 ***BLAZE***

Biomass Low cost Advanced Zero Emission small-to-medium scale integrated gasifier-fuel cell combined heat and power plant

Coordinatore: UNIV. GUGLIELMO MARCONI (Italia) N. Partner: 9

Abstract:

BLAZE aims at developing Low cost, Advanced and Zero Emission first-of-a-kind small-to-medium Biomass CHP. This aim is reached by developing bubbling fluidised bed technology integrating high temperature cleaning & conditioning system (IBFBG, that can convert heterogeneous feedstocks in a syngas with zero particulate matter and ultra-low tar and contaminants content), an integrated high temperature gas cleaning approach for HCl and H2S removal and an innovative key component for thermal and chemical integration of solid oxide fuel cell (efficient gas recirculation of the fuel cell anode exhaust to the gasification process via a steam-driven high speed micro-compressor using gas bearing technology). The technology is developed for a CHP capacity range from small (25-100 kWe) to medium (0.1-5 MWe) scale and is characterised by the widest fuel spectrum applicable (forest, agricultural, industrial and municipal waste also with high moisture, ash and contaminants content), high efficiencies (50% electrical versus the actual 20%), low investment (< 4 k€/kWe) and operation (˜ 0.05 €/kWh) costs as well as almost zero gaseous and PM emissions, projecting electricity production cost below 0.10 €/kWh . Gasification, gas cleaning & conditioning and fuel cells will be tested at lab scale and 25 kWe SOFC will be thermally and chemically integrated in 100 kWth IBFBG demonstrating the achievement of new milestones, increasing competitiveness of European industry, energy system reliability and flexibility and biomass plants social acceptance. Process simulations, computer aided design, tests, performance evaluation, risk and safety analysis as well as a technology assessment part covering techno-economic, environmental and overall impact assessments and market studies will be carried out together with a clear dissemination, exploitation and communication plan, that can count on the involvement of the main gasifier, gas conditioning and SOFC European companies and research centres.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-03-2019
Data scadenza:	31-05-2023
Contributo totale:	€ 4.255.615
Costo eleggibile totale:	€ 4.255.615
Contributo a ENEA:	€ 210.375
Costo eleggibile ENEA:	€ 210.375
Doc. approvazione:	23/E/2019/DTE
Codice atto:	PT1AAS
Resp. scientifico ENEA:	BARISANO DONATELLA
Unità:	DTE-BBC-TER

Attività ENEA:

According to the project framework, ENEA is involved both in work packages (WP) focused on activities of project management and exploitation of results, and in WPs of R&D. Specifically, on these latter, ENEA participates with its consolidated know-how and well-equipped infrastructures on gasification and high-temperature fuel cells. At Trisaia Research Centre, different types of biomass residues, selected among those considered of major interest and possible use, will be tested. After chemical and physical-chemical characterization, the identified feedstocks will be used in experimental gasification campaigns in fluidized-bed reactor. The objective of these campaigns will be to define the process conditions at which the conversion of biomass into gaseous product will be the highest. Moreover, through the use of primary (in-bed) methods for reducing the load of contaminants directly in the implementation phase of the gasification process, materials will be identified that can contribute to the production of a gaseous stream of high quality, in terms of composition and calorific value, and low degree of contamination. At Casaccia Research Center, solid-oxide fuel cells (SOFC) will be tested to study their performance according to the quality of the supplied gas. The attention will be focused on the main contaminants of the produced gas to identify the type of SOFC that, in the final project phase of technologies integration, will achieve the best performances (i.e. high electrical efficiency, stability in operation and long lifetime).

N. Contratto: 5MED18_1.1_M23_072

BLUE DEAL

BLUe Energy Deployment Alliance

Coordinatore: UNIV. SIENA (Italia) N. Partner: 13

Abstract:
BLUE DEAL is a European project co-financed by the European Regional Development Fund based on the capitalization of Blue Energy (BE). The project aims to increase transnational activity of innovative clusters and networks of the BE sector, develop links and synergies between SME's, public authorities, knowledge institutions and civil society and establish transnational and regional Blue Deal Alliances. This project will create a favorable environment for BE investments and for developing sustainable actions in the Mediterranean economy.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg MED
Data inizio:	01-11-2019
Data scadenza:	30-06-2022
Contributo totale:	€ 2.415.647
Costo eleggibile totale:	€ 2.841.938
Contributo a ENEA:	€ 252.799
Costo eleggibile ENEA:	€ 297.410
Doc. approvazione:	269/2019/SSPT-MED
Codice atto:	PS2ABJ
Resp. scientifico ENEA:	STRUGLIA MARIA VITTORIA
Unità:	SSPT-MET-CLIM

Attività ENEA:
Le attività di competenza dell'Ente riguardano la mappatura delle risorse energetiche marine nel Mediterraneo e la valutazione e sviluppo di tecnologie per la conversione dell'energia del moto ondoso. ENEA contribuirà inoltre alla pianificazione e gestione generale del progetto, alla realizzazione di specifici eventi (workshops) di disseminazione, rivolti sia alla comunità scientifica che a quella industriale, e, infine, alla realizzazione di un piano efficace per il trasferimento dei risultati del progetto verso i decisori politici nazionali ed Europei, e verso altri settori economici potenzialmente interessati.

N. Contratto: 101052679

BRIDGeconomies 2022-2025

Business Relays for Innovation and Development Growing Economies

Coordinatore: S.I. IMPRESA - SERVIZI INTEGRATI IMPRESA (Italia) N. Partner: 13

Abstract:

The project “BRIDGeconomies_2022-2025 (Business Relays for Innovation and Development of Growing €conomies) proposed by this consortium covers the following regions of Southern Italy: Abruzzo, Basilicata, Calabria, Campania, Molise, Apulia and Sicily. The members of the consortium and their Host Structures include public/semi-public entities, whose activities are directly addressed to SMEs, guaranteeing an interregional coverage and services providing in all activity areas indicated in the call. The Consortium, already having a multi-annual experience in the Enterprise Europe Network, includes: the Italian Chamber of Commerce System - representing all entreprenurial associations and the labour/civil society - specialised in services to SMEs, including the Special Agency of Naples Chamber of Commerce (SI IMPRESA); - an industrial association at regional level, in Sicily (Sicindustria); - scientific and technological organisation, specialised in innovation/research services to SMEs, including the National government Agency for new technologies, energy and environment (ENEA). Consortium partner will support SMEs, to innovate, grow and scale in the single market and beyond, contributing to their triple transition towards: sustainability, digitalisation and resilience. The proposed Consortium has 12 partners, involved since 2008 in the Enterprise Europe Network and one new partner which is a public/private organisation participated by ENEA (CETMA).

Anno di stipula:	2022
Tipo progetto:	SA - Azioni di supporto
Programma UE:	Other programmes 2021-2027 SMP - COSME
Data inizio:	01-01-2022
Data scadenza:	30-06-2025
Contributo totale:	€ 7.088.722
Costo eleggibile totale:	€ 11.764.210
Contributo a ENEA:	€ 1.053.124
Costo eleggibile ENEA:	€ 1.755.207
Doc. approvazione:	10/2022/ISV
Codice atto:	PZ1AAC
Resp. scientifico ENEA:	AMERIGHI OSCAR
Unità:	ISV-DST-KES

Attività ENEA:

Le attività di pertinenza ENEA riguarderanno la partecipazione al nodo della rete Enterprise Europe Networdk (EEN) denominato BRIDGeconomies, nelle regioni del Sud Italia. In particolare ENEA parteciperà alle attività del nodo EEN BRIDGeconomies per le regioni Campania e Puglia. Unità ENEA coinvolte: ISV-DST-KES, ISV-STP, ISV-MARK; ISER-POR; TERIN, TERIN-ICT, TERIN-STSN-SGRE; SSPT-SEC, SSPT, SSPT-USER-RISE, SSPT-USER-T4RM

N. Contratto: 731101

BRISK II

Biofuels Research Infrastructure for Sharing Knowledge II

Coordinatore: KTH - ROYAL INSTITUTE OF TECHNOLOGY (Svezia) N. Partner: 15

Abstract:

The vision of BRISK II is to establish a centre of excellence in the field of 2nd and 3rd generation biofuels via the uniting of leading European research infrastructures. Building upon the success of its FP7 predecessor, BRISK II Networking Activities will consolidate knowledge in the field, reaching out to a wide set of stakeholders and potential users. Databases generated within the project will serve as a valuable resource for academia and industry. The business plan will boost momentum beyond H2020 so that the research infrastructures can be utilised between framework programmes or even independently. Joint Research Activities will yield a manifold improvement in the characterisation of feedstocks for thermochemical and biochemical conversion processes, tying micro-scale and macro-scale phenomena in novel ways. Enhanced measurement techniques will lead to significant gains in process flexibility and reliability. New biorefining approaches are intended to explore novel process combinations, ones that cannot be tested without a concerted effort between project partners. Assimilated data and knowledge will be input to simulation tools for use in a broad spectrum of analyses. Transnational Access supports the biofuels research community through the availability of high-quality installations within a well-structured framework.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-05-2017
Data scadenza:	31-10-2022
Contributo totale:	€ 9.968.144
Costo eleggibile totale:	€ 9.977.271
Contributo a ENEA:	€ 583.309
Costo eleggibile ENEA:	€ 583.309
Doc. approvazione:	126/2017/PRES
Codice atto:	PT7AAE
Resp. scientifico ENEA:	ZIMBARDI FRANCESCO
Unità:	DTE-USTS

Attività ENEA:

L'ENEA partecipa a varie attività di network e ricerca.

N. Contratto: 101048703

CA EED3

Concerted Action on the Energy Efficiency Directive

Coordinatore: MINISTRY OF ECONOMIC AFFAIRS, FARM AND INNOVATION (Paesi Bassi) N. Partner: 28

Abstract:

The objective of the 3rd Concerted Action on the Energy Efficiency Directive (CA EED3) is to foster exchange of information and experience among Member States and other participating countries (Norway) with a view to facilitating the implementation of the Directive of 2018/2002 amending Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency (EED), including the implementation of the foreseen recast of this Directive . The Action follows on from the CA ESD, CA EED and CA-EED 2 which has helped MS with the interpretation of the legislation, the implementation options and support via detailed information and access to experts on mature policies and practices. The specific objectives of the Action are: • To enhance and structure the sharing of information and experiences from national implementation whilst promoting good practice concepts in activities to improve and strengthen MS implementation of the EED. • To encourage dialogue between MS on common approaches for the effective implementation of particular parts of the EED and synergies with RED and EPBD. • To complement the work of the EED Committee assisting the European Commission. The expected impact of the Action consists of a more harmonized approach and improved implementation of the EED in MS, as well as the transfer of good practices between countries and strengthened cross fertilisation with CA EPBD and CA RES. The CA EED3 brings together a unique group of experts and policy makers, it is the only informal group with full representation of all Member States and Norway and by its very nature provides MS, DG Energy and CINEA with a unique opportunity to communicate in an informal way on a technical level with relevant experts. The Concerted Action community has developed during the course of the CA ESD, CA EED and CA-EED 2 making it easy to find entry points in MS where without the Action contacts would be difficult. In turn the road is paved for bilateral cooperation.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-01-2022
Data scadenza:	31-12-2027
Contributo totale:	€ 4.999.770
Costo eleggibile totale:	€ 4.999.770
Contributo a ENEA:	€ 70.490
Costo eleggibile ENEA:	€ 70.490
Doc. approvazione:	26/2021/DUEE-SPS
Codice atto:	PW3ABA
Resp. scientifico ENEA:	SALAMA ANNA MARIA
Unità:	DUEE-SPS-MPE

Attività ENEA:

L'ENEA partecipa contribuendo alle attività di tutti i WP (sotto riportati) ma in particolare a quelle dei WP 3, 4, 5 e 7: . WP1: Coordinamento . WP2: Team di Gestione de l Progetto (Management Team) . WP3: Aree di Esperti e Settori Tematici (Domains) . WP4: Gruppi di Lavoro . WP5: Riunioni Plenarie di Progetto, Riunioni dei Punti di Contatto Nazionali e Visite Studio . WP6: comunicazione e divulgazione dei risultati . WP7: attività di reporting.

N. Contratto: 754521

CA-EED 2

Concerted Action EED - Support to Member States and participating countries for the implementation of the Energy Efficiency Directive

Coordinatore: MINISTRY OF ECONOMIC AFFAIRS, FARM AND INNOVATION (Paesi Bassi) N. Partner: 23

Abstract:

The objective of the 2nd Concerted Action for the Energy Efficiency Directive (CA-EED 2) is to foster exchange of information and experience among Member States and other participating countries (Norway) with a view to facilitating to the implementation of the Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency (EED), including the implementation of the foreseen re-cast of this Directive. The specific objectives of the Action are: • To enhance and structure the sharing of information and experiences from national implementation whilst promoting good practice concepts in activities to improve and strengthen MS implementation of the EED. • To encourage dialogue between MS on common approaches for the effective implementation of particular parts of the EED. • To complement the work of the EED Committee assisting the European Commission. The expected impact of the Action consists of a more harmonized approach and improved implementation of the EED in all MS, as well as the transfer of good practices between countries. The objectives of the CA-EED 2 will be achieved by organising information exchange via amongst others 8 structured plenary meetings for coverage of the various topics. The meetings will allow experts from implementing bodies and ministries in the MS to discuss and exchange views, and aim to achieve as much convergence of objectives and methodologies as appropriate, avoiding redundant efforts and maximizing the benefits that can be obtained from the work otherwise required from individual MS working on their own. A large part of the work in the CA-EED 2 will be done in the sessions during the plenary meetings, focussing on good practice examples, but also through Working Groups that interact between the meetings and exchange of information through the forum on the CA-EED website. In order to structure the topics covered by the EED Expert Areas have been identified encompassing the main areas of the EED.

Anno di stipula:	2017
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	15-04-2017
Data scadenza:	14-05-2022
Contributo totale:	€ 4.696.182
Costo eleggibile totale:	€ 4.696.182
Contributo a ENEA:	€ 88.492
Costo eleggibile ENEA:	€ 88.492
Doc. approvazione:	100/2017/PRES
Codice atto:	PE4AAC
Resp. scientifico ENEA:	SALAMA ANNA MARIA
Unità:	UTEE

Attività ENEA:

Le attività ENEA riguardano il supporto alle istituzioni nazionali competenti nell'attuazione della direttiva 27/2012 e nella riformulazione della stessa a sostegno del MISE. In particolare attraverso lo scambio di: . Informazioni ed esperienze tra gli Stati Membri e la Norvegia; . Promozione di buone pratiche e individuazione di approcci comuni per la convergenza degli obiettivi e delle metodologie.

N. Contratto: CS2ABO

CAMS_63

Development of post-processing methods and tools for monitoring service

Coordinatore: INERIS Institut National de l'Environnement Industriel e des Risques (Francia) N. Partner: 4

Abstract:

The objective of this framework agreement is to further develop CAMS regional air quality ensemble products and to improve their presentation for conveying the associated uncertainty information. A central aspect is to improve the quality and performance of the products by testing advanced post-processing methods and by considering the most adapted one(s) for the different types of air quality indicators. The contractor will also liaise with users and stakeholders of CAMS (Copernicus Atmosphere Monitoring Service) regional products in order to develop best ways of providing uncertainty information.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Copernicus
Data inizio:	01-10-2019
Data scadenza:	30-03-2022
Contributo totale:	N/D
Costo eleggibile totale:	N/D
Contributo a ENEA:	€ 69.957
Costo eleggibile ENEA:	€ 69.957
Doc. approvazione:	80/2020/SSPT-MET
Codice atto:	CS2ABO
Resp. scientifico ENEA:	ADANI MARIO
Unità:	SSPT-MET-INAT

Attività ENEA:

L'ENEA sviluppa algoritmi e programmi necessari per la composizione ottimale di osservazioni con diverse realizzazioni di campi di qualità dell'aria provenienti da modelli numerici differenti che dovranno essere utilizzati in maniera operativa in altri progetti del programma Copernicus

N. Contratto: ECMWF/Copernicus/2021/CAMS2_40a_MF/SC1

CAMS2_40

MF for the provision of Regional Air Quality Products

Coordinatore: METEO FRANCE CENTRE NATIONAL DE RECHERCHES METEOROLOGIQUES (Francia) N. Partner: 2

Abstract:

This ITT, entitled 'Regional air quality products' is for the operational delivery of the European-scale air quality component of CAMS. It consists of a set of services, which are further detailed in the technical specification in ITT documents. The production must be based upon a geographically distributed ensemble of more than ten individual models and a central processing function to deliver three numerical data streams: on a daily basis, analyses for the previous day and forecasts for key air pollutants up to +96h with a temporal resolution of one hour; with a delay of a few weeks (in order to maximise the number of observations), interim reanalyses shall be produced daily with systems frozen in their configuration of January 1st every year; with a delay of up to two years (due to the delay in getting fully validated data), reanalyses shall be produced with frozen systems, which are only updated every few years. All the individual Regional Systems must be mature, well-validated and operated by their main developers. This aspect is essential so that the operators can directly maintain a continuous workflow of changes to the numerical systems, in order to include new research developments, to make corrections reflecting findings from verification and validation activities, as well as to implement changes to better meet user requirements. Acquisition of data, production of analyses, reanalyses and forecasts, data dissemination services and support to the users form the bulk of the operational delivery and development activities that are procured within this ITT.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Copernicus
Data inizio:	01-11-2021
Data scadenza:	31-05-2025
Contributo totale:	€ 6.496.496
Costo eleggibile totale:	€ 6.496.496
Contributo a ENEA:	€ 466.000
Costo eleggibile ENEA:	€ 466.000
Doc. approvazione:	316/2021/SSPT-MET
Codice atto:	CS2ACA
Resp. scientifico ENEA:	ADANI MARIO
Unità:	SSPT-MET-INAT

Attività ENEA:

L'ENEA svolge in particolare le seguenti attività: . Congiuntamente con TERIN-ICT-HPC, mantenere attiva una versione operativa del modello previsionale nei termini del contratto CAMS2_40 Regional Air Quality Production, con: operazioni quotidiane di acquisizione delle previsioni meteorologiche operative ad alta risoluzione fornite da ECMWF; acquisizione del dataset di incendi e condizioni al contorno chimiche fornite dal programma Copernicus; acquisizione ed assimilazione delle osservazioni di qualità dell'aria fornite dall' European Environment Agency (EEA) e delle osservazioni avanzate sulla composizione chimica fornite dai programmi ACTRIS and EMEP; . Recepire gli sviluppi del modello così come richiesti dal committente a tutti gli 11 modelli operativi . Produrre report periodici di varia tipologia, secondo la tempistica indicata dal committente.

N. Contratto: 101056927

CapaCITIES

Building Capacities for the Climate Neutral and Smart Cities Mission

Coordinatore: UEFISCDI - UNIT EXECUTIVE FOR FUNDING HIGHER EDUCATION, RESEARCH DEVELOPMENT AND INNOVATION (Romania) N. Partner: 59

Abstract:

CapaCITIES will shape a European environment conducive to urban climate neutrality transitions for national, regional and local authorities. The project aims to initiate and strengthen national change processes by establishing national networks and governance structures and by providing dedicated support for public authorities to put enabling conditions and measures for cities in place for achieving the cities mission. To achieve this ambition, the CapaCITIES consortium represents 15 European countries who have committed to initiative and strengthen national change processes by ministerial or other high political level. CapaCITIES thereby build on a wellestablished network of national authorities (national ministries and agencies responsible for urban transition) with its relevant urban stakeholder organisations beyond the consortium partners and countries. To all project partners CapaCITIES offers dedicated services to in support of national change process. First, a transnational alliance for public authorities to exchange, learn and inspire each other in their transition towards climate neutral cities. Second, support in prototyping innovative multi-level and cross sector governance structures. Third, thematic capacity building for public authorities and support in taking effective local action and fourth, strategic synergies and access to other initiatives that address the climate neutral and smart cities mission.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Mission 3 Climate neutral and smart cities
Data inizio:	01-10-2022
Data scadenza:	30-09-2024
Contributo totale:	€ 1.997.952
Costo eleggibile totale:	€ 1.997.952
Contributo a ENEA:	€ 65.187
Costo eleggibile ENEA:	€ 65.187
Doc. approvazione:	175/2022/TERIN
Codice atto:	PK5AAK
Resp. scientifico ENEA:	CLERICI MAESTOSI PAOLA
Unità:	TERIN-SEN

Attività ENEA:

ENEA TERIN SEN coordina attività a supporto della crescita professionale dei dipendenti delle pubbliche amministrazioni urbane in merito ai temi della sostenibilità energetica e svolge funzioni di supporto alla diffusione ed alla replicabilità dei modelli di sostenibilità urbana anche attraverso strumenti e metodi già ampiamente utilizzati nel corso degli anni.

N. Contratto: 820497

CAV_EPBD

Concerted Action Energy Performance of Buildings Directive V

Coordinatore: DEA DANISH ENERGY AUTHORITY (Danimarca) N. Partner: 29

Abstract:

Concerted Action EPBD V aim to support the implementation of the Energy Performance in Buildings Directive through exchange of information and experience among Member States and other participating countries (Norway) with regards to the implementation of the specific European Union legislation and policy on the energy performance of buildings, and in particular with regards to the transposition and implementation of the re-cast of the EPBD (DIRECTIVE 2010/31/EU) and the on-going revision of this directive. The specific objectives are to: 1. Enhance and structure sharing of information and experience from national implementation and promote good practice in activities required of Member States for implementation of the Energy Performance of Buildings Directive (EPBD). 2. Create favourable conditions for faster convergence of national procedures on EPBD-related matters. 3. Develop a direct link with the other two buildings-related Concerted Actions established within the IEE programme: the CA-RES, focussing on transposition and implementation of the Renewable Energy Systems Directive (DIRECTIVE 2009/28/EC); and the CA-EED, focusing on transposition and implementation of the Energy Efficiency Directive (DIRECTIVE 2012/27/EU), where National Energy Plans include initiatives towards building energy efficiency. 4. Supplement the work of the Article 26 Committee and possible ad-hoc groups on CEN (European Committee for Standardization) standards and certification exercises. 5. Establish a dialogue with the CEN in the implementation of 2nd generation standards to support the implementation of the recast EPBD and its revision. 6. Support for European Member States and Norway to use National Energy Plans to report progress on the EPBD implementation. The CAV_EPBD will strive to result in a more harmonized approach, improved implementation and actual application of the EPBD in all the countries involved, as well as helping to disseminate best practices between the countries.

Anno di stipula:	2018
Tipo progetto:	CA - Azione di coordinamento
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-05-2018
Data scadenza:	30-04-2022
Contributo totale:	€ 5.000.000
Costo eleggibile totale:	€ 5.000.003
Contributo a ENEA:	€ 46.805
Costo eleggibile ENEA:	€ 46.805
Doc. approvazione:	14/2018/DUEE
Codice atto:	PW3AAD
Resp. scientifico ENEA:	AZZOLINI GABRIELLA
Unità:	DUEE-SPS-SAP

Attività ENEA:

ENEA è l' istituzione rappresentante dell'Italia e coordinatore nazionale L'ENEA è coinvolta in tutti i moduli tematici del progetto; l'attività progettuale sarà articolata in sei sessioni plenarie e due workshop tematici e attività di scrittura del report nazionale e questionari preliminari alle sessioni plenarie.

N. Contratto: 958170

CEM-WAVE

Novel Ceramic Matrix Composites produced with Microwave assisted Chemical Vapour Infiltration process for energy-intensive industries

Coordinatore: UNIV. PISA (Italia) N. Partner: 13

Abstract:

The “European Green Deal” aims at Europe as the first climate-neutral continent by 2050. Research and innovation on technologies allowing intense exploitation of renewable energy is paramount. Renewable energy sources are, for their very nature, fluctuating, and potentially generating extreme conditions. Adaptation and optimisation of current processes to changes caused by increased use of renewable energy sources is particularly important in energy-intensive industries. Novel materials are needed to sustain conditions, such as higher temperatures and corrosive environments and, at the same time, guarantee energy efficiency and high-performances. Materials potentially able to withstand such extreme conditions keeping excellent thermo-mechanical properties already exist, but are currently used only in sectors such as aerospace due to the high production costs: Ceramic Matrix Composites (CMCs). In CEM-WAVE we aim at introducing an innovative CMC production process, based on Microwave-assisted Chemical Vapour Infiltration (MW-CVI) technologies. This novel proposed process will extremely reduce processing costs, thus making CMCs sustainable for process industries in energy-intensive sectors such as steelmaking. In more detail, CEM-WAVE aims at validating, in a radiant tube furnace, a small scale CMC-based tube embedded with sensors, substituting Inconel/Stainless steel alloys currently employed. The research and innovation work will be flanked by Artificial Intelligence (AI)-aided modelling research to predict the material behaviour, and will develop innovative joining and coating technologies to produce complex shaped components and further improving their high-temperature corrosion resistance. Life-Cycle Assessment (LCA), Life-Cycle Costing (LCC) and Thermoeconomic Analysis (TA) will guarantee that the project follows at every step the best directions in term of sustainability and future market uptake of the generated results.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
Data inizio:	01-10-2020
Data scadenza:	31-03-2024
Contributo totale:	€ 4.878.720
Costo eleggibile totale:	€ 4.878.720
Contributo a ENEA:	€ 190.000
Costo eleggibile ENEA:	€ 190.000
Doc. approvazione:	166/2020/SSPT-PROMAS
Codice atto:	PS3ACV
Resp. scientifico ENEA:	MINGAZZINI CLAUDIO
Unità:	SSPT-PROMAS-TEMAF

Attività ENEA:

Le attività ENEA prevedono l'esecuzione di attività sperimentali relative alla qualificazione dei nuovi materiali, nonché un contributo alla messa a punto dei processi. L'ENEA è work package leader del WP4 (caratterizzazione meccanica ed ageing accelerato dei materiali) ed è anche coinvolto nei WP1, WP6, WP8, WP9 e WP10).

N. Contratto: 101083699

CETMA-DIHSME

CETMA-Digital Innovation Hub for SMEs

Coordinatore: CETMA - Centro di Ricerche Europeo di Tecnologie, Design e Materiali (Italia) N. Partner: 14

Abstract:

The project proposes the creation of an EDIH by CETMA, a non-profit RTO with over 20 years of experience in innovation services to SMEs in Southern Italy. The project is strongly focused on the local economic and social reality (Apulia and Basilicata) where the partners are strongly rooted. It starts from the vision that AI, HPC and CS technologies can bring significant benefits to the development of the Territory, but this requires that all local actors are involved such as PA and SMEs, even the smallest and even those operating in more traditional sectors. Based on the experience of CETMA and analysis of innovation experts, CETMA-DIHSME starts from the consideration that to foster innovation in small businesses, in addition to "problem solving" services (technology consulting, research, engineering, etc.), it is necessary to support SMEs with "problem setting" services (strategic analysis, business planning, fundraising, supply chain relations, etc.). This is the way to break the vicious circle that grips them because they generally do not have their own resources to devote to these functions and are unable to seize the opportunities of new technologies. For this reason, the project foresees an integrated offer of "business and strategy setting" and technological services. An intensive promotional campaign has been planned to attract as much as possible the SMEs that are generally too busy in their daily routine. An integrated offer of demonstrations has been planned for all sectors of the local economy and for local administrations. The project aims to trigger synergies with the relevant opportunities offered by regional, national, and European innovation policies and funding. It also wants to exploit the great opportunities of the creation of a structured network of EDIH to promote cohesion between European territories to take advantage of social, economic, and environmental benefits.

Anno di stipula:	2022
Tipo progetto:	DIGITAL Simple Grants
Programma UE:	Other programmes 2021-2027 DIGITAL
Data inizio:	01-09-2022
Data scadenza:	30-09-2025
Contributo totale:	€ 2.924.738
Costo eleggibile totale:	€ 5.849.476
Contributo a ENEA:	€ 227.157
Costo eleggibile ENEA:	€ 454.313
Doc. approvazione:	188 /2022/TERIN
Codice atto:	PK3AAF
Resp. scientifico ENEA:	MARIANO ANGELO
Unità:	TERIN-ICT

Attività ENEA:

Il progetto coinvolge competenze già presenti in ENEA nei seguenti campi: • Applicazione di sistemi di calcolo ad alte prestazioni (HPC); • Integrazione di grandi moli di dati (Big Data) provenienti da sorgenti eterogenee e funzionalità di accesso agli stessi in modo distribuito; • Gestione di ambienti virtuali basati su cloud computing; • Intelligenza Artificiale • Cybersecurity

N. Contratto: 755371

CHANCE

Characterization of conditioned nuclear waste for its safe disposal in Europe

Coordinatore: ANDRA - AGENCE NATIONALE POUR LA GESTION DES DECHETS RADIOACTIFS (Francia)

N. Partner: 12

Abstract:

Successful interim storage and final disposal of radioactive waste (RW) requires effective characterization and quality control of the waste. CHANCE aims to address the as yet unsolved and specific issue of the characterization of conditioned radioactive waste (CRW). CHANCE will establish a comprehensive understanding of current characterization methods and quality control schemes for conditioned radioactive waste in Europe. Furthermore, CHANCE will develop, test and validate already-identified and novel new techniques that will undoubtedly improve the characterization of CRW. Input from “end users” (mainly WMOs and waste producers) on methods of CRW characterization is critical to the success of CHANCE. Therefore, a dedicated End-Users Group will be established within CHANCE in order to represent and promote the interests and requirements of end-users. One of the project’s key tasks will be dedicated to the identification of links and overlaps between waste acceptance criteria and actual waste characterization technologies available, in order to identify specific, as yet unsolved, methodology issues and technology gaps. CHANCE’s R&D programme consists of the testing and evaluation of the performance of 3 innovative characterization techniques that are complementary and supplementary to current techniques for the non-destructive assay of RW, specifically: • Calorimetry as an innovative non-destructive technique to reduce uncertainties on the inventory of radionuclides (RN), namely from hidden RN-compounds with a weak gamma signal. • Muon Tomography to address the specific issue of the non-destructive interrogation of the content of large volume RW. • Cavity Ring-Down Spectroscopy as an innovative technique to characterize outgassing of RW at a very low detection level. The activities performed and the results obtained within CHANCE will be integrated and disseminated both between the partners and the whole European community involved in RW management.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-06-2017
Data scadenza:	31-03-2022
Contributo totale:	€ 3.982.604
Costo eleggibile totale:	€ 4.253.326
Contributo a ENEA:	€ 224.944
Costo eleggibile ENEA:	€ 224.944
Doc. approvazione:	87/2017/FSN
Codice atto:	PF6AAF
Resp. scientifico ENEA:	RIZZO ANTONIETTA
Unità:	FSN-SICNUC-TNMT

Attività ENEA:

L'ENEA sarà coinvolto principalmente nei WP2, WP4 e WP5 occupandosi di: . Identificazione di parametri specifici per la caratterizzazione dei rifiuti radioattivi, delle tecnologie per la loro verifica e delle sfide tecnologiche a loro associate; . Analisi di dati sperimentali ottenuti tramite tomografica muonica; . Progettazione di un sistema di progettazione e raccolta delle emissioni gassose dai materiali costituenti rifiuti radioattivi; . Misura dell'attività di C-14 e di Cl-36 attraverso tecniche convenzionali e confronto con i dati ottenuti tramite spettroscopia laser cavity ring down.

N. Contratto: 101007669

CHemPGM

Chemistry of Platinum Group Metals

Coordinatore: MONOLITHOS CATALYSTS LTD. (Grecia) N. Partner: 7

Abstract:

The CHemPGM project is a joint initiative of 7 expert organizations from the fields of chemistry, engineering, mining, metallurgy and materials science, designed to conduct fundamental research regarding the chemistry of platinum group metals (PGMs) and utilize the obtained knowledge to improve and secure the PGMs value chain. Specifically, the project aims: i) to establish fundamental knowledge regarding the chemistry of the PGMs, their reactions and complexation with other metals and chemical compounds, and the corresponding reactivities during leaching, separation and recovery processes; ii) to gain a complete understanding of the mechanisms associated with the above-mentioned processes, during the utilization of secondary materials to extract PGMs and incorporate them into new materials and processes such as nanomaterials, catalysis and CO2 capture; iii) to create knowledge, provide expertise and educate the public. This will lead to the upgrading of existing processes and the development of new ones, aligned with sustainable principles, to ensure a circular operation model of the relevant industries. Through the involvement of universities, RTOs and SMEs, CHemPGM is backed by a well-rounded team, with multiyear expertise in the relevant fields, capable to deliver high-quality results regarding the project objectives. The consortium approaches the challenge from a multidiscipline aspect and proposes a balanced number of secondments alongside trainings, workshops, seminars and events that guarantee a cross-sectorial synergy among them. As a result, CHemPGM will broaden the expertise of the organizations, contribute to the advancement of the secondees and enhance the potential for innovation to its stakeholders and those inter-related with it. Overall, the methodology for carrying out the tasks involved, guarantees the smooth running of the project and the successful fulfillment of the objectives to contribute towards a more efficient and sustainable future.

Anno di stipula:	2021
Tipo progetto:	MSCA RISE - Research and Innovation Staff Exchange
Programma UE:	HORIZON 2020 MSCA Marie Skl. Curie Actions
Data inizio:	01-05-2021
Data scadenza:	30-04-2025
Contributo totale:	€ 736.000
Costo eleggibile totale:	€ 736.000
Contributo a ENEA:	€ 110.400
Costo eleggibile ENEA:	€ 110.400
Doc. approvazione:	430/2020/PRES
Codice atto:	PK4AAC
Resp. scientifico ENEA:	GRILLI MARIA LUISA
Unità:	TERIN-PSU-IPSE

Attività ENEA:

L'obiettivo specifico dei ricercatori ENEA all'interno del progetto è quello della sintesi e caratterizzazione di materiali innovativi che utilizzano i metalli del gruppo del Pt, riciclati dagli altri partner, per lo sviluppo di materiali innovativi per la cattura e riutilizzo della CO2 e/o per l'implementazione di processi catalitici. Queste attività sono di importanza strategica per il gruppo e integreranno le attività già esistenti sulla cattura della CO2.

N. Contratto: 945335

CLEANDEM

Cyber physicaL Equipment for unmAnned Nuclear DEcommissioning Measurements

Coordinatore: CEA (Francia) N. Partner: 11

Abstract:

The CLEANDEM project, with its collaboration of 11 partners from 4 EU countries, proposes a technological breakthrough associated to various dismantling and decommissioning (D&D) operational steps with an Unmanned Ground Vehicle (UGV) Platform. The CLEANDEM strategy will be based on innovative detection technology systems that will constitute a toolbox for equipping an intelligent robotic platform for fully remote operations. The pre-identified technologies are low-cost sensThe CLEANDEM project, with its collaboration of 11 partners from 4 different EU countries, proposes a technological breakthrough for dismantling and decommissioning (D&D) operations of nuclear sites, employing an Unmanned Ground Vehicle (UGV) Platform equipped with innovative radiological sensing probes. The aim of the project is to deliver a cyber physical system which will support the end-users' operations, initially performing a radiological assessment of the area and then monitoring D&D operations throughout the final characterization of the plant. This will result in a 3D and fully detailed digital twin of the surveyed area augmented with radiological information provided by the sensors, thus enabling an efficient and effective planning of the dismantling actions and optimizing the nuclear waste sorting for reprocessing or for delivery to the final storage. Targeted impacts of the UGV Platform are to: save time, drastically reduce costs, minimize human intervention, improve workers and population safety and be greener; all of those driving the project execution to match the stakeholders' expectation. The effectiveness of the UGV Platform will be assessed in an extensive testing and validation campaign that will be performed in laboratories, in simulated environment and finally on the field. A demonstration event in a real nuclear site, involving all project partners and external stakeholders, will conclude the three years project activities opening for further exploitation in the D&D market.

Anno di stipula:	2021
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-03-2021
Data scadenza:	29-02-2024
Contributo totale:	€ 2.795.752
Costo eleggibile totale:	€ 3.414.843
Contributo a ENEA:	€ 151.000
Costo eleggibile ENEA:	€ 151.000
Doc. approvazione:	019 /2021/FSN
Codice atto:	PF1AAG
Resp. scientifico ENEA:	LEPORE LUIGI
Unità:	FSN-FISS-CRGR

Attività ENEA:

L'Agenzia ENEA è coinvolta principalmente nei Work Package 4 "Gamma and neutron detection and identification technologies", 6 "Contamination monitoring" e 8 "Data fusion and DT". Il ruolo dell'ENEA sarà quello di: - WP4: collaborare alle prove sperimentali inerenti al sistema di discriminazione Gamma Neutroni. Il Laboratorio di Caratterizzazione Radiologica parteciperà alla taratura del sistema in laboratorio; predisporrà ed eseguirà prove con le sorgenti di taratura gamma e neutroni per la caratterizzazione ei sistemi per testare e verificare le procedure operative. - WP6: progettare e realizzare un sistema di monitoraggio per la rivelazione continua di C-14 utilizzando elaborazioni digitali del segnale. Il sistema sarà installato in un idoneo impianto nucleare o deposito di rifiuti per il monitoraggio dell'aria atmosferica. - WP8: ottimizzare e coordinare i dati acquisiti da diverse fonti (sensori, campioni di materiali, database storico, ecc.).

N. Contratto: 101022831

CO2OLHEAT

Supercritical CO2 power cycles demonstration in Operational environment Locally valorising industrial Waste Heat

Coordinatore: EUROPEAN TURBINE NETWORK A.I.S.B.L (Belgio) N. Partner: 21

Abstract:

CO2OLHEAT will demonstrate at TRL7 in the CEMEX cement manufacturing plant in Prachovice (CZ) the operation of a 2 MW Waste-Heat-to-power (WH2P) skid based on a 2MW-sCO2 cycle able to efficiently valorize local waste heat at a significant temperature of 400°C. Capitalizing consortium excellent knowledge coming from previous sCO2 turbomachinery design experience and EU funded projects on industrial waste heat valorisation (TASIO, i-THERM, sCO2-FLEX etc.) and stimulated by SPIRE roadmap and EU sCO2 R&D initiatives, CO2OLHEAT aims to valorize waste heat even at higher temperature if compared with the traditional steam/ORC solutions. The project will demonstrate the EU MW scale first-of-a-kind waste heat-sCO2 plant towards a cheaper/more flexible waste heat valorisation. The project will strengthen EU industrial leadership in both energy intensive industries (making them more competitive) and turbomachinery sectors, bridging the current gap on sCO2 turbomachinery that EU has with US and Japan-Korea. The project will analyse sCO2 WH2P potential from a technical, economic and environmental point of view, developing innovative models for the design of the cycle and of the turbomachinery as well as investigating CO2OLHEAT cycle benefits in the cement, glass, aluminium, power generation sectors via techno-economic and Life Cycle based replication feasibility studies, involving relevant EU industrial players (EDF, ENGIE, MYTH, CEMEX, SISECAM, CELSA). The project is coordinated by ETN and involves an industry driven consortium with key turbomachinery OEM (SIE-BH), energy intensive industries, energy utilities and R&D partners all committed to bring soon CO2OLHEAT sCO2 cycle technologies on the market. Thanks to its robust demonstration and replication campaign (also foreseeing extra-EU stakeholders collaboration), CO2OLHEAT can be considered a “demonstration to market” project, being keystone for EU sCO2 turbomachinery industry and for a more effective waste heat valorisation.

Anno di stipula:	2021
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-06-2021
Data scadenza:	31-05-2025
Contributo totale:	€ 13.999.996
Costo eleggibile totale:	€ 18.813.891
Contributo a ENEA:	€ 189.163
Costo eleggibile ENEA:	€ 189.163
Doc. approvazione:	53/2021/TERIN
Codice atto:	PK4AAG
Resp. scientifico ENEA:	MESSINA GIUSEPPE
Unità:	DTE-PCU-IPSE

Attività ENEA:

Le attività che l’ENEA svolgerà all’interno del progetto “CO2OLHEAT” saranno inquadrate nei seguenti work packages: WP1 - analisi di scenario e definizione dei requisiti dell’impianto CO2OLHEAT; WP2 - unità turbo-expander: studi di scale-up del concetto e della tecnologia CO2OLHEAT per potenze maggiori di 5 MW; WP3 - turbina sCO2: studi di scale-up del concetto e della tecnologia CO2OLHEAT per potenze maggiori di 5 MW; WP6 – campagna presso il sito di dimostrazione Prachovice; WP 7 - analisi di replicabilità e di impatto; WP 8 - disseminazione, comunicazione e sfruttamento: ; WP9 - coordinamento e gestione del progetto: coinvolgimento nei Task di gestione del consorzio sotto la guida di ETN, nel monitoraggio del progresso delle attività, nella redazione di rapporti, e nella gestione del piano di garanzia della qualità scientifica e dei rischi.

N. Contratto: 101003598

CoCliCo

COASTAL CLIMATE CORE SERVICES

Coordinatore: BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES (Francia) N. Partner: 18

Abstract:

Even if climate change mitigation objectives agreed in Paris are met, sea level will rise at least by 0.3 to 0.6m in 2100 and then continue rising for centuries. The potential impacts for coastal flooding are a major source of concern for Europe because many infrastructures are located close to shorelines or in low-lying areas. Broad scale coastal climate services and platforms available today have successfully addressed the need to raise awareness on mitigation. However, an authoritative, consistent and decision oriented platform is still missing to meet the needs of adaptation practitioners concerned with (1) the routine identification of coastal territories at risk from innundation, (2) coastal land use planning or (3) maintaining coastal infastructure services. The Coastal Climate Core Service (CoCliCo) project aims at informing decision-making on coastal risk and adaptation, by delivering an open web-platform exploring dominant risk drivers, adjusting visualisation and analysis techniques to local decision contexts, and combining relevant and high-quality geospatial information layers. Through the platform, users will be able to visualize, download and analyse multiple decision-oriented coastal risk scenarios relevant to the rich user narratives of our Demonstration Case Studies addressing the three needs raised above. To meet this challenge, CoCliCo brings together European organizations and scholars that have proven track records of delivering broad-scale coastal risk and adaptation assessment, as well as leading research and technologies in interoperable geospatial data management, decision sciences and risk communication.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-09-2021
Data scadenza:	31-08-2025
Contributo totale:	€ 5.999.641
Costo eleggibile totale:	€ 5.999.641
Contributo a ENEA:	€ 297.125
Costo eleggibile ENEA:	€ 297.125
Doc. approvazione:	105/2021/SSPT-MET
Codice atto:	PS2ABW
Resp. scientifico ENEA:	SANNINO GIANMARIA
Unità:	SSPT-MET-CLIM

Attività ENEA:

ENEA sarà coinvolta in 7 degli 8 Work-packages del progetto. Nel corso del progetto ENEA si occuperà principalmente dell'esecuzione di simulazioni climatiche per la proiezione del livello del mare in area mediterranea e del Mar Nero ad alta risoluzione e la gestione dei rapporti con Federlogistica Italia e la divulgazione dei risultati presso gli stakeholder nazionali (autorità portuali, RFI, Confcommercio, ecc).

N. Contratto: 953040

COME RES

Community Energy for the uptake of RES in the electricity sector. Connecting long-term visions with short-term actions

Coordinatore: UNIV. FREIE BERLIN (Germania) N. Partner: 16

Abstract:

COME RES aims to facilitate the market uptake of RES in the electricity sector by supporting, with a set of specific activities, the implementation of the provisions for renewable energy communities (RECs) as defined in the new Renewable Energy Directive to be transposed in 2021. Taking a multi- and transdisciplinary approach, COME RES aids the development of RECs in nine European countries (BE, DE, IT, LV, NL, NO, PL, PT, SP). It covers different socio-technological systems including community PV, wind (onshore), storage and integrated solutions. The countries selected range from pioneers that have gained broad experience of community energy (CE) to countries that are just beginning to look at CE. COME RES analyses legal, socioeconomic, spatial and environmental characteristics, and the reasons for the slow deployment of RECs in selected target regions. Stakeholder desks consisting of the project partners and committed community, market and policy actors in each country take on the operational tasks. Both overall and specific objectives will be reached by i) analysing the potentials, barriers and drivers for RECs in the target regions, ii) carrying out stakeholder dialogues, iii) developing regional action plans and business-model proposals for target regions, iv) examining good/best practice cases that are transferable to specific local, regional and national contexts, v) initiating transfers of best practice solutions via policy labs supported by capacity development and training and vi) developing a renewable energy community platform. The consortium synchronises project activities with the transposition/implementation of the Clean Energy Package and its provisions for RECs in policy labs. Policy lessons with validity across Europe will be drawn and recommendations proposed. Over 85 stakeholders and market actors have provided letters of support expressing their commitment to support the project and implement its results.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	28-02-2023
Contributo totale:	€ 2.998.448
Costo eleggibile totale:	€ 2.998.848
Contributo a ENEA:	€ 134.875
Costo eleggibile ENEA:	€ 134.875
Doc. approvazione:	80/2020/DTE
Codice atto:	PT7AAO
Resp. scientifico ENEA:	DE LUCA ELENA
Unità:	DTE

Attività ENEA:

I principali contributi forniti da ENEA riguarderanno i - seguenti work package: - WP3 (Country Desks and stakeholder dialogues) con la responsabilità del Task 3.1 “Stakeholder identification and engagement plans” e del Task 3.2.3 “Desk Italy” in collaborazione con Ecoazioni; - i WP6 (Supporting the development of renewable energy communities through capacity development and best practice transfer) e WP7 (Policy monitoring, policy assessment and policy lessons) i cui obiettivi generali sono evidenziare i casi studio di realizzazione delle REC e ricavare approfondimenti nonché fornire input per la politica a vari livelli di governance.

N. Contratto: PGI05560

CONDEREFF

Construction & demolition waste management policies for improved resource efficiency

Coordinatore: UNIV. POLITECNICA VALENCIA (Spagna) N. Partner: 8

Abstract:

The challenge and opportunity faced by the CONDEREFF regions is to accelerate their policy work on improving resource efficiency at territorial level. ?he EU Construction & Demolition Waste Management Protocol and the transition towards Circular Economy can guide the regulative roll-out of C&D waste management across EU regions; accordingly, the proliferation of infrastructures & methods for recycling and re-use of C&D waste materials can introduce a green growth opportunity. Regions can exploit this opportunity by improving their policy instruments to factor these developments in, and support projects and processes to this direction. OBJECTIVE AND EXPECTED CHANGE The CONDEREFF project brings together 8 partners from 7 countries to exchange experiences and practices on how to move forward from existing procedures on C&D waste management towards the adoption and further exploitation of the best practices and measures applied in the field. The project will enable the participating regions to advance their goals for resource efficiency and green growth through the proper management of C&D waste, which can boost demand for C&D recycled materials and support both sustainability and recycling in the construction sector.

Anno di stipula:	2018
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg Europe
Data inizio:	01-06-2018
Data scadenza:	31-05-2023
Contributo totale:	€ 1.354.450
Costo eleggibile totale:	€ 1.617.955
Contributo a ENEA:	€ 141.664
Costo eleggibile ENEA:	€ 166.663
Doc. approvazione:	105/SSPT-USER
Codice atto:	PS6ABU
Resp. scientifico ENEA:	LUCIANO ANTONELLA
Unità:	SSPT-USER-RISE

Attività ENEA:

ENEA will develop a methodology to assess the methodology for partners to survey on public awareness, perception and acceptance of C&D waste and to analyse the perceived value and potential for re-use. ENEA will assist the consortium with the collection/provision of input relevant to baseline studies, supporting the CONDEREFF partnership in the description and assessment of the regional context in the field of C&D waste management, and providing insights from EU regions beyond the partnership. As recicling and C&D waste expert, ENEA will participate in the interregional workshops. ENEA will be responsible for the exchange of experience visit on selection, permits and monitoring of C&D waste management sites and facilities preparing the thematic input paper and organising the event. It will also participate in the policy and industry symposium on promoting and incentivising re-use of C&D waste.

N. Contratto: 101069838 ***CRISTAL***

Climate resilient and environmentally sustainable transport infrastructure, with a focus on inland waterways

Coordinatore: LUKASIEWICZ - POZNAN INSTITUTE OF TECHNOLOGY (Polonia) N. Partner: 16

Abstract:
It is the key objective of the project CRISTAL (36 months) to increase the share of freight transport on inland water transport (IWT) by a minimum of 20% and to demonstrate on its three pilot sites (Italy, Poland and France) strategies to improve reliability by 80%. CRISTAL project will assure IWT capacity at 50% even during extreme weather events. Towards that CRISTAL will co-create, test and implement integrated, cooperative and innovative solutions in its three pilot partners' areas identified in Italy, France and Poland. The project will include the aspects of technological Inovation/development and digitalization; further advancement towards the Physical Internet, governance solution and business models, will be proposed while targeting sustainability and infrastructure resilience requirements.

Anno di stipula:	2022
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Transport and Smart Mobility services
Data inizio:	01-09-2022
Data scadenza:	31-08-2025
Contributo totale:	€ 6.371.049
Costo eleggibile totale:	€ 6.837.453
Contributo a ENEA:	€ 421.563
Costo eleggibile ENEA:	€ 421.563
Doc. approvazione:	112/2022/TERIN
Codice atto:	PK5AAH
Resp. scientifico ENEA:	GIOVINAZZI SONIA
Unità:	TERIN-SEN-APIC

Attività ENEA:
ENEA sarà leader del workpackage WP2, denominato "Technologies" nel quale sarà responsabile delle seguenti Tasks: - Task 2.1 Technologies for improving the resilient and reliable navigability - Task 2.2 Technologies for the resilient management of engineered Inland waterway infrastructures - Task 2.3 Software architecture of CRISTAL acquisition - Task 2.4 End-users interfaces including ad-hoc defined dashboards and mobile Apps for navigability,preventive maintenance as well as to support corridor management ENEA contribuirà, inoltre, ad altri workpackages del progetto.

N. Contratto: 101075408

CST4ALL

SUPPORT TO THE ACTIVITIES OF THE CONCENTRATED SOLAR THERMAL TECHNOLOGY AREA OF THE SET PLAN

Coordinatore: ESTELA EUROPEAN SOLAR THERMAL ELECTRICITY ASSOCIATION (Belgio) N. Partner: 5

Abstract:

The main hurdle the Concentrated Solar Thermal Technologies (CST) sector has been facing over the last decade in Europe is the assumed level of the costs of CSP power plants with a too narrow perception of its use as flexibility provider to the sole electricity systems. To mitigate this, the CST4ALL project identifies an array of hybridisation and cooperation initiatives at the interface between CST and other technologies for applications relevant to the 3 sectors (electricity, heat and fuels) incorporating the work products of various ETIPs. Well-aligned on current EU initiatives (Smart Sector Integration, Fit for 55, CETP) and specific energy strategies across the reviewed Member States to provide answers to the most urgent challenges of decarbonisation, the core deliverable of CST4ALL consists of an intertwined set of workshops with respective industry and R&I focus. These shall bring together, better coordinate and incentivise the interaction of main stakeholders at key technology interfaces with the CSP sector building on combined technological and non-technological improvements. Both the research and the industry perspectives are first analysed aiming primarily at supporting and enlarging the network of active stakeholders in the CSP Implementation Working Group in the SET Plan and to raise the general awareness about the role CST can play in a future sustainable energy mix. These workshops finally result in specific proposals at EUlevel from a cross-sector perspective to foster public/private funding for R&I and create the necessary political/regulatory framework conditions for the execution of the new CSP Implementation Plan.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Cluster 5 - Energy supply
Data inizio:	01-10-2022
Data scadenza:	30-09-2025
Contributo totale:	€ 599.529
Costo eleggibile totale:	€ 599.529
Contributo a ENEA:	€ 50.625
Costo eleggibile ENEA:	€ 50.625
Doc. approvazione:	143/2022/TERIN
Codice atto:	PK7AAF
Resp. scientifico ENEA:	TURCHETTI LUCA
Unità:	TERIN-STSN-SCIS

Attività ENEA:

ENEA partecipa alle normali attività di progetto tra cui: partecipazione ed organizzazione a meeting e workshop di progetto, raccolta ed elaborazione delle informazioni prodotte in questi eventi e stesura di report. Le attività di progetto saranno svolte con la partecipazione del personale afferente a TERIN-STS.

N. Contratto: 952982

CUSTOM-ART

DISRUPTIVE KESTERITES-BASED THIN FILM TECHNOLOGIES CUSTOMISED FOR CHALLENGING ARCHITECTURAL AND ACTIVE URBAN FURNITURE APPLICATIONS

Coordinatore: FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA (Spagna) N. Partner: 17

Abstract:

CUSTOM-ART aims at developing the next generation of building and product integrated photovoltaic modules (BIPV and PIVP respectively), based on earth-abundant and fully sustainable thin film technologies. Nowadays, BIPV and PIPV are identified as key enabling technologies to make “near Zero Energy Buildings” and “net Zero Energy Districts” more realistic, through the integration of a new generation of photovoltaic modules capable of entirely replacing architectural/mobility/urban-furniture passive elements. This promising scenario of mass realisation of BIPV and PIPV solutions can only be achieved by developing cost-efficient and sustainable thin film technologies with unbeatable aesthetic functionalities, including mechanical flexibility and optical tuneability. Unfortunately, mature materials already available at the market such as Cu(In,Ga)Se2 or CdTe are formed by scarce and expensive elements (In, Ga and Te), or toxic ones (Cd). Considering this, CUSTOM-ART will join for the first time a leading group of companies and academic partners all around Europe, to develop advanced BIPV and PIPV products (flexible and semi-transparent solar modules), based on earth abundant kesterite materials, which have been demonstrated in two previous European projects to be at the forefront of emerging inorganic thin film technologies. By combining advanced strategies for materials properties management, with customized modules design in a circular economy approach, two types of products will be developed including flexible PV modules (polymer and steel supports) and semi-transparent (polymer). CUSTOM-ART will bring these technologies from TRL4-5 up to TRL7, demonstrating very competitive conversion efficiencies (20% at cell and 16% at module level) and durability (over 35 years), at a reduced production cost (< 75 €/m2), using exclusively abundant elements and contributing to ensure the full sustainability and competitiveness of the European BIPV and PIPV Industry.

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	29-02-2024
Contributo totale:	€ 6.999.745
Costo eleggibile totale:	€ 8.016.422
Contributo a ENEA:	€ 216.512
Costo eleggibile ENEA:	€ 216.512
Doc. approvazione:	97/2020/DTE
Codice atto:	PT2ABD
Resp. scientifico ENEA:	MITTIGA ALBERTO
Unità:	DTE-FSN-TEF

Attività ENEA:

WP1: Sviluppo di celle ad alta efficienza e test di stabilità: TASK 1.1. Ottimizzazione dell’assorbitore in kesterite; TASK 1.2. Miglioramento della efficienza tramite drogaggio (con elementi alcalini) e modifiche alla composizione chimica dell’assorbitore in kesterite; TASK 1.3. Scelta e ottimizzazione dei contatti frontale e posteriore della cella. WP2 – Incapsulamento, stabilità e affidabilità: TASK 2.1. Tempo di vita dei dispositivi non incapsulati; WP5 – Analisi dei costi, riciclaggio, LCA; TASK 5.1. Life cycle assessment; TASK 5.2. Life cycle cost (lcc) analyses; TASK 5.3. Socio-economic impact analysis in the context of circular economy WP6 – Sfruttamento e disseminazione: TASK 6.1 Communication and dissemination strategy; TASK 6.2 Implementation of project identity and online communication channels TASK 6.3 Market and stakeholder analysis and needs TASK 6.4 Exploitation Plan

N. Contratto: UIA 04-137

DARE

Digital Environment for collaborative Alliances to Regenerate urban Ecosystems in middle-sized cities

Coordinatore: COMUNE DI RAVENNA (Italia) N. Partner: 12

Abstract:

DARE proposes an Urban Regeneration Process based on new alliances between public, private profit and non-profit sectors and residents. In order to create a collaborative platform, we will develop a digital environment and a participatory process. The digital platform will make data accessible, understandable and useful, describing the district, the process and the changes and enabling, in so doing, not only decision makers but also citizens to become active part in the process. Such system has to rely on a widespread DIGITAL CULTURE to allow people to become aware digital city changers and interact with regenerations iconic services/engagement actions based on data & digital tools. Platform and skills will allow us to collaborate rapidly and effectively to co-develop and start-up a set of new integrated and concrete actions for regeneration. The new governance will include a multidisciplinary expert team supporting feasibility and sustainability of projects and a specific focus on “story telling” the whole process. Finally, we propose to assess our results against a new set of quality of life indicators, that may truly seize the improvements in the life of citizens.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes UIA - Urban Innovative Actions
Data inizio:	01-09-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 4.998.004
Costo eleggibile totale:	€ 6.247.505
Contributo a ENEA:	€ 367.000
Costo eleggibile ENEA:	€ 458.750
Doc. approvazione:	36/2020/DTE
Codice atto:	PT5ABE
Resp. scientifico ENEA:	CLERICI MAESTOSI PAOLA
Unità:	DTE-SEN

Attività ENEA:

L'ENEA lavora a fianco del Comune di Ravenna per la progettazione della prima infrastruttura digitale della città nell'area portuale-industrale, interessata da profondi processi di dismissione, dove attualmente vivono 20.000 persone. L'ENEA guida il work package (WP)7 che mira a testare l'implementazione del meccanismo di governance iniziato nel WP 5 (emersione delle idee di progetto); nel WP2 è responsabile del database dei contatti all'interno delle attività di capitalizzazione; nel WP4 svilupperà ulteriormente la piattaforma ENEA Smart City; nel WP6 collaborerà con la CertiMaC nell'implementazione del gioco di ruolo urbano.

N. Contratto: 101086523

DRG4Food

Empowering a fair and responsible European FoodRegister, fostering citizen sovereignty and creating a data-driven food system

Coordinatore: TWINDS (Belgio) N. Partner: 8

Abstract:

The overall goal of our project is to achieve trust in a data-driven food system by implementing Digital Responsibility Goals for the food sector. This will enable new levels of innovation for example in food safety, sustainability, personalized nutrition, reduction of food waste and fair conditions throughout the entire food chain. The programme works on a clear strategic roadmap (a new virtual food system), a set technological enablers, demonstration of solutions, a structured funding programme with open calls, and measures to guide and support the food ecosystem of third party beneficiaries, citizens, stakeholders. As a consortium, we maintain the perspective that technology is not a means to an end, but acts merely as an empowering enabler, providing the means to achieve a wide variety of innovative and valuable use cases. Use cases that promise to serve a broader audience, provided that adequate access also is considered as a prerequisite. Currently however, technology is primarily developed from the perspective and needs of corporations and / or authorities- a limitation that risks perpetuating or further exacerbating the above-mentioned lack of trust within the markets that they serve. With a more diverse and human-centric driven perspective we believe the new use cases that will emerge and the technology development required to realise them will contribute to a more sustainable ecosystem that is “trustworthy by default”. To truly design for trust, the entire chain of activities and underlying assumptions towards developing technology has to be based on fundamental values like responsibility, privacy and user control - especially when dealing with valuable and sensitive food data. The starting point of all assumptions needs to be the user and their values - not a business model or (legitimate) state interests.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
Data inizio:	01-12-2022
Data scadenza:	30-11-2025
Contributo totale:	€ 4.000.000
Costo eleggibile totale:	€ 4.000.000
Contributo a ENEA:	€ 326.250
Costo eleggibile ENEA:	€ 326.250
Doc. approvazione:	271/2022/SSPT-BIOAG
Codice atto:	PS1ADA
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

ENEA riveste il ruolo di Partner, partecipando alle attività di tutti i WP e svolgendo in particolare il ruolo di Task Leader per la Task 1.2 Scientific Coordination (WP Coordination & Project Management), monitoring and risk management e la Task 2.4 Policy Briefings (WP Virtual food system roadmap).

N. Contratto: 101069506

DUT

European Partnership Driving Urban Transitions

Coordinatore: AUSTRIAN FEDERAL MINISTRY FOR CLIMATE ACTION, ENVIRONMENT, ENERGY, MOBILITY, INNOVATION AND TECHNOLOGY (Austria)

N. Partner: 64

Abstract:

Driving Urban Transitions to a Sustainable Future (DUT) is the new programme of JPI Urban Europe starting in 2022. The DUT Partnership steps up the game to tackle urban challenges. Through research and innovation, we enable local authorities and municipalities, business, and citizens to translate global strategies into local action. We develop the skills and tools to make urban change happen and boost the urgently needed urban transformations towards a sustainable future with enhanced quality of life in cities. DUT is realised as a European partnership of more than 60 partners from 27 countries, involving national and regional policy makers, funders and urban-related policy agencies to invest in urban R&I and strengthen a European innovation eco-system for urban transitions. Building upon the JPI Urban Europe achievements, DUT aims to create a strong community around urban transitions and to establish a well-known research and innovation platform that will help cities become more sustainable, inclusive and liveable. DUT is one out of 49 European partnerships under Horizon Europe framework and the only one addressing urban development in its complexity, with a close link to the European mission of 100 climate-neutral and smart cities.

Anno di stipula:	2022
Tipo progetto:	Programme Cofund Actions
Programma UE:	HORIZON EUROPE Cluster 5 - Cross-cutting solutions
Data inizio:	01-01-2022
Data scadenza:	31-12-2028
Contributo totale:	€ 37.000.000
Costo eleggibile totale:	€ 172.369.768
Contributo a ENEA:	€ 124.875
Costo eleggibile ENEA:	€ 578.125
Doc. approvazione:	113/2022/TERIN
Codice atto:	PK5AAI
Resp. scientifico ENEA:	CLERICI MAESTOSI PAOLA
Unità:	TERIN-SEN

Attività ENEA:

ENEA coordina il WP6 'Capacity building for the Transition Pathways' e sarà inoltre impegnato ad eseguire le seguenti attività: Task 2.2 Strategic development of the 15-Minute City Transition Pathway Task 2.3 Strategic development of the Positive Energy Districts Transition Pathway Task 2.4 Strategic development of the Circular Urban Regenerative Economies Transition Pathway Task 6.2 Target group specific empowerment Task 7.2.2 Develop and implement a valorisation strategy: Neighbourhood Transformation Showcasing Task 7.3 Towards replication and mainstreaming

N. Contratto: INEA/CEF/ICT/A2018/1838049

DYDAS

Dynamic Data Analytics Services

Coordinatore: KEY2 - KEY TO BUSINESS SRL (Italia) N. Partner: 5

Abstract:

The Action aims to develop a collaborative platform DYDAS (Dynamic Data Analytics Services) for offering data, algorithms, processing, and analysis services to a large number of users from different public and private user communities. The platform will act as an e-marketplace enabling transactions for accessing data and added value services enabled by High Performance Computing (HPC) and based on Big Data technologies, Machine Learning (ML), Artificial Intelligence (AI) and advanced data analytics. Geospatial Data Architecture will be a key element of the platform, which through the adoption of a Geospatial Data Model and of interoperability rules will enable seamless large dataset integration and processing capabilities for using geospatial data of different type and sources with data that are not intrinsically geo-referenced. The Action will test the platform data analytics capabilities through the integration and operation of three use cases (maritime, energy and mobility), which will demonstrate functionalities and service potential of the DYDAS platform. Finally, the exploitation and dissemination activities will foster the uptake of the platform by national and local administrations, industry, application developers and service providers, academia and research centres.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes CEF (Connecting Europe Facility) - TELECOM
Data inizio:	01-10-2019
Data scadenza:	31-01-2023
Contributo totale:	€ 2.045.580
Costo eleggibile totale:	€ 2.727.440
Contributo a ENEA:	€ 341.865
Costo eleggibile ENEA:	€ 455.820
Doc. approvazione:	61/E/2019/DTE
Codice atto:	PT3AAI
Resp. scientifico ENEA:	PONTI GIOVANNI
Unità:	DTE-ICT-HPC

Attività ENEA:

Il contributo dell'ENEA al progetto è relativo all'area tecnico scientifica dell'High Performance Computing con particolare riguardo alla gestione di grandi moli di dati, alla loro fruizione e alla definizione dell'infrastruttura di cloud computing; sarà inoltre definito lo scenario per lo use case marittimo (unità organizzative coinvolte DTE-ICT e SSPT-MET).

N. Contratto: 101084201 ***ECO-READY***

Achieving Ecological Resilient Dynamism for the European food system through consumer-driven policies, socio-ecological challenges, biodiversity, data-driven policy, sustainable futures

Coordinatore: UNIV. CZECH OF LIFE SCIENCES PRAGUE (Repubblica Ceca) N. Partner: 18

Abstract:

The ECO-READY project will develop a real-time surveillance system, an Observatory offered as an e-platform and as a mobile application. This will function as the necessary singular source of information, provide real-time assessments for the food system, and update forecasts frequently and consistently. The Observatory will be available to society, policymakers, the scientific community, and the agri-food industry, and integrated with a network of 10 Living Labs, supported through the third party funding process, covering all bioclimatic regions in Europe, forming the ECO-READY project knowledge infrastructure. ECO-READY will produce knowledgebased resilience strategies, and develop tools that will be embedded on the Observatory. The underlining principle behind the ECOREADY approach is, resilient dynamism, or tackling immediate problems and long-term challenges at the same time. The Living Labs network will facilitate 'concept to action' through the co-creation of scenarios addressing their regional needs, the development of policy recommendations, contingency plans, and resilience strategies, and embed them on the Observatory. Furthermore, ECO-READY will develop an early warning system and decision support tools using innovative Artificial Intelligence based on holistic prediction models and Life Cycle Assessment results. ECO-READY will ensure that European farmers and society's interests be reflected in future policymaking and monitoring, through early-stage active engagement incorporating bottom-up recommendations, facilitated by the increased usership of the digital tools developed, and resulting in increased awareness for climate-adaptive and mitigating agri-food products. Furthermore, the Observatory smart application will include tools that will empower the citizens to actively engage in policy making, and interact directly with the scientific community, farmers, and industry and policy makers, thus driving change in consumption habits.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
Data inizio:	01-12-2022
Data scadenza:	30-11-2026
Contributo totale:	€ 13.628.429
Costo eleggibile totale:	€ 13.628.429
Contributo a ENEA:	€ 267.000
Costo eleggibile ENEA:	€ 267.000
Doc. approvazione:	285/2022/SSPT-BIOAG
Codice atto:	PS1ADB
Resp. scientifico ENEA:	BEVIVINO ANNAMARIA
Unità:	SSPT-BIOAG-SOQUAS

Attività ENEA:

ENEA riveste il ruolo di partner ed è coinvolto nei seguenti workpackage: WP1 - Scoping and outlining the extended European Food Social-Ecological system WP2 - Stakeholders' engagement and empowerment WP6 - Communication and post-project sustainability WP7 - Project management In particolare, parteciperà attivamente alle attività previste dal WP1 con un ruolo di leader della Task T1.2 "Connecting the project scope with CAP, Green Deal and other EC Frameworks & Policies". Nel WP2 contribuirà attraverso l'expertise e la capitalizzazione di progetti in corso che prevedono il coinvolgimento degli stakeholder. In WP6 sosterrà le principali attività di comunicazione e disseminazione ed in WP7 collaborerà alla gestione del progetto.

N. Contratto: 893945

E-DYCE

Energy flexible DYnamic building Certification

Coordinatore: UNIV. AALBORG (Danimarca) N. Partner: 10

Abstract:

Current steady-state energy labels have several shortcomings, but the inherent inability to accurately reflect dynamic and changing conditions is the most impactful one. Steady-state labels result in high discrepancies with post occupancy behaviour - performance gap. This inaccuracy does not allow the building owner to make informed decisions on time, and restricts the potential of economical exploitation of the building. E-DYCE will combine innovative approaches with established and widely available tools to create a methodology capable of implementing scalable and adaptable dynamic energy performance certification (DEPC): - Create a technology neutral methodology for dynamic labelling based on maximizing the free running potential of the building and promoting the use of passive and low cost solutions (e.g. ventilative cooling) instead of constant reliance on mechanical systems. - Communicate clear actions to the user, as well as their positive effects on the energy consumption to motivate and improve energy behavior. - Validate the methodology through implementing DEPC in 39 buildings across 5 locations in 4 countries for a total of 60,000m2 heated area. - Generate energy savings of 1.8 GWh/year, from the first year and aiming to exceed 370GWh and 50million euros in savings by 2028, accounting only for the areas participating in the project. - Strengthen collaboration between energy experts, authorities and building owners to share the benefits of reliable dynamic certification. - Adapt to any level of building typology, climate, smartness and scale through dynamic simulation of performance utilizing resolutions from real time, to minutes, hours or days: from traditional buildings to smart-homes. E-DYCE will be compatible to existing and emerging EPC methods, or can function as a stand-alone DEPC labelling process. The process will not require investment for the user, instead depending on sharing the savings for revenue streams.

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	31-08-2023
Contributo totale:	€ 2.498.178
Costo eleggibile totale:	€ 2.936.065
Contributo a ENEA:	€ 150.813
Costo eleggibile ENEA:	€ 150.813
Doc. approvazione:	62/2020/DTE
Codice atto:	PT5ABH
Resp. scientifico ENEA:	ZINZI MICHELE
Unità:	DTE-SEN

Attività ENEA:

Obiettivo principale dell'ENEA è promuovere l'edificio F40 del CR Casaccia come Living Lab in grado di applicare, testare e qualificare tecnologie energetiche e costruttive di tipo smart building. In questa ottica le azioni utili messe in piedi dal progetto sono quelle relative alla validazione in campo, ferma restando una partecipazione marginale in tutti i work package del progetto. L'ENEA partecipa ai seguenti work package (WP): • WP1: Consolidamento delle specifiche per energy performance e certification di tipo dinamico; • WP2: Modellazione dei dati e progettazione del progetto energetico; • WP3: Generazione della piattaforma di simulazione e ottimizzazione, con particolare riferimento alla possibilità di collegamenti con altri strumenti di calcolo; • WP4: Estensione delle funzionalità della piattaforma di calcolo e sua validazione in campo. ENEA coordina il Task 4.3-Model comparison and demonstration in controlled conditions; • WP5: Dimostrazione a larga scala di fattibilità e accuratezza dello schema di certificazione dinamica sviluppato; • WP6: Disseminazione dei risultati, attraverso partecipazioni ad eventi scientifici, sviluppo di una roadmap per future applicazioni, approccio al processo regolatorio e di standardizzazione; • WP7: management del progetto

N. Contratto: 832558

EEPLIANT 3

Energy Efficiency Compliant Products 3

Coordinatore: PROSAFE - THE PRODUCT SAFETY ENFORCEMENT FORUM OF EUROPE (Paesi Bassi) N. Partner: 29

Abstract:

This proposal proposes a substantial project of a pan-EU market surveillance action to achieve impacts in line with the aims and objectives of the Horizon 2020 ? Work Programme 2018-2020 Secure, Clean and Efficient Energy. The project, if approved, will be the most comprehensive and complex product market surveillance exercise ever undertaken in the EU's energy efficiency and Ecodesign sector, building on and reinforcing the successes and momentum of the predecessor programmes: Energy Efficiency Compliant Products (ECOPLIANT, EEPLIANT2014 and EEPLIANT2), Market Surveillance Project for TYRES 2015 (MSTyr15). The proposed activities are structured around the needs and priorities identified by the memberships of the Energy Labelling and Eco-design ADCOs. These, without surprise, closely match the requirements set in the Call with ref. no. H2020-IBA-SC3-energy-2018, Exchange of information and best practices, development of common methods, protocols, checklists or IT tools (e.g. web crawlers), execution of joint surveillance activities, strengthening the collaboration with customs authorities, communication, establishment of centres of excellence for product testing, support the development of the Energy Labelling products registration database, input into standardisation, addressing challenging issues like defeat devices, software updates, plausibility testing, support for international alignment of test standards are all covered. The methodology to be used for addressing those requirements will include the delivery of a programme structure consisting of a matrix of activities both horizontal (method development and capacity improvement) and vertical (product inspection and testing). This will result in building further expertise, developing and adopting common best practices and protocols by the Member State Authorities (MSAs). Altogether, Energy Efficiency Compliant Products 3 (EEPLIANT3) is expected to substantially enhance the impacts and the overall effectiveness and efficiency of market surveillance across the European Union (EU).

Anno di stipula:	2019
Tipo progetto:	CS2-IA Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-06-2019
Data scadenza:	31-05-2023
Contributo totale:	€ 6.851.481
Costo eleggibile totale:	€ 6.851.481
Contributo a ENEA:	€ 146.123
Costo eleggibile ENEA:	€ 146.123
Doc. approvazione:	17/2019/DUEE
Codice atto:	PW3AAH
Resp. scientifico ENEA:	PRESUTTO MILENA
Unità:	DUEE

Attività ENEA:

Le attività progettuali a carico ENEA prevedono principalmente il supporto nella creazione di centri di eccellenza per testare i prodotti, nel lancio di nuove sfide per la sorveglianza del mercato, nei controlli su condizionatori e ventilatori, nei controlli sulle asciugatrici, nei controlli su lampade. In particolare l'ENEA è work package leader nel WP6 'Nuove sfide per la sorveglianza del mercato'.

N. Contratto: 883823

EERADATA

Towards a FAIR and open data ecosystem in the low carbon energy research community

Coordinatore: UNIV. WESTERN NORWAY OF APPLIED SCIENCES (Norvegia) N. Partner: 6

Abstract:

The majority of databases are unfit for deploying advanced analytical tools by humans and machines, causing forgone opportunities arising from advanced ICT solutions. It adds to the problem that the transition towards low carbon and sustainable energy systems requires the integration of interdisciplinary and complex data. It means that it is not sufficient to only account for physical and technical attributes, but also socio-economic and environmental ones. Otherwise, society is misinformed about the consequences of upcoming fundamental systemic changes, affecting acceptance building and the creation of ownership for the energy transition. Transparent and integrated management of energy data with useful metadata information and quality assurance provides the basis for society to choose, monitor, and implement sustainable transition pathways; and for the industry to be innovative. Therefore, databases need to adhere to the principles of open and FAIR data (findability, accessibility, interoperability, re-usability). However, the concepts and infrastructures for FAIR and open data management are currently not existing in low carbon energy research. The overall objective of EERAdata is to develop, explore, and test a FAIR and open data ecosystem. This new data infrastructure is established through the broad involvement of the energy research community in a series of workshops and is applied in four selected use cases, covering essential aspects of data-driven low carbon energy research. EERAdata also implements an open platform for uniform and seamless access to energy data and establishes a pool of experts and data stewards to facilitate a mental shift in the community towards FAIR and open data practices. A key element is the active linking of EERAdata to national initiatives, the European Open Science Cloud, the Research Data Alliance, and others. In this way, the project builds a critical mass to explore the prospects of large-scale FAIR and open energy data.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-03-2020
Data scadenza:	28-02-2023
Contributo totale:	€ 999.913
Costo eleggibile totale:	€ 999.913
Contributo a ENEA:	€ 111.950
Costo eleggibile ENEA:	€ 111.950
Doc. approvazione:	19/2020/DTE
Codice atto:	PT2ABB
Resp. scientifico ENEA:	CELINO MASSIMO
Unità:	DTE-ICT

Attività ENEA:

L'ENEA è leader del work package 6 'Materials for low carbon energy' e si occupa della applicazione delle metodiche FAIR nel settore dei materiali per l'energia. Partecipa inoltre ai seguenti work package: 1 - coordination and management; 2 - capacity building; 3 - community platform; 4 - use case 1 'buildings efficiency; 5 - use case 2 'power trasmission & distribution' 6 - use case 3 'materials for low carbon energy' 7 - use case 4 'energy and efficiency policies' 8 - communication, dissemination & exploitation

N. Contratto: 475

EFFECTS

EFFective Planning of schools buildings for Environment and ClimaTe changeS

Coordinatore: COMUNE DI BARLETTA (Italia) N. Partner: 5

Abstract:

The buildings sector represents approximately 40% of the EU's total energy consumption. In this respect, Europe has issued an ad hoc Directive on the Energy Performance of Buildings and several actions have been putting in place by each Country to tackle this issue. For this, the CB cooperation between Italy, Albania and Montenegro is important in order to exchange experiences, transfer innovation aimed at reducing the heating demand (in terms of annual energy balance) and minimising the cooling peak power demand. Supporting sector operators to identify cost-effective approaches to renovations relevant to the building type and climatic zone is also considered important. As for other priorities, creating an effective system involving public institutions, sector operators and other relevant stakeholders is strongly supported, and one result expected from this is enhanced capacities of public authorities to plan and implement sustainable energy policies and measures. EFFECTS project intends to deepen the issues related to Energy Efficiency in School Buildings in the CB Area, evaluating possible strategies of intervention to reduce the negative impact on environment and climate change, and at the same time to have a positive impact on the budget of local bodies, and on the improvement of indoor comfort. School is the most adequate context to diffuse a culture of Sustainability and Energy saving that can be expressed not only in structural interventions, but also through educative action, participatory and sharing experiences that can and must be adopted referring to the didactical approach within the School System itself. Through specific pilot actions, students, teachers and families will have the opportunity to closely participate actively at the efficiency planning and renovation process and to experience its impact on the indoor environment for themselves.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg-IPA-CBC Italy-Albania-Montenegro
Data inizio:	01-09-2020
Data scadenza:	31-12-2023
Contributo totale:	€ 614.124
Costo eleggibile totale:	€ 722.500
Contributo a ENEA:	€ 72.239
Costo eleggibile ENEA:	€ 84.987
Doc. approvazione:	31/2021/SSPT-PROMAS
Codice atto:	PS3ADB
Resp. scientifico ENEA:	LUPRANO VINCENZA ANNA MARIA
Unità:	SSPT-PROMAS-MATAS, DUEE-SIST-SUD

Attività ENEA:

L'ENEA di Brindisi e l'ENEA di Bari insieme sperimenteranno un modulo per l'aumento della consapevolezza pubblica sui temi dell'efficienza energetica nelle 4 regioni di pertinenza del progetto partendo dalle specificità delle regioni stesse. In particolare l'ENEA di Brindisi curerà la parte relativa al trasferimento di una metodologia di approccio agli studenti per studiare il confort microclimatico e l'ENEA di Bari curerà la parte relativa all'efficienza energetica. In particolare sono previste le seguenti fasi: •WPM Gestione del Progetto •WP TI Analisi e valutazione del sistema energetico •WP T2 INVESTMENT: Caso Studio: "CBC Schools Living LAB on Energy Efficiency and Renewable Energy Sources",

N. Contratto: 6243

EFFICIENT BUILDINGS

Efficient buildings

Coordinatore: CITY OF NICE (Francia)

N. Partner: 8

Abstract:

As a MED hub for Energy Efficiency (EE) innovative and shared solutions, the Efficient Buildings Community will anchor a MED community around energy issues that public organisations face in order to promote modular projects' outcomes and increase their impact on public policies. Indeed, in the MED area, the majority of public buildings is not adequately designed to reduce their energy consumption and improve their EE performance. This is partly due to a lack of awareness of owners and managers and knowledge gaps regarding common answers to this transnational challenge. By establishing a joint transnational framework around energy efficiency in public buildings to propose solutions to energy issues faced by public organizations in the MED area, the Efficient Buildings community will contribute to increase the capacity of owners and managers of public buildings to design and implement better energy efficiency practices. On the other hand, the Efficient Buildings Community will promote its results at national and EU levels to influence policies and call for new national and European regulatory framework that take into account MED specificities and the innovative solutions proposed by the community.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg MED
Data inizio:	01-11-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 1.354.794
Costo eleggibile totale:	€ 1.593.876
Contributo a ENEA:	€ 109.948
Costo eleggibile ENEA:	€ 129.350
Doc. approvazione:	7/2020/SSPT-USER
Codice atto:	PS6ACO
Resp. scientifico ENEA:	TARANTINI MARIO
Unità:	SSPT-USER-RISE

Attività ENEA:

Il progetto prevede l'esecuzione di attività di comunicazione, di trasferimento di conoscenze mediante l'organizzazione di meeting e corsi di formazione articolati secondo differenti metodologie, di capitalizzazione dei risultati dei progetti modulari tra cui il progetto TEESCHOOLS di cui ENEA è capofila.

N. Contratto: 190736

EIT CLIMATE-KIC GECO

Green Energy Community

Coordinatore: AESS - AGENZIA PER L'ENERGIA E LO SVILUPPO SOSTENIBILE (Italia) N. Partner: 3

Abstract:

GECO is a pilot Green Energy Community that experiment in Bologna, Pilastro – Roveri district, the creation of a energy community, recently introduced by the EU Clean Energy Package (CEP). GECO intends to tackle all the socio, technical and economic aspects that contribute to the creation of the energy community, contributing to the CEP transposition into the national law framework, increasing the sustainability, reducing the energy poverty and generating a low carbon economy cycle, enabling it through the digitalization, data collection, smart opmization algorithms, blockchain technologies and Internet of Things (IoT). The project seeks to experiment the newest smart solutions to maximize the energy self-consumption, the storage and the decentralized energy resources, increasing the ?exibility through real-time monitoring, predictive analytics and automated response. Those activities will be performed by the GECO entity, that will manage the energy community and also provides climate services to its members related to energy saving technical assistance, renewable energy plant design, stakeholder engagement, training, disseminaon, and promotion of behavioral changes among the community stakeholders. In the end, all local households and business members of the community will bene?t from the GECO acvies. It is expected that the synergies, frictions and disruptions arising from the smart energy community proposed will help to shape the neighbourhood and the Italian energy systems in the low carbon economy transion. The community will not only provide competitive clean energy prices, but also ?ght climate change, develop cooperation among neighbours and provide added-value to the local economy.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 EIT - Climate KIC
Data inizio:	01-09-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 1.477.666
Costo eleggibile totale:	€ 2.466.403
Contributo a ENEA:	€ 520.772
Costo eleggibile ENEA:	€ 520.772
Doc. approvazione:	66/E/2019 e 48/2020/DTE, 208/2021/TERIN, 278/2022/PRES
Codice atto:	PT5ABC
Resp. scientifico ENEA:	D'AGOSTA GIANLUCA
Unità:	DTE-SEN-CROSS

Attività ENEA:

Enea, per contribuire al progetto, ha sviluppato un modello di business green basato su blockchain, finalizzato a rendere flessibile la domanda di energia dei partner della comunità energetica. I ricercatori Enea si occuperanno anche di definire una piattaforma ICT per raccogliere i dati con al fine di migliorare la consapevolezza dei consumatori.

N. Contratto: 21109

EIT KIC Urban Mobility CELESTE

dynamiC spEed Limits compliancE for optimiSed Traffic managEment

Coordinatore: CTAG - Automotive Technology Center of Galicia (Spagna) N. Partner: 16

Abstract:

Intelligent Speed Assistance (ISA) systems, mandatory for all vehicles commercialised in the EU from 2022, enable speed alerts and, in some cases, automatic speed reduction and compliance. However, there are pending issues to support their correct use: . What is the appropriate speed limit for a specific city section? . Is the speed limit for a city section at times too high or too low depending on changing conditions? . How to modify and ensure compliance of a speed limit in real me? . How to assist traffic managers to achieve such compliance? Delivering systems that can complement existing Traffic Management Centres (TMCs) (e.g. extended data models, connected signals, vehicle technology) is critical to successfully change behaviours. CELESTE seeks to work both on technological solutions and assessment tools that can be transferred outside the partner cities, as well as concretising them in functional prototypes, delivering value globally to both project partners and EIT.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 EIT - Urban Mobility
Data inizio:	01-04-2021
Data scadenza:	31-12-2022
Contributo totale:	€ 795.769
Costo eleggibile totale:	€ 1.138.297
Contributo a ENEA:	€ 48.367
Costo eleggibile ENEA:	€ 67.502
Doc. approvazione:	17/2022/TERIN, 144/2022/TERIN
Codice atto:	PK4AAP
Resp. scientifico ENEA:	D'AGOSTINO GREGORIO
Unità:	TERIN-SEN-APIC

Attività ENEA:

L'attività prevalente dell'ENEA sarà la definizione di campagne specifiche di osservazione della percezione dei cittadini sulla viabilità, la sicurezza delle strade, la necessità di imporre limiti di velocità e eventuali problemi alla viabilità causati dai limiti imposti.

N. Contratto: 22023

EIT KIC Urban Mobility E+ Mobility

EIT KIC Urban Mobility E+ Mobility

Coordinatore: UNIV. TECHNICAL OF CATALONIA (Spagna) N. Partner: 10

Abstract:

The E+ Mobility Accelerator proposal is a continuation of the EIT Urban Mobility Hub South Acceleration Program (batches #1-3), with a specific focus into the mobility & energy, micromobility and shared mobility thematic fields. Its main objective is to accelerate the introduction of startups-led solutions in the market while helping cities and companies solve their challenges faster and efficiently. Therefore, the new consortium plans to become the seed generator of top european startups within these fields by attracting and selecting proposals that best fit the program, supporting projects with business and technical orientation, providing access to key players for market and technical validation and connecting and preparing them to build pilots with relevant stakeholders.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON EUROPE EIT - Urban Mobility
Data inizio:	01-01-2022
Data scadenza:	31-12-2022
Contributo totale:	€ 360.000
Costo eleggibile totale:	€ 360.000
Contributo a ENEA:	€ 8.000
Costo eleggibile ENEA:	€ 8.000
Doc. approvazione:	94/2022/TERIN, 144/2022/TERIN
Codice atto:	PK0AAE
Resp. scientifico ENEA:	ROCA FRANCESCO
Unità:	TERIN

Attività ENEA:

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N. Contratto: 21099

EIT Raw Materials FENICE

Fire resistant Environment-frIendly CompositEs

Coordinatore: ENEA (Italia) N. Partner: 10

Abstract:

FENICE will achieve weight reduction in comparison to steel battery boxes, using FML and innovative composites, instead of light alloys with several advantages in terms of sustainability & safety. As verified in the aeronautic sector, FML are much more tolerant to fire accidents, impacts and fatigue. The project will develop prepregs as semifinished products, for reducing manufacturing costs and increasing reliability. These prepregs will be associated with thin metallic foils, with no structural function, so recycled Al can be used. Both prepregs and metallic foils can be circular-recycled, in line with EU Directives about EOL reuse of automotive materials. Glass and basalt will be the fibres of choice, to avoid non-recyclable and high embodied energy C-fibres. as validated in previous KAVA 5 “C2CC”, ensuring cost and environmental advantages. FENICE will develop the engineering for a patented novelbattery-box-concept, optimising for the final target production of one million pieces per year (starting from 100k in 2026). This implies that assembly, disassembly and recycling will have to be investigated for all the adopted materials with an industry driven approach. Several high sustainability resins will be investigated, with specific focus on biobased resins, C2C recyclable vitrimers and reactive thermoplastics. FE modeling will support component engineering & validation. Qualification, accelerated ageing in expected working conditions & precertification will be performed.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON EUROPE EIT - Raw Materials KIC
Data inizio:	02-07-2022
Data scadenza:	31-12-2022
Contributo totale:	€ 365.750
Costo eleggibile totale:	€ 531.024
Contributo a ENEA:	€ 34.907
Costo eleggibile ENEA:	€ 52.475
Doc. approvazione:	110/2022/SSPT-PROMAS
Codice atto:	PS3ADO
Resp. scientifico ENEA:	MINGAZZINI CLAUDIO
Unità:	SSPT-PROMAS-TEMAF

Attività ENEA:

L'ENEA partecipa al progetto per l'esecuzione di attività finalizzate allo sviluppo di tecnologie di produzione di box batteria per la trazione elettrica in materiale a base FML (Fiber Metal Laminates).

N. Contratto: 10014

EIT Raw Materials HUB - Regional Centre South Italy

Regional center South Italy (EIT RIS activity related to action line II)

Coordinatore: ENEA (Italia) N. Partner: 2

Abstract:
The focus area of Innovation Hub CLC South encompasses all the main themes of the EIT RawMaterials: primary resources (geophysics and exploration, rock mechanics, treatment of mineral resources and waste), recycling (metals and minerals processing, refining and recycling; industrial waste; collection and processing of end-of-life products), and substitution (materials and nanomaterials design, bio-based substitution, biopolymers, elastomers, composites and natural rubber).

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 EIT - Raw Materials KIC
Data inizio:	02-01-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 207.000
Costo eleggibile totale:	€ 207.000
Contributo a ENEA:	€ 207.000
Costo eleggibile ENEA:	€ 207.000
Doc. approvazione:	77/2019, 104/2020, 147/2021, 146/2022, 12/2023/SSPT/PROMAS
Codice atto:	PS3ABU
Resp. scientifico ENEA:	PENZA MICHELE
Unità:	SSPT-PROMAS-MATAS

Attività ENEA:

L'ENEA si avvale della collaborazione del Co-location Centre South Italy di EIT Raw Materials con sede presso il CR ENEA di Casaccia. Le attività sono articolate secondo il seguente programma di lavoro: .WP1 - Network and community building - Build up the local SME/Start-up RM sector system .WP2 - Business creation and entrepreneurship support .WP3 - Dissemination, marketing and outreach .WP4 - Strategy, business plan and mapping of the Regional Center South of Italy .Workshop

N. Contratto: 10009

EIT Raw Materials RIS

RIS EDUCATION & ENTREPRENEURSHIP

Coordinatore: EIT Raw Materials CLC East Sp (Polonia) N. Partner: 20

Abstract:

RIS Education & Entrepreneurship project is a centrally steered RIS activity to bring top-down orientation and boost impact and create activities building up capacity for higher education institutions in RIS regions to be able to successfully active partner in local ecosystem and be bale to bring products to the market through their innovation activities while connecting KIC education activities with business creating activities supporting action line 2 goals by connecting local RIS players with broader KIC community and programs. The main focus of the EIT RawMaterials Hub – Regional Center Southern Italy is devoted to: • Recycling and Reuse • Substitution • Functional Materials for Manufacturing • Innovative Materials for Transportation • Circular Economy The target audience of the Southern Italy Hub is the entire raw materials value chain, where the Hub is continuously developing its database of contacts, ongoing networking and planned matchmaking activities in the prioritised sectors. The long-term strategy includes urban mining, exploration and high-impact Cross-KIC activities in key interdisciplinary sectors such as climate, digital, manufacturing. The Strategic Agenda of the Hub – Regional Center Southern Italy includes specific initiatives such as research and innovation, training and education, and finally business support.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 EIT - Raw Materials KIC
Data inizio:	02-01-2021
Data scadenza:	31-12-2022
Contributo totale:	€ 659.579
Costo eleggibile totale:	€ 659.579
Contributo a ENEA:	€ 40.500
Costo eleggibile ENEA:	€ 40.500
Doc. approvazione:	149/2021, 216/2021 e 143/2022/SSPT-PROMAS
Codice atto:	PS3ADI
Resp. scientifico ENEA:	PENZA MICHELE
Unità:	SSPT-PROMAS-MATAS

Attività ENEA:

Il progetto si baserà sulle attività avviate da ENEA nel Sud Italia, prevalentemente ma non esclusivamente in Puglia, per implementare uno sforzo integrato di portatori di interesse, privati e pubblici, nel settore delle materie prime critiche. Il progetto internazionale di Formazione mirerà ad aumentare la presenza della KIC, mettendo in relazione studenti universitari ed aziende dell'area RCSI operanti nel settore delle materie prime mediante stage aziendali, formazione frontale, training-on-the-job, learning-by-doing, doing-by-learning per raggiungere nuove organizzazioni private e/o pubbliche, e promuovere modelli di innovazione nelle regioni scarsamente coinvolte del Sud Italia (Puglia, Campania, Calabria, Molise, Basilicata, Sicilia, Sardegna).

N. Contratto: 20255

EIT Raw Materials SisAl

SisAl Slag Valorisation

Coordinatore: UNIV. NORWEGIAN OF SCIENCE AND TECHNOLOGY -NTNU (Norvegia) N. Partner: 12

Abstract:

Silicon and High Purity Alumina (HPA) are vital raw materials for the transition to the low carbon society; silicon as a dominant photovoltaic (PV) material for solar energy applications and as an important ingredient in light-weight applications (automotive and others), while HPA is a key material in Light Emitting Diodes (LEDs) and increasingly in Lithium Ion Batteries (LIBs). Unfortunately, both Si and HPA are today produced non-sustainably; for each tonne of Si you make a lot more CO2, plus harmful pollutants. Similarly, HPA is today made from ultrapure primary aluminium, having a large CO2 footprint. The promise of the SisAl process is to resolve this problem of non-sustainable raw materials, by replacing carbon with secondary aluminium sources (scrap, dross) as reductant for Si production from quartz (SiO2), and in parallell making an intermediate slag which is a perfect precursor for HPA processing. By introducing integrated CO2 looping, the already superior low CO2 footprint of the SisAl process is strengthened. Elkem (Si), SiQAl & Mytilineos (HPA), and Calef (CO2 looping) will commercialise the technologies and products (Si & HPA) for the benefit of end users requiring sustainable raw materials with a minimal environmental and CO2 footprint. With the SisAl process the transformation to a low carbon circular economy and other key challenges are turned upside down into new European opportunities. Carbon leakage means moving industry to countries with less strict emission regulations, giving no positive or even negative effects on global emissions. A reversed carbon leakage would be to move industry back to Europe, and by replacing just one traditional silicon smelter in China with a new SisAl smelter in Europe, we have estimated that 50 million Euros will be saved annually in avoided societal emission costs. The project consortium covers the value chain from raw material provider to product user, with partners from SME´s, companies, institutes and universities.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 EIT - Raw Materials KIC
Data inizio:	01-03-2021
Data scadenza:	31-12-2022
Contributo totale:	€ 319.499
Costo eleggibile totale:	€ 437.999
Contributo a ENEA:	€ 85.988
Costo eleggibile ENEA:	€ 85.988
Doc. approvazione:	254/2021/TERIN, 02/2022/TERIN
Codice atto:	PK4AAO
Resp. scientifico ENEA:	STENDARDO STEFANO
Unità:	TERIN-PSU

Attività ENEA:

Le attività di ENEA possono essere così riassunte: .ENEA TERIN, si occuperà della progettazione, della supervisione alla costruzione in collaborazione con il Consorziato Walter Tosto S.p.A. e CALEF, e della messa in esercizio fino al collaudo finale, di un calcinatore ad alta temperatura (850-900°C) a partire da modellazione e simulazioni CFD. . ENEA SSPT, supporterà ENEA TERIN per le caratterizzazioni metallurgiche in laboratorio dei materiali e nella supervisione delle attività per tutta la durata del progetto fino al collaudo finale del prototipo.

N. Contratto: 862695

EJP SOIL

Towards climate-smart and sustainable soil management

Coordinatore: INRAE - INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENT (Francia)

N. Partner: 27

Abstract:

The main objective of EJP SOIL is to create an enabling environment to enhance the contribution of agricultural soils to key societal challenges such as climate change adaptation and mitigation, sustainable agricultural production, ecosystem services provision and prevention and restoration of land and soil degradation. The EJP SOIL will build a sustainable European integrated research community on agricultural soils and will develop and deploy a roadmap on climate-smart sustainable agricultural soil management. The EJP SOIL roadmap is based on a knowledge framework with 4 interacting components. Knowledge development is set out in project calls with internal and external partners. Knowledge sharing & transfer is framed in capacity building for young scientists, enhancing general public awareness and fostering societal understanding and appreciation of agricultural soil management and its contribution to society. Knowledge harmonization, storage & organization supports harmonised soil information and reporting practices. Knowledge application deals with ways to overcome barriers for adoption of novel practices in a European context, co-developing adequate tools and providing evidence-based recommendations for EU policies. EJP SOIL activities in interaction with stakeholders, MSs and DG AGRI will pursue the long-term goal of promoting farmers as stewards of land and soil resources and support policy development and deployment, in particular the CAP and Climate policies. The EJP SOIL addresses 6 expected impacts with targeted activities in response to societal, scientific, policy and operational challenges. A first annual workplan based on the roadmap is provided as part of the proposal. The EJP Soil consortium unites a unique group of 26 leading European research institutes and universities in 24 countries. The consortium has developed this proposal in close collaboration with its programme owners and has secured over 40M€ in co-funding and 10M€ for external calls over 5 years.

Anno di stipula:	2021
Tipo progetto:	COFUND-EJP European Joint Programme COFUND
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	18-03-2021
Data scadenza:	31-01-2026
Contributo totale:	€ 40.000.000
Costo eleggibile totale:	€ 80.000.000
Contributo a ENEA:	€ 74.406
Costo eleggibile ENEA:	€ 148.813
Doc. approvazione:	20/2021/SSPT-BIOAG
Codice atto:	PS1ABX
Resp. scientifico ENEA:	BEVIVINO ANNAMARIA
Unità:	SSPT-BIOAG-SOQUAS

Attività ENEA:

L'ENEA in qualità di parte terza (Linked Third Party) si prefigge di collaborare con il Beneficiario (CREA) per il raggiungimento degli obiettivi legati alle attività tecnico-scientifiche previste nel progetto, in particolare nei seguenti WP: WP2 - Roadmap for EU Agricultural Soil Management research WP3 - Research alignment. Internal calls WP6 - Supporting harmonised soil information and reporting WP9 - Dissemination and outreach for European scale impacts

N. Contratto: 847553

ELSMOR

Towards European Licencing of Small Modular Reactors

Coordinatore: VTT TECHNICAL RESEARCH CENTRE OF FINLAND (Finlandia) N. Partner: 15

Abstract:

ELSMOR (towards European Lisencing of Small MOdular Reactors) aims to create methods and tools for the European stakeholders to assess and verify the safety of light water small modular reactors (LW-SMR) that would be deployed in Europe. ELSMOR advances the understanding and technological solutions pertaining to light water SMRs on several fronts: • Collection, analysis, and dissemination of the information on the potential and challenges of Small Modular Reactors to various stakeholders, including the public, decision makers and regulators. • Development of the high level methods to assess the safety of LW-SMRs • Improvement of the European experimental research infrastructure to assist in the evaluation of the novel safety features of the future LW-SMRs. • Improvement of the European nuclear safety analysis codes to demonstrate the capability to assess the safety of the future LW-SMRs Establishing education and training in the field of innovative nuclear reactors for young professionals is also emphasized. The ELSMOR project is built upon the expertise of the consortium that consists of technical support organizations, technical research centres, industrial partners, and universities with the long experience in European nuclear safety analysis and the development and implementation of innovative nuclear technologies. The industrial partners include utilities, small medium sized enterprises as well as the consortium currently developing the French LW-SMR (F-SMR design). The developers of European safety analysis tools and other computer codes use their well-established paths for exploitation of the improved and validated simulation tools. The licencing approaches and methods would be expected to be directly utilized by SMR designers like the French consortium. The outcomes should make the licensing process more fluid and comprehensive; this should also be true from the regulator point of view.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2019
Data scadenza:	28-02-2023
Contributo totale:	€ 3.494.704
Costo eleggibile totale:	€ 4.279.581
Contributo a ENEA:	€ 217.000
Costo eleggibile ENEA:	€ 270.900
Doc. approvazione:	072/2019/FSN
Codice atto:	PF6AAK
Resp. scientifico ENEA:	LOMBARDO CALOGERA
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA coordina il work package 3 "Core cooling safety functions" e partecipa a tutti i work package del progetto: WP 1 Identification of improved safety features of LW-SMRs WP 2 Development of safety case methodology WP 4 Containment safety functions WP 5 Application of safety case methodology WP 6 Synthesis, Recommendations and Dissemination WP 7 Education and training WP 8 Management

N. Contratto: CINEA/EMFAF/2021/3.4.10/02/SI2.868290

EMODNET Data Ingestion n. 3

EMODnet - Ingestion and safe-keeping of marine data – n° 3

Coordinatore: MARIS MARINE INFORMATION SERVICE B.V. (Paesi Bassi) N. Partner: 2

Abstract:

A partnership of over a hundred and twenty European organisations work together under EMODnet in seven thematic groups to assemble marine data from diverse sources and resources in order to make them more accessible and more interoperable. Part of their work involves building gateways to national, regional or thematic repositories and creating products based on marine and maritime data held by public bodies. However, many data collected by public authorities, researchers and private operators of coastal or offshore facilities still do not arrive to these national or regional repositories and are thus unavailable to potential users. This creates additional costs for those working on marine issues who will have the choice of accepting lower confidence in their analysis than would otherwise be the case, or being compelled to needlessly repeat observations. There is therefore the need to streamline the data ingestion process so that data holders from public and private sectors can easily release their data for safekeeping and subsequent distribution through EMODnet or other means.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes 2021-2027 EMFAF - European Maritime, Fisheries and Aquaculture Fund (2021-2027)
Data inizio:	30-03-2022
Data scadenza:	29-03-2024
Contributo totale:	€ 2.680.000
Costo eleggibile totale:	€ 2.680.000
Contributo a ENEA:	€ 18.750
Costo eleggibile ENEA:	€ 18.750
Doc. approvazione:	133/2022/SSPT-PROTER
Codice atto:	CS4ABH
Resp. scientifico ENEA:	PECCI LEDA
Unità:	SSPT-PROTER-BES

Attività ENEA:

ENEA partecipa al progetto come subcontraente del coordinatore MARIS; le attività ENEA sono relative ai seguenti workpackage: WP2- Mantenere ed ulteriormente sviluppare percorsi per facilitare le trasmissioni di dati marini nel repository appropriato WP3 - Facilitare il trasferimento machine-to-machine WP4 - Attività di marketing e disseminazione

N. Contratto: 101061677 ***ENEN2plus***

Building European Nuclear Competence through continuous Advanced and Structured Education and Training Actions

Coordinatore: ENEN - European Nuclear Education Network (Organ. Internazionali) N. Partner: 54

Abstract:

Nuclear power and non-power technologies are technically very complex facilities that operate in the increasingly challenging regulatory framework and market conditions. Development, construction, operation, decommissioning, waste management and oversight of these facilities require personnel with excellent education, skills and motivation: nuclear specialists, that are equipped to work in multidisciplinary, multicultural and competitive environments. ENEN# stands for the largest and most integrative nuclear Education and Training (E&T) efforts up to date. Attraction of excellent new talents followed by outstanding development through E&, crosscultural and cross-disciplinary activities are the overarching objectives. Excellent workforce should remain the basic enabler of safe longterm operation of existing and development of advanced facilities. A detailed insight into the EU supply and demand of nuclear human resources for power and non-power applications will be developed. This will include industries, academia, technical safety organizations and regulators. Higher number of nuclear talents will be achieved through dedicated career related events and competitions for high school pupils and teachers, students (BSc, MSC, PhD), postdocs and lifelong learners. A strong mobility program will support over 100 personyears of nuclear career enhancing experience to about 1.000 learners with over 2,5 million EUR. Cross-border and cross-disciplinary mobility within and beyond EU will be promoted in cooperation with JRC, OECD/NEA and partners from USA, China, Korea and Japan. A single hub will be established to provide information on available educational, training and job opportunities. Appropriate connections with the complementary NRT-12 project facilitating access to research infrastructures will be maintained. A centralized platform with coherent information on vocational training programs, developed during the project, will be established.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-06-2022
Data scadenza:	31-05-2026
Contributo totale:	€ 6.819.707
Costo eleggibile totale:	€ 7.156.424
Contributo a ENEA:	€ 81.875
Costo eleggibile ENEA:	€ 81.875
Doc. approvazione:	077/2022/FSN
Codice atto:	PF6AAX
Resp. scientifico ENEA:	FERRUCCI BARBARA
Unità:	FSN-SICNUC-TNMT

Attività ENEA:

L'ENEA partecipa ai seguenti work package (WP): WP1 – Human Resources analysis in the nuclear sector WP2 – Informing and attracting new talents WP3 – Enhancing nuclear competences: continuous E&T programs Le attività sono svolte presso i centri ENEA di Bologna e Brasimone.

N. Contratto: ENER/20/NUCL/SI2.838109

ENER/20/NUCL/SI2.838109

Implementation of nuclear and radiological emergency preparedness and response requirements in EU Member States and neighbouring countries

Coordinatore: NucAdvisor (Francia) N. Partner: 4

Abstract:

Review and evaluate the practical implementation of national emergency preparedness and response arrangements, emergency management systems and emergency plan in all EU Member States and participating countries in line with the provisions of the BSS and Nuclear Safety Directives. Provide information on the effectiveness of existing arrangements and capabilities in practice; review to what extent existing international and European standards, guidance and approaches are applied in practice: share national experiences amongst the relevant authorities and highlight effective practices that would improve public confidence.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Service contract
Data inizio:	01-01-2021
Data scadenza:	14-02-2023
Contributo totale:	€ 490.000
Costo eleggibile totale:	€ 490.000
Contributo a ENEA:	€ 67.086
Costo eleggibile ENEA:	€ 67.086
Doc. approvazione:	47/2021/FSN
Codice atto:	CF6AAL
Resp. scientifico ENEA:	ROCCHI FEDERICO
Unità:	FSN-SICNUC-PSSN

Attività ENEA:

ENEA è coinvolta in tutte le task del contratto, ma è particolarmente impegnata nella Task 2, ove dovranno essere preparati, analizzati e presentati due “case studies” con particolare rilevanza transfrontaliera.

N. Contratto: 957779

eNeuron

greEN Energy hUbs for local integRated energy cOmmunities optimizatioN

Coordinatore: ENEA (Italia) N. Partner: 17

Abstract:

The main goal of the eNeuron project is to develop innovative tools for the optimal design and operation of local energy communities (LECs) integrating distributed energy resources and multiple energy carriers at different scales. This goal will be achieved, by having in mind all the potential benefits achievable for the different actors involved and by promoting the Energy Hub concept, as a conceptual model for controlling and managing multi-carrier and integrated energy systems in order to optimize their architecture and operation. In order to ensure both the short-term and the long-term sustainability of this new energy paradigm and thus support an effective implementation and deployment, economic and environmental aspects will be taken into account in the optimization tools through a multi-objective approach. eNeuron's proposed tools enable tangible sustainability and energy security benefits for all the stakeholders in the LEC. Local prosumers (households, commercial and industrial actors) stand to benefit through the reduction of energy costs while leveraging local, low carbon energy. Developers and solution providers will find new opportunities for technologies as part of an integrated, replicable operational business model. Distribution system operators (DSOs) benefit from avoiding grid congestion and deferring network investments. Policy makers benefit from increasingly sustainable and secure energy supply systems. eNeuron is a high TRL project in line with the Work Programme, by developing innovative approaches and methodologies to optimally plan and operate integrated LECs through the optimal selection and use of multiple energy carriers and by considering both short- and long-run priorities. Through optimally coordinating all energy carriers and vectors, cost-effective and low-carbon solutions will be provided for fostering the deployment and implementation of this new energy paradigm at European level.

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-11-2020
Data scadenza:	31-10-2024
Contributo totale:	€ 5.731.118
Costo eleggibile totale:	€ 6.319.693
Contributo a ENEA:	€ 487.500
Costo eleggibile ENEA:	€ 487.500
Doc. approvazione:	101/2020/DTE
Codice atto:	PT7AAP
Resp. scientifico ENEA:	DI SOMMA MARIALAURA
Unità:	DTE-STSN-SGRE

Attività ENEA:

L'ENEA coordina il progetto eNeuron (WP1) ed è anche responsabile del WP3 che ha l'obiettivo principale di identificare la "Comunità energetica locale integrata" in base agli sviluppi e alle politiche normative più recenti in Europa, nonché di definire una mappatura dettagliata delle principali tecnologie abilitanti e degli attori chiave con potenziale interesse per l'implementazione di questo nuovo paradigma energetico a livello locale. Sulla base di questa analisi preliminare, verranno sviluppati i casi d'uso e i modelli di business di eNeuron. L'l'ENEA inoltre parteciperà attivamente ai seguenti wokpackage: . WP2: attività relative all'analisi critica dell'attuale stato di implementazione di sistemi energetici multi-vettore locali integrati in Europa; . WP4 sviluppo del tool eNeuron; . WP5: modellizzazione degli elementi di flessibilità e delle reti di distribuzione e definizione degli scenari, nonché alla simulazione delle soluzioni tecniche fornite dal tool eNeuron; . WP6: valutazione tecno-economica dei risultati dei test svolti nei siti pilota in Europa; . WP7: valutazione del potenziale di replicazione delle soluzioni implementate nei siti pilota. L'ENEA contribuirà anche all'elaborazione di raccomandazioni e linee guida generali per favorire la decarbonizzazione delle isole energetiche; . WP8: attività di diffusione e disseminazione.

N. Contratto: 889385

ENPOR

Actions to Mitigate Energy Poverty in the Private Rented Sector

Coordinatore: IEECP - INSTITUTE FOR EUROPEAN ENERGY AND CLIMATE POLICY STICHTING (Paesi Bassi)

N. Partner: 12

Abstract:

Energy poverty remains at high levels in the EU Member States due to increasing energy costs and slow progress on energy efficiency improvements. Despite various policies in place that directly or indirectly mitigate energy poverty in the household level, energy poverty is increasing in the private rented sector (PRS). The PRS also presents quite specific issues that cannot be dealt adequately in the framework of energy poverty linked directly to energy efficiency, such as a) difficulty to identify and quantify energy poor households in the PRS; and b) the delivery of energy efficiency measures to these households is difficult due to structural problems like information deficits, split incentives and others. ENPOR thus aims to overcome both challenges – making energy poverty in the PRS visible and as far as possible quantifiable, and also test energy efficiency support schemes to address it. This can increase the effectiveness of policies at a local or regional level, an alignment with structural measures is needed. Dedicated actions are therefore needed that actively contribute to alleviating energy poverty in the PRS by identifying energy poor tenants (and respective homeowners) as well as understanding and addressing their needs. TO this end, ENPOR will support the adaption and implementation of ten policies in 7 Member States tailored to the specific needs of the PRS and will integrate them into broader policy objectives. To achieve that, ENPOR will examine in depth energy poverty policies for the PRS across the EU, Monitor the dimensions of energy poverty in the PRS, support tailored policies and will provide guidelines for other countries. Through ENPOR partners links with the Covenant of Mayors, EU Energy Poverty Observatory and market (Union of Tenants and Associations of homeowners), the high-level dialogue on the EU level for the energy poverty in the PRS will be promoted.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	31-08-2023
Contributo totale:	€ 1.999.966
Costo eleggibile totale:	€ 1.999.966
Contributo a ENEA:	€ 154.188
Costo eleggibile ENEA:	€ 154.188
Doc. approvazione:	16/2020/DUEE
Codice atto:	PW3AAO
Resp. scientifico ENEA:	PANDOLFI EDOARDO
Unità:	DUEE-SPS-MPE

Attività ENEA:

Le attività di ENEA sono principalmente legate ai seguenti WP: - WP3: “Design of the policies for energy poverty in the PRS”: questo WP rappresenta l’attività principale del progetto. Le Agenzie per l'energia (e altri partner di ENPOR) dovranno fornire supporto ai governi nazionali e regionali in Germania, Grecia, Estonia, Italia, Croazia, Austria e Paesi Bassi per adattare dieci politiche esistenti per il SAP. - WP4 “Engagement of energy poverty groups and relevant actors”: l’ENEA è il responsabile di questo WP e gestisce la parte legata al capacity building. Gli obiettivi di questo WP sono: istituire i Regional Energy Action (REACT) group per consentire lo scambio di conoscenze locali e nazionali sulla povertà energetica nell’ASP; svolgere attività di capacity building alle parti interessate per migliorare l'attuazione delle politiche ENPOR; integrare le attività ENPOR nel dialogo politico a livello UE e in altre iniziative sulla povertà energetica. - WP5 ”Exploitation, dissemination and policy recommendations”: lo scopo di questo WP è quello di trarre insegnamenti dall'attuazione delle politiche promosse da ENPOR ed evidenziare quali sono stati le strategie più efficaci per superare le barriere nell’APS in modo che possano essere adottate da una comunità più ampia. - WP6 “Communication activities”: questo WP racchiude tutte le attività di comunicazione necessarie alla buona riuscita del progetto tra cui: definizione di un piano di comunicazione, creazione di un sito web, eventi, attività di networking.

N. Contratto: 883947

ENTRANCES

ENergy TRANsitions from Coal and carbon: Effects on Societies

Coordinatore: UNIV. DA CORUNA (Spagna) N. Partner: 14

Abstract:

"This project is framed under the topic ""SSH aspects of the Clean-Energy Transition"" and it tries to interpret the ""Challengues facing the carbon intensive regions"" within a multi-contextual framework: 1) the de-carbonisation policies; 2) the ongoing processes of de-territorialisation; and 3) the territorial dimension of clean energy transition. These contextual elements are presented in the project, providing an interpretation of the main research questions of the topic.: a) The de-carbonisation of coal and carbon intensive regions risks to be a cul de sac of the energy transition process. Along with this process a set of conflicts emerge and move from local to national and European level and vice-versa. One of the main ideas of the project is analysing these conflicts and the negotiation processes related to them, as well as the political cultures and discourses behind these conflicts; b) The challenges facing coal and carbon-intensive regions are studied in the light of the ongoing process at the territorial level. Another main idea of the project is to identifying the factors of de-territorialisation in action in different coal and carbon-intensive regions and to explain their dynamics and interactions; c) The clean energy transition cannot be understood only as a technological change or as an industrial shift, and it is studied as a socio-economic-psychological process affectng the life of local communities. In this respect the project is focused on the study of the coping strategies from a wide array of perspectives: A multidimensional perspective, combining different disciplinary frameworks; a comparative perspective, developing a comprehensive set of case studies; and a multilevel perspective, involving different key players at territorial, regional, national, European and global level. Each of these strategies will be developed in a specific strand of research: Theoretical strand, Analytic strand, and Pro-active strand."

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-05-2020
Data scadenza:	30-04-2023
Contributo totale:	€ 2.999.524
Costo eleggibile totale:	€ 2.999.524
Contributo a ENEA:	€ 193.958
Costo eleggibile ENEA:	€ 193.958
Doc. approvazione:	41/2020/DTE
Codice atto:	PT6AAK
Resp. scientifico ENEA:	DE LUCA ELENA
Unità:	DTE

Attività ENEA:

L'ENEA è impegnata in tutti i work package (WP) del progetto; i principali contributi forniti da ENEA riguardano i seguenti WP: WP4 'Carbon-intensive regions case studies' in cui è leader della task 4.1 'Brindisi case study'; WP6 'Knowledge co-production and recommendations' il cui obiettivo generale è quello di integrare le conoscenze maturate e i dati raccolti nel corso del progetto per definire e categorizzare sia le barriere da superare sia le prospettive da valorizzare nel contesto dello scenario di transizione energetica nei paesi europei a alta intensità di carbonio e carbone.

N. Contratto: 824158

EoCOE-II

Energy oriented center of excellence: towards exascale for energy

Coordinatore: CEA (Francia) N. Partner: 18

Abstract:

The Energy-oriented Centre of Excellence (EoCoE) applies cutting-edge computational methods in its mission to accelerate the transition to the production, storage and management of clean, decarbonized energy. EoCoE is anchored in the High Performance Computing (HPC) community and targets research institutes, key commercial players and SMEs who develop and enable energy-relevant numerical models to be run on exascale supercomputers, demonstrating their benefits for low-carbon energy technology. The present project will draw on a successful proof-of principle phase of EoCoE-I, where a large set of diverse computer applications from four such energy domains achieved significant efficiency gains thanks to its multidisciplinary expertise in applied mathematics and supercomputing. During this 2nd round, EoCoE-II will channel its efforts into 5 scientific Exascale challenges in the low-carbon sectors of Energy Meteorology, Materials, Water, Wind and Fusion. This multidisciplinary effort will harness innovations in computer science and mathematical algorithms within a tightly integrated co-design approach to overcome performance bottlenecks and to anticipate future HPC hardware developments. A world-class consortium of 18 complementary partners from 7 countries will form a unique network of expertise in energy science, scientific computing and HPC, including 3 leading European supercomputing centres. New modelling capabilities in selected energy sectors will be created at unprecedented scale, demonstrating the potential benefits to the energy industry, such as accelerated design of storage devices, high-resolution probabilistic wind and solar forecasting for the power grid and quantitative understanding of plasma core-edge interactions in ITER-scale tokamaks. These flagship applications will provide a high-visibility platform for highperformance computational energy science, cross-fertilized through close working connections to the EERA and EUROfusion consortia.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-01-2019
Data scadenza:	30-06-2022
Contributo totale:	€ 8.303.455
Costo eleggibile totale:	€ 8.621.955
Contributo a ENEA:	€ 501.750
Costo eleggibile ENEA:	€ 501.750
Doc. approvazione:	74/E/2018/DTE
Codice atto:	PT3AAE
Resp. scientifico ENEA:	CELINO MASSIMO
Unità:	DTE-ICT

Attività ENEA:

L'ENEA partecipa a task chiave che la pongono al centro di attività strategiche verso l'industria e centri di modellistica numerica. In particolare l'ENEA è impegnata nei seguenti work package (WP): . WP1 Exascale science challenges in energy research - leader del Task 1.3 "Materials for energy"; . WP4 I/O and Data Flow - partecipa al Task 4.2 "I/O refactoring and optimization"; . WP6 Dissemination and Networking - leader del Work package; leader del Task 6.1 "Dissemination and communication of results and knowledge"; partecipa a ulteriori task di questo work package; . WP7 Management - partecipa ai task 7.1 "Strategic and technical coordination" e 7.4 "EoCoE Sustainability Plan"

N. Contratto: 101036086

ERN-APULIA3

European Researchers

Coordinatore: UNIV. SALENTO (Italia) N. Partner: 12

Abstract:

ERN-Apulia3 targets to continue bringing Apulian population closer to researchers and viceversa. Apulia is an Italian region with about 4.1 million inhabitants and 4 public universities having a total of about 2800 permanent researchers in addition to those in Public and Private Research Institutions. The large capacity of beneficiaries was already demonstrated in the past EU-funded project for 2018, 2019 and 2020 Nights. ERN-Apulia3 further enlarged the network of partners in order to overpass its previous achievements. Main objectives are: - to implement preparatory events and the 2021 ERN, with particular attention to students, industrial and professional organizations, municipalities and public administrations, already actively involved in the past editions; - to increase public awareness and recognition of the importance and impact of research in daily life, with specific examples from ICT to health and life sciences, from elementary particle to cultural heritage, etc with a special emphasis on societal challenges for the 2021 edition; - to stimulate curiosity and interest and explain the fascinating world and the opportunities in research, especially to the youngest as a mean to encourage them to embark scientific careers; - to establish a tight connection among population/institutions and researcher to continue during the year; - to prepare and publicize dissemination materials along with scientific games and site visits (including laboratories and sites of cultural interest) to be available during the whole year for the general public; - to explain the spirit and opportunities of the European Research Area, the Marie Sklodowska-Curie actions and the principles of The European Charter for Researchers; - to reach a number of Facebook Impressions >1.5M and Reach >400k, Youtube Views > 30k and watch time > 1000h, followers close to 200k, participants > 100k (among all the various initiatives) and a participants to the ERN > 50k.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 MSCA Marie Skl. Curie Actions
Data inizio:	02-05-2021
Data scadenza:	01-03-2022
Contributo totale:	€ 178.850
Costo eleggibile totale:	€ 237.055
Contributo a ENEA:	€ 10.000
Costo eleggibile ENEA:	€ 10.000
Doc. approvazione:	96 /2021/SSPT/PROMAS
Codice atto:	PS3ADE
Resp. scientifico ENEA:	PENZA MICHELE
Unità:	SSPT-PROMAS-MATAS

Attività ENEA:

L'attività proposta ERN-APULIA 3 per il 2021 è la prosecuzione naturale delle edizioni Notte Europea dei Ricercatori edizione biennale 2018-2019 svolte in collaborazione con i partner del Sistema Accademico Pugliese ed Enti Pubblici di Ricerca operanti in Puglia. Le attività coinvolgono tutto il personale del Centro di Brindisi e più in generale il personale ENEA e consistono prevalentemente in attività sia in digitale che in presenza, se ci saranno le condizioni di sicurezza sanitaria. In particolare, visita guidata ai laboratori, allestimento di stand dimostrativi, presentazioni, discussioni, open desk, esperimenti didattici, esperienze multi-laboratoriali, giochi di ricerca con studenti, dibattiti, commenti a libri, conversazioni divulgative, illustrazione di dimostratori e prototipi, video esplicativi di scienza e tecnologia, video-collegamenti, tele-conferenze, interviste ad esperti.

N. Contratto: 101059543 ***ESFR-SIMPLE***

European Sodium Fast Reactor - Safety by Innovative Monitoring, Power Level flexibility and Experimental research

Coordinatore: CEA (Francia) N. Partner: 16

Abstract:

To facilitate the integration of the future nuclear reactors into the European energy system, it is necessary to demonstrate that the reactors have uncompromised safety and meet the future societal needs. The ESFR-SIMPLE project aims at challenging the current European Sodium Fast Reactor (ESFR) design to improve its safety and economics through implementation of innovative technologies in accordance with the ESNII roadmap. The project has 5 specific objectives: 1) Rethink the ESFR design in order to simplify it and make it more cost-competitive, while still achieving resource sustainability and having safety reinforced by intrinsic behaviour. This can be accomplished through reducing the size of the reactor, which will also allow taking advantage of Small Modular Reactor features such as transportability, modularisation, standardisation, and flexible operation, all ultimately leading to improved economics. 2) Assess impact of alternative technologies, such as metallic fuel and compact secondary system design, for the large-size ESFR on the economics and safety. 3) Propose, develop and assess advanced methods of monitoring and processing operational data using Artificial Intelligence, e.g., to optimise fault detection in steam generators at an early stage. 4) Produce new experimental data in order to assist in qualification of innovative components, such as expansion bellows, core catcher and thermo-electric pumps. 5) Ensure that the knowledge generated in the project is shared not only among the project partner institutions, but also with a wide range of stakeholders in Europe and internationally. The project activities will also be informed by the public and other stakeholders' perception of risks and benefits of ESFR technology. Close interactions with EU safety regulator experts will enable continued review and recommendation of the solutions proposed and developed in the project.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-10-2022
Data scadenza:	30-09-2026
Contributo totale:	€ 3.046.561
Costo eleggibile totale:	€ 6.506.234
Contributo a ENEA:	€ 78.727
Costo eleggibile ENEA:	€ 152.768
Doc. approvazione:	067/2022/FSN
Codice atto:	PF6AAR
Resp. scientifico ENEA:	POLIDORI MASSIMILIANO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA sarà coinvolta nei seguenti work package: WP4 dedicato a studi di sicurezza di SMR WP8 dedicato all'ottimizzazione dell'elemento di combustibile

N. Contratto: 754501

ESFR-SMART

European Sodium Fast Reactor Safety Measures Assessment and Research Tools

Coordinatore: PAUL SCHERRER INSTITUT (Svizzera) N. Partner: 19

Abstract:

To improve the public acceptance of the future nuclear power in Europe we have to demonstrate that the new reactors have significantly higher safety level compared to traditional reactors. The ESFR-SMART project (European Sodium Fast Reactor Safety Measures Assessment and Research Tools) aims at enhancing further the safety of Generation-IV SFRs and in particular of the commercial-size European Sodium Fast Reactor (ESFR) in accordance with the ESNII roadmap and in close cooperation with the ASTRID program. The project aims at 5 specific objectives: 1) Produce new experimental data in order to support calibration and validation of the computational tools for each defence-in-depth level. 2) Test and qualify new instrumentations in order to support their utilization in the reactor protection system. 3) Perform further calibration and validation of the computational tools for each defence-in-depth level in order to support safety assessments of Generation-IV SFRs, using the data produced in the project as well as selected legacy data. 4) Select, implement and assess new safety measures for the commercial-size ESFR, using the GIF methodologies, the FP7 CP-ESFR project legacy, the calibrated and validated codes and being in accordance with the update of the European and international safety frameworks taking into account the Fukushima accident. 5) Strengthen and link together new networks, in particular, the network of the European sodium facilities and the network of the European students working on the SFR technology. Close interactions with the main European and international SFR stakeholders (GIF, ARDECo, ESNII and IAEA) via the Advisory Review Panel will enable reviews and recommendations on the project's progress as well as dissemination of the new knowledge created by the project. By addressing the industry, policy makers and general public, the project is expected to make a meaningful impact on economics, EU policy and society.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2017
Data scadenza:	31-08-2022
Contributo totale:	€ 5.000.000
Costo eleggibile totale:	€ 9.911.150
Contributo a ENEA:	€ 124.381
Costo eleggibile ENEA:	€ 269.613
Doc. approvazione:	86/2017/FSN
Codice atto:	PF6AAE
Resp. scientifico ENEA:	LOMBARDO CALOGERA
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA è coinvolta nei seguenti work package: WP1.1 - 'New safety measures' con il compito di revisione del lavoro degli altri partners nelle tasks 1.1.1 e 1.1.3 Wp1.3 - 'Normal operation' relativamente a: assessment della transiione da circolazione forzata a circolazione naturale; assessment delle pompe primarie; assessment dei sistemi di rimozione del calore di decadimento e assessment del sistema passivo di core shutdown. WP2.1 - 'Codes calibration and validation' partecipando allo 'SPX thermal hydraulics benchmark exercise' e all'assessment di modelli numerici WP3.1 - Dissemination, education and training per l'organizzazione del Workshop W1 Sodium facilities design and safe operation presso l'ENEA Casaccia.

N. Contratto: 101007226 ***e-SHyIPS***

Ecosystemic knowledge in Standards for Hydrogen Implementation on Passenger Ship

Coordinatore: POLITECNICO DI MILANO (Italia) N. Partner: 15

Abstract:

Hydrogen fuel cells market potentials in the maritime sector have been demonstrated in the last years with several vessels flagship projects. Despite hydrogen is a worldwide considered a valid option to reach the emission reduction targets, also part of the International Maritime Organization (IMO) strategy, a regulatory framework applicable to hydrogen fuelled ships is not yet available. E-SHyIPS brings together the Hydrogen and maritime stakeholders and international experts, through an Advisory Board, to gather new knowledge based on regulatory framework review and experimental data on ship design, safety systems, material and components and bunkering procedures. The approach is ""vessel independent"", in order to avoid the burdens of customized projects, and is focused on the risk and safety assessment methodologies. Based on this, e-SHyIPS will define a pre-standardization plan for IGF code update for the hydrogen-based fuels passenger ships and a roadmap for the boost of Hydrogen economy in the maritime sector.

Anno di stipula:	2021
Tipo progetto:	FCH2-RIA
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2021
Data scadenza:	31-12-2024
Contributo totale:	€ 2.500.000
Costo eleggibile totale:	€ 2.500.000
Contributo a ENEA:	€ 25.000
Costo eleggibile ENEA:	€ 25.000
Doc. approvazione:	134/2021/TERIN
Codice atto:	PK4AAJ
Resp. scientifico ENEA:	CIGOLOTTI VIVIANA
Unità:	TERIN-PSU-ABI

Attività ENEA:

ENEA svolgerà il ruolo di terza parte di ATENA e sarà coinvolta nei seguenti WP come supporto ad ATENA; in particolare le attività di competenza ENEA si possono riassumere e sintetizzare nei seguenti punti: • WP1-Task 1.1: Project concept and functional scenarios definition and review; • WP2- Task 2.1: Vessel Requirements Definition: Functional and Technical; • WP6- Task 6.1: Definition of functional requirements for the use of hydrogen in maritime; • WP7- Dissemination, Communication and Exploitation. Le attività verranno condotte in diretta collaborazione con ATENA.

N. Contratto: 101079773

EuPRAXIA

EuPRAXIA Preparatory Phase Project

Coordinatore: INFN (Italia) N. Partner: 34

Abstract:

EuPRAXIA is a distributed, compact and innovative accelerator facility based on plasma technology. It has been selected for the 2021 Update of the ESFRI Roadmap. In its first phase, its consortium of 51 institutes and industry partners will construct an electron-beamdriven plasma accelerator in the metropolitan area of Rome, thus bringing innovation, potential for spin-off companies, state-of-the art scientific applications and a vibrant international user community to the middle of Italy. In its second phase, EuPRAXIA will build one laser-driven plasma accelerator at a site to be chosen between several options in Europe. EuPRAXIA will serve users in ultra-fast science, e.g. on high-resolution medical imaging, deeply penetrating positron annihilation spectroscopy for materials and with Europe's most southern free-electron laser (FEL). It will offer fascinating capabilities for research on biomolecules, viruses and microscopic processes. EuPRAXIA will thus be a transformative step in the development of ultra-compact accelerators and applications. The Preparatory Phase project EuPRAXIA-PP will prepare its full implementation.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Research Infrastructures (2021-2027)
Data inizio:	01-11-2022
Data scadenza:	31-10-2026
Contributo totale:	€ 2.490.000
Costo eleggibile totale:	€ 2.490.000
Contributo a ENEA:	€ 30.000
Costo eleggibile ENEA:	€ 30.000
Doc. approvazione:	114/2022/FSN
Codice atto:	PF2AAK
Resp. scientifico ENEA:	NGUYEN FEDERICO
Unità:	FSN-FUSPHY-TSM

Attività ENEA:

L'ENEA partecipa al Work Package 9 – RF, Magnets and Beamline Components, del quale è il Co-Leader.

N. Contratto: 786805

EXERTER

Security of Explosives pan-European Specialists Network

Coordinatore: FOI SWEDISH DEFENCE RESEARCH AGENCY (Svezia) N. Partner: 21

Abstract:

EXERTER connects 22 practitioners from 13 EU Member States into a Network with Explosives Specialists within the Security of Explosives (SoE) area. The objective of the EXERTER Network is to bridge the difficulties for security practitioners to capture and utilize research results and to direct the industry's innovation efforts to address the most pressing needs in the fight against terrorism and serious crime. Practitioners will via EXERTER get improved operational capability via novel technologies, methods and knowledge to aid them in executing more efficient countermeasures in a changing threat environment. In cooperation with key practitioners in the Network, the project will each year define one unique scenario based on past events to facilitate the identification of capability gaps along different counter-terrorist phases associated with PREVENT, DETECT, MITIGATE and REACT. With its explosives expertise, EXERTER will provide recommendations to the SoE community on how these gaps can be countered by (i) directing innovators into targeted areas to which research programmes should focus, (ii) proposing standardization priority areas and (iii) advising on exploitation and commercialisation opportunities. Ongoing research activities will continuously be reviewed to promote practitioners' uptake of results and knowledge. Academia and research institutes will be supported by the technical expertise within EXERTER to lower exploitation barriers for promising research by enhancing their interaction with security industry. EXERTER will assess evolving threats requiring immediate attention of the SoE community - thus widely addressing emerging technologies and trends. Annual interaction workshops will be held where explosives practitioners, research institutes and academia as well as industry gather to discuss the current state of play and future roadmaps to answer to urgent capability requirements.

Anno di stipula:	2018
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Secure societies
Data inizio:	01-06-2018
Data scadenza:	31-05-2023
Contributo totale:	€ 3.498.869
Costo eleggibile totale:	€ 3.498.869
Contributo a ENEA:	€ 150.313
Costo eleggibile ENEA:	€ 150.313
Doc. approvazione:	052/2018/FSN
Codice atto:	PF7AAG
Resp. scientifico ENEA:	CHIRICO ROBERTO
Unità:	FSN-TECFIS-DIM

Attività ENEA:

Diagnostiche fisiche finalizzate all'uso di precursori degli esplosivi.

N. Contratto: 857160

EXPAND II

URBAN EUROPE

Widening participation of countries and stakeholders in JPI Urban Europe through capacity building in urban policy, funding and research

Coordinatore: NWO - NETHERLANDS ORGANISATION FOR SCIENTIFIC RESEARCH (Paesi Bassi) N. Partner: 17

Abstract:

In an era of global competition for commerce, industry, tourism, labour and investment, Europe's cities should transition towards a future that maximises sustainability, resilience and liveability. This is the goal of the Joint Programming Initiative (JPI) Urban Europe Strategic Research and Innovation Agenda 2.0 (SRIA 2.0) which responds to the urgent need for ambitious, sustained and inter- and trans-disciplinary research. The EXPAND II project will widen the community and build capacities in research, urban policy and society. As such, it will target Widening Countries to launch national dialogues and processes, mobilise national research & innovation (R&I) communities, intensify strategic relationships of urban stakeholders at a transnational level, and assess national programmes and instruments for transnational R&I cooperation.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Spreading Excellence and Widening Participation - WIDESPREAD
Data inizio:	01-06-2019
Data scadenza:	31-03-2022
Contributo totale:	€ 1.499.438
Costo eleggibile totale:	€ 1.499.438
Contributo a ENEA:	€ 54.250
Costo eleggibile ENEA:	€ 54.250
Doc. approvazione:	54/E/2019/DTE
Codice atto:	PT5ABB
Resp. scientifico ENEA:	MASSA GILDA
Unità:	DTE-SEN-CROSS

Attività ENEA:

L'ENEA partecipa al progetto e coordina il work package 3: 'ampliamento dell'azione di capacity building e allineamento: soluzioni congiunte per policy, programmi e ricerca e coinvolgimento degli stakeholder a livello nazionale'. Partecipa inoltre alle attività di comunicazione e diffusione previste dal work package 6.

N. Contratto: F4E-FPA-327(PMS-DG):SG07

F4E-FPA-327 SG07

Development of the final design and prototyping

Coordinatore: ENEA (Italia) N. Partner: 7

Abstract:
The ultimate objective of the project is to complete the design of all ITER RNC components including electronics and software up to a Final Designa stage such that final Built-To-Print and Manufacturing Specifications can be produced by a F4E contractor to input the Manufacturing Readiness Review.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 - Euratom F4E - Fusion for energy
Data inizio:	14-02-2020
Data scadenza:	13-04-2024
Contributo totale:	€ 1.819.126
Costo eleggibile totale:	€ 4.155.088
Contributo a ENEA:	€ 1.267.827
Costo eleggibile ENEA:	€ 2.820.040
Doc. approvazione:	015/2020/FSN
Codice atto:	PF3AAF
Resp. scientifico ENEA:	MAROCCO DANIELE
Unità:	FSN-FUSTEC

Attività ENEA:

L'ENEA coordina il progetto.

N. Contratto: 863059

FNS-CLOUD

Food Nutrition Security Cloud

Coordinatore: RTDS ASSOCIATION (Austria) N. Partner: 35

Abstract:

FNS-Cloud will overcome fragmentation problems by integrating existing FNS data, which is essential for high-end, pan-European FNS research, addressing FNS, diet, health, and consumer behaviours as well as on sustainable agriculture and the bio-economy. Current fragmented FNS resources not only result in knowledge gaps that inhibit public health and agricultural policy, and the food industry from developing effective solutions, making production sustainable and consumption healthier, but also do not enable exploitation of FNS knowledge for the benefit of European citizens. FNS-Cloud will, through three Demonstrators; Agri-Food, Nutrition & Lifestyle and NCDs & the Microbiome to facilitate: (1) Analyses of regional and country-specific differences in diet including nutrition, (epi)genetics, microbiota, consumer behaviours, culture and lifestyle and their effects on health (obesity, NCDs, ethnic and traditional foods), which are essential for public health and agri-food and health policies; (2) Improved understanding agricultural differences within Europe and what these means in terms of creating a sustainable, resilient food systems for healthy diets; and (3) Clear definitions of boundaries and how these affect the compositions of foods and consumer choices and, ultimately, personal and public health in the future. Long-term sustainability of the FNS-Cloud will be based on Services that have the capacity to link with new resources and enable cross-talk amongst them; access to FNS-Cloud data will be open access, underpinned by FAIR principles (findable, accessible, interoperable and re-useable). FNS-Cloud will work closely with the proposed Food, Nutrition and Health Research Infrastructure (FNHRI) as well as METROFOOD-RI and other existing ESFRI RIs (e.g. ELIXIR, ECRIN) in which several FNS-Cloud Beneficiaries are involved directly.

Anno di stipula:	2019
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-10-2019
Data scadenza:	31-12-2023
Contributo totale:	€ 10.912.775
Costo eleggibile totale:	€ 10.912.775
Contributo a ENEA:	€ 331.138
Costo eleggibile ENEA:	€ 331.138
Doc. approvazione:	229/219/SSPT-BIOAG
Codice atto:	PS1AAB
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

L'attività dell'ENEA s'inserisce pienamente negli obiettivi e nelle azioni condotte per la realizzazione e il coordinamento dell'infrastruttura di ricerca METROFOOD-RI. L'ENEA partecipa alle attività previste nei seguenti work package: 2. Data standardisation and interoperability; 4. Use cases; 5. FSN demonstrators; 6. Education and training; 7. Dissemination, exploitation, communication and community; 8. Coordination

N. Contratto: 823964

FocusCoE

Concerted action for the European HPC CoEs

Coordinatore: SCAPOS AG (Germania) N. Partner: 11

Abstract:

High Performance Computing (HPC) has been recognised by the European Union as a key component of the digital single market strategy. The EuroHPC Joint Undertaking is being created to support an integrated European HPC ecosystem covering all scientific and industrial value chain segments (hardware, software, applications, services, interconnections, and skills). HPC applications have a pivotal role in the HPC ecosystem: borrowing a promotional slogan used previously by the IEEE SC (supercomputing) conference – HPC Matters, primarily because the use of HPC (to address industrial, scientific and societal challenges) matters! As has been presented by the European Commission and the European Technology Platform for HPC (ETP4HPC) when establishing the contractual public private partnership (cPPP) for HPC, the European HPC Centres of Excellence (CoEs) constitute the applications-oriented pillar of the European HPC Initiative (complementing infrastructure and computing technology development). FocusCoE will contribute to the success of the EU HPC Ecosystem and the EuroHPC Initiative by supporting the EU HPC CoEs to more effectively fulfil their role within the ecosystem and initiative: ensuring that extreme scale applications result in tangible benefits for addressing scientific, industrial or societal challenges. It will do this by creating an effective platform for the CoEs to coordinate strategic directions and collaboration (addressing possible fragmentation of activities across the CoEs and coordinating interactions with the overall HPC ecosystem) and will provide support services for the CoEs in relation to both industrial outreach and promotion of their services and competences by acting as a focal point for users to discover those services.

Anno di stipula:	2018
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-12-2018
Data scadenza:	31-03-2022
Contributo totale:	€ 1.997.921
Costo eleggibile totale:	€ 1.997.921
Contributo a ENEA:	€ 194.625
Costo eleggibile ENEA:	€ 194.625
Doc. approvazione:	62/E/2018/DTE
Codice atto:	PT3AAD
Resp. scientifico ENEA:	CHINNICI MARTA
Unità:	DTE-ICT-PRA

Attività ENEA:

L'ENEA è impegnata in task chiave che la pongono al centro di numerose attività strategiche verso l'industria e i Centri di eccellenza. In particolare l'ENEA è impegnata nei seguenti work package: WP1 Management: task 'Operational Management' WP3 CoE-Industri interaction: task 'Action planning and monitoring of success'; 'Sectorial communication activities'; 'Coordination with HPC SMEs initiatives'; WP5 Promoting EU HPC CoEs: task 'Support for CoE Event Management'; task 'Operational Support for Dissemination and outreach Infrastructure'

N. Contratto: 101000613

FOODSAFETY4EU

FOODSAFETY4EU - MULTI-STAKEHOLDER PLATFORM FOR FOOD SAFETY IN EUROPE

Coordinatore: CNR - CONSIGLIO NAZIONALE DELLE RICERCHE (Italia) N. Partner: 23

Abstract:

FOODSAFETY4EU is a Project focused to design, develop and release a multi-stakeholder platform for the future European Food Safety System (FSS), by structuring a participatory process, which sustains a responsive and adaptive community of FSS actors. The platform will enable the FSS actors to access efficiently resources and data, synchronize food safety research strategies, share and exchange scientific knowledge and contributions for the future EU FSS. It will boost interactive cooperation within the system and with the civil society for enhancing public confidence through dedicated tools. A European Food Safety Forum will be set up to officially consolidate the participatory process and guarantee the long term science-policy-society interface. New digital tools, co-designed strategies and communication models will support Food Safety Authorities (FSAs), EU Agencies, policy makers, scientists and civil society in a coordinate approach, thus contributing to strengthen the EU approach to risk assessment & communication. The multi-actor consortium is pooled by a core group of 23 partners from 12 countries: scientific experts in food safety will work closely with key actors with complementary knowledge in: a) developing and structuring of participatory processes; b) stakeholders engagement, communication and networking; c) e-platforms, smart tools, data management; d) Food Safety policies implementation; e) representing the voices from food and feed industry, consumers and the civil society. A network of other 44 Food Safety actors – engaged as “Supporting partners” – are committed to populate the platform and interact by expressing opinions, sharing information, data and reports; providing strategy advice and assuring a multiplier impact of project results.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-01-2021
Data scadenza:	31-12-2023
Contributo totale:	€ 3.000.000
Costo eleggibile totale:	€ 3.000.000
Contributo a ENEA:	€ 195.000
Costo eleggibile ENEA:	€ 195.000
Doc. approvazione:	158/2020/SSPT-BIOAG
Codice atto:	PS1ABQ
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

ENEA partecipa attivamente alle attività previste dai seguenti WP: WP1: SAFE4FOOD digital tools. In particolare ENEA curerà l’implementazione dei digital tools per la food safety, rivestendo il ruolo di WP1 Leader. WP3: Improvement of roadmaps for the future FSS - integration and forecasting WP4: Definition of the Research & Innovation framework for the future policies WP5: Strategies to improve public awareness of Food Safety and civil society engagement WP6: Co-design of the platform strategy and business model for long term cooperation WP7: Dissemination, Communication and Exploitation WP8: Coordination and Project Management

N. Contratto: 101056875

ForestNavigator

Navigating European Forests and forest bioeconomy sustainably to EU climate neutrality

Coordinatore: IIASA - INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS (Austria) N. Partner: 24

Abstract:

ForestNavigator aims at assessing the climate mitigation potential of European forests and forest-based sectors through modelling of policy pathways, consistent with the best standards of LULUCF reporting, and informing the public authorities on the most suitable approach to forest policy and bioeconomy. With a primarily European scope, ForestNavigator zooms into carefully selected EU Member States to enhance the consistency of the EU and national pathways, but the project also zooms out towards the global scale, and selected key EU trading partners, accounting for extra-EU future drivers and potential leakage effects. The project will rely on a newly developed integrated policy modelling framework for the EU forests and forest bioeconomy covering i) all relevant mitigation strategies from forest management to energy and material substitution, ii) climate change impacts, adaptation, and natural disturbances, iii) biophysical climate feedbacks, iv) systematically accounting for impacts on biodiversity, forest ecosystem services, and other forest functions, incl. jobs and green growth. To increase the accessibility of the models and pathways assessments, their understanding and transparency, a novel decision-making platform will be established consisting of the web-based ForestNavigator Portal, and a community of policymakers, national authorities, and modelers, the Forest Policy Modelling Forum. To reach its ambitious objectives, ForestNavigator will i) harmonize, integrate and continuously update existing datasets by, including national inventories with new remote sensing data and models ii) start from complex forest and climate models and through emulators build them into operational policy modelling tools, iii) integrate biophysical and socio-economic information, iv) consider EU forests and forest bioeconomy in the broader context of other land use and economic sectors, v) rely on input from policy makers and other stakeholders.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Climate Science
Data inizio:	01-10-2022
Data scadenza:	30-09-2026
Contributo totale:	€ 5.995.241
Costo eleggibile totale:	€ 5.995.241
Contributo a ENEA:	€ 212.653
Costo eleggibile ENEA:	€ 212.653
Doc. approvazione:	93/2022/SSPT-MET
Codice atto:	PS2ACI
Resp. scientifico ENEA:	MICHETTI MELANIA
Unità:	SSPT-MET

Attività ENEA:

Le attività ENEA prevedono il reperimento, la produzione e l'analisi di dati utili a: i) raccogliere le valutazioni di diversi portatori di interesse verso diverse combinazioni di gestione forestale; ii)valutare i trade-off tra diversi servizi ecosistemici forestali iii) produrre una metanalisi sul servizio ecosistemico culturale/ricreativo delle foreste. ENEA supporterà inoltre le attività di coinvolgimento di differenti categorie di stakeholder all'interno del progetto e la disseminazione dei risultati.

N. Contratto: 101060800

FREDMANS

Fuel Recycle and Experimentally Demonstrated Manufacturing of Advanced Nuclear Solutions for Safety

Coordinatore: UNIV. TECHNOLOGY CHALMERS (Svezia) N. Partner: 17

Abstract:

FREDMANS aims to increase safety and efficiency in both nuclear power production as well as the recycling of spent fuel. Changing from oxide fuel to a more fissile dense material with higher thermal conductivity can enhance both safety of operation and the economicimpact of nuclear power. At the same time, a transition to a greener society with respect to both the generation and usage of electricity will drastically increase consumption of finite materials. Generation is predicted to increase by 16?20 times, in particular as electrification replaces the direct use of fossil fuels for heating and transportation. The nuclear industry can mitigate their part of the resource use through the recycling of spent nuclear fuel. This can enhance the actual power output by about 20 times. However, today there has been no full industrial demonstration of the complete recycling of nuclear fuel, although one time recycling, including of plutonium, has been used on large scale for many years e.g. in France. The model fuel is nitride fuel. It may be more energy efficient/economically advantageous to recycle not only the fissile material, but also the required isotopically enriched N-15 that is otherwise currently a costly raw material. The project sets objectives that address the overall goals of the SET plan, SNETP and EERA JPNM SRA to answer the specific aims of this call relating to the safety of advanced fuels and their recyclability, in particular nitrides highlighted in the call. We will prove that advanced fuels are a viable option for industrial use that can enhance the safety, sustainability and economics of nuclear power operation. The work packages are: Advanced Manufacturing, Recyclability, Waste Management, and Industrial Applications. Across all these WPs, the crucial aspect of safety is held in high focus.As the real safety of future nuclear systems is achieved through well educated people, an extensive Training & Education work package is included.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-09-2022
Data scadenza:	31-08-2026
Contributo totale:	€ 2.503.797
Costo eleggibile totale:	€ 2.904.416
Contributo a ENEA:	€ 22.000
Costo eleggibile ENEA:	€ 24.375
Doc. approvazione:	080/2022/FSN
Codice atto:	PF6AAV
Resp. scientifico ENEA:	LODI FRANCESCO
Unità:	FSN-SICNUC-PSSN

Attività ENEA:

ENEA è coinvolta nei seguenti work package (WP): - WP4 dedicato al progetto concettuale dell'impianto di fabbricazione e riprocessamento di combustibile nitruro Task 4.2: Design concettuale della fabbrica di UN e relativo impianto di arricchimento di N-15. Il risultato sarà il layout preliminare dell'impianto, la definizione dei flussi di materiale e la descrizione concettuale dei principali componenti.

N. Contratto: 101069828

FuelSOME

Multifuel SOFC system with Maritime Energy vectors

Coordinatore: AVL LIST GMBH (Austria) N. Partner: 11

Abstract:

Shipping is responsible for the emission of about 1 billion tons of carbon dioxide (CO2) and about 2.5% of global greenhouse gas (GHG) emissions worldwide. The drastic reduction of GHG emissions from ships has been set as one of the urgent targets to achieve the EU Green deal objectives. As a result, the maritime industry, which is a hard-to-decarbonize sector, is actively seeking for alternate solutions/technology which can make it more climate friendly but at the same time does not compromise on the current performance levels. Leveraging novel concepts as well as assets from former projects and initiatives, the project FuelSOME focuses on establishing the technological feasibility of a flexible, scalable, and multi-fuel capable energy generation system based on Solid Oxide Fuel Cells (SOFC) technology specially catered for long-distance maritime shipping. This system will be able to operate on Ammonia, Methanol and Hydrogen and their mixtures for which short and long-term sustainable supply pathways will be explored. Finally, on a broader level, an in-depth and detailed investigation on the environmental, social, and economic benefits of developing such a system for the European industry, the maritime sector and the citizens will be carried out. The future roadmap of the project is that the outcomes generated will not only benefit the maritime industry but can also serve as a blueprint/launchpad for implementing the same technology in other hard to abate emission sectors and/or, thereby enabling multi-fuel energy generators to become the norm in the future. The consortium comprises 8 partners: 7 partners from 6 European Member States and 1 partner from a non-associated third country (Switzerland). The FuelSOME consortium unites the necessary multidisciplinary knowledge, expertise, skills, and resources to constitute a representative value chain of actors, which together can achieve the project's ambitious objectives.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Cross-cutting solutions
Data inizio:	01-09-2022
Data scadenza:	31-08-2026
Contributo totale:	€ 2.499.986
Costo eleggibile totale:	€ 2.499.986
Contributo a ENEA:	€ 25.000
Costo eleggibile ENEA:	€ 25.000
Doc. approvazione:	156/TERIN/
Codice atto:	PK4AAR
Resp. scientifico ENEA:	CIGOLOTTI VIVIANA
Unità:	TERIN-PSU-ABI

Attività ENEA:

ENEA svolgerà il ruolo di terza parte di ATENA e sarà coinvolta nei seguenti WP come supporto ad ATENA; in particolare le attività di competenza ENEA si possono riassumere e sintetizzare nei seguenti punti: • WP4-Task 4.1: System definition and overarching impact assessment framework for TEA and LCSA; • WP4-Task 4.2: Techno-economic analysis; • WP4-Task 4.3: Prospective Life Cycle Sustainability Assessment (LCSA) focusing on environmental, social and economic impacts, including biodiversity); • WP5-Dissemination, Communication and Exploitation.

N. Contratto: 894356

GEAR-at-SME

GENERATE ENERGY EFFICIENT ACTING AND RESULTS AT SMALL & MEDIUM ENTERPRISES

Coordinatore: TNO - NETHERLANDS ORGANISATION FOR APPLIED SCIENTIFIC RESEARCH (Paesi Bassi) N. Partner: 11

Abstract:

The untapped potential of energy efficiency will be addressed by the GEAR@SME consortium by substantiating the role of a local Trusted Partner to bridge the gap between SMEs (demand side) and suppliers of energy services toward SMEs (supply side) such that SMEs will effectively undergo energy audits and implement energy saving measures. The Trusted Partner will be supported by the GEAR@SME methodology, which aims to catalyse the implementation of energy efficiency measures by taking a local, collective approach based on multiple benefits, tailored to the specific locality. After demonstrating the effectiveness of the common methodology in four use cases, large-scale rollout will be supported by an online platform offering documentation, stand-alone tools, and an interactive platform to support a Community of Practice for Trusted Partners. The GEAR@SME methodology will be tested and validated in four countries (Germany, Italy, Netherlands and Romania), reaching out to a minimum of 300 SMEs per location. While four locations will be targeted within the project as use case, another 80 locations will be reached through the communication and exploitation activities within project lifetime. Beyond project lifetime, another 600 locations will be reached through dissemination events and the online portal. The GEAR@SME consortium has extensive expertise on activating, organising and enabling SMEs to take energy efficiency actions, from concept to validation to implementation. The team includes research organisations (TNO, C-MAC), consultancies with expertise on SMEs and energy efficiency (CIT, CCS). Validation of the methodology will be carried out by CCS, C-MAC, BEA and SERVELECT all of whom have track records in engaging with SMEs on energy issues. Finally, an exploitation strategy and further roll out will be carried out by SYNYO and multiplier organisations (CNA, CLOK and TUCN).

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	28-02-2023
Contributo totale:	€ 1.993.228
Costo eleggibile totale:	€ 1.993.228
Contributo a ENEA:	€ 98.773
Costo eleggibile ENEA:	€ 98.779
Doc. approvazione:	17/2021/DUEE-SPS
Codice atto:	PW3AAX
Resp. scientifico ENEA:	SEGRETO MARIA-ANNA
Unità:	DUEE-SPS-SEI

Attività ENEA:

ENEA partecipa al progetto in qualità in qualità di "third linked party" associata al partner CERTIMAC. Gli obiettivi del Progetto intercettano diversi ambiti in cui ENEA è attivamente impegnata da anni nella sua attività di supporto alle politiche pubbliche in tema di efficienza energetica. ENEA ha il compito di analizzare gli strumenti esistenti per i servizi di efficienza energetica, adattarli per l'approccio GEAR@SME e sviluppare strumenti strategici integrali per colmare il divario tra domanda e offerta di servizi di efficienza energetica.

N. Contratto: 101006656

GICO

Gasification Integrated with CO2 capture and conversion

Coordinatore: UNIV. GUGLIELMO MARCONI (Italia) N. Partner: 10

Abstract:

In order to overcome the main barriers that prevent renewable energy technologies from forming the backbone of the energy system, GICO develops new materials (CO2 capture sorbents; high temperature inorganic removal sorbents; catalytic filter candles; membranes for oxygen separation and methanol production) and technologies (Hydro Thermal Carbonisation; Sorption Enhanced Gasification; Hot Gas Conditioning; Carbon Capture, Storage and Use; Power To Gas via Plasma conversion) to: ? produce intermediate solid (5 vs 15 €/MWh) and gaseous (10 vs 30 €/MWh with zero particulate and ppb contaminants level) bioenergy carriers, ? capture CO2 (40 €/t vs 90 €/t) receiving waste high alkali content and producing bricks, ? convert CO2 to CO and O2 (90 vs 10% efficiency) storing renewable electricity excess ? produce methanol (35 vs 75 €/MWh) and electricity (100 vs 200 €/MWh), GICO encompasses technology development (materials, processes, simulations, integrated system besides full-scale design) and assessment (techno-economical, environmental, social impacts and market) and dissemination activities. GICO activities are fully innovative and constitute a breakthrough (in materials and processes development and integration) involving methodological, technological and exploitation developments achieved previously by partners´ research over many years. The GICO activities aim at developing small to medium scale residual biomass plants (i.e. 2-20 t/day and 500-5,000 kWe, compatible with the standard residual biomass availability of few thousand tons per year) will change the actual social acceptance of the energy plants. They will no longer be seen as distant large consumers of resources and emitters of pollutants but as local small/medium plants connected to communities (for waste, materials and energy with negative/zero emissions) within the circular business model (industrial symbiosis with jointly located industries) that GICO promotes.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-12-2020
Data scadenza:	30-11-2024
Contributo totale:	€ 3.928.258
Costo eleggibile totale:	€ 3.928.258
Contributo a ENEA:	€ 532.760
Costo eleggibile ENEA:	€ 532.760
Doc. approvazione:	162/2020/TERIN
Codice atto:	PK4AAB
Resp. scientifico ENEA:	STENDARDO STEFANO
Unità:	TERIN-PSU

Attività ENEA:

Nelle attività sono coinvolti impianti e laboratori dei Centri Ricerca ENEA di Trisaia e di Casaccia. In particolare: Trisaia e Casaccia nel work package 2 'Gasification and sorbent test' ; Casaccia si occuperà anche del work package 3 'CO" Conversion to CO and 02separation' e del work package 4 'Lab scale prototype: model, integration and tests'. Entrambi i centri contribuiranno anche alle attività trasversali previste nel WP1 (Management) e WP6 (Dissemination and exploitation) finalizzati rispettivamente alla gestione del progetto e alla implementazione delle azioni di diffusione e sfruttamento dei risultati generati.

N. Contratto: 2019-1-IT02-KA204-063281

GreenAbility

Green abilities to tackle social issue

Coordinatore: FRATELLO SOLE SCARL (Italia) N. Partner: 4

Abstract:

Energy poverty is an increasing socio-economic problem affecting over 50 million households in the European Union and 1 out of 10 Eu citizens. Defined by EU as a set of conditions where 'individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost', energy poverty is a key societal challenge to be addressed urgently. Energy poverty has severe health and environmental implications which have an impact on both low-income households and on Third Sector Organisations (TSOs) providing social services for children, youths, the elderly, families, the disabled and the disadvantaged people, both at their home and inside dedicated structures like care homes. To address the issue, four EU organizations joined in the proposal 'GreenAbility' which has recently been funded by the EU program Erasmus+. The project consists of an education program, based on collaboration and exchange among partners which are expert in providing social services, starting from an environmental approach, and in facing these issues both in their relation to low-income families and inside communities hosting vulnerable people in specific care homes.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Erasmus +
Data inizio:	01-10-2019
Data scadenza:	30-09-2022
Contributo totale:	€ 275.356
Costo eleggibile totale:	€ 275.356
Contributo a ENEA:	€ 55.666
Costo eleggibile ENEA:	€ 57.046
Doc. approvazione:	59/2019/DUEE-SPS
Codice atto:	PW3AAM
Resp. scientifico ENEA:	VIOLA CORINNA
Unità:	DUEE-SPS-MPE

Attività ENEA:

Le attività a carico dell'ENEA prevedono principalmente lo sviluppo dei contenuti formativi e relativi materiali informativi: 1) Linee guida per gli operatori del terzo settore: - comportamento: misure a costo zero; - interventi di efficienza energetica a basso costo; - interventi strutturali. 2) Booklet sulle buone pratiche 3) Policy brief I prodotti saranno sia sul sito web sia nel corso degli eventi di progetto e dei corsi di formazione.

N. Contratto: 101033844

GREENROAD

GROWING ENERGY EFFICIENCY THROUGH NATIONAL ROUNDTABLES ADDRESSES

Coordinatore: ENEA (Italia) N. Partner: 6

Abstract:

The project aims at facilitating the dialogue between Italian public and private key actors on financing issues related to energy efficiency in the existing and new buildings sector and fostering collaboration, innovation and action through the establishment of a permanent national roundtable and connected events at local level. The project will set up a national roundtable with selected high level stakeholders in order to allow an in-depth discussion about current barriers and market failures, as well as share best practice and innovative financing solutions, with the goal to improve stakeholders' awareness and knowledge and to identify the necessary political and regulatory framework. In parallel, local events and initiatives will be organized to engage as many stakeholders as possible, enabling capacity building, dissemination, replication activities and scale up of "success stories": local actors are one of the main drivers of the energy transition and they bring forward tremendous opportunities for investment and innovation in a number of fields. National roundtables and local events will be organised in order to trigger a continuous and mutually reinforcing virtuous circle. The combination of a top-down and bottom-up approach will create the conditions for the development of tailor made support tools and instruments for the different stakeholders involved. The outcomes of the national roundtables and the local events will be analysed, and a roadmap for PAs and industry sector including strategic and operative recommendations for the implementation of financial instruments will be elaborated. Connections with past and current similar initiatives at EU level will be pursued throughout the project, in order to keep the national outputs in line with EU requirements and the provisions put in place to face the ongoing global situation. Finally, different strategies to maintain the roundtables as a permanent forum after the end of the project will be proposed.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2021
Data scadenza:	29-02-2024
Contributo totale:	€ 1.186.126
Costo eleggibile totale:	€ 1.186.126
Contributo a ENEA:	€ 265.468
Costo eleggibile ENEA:	€ 265.468
Doc. approvazione:	12/2021/DUEE-SPS
Codice atto:	PW3AAV
Resp. scientifico ENEA:	PANDOLFI EDOARDO
Unità:	DUEE-SPS-MPE

Attività ENEA:

L'ENEA coordina il progetto, contribuendo alle attività di tutti i work package. In particolare: - è leader del WP1 - Coordination and Management che include tutte le attività di gestione del progetto volte a garantire che le attività rispettino quanto previsto nel GA inclusa la pianificazione temporale ed il relativo budget; - è inoltre leader del WP6 - Dissemination and communication volto alla promozione e diffusione dei risultati del progetto.

N. Contratto: 826339

H2PORTS

Implementing Fuel Cells and Hydrogen Technologies in Ports

Coordinatore: FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT (Spagna)

N. Partner: 10

Abstract:

Hydrogen is an energy carrier with great potential for clean, efficient power in transport applications. Hydrogen can be obtained from different sources, which in combination with fuel cells it can improve energy efficiency especially when hydrogen is produced by renewable energy sources. The action proposed tries to introduce hydrogen as an alternative fuel in the port industry. The H2Ports project is an Action aligned with the needs and objectives of the European Commission and the port industry. The aim is to provide efficient solutions to facilitate a fast evolution from a fossil fuel based industry towards a low carbon and zero-emission sector. Hydrogen has been proved in other logistics and transportation sectors as a solution to power machinery and vehicles, therefore the action proposes different pilots to bridge the gap between prototypes and pre-commercial products: • The first prototype will comprise a reach stacker powered with hydrogen and tested under a real life trial, in a Port Container Terminal. • The second prototype will comprise a yard tractor equipped with a set of fuel cells. The design will enable the tractor to perform different operations like container horizontal transport or ro-ro loading/unloading operations. • The third prototype will comprise a mobile Hydrogen supply station, which will provide the needed fuel under the appropriate thermodynamic conditions for guaranteeing the continuous working cycles of the abovementioned equipment. The H2Ports project would also have a transversal objective that consists on developing a sustainable hydrogen supply chain at the port, coordinating all actors involved: customers, hydrogen producers, suppliers, etc. The expected results of the project are to test and validate hydrogen-powered solutions in the port-maritime industry, with the aim of having applicable and real solutions without affecting to port operations while producing zero local emissions.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-07-2020
Data scadenza:	31-12-2024
Contributo totale:	€ 3.999.948
Costo eleggibile totale:	€ 4.117.198
Contributo a ENEA:	€ 28.750
Costo eleggibile ENEA:	€ 28.750
Doc. approvazione:	124/2020/TERIN
Codice atto:	PK4AAA
Resp. scientifico ENEA:	CIGOLOTTI VIVIANA
Unità:	TERIN-PSU-ABI

Attività ENEA:

L'ENEA è parte terza del partner ATENA da luglio 2020 ed è coinvolta nelle attività del work package 4; in particolare: WP4-T4.1 “Design” - Definizione del proof of concept del nuovo veicolo elettrico con cella a combustibile; WP4-T4.1 “Design” - Analisi dei componenti necessari all’integrazione della cella a combustibile nello yard truck; WP4-T4.1 “Design” - Testing della cella a combustibile ? WP4-T4.3 “Piloting” - Analisi Costi/Benefici della nuova soluzione di veicolo FCV alimentato ad idrogeno e valutazione dei casi studio più significativi applicati all’ecosistema porto.

N. Contratto: 101061643

HARMONISE

Harmonisation of licensing procedures, codes and standards for future fission and fusion plants

Coordinatore: LEI LITHUANIAN ENERGY INSTITUTE (Lituania) N. Partner: 17

Abstract:

HARMONISE puts forward a holistic approach for studying the body of knowledge required to accomplish harmonization and standardization of methodologies, codes and standards as well as the assessment of nuclear reactor components. Departure from a prescriptive-based to a performance-based approach in nuclear regulatory regimes is to be examined under the prism of conformity with the safety objectives of innovative fission and fusion facilities. To this end, data related to fusion installations is expected to stem from the ITER safety demonstrations, whereas data pertinent to advanced fission designs – such as fast breeder reactors and SMRs – will be extracted from relevant EC-funded projects. The basis for HARMONISE activities will be the outcomes of relevant research and cooperation activities in standardization and nuclear safety considering also the lessons learnt from the stress tests performed in the EU. HARMONISE will examine issues related to qualification, standardization, V&V and licensing of fission and fusion installations, while taking into account stakeholder involvement. The benefits of adopting digital twins of nuclear installations during the design phase will be reviewed, while also identifying the cross-cutting activities that contribute to collaborative research efforts between fission and fusion. HARMONISE will address issues related to the preliminary safety assessments and licensing needs of innovative fission and fusion installations; risk-informed, performance-based approaches in licensing reviews and regulatory decision-making; harmonisation and standardisation on component assessments, methodologies, codes and standards and draw lessons from earlier experience in harmonisation efforts. HARMONISE findings will be disseminated to the nuclear safety regulators of EU MSs along with the State Nuclear Regulatory Inspectorate of Ukraine as material to be considered during safety verification and licensing of future fission and fusion installations.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-06-2022
Data scadenza:	31-05-2025
Contributo totale:	€ 2.500.000
Costo eleggibile totale:	€ 2.843.500
Contributo a ENEA:	€ 177.750
Costo eleggibile ENEA:	€ 197.500
Doc. approvazione:	072/2022/FSN
Codice atto:	PF6AAV
Resp. scientifico ENEA:	LODI FRANCESCO
Unità:	FSN-SICNUC-PSSN

Attività ENEA:

ENEA è coinvolta con ruolo di leader nel work package (WP2) dedicato all'individuazione delle necessità legate alla sicurezza di impianti innovativi e alle relative sfide di armonizzazione. È inoltre coinvolta con ruolo di supporto nei seguenti work package: • WP1 dedicato alla creazione di un network con tutti gli stakeholder i cui risultati del progetto possono essere di interesse; • WP3 dedicato allo sviluppo concettuale di un nuovo contesto di licensing basato su metriche di rischio e performance • WP4 dedicato alla individuazione dei gap presenti nelle attuali norme ingegneristiche (codes and standards) per applicazione a reattori innovativi • WP5 dedicato a disseminazione e comunicazione dei risultati per promuovere le attività del progetto

N. Contratto: 101000716

HARNESSTOM

Harnessing the value of tomato genetic resources for now and the future

Coordinatore: CSIC SPANISH NATIONAL RESEARCH COUNCIL (Spagna) N. Partner: 22

Abstract:

Tomato is a paradigm of crop domestication: a widely cultivated and consumed vegetable but with reduced genetic diversity and therefore highly vulnerable to emerging diseases and climate change. Fortunately, tomato is rich in genetic resources and information to overcome those difficulties and a coalition of scientists and breeding experts which have generated a large amount of this information have been organized under an effective management structure and a series of objectives to overcome those threats. HARNESSTOM aims to demonstrate that increasing use of Genetic Resources is key for food safety and security and can lead to innovation and benefit all stakeholders. By capitalizing on the large effort done recently in several EU-funded projects to connect phenotypes/genotypes in a large number of accessions from different germplasm banks and academia, HARNESSTOM will first collect, centralize and normalize this wealth of information in a way that is easily searchable and displayed in a user-friendly manner adapted to different type of users. Second, HARNESSTOM will develop four prebreeding programs addressing the major challenges of the field: 1) introducing resistances against major emerging diseases, 2) improving tomato tolerance to climate change, 3) improving quality 4) increasing resilience in traditional European tomato by participatory breeding. And additional goal is to increase speed and efficiency in prebreeding what is needed to be able to respond to the emerging challenges in a timely and effective manner. Joint leadership of both academia and industry in each of the WP and the participation of two NGOs representing different stakeholders guarantees the results of the project will have an impact in industry innovation and also in the society. An efficient management and outreach and communication platform is also in place to make sure the project runs smoothly and the interests of all stakeholders are protected

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-10-2020
Data scadenza:	30-09-2024
Contributo totale:	€ 7.048.236
Costo eleggibile totale:	€ 8.075.196
Contributo a ENEA:	€ 500.000
Costo eleggibile ENEA:	€ 500.000
Doc. approvazione:	126/2020/SSPT-BIOAG
Codice atto:	PS1ABM
Resp. scientifico ENEA:	GIULIANO GIOVANNI
Unità:	SSPT-BIOAG

Attività ENEA:

ENEA coordina il WP4 (Tools to increase the speed, efficiency and precision of breeding) e partecipa ai seguenti WP: . 1 Project Management and Coordination . 2 Societal issues. Stakeholder engagement and project dissemination; legislation and public acceptance; ethics . 3 One-stop-shop for tomato GenRes information, visualization and prebreeding tools . 7 Improving fruit quality . 9 Global assessment of advanced materials, marketing strategy, life cycle assessment

N. Contratto: 847049

HARP

Heating Appliances Retrofit Planning

Coordinatore: ADENE AGENCIA PARA A ENERGIA (Portogallo) N. Partner: 18

Abstract:

Consumers do not think about heating until their system breaks down. When it does, the replacement is always an urgent process, hindering the possibility to look for the best solutions in the market and making smarter choices regarding a heating system that will likely be in operation for the next 20 years. In Europe, there are more than 300 million heaters (space, water or combi) that have, on average, been installed more than 20 years ago. Considering the heating energy label framework, market assumptions are that more than 50% of these equipments perform as C or lower. Old and inefficient, this is the status of the installed heating stock. Now is the time to act and raise consumers' awareness about the opportunities of a planned replacement. Taking advantage of the energy label for space and water heating, we can mainstream the labelling concept to the installed heating stock, allowing to use a well-known support decision tool to communicate and motivate the consumer to replace its heating system with modern high-efficiency and renewable solutions. HARP accompanies the consumer decision process, providing an impartial message, based on the energy label and presenting the market solutions that respond to the consumer's heating needs, providing a quantified approach for economic and non-economic benefits and bridging the gap with the market providers and available national incentives. HARP is promoted by key knowledgeable partners in the fields of consumer behaviour, energy efficiency, heating solutions and business models, working directly with the consumer, or indirectly via professionals who are critical multiplying agents. Promoting dynamic efficient heating communities, where all the agents, from the supply to the demand side are committed to an efficient heating market, supporting the consumer to make smarter choices. This allows HARP to build a solid concept that will succeed in the participating countries and within the EU reach.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-05-2019
Data scadenza:	31-07-2022
Contributo totale:	€ 1.992.608
Costo eleggibile totale:	€ 1.992.608
Contributo a ENEA:	€ 75.788
Costo eleggibile ENEA:	€ 75.788
Doc. approvazione:	16/2019/DUEE-SPS
Codice atto:	PW3AA4
Resp. scientifico ENEA:	PRISINZANO DOMENICO
Unità:	DUEE-SPS-SAP

Attività ENEA:

Le attività ENEA prevedono principalmente il supporto alla definizione delle metodologie di etichettatura, alla definizione dei piani d'azione nazionali per l'utilizzo di tale etichetta, partecipanto attivamente alla comunicazione e diffusione dei risultati progettuali.

N. Contratto: 101060028 ***HARPERS***

HARmonised PracticEs, Regulations and Standards in waste management and decommissioning

Coordinatore: SCK CEN - CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE (Belgio) N. Partner: 25

Abstract:

The project aims to establish and clarify the benefits and added value of more aligned and harmonised regulations and standards for prioritised topics related to decommissioning and initial phases of radioactive waste handling, including shared processing facilities between Member States (MS). The project has a two-phase approach: first engaging with Stakeholders to assess needs and pros/cons for harmonisation and identify priority areas for deeper analysis (WP2). The second phase will pursue deeper engagement with Stakeholders to further assess the highest ranked priority areas in Work Packages (WP) focusing on (i) cross border services and cooperation (WP3), (ii) circular economy (WP4), and (iii) advanced technologies (WP5). These WPs will review (inter)national practices, capture lessons learned, and assess opportunities. WP6 on Regulatory Framework will identify regulatory differences between MS and evaluate strengths, weaknesses, opportunities, and threats associated with harmonisation, while quantifying the benefits of aligned regulations and proposing harmonisation methodologies. The project will: - support coordination between Stakeholders, - enhance existing commitments to facilitate sharing and exchange of knowledge and experience, - develop strategies for shared treatment and storage facilities, cross border services and cooperation, and explore additional mechanisms to build capacity in MS, - assess and clarify the benefits and any disadvantages of harmonisation, - deliver S&T-based solutions and share best practices by engaging and supporting coordination between different actors through the TSOs and regulators, - define conditions and opportunities of a high safety circular economy. The action will reinforce the activities of the EURAD, PREDIS, and SHARE projects, while encompassing MS national programs and the wider European Community, including i.e. ERDO, ENSREG, WENRA, IAEA, OECD NEA, IGDTP, SNETP, DigiDecom.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-06-2022
Data scadenza:	31-05-2025
Contributo totale:	€ 2.434.460
Costo eleggibile totale:	€ 2.434.460
Contributo a ENEA:	€ 115.125
Costo eleggibile ENEA:	€ 115.125
Doc. approvazione:	069/2022/FSN
Codice atto:	PF1AAK
Resp. scientifico ENEA:	GANDOLFO GIADA
Unità:	FSN-FISS-CRGR

Attività ENEA:

L’ENEA sarà leader del WP7 “Engagement and Dissemination”, il cui scopo è coinvolgere la comunità nucleare e comunicare, diffondere e sfruttare i risultati generati nel progetto e identificare le parti interessate che trarrebbero maggior beneficio dalle attività del progetto. Inoltre, l’Agenzia sarà coinvolta nel WP1 “Project Management” e in 3 dei 5 Work Package tecnici: WP2 “Strategic Tasks”, WP5 “Advanced Technologies” e WP6 “Regulatory Framework”.

N. Contratto: 838514

HORIZON-STE

Implementation of the Initiative for Global Leadership in Solar Thermal Electricity

Coordinatore: ESTELA EUROPEAN SOLAR THERMAL ELECTRICITY ASSOCIATION (Belgio) N. Partner: 5

Abstract:

Since 2007, the initial deployment of CSP/STE in Spain has brought the European STE sector to be a worldwide technology leader. But the further deployment has been hindered in Europe since 2013 due to the retroactive changes in the investment conditions in Spain. To unlock this situation, the EC has launched in 2015 a dedicated Initiative – Initiative for Global Leadership in Concentrated Solar Power (CSP). This Initiative, focusing on 2 targets (a cost reduction target and an innovation target), was adopted in 2016 within the SET-Plan structures. A working group gathering representatives from several SET-Plan countries and the STE stakeholders from both industry and research sectors was set up to define a corresponding Implementation Plan (IP), which was officially adopted in June 2017, including 12 R&D action line and the implementation of new innovative, so-called First-Of-A-Kind (FOAK) plants. Thus, as response to the call H2020- LC-SC3-JA-2-2018, this project proposal aims at supporting the full implementation of the a.m. Initiative taking into consideration the political, legislative and institutional as well as the market backgrounds put in perspective to the situation of the STE sector in 2018 – 2 years after the “Initiative” was presented and the corresponding “IP” adopted by the SET-Plan Steering Group. Building bridges to other ongoing projects (MUSTEC, SMARTSPEND, etc), the project will propose solutions and pathways for relevant countries to overcome the main shortcomings of current national strategies related to STE that are: a) for the industry the framework conditions for procurement of manageable RES, and b) for the R&I sector, the extension to more public funding agencies and other sources for the funding of a.m. R&I projects. This will result in national country reports and events as well as an EU-wide cooperation report/event to be extensively covered by national mainstream media and supported by a strong dissemination and political communication campaign.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-04-2019
Data scadenza:	30-09-2022
Contributo totale:	€ 999.656
Costo eleggibile totale:	€ 999.656
Contributo a ENEA:	€ 104.448
Costo eleggibile ENEA:	€ 104.448
Doc. approvazione:	37/E/2019/DTE
Codice atto:	PT7AAK
Resp. scientifico ENEA:	DE IULIIS SIMONA
Unità:	DTE-USTS

Attività ENEA:

L'ENEA è impegnato in tutte le attività realizzative; i principali contributi forniti da ENEA riguarderanno: . il WP3 (R&I Impact maximization) che mira ad individuare e a definire le condizioni/azioni necessarie al raggiungimento degli obiettivi SET-PLAN con riferimento al settore CSP/STE; . Il WP1 che propone, come fase iniziale delle attività del progetto, un aggiornamento su base annuale dello stato del CSP/STE in termini di ricerca, innovazione e sviluppo industriale.

N. Contratto: N/A

IMPRESA

IMProvingRESilience to Abiotic stresses in durum wheat: enhancing knowledge by genetic, physiological and "omics" approaches and increasing Mediterranean germplasm biodiversity by crop wild relatives-based introgressiomics

Coordinatore: UNIV. TUSCIA (Italia) N. Partner: 6

Abstract:

As a means of countering the insufficient genetic variation of the durum wheat (DW) crop to cope with increasing environmental stresses, a strategic objective of IMPRESA is the focus on wild wheat relatives (WWRs), belonging to the Triticeae tribe, as valuable sources for identification and transfer of abiotic stress tolerance genes/alleles into cultivated DW. Most WWRs evolved in harsh, dry or nutrient-limited environments; thus, WWRs' noteworthy tolerance to environmental stresses is the expected result of their natural adaptation. IMPRESA aims to capitalize on this potential and accomplish results of practical value within the project duration by using DW-WWR genetic materials in which variable amounts of the alien donor are combined with the DW genome (from segmental introgression/recombinant lines, to synthetic amphiploids), and can be transferred into locally suited DW cultivars by well established, breeder-friendly, non-GMO strategies of "chromosome engineering".

Anno di stipula:	2021
Tipo progetto:	JRP - Joint research project
Programma UE:	HORIZON 2020 PRIMA (2018-2028)
Data inizio:	02-09-2019
Data scadenza:	02-09-2023
Contributo totale:	€ 417.600
Costo eleggibile totale:	€ 612.000
Contributo a ENEA:	€ 110.600
Costo eleggibile ENEA:	€ 158.000
Doc. approvazione:	162/2021/SSPT-BIOAG
Codice atto:	PS1ACE
Resp. scientifico ENEA:	GIORGI DEBORA
Unità:	SSPT-BIOAG-BIOTEC

Attività ENEA:

Le attività prevedono : . esecuzione di analisi citogenetico-molecolari sui materiali in selezione per l'identificazione della composizione genomica degli anfiploidi di frumento e la caratterizzazione delle linee di ntrogressione (anfidiploidi parziali, linee di addizione o ricombinanti) . Prove in serra in condizioni controllate per la valutazione della risposta a stress salini di linee ricombinanti Durum wheat –/Wild Wheat Relatives; . Studio degli effetti della salinità sul ciclo cellulare mediante "Citometria a Flusso" . " Chromosome sorting" mediante citometria a Flusso. . Conduzione di incroci tra linee ricombinanti risultate tolleranti allo stress e frumenti selezionati, anche originari dei Paesi partner; . Partecipazione alle indagini "omiche" (in collaborazione con Univ. Viterbo) . Disseminazione dei risultati, training.

N. Contratto: 833573

INCLUDING

Innovative Cluster for Radiological and Nuclear Emergencies

Coordinatore: ENEA (Italia) N. Partner: 14

Abstract:

INCLUDING connects 15 Partners from 10 EU Member States (MS), bringing together infrastructure, equipment and experts coming from Medical Organizations, Fire Corps, Government Department, Municipalities, Law Enforcement Agencies, Ministries, Governmental and Civilian Research Institutes and Industries operating in the field of radiological and nuclear emergencies. Far from being a simple aggregation of entities separated geographically and with complementary expertise, INCLUDING pursues to develop a Federation in which individual Members will cooperate together to provide a common framework to standardize access to their respective facilities, enhance interoperability and to allow a more intensive use of expensive equipment. The operative tool to manage the Federation will be a web-based platform with a sophisticated architecture and whose functionality has been proven in a previous EU project. At the same time the project aims to enhance practical know-how and to boost a European sustainable training and development framework for practitioners in the Radiological and Nuclear Security sector. The INCLUDING project will be flexible in order to include new facilities and innovation in technology, organizations and procedures. The plurality of facilities and expertise in the INCLUDING Federation reflects the complex and intertwined structure of the prevention and response phases of RN threats and will provide to the practitioners a set of real or emulated scenarios where to test concept of operations in a controlled environment. The Joint Actions will be the focal points of the project. They are multidisciplinary field exercises, tabletop exercises, training, serious gaming and simulation organized at their premises by the project partners and with the objective of demonstrating the added value of the Federated scheme and of the use of an innovative tool like the INCLUDING web based Platform to manage a pan European network of training facilities and resources.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Secure societies
Data inizio:	01-08-2019
Data scadenza:	31-07-2024
Contributo totale:	€ 3.585.529
Costo eleggibile totale:	€ 3.585.529
Contributo a ENEA:	€ 564.606
Costo eleggibile ENEA:	€ 564.606
Doc. approvazione:	116/2019/FSN
Codice atto:	PF7AAS
Resp. scientifico ENEA:	DE DOMINICIS LUIGI
Unità:	FSN-TECFIS-DIM

Attività ENEA:

L'ENEA coordina il progetto. La partecipazione al progetto coinvolge personale di diverse unità tecniche dell'ENEA: FSN-TECFIS-DIM, FSN-SICNUC, FSN-FISS, ISER-CAS, DTE-PCU-STMA.

N. Contratto: 101083398

I-NEST

Italian National hub Enabling and Enhancing networked applications & Services for digitally Transforming SMEs and Public Administrations

Coordinatore: CNIT - CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI (Italia)

N. Partner: 8

Abstract:

I-NEST (Italian National hub Enabling and enhancing networked applications and Services for digitally Transforming Small-Medium Enterprises and Public Administrations) provides a transversal, multi-sector digitalization support for connected businesses, administrations and other digital innovation hubs, exploiting fixed and mobile network infrastructures and cloud-native, intelligent, highperformance, secure services. The hub operates with a national coverage, thanks to a network of points-of-presence and demo-centers implemented at the 88 offices of the Italian Chambers of Commerce and in 5 National Research Laboratories of CNIT, a consortium of 38 Italian Universities. The hub is specialized in emerging intelligent and secure communication and computing infrastructures, exploiting 5G as a powerful innovation platform. These infrastructures can enable innovative applications in multiple fields, improve efficiency and sustainability of supply chains and industrial ecosystems, and create new opportunities for SMEs and PAs. The hub services are designed for addressing the knowledge, capability, demand-supply and financial gaps of stakeholders working in non-ICT vertical domains. Technology awareness will be built by presenting concrete 5G economical scenarios and use cases, showcasing innovative artificial intelligence applications and analysing cybersecurity threats. Training programs and consultancy services will exploit the hub testing facilities and prototyping platforms, including a high-performance-computing platform for process simulation. Multiple players will be encouraged to share tools and interact on these facilities for creating conditions for collaboration, circularity, and open innovation. Support will be provided not only for identifying and applying for funding opportunities, including the current National Plan for Resilience and Recovery, but also for effectively and efficiently utilizing the granted funds.

Anno di stipula:	2022
Tipo progetto:	DIGITAL Simple Grants
Programma UE:	Other programmes 2021-2027 DIGITAL
Data inizio:	01-10-2022
Data scadenza:	30-09-2025
Contributo totale:	€ 2.878.550
Costo eleggibile totale:	€ 5.757.103
Contributo a ENEA:	€ 572.149
Costo eleggibile ENEA:	€ 1.144.299
Doc. approvazione:	180/2022/TERIN
Codice atto:	PK5AAL
Resp. scientifico ENEA:	D'AGOSTINO GREGORIO
Unità:	TERIN-SEN-APIC

Attività ENEA:

L'ENEA ha la responsabilità del WP3 relativo al "Training and Skill Development" e partecipa a tutti gli organi direttivi del progetto (WP1 "EDIH Management and Sustainability"). Parteciperà prevalentemente al WP3 e WP4 "Test-Before-invest Innovation Support".

N. Contratto: 871037

iNEXT-Discovery

Infrastructure for transnational access and discovery in structural biology

Coordinatore: NKI - NATIONAL CANCER INSTITUTE (Paesi Bassi) N. Partner: 25

Abstract:

Structural biology reveals the molecular architecture of life; the three-dimensional structure of biomolecules and how they interact to form complex machineries and cells. Structural biology is key to innovations in chemistry, biotechnology and medicine: new drugs, advanced vaccines, novel biomaterials, engineered enzymes for food production, a cleaner environment, and efficient biofuels. iNEXT-Discovery takes on the challenge of proactively supporting the uptake of existing tools, and the innovation of new tools, to promote scientific Discovery and translation in a range of disciplines, building on the success of the H2020 project iNEXT (infrastructure for NMR, EM and X-rays for Translational research). iNEXT-Discovery brings together a strong network of leading structural biology facilities in partnership with regional experts and ESFRI communities in medicinal chemistry, translational medicine, biological imaging, and food research, to disseminate knowledge and services. We aim to stimulate the wider uptake of structural biology across Europe, across scientific disciplines and research sectors. Significant hardware and software advances allow targeting transnational access to advanced instrumentation also to scientists without previous expertise in structural biology: uptake will be facilitated by training and thematic calls focused on new communities. Access to our instrumentation and expertise will ultimately allow European scientists to gain structural insight that can translate into innovations in the biomedical, food, biotechnological and biomaterials sectors. Our joint research activities will roll-out advances in key technologies for translational research: fragment screening for drug development, EM efficiency and capacity, NMR applications to extend structures beyond three dimensions, and integrative structural biology approaches to look at macromolecules in cells. All our activities support innovative research of both academic and industrial users.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-02-2020
Data scadenza:	31-01-2024
Contributo totale:	€ 9.987.744
Costo eleggibile totale:	€ 9.987.744
Contributo a ENEA:	€ 24.375
Costo eleggibile ENEA:	€ 24.375
Doc. approvazione:	284/2019/SSPT-BIOAG
Codice atto:	PS1ABG
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

L'ENEA riveste il ruolo di partner, partecipando alle attività previste dal work package 3 e in particolare dalla task 3.4 'Engaging with the food research community'. In qualità di coordinatore del progetto METROFOOD-RI l'ENEA ha il compito di coordinare i link con il "food" definendo le opportunità per potenziali collaborazioni inter-settoriali e promuovendo attività di ricerca congiunta e training.

N. Contratto: 101000373

InnCoCells

Innovative high-value cosmetic products from plants and plant cells

Coordinatore: VTT TECHNICAL RESEARCH CENTRE OF FINLAND (Finlandia) N. Partner: 17

Abstract:

The InnCoCells project will develop innovative and sustainable plant-based production processes for the commercial exploitation of scientifically validated cosmetic ingredients based on underutilised plant resources. We will optimise these resources for profitable and sustainable production using cell cultures, aeroponics and greenhouse/field cultivation. We will apply systematic approaches including metabolic engineering tools to optimise growth conditions and the yields of valuable bioactive, small-molecule compounds and ingredients. The optimised processes will be demonstrated by pilot-scale production and subsequent product extraction/purification. We will bring at least ten cosmetic ingredients to the pre-commercial stage. InnCoCells includes a cascade biorefinery concept in which by-products and biowaste are utilised for the extraction of further bioactive molecules. The processes will be characterised by techno-economic assessment and life cycle analysis to ensure economic feasibility and a reduced environmental footprint. The ingredients and extracts will be evaluated using a unique panel of innovative enzyme-based and cell-based assays to ensure safety and validate claimed activities based on robust scientific data without animal testing. We will implement a unique stakeholder engagement strategy, including the assembly of a Stakeholder Group to guide our research program based on the needs of industry, academia, farmers, policymakers and consumers. The consortium includes eight SMEs and one large company from the cosmetic sector among the 17 partners to facilitate exploitation. We will develop bespoke communications strategies for different stakeholders and for public engagement. We will also interact closely with the regulatory authorities in Europe. This industry-driven and interdisciplinary project will ultimately increase the strength of the European bioeconomy by supporting the development of innovative biobased goods and markets.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-05-2021
Data scadenza:	30-04-2025
Contributo totale:	€ 7.905.559
Costo eleggibile totale:	€ 7.905.559
Contributo a ENEA:	€ 339.063
Costo eleggibile ENEA:	€ 339.063
Doc. approvazione:	57/2021/SSPT-BIOAG
Codice atto:	PS1ABZ
Resp. scientifico ENEA:	DIRETTO GIANFRANCO
Unità:	SSPT-BIOAG-BIOTEC

Attività ENEA:

L'ENEA è coinvolto nei work package 1, 5, 7 e 8 del progetto, svolgendo attviità di ricerca inerenti la crescita di specie vegetali fuori suolo (coltivazione idroponica) e di metabolomica, caratterizzazione di prodotti bioattivi innovtivi, sostenibilità, disseminazione, comunicazione e management.

N. Contratto: 101061241

INNUMAT

Innovative Structural Materials for Fission and Fusion

Coordinatore: KIT KARLSRUHER INSTITUT FUER TECHNOLOGIE (Germania) N. Partner: 37

Abstract:

INNUMAT aims to develop innovative structural materials for nuclear applications and put them on track towards qualification for fission lead-cooled and molten salt fast reactors as well as fusion DEMO. High entropy alloys (HEAs), a new class of materials with a vast development potential and very promising properties, as well as alumina forming austenitic (AFA) steels, already identified as prospective structural materials for Gen IV and Small Modular Reactors, are in the main focus in which advanced material solutions are considered as well, in particular weld overlay and coated 15-15Ti for lead-cooled fast reactors, among others MYRRHA and ALFRED, and coated EUROFER and advanced oxide dispersion strengthened (ODS) steel for fusion DEMO. Some of these structural materials are of potential applicability also outside the nuclear field, e.g. in concentrated solar power and/or in H2 confinement. The project is thus cross-cutting because of the target applications as well as because of the accelerated methodologies for materials discovery, screening and qualification that it pursues, applied at different technology readiness levels (TRLs). The differences in TRL, application conditions and requirements of the considered materials result in different objectives and hence different research tracks through the project with even different efforts. Common goal is to rapidly increase the TRL for the desired nuclear applications towards requirements of corrosion resistance, high temperature strength, thermal stability and irradiation tolerance, which are not met by current structural materials. Therefore, computational and experimental high throughput material screening methods will be applied and roadmaps for accelerated qualification will be established paving a fast way to more efficient safe sustainable nuclear energy systems with considerable contribution to the overall mission of developing economic energy systems with reduced/zero CO2 emissions.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-09-2022
Data scadenza:	31-08-2026
Contributo totale:	€ 7.815.063
Costo eleggibile totale:	€ 9.880.955
Contributo a ENEA:	€ 679.634
Costo eleggibile ENEA:	€ 894.566
Doc. approvazione:	Disp. 376/2022/PRES
Codice atto:	PF4AAR
Resp. scientifico ENEA:	BASSINI SERENA
Unità:	FSN-ING-SMN

Attività ENEA:

L'ENEA partecipa ai seguenti work package: WP1. dedicato all'approvvigionamento ed alla sintesi dei materiali per tutte le linee di ricerca ed alle caratterizzazioni in ingresso WP2. Nel WP2 verrà studiata la compatibilità dei materiali sviluppati nel WP1 con l'ambiente applicativo (metalli liquidi pesanti e sali fusi) rispetto alla corrosione, erosione ed al deterioramento delle proprietà meccaniche. WP3. La caratterizzazione meccanica avanzata dei materiali considerati sarà condotta nel WP3 ben oltre la caratterizzazione di base prevista nel WP1. Il lavoro sperimentale del WP3 comprenderà anche prove di thermal aging WP4. Questo work package sarà dedicato ad esplorare la tolleranza all'irraggiamento neutronico dei materiali sviluppati attraverso programmi di irradiazione ionica e neutronica. WP5. Metodologie di qualifica e standardizzazione. WP7. Disseminazione dei risultati e gestione dei dati prodotti

N. Contratto: 754329

INSPYRE

Investigations Supporting MOX Fuel Licensing in ESNII Prototype Reactors

Coordinatore: CEA (Francia) N. Partner: 14

Abstract:

INSPYRE, a proposal fully supported and endorsed by the Steering Committee of the EERA Joint Programme on Nuclear Materials, focusses on the investigation of fast reactor MOX fuel to support the licensing of the start-up cores of the ESNII reactor prototypes. It will: • Use carefully designed separate effect (modelling and experimental) investigations to accurately describe basic phenomena occurring in the fuel with sound physical models, expanding empirical fuel behaviour knowledge gained in the past in irradiation tests and post-irradiation examinations, • Characterize selected key irradiated fuel samples to fill clearly identified knowledge gaps, • Combine and leverage basic and technological research to enhance and extend the reliability range of traditionally deduced empirical laws governing performance of nuclear fuels under irradiation, • Implement the new models and data obtained in the fuel performance codes used for the design of ESNII systems and apply the improved codes to ESNII relevant conditions. The impacts of the INSPYRE project will be many. Fuel is at the heart of nuclear reactor systems, but its qualification and licensing is challenging due to the complex coupled phenomena (physical, chemical, radiation, thermal and mechanical) induced by fission. INSPYRE represents a paradigm shift. It will enable a timely, facilitated and cost effective licensing of fast reactor fuels, only achievable by generating validated simulation tools capable of limiting qualification to punctual dedicated irradiation experiments. Of foremost importance is the relevant and efficient leveraging of past knowledge, technological and basic science approaches to extend the applicability of codes. INSPYRE's goals will be achieved by a well-balanced consortium from universities, research and industrial organisations already collaborating in the EERA JPNM, further augmented by a dedicated user group stemming from ESNII representatives, fuel vendors, utilities and TSOs.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2017
Data scadenza:	28-02-2022
Contributo totale:	€ 3.398.479
Costo eleggibile totale:	€ 8.500.740
Contributo a ENEA:	€ 102.925
Costo eleggibile ENEA:	€ 174.588
Doc. approvazione:	76/2017/FSN
Codice atto:	PF4AAF
Resp. scientifico ENEA:	DEL NEVO ALESSANDRO
Unità:	FSN-ING-PAN

Attività ENEA:

Nel progetto l'ENEA coordina il WP 'Derivering parameters and developing models for FPC'; è coinvolta inoltre nei WP 7 'Knowledge transfer to fuel performance codes and to users' e nel WP9 'Communication, dissemination and exploitation of results'.

N. Contratto: 101056841 ***KNOWING***

Framework for defining climate mitigation pathways based on understanding and integrated assessment of climate impacts, adaptation strategies and societal transformation

Coordinatore: AIT AUSTRIAN INSTITUTE OF TECHNOLOGY (Austria) N. Partner: 20

Abstract:

According to the EU's Climate Adaptation Strategy (COM(2021) 82), "improving knowledge and managing uncertainty" is key for realising the vision of a climate neutral and climate-resilient Union, as "Climate change is having such a pervasive impact that our response to it must be systemic". Thus, there is an urgent need for an integrated approach for an enhanced understanding of the interaction, complementarity and trade-offs between adaptation and mitigation measures, especially regarding the expected increase in region-al mean temperature, precipitation and changing soil moisture (IPCC AR6 WG I). Furthermore, this under-standing and knowledge needs to be provided to a broad audience to support local authorities in EU partner countries in developing regional programmes. KNOWING aims to develop a modelling framework to help understand and quantify the interactions between impacts and risks of climate change, mitigation pathways and adaptation strategies. The framework will be used to assess thAdvancing climate science and further broadening and deepening the knowledge base is essential to inform the societal transition towards a climate neutral and climate resilient society by 2050, as well as towards a more ambitious greenhouse gas reduction target by 2030. There is a need for research that furthers our understanding of past, present and expected future changes in climate and its implications on ecosystems and society, closing knowledge gaps, and develops the tools that support policy coherence and the implementation of effective mitigation and adaptation solutions. Currently, there is a lack of knowledge of the Earth system and the ability to predict and project its changes under different natural and socio-economic drivers, especially regarding complex interrelations, rebound effects and behavioural aspects. Therefore, a holistic,system-aware and behaviour centred approach is needed to identify and implement realistic and effective climate mitigation pathways.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Climate Science
Data inizio:	01-06-2022
Data scadenza:	31-05-2026
Contributo totale:	€ 6.204.910
Costo eleggibile totale:	€ 6.204.910
Contributo a ENEA:	€ 260.146
Costo eleggibile ENEA:	€ 260.146
Doc. approvazione:	88/2022/SSPT-MET
Codice atto:	PS2ACH
Resp. scientifico ENEA:	PISACANE GIOVANNA
Unità:	SSPT-MET-CLIM

Attività ENEA:

Le attività ENEA prevedono il reperimento, la produzione e l'analisi dei dati climatici necessari per il progetto e la partecipazione attiva alla definizione dei parametri critici. In particolare: la ricognizione delle analisi e dei dati esistenti e produzione dei dati aggiuntivi necessari attraverso simulazioni numeriche; la raccolta dei dati e loro organizzazione e selezione; la partecipazione alle attività di co-creazione con gli stakeholder, per la definizione dei sistemi dinamici di interesse e dei parametri critici che li descrivono; il calcolo e mappatura degli indicatori critici; la disseminazione dei risultati. Il laboratorio ENEA TERIN-ICT-HPC fornirà il supporto informatico necessario alla realizzazione delle simulazioni climatiche sull'infrastruttura HPC CRESCO6.

N. Contratto: 893924

LEAP4SME

Linking Energy Audit Policies to enhance and support SMEs towards energy efficiency

Coordinatore: ENEA (Italia) N. Partner: 10

Abstract:

The proposed project intends to support Member States in establishing or improving national and local schemes for SMEs to undergo energy audits and implement cost-effective recommended energy-saving measures. An initial work of policies and programmes mapping will be followed by an in-depth understanding of their strengths and weaknesses, with the aim of overcoming the current criticalities and bottlenecks. At the same time a work of characterisation of SMEs in terms of energy consumption, size and sector will be carried out to understand effective ways to properly address existing and innovative energy audit policies. Provided a continuous interaction (by means of workshops, questionnaires, meetings) with policy makers as well as SMEs and ESCOs/Energy Auditors associations, a set of policy proposals and recommendations will be then developed and diffused. The priorities guiding the policy and recommendation development will be: - Effectiveness and orientation to real market needs; - Integration with other points of the EED, particularly article 7 Energy Efficiency Obligation Schemes and alternative measures; - Replicability, at least for SMEs sector/size/region; A fundamental part of the project, with a relevant participation requested to each partner, will be a continuous action of capacity building and dissemination addressed to policy makers and relevant stakeholders at European, National and Regional level. In order to concentrate the efforts on new challenges and to valorise previous efforts, the Consortium is committed to take as much advantage as possible of results obtained in previous pertinent EU funded projects (such as ENSPOL, ODYSSEE-MURE, EPATEE) and relevant initiatives such as EEFIG and its related Sustainable Energy Investment Forums. On request of the European Institutions, the Consortium would also be very glad to contribute, through findings and results of the project, to the current debate on the SME definition.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2020
Data scadenza:	31-08-2023
Contributo totale:	€ 1.895.028
Costo eleggibile totale:	€ 1.895.028
Contributo a ENEA:	€ 404.369
Costo eleggibile ENEA:	€ 404.369
Doc. approvazione:	17/2020/DUEE-SPS
Codice atto:	PW3AAP
Resp. scientifico ENEA:	BIELE ENRICO
Unità:	DUEE-SPS-ESE

Attività ENEA:

ENEA svolge il ruolo di coordinatore del progetto e di leader del Work Package dedicato alle proposte di efficaci strumenti per il supporto ai policy-maker nel superamento delle attuali criticità legate ai programmi sulle PMI.

N. Contratto: 101004728 ***LEAPS-INNOV***

LEAPS pilot to foster open innovation for accelerator-based light sources in Europe

Coordinatore: DESY - DEUTSCHES ELEKTRONEN SYNCHROTRON DESY (Germania) N. Partner: 22

Abstract:

The European synchrotron radiation sources and free electron lasers serve a broad scientific community with more than 24000 users and play a vital role in most research fields from basic science in physics, chemistry and biology to applied areas in health, engineering, environment, cultural heritage and high-impact industrial applications. Rising international competition requires the European facilities to coordinate and combine complementary strengths and capabilities. Established in 2017, the League of European Accelerator-Based Photon Sources (LEAPS) seeks to realise synergies across Europe's light sources. The increasing complexity of technology and a shorter life cycle require the photon sources to open up innovation to their partner facilities, users and industrial suppliers to promote creativity, novelty and resource efficiency. The LEAPS-INNOV pilot project will contribute to solving key technological challenges for the light sources, over 50 facilities in Europe and worldwide, and in particular will support their newest generation - diffraction-limited storage rings and X-ray FELs. It will kick-start the implementation of the LEAPS Technology Roadmap and, at the same time, will enhance partnership with industry through open innovation by offering joint technological developments and advanced research capabilities for industry as collaborators, suppliers and users. Six technology work packages (WP) form the heart of LEAPS-INNOV, based on their potential for co-innovation and their ability to enhance European leadership of both, LEAPS facilities and industry. They integrate 50-some companies, are supported by an industry networking WP and complemented by pilot activities towards co-creation with the Horizon Europe clusters. In the context of open innovation, LEAPS-INNOV focusses on new approaches for partnership between industry and the photon science community, with the goal of accumulating a strategy for long-term industry engagement for LEAPS in Europe

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-04-2021
Data scadenza:	31-03-2025
Contributo totale:	€ 9.999.991
Costo eleggibile totale:	€ 10.000.000
Contributo a ENEA:	€ 27.500
Costo eleggibile ENEA:	€ 27.500
Doc. approvazione:	038/2021/FSN
Codice atto:	PF2AAJ
Resp. scientifico ENEA:	NGUYEN FEDERICO
Unità:	FSN-FUSPHY-TSM

Attività ENEA:

L'ENEA partecipa al Work Package 6 – LEAPS Insertion Devices, dispositivi d'inserzione, con esplicito riferimento agli ondulatori magnetici, nel Task 6.1 – Industry involvement.

N. Contratto: LIFE19 ENV/FR/000086

LIFE AIRFRESH

Air pollution removal by urban forests for a better human well-being

Coordinatore: ARGANS LTD (Francia) N. Partner: 4

Abstract:

Urban reforestation, e.g. by increasing the tree density in cities, and peri-urban reforestation near densely populated cities where it is not easy to plant trees, can help improve air quality in cities. As large-scale reforestation is not feasible within a project, a test area will be implemented in Aix-en-Provence and Florence as front-runner cities and living labs. AIRFRESH aims to: . Estimate the air pollution (PM, NO2, CO2 and O3) removal capacity by urban trees and shrubs by a reforested test area in both cities. . Estimate and quantify the environmental and health benefits provided by a new reforested test area. . Propose recommendations for reforestation policies (e.g. number and type of tree species to be planted) for attainment of the legislative air quality standards in both cities. . Our findings will be translated into a guidebook to support urban policies for sustainable city planning (local urban masterplan) and to make choices for "greening up" the environment to improve citizens' well-being.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	01-09-2020
Data scadenza:	01-12-2024
Contributo totale:	€ 673.512
Costo eleggibile totale:	€ 1.225.070
Contributo a ENEA:	€ 152.196
Costo eleggibile ENEA:	€ 276.620
Doc. approvazione:	338/2020/PRES
Codice atto:	PS2ABR
Resp. scientifico ENEA:	DE MARCO ALESSANDRA
Unità:	SSPT-PVS

Attività ENEA:

La partecipazione al progetto AIRFRESH, svolto in stretta collaborazione con i partner europei estremamente qualificati, consente all'ENEA di sviluppare ulteriori competenze e rivestire un ruolo di primo piano nella lotta all'inquinamento atmosferico.

N. Contratto: LIFE18 GIE/IT/000813

LIFE BLUE LAKES

Life Blue Lakes

Coordinatore: LEGAMBIENTE ONLUS (Italia) N. Partner: 7

Abstract:

The main goal of LIFE BLUE LAKES is to prevent and reduce plastic waste in Italian and German lakes. The project will apply an integrated approach to five lakes in Germany and Italy, combining governance, training, information and awareness-raising activities. It will contribute to both the EU plastics strategy and the circular economy action plan. The projects specific objectives include: • improving the governance, management and decision-making processes concerning microplastic pollution in lakes (e.g. through a new support tool and suggestions on plastic waste treatment, discharge limits, monitoring programmes, wastewater treatment process improvements and awareness-raising initiatives); • increased commitment by local economic actors (e.g. industries, farmers, tourist operators) near the main lakes in Italy and Germany to reducing the impact of their activities; • reducing the entry of microplastics into lake basins from WWTPs through developing and disseminating a technical protocol for sewage treatment; • establishing close cooperation between relevant industries to develop solutions to reduce and prevent additional primary loads of microplastics; • raising the awareness of residents living close to the main lakes in Italy and Germany about the problem of microplastics; and • influencing the political agenda at national (German and Italian) and European level in order to improve the existing regulatory framework for tackling microplastic pollution in lake basins.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	01-10-2019
Data scadenza:	30-09-2023
Contributo totale:	€ 1.391.990
Costo eleggibile totale:	€ 2.530.927
Contributo a ENEA:	€ 123.200
Costo eleggibile ENEA:	€ 235.400
Doc. approvazione:	375/2019/PRES
Codice atto:	PS4ABW
Resp. scientifico ENEA:	SIGHICELLI MARIA
Unità:	SSPT-PROTER-BES

Attività ENEA:

L'attività ENEA, svolta in collaborazione con gli altri partner italiani e tedeschi, prevede: . La realizzazione di campagne di formazione destinate alla Pubblica Amministrazione e sviluppo di programmi di monitoraggio delle microplastiche nei laghi; . La stesura di protocolli tecnici per la valutazione delle microplastiche presenti nelle aree pilota del Nord (Lago di Garda) e Centro Italia (Lago Trasimeno e Lago di Bracciano) . Le attività di comunicazione e coinvolgimento delle comunità locali e diffusione dei risultati

N. Contratto: LIFE 18 GIE/IT/000735

LIFE MAGIS

Made Green in Italy Scheme

Coordinatore: ENEA (Italia) N. Partner: 9

Abstract:

The LIFE MAGIS project will target consumers and producers to support the launch and spread of the PEF method and of the PEF-based Made Green in Italy scheme. The project will thus stimulate PEF-related innovation, improve communication about green products, and incentivise consumers to purchase greener products. To do this, LIFE MAGIS will develop new Italian product category rules for the carrying out of PEF studies on specific products (PEFCRs). The PEFCRs will cover certain food products (snacks, ice cream, fruit, cheese and coffee), leather products, window fittings and cosmetics. The project will also: . Help define PEFCRs at EU level through its work on new product groups at national level; . Demonstrate the effectiveness of the PEF method in promoting sustainable models of production and consumption; encourage better-informed and conscious consumer choices and ensure the transparency and comparability of environmental information; . Create tools and approaches to make PEF easily replicable and transferable to other Member States.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	02-09-2019
Data scadenza:	30-04-2023
Contributo totale:	€ 1.385.942
Costo eleggibile totale:	€ 2.624.168
Contributo a ENEA:	€ 256.249
Costo eleggibile ENEA:	€ 450.049
Doc. approvazione:	230/2019/SSPT-USER
Codice atto:	PS6ACK
Resp. scientifico ENEA:	CORTESI SARA
Unità:	SSPT-USER-RISE

Attività ENEA:

L'ENEA coordina il progetto. Le attività ENEA prevedono: . Valutazione dell'implementazione del metodo PEF nelle regole di categoria di prodotto (RCP) sviluppate dai gruppi di lavoro proponenti, come da regolamento dello schema Made Green in Italy; . Verifica della conformità con il metodo PEF e con lo schema Made Green in Italy delle analisi condotte durante il progetto; . Sviluppo di dataset conformi allo schema Made Green in Italy, sviluppati a partire dalle analisi condotte durante il progetto; . Attività di comunicazione, disseminazione e supporto alla replicabilità dello schema a livello europeo; . Coordinamento e monitoraggio del progetto

N. Contratto: LIFE20 GIE/IT/000091

LIFE MODERn (NEC)

new MOnitoring system to Detect the Effects of Reduced pollutants emissions resulting from NEC Directive adoption

Coordinatore: ARMA DEI CARABINIERI - Comando Unità Forestali, Ambientali e Agroalimentari (CUFAA) (Italia)

N. Partner: 8

Abstract:

The main objective of the LIFE MODERn (NEC) project is to comply with the NEC Directive and enhance the representativeness of sites and indicators, thus improving the Italian NEC network. In particular, the project aims to: Establish national emissions ceilings of certain atmospheric pollutants, linking them to the impacts on ecosystems; Expand the network of monitoring sites so that it is fully representative of the variety of Italian freshwater and forest ecosystems; Introduce and test a new set of indicators and develop new monitoring protocols to study the impacts of air pollution on biodiversity (plant functional groups, lichens, selected groups of fauna, and selected biological indicators in water bodies) and air pollution chemistry and transparency; Measure pollutant effects in remote areas that can provide the full background level for comparison with health-related impacts in urban areas; Assess mass balances of the major nutrient and pollutant flows through the atmosphere-forest-soil-water system, to quantify the long-term trends of the most relevant impacts; Distinguish between impacts resulting from pollutant emissions and those related to other drivers (climate change, management, land-use) by applying a multivariate statistical approach on NEC Directive target pollutants and on data collected during the 20-year environmental monitoring at ICP Forests and ICP Waters sites in Italy; Improve the awareness of experts in the Italian and European NEC network by promoting internet data dissemination through the FAIR (Findable, Accessible, Interoperable and Reusable) Data Principles and the development of specific software; Raise awareness among the Italian public about pollution sources and their impacts on ecosystems, including by promoting the NEC network; and Increase knowledge exchange between EU Member States involved in implementation of the NEC Directive to discuss and promote common strategies and solutions.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	01-10-2021
Data scadenza:	30-09-2025
Contributo totale:	€ 1.877.109
Costo eleggibile totale:	€ 3.414.809
Contributo a ENEA:	€ 143.768
Costo eleggibile ENEA:	€ 287.536
Doc. approvazione:	9/2021/PRES
Codice atto:	PS0ABA
Resp. scientifico ENEA:	DE MARCO ALESSANDRA
Unità:	SSPT-PVS

Attività ENEA:

Le attività di ENEA prevedono: . Interazione e contatto con la EU; . Valutazione della rete di monitoraggio per gli ecosistemi terrestri e acquatici e per gli impatti dell'ozono sulla vegetazione; . Messa a punto e validazione di metodologia per la quantificazione del "Visibility Index", che sarà pèro posto come nuovo indicatore per l'implementazione della direttiva NEC.

N. Contratto: 101102078 ***LIFE21-CET-CA-CAEPBD6***

6th Concerted Action supporting Member States and participating countries in implementing the Energy Performance of Buildings Directive

Coordinatore: DEA DANISH ENERGY AUTHORITY (Danimarca) N. Partner: 28

Abstract:

The overall objective of the Concerted Action EPBD is to foster exchange of information and experience among Member States and other associated countries (Norway) with regards to the implementation of the specific European Union legislation and policy on the energy performance of buildings, and in particular with regards to the transposition and implementation of the EPBD (DIRECTIVE 2018/844/EU) and the on-going revision of this directive. The specific objectives of the CA are to: 1. Enhance and structure sharing of information and experience from national implementation and promote good practice in activities of Member States for implementation of the Energy Performance of Buildings Directive (EPBD). 2. Create favourable conditions for faster convergence of national procedures on EPBD-related matters. 3. Develop a direct collaboration with the other two buildings-related Concerted Actions that were established within the IEE programme: the CA-RES, focussing on transposition and implementation of the Renewable Energy Systems Directive (DIRECTIVE 2018/2001/EU); and the CA-EED, focusing on transposition and implementation of the Energy Efficiency Directive (DIRECTIVE 2018/2002/EU), where National Energy Plans are expexted o include initiatives towards building energy efficiency. 4. Supplement the work of the Article 26 Committee and establish a dialogue with the European Committee for Standardization (CEN) in their work and implementation of standards to support the implementation of the zero carbon and life cycle calculations. 5. Support for European Member States and Norway to use National Renovation Plans to support progress on the EPBD implementation and increased renovation activities. As with previous instalments of the Concerted Action, CAV_EPBD will strive to result in a more harmonized approach, improved implementation and actual application of the EPBD in all the countries involved, as well as helping to disseminate best practices between the countries.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes 2021-2027 LIFE (2021-2027)
Data inizio:	01-11-2022
Data scadenza:	31-10-2027
Contributo totale:	€ 5.000.000
Costo eleggibile totale:	€ 5.263.175
Contributo a ENEA:	€ 141.964
Costo eleggibile ENEA:	€ 149.436
Doc. approvazione:	44/2022/DUEE-SPS
Codice atto:	PW3ABD
Resp. scientifico ENEA:	AZZOLINI GABRIELLA
Unità:	DUEE-SPS-SAP

Attività ENEA:

L'ENEA partecipa alle otto task del progetto e coordina la Task 2.5: Decarbonization/Zero emission buildings.

N. Contratto: 101075902

ODYSSEE-MURE

LIFE21-CET-POLICY-OdysseeMure fit-4-55

Odyssee-MURE – Monitoring the Energy Efficiency Pillar for Climate Neutrality

Coordinatore: ADEME (Francia) N. Partner: 34

Abstract:

ODYSSEE-MURE “Monitoring the Energy Efficiency Pillar for Climate Neutrality” aims at supporting policy makers in EU Commission, Member States (MS) and Energy Community (EnC) countries to implement the framework of the EU Energy Efficiency Directive (EED) as efficiently as possible at national level. It provides updated, well-experienced, user-friendly databases and web-tools for monitoring and evaluating impacts of EE policies. The ODYSSEE database and facilities contain and analyse latest available energy demand and energy efficiency indicators. The MURE database and facilities contain and analyse energy efficiency policies and measures. These tools have been successfully used in the past and will be extended from 27 EU MS to 9 EnC countries, supported by a specific buddy system from selected partners of the EU27. New tools, such as a web-based Energy Efficiency Policy Assessment Tool and a Policy Radar, will strengthen capabilities of EU MS and EnC. The project will enhance, update and modernise ODYSSEE-MURE tools and databases for support to EU MS and EnC through regional and national training events as well as dissemination channels such as country/sector profiles, newsletters, policy briefs, webinars and social media. In addition, we disseminate the analysis developed in this project, through cooperation with the European Council for an Energy Efficient Economy (eceee) that organisesthe most important energy efficiency events, and which gathers policy makers, researchers and industry. We further disseminate the results through cooperation with international/ regional organisations such as the Energy Community Secretariat, the International Energy Agency IEA, EEA, UNCepal/Eclac and OLADE. ODYSSEE-MURE has a decentral, though harmonised, approach combining a strong Technical Coordination (ADEME, Enerdata, Fraunhofer ISI) with a large number of National Teams(EE agencies), and an efficient project management structure adapted to the large number of partners.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes 2021-2027 LIFE (2021-2027)
Data inizio:	01-10-2022
Data scadenza:	31-03-2025
Contributo totale:	€ 1.853.113
Costo eleggibile totale:	€ 1.853.113
Contributo a ENEA:	€ 36.986
Costo eleggibile ENEA:	€ 36.986
Doc. approvazione:	48/2022/DUEE-SPS
Codice atto:	PW3ABE
Resp. scientifico ENEA:	IORIO GIULIA
Unità:	DUEE-SPS-MPE

Attività ENEA:

L'ENEA è l'unico partner italiano del progetto ed è coinvolto nelle attività previste nei WP1, 2, 3 e 6 che prevedono principalmente: . il monitoraggio dei progressi in materia di efficienza energetica (database e strumenti in ODYSSEE); . la valutazione delle misure di politica di efficienza energetica (database e strumenti in MURE); . l'organizzazione di un meeting di progetto per consentire il dialogo e lo scambio di esperienze tra i partner al fine di rafforzare le competenze interne.

N. Contratto: LIFE19 GIE/PL/000784

LIFEproETV

Promotion and implementation of ETV as an EU voluntary scheme for verifying performance of environmental technologies

Coordinatore: IETU - INSTITUTE FOR ECOLOGY OF INDUSTRIAL AREAS (Polonia) N. Partner: 8

Abstract:

The overall goal of LIFEproETV is to promote and ensure the effective implementation of Environmental Technology Verification (ETV) in Poland, as a voluntary scheme with a strong recognition and acceptance on the EU market. To achieve the goal, the project beneficiaries will: • Increase the awareness, knowledge and understanding about ETV as a voluntary environmental scheme, which facilitates market entry of new environmental technologies (supply side) and supports transparent, evidence-based procurement decisions (demand side); • Build capacity, skills and a knowledge base for EU-wide ETV uptake and easy access of SMEs to ETV; • Create a favourable policy environment to encourage the uptake of ETV on EU and domestic markets, as a tool for helping achieve environmental, climate and innovation policy objectives; and • Foster the scale-up of the EU ETV pilot programme within Member States and towards new technology areas. The project, by promoting eco-innovation within ETV, contributes to achieving the objectives of EU policy in the field of environmental protection, including climate and air protection. It also helps implement the objectives of the European Green Deal (COM/2019/640), including the achievement of the climate neutrality target by 2050, and the EU action plan for the Circular Economy (COM/2015/0614).

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	01-09-2020
Data scadenza:	31-12-2023
Contributo totale:	€ 988.370
Costo eleggibile totale:	€ 1.876.282
Contributo a ENEA:	€ 97.428
Costo eleggibile ENEA:	€ 256.387
Doc. approvazione:	6/2021/PRES
Codice atto:	PS6ADF
Resp. scientifico ENEA:	SBAFFONI SILVIA
Unità:	SSPT-USER-RISE

Attività ENEA:

ENEA coordinerà l’azione B.4 (Establish an EU wide framework for ETV recognition and market acceptance) e due task. Le attività ENEA prevedono: . la creazione di una comunità ETV di stakeholders per garantire che le attività di comunicazione e promozione pianificate abbiano un reale impatto sul reale riconoscimento dell’ETV da parte del mercato; . l’elaborazione di una metodologia per la promozione e il riconoscimento da parte del mercato europeo del programma ETV; . la diffusione dei risultati del progetto tra le parti interessate nell’UE utilizzando vari canali e strumenti come newsletter di progetti, volantini, opuscoli e documenti tecnici.

N. Contratto: 953020

LIGHTNESS

market uptake of citizen energy communities enabLing a hIGH peneTratioN of renewable Energy SourceS

Coordinatore: R2M SOLUTION SPAIN SL (Spagna) N. Partner: 13

Abstract:

LIGHTNESS will increase the Renewable Energy hosting capacity, to securely achieve the EU target for 2030, by supporting the market uptake of Citizen Energy Communities through a turnkey social engagement, regulatory roadmap, low-cost technological package and innovative business models to unlock the full flexibility potential, reduce the final energy consumption and CO2 emissions and bring economic, social and environmental benefits to the communities and across the energy value chain. LIGHTNESS solution will elaborate and execute ambitious end users engagement plans for the involved sites with continuous iterations and solution adaptation to achieve a direct engagement of +500 households and +30 tertiary buildings and an immediate replication potential to over 70.000 persons. LIGHTNESS solution will create digital twins for holistic assessment of 5 CECs case studies across 5 countries to be then deployed and monitored. Case studies consist in an energy cooperative (ES), a social housing building (PL), a private multi-apartment building (IT), a business park (FR) and 2 CECs to uphold the interaction among them (NL). The different regulatory and policy frameworks will allow to exchange best practices and providing road maps for the authorities. Overall, LIGHTNESS will engage +3000 end users, professionals, policy makers in EU, will consent a minimum 25% increase of renewable hosting capacity by making available up to 20% of flexibility in peak times from residential and tertiary buildings, will reduce up to 30% the Prosumers and CECs energy cost and up to 30% of CAPEX and OPEX costs for DSOs. LIGHTNESS has received the support from 59 organisations from which we can highlight EPEX-Spot, STEDIN, LIANDER, ACCIONA, VEOLIA, BAM, 10 EU cities, 9 energy agencies, 9 energy cooperatives, and 3 extra EU replicators from India, Turkey and Africa/America.The project management structure is gender balanced with two women and two men serving in the positions of responsibility.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-12-2020
Data scadenza:	30-11-2023
Contributo totale:	€ 2.924.250
Costo eleggibile totale:	€ 2.924.250
Contributo a ENEA:	€ 258.125
Costo eleggibile ENEA:	€ 258.125
Doc. approvazione:	23/2020/DUEE-SPS
Codice atto:	PW3AAS
Resp. scientifico ENEA:	BALDI FRANCESCO
Unità:	DUEE-SPS-SEI

Attività ENEA:

ENEA è leader del Work Package 2, “CECs and Flexibility Framework conditions and recommendations”. E' inoltre leader di quattro diverse task che si occuperanno di : . analizzare le comunità energetiche esistenti in Europa e sviluppare benchmark di riferimento (task 2.2); . mappare gli stakeholders più rilevanti a livello europeo (task 2.3); . sviluppare linee guida per l’integrazione delle Comunità Energetiche nelle politiche nazionali e per l'allineamento con gli obiettivi UE, progettazione e simulazione dei casi studio (task 6.3).

N. Contratto: 776467

MED-GOLD

Turning climate-related information into added value for traditional MEDiterranean Grape, OLive and Durum wheat food systems

Coordinatore: ENEA (Italia) N. Partner: 16

Abstract:

MED-GOLD will demonstrate the proof-of-concept for climate services in the agriculture sector by developing case studies for three hallmarks of the Mediterranean food system: grapes, olives and durum wheat. Agriculture is primarily climate-driven and hence highly vulnerable to climate variability and change. Evidence suggests that the Mediterranean region is under immediate threat of shifting climate patterns and the associated ecological, economic and social effects. Developing a capacity to turn the increasingly big climate-related data into tailored climate services that can inform decision-making in agriculture, is therefore a priority both in Europe and worldwide. The long-term goal of this project is to make European agriculture and food systems more competitive, resilient, and efficient in the face of climate change, by using climate services to minimize climate-driven risks/costs and seize opportunities for added-value. The MED-GOLD project aims to develop climate services for olive, grape, and durum wheat crop systems that are the basis for producing olive oil, wine and pasta. This set of crops and related food products is of utmost climatic, ecological, economic, and cultural relevance to the Mediterranean region. Because olive oil, wine and pasta are not only hallmarks of the Mediterranean diet but also food commodities with a global market, there is considerable potential for developing climate services with high added-value for olive, grape, and durum wheat. A key challenge is to co-design prototype pilot service applications involving both suppliers and users in the three major traditional Mediterranean crop systems so as to demonstrate the added-value of data/information-driven responses to changes in the climate system. The operational decision-making of users will be reviewed to either identify key decisions or introduce new actions that can benefit from climate-related information at different timescales from months to decades.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-12-2017
Data scadenza:	31-05-2022
Contributo totale:	€ 4.990.968
Costo eleggibile totale:	€ 4.990.968
Contributo a ENEA:	€ 452.445
Costo eleggibile ENEA:	€ 452.445
Doc. approvazione:	199/201/SSPT-MET, 123/2021/SSPT-MET
Codice atto:	PS2AAK
Resp. scientifico ENEA:	DELL'AQUILA ALESSANDRO
Unità:	SSPT-MET-CLIM

Attività ENEA:

L'ENEA coordina il progetto e inoltre svolge attività di ricerca e innovazione di propria pertinenza contribuendo alle attività di tutti i pacchetti di lavoro del progetto.

N. Contratto: ENI/2020/420-413

meetMED II

Mitigation enabling energy transition in the Southern Neighbourhood

Coordinatore: MEDENER - MEDITERRANEAN ASSOCIATION OF NATIONAL AGENCIES FOR ENERGY MANAGEMENT (Organ. Internazionali)

N. Partner: 14

Abstract:

MeetMED project begins its second phase aiming to enhance the energy security of beneficiary countries (namely Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia) while fostering their transition to low carbon economy. Accordingly, meetMED II will be contributing to the creation of more stable, efficient, competitive and climate-resilient socioeconomic contexts in the targeted countries. MeetMED II activities aim at strengthening the implementation of EE measures and improving countries' energy mix focusing on building and appliances' sectors through a multiscale, multi-partner and inclusive approach at local and regional levels, thereby fostering regional cooperation.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes ENI - European Neighbourhood Instruments (2014-2020)
Data inizio:	01-01-2021
Data scadenza:	30-06-2024
Contributo totale:	€ 5.000.000
Costo eleggibile totale:	€ 5.556.380
Contributo a ENEA:	€ 352.913
Costo eleggibile ENEA:	€ 436.798
Doc. approvazione:	266/2021/PRES
Codice atto:	PW3AAW
Resp. scientifico ENEA:	VIOLA CORINNA
Unità:	DUEE-SPS-MPE

Attività ENEA:

ENEA svolge le seguenti attività nel progetto: • Partecipazione al WPl - Project Management; • Work Package Leader del WP2 - Strategies and policies; • Task Leader del Task 2.1 - Stakeholders' engagement and dynamic dissemination of information; • Task Leader del Task 3.1.4 - Implement a set of tools far energy management in schools and previde guidance far deep building renovation, which includes renewable energy solutions, storage, and energy management system; • Partecipazione al Task 3.2 - Professional training and capacity building; • Task Leader del Task 5.1.2 - Financing Energy Efficiency in Buildings and Appliances; • Partecipazione al WP6 "Communication / information and Education strategy".

N. Contratto: 871083

METROFOOD-RI

METROFOOD-RI Preparatory Phase Project

Coordinatore: ENEA (Italia) N. Partner: 20

Abstract:

METROFOOD-RI – Infrastructure for Promoting Metrology in Food and Nutrition - is a pan-European Research Infrastructure (RI) aimed to promote scientific excellence in the field of food quality and safety. It provides high-quality metrology services in food and nutrition, comprising an important cross-section of highly interdisciplinary and interconnected fields throughout the food value chain, including agrifood, sustainable development, food safety, quality, traceability and authenticity, environmental safety, and human health. METROFOOD-RI has been selected to the ESFRI Roadmap2018 as mature enough to be implemented within the next ten years. The Action is aimed to support METROFOOD-RI to grow from its current status (research-based network of facilities and skills) to a mature, centrally-coordinated, integrated RI, with the legal, financial and technical maturity required for implementing it. The main objective is to develop the organizational, operational and strategic framework of METROFOOD-RI. Activities include legal, governance, financial, technical, strategic and administrative aspects carried out in 15 work packages, organised in 3 blocks dedicated respectively to: the organisation of the legal entity that will manage the future RI, i.e. ERIC; define the operation and the operational standards at the level of the whole RI and for the National Nodes, as well as the role of the RI as service-oriented organisation; define the long term activities for the future RI and update the Strategic Research & Innovation Agenda, in response to the actual and future challenges in the agrifood sector and for the Society. The main outcome will be the establishment of legal and financial commitment for the future ERIC, ensuring long-term common commitment, decision-making and funding engagement. Continuous relations with stakeholders and the user community will be kept in order to ensure the addressing of their needs at the best, and to focus strategies and planned services.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-12-2019
Data scadenza:	31-05-2022
Contributo totale:	€ 3.999.890
Costo eleggibile totale:	€ 3.999.890
Contributo a ENEA:	€ 506.187
Costo eleggibile ENEA:	€ 506.187
Doc. approvazione:	256/2019/SSPT-BIOAG
Codice atto:	PS1ABE
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

L'ENEA coordina il progetto e partecipa alle attività di tutti i work package. Per quanto riguarda le specifiche attività, coordina le attività di predisposizione dello statuto per l'ERIC con le rispettive policy - in previsione dell'assunzione di una propria figura legale da parte di METROFOOD-RI - e di organizzazione dell'infrastruttura con la sua struttura Hub&Nodes. E' inoltre coinvolta in tutte le attività finalizzate alla definizione del piano finanziario e del piano di implementazione, della carta dei servizi, dell'agenda strategia, del posizionamento nel landscape delle infrastrutture i networks impegnati nel settore "Health and Food", delle relazioni con le industrie e delle collaborazioni a livello globale, dell'analisi di impatto e del piano di comunicazione e disseminazione

N. Contratto: 847641

MICADO

Measurement and Instrumentation for Cleaning And Decommissioning Operations

Coordinatore: C.A.E.N. SPA COSTRUZIONI APPARECCHIATURE ELETTRONICHE NUCLEARI (Italia) N. Partner: 8

Abstract:

The goal of the MICADO project is to propose a cost-effective solution for non-destructing characterization of nuclear waste, implementing a digitization process that could become a referenced standard facilitating and harmonizing the methodology used for the in-field Waste Management and Dismantling & Decommissioning operations. The D&D process of nuclear infrastructures demands methods for a full traceability of waste material to improve quality management and operational safety. Precise procedures provide twofold benefits: the optimization of costs, associated with D&D, and the minimization of the dose exposure to operators and personnel. The absence of a consistent and straightforward solution to characterize all types of materials, along with the lack of an integrated solution for digitizing the enormous amount of data produced, is a critical issue. Now the systems rely on the operator's ability to maintain high operational skills and quality assurance with precision measurements that unfortunately today very often are associating high uncertainties not allowing therefore a real optimization of the waste. The utilization of several un-automatized instruments implies taking many notes and inserting them into specific ad-hoc format and on a database manually, without the possibility to combine data including previously available legacy data's if present. The RCMS Digi-Waste solution proposed in the MICADO project will result in a proven modular solution offering an opportunity to proactively develop a unified and standardized Waste NDA Characterization Procedure and Method that could become an international reference allowing all Nuclear Operators - Research Laboratories & Safety Authorities to facilitate their exchanges. The MICADO project involves some key EU players with major knowledge in nuclear waste having all in common the interest to converge in technologies, methods and implementing a full digitization process applied to nuclear waste management.

Anno di stipula:	2019
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-06-2019
Data scadenza:	28-02-2023
Contributo totale:	€ 4.442.163
Costo eleggibile totale:	€ 4.986.644
Contributo a ENEA:	€ 533.858
Costo eleggibile ENEA:	€ 533.858
Doc. approvazione:	081/2019/FSN
Codice atto:	PF1AAE
Resp. scientifico ENEA:	CHERUBINI NADIA
Unità:	FSN-FISS e FSN-INMR

Attività ENEA:

L'ENEA è leader del work package 10 ed è coinvolta principalmente nei work package 4, 5, 6, 7 occupandosi di: . Progettazione e realizzazione di un sistema modulare per la caratterizzazione radiologica di rifiuti contenenti alfa emettitori mediante tecniche neutroniche passive e attive e preparazione dei test dimostrativi sul campo; . Collaborazione allo sviluppo di un sistema automatico per la caratterizzazione completa dei rifiuti radioattivi contenenti radionuclidi gamma emettitori; . Preparazione di alcuni standard di calibrazione da utilizzarsi come materiali di riferimento nelle attività sperimentali; . Collaborazione durante la fase di ricerca per l'accoppiamento di sistemi di interrogazione neutronica e fotonica utilizzando un acceleratore di elettroni; . Partecipazione alla realizzazione e integrazione della piattaforma software DigiWaste; . Coordinazione delle attività dei partner per la 'Field Demonstration' finale.

N. Contratto: 779373

MILEDI

Micro Quantum Dot-Light Emitting Diode and Organic Light Emitting Diode Direct Patterning

Coordinatore: ENEA (Italia) N. Partner: 10

Abstract:

The project MiLEDI aims to realise micro-Light Emitting Diodes (mQDL) and micro -Organic Light Emitting Diodes (mQDO) using direct laser or electron beam patterning of nanometer-scale Quantum Dots (QDs) to write the Red-Green-Blue (RGB) arrays for display manufacturing. The main idea sustaining the project is to form the colored green-red light-emitting QDs directly over a matrix of blue emitting micro QDL/QDO arrays, so that the QDs act as frequency down-converters and constitute a RGB micro-display. Both direct-writing technologies will be thoroughly developed to optimize the QD light emission spectrum of the display and its stability. They are expected to provide patterning resolution at micrometric scales, depending on the laser spot areas and particle beam dimensions and operation. These techniques together with the direct formation of QDs assure highly flexible and simpler manufacturing processes, in few steps and with low chemical impact The MiLEDI approach for both micro QDL and QDO RGB displays manufactured by direct laser/electron beam patterning of QDs, is validated by the production of a final prototype of Rear Projection display through the existing supply chain of the project.

Anno di stipula:	2018
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 ICT
Data inizio:	01-01-2018
Data scadenza:	30-06-2022
Contributo totale:	€ 4.130.041
Costo eleggibile totale:	€ 4.130.041
Contributo a ENEA:	€ 672.500
Costo eleggibile ENEA:	€ 672.500
Doc. approvazione:	178/2017/FSN
Codice atto:	PF7AAE
Resp. scientifico ENEA:	ANTOLINI FRANCESCO
Unità:	SN-TECFIS-MNF

Attività ENEA:

The research activity of the MILEDI project includes i) the synthesis of nano-materials, ii) the dissemination of the results and iii) the coordination. The chemical synthesis of the nanoparticles in MILEDI project will be carried out in a chemical laboratory recently set up with the support of the Department of Fusion and Technology for Nuclear Safety. Within this lab the optical characterisation of the produced materials is carried out. Further optical and structural characterisations are developed in collaboration with the Photonics Micro and Nanostructures Laboratory. The dissemination and coordination of the project activity will be done together with the Department of Fusion and Technology for Nuclear Safety.

N. Contratto: 101008724 ***MINKE***

Metrology for Integrated Marine Management and Knowledge-Transfer Network

Coordinatore: CSIC SPANISH NATIONAL RESEARCH COUNCIL (Spagna) N. Partner: 22

Abstract:

MINKE will integrate key European marine metrology research infrastructures, to coordinate their use and development and propose an innovative framework of “quality of oceanographic data” for the different European actors in charge of monitoring and managing the marine ecosystems. MINKE proposes a new vision in the design of marine monitoring networks considering two dimensions of data quality, accuracy and completeness, as the driving components of the quality in data acquisition. This new vision will be framed in a quintuple helix model of innovation, incorporating all the elements involved in the monitoring network design: ? the context (ocean health), identifying the Essential Ocean variables (EOVs) as the key parameters to monitor ? the civil society (NGO, Makers community, Social media and Citizen Science platforms) as the key actors to ensure data completeness ? the academia researching new methods to ensure the accuracy and the global quality of the final products, developing tools for integrating the information of top-qualified oceanographic instruments and low-cost instrumentation. ? the industry improving the performance of the observations with new instrumentation, data-transmission systems and cost-effective technologies ? the governments that provide the legal and socio-economic frameworks to develop the proposed network The present proposal, through the different Integration Activities (Networking, Transnational-Virtual Access and Joint Research), aims to lay the groundwork for creating the necessary synergies among the different involved actors in the quintuple helix model of innovation, creating a new community with complementary capabilities for Ocean & Coastal Observation, that will facilitate the transition towards a blue growth socio-economic system.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-04-2021
Data scadenza:	31-03-2025
Contributo totale:	€ 4.994.955
Costo eleggibile totale:	€ 4.994.955
Contributo a ENEA:	€ 55.057
Costo eleggibile ENEA:	€ 55.057
Doc. approvazione:	39/2021/SSPT-PROTER
Codice atto:	PS4ACR
Resp. scientifico ENEA:	RESEGHETTI FRANCO
Unità:	SSPT-PROTER-BES

Attività ENEA:

ENEA è coinvolto nel WP2 (Promoting Operational Integration through Harmonization of Procedures) e si occuperà di: • misure in situ e caratterizzazione metrologica della strumentazione marina; • sviluppo delle migliori pratiche per gli strumenti e analisi dell'incertezza relativa agli EOV ENEA è coinvolto inoltre nel WP10 (Management, Communication and Ethics), come gli altri 21 partners partecipanti alla proposta, per lo svolgimento della seguente attività: • l'obiettivo generale del WP10 è fornire, promuovere e gestire tutti i compiti, gli strumenti, le strutture e le strategie necessarie per una gestione e governance quotidiana efficace, adeguata e trasparente del consorzio durante tutto l'arco di vita del progetto .

N. Contratto: 847441

MUSA

MANAGEMENT AND UNCERTAINTIES OF SEVERE ACCIDENTS

Coordinatore: CIEMAT (Spagna) N. Partner: 28

Abstract:

In the current state of maturity of severe accident codes in terms of phenomena addressed and extensive validation conducted, the time has come to foster BEPU, Best Estimate Plus Uncertainties, application in the severe accident (SA) domain, and accident management (AM). The advantages with respect to deterministic analysis are known: avoid adopting conservative assumptions in the model and allow identifying safety margins, quantify likelihood of reaching specific values and, through the distribution variance provide insights into dominating uncertain parameters.The overall objective of the Management and Uncertainties of Severe Accident (MUSA) project is to assess the capability of SA codes when modelling reactor and SFP (Spent Fuel Pool) accident scenarios of Gen II and III. To do so UQ (Uncertainty Quantification) methods are to be used, with emphasis on the effect of already-set and innovative accident management measures on accident unfolding, particularly those related to ST (Source Term) mitigation. Therefore, ST related Figures Of Merit (FOM) are to be used in the UQ application. The MUSA project proposes an innovative research agenda in order to move forward the predictive capability of SA analysis codes by combining them with the best available/improved UQ tools and embedding accident management as an intrinsic aspect of SA analyses.MUSA develops through key activities which also describe the main outcomes foreseen from the project: identification and quantification of uncertainty sources in SA analyses; review and adaptation of UQ methods; and testing such methods against reactor and SFP accident analyses, including AM. Given the focus of FOM on source term, the project will identify variables governing ST uncertainties that would be worth investigating further. All the ingredients necessary to conduct the project are already available: analytical tools, experimental data, postulated reactor and SFP scenarios and, technical and scientific competences.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-06-2019
Data scadenza:	31-05-2023
Contributo totale:	€ 3.186.503
Costo eleggibile totale:	€ 5.768.453
Contributo a ENEA:	€ 176.863
Costo eleggibile ENEA:	€ 232.550
Doc. approvazione:	087/2019/FSN
Codice atto:	PF6AAJ
Resp. scientifico ENEA:	MASCARI FULVIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA è coinvolto in proporzioni diverse in tutti i work package. In particolare contribuirà: . Nel WP2 all'identificazione e quantificaione delle sorgenti di incertezza oer GEN II/III/III+; . Nel WP3 alla revisione delle metodologie per quantificare le incertezze; . Nel WP4 all'applicazione delle metodologie di incertezza per il calcolo di esperimenti condotti nell'impianto sperimentale, di tipo integrale, PHEBUS e coordinerà queste attività; . Nel WP5 all'applicazione di metodologie di incertezza per il calcolo di scenari incidentali in generico PWR-900; . Nel WP6 alla simulazione di scenari incidentali in SFP e eventuali analisi di sensibilità o incertezza.

N. Contratto: 755439

NARSIS

New Approach to Reactor Safety ImprovementS

Coordinatore: CEA (Francia) N. Partner: 18

Abstract:

Probabilistic Safety Assessment (PSA) procedures allow to better understand and estimate the likelihood of the most causes prone to initiate nuclear accidents and to identify the most critical elements of the systems. However, despite of the remarkable reliability of current procedures, the 2011 Fukushima Daiichi accident highlighted a number of challenging issues with respect to their application and validity of their results. From this nuclear disaster the upgrading of the current methodological framework appeared to be necessary in areas such as cascading/conjunct events characterization, fragility analyses and uncertainties treatment. New developments in those areas would even enable the extension of their use in accident management. Based on recent theoretical progresses, the NARSIS project aims at making significant scientific updates of some elements required for the PSA, focusing on external natural events (earthquake, tsunami, flooding, high speed winds...). These improvements mainly concern: • Natural hazards characterization, considering concomitant external (simultaneous-yet-independent or cascading) events, and the correlation in intra-event intensity parameters; • Fragility and functionality assessment of main critical NPPs' elements, accounting for conjunct effects (including ageing effects) and interdependencies under single or multiple external aggressions; • Risk integration combined with uncertainty characterization and quantification, to allow efficient risks comparison and account for all possible interactions and cascade effects; • Better processing/integration of expert-based information within PSA, through modern uncertainty theories both to represent in flexible manner experts' judgments and to aggregate them to be used in a comprehensive manner. The proposed improvements will be tested and validated on simplified and real NPP case studies. Demonstration supporting tools for operational & severe accident management will be also provided.

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2017
Data scadenza:	28-02-2022
Contributo totale:	€ 4.965.472
Costo eleggibile totale:	€ 5.470.829
Contributo a ENEA:	€ 94.500
Costo eleggibile ENEA:	€ 94.500
Doc. approvazione:	88/2017/FSN
Codice atto:	PF6AAG
Resp. scientifico ENEA:	LOMBARDO CALOGERA
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA è coinvolta principalmente nei WP1-2-3-5-6. In particolare si occupa di: . Definizione di una metodologia per l'analisi dei rischi esterni; . Analisi di vulnerabilità e resilienza di sistemi e componenti; . Analisi di sicurezza e rischio di impianti a fronte sia di rischi interni che esterni; . Costruzione di un modello per la definizione delle linee guida al fine dell'Accident Management; . Disseminazione dei risultati

N. Contratto: 101036127

NET2

ScieNcE Together

Coordinatore: CNR - CONSIGLIO NAZIONALE DELLE RICERCHE (Italia) N. Partner: 11

Abstract:

The goal of the NET project is to lay the foundation of a NETwork connecting research world and society, building a stable and empatic communication path among institutions, researchers and citizens, also thanks to the capillary physical presence of the partners in the territory, since the NET consortium is made by well-recognised public italian research and academic institutions. This network will offer a stable exchange path through which researchers can share their passion for science, their work and life with citizens, who, in turn will use the path to get the scientific viewpoint from their “informed neighbors”. Conveying this idea is the first step to build and plan a research-based society, by increasing the number of students taking up research careers. The path will be paved by using conventional and unconventional, online and offline communications tools, to reach every citizen, regardless of age, gender, cultural or economic conditions, even if particular attention will be devotaed at students and pupils. NET will bring researchers closer to the general public and increase awareness of research and innovation activities, increasing the public recognition of researchers, creating an understanding of the impact of researchers' work on citizens ´ daily life, promoting choices for a sustainable future. In fact the main theme of the project is the most relevant and global question of this millennium: the climate change, in order to give citizens information to be aware protagonists of collective political choices and correct individual behavior. NET European Researchers’ Night and related activities will take place in 16 italian cities (from North to South: Brasimone, Chioggia, La Spezia, Ozzano, Civitavecchia, Fiumicino, Frascati, Grottaminarda, Monte Porzio Catone, Rieti, Rocca di Papa, Roma, Tarquinia, Viterbo, Palermo, Portici, Trisaia) and Vulcano and Stromboli Aeolian Islands, so as to wrap the whole of Italy in the NET.

Anno di stipula:	2021
Tipo progetto:	
Programma UE:	HORIZON 2020 MSCA Marie Skl. Curie Actions
Data inizio:	04-05-2021
Data scadenza:	03-02-2022
Contributo totale:	€ 399.948
Costo eleggibile totale:	€ 533.263
Contributo a ENEA:	€ 29.015
Costo eleggibile ENEA:	€ 38.686
Doc. approvazione:	90/2021/TERIN
Codice atto:	PK0AAD
Resp. scientifico ENEA:	FALCONIERI FABIOLA LETIZIA
Unità:	REL-EVENTI

Attività ENEA:

L’ENEA si occupa della promozione del progetto NET sui social network, ampliare l’offerta dei virtual tour ENEA e per i 5 centri di ricerca che hanno aderito al progetto (C.R. Brasimone, C.R. Casaccia, C.R. Frascati, C.R. Portici, C.R. Trisaia) coordinare un programma di fruizione on-line sia in modalità “diretta streaming” sia “on-demand”.

N. Contratto: 760331

NEWCOTIANA

Developing Multipurpose Nicotiana Crops for Molecular Farming using New Plant Breeding Techniques

Coordinatore: CSIC SPANISH NATIONAL RESEARCH COUNCIL (Spagna) N. Partner: 19

Abstract:

A group of New Plant Breeding Techniques (NPBT) has opened unprecedented opportunities in agriculture. Those NPBTs are at least as efficient and often more precise than previous traditional and GM techniques, while circumventing the introduction of heritable transgenes from distant species in the plant genome. Properly communicated, NPBTs are expected to gain wide acceptance, especially when applied to breeding objectives which are seen as beneficial for the society. A well-perceived objective is Molecular Farming, which refers to the use of plants for the production of valuable biomolecules (e. g. biopharmaceuticals). Cultivated tobacco (Nicotiana tabacum) and its close Australian relative Nicotiana benthamiana, are preferred species in Molecular Farming due to their favourable features: non-food crops, easy tissue regeneration, high productivity, rich secondary metabolism and availability of genetic tools. In sharp contrast, traditional tobacco cultivation is in serious decline in the EU, causing serious social problems in many rural areas. NEWCOTIANA aims to revitalize those areas by breeding efficient Nicotiana biofactories of high-value non-smoking products as alternatives for traditional tobacco crops. NEWCOTIANA will develop the most advanced tobacco NPBTs toolbox, easily transferable to other plants. This will position EU in the avant-garde of breeding innovation. This toolbox will be used to create elite multipurpose Nicotiana varieties improved in product-specific traits (bioproduct quality, stability and yield), next to more general traits as biomass, resilience and biosafety. The “Newcotiana” varieties will be carefully tested in relevant pre-industrial environments for the production of end-value chemicals, namely proteins and metabolites for health and nutriceutical use. Ethical, social and legal aspects will be closely monitored and public and stakeholder engagement will be assured using innovative science communication methodologies.

Anno di stipula:	2018
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
Data inizio:	01-01-2018
Data scadenza:	31-12-2022
Contributo totale:	€ 7.199.560
Costo eleggibile totale:	€ 7.363.310
Contributo a ENEA:	€ 465.000
Costo eleggibile ENEA:	€ 465.000
Doc. approvazione:	319/2017/PRES
Codice atto:	PS1AAJ
Resp. scientifico ENEA:	GIULIANO GIOVANNI
Unità:	SSPT-STS

Attività ENEA:

L'ENEA partecipa ai work package: . WP1 Nicotiana biofactory NPBT toolbox: completamento della sequenza genomica di Nicotiana al fine di ottimizzare l'applicazione di NPBT; . WP3 Breeding and evaluation of metabolite biofactory lines: ottimizzazione, tramite NPBT, della produzione di carotenoidi antiossidanti e alcaloidi anti-Alzheimer in foglie di tabacco; . WP4 Validation and evaluation of NEWCOTIANA biofactories in industrially-relevant settings: verifica dei livelli di produzione di tali sostanze in pieno campo.

N. Contratto: 840651

OCEANSET

Support to the Realisation of the Ocean Energy Implementation Plan of the SET-Plan

Coordinatore: SEAI - SUSTAINABLE ENERGY AUTHORITY IRELAND (Irlanda) N. Partner: 9

Abstract:

he SET Implementation Plan for Ocean Energy (IP) was adopted by the SET-Plan Steering Committee on the 21st of March 2018. The IP was prepared by a Temporary Working Group, with representatives from the European Commission, Member States and other stakeholders. For the execution of the IP, the TWG has evolved to assume the role of the Implementation Working Group (IWG). Support for the OE sector to date has focused on the development of research and roadmaps which have set out the aspirations of wave and tidal sector. The principle of the IP is to transform those aspirations into operational actions. The actions listed within the IP are primarily based upon the Ocean Energy Strategic Roadmap, which has been agreed by the EC, MS, Regions, stakeholders and the wider ocean energy sector. The ambition of the IP is to outline a structured approach that will enable wave and tidal technologies to follow a credible development path, with the ultimate destination of a commercially viable products and industry. The target timescale presented in the IP is 2025 for tidal technologies and 2030 for wave technologies. OceanSET will assist the IWG to continue their work to deliver on the targets set in the IP. In particular OceanSET will focus on assessing the progress of the ocean energy sector and will monitor the National and EU funded projects in delivering successful supports. Relevant data will be collected annually and will be used to inform MS and EU Commission on progress of the sector, it will also be used to review what works and what doesn't and to assess how to maximise the benefit of the funding streams provided across the MS, Regions and the EC. The partners on this project include representatives from Ireland (SEAI), UK (WES, University of Edinburgh), France (FEM), Portugal (DGEG), Spain (EVE, PLOCAN), Italy (ENEA) and from the industry (OEE). The Sustainable Energy Authority of Ireland (SEAI) will be lead partner on the project.

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	16-03-2019
Data scadenza:	15-03-2022
Contributo totale:	€ 992.029
Costo eleggibile totale:	€ 1.043.745
Contributo a ENEA:	€ 41.828
Costo eleggibile ENEA:	€ 41.828
Doc. approvazione:	28/2019/SSPT-MET
Codice atto:	PS2ABD
Resp. scientifico ENEA:	PISACANE GIOVANNA
Unità:	SSPT-MET-CLIM

Attività ENEA:

Le attività ENEA riguardano l'adozione di metriche appropriate ed efficaci per monitorare e valutare i progressi tecnologici e applicativi nel campo dell'energia del mare. ENEA contribuisce inoltre alla diffusione di competenze tra gli stakeolder del settore e partecipa alle attività di trasferimento tecnologico del progetto, per stimolare lo sviluppo in ambiti specifici riconosciuti come prioritri

N. Contratto: INEA/CEF/ICT/A2018/1815914

OpenIACS

Open LOD platform based on HPC capabilities for Integrated Administration and Control System of Common Agrarian Policy

Coordinatore: UNIV. CARLOS III MADRID (Spagna) N. Partner: 10

Abstract:

The overall objective of the Action is to foster data use and reuse in the context of the European Common Agricultural Policy (CAP), and to improve its accessibility and usability by farmers, policy makers and third parties such as SMEs. The main technical goal of the Action is to enrich HPC European capabilities through the creation of a common infrastructure for agri-environmental governance of the CAP. In doing so, the action will provide an open community platform for sharing solutions in the Integrated Administration and Control System (IACS) domain for the CAP through the Linked Open Data paradigm. This will include generic services to facilitate end-user access to HPC capabilities by managing different HPC providers via a technological architecture that processes service level agreements to seamlessly assign jobs to the different providers involved in Open IACS infrastructure. More specifically, the Action will: 1. Design a network of interoperable Linked Open Data (LOD) End-points considering information for Agri-environmental management of IACS policies. 2. Implement the common agri-environmental LOD infrastructure for IACS policy management by means of increasing HPC capabilities. 3. Demonstrate the usefulness of this infrastructure through its application in different scenarios.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes CEF (Connecting Europe Facility) - TELECOM
Data inizio:	01-09-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 3.360.731
Costo eleggibile totale:	€ 4.480.973
Contributo a ENEA:	€ 392.679
Costo eleggibile ENEA:	€ 523.572
Doc. approvazione:	56/E/2019/DTE
Codice atto:	PT3AAH
Resp. scientifico ENEA:	AMBROSINO FIORENZO
Unità:	DTE-ICT-HPC

Attività ENEA:

L'ENEA opera nell'ambito dell'area tecnico-scientifica dell'High performance Computing con particolare riguardo alla gestione di una gran mole di dati e loro fruizione (OpenData). In particolare si dovranno: . Progettazione e sviluppare soluzioni software che vanno dall'armonizzazione dei dati mediante modelli concettuali, fino alla progettazione e implementazione di modelli fisici basati su database; . Soluzioni per l'integrazione di modelli di simulazione sulla piattaforma HPC CRESCO e integrazione con le architetture HPC implementate dagli altri partner HPC.

N. Contratto: 101061453 ***OperaHPC***

OPEn HPC theRmomechanical tools for the development of eAtf fuels

Coordinatore: CEA (Francia) N. Partner: 18

Abstract:

Increasing further the safety of light water nuclear reactors in the new operating conditions induced by their integration in a more varied energy mix brings many new challenges for fuel development. This calls for effective and validated tools enabling one to capture the complexity of the behaviour of fuel elements under various operation conditions from nominal to design basis accident ones.. The objective of the OperaHPC proposal is to develop open tools using High Performance Computing (HPC) enabling a full 3D high-fidelity thermo-mechanical simulation of the fuel element including the material microstructure. This will contribute to the design of so-called fuel element digital twins. This development includes an ambitious basic research program devoted to the investigation of non-linear mechanical behaviour of irradiated fuel using multiscale experiments and simulations from the atomic scale up to the material law. This will yield the detailed description of the in-pile behaviour of the fuel element and the materials data necessary for the simulation. The tools developed will be assessed against state-of-the-art 1D/3D fuel performance codes for verification, definition of boundary conditions and coupling with neutronic, thermochemical and thermohydraulic codes. Validation and uncertainty analyses will also be performed through the comparison of the results of the 3D simulations with the experimental data available from irradiation programs. The knowledge from these advanced simulations will be transferred to industrial fuel performance codes thanks to the application of new methods based on reduced order and meta models, including Artificial Intelligence. The HPC tools will finally be applied to the detailed evaluation of innovative fuel element concepts, including (enhanced) accident tolerant fuels, under transient conditions in several light water reactor designs.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-11-2022
Data scadenza:	30-04-2027
Contributo totale:	€ 2.846.944
Costo eleggibile totale:	€ 2.846.944
Contributo a ENEA:	€ 170.300
Costo eleggibile ENEA:	€ 262.000
Doc. approvazione:	104/2022/FSN
Codice atto:	PF6ABA
Resp. scientifico ENEA:	CERVONE ANTONIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA è coinvolta dei seguenti Work Package: • WP4 - Development of 3D HPC simulation tools for the thermomechanical behavior of fuel elements under irradiation • WP5 - Verification and validation, uncertainties and sensitivity analyses • WP6 - Development of improved models for industrial fuel performance codes • WP7 – Simulation of fuel element behavior in operating and accidental transient conditions • WP8 – Education and training, exploitation, dissemination and communication

N. Contratto: 899997

ORIENT-NM

OrganIsation of the European Research Community on Nuclear Materials

Coordinatore: CIEMAT (Spagna) N. Partner: 15

Abstract:

ORIENT-NM answers the Euratom WP 2019-20 call NFRP-08, which requests to explore the possibility of establishing a European Joint Programme (EJP) on nuclear materials. Accordingly, ORIENT-NM will: 1. Produce a convincing strategic research agenda (SRA) for materials for all nuclear fission reactor generations (until 2040), consistent with national programmes and industrial needs, including supply chain constraints, paying attention to standardisation issues and verifying the availability of suitable infrastructures; 2. Elaborate an efficient EJP governance and legal structure, including attention for decision-making processes, intellectual property issues, promotion of innovation and analysis of potentially available resources, as well as an implementation scheme caring among others for quality assurance, SRA updating, knowledge and data management; all this considering different possible scenarios; 3. To identify appropriate ways of interactions between the EJP and other bodies and initiatives that bear connections with nuclear materials (stake-holders), including international organisations, standardisation bodies, technical safety organisations, fusion and non-nuclear energy communities, other associations, while addressing the issue of a coordinated use of nuclear materials infrastructures. All of the above will be done in close dialogue with Member States and European Commission, as well as all other stake-holders, in order to meet their requirements and expectations from an EJP on nuclear materials and raise the interest of identified research owners and research managers, by demonstrating the added value of such EJP. The key outcomes will be: A. Critical assessment of the added value of an EJP on nuclear materials; B. Vision Paper and SRA; C. Possible EJP structure, governance, legal aspects and implementation; D. Set of protocols for the interaction of the EJP with other stake-holders. Documents listed under A, C and D will complement and integrate the SRA.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-10-2020
Data scadenza:	31-03-2023
Contributo totale:	€ 1.099.589
Costo eleggibile totale:	€ 1.756.380
Contributo a ENEA:	€ 92.224
Costo eleggibile ENEA:	€ 186.788
Doc. approvazione:	068/2020/FSN
Codice atto:	PF4AAO
Resp. scientifico ENEA:	ANGIOLINI MASSIMO EMILIO
Unità:	FSN-ING-SMN

Attività ENEA:

ENEA è coinvolta nei seguenti Work Package: . WP1 con il ruolo di coordinamento. Tale WP sarà interamente dedicato alla raccolta di informazioni sui programmi nazionali ed all'analisi dell'interesse de-gli Stati membri per un EJP sui materiali nucleari . WP2 relativamente alla stesura del Vision Paper della SRA dell'EJP . WP3 relativamente all'organizzazione dell'EJP in tutti i suoi aspetti; go-vernance e struttura, questioni legali, implementazione, education and training . WP4 relativamente all'interazione con gli organismi che si occupano di standardizzazione, di codici di progettazione, della gestione dei dati e delle conoscen-ze, dell'interazione dell'EJP con gli organismi che gestiscono le infrastrutture per lo studio dei materiali. . WP5 relativamente alla stesura ed attuazione della Strategia per le attività di diffusione e comunicazione delle informazioni

N. Contratto: 945341

PASCAL

PROOF OF AUGMENTED SAFETY CONDITIONS IN ADVANCED LIQUID-METAL-COOLED SYSTEMS

Coordinatore: ENEA (Italia) N. Partner: 16

Abstract:

The PASCAL project is devoted at significantly contribute to the advancement of the safety research on innovative heavy liquid metal cooled reactors, with the ambition to generate evidence that is ready-for-use in the discussions between the ALFRED and MYRRHA designers and the respective safety authorities in the pre-licensing phase. The goals of PASCAL also set an ambition of relevance and quality to the results, which is reflected in structuring and organizing the proposal. Relevant experiments in representative conditions are planned, and - wherever applicable - accompaigned by simulations with the objective of extending their domain of validation and reducing uncertainties. The selected activities all address the main reference: supporting the justification of resilience to severe accident conditions, aiming to demonstrate the claim that no off-site emergency measures are needed for an HLM-cooled system. Finally, the project will strengthen the longstanding collaborations among European organizations, and will strongly support the education and training of a new generation of experts, to secure safety culture is preserved.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-11-2020
Data scadenza:	31-10-2024
Contributo totale:	€ 3.799.238
Costo eleggibile totale:	€ 4.610.189
Contributo a ENEA:	€ 562.969
Costo eleggibile ENEA:	€ 750.625
Doc. approvazione:	140/2020/FSN
Codice atto:	PF6AAQ
Resp. scientifico ENEA:	GRASSO GIACOMO
Unità:	FSN-SICNUC-PSSN

Attività ENEA:

L'ENEA coordina il progetto ed è coinvolta nei seguenti work package. . WP4 dedicato allo studio di tecniche di prevenzione di fallimenti (ENEA coordina) Task 4.1: vibrazioni fluido-indotte sul fascio di barrette di combustibile (ENEA coordina) Sub-Task 4.1.1 progettazione, allestimento ed esecuzione di prove sperimentali di vibrazioni fluido indotte nel fascio di barrette di un elemento di combustibile di ALFRED (ENEA coordina) Sub-Task 4.1.2 analisi numerica dei risultati sperimentali, loro interpretazione e validazione dei codici di calcolo . WP6 dedicato alla gestione del progetto (ENEA coordina)

N. Contratto: 945275

PASTELS

PAssive Systems: Simulating the Thermal-hydraulics with ExperimentaL Studies

Coordinatore: EDF - ELECTRICITE DE FRANCE SA (Francia) N. Partner: 11

Abstract:

PASTELS aims to significantly increase the knowledge within Europe of innovative passive systems, namely SACOs and CWCs, and the ability of several European system and CFD computational codes to be able to accurately model key phenomena such as natural circulation loops and condensation. This is very challenging due to their very specific properties, i.e. small driving forces working against high resistive forces which are specific to the concept of these technologies. Given the growing use of the SACO and CWC technologies in non-European NPPs, it is essential, especially with the foreseen future use of Small Medium Reactors (SMR) that the European nuclear community is able to adapt its current numerical tools to this promising technology. Extensive experimental testing (SET, CET and integral experiments) with representative operating conditions on semi-industrial full scale test facilities (PKL facility [DE] and PASI facility [FI]) will provide essential data to support the improvement of the numerical activities. Existing data from PERSEO and HERO-2 facilities will also be used. The numerical and experimental activities will be conducted in an integrated step-by-step approach. PASTELS will investigate improvements to models, novel methodologies for the coupling of system and CFD codes working at different scales. Additionally, important knowledge on the behaviour of the SACO and CWC will be captured through the observation of their behaviour during the test campaigns. Different and similar computational codes will be used by the partners in order to be able to benchmark and compare the different results obtained, understand the causes and propose strategies to improve them. All project results will feed into extensive methodology guidelines and a roadmap to achieving licensing and implementation of these innovative passive system technologies in future European NPPs.

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2020
Data scadenza:	29-02-2024
Contributo totale:	€ 2.993.263
Costo eleggibile totale:	€ 3.801.458
Contributo a ENEA:	€ 188.300
Costo eleggibile ENEA:	€ 269.000
Doc. approvazione:	67/2020/FSN
Codice atto:	PF6AAO
Resp. scientifico ENEA:	POLIDORI MASSIMILIANO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA è coinvolta nei seguenti work package: • WP2 dedicato allo studio di test a effetti separati (SET) e combinati (CET • WP3 dedicato alla costruzione di un Safety Condenser e sperimentazione su facility PKL

N. Contratto: 945077

PATRICIA

Partitioning And Transmuter Research Initiative in a Collaborative Innovation Action

Coordinatore: SCK CEN - CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE (Belgio) N. Partner: 27

Abstract:

Climate change is one of the main issues facing humanity. Due to its low CO2 emission, nuclear power is part of a sustainable energy mix. However, safety and waste issues cannot be taken lightly. For the latter the way forward is to recycle spent fuel with the goal to close the fuel cycle. This eases ultimate radioactive waste management, increases proliferation resistance and drastically improves economy and sustainability by better use of fuel resources. The SNETP deployment plan describes a technical needs fuel recycling including partitioning of spent fuel, fabrication and characterisation of minor actinide bearing fuel and the development of transmutation systems. This proposal follows that plan and answers to NRFP7 of the 2018-2019 EURATOM call: Research and Innovation for Partitioning and/or Transmutation. It focusses on research on advanced partitioning to efficiently separate Am from spent fuel, on experimental and fuel performance code development work studying the behaviour of Am bearing fuel under irradiation and on the safety related research supporting the licensing process of MYRRHA in its role in the development trajectory for a dedicated accelerator driven transmuter. It may be noted that for first time, the communities working of partitioning, transmutation and the development of MYRRHA are joint in one project. Besides the technical work described above, dedicated work packages deals with education focussing on pre-and post-graduate students, and with dissemination where besides the specific stakeholders also high school pupils and the general public is targeted. A further task on knowledge management includes the both foreground data as well as metadata to so ensure proper QA for V&V is possible. The project is performed using a combination of experiments, theoretical studies and numerical simulations for which the expertise of 26 research centres and universities from 14 EU countries, Switzerland, Korea, Russia and the US is pooled.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2020
Data scadenza:	31-08-2024
Contributo totale:	€ 6.499.980
Costo eleggibile totale:	€ 8.924.941
Contributo a ENEA:	€ 380.213
Costo eleggibile ENEA:	€ 503.125
Doc. approvazione:	075/2020/FSN
Codice atto:	PF4AAN
Resp. scientifico ENEA:	MARTELLI DANIELE
Unità:	FSN-ING-PRO

Attività ENEA:

ENEA è coinvolta nel Dominio 3, 4, 5: - DOMAIN 3: WP31 (WP7) Fuel Cladding Behavior 3 Nell'ambito del TASK 312 "Mechanical Properties of corroded fuel pins" ENEA contribuirà a verificare gli effetti della corrosione indotta dal metallo liquido pesante (LBE) sulla resistenza meccanica delle cladding in 15-15Ti proposte per il reattore MYRRHA. - DOMAIN 4: WP42 (WP11) System Thermal Hydraulics Safety Nell' ambito del TASK 4211 "Experimental investigation of the transition between natural circulation modes in CIRCE" ENEA condurrà sperimentazioni sulla stabilità della circolazione naturale in condizioni rappresentative degli scenari incidentali di riferimento per il reattore MYRRHA. - DOMAIN 5: WP52 (WP14) Knowledge management, education and training Nell' ambito del TASK 521 "Dissemination, education and communication" ENEA organizzerà incontri annuali con le scuole medie-superiori locali e non allo scopo di presentare il progetto, i risultati raggiunti e includendo visite ai laboratori e alle facility sperimentali. Nell' ambito del TASK 522 "Knowledge management" ENEA provvederà alla elaborazione e stesura di un data management and quality plan.

N. Contratto: 10MED21_1.1_M3_012

PEFMED PLUS

Sharing and transferring Product Environmental Footprint experiences and methods to neighbouring countries of the Adriatic agrifood sector

Coordinatore: ENEA (Italia) N. Partner: 7

Abstract:

PEFMED Plus project will share and tailor the knowledge already generated in PEFMED – the predecessor project – for the agri-food supply chain stakeholders focusing on the Adriatic. PEFMED Plus will help the stakeholders involved to become fully aware of the Product Environmental Footprint (PEF) approach – a multi-criteria measure of the environmental performance of a good or service throughout its life cycle – and of the need to reduce environmental impact through concrete improvement actions.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes Interreg MED
Data inizio:	01-06-2021
Data scadenza:	30-06-2022
Contributo totale:	€ 398.400
Costo eleggibile totale:	€ 398.400
Contributo a ENEA:	€ 66.768
Costo eleggibile ENEA:	€ 78.550
Doc. approvazione:	252/2021/SSPT-BIOAG
Codice atto:	PS1ACF
Resp. scientifico ENEA:	COLONNA NICOLA
Unità:	SSPT-BIOAG

Attività ENEA:

Le attività prevedono l'esecuzione di attività di coordinamento della partnership, di trasferimento di conoscenze e metodi e di scambio di informazioni oltreché di organizzazione e gestione di eventi.

N. Contratto: 958223

PHOTORAMA

PHOtovoltaic waste management - advanced Technologies for recOvery and recycling of secondary Raw Materials from end-of-life modules

Coordinatore: CEA (Francia) N. Partner: 13

Abstract:

Since the last decades, Waste Electrical and Electronic Equipment (WEEE) have been drastically increasing in Europe, particularly for recent technologies such as Photovoltaic (PV) devices. These products are designed as complex sandwiches, which make the recovery of the critical (Si, In, Ga) and precious (Ag) raw materials encapsulated in the layers extremely challenging. The overall objective of PHOTORAMA is to draw up a profitable and sustainable circular value chain that will lead to a carbon neutral PV industry. PHOTORAMA will develop and demonstrate the industrial prospective of recycling solutions to recover and recycle all the materials 'components from End-of-life PV panels. A complementary consortium of 13 European companies and research institutes has built the framework of PHOTORAMA as follow: (1) the development of innovative processes and technologies from TRL4-5 to TRL7 to establish a sound recycling scheme to increase significantly resource efficiency with decisive cost-cutting solutions. The implementation of automated disassembly and sandwich opening as layer separation (MONDRAGON, DFD, CEA) enabling high-recovery (> 95%) of secondary raw materials: Ag, Si (SINTEF, CEA, IDENER) and In, Ga (LUXCHEMTECH) from EoL PV panels (crystalline silicon, thin films), (2) the full-circularity approach emphasised from collection (PV CYCLE) to marketable new products from Si, In, Ga, Ag (RHP), glass (MALTHA) mainly for PV manufacturing (EGP), (3) the demonstration of the business viability and attractiveness of its technological solutions (BIFA, ENEA) as one of the most competitive perspective for PV recycling. PHOTORAMA will strengthen this ambitious model with environmental impacts assessments and a strategic dissemination and exploitation plan supported by a strong effort for raising societal awareness (ZSI). The implementation of PHOTORAMA recycling scheme would unlock already more than 100,000 tons of valuable secondary raw materials by 2030.

Anno di stipula:	2021
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-05-2021
Data scadenza:	30-04-2024
Contributo totale:	€ 8.381.666
Costo eleggibile totale:	€ 10.365.764
Contributo a ENEA:	€ 400.134
Costo eleggibile ENEA:	€ 400.134
Doc. approvazione:	93/2021/TERIN
Codice atto:	PK2AAB
Resp. scientifico ENEA:	IZZI MASSIMO
Unità:	TERIN-FSD-IIF

Attività ENEA:

L' ENEA partecipa alle attività di sviluppo di linea pilota per Tecnologie avanzate per il recupero di materiali critici e preziosi da pannelli fotovoltaici a fine vita come Silicio, Indio, Gallio, Argento. In particolare il progetto mira allo sviluppo di un ecodesign attraverso 2 diversi tipi di processo di recupero dei metalli che riducono al minimo l'uso di sostanze chimiche consentendo, al contempo, un elevato tasso di riciclaggio dei materiali di ingresso. Riuso dei materiali riciclati per linea produzione PV.

N. Contratto: 847715

PIACE

Passive IsolAtion CondEnser

Coordinatore: ENEA (Italia) N. Partner: 11

Abstract:
PIACE has the main objective to support the technology transfer from the research to industry in the area of safety of nuclear installations. An Innovative Decay Heat Removal System for nuclear reactors, presently under technology validation in relevant environment (SIRIO facility), will be scaled-up to achieve a system prototype demonstration in operational environment, relevant for LFRs/ADSs and LWRs.

Anno di stipula:	2019
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-06-2019
Data scadenza:	31-05-2022
Contributo totale:	€ 2.247.230
Costo eleggibile totale:	€ 3.210.440
Contributo a ENEA:	€ 415.643
Costo eleggibile ENEA:	€ 593.775
Doc. approvazione:	073/2019/FSN
Codice atto:	PF4AAI
Resp. scientifico ENEA:	NITTI FRANCESCO SAVERIO
Unità:	FSN-ING-PAN

Attività ENEA:

L'ENEA coordina il progetto e partecipa ai seguenti Work package: . WP2 - Task 2.1 Test Matrix definition for LFR reference reactor; . WP3 - Task 3.1 Experimental run for LFR reference reactor; Task 3.2 Identification of two reference cases: Task 3.3-3.4 SIRIO facility upgraded for the first/second reference case and experimental run . WP4 - Task 4.1 Numerical analysis and code validation: . WP5 - Task 5.2 Nurturing Knowledge and Competence through E&T . WP6 - Task 6.1 Consortium Management

N. Contratto: 101061037

PIANOFORTE

Partnership for european research in radiation Protection and detection of ionising radiation: towards a safer use and improved protection of the environment and human health

Coordinatore: IRSN INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE (Francia) N. Partner: 58

Abstract:

The ambition of the PIANOFORTE Partnership is to improve radiological protection of members of the public, patients, workers and environment in all exposure scenarios and provide solutions and recommendations for optimised protection in accordance with the Basic Safety Standards. Research projects focusing on identified research and innovation priorities will be selected through a serie of three competitive open calls. The input to define the research priorities will be based on the priorities defined in the Joint Road Map (JRM) developed during the H2020 CONCERT EJP but also on the results of ongoing H2020 projects and on the expectations expressed by other actions carried out in other European programmes, in particular the SAMIRA action plan. High priority will be dedicated to medical applications considering that 1) medical exposures are, by far, the largest artificial source of exposure of the European population and 2) the fight against cancer is a top priority of the present European Commission. In order to ensure an appropriate continuity in the research goals and methodologies, in line with the contents of the CONCERT JRM, two other priorities have been identified to further understand and reduce uncertainties associated with health risk estimates for exposure at low doses in order to consolidate regulations and improve practices and to further enhance a science-based European methodology for emergency management and long-term recovery. Once the research priorities defined, the open call system will promote excellence in science and widening participation through a process open to the whole radiation protection community. Beyond the research actions, the selected projects will be able to benefit from the system of sharing and mutualisation of infrastructures that will be implemented at the European level. This will be accompanied by education and training schemes for health workforce and young scientists to increase Europe's research capacity in the field.

Anno di stipula:	2022
Tipo progetto:	EJP COFUND - Coordinamento di progetti nazionali di Ricerca ed Innovazione
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-06-2022
Data scadenza:	31-05-2027
Contributo totale:	€ 29.414.411
Costo eleggibile totale:	€ 45.252.945
Contributo a ENEA:	€ 30.371
Costo eleggibile ENEA:	€ 46.725
Doc. approvazione:	119/2022/SSPT
Codice atto:	PS5ABE
Resp. scientifico ENEA:	PAZZAGLIA SIMONETTA
Unità:	SSPT-TECS-TEB

Attività ENEA:

L'ENEA rivestirà il ruolo di Partner nel progetto nella Task 2.2 (Update of the Joint Road Map) e sarà Sub-Task leader (Identification of changes affecting the Joint Roadmap including the update of platform SRAs). In particolare l'ENEA coordinerà l'analisi dei cambiamenti nel campo delle applicazioni mediche delle radiazioni ionizzanti dovute ai progressi tecnologici, e/o ai cambiamenti ambientali e climatici. Il time-frame di questa analisi permetterà di includere i progressi scientifici e tecnologici nelle tematiche dei bandi di ricerca finanziati da PIANOFORTE. Questo imput sarà sintetizzato nella milestone 2.2.2 al mese 32 del progetto. ENEA ha accettato l'niversità di Pavia come "Affiliated Entity" in PIANOFORTE.

N. Contratto: 964766

POLYRISK

Understanding human exposure and health hazard of micro- and nanoplastic contaminants in our environment

Coordinatore: UNIV. UTRECHT (Paesi Bassi) N. Partner: 15

Abstract:

The POLYRISK project aims unraveling the risks of microplastic and nanoplastic particles (MNP) that are ubiquitous in our environment and are likely to be entering the human body via inhalation and ingestion. The most bioavailable low-micron and nano-sized MNP, pose the biggest analytical challenges or today's analytical chemists. Existing knowledge about the adverse pro-inflammatory effects of airborne particulate matter and nanoparticles, combined with pro-inflammatory evidence of MNP exposure observed in animal models and in vitro pilot tests with human immune cells, suggests that MNP may cause immunotoxicity in humans. Occupational exposure of workers to fibrous MNP can indeed lead to granulomatous lesions, causing respiratory irritation, functional abnormalities and flock worker's lung. Currently, human health risk assessment protocols specific to MNP are not available and key data is missing. This hampers science-based decision making. On this backdrop, POLYRISK's human risk assessment strategy will combine highly advanced sampling, sample pretreatment and analytical methods to detect MNP in complex matrices, up-to-date fit-for-purpose hazard assessment technologies and multiple real-life human exposure scenarios. We will focus on key toxic events linked to several chronic inflammatory diseases. The consortium uniquely brings together interdisciplinary experience and know-how on quality-controlled chemical analyses of MNP and additives, intestinal and respiratory toxicity models, human exposure epidemiology, immunotoxicology and real-life high-exposure studies. POLYRISK's novel human risk assessment strategy is based on mechanistic reasoning and pragmatically accommodates the complexity of the MNP toxicant class. Building with ground-breaking science, stakeholder engagement and strong communication, POLYRISK aims to rapidly reduce current MNP risk uncertainties and support EU efforts to ensure public health is adequately protected from the potential risks of MNP pollution. POLYRISK is a part of the European cluster on Health Impacts of Micro- and Nanoplastics.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Health
Data inizio:	01-04-2021
Data scadenza:	31-03-2025
Contributo totale:	€ 5.991.078
Costo eleggibile totale:	€ 5.991.078
Contributo a ENEA:	€ 185.250
Costo eleggibile ENEA:	€ 185.250
Doc. approvazione:	10/2021/SSPT-PROTER
Codice atto:	PS4ACQ
Resp. scientifico ENEA:	MANZO SONIA
Unità:	SSPT-PROTER

Attività ENEA:

L'ENEA è coinvolto nella preparazione di materiali e nella messa a punto di metodi per la valutazione dell'esposizione (WP1), nella caratterizzazione di materiali plastici in scenari di vita reale (WP3), nella definizione del rischio da microplastiche (WP4) e nella redazione di Standard operational procedures per la valutazione delle microplastiche (WP5). In particolare, ENEA si occuperà principalmente di produrre e qualificare un set di materiali plastici micrometrici arricchiti con contaminanti ambientali selezionati (e.g. IPA, PCB, ecc.) e di caratterizzarli anche per gli effetti ecotossici

N. Contratto: 945098

PREDIS

PREDIS

PRE-DISposal management of radioactive waste

Coordinatore: VTT TECHNICAL RESEARCH CENTRE OF FINLAND (Finlandia) N. Partner: 47

Abstract:

The PREDIS project targets the development and implementation of activities for pre-disposal treatment of radioactive waste streams other than nuclear fuel and high-level radioactive waste. Member States will profit from measurable benefits including the further development and increase in Technological Readiness Level of treatment and conditioning methodologies for wastes for which no adequate or industrially mature solutions are currently available, including metallic material (WP4), liquid organic waste (WP5) and solid organic waste (WP6), and by testing and evaluating innovations in cemented waste handling and pre-disposal storage (WP7). These technical Work Packages align with priorities formulated within the Roadmap Theme 2 of EURAD and with those identified by the project's industrial End Users Group (EUG), and follow the 50% co-funding principle. Furthermore, PREDIS will produce tools guiding decision-making on the added value of the developed technologies and their impact on the design, safety and economics of waste management and disposal (WP2). PREDIS will also liaise with EURAD to provide complementarity on areas including the adaptation and update of the reference founding documents of the EJP (vision, roadmap, governance and implementation mechanisms) (WP2), and the organisation of training courses and mobility training schemes to enhance sharing and transfer of knowledge and competences as part of knowledge management activities (WP3). The PREDIS consortium, which includes 47 partners from 18 Member States, and EUG, which specifically targets Radioactive Waste Producers (RWP) as a separate group within the radioactive waste management process. PREDIS also encompasses the wider European Community, allowing cross-fertilisation and interaction between different national programmes. Numerous dissemination activities (WP1), including with Nugenia, IAEA and NEA, will be undertaken to maximize PREDIS's impact to all the identified Stakeholders in the field

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2020
Data scadenza:	31-08-2024
Contributo totale:	€ 14.000.000
Costo eleggibile totale:	€ 23.773.742
Contributo a ENEA:	€ 87.885
Costo eleggibile ENEA:	€ 175.770
Doc. approvazione:	065/2020/FSN
Codice atto:	PF1AAF
Resp. scientifico ENEA:	MARZO GIUSEPPE AUGUSTO
Unità:	FSN-FISS-CRGR

Attività ENEA:

L'ENEA è coinvolta nel WP5 "Innovations in liquid organic waste treatment and conditioning" e, più specificatamente, nei Task 5.4 (Study of conditioning matrix) e Task 5.6 (Implementation & Dissemination). Nel WP5 saranno studiate le prestazioni delle diverse matrici di condizionamento dei rifiuti liquidi organici. L'Agenzia sarà coinvolta per un totale di 18.7 mesi/uomo (PM).

N. Contratto: 18NRM02

PRISM-eBT

Primary standards and traceable measurement methods for X-ray emitting electronic brachytherapy devices

Coordinatore: PTB PHYSIKALISCH TECHNISCHE BUNDESANSTALT (Germania) N. Partner: 8

Abstract:

Electronic brachytherapy (eBT) targets tumours using X-rays from close range and has potential advantages over conventional radiotherapies. However, the systems available tend to have unique calibration methods; mostly indirect and with uncertainties larger than clinically acceptable. This means that treatment plans aren't easily adapted from one system to another, impeding progress other therapy in clinical practice. This project will deliver harmonised, simplified and traceable dosimetry for eBT detectors and measurement devices, by determining 3D dose distributions in water models. Four primary standards will be developed for absorbed doses from internal radiotherapy devices, new measurement methods will be developed, and guidance produced. The outcome will be a harmonised calibration service, capable of promotion to the profession, plus calibration standards for independent and traceable veri?cation of dosimetry, for both novel systems and for quality assurance of existing equipment. Comparability, backed by the first ever standards, will improve clinical confidence and, since treatment costs are lower than for conventional radiotherapies, increased uptake could reduce costs for Europe's health systems.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes EMPIR
Data inizio:	01-07-2019
Data scadenza:	31-12-2022
Contributo totale:	€ 799.664
Costo eleggibile totale:	€ 850.914
Contributo a ENEA:	€ 72.348
Costo eleggibile ENEA:	€ 72.348
Doc. approvazione:	108/2019/FSN
Codice atto:	PF5AAE
Resp. scientifico ENEA:	PINTO MASSIMO
Unità:	FSN-INMRI

Attività ENEA:

L'ENEA coordina uno dei quattro work packages tecnici previsti, il WP1: campioni primari e di trasferimento per il rateo di dose assorbita in acqua alla profondità di 1 cm in acqua, dovuta a dispositivi EBT, con lo scopo di effettuare ricerche pre-normative necessarie per armonizzare e semplificare le procedure dosimetriche per l'uso clinico di eBT nella radioterapia interna, al fine di ridurre le incertezze nella determinazione della dose al livello raccomandato dall'AIEA.

N. Contratto: 2132

PROMEDLIFE

Novel food products for the PROmotion of MEDiterranean LIFEstyle and healthy diet

Coordinatore: FEM - FONDAZIONE EDMUND MACH (Italia) N. Partner: 12

Abstract:

PROMEDLIFE aims to increase adherence to the MD through a multi-actor approach by encouraging the adoption of a healthy eating lifestyle while decreasing the environmental and economic impact of food production and processing. It also aims to attain optimal food communication and education through training programs that target primary and (upper) secondary students as well as their families, from children to older adults.

Anno di stipula:	2022
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 PRIMA (2018-2028)
Data inizio:	01-04-2022
Data scadenza:	31-03-2026
Contributo totale:	€ 2.363.973
Costo eleggibile totale:	€ 2.590.863
Contributo a ENEA:	€ 253.313
Costo eleggibile ENEA:	€ 253.313
Doc. approvazione:	01/2022/SSPT-BIOAG
Codice atto:	PS1ACG
Resp. scientifico ENEA:	DIRETTO GIANFRANCO
Unità:	SSPT-BIOAG-BIOTEC

Attività ENEA:

L'ENEA, partner del progetto, parteciperà allo studio degli stili di vita adottati nei Paesi coinvolti grazie ad approcci innovativi e avanzati per la caratterizzazione, la rintracciabilità e la verifica dell'autenticità dei prodotti agro-alimentari, unendo le sue competenze scientifiche ad un'analisi delle percezioni dei consumatori.

N. Contratto: 101007194

PROMETEO

Hydrogen PROduction by MEans of solar heat and power in high TEmperature Solid Oxide Electrolysers

Coordinatore: ENEA (Italia) N. Partner: 9

Abstract:

PROMETEO aims at producing green hydrogen from renewable heat & power sources by high temperature electrolysis in areas of low electricity prices associated to photovoltaic or wind. Solid Oxide Electrolysis (SOE) is a highly efficient technology to convert heat & power into hydrogen from water usually validated in steady-state operation. However, the heat for the steam generation may not be available for the operation of the SOE when inexpensive power is offered (e.g. off-grid peak, photovoltaics or wind). Thus, the challenge is to optimize the coupling of the SOE with two intermittent sources: non-programmable renewable electricity and high-temperature solar heat from Concentrating Solar (CS) systems with Thermal Energy Storage (TES) to supply solar heat when power is made available. In PROMETEO a fully integrated optimized system will be developed, where the SOE combined with the TES and ancillary components will efficiently convert intermittent heat & power sources to hydrogen. The design will satisfy different criteria: end-users' needs, sustainability aspects, regulatory & safety concerns, scale-up and engineering issues. The players of the value-chain will play key roles in the partnership created around the project: from developers and research organizations, to the electrolyzer supplier, system integrator/engineering and end-users. A fully-equipped modular prototype with at least 25 kWe SOE (about 15 kg/day hydrogen production) and TES (for 24 hours operation) will be designed, built, connected to representative external power/heat sources and validated in real context (TRL 5). Particular attention will be given to partial load operation, transients and hot stand-by periods. Industrial end-users will lead to techno-economic & sustainability studies to apply the technology upscaled (up to 100 MW) in on-grid & off-grid scenarios for different end-uses: utility for grid balancing, power-to-gas, and hydrogen as feedstock for the fertilizer & chemical industry.

Anno di stipula:	2021
Tipo progetto:	FCH2-RIA
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2021
Data scadenza:	30-06-2024
Contributo totale:	€ 2.499.531
Costo eleggibile totale:	€ 2.765.206
Contributo a ENEA:	€ 416.000
Costo eleggibile ENEA:	€ 416.000
Doc. approvazione:	193/2020/TERIN
Codice atto:	PK7AAB
Resp. scientifico ENEA:	GIACONIA ALBERTO
Unità:	TERIN-STSN

Attività ENEA:

L'ENEA assume il triplice ruolo di coordinatore del progetto/consorzio, coordinatore tecnico di un Work Package e di sviluppatore della tecnologia. Per la copertura dei ruoli di coordinamento l'ENEA potrà avvalersi di una struttura già attrezzata, disponibilità di risorse umane e consolidata esperienza maturata nel coordinamento e gestione di progetti Europei similari (per dimensione, tipologia e ambizione). Le attività sperimentali riguardano lo sviluppo di un prototipo di sistema di accumulo termico integrato con generatore di vapore: per tale sperimentazione la divisione TERIN-STSN usufruirà dei propri laboratori attrezzati e del personale qualificato.

N. Contratto: n.d.

PROVIDE

PROtein sources for nutritional security and biodiVersity in a cIrcular fooD system

Coordinatore: UNIV. TECHNICAL MUNICH (TUM) (Germania) N. Partner: 5

Abstract:

The project focuses on valorisation of food transformation industry by-products for use in bakery production. This will be based on “green” innovation processes, which will use also material from organic products and the resulting new products can be marketed “organic”. With the aim to promote circularity in the agrifood systems, 4 specific objectives have been identified: identify by-products rich in nutrients and bioactives, valorise wastes and by-products, promote circular Food Systems, define strategies to put the new products into the market. After having mapped sources of proteins and bioactive compounds from agrifood processes by-products, byproducts from different food production chains (e.g.: dairy, oilseeds, brewery, meat, prickly pear cactus) will be valorised treating them with innovative “clean technologies” in pilot facilities to extract bioactive compounds (e.g. oils, waxes, fatty acids, carotenoids, polyphenols, tocopherols) and obtain defatted protein cakes to be used for producing new bakery products. 3 case studies will be implemented. Quality & safety of sources, intermediate-, end- and by-products, as well as the health enhancing properties of plant and by products extracts, will be assessed. The new products will be tested for consumers’ perception and acceptance and the technologies implemented at industrial scale. Environmental and socio-economic sustainability will be assessed, and integrated traceability systems and innovative processes for human health and well-being developed. PROVIDE is designed to achieve a multi-sector impact (public authorities, market system, consumers/society, healthcare, environment, sustainability&circular economy), thus reflecting its multidisciplinary (anal. chemistry, (micro)biology and biotechnol., environm., food technologies, etc.), multi-actor and Pan-European (Scandinavia – Norway; Central Europe - Germany; South-East Europe – Romania; Southern Europe - Italy) & Northern African (Morocco) approach.

Anno di stipula:	2021
Tipo progetto:	ERANET COFUND
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-01-2021
Data scadenza:	30-11-2023
Contributo totale:	€ 723.000
Costo eleggibile totale:	€ 878.000
Contributo a ENEA:	€ 117.354
Costo eleggibile ENEA:	€ 198.564
Doc. approvazione:	49/2021/PRES
Codice atto:	PS1ABV
Resp. scientifico ENEA:	ZOANI CLAUDIA
Unità:	SSPT-BIOAG

Attività ENEA:

ENEA riveste il ruolo di partner e partecipa alle attività di tutti i WP di progetto, coinvolgendo competenze legate alla qualità & sicurezza alimentare, caratterizzazione chimico-analitica di materie prime e prodotti, processi di estrazione di molecole ad elevato valore aggiunto da scarti e sotto-prodotti, sostenibilità ed economia circolare. ENEA riveste il ruolo di leader dei seguenti WP: - WP 4 Technological innovation and food processing - WP 7 Environmental and socio-economic sustainability: towards zero waste - WP 9 Demonstration and technology transfer

N. Contratto: 863227

PULSE-COM

PULSE-COM

Photo-Piezo-ActUators based on Light SEnsitive COMposite

Coordinatore: CNR - CONSIGLIO NAZIONALE DELLE RICERCHE (Italia) N. Partner: 8

Abstract:

PULSE-COM aims to explore technological breakthroughs developing and integrating a new class of Photo-Piezo-Actuators to open a radical new future technology. Our vision is based on the use of low cost photo-mobile polymer (PMP) films and a leadfree piezo-composite (PZL) to target their use in innovative new fields never before considered. Starting from phenomenological and modelling aspects of the composite materials, we will fabricate and experimentally characterize Photo-Piezo-Actuators (PMP-PZL) proof of concept devices. The project will address through an ambitious interdisciplinary research to the employment of proper materials and the appropriate optical strategies to increase and tune the absorption of the light and finally to increase the PMP devices efficiency. With the same target electromechanical models and innovative growth processes will guide the optimization of the piezocomposite to improve its performance, and thus its sensitivity when coupled with the PMP. The PMP-PZL device will be integrated into more complex opto-electronic systems through high-risk incremental research to achieve pioneering industrial implementation. Specifically, we target the realization of cutting-edge applications based on photo-activated Meso-scale machines as opto-switches and opto-microvalves, Reconfigurable Optics and Photoenergy Harvesting Systems. Our study can open a new window on the future development of light-driven nanomotors and their potential applications in different areas such as biomedical, environmental and nanoengineering fields.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Future and Emerging Technologies (FET)
Data inizio:	01-12-2019
Data scadenza:	30-06-2023
Contributo totale:	€ 2.980.015
Costo eleggibile totale:	€ 2.980.015
Contributo a ENEA:	€ 511.250
Costo eleggibile ENEA:	€ 511.250
Doc. approvazione:	220/2019/SSPT-PROMAS
Codice atto:	PS3ACB
Resp. scientifico ENEA:	NENNA GIUSEPPE
Unità:	SSPT-PROMAS-NANO

Attività ENEA:

L'ENEA è coinvolta nei seguenti work package: WP1: ENEA partecipa alla ottimizzazione dei materiali polimerici fotomobili, alla realizzazione degli elettrodi; WP2: ENEA è il leader di questo WP focalizzato alla ottimizzazione dei dispositivi fotomobili (PMP) e piezo (PZL) e ne completa inoltre la caratterizzazione sia ottica che elettrica; WP3: ENEA ha la responsabilità di ideare un set up sperimentale dedicato alla caratterizzazione del dispositivo PNP-PZL in risposta alle diverse lunghezze d'onda di luce incidente; WP4: ENEA fornice il supporto per le formulazioni e le caratterizzazioni necessarie alla realizzazione delle varie applicazioni; WP5: ENEA partecipa alla diffusione e promozione dei risultati delle attività progettuali.

N. Contratto: 945022

PUMMA

Plutonium Management for More Agility

Coordinatore: CEA (Francia) N. Partner: 20

Abstract:

The PUMMA project will define different options for Pu management in Generation-IV systems and evaluate the impact on the whole fuel cycle in addition to safety and performance aspects. Fast neutron reactors with the associated fuel cycle strategy have been chosen to cope with these options because they are flexible: they offer the possibility of isogeneration, burning or breeding of plutonium. A wide range of Pu content (20 to 45%) corresponds to the highest concentration that can be encountered for plutonium multirecycling (~30-35% Pu to compensate degraded isotopic composition) and targeted plutonium burning (40-45%). The fuel cycle scenarios associated with the different strategies will be evaluated at different stages of the cycle in terms of impact on the facilities. These studies will be completed with dissolution tests as there is currently no dissolution data on fuels with very high plutonium contents. Studies to date have been limited to concentrations of less than 30%. Today, knowledge on MOX fuel behavior in Generation-IV reactors comes mainly from feedback on SFRs that have operated in the past in Europe, with Pu contents varying between 15% to 30% and Linear Heat Rate often in the 300 to 450 W/cm range. This knowledge is insufficient to cover future needs, whether in terms of reactor concepts (GFR, LFR, F-SMR ...), Pu management option or operating regime. PUMMA will provide complementary results on fuel properties and characterisations of 45%Pu-fuels irradiated in HFR and Phénix under nominal conditions and overpower. The safety standards will then be extended to this fuel composition as well as the fuel performance code validation. PUMMA will make the link between Europe and others international organisations: the fuel cycle studies at IAEA and OECD, the GEN-IV systems at ESNII and GIF, the fuel material studies at OECD. PUMMA will provide common data in E.U. for Pu management on : fuel cycle, fuel behavior, fuel properties and safety st-

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-10-2020
Data scadenza:	30-09-2024
Contributo totale:	€ 3.795.801
Costo eleggibile totale:	€ 6.749.591
Contributo a ENEA:	€ 80.625
Costo eleggibile ENEA:	€ 154.063
Doc. approvazione:	063/2020/FSN
Codice atto:	PF4AAM
Resp. scientifico ENEA:	DEL NEVO ALESSANDRO
Unità:	FSN-ING-SIS

Attività ENEA:

Nell'ambito del progetto PUMMA è assegnato ad ENEA il coordinamento della Task 4.1 "Irradiation in MTR vs FR: comparison of irradiation conditions", ENEA è coinvolta nel progetto come partecipante dei Work Package 2 ("Fuel Pin behaviour in reactor with high Pu content: Nominal and transient"), 3 ("Fuel properties with high PU content: Measurements and modelling"), con anche il compito di organizzare e ospitare un Workshop di progetto, dedicato alle proprietà del combustibile nuclearei interesse, dal punto di vista della sua fabbricazione, misura e modellazione. ENEA è stata proposta per ospitare il quarto Workshop tematico (Task 6.2): Workshop 4 on fuel properties: fabrication & modelling & measurements – Uncertainties reduction and impact on safety margins.

N. Contratto: 847656

R2CA

Reduction of Radiological Consequences of design basis and design extension Accidents

Coordinatore: IRSN INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE (Francia) N. Partner: 17

Abstract:

The Reduction of Radiological Consequences of design basis and extension Accidents (R2CA) project targets the development of harmonized methodologies and innovative management approach and safety devices for the evaluation and for the reduction of the consequences of DBA and DEC-A accidents in operating and foreseen nuclear power plants in Europe. For both purposes development of methodologies will be conducted with the goal of reassessing the safety margins using less conservative approaches and considering the new risks that rose from the original design or design extension phases. This will reinforce the confidence on these safety margins for conditions up to the extended design domain, will allow the identification of new accident management measures and devices and will support the optimization of the potential associated emergency population protection measures. Improvement of evaluations tools will be supported by the reassessment of the existing experimental and analytical databases. The efficiency of the approach will be demonstrated by comparing at start and then at the end of the project the results of the evaluation of a series of reactor cases selected by a senior expert group among two main categories: loss of coolant accidents and steam generator tube rupture accidents. Detailed analyzes of these reactor cases simulations will suggest the development of harmonized evaluation methodologies. The project will include also innovative actions to estimate the pros and cons of potential new accident management measures and devices, to explore the potential switch of prognosis evaluation tools to the diagnosis of on-going fuel cladding failure and to explore the potentiality for these accidental situations of advanced technological fuels.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2019
Data scadenza:	31-08-2023
Contributo totale:	€ 3.184.941
Costo eleggibile totale:	€ 4.156.896
Contributo a ENEA:	€ 215.178
Costo eleggibile ENEA:	€ 215.178
Doc. approvazione:	07172019/FSN
Codice atto:	PF6AAL
Resp. scientifico ENEA:	MASCARI FULVIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA è coinvolta nei work package 1, 3 e 6. In particolare contribuisce: . Alla revisione degli strumenti computazioni che sono utilizzati nelle analisi (ASTEC, DRACCAR) dei dati sperimentali (e eventuali dati di impianto); . All'analisi dei transitori dovuti a eventi tipo LOCA con ASTEC e DRACCAR per un generico PWR; . Alla revisione dei dati sperimentali disponibili e i modelli matematici esistenti al fine di un ulteriore sviluppo degli strumenti in relazione alla valutazione delle conseguenze radiologiche dovute a un LOCA; . Alla disseminazione dei risultati del progetto, in particolare coordinando il WP6 relativo alle attività di disseminazione dei risultati del progetto.

N. Contratto: 101008126

RADNEXT

RADiation facility Network for the EXploration of effects for indusTry and research

Coordinatore: CERN - EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (Svizzera) N. Partner: 30

Abstract:

New applications in the industrial sectors of space, automotive, IoT, nuclear dismantling and civil applications, medical and accelerators among others require innovative radiation testing methodologies. As well, for coping with the industrial demand and market timelines, streamlined and coordinated testing becomes highly necessary. Although punctual exceptions exist, Europe does not count with a coordinated network of cost-effective testing facilities helping these purposes. Such a network could enormously help fast innovators such as SMEs who in many cases find difficult to access the required facilities and related test expertise. As well, it will offer a competitive advantage to large Corporations. Novel testing methodologies will also pave the way for generating new standards since the existing ones are mainly restricted to classical space applications and radiation-hardened components. Pan-European and National Research Infrastructures can play a key role for boosting European Industry by taking the first steps in the creation of a sustainable, coordinated and streamlined irradiation testing facilities network. It will also respond to the need of establishing a radiation hardness evaluation based on risk assessment and mitigation rather than on complete risk avoidance. This project aims at increasing and optimizing the access of system developers to irradiation facilities in which representative conditions of their final application are reproduced, and that can serve as a satisfactory validation for the end-users. Such optimization will be based on a network of irradiation facilities with a common entry-point, in which users can define, prepare, carry out and analyze their irradiation campaigns. A key point of such improvement would be that of advancing in the harmonization and standardization of the system level testing methodology, so not to multiply efforts around the same common objective.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-06-2021
Data scadenza:	31-05-2025
Contributo totale:	€ 5.000.000
Costo eleggibile totale:	€ 5.000.000
Contributo a ENEA:	€ 400.938
Costo eleggibile ENEA:	€ 400.938
Doc. approvazione:	052/2021FSN
Codice atto:	PF3AAG
Resp. scientifico ENEA:	FIORE SALVATORE
Unità:	FSN-FUSTEC-TEN

Attività ENEA:

ENEA sarà coinvolta in misura diversa nei vari work packages del progetto RADNEXT. In generale coordinera' tutte le attivita' connesse alla gestione del Transnational Access attraverso il progetto, i cui costi costituiscono piu' della meta' del budget complessivo del progetto; svolgera' inoltre attivita' di irraggiamento con il Frascati Neutron Generator.

N. Contratto: 101007175 ***REACTT***

REliable Advanced Diagnostics and Control Tools for increased lifetime of solid oxide cell Technology

Coordinatore: JSI - JOZEF STEFAN INSTITUT (Slovenia) N. Partner: 9

Abstract:

Solid Oxide Electrolysis (SOE) and its possibility to operate in reversible mode (rSOC) can play a major role in H2 production at low cost and for renewable energies storage. These operating modes with high current and transients can induce degradation that needs to be mitigated for successful system deployment. Federating the cumulated advances built up in preceding collaborative projects, REACTT, with an established expert team, will realize a Monitoring, Diagnostic, Prognostic and Control Tool (MDPC) for SOE and rSOC stacks and systems. Its hardware platform will embed diagnostics and prognostics algorithms, and interact with the system power converters without modification. It contains (a) an innovative excitation module to probe the stack with PRBS (pseudo-random binary signal) or sine stimuli, and (b) a control coordination unit, interfaced with real-time optimisation (RTO). The latter uses on-line measurements with a constraint-adaptive algorithm that drives the system to optimal operation, respecting all safety boundaries. Together, this approach will achieve to supervise and analyse the (reversible) electrolyser system, increase its reliability and extend its stack lifetime. REACTT will demonstrate the effectiveness of this approach by tests on a SOLIDpower (SP) 5 kWe SOE system and on an rSOC x kWe CEA system, both at TRL6. This validation in two different operating modes with two different stack designs will prove the generic character of the developed tools, which can then be extended towards multiple technologies and higher power applications. It will reduce the operation and maintenance costs by 10%; the additional cost of the MDPC tool will not exceed 3% of the overall system manufacturing costs. These ambitious targets will be pursued in close collaboration between 6 R&D (IJS, UNISA, CEA, VTT, EPFL, ENEA and HES-SO) and 3 industry partners (SP, Bitron and AVL) on the whole value chain from tests to systems through hardware and software developments.

Anno di stipula:	2021
Tipo progetto:	FCH2-RIA
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2021
Data scadenza:	31-12-2023
Contributo totale:	€ 2.712.323
Costo eleggibile totale:	€ 2.712.323
Contributo a ENEA:	€ 128.125
Costo eleggibile ENEA:	€ 128.125
Doc. approvazione:	194/2020/TERIN
Codice atto:	PK4AAE
Resp. scientifico ENEA:	MC PHAIL STEPHEN JOHN
Unità:	TERIN-PSU-ABI

Attività ENEA:

Le attività che l'ENEA svolgerà all'interno del progetto REACTT verteranno sulla gestione del piano di disseminazione e valorizzazione del know-how e del prodotto generato nel progetto, diffusione nei mercati e promozione del prodotto facendo leva sulle piattaforme dedicate Europee, mediante l'organizzazione di workshop e la pubblicazione di articoli. Proposta di standardizzazione dei protocolli di controllo in ambito normativo internazionale

N. Contratto: ENI/2019/409-771

REESTART

Renewable and Energy Efficiency for Sustainable energy Transition and Reinforced Trust between SMEs and ESCOs

Coordinatore: ICU - ISTITUTO PER LA COOPERAZIONE UNIVERSITARIA ONLUS (Italia) N. Partner: 3

Abstract:

The project contributes to foster Lebanese economic growth by promoting the expansion of the sustainable energy (SE) market. The action was designed starting from the identification of two main market criticalities: 1) demand side and 2) offering side.

Anno di stipula:	2020
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes ENI - European Neighbourhood Instruments (2014-2020)
Data inizio:	01-04-2020
Data scadenza:	31-10-2022
Contributo totale:	€ 1.997.407
Costo eleggibile totale:	€ 2.496.759
Contributo a ENEA:	€ 129.066
Costo eleggibile ENEA:	€ 161.333
Doc. approvazione:	56/2020/DTE
Codice atto:	PT7AAM
Resp. scientifico ENEA:	CASARCI MAURIZIO
Unità:	DTE-USTS

Attività ENEA:

L'ENEA partecipa alle seguenti attività: . Lancio di un invito aperto a selezionare 35 PMI che beneficiano dell'audit energetico parzialmente sovvenzionato mediante coinvolgimento nella valutazione delle domande e selezione delle PMI; . Realizzazione di audit energetici e piani di intervento per PMI selezionate. . Lancio di un invito aperto a selezionare 35 PMI che beneficiano dell'audit energetico parzialmente sovvenzionato mediante coinvolgimento nella valutazione delle domande e selezione delle PMI; . Realizzazione di audit energetici e piani di intervento per PMI selezionate.

N. Contratto: 101079951 ***REHOUSE***

Renovation packagEs for HOlistic improvement of EU's bUildingS Efficiency, maximizing RES generation and cost-effectiveness

Coordinatore: FUNDACION CARTIF (Spagna) N. Partner: 25

Abstract:

The main objective of REHOUSE is to develop and demonstrate 8 renovation packages of promising technology innovations until TRL7. The renovation packages are fully designed for a wide range of building renovation actions, including deep renovations, that overcome the main barriers that slow down the current EU renovation ratios, following circularity principles, including multifunctionality through active/passive elements integration, prefabrication and off-site construction of components and respect of buildings aesthetics, architectural and historic value. REHOUSE also implements an inclusive people-centric social engagement strategy to endow the renovation wave with a resident and owner perspective towards affordability, satisfaction and attractiveness of sustainable renovation. The renovation packages will be deployed across 4 locations serving as demonstrators located in Greece, Italy, France and Hungary. These buildings renovations include detailed design, pilot set-up, demonstration and evaluation to validate in operational conditions (social) the prototypes of the 8 renovation packages. REHOUSE proposes solutions that cover together a set of 5 renovation principles offering technically and economically affordable renovation solutions with enough flexibility to tackle almost 100 % of the building renovation challenges at EU level. The aim is to boost market uptake, scalability and replicability of REHOUSE renovation packages, linking its value proposition with critical economic, technical, social, regulatory and data security/protection aspects and barriers and propose practical recommendations on how to overcome them.

Anno di stipula:	2022
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON EUROPE Cluster 5 - Energy demand
Data inizio:	01-10-2022
Data scadenza:	30-09-2026
Contributo totale:	€ 10.016.536
Costo eleggibile totale:	€ 10.016.536
Contributo a ENEA:	€ 313.438
Costo eleggibile ENEA:	€ 313.438
Doc. approvazione:	31/2022/DUEE-SIST
Codice atto:	PW4AAP
Resp. scientifico ENEA:	MISCEO MONICA
Unità:	DUEE-SIST-SUD

Attività ENEA:

Il progetto si inserisce nelle attività di ENEA a supporto alla pubblica amministrazione per la riqualificazione energetica degli edifici, considerando un approccio che parte dalle diagnosi energetiche e arriva al coinvolgimento degli utenti. In particolare nel progetto verranno affrontati i temi di riqualificazione energetica che includeranno l'integrazione tra aspetti energetici e strutturali; l'approccio EU di "Energy Effciency First" in un percorso di riqualificazione che include gli aspetti sociali; lotta alla povertà energetica lavorando su modelli di integrazione che siano economici e facilmente replicabili; coinvolgimento degli utenti secondo il "Behavioural change". ENEA è coinvolta maggiormente nei WP1 (SOCIAL INNOVATION FOR PEOPLE-CENTRIC RENOVATION PROCESSES) e WP2 (WP4: DEMONSTRATION OF THE 8 RENOVATION PACKAGES: ENEA è responsabile del DEMO Italiano). Parteciperà inoltre a tutti gli altri work package.

N. Contratto: 101058414

ReMade-at-ARI

RECYCLABLE MATERIALS DEVELOPMENT at ANALYTICAL RESEARCH INFRASTRUCTURES

Coordinatore: HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV (Germania) N. Partner: 47

Abstract:

A radical shift to the Circular Economy is urgently needed to cope with the challenge of finite resources decreasing at a frightening pace while the quantity of waste increases alarmingly. The European Commission`s (EC) Circular Economy Action Plan (CEAP) adopted in March 2020 has identified seven key product value chains that must rapidly become circular, given their environmental impacts and circularity potentials. This requires substantial research on materials with a very high recycling capability while exhibiting competitive functionalities. In ReMade@ARI, the most significant European analytical research infrastructures join forces to pioneer a support hub for materials research facilitating a step change to the Circular Economy. ReMade@ARI offers coordinated access to more than 50 European analytical research infrastructures, comprising the majority of the facilities that constitute the Analytical Research Infrastructures in Europe (ARIE) network. ReMade@ARI offers comprehensive services suiting any research focusing on the development of new materials for the Circular Economy in the key areas highlighted in the CEAP and plays an important role in the preparation of the common technology roadmap for circular industries. Senior scientist, facility experts and highly trained young researchers contribute scientific knowledge and extensive support to realise a user service of unprecedented quality, making each promising idea a success. Particular attention is attributed to the implementation of attractive formats to support researchers and developers from industry. The comprehensive service catalogue is complemented by an extensive training programme. Communication and dissemination activities are underpinned by a continuous impact assessment, which also enables evidence-based decision-making in the context of the proposal selection. Routes to sustainability of the platform will be explored towards the end of the project.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Research Infrastructures (2021-2027)
Data inizio:	01-09-2022
Data scadenza:	31-08-2026
Contributo totale:	€ 13.679.983
Costo eleggibile totale:	€ 13.728.333
Contributo a ENEA:	€ 46.872
Costo eleggibile ENEA:	€ 46.872
Doc. approvazione:	01/2023/FSN
Codice atto:	PF2AAM
Resp. scientifico ENEA:	CONSOLI FABRIZIO
Unità:	FSN-PLAS-PAX

Attività ENEA:

L'ENEA partecipa al progetto come affiliato del partner Laserlab Europe AISBL. In particolare l'ENEA mette a disposizione una parte del tempo macchina degli impianti di ABC e CETRA.

N. Contratto: 101060813

REPRODIVAC

Next-generation vaccines and diagnostics to prevent livestock reproductive diseases of worldwide impact

Coordinatore: ENEA (Italia) N. Partner: 16

Abstract:

Endemic and zoonotic infectious reproductive diseases of livestock cause major economic losses globally and threaten both food security and public health. REPRODIVAC will develop new and improved vaccines and diagnostic tools required to better control four priority abortifacient diseases: porcine reproductive and respiratory syndrome (PRRS), Q fever, ovine enzootic abortion (OEA), and porcine brucellosis. The consortium spans academia and industry with complementary expertise including structural biology, microbiology, immunology, plant and veterinary sciences. This enables us to address reproductive disorders with an interdisciplinary approach: (1) applying reverse and structural vaccinology to select and design vaccine and diagnostic candidate antigens; (2) exploiting relevant protein expression systems for the production of these antigens; (3) producing rationally attenuated and viral vectored vaccines; and (4) developing a suite of molecular and immunological diagnostic tests, including point-of-care tests (PoC) to discriminate vaccinated from infected animals (DIVA). We will develop a broadly protective PRRSV vaccine, and a serological ELISA that will reliably correlate with PRRSV neutralising antibody titres. We will identify protective subunit vaccine candidates for Q fever and validate a companion serological DIVA test. We will further refine an OEA vaccine for commercialisation and pursue a complementary approach towards a DIVA-compatible next-generation subunit vaccine and serological and molecular DIVA/PoC tests. We will develop live attenuated Brucella suis vaccines and brucellosis diagnostic tests with improved specificity. These new vaccines and diagnostics will be further developed by our industrial partners and made accessible to users. Thereby by using the latest technologies in vaccine and diagnostic development REPRODIVAC will improve animal health and welfare, productivity and sustainability of the livestock sector, as well as human health.

Anno di stipula:	2022
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON EUROPE Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment
Data inizio:	01-09-2022
Data scadenza:	31-08-2025
Contributo totale:	€ 3.125.324
Costo eleggibile totale:	€ 3.136.284
Contributo a ENEA:	€ 874.526
Costo eleggibile ENEA:	€ 874.526
Doc. approvazione:	82/2022 e 103/2022/SSPT-BIOAG
Codice atto:	PS1ACO
Resp. scientifico ENEA:	BASCHIERI SELENE
Unità:	SSPT-BIOAG-BIOTEC

Attività ENEA:

ENEA coordina il progetto e partecipa alle attività dei seguenti work package (WP): WP5 - Stakeholder engagement, dissemination, exploitation, and communication WP6 – Project & IP management WP7 – Ethics requirements Partecipa inoltre alle attività dei seguenti work package (WP): WP1 - Target antigen identification and structure-based vaccine design WP2 - Antigen and antibody production and delivery platforms WP3 - Evaluation of vaccine antigen formulations in vivo WP4- Specific diagnostic tests and DIVA strategies

N. Contratto: 861704

RESIST

REsilience Support for critical Infrastructures through Standardized Training on CBRN

Coordinatore: ASSOCIAZIONE ETHIC SAFE (Italia) N. Partner: 7

Abstract:

RESIST aims at creating a standardized CBRNe joint training programme for the establishment of “CBRNe Intervention Groups” within public and privately owned Critical Infrastructures. The objective is that of creating pools of CI personnel trained and equipped to operate in a contaminated environment with the necessary basic equipment to mitigate the impacts of disruptive events and long-term incremental changes, thus guaranteeing the continued provision of its basic functions. Following the training and the execution of real life exercises, the Intervention Group should be able to: a) intervene, if and as far as possible, eliminating or reducing the immediate effects of a CBRNe event, pending the arrival of the Fire Brigade and/or, in emergency cases, of the Armed Forces; b) guarantee the provision of minimum services and/or contribute to the maintenance of security and safety of the facilities (if relevant authorities do not request the closure/shut down).

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes ISFP - Internal Security Fund Police
Data inizio:	01-11-2019
Data scadenza:	30-04-2022
Contributo totale:	€ 990.958
Costo eleggibile totale:	€ 990.958
Contributo a ENEA:	€ 68.975
Costo eleggibile ENEA:	€ 76.639
Doc. approvazione:	159/2019/FSN
Codice atto:	PF7AAU
Resp. scientifico ENEA:	DE DOMINICIS LUIGI
Unità:	FSN-TECFIS-DIM

Attività ENEA:

L'ENEA contribuisce al progetto in tuitti i work packages con le attività del personale dei servizi FSN-TECFIS-DIM, FSN-FISS-RNR, FSN-SICNUC-SIN e ISER-CAS. E' inoltre responsabile del WP 6 'Proposal for CBRNe Resilience Label'.

N. Contratto: 814247

RETRACE

Realising the Transition to the Circular Economy: Models, Methods and Applications

Coordinatore: UNIV. SHEFFIELD (Regno Unito) N. Partner: 10

Abstract:

This network brings together an exceptionally strong team of world-leading experts from a wide set of beneficiaries and partners in order to achieve breakthroughs in understanding how the transition towards a Circular Economy (CE) can be realised in a successful way in the European context, both within existing organisations and industries as well as through innovative and sustainable business models. The proposed approach is inherently multi-disciplinary, drawing upon research that will advance significantly the state-of-the-art in terms of the current understanding of the applicability of the CE paradigm from Economic, Environmental and Social points of view, providing policy insights and implications for practice. The consortium of 10 beneficiaries (including 7 academic and 3 non-academic groups) will design and deliver world class multidisciplinary training to 15 Early Stage Researchers (ESRs), offering them an extended and valuable program of international exchanges and secondments through the wide network of partner organisations involved in the proposal. The network builds on the success of previous projects in which beneficiaries have successfully delivered high impact research and knowledge exchange. ReTraCE is specifically designed to train a cohort of new thought leaders capable of driving the transition towards a more sustainable mode of production and consumption in Europe in the next decades, who will directly facilitate the implementation of the recently adopted ambitious Circular Economy strategy of the European Commission, which is closely linked to Sustainable Development Goals (SDGs). Indeed, it is envisaged that ESRs will be employable not only by research institutions, but also by public sector bodies and within a wide range of manufacturing and service industries which will require new professional profiles for realising the transition towards the CE.

Anno di stipula:	2018
Tipo progetto:	MSCA-ITN-ETN
Programma UE:	HORIZON 2020 MSCA Marie Skl. Curie Actions
Data inizio:	01-11-2018
Data scadenza:	31-10-2022
Contributo totale:	€ 4.039.862
Costo eleggibile totale:	€ 4.039.862
Contributo a ENEA:	N/D
Costo eleggibile ENEA:	N/D
Doc. approvazione:	
Codice atto:	
Resp. scientifico ENEA:	GRADITI GIORGIO
Unità:	DTE-FSN-FOSG

Attività ENEA:

ENEA is part of the ReTraCE consortium as expert institution in the development and the implementation of policies in the field of resource, energy efficiency and waste management. As a partner, ENEA is involved in the research training provision and will deliver the highest standard of training in terms of research methodologies.

N. Contratto: 883116

RISEN

Real-tIme on-site forenSic tracE qualificatioN

Coordinatore: ENEA (Italia) N. Partner: 20

Abstract:

While time is an important factor for successful outcome of the crime investigation, the traditional forensic examinations are usually time consuming. It can be very problematic when investigations are underway and quick results are needed. Traces must be detected on-site as soon as possible before they degrade and loose forensic information important for criminal investigation. Based on the results of the FORLAB project, the aim of the RISEN project is the development of a set of real-time contactless sensors for the optimization of the trace, detection, visualisation, identification and interpretation on site, with a consequent reduction of the time and resources in the laboratory, and for a fast exchange of information among LEAs. The new proposed approach could be applied to the classical forensic investigations and to disaster sites, e.g. after a terrorist attack. The objectives of the RISEN project will be obtained by: -Developing and demonstrating contactless, non-destructive, automated sensors to identify, select and label trace materials; -Processing and sending in real-time acquired in-situ data to a 3D Augmented Crime Scene Investigation system to produce an interactive 3D model of the scene with position and labelling of traces and relative results of the on-site analysis. The recreated 3D model of the scene resorts to augmented reality techniques for sensor data, collected evidence and identified points of interest in order to deliver a realistic and immersive visual environment for investigators, allowing them to conduct highly detailed investigations. The crime scenes, with analytical information from traces, will be digitally frozen to be available at any time for several purposes in the criminal justice system. The identified traces will be digitally marked and inventoried, and a digitalised Chain of Custody will be established in real-time implementing mechanisms that assure data integrity over its lifecycle.

Anno di stipula:	2020
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Secure societies
Data inizio:	01-07-2020
Data scadenza:	30-06-2024
Contributo totale:	€ 6.995.876
Costo eleggibile totale:	€ 6.995.876
Contributo a ENEA:	€ 1.216.961
Costo eleggibile ENEA:	€ 1.216.961
Doc. approvazione:	54/2020/FSN
Codice atto:	PF7AAW
Resp. scientifico ENEA:	CHIRICO ROBERTO
Unità:	FSN-TECFIS-DIM

Attività ENEA:

L'ENEA coordina ill progetto RISEN con responsabilità diretta nel WP1 (Management) e nel WP7 (System Validation) oltre a partecipare a tutti gli altri WP. In particolare, Il laboratorio DIM contribuisce notevolmente al WP5 "Sviluppo di sensori e test di laboratorio" durante i quali DIM svilupperà in sensori basati sulle tecnologie Raman, LIBS LIF e imaging iperspettrale. Nelle attività relative a questo progetto è coinvolto oltremodo il personale tecnico e scientifico del laboratorio DIM oltre alle sue strutture interne quali laboratori laser, chimici e biologici, aree dedicate e la segreteria periferica di sicurezza.

N. Contratto: 964562 ***RISEUP***

Regeneration of Injured Spinal cord by Electro pUlsed bio-hybrid imPlant

Coordinatore: ENEA (Italia) N. Partner: 6

Abstract:

Spinal Cord Injury (SCI), a major cause of paralysis, currently has no effective therapies. Every year almost 500.000 people are diagnosed with SCI worldwide. In Europe, the average investment is up to 2 M€ per patient in health care. The difficulty on the neuronal restoration after SCI is based on the complex cascade of events that inexorably cause a degenerative chronic stage mainly favored by the non-permissive environment and limited capacity for axonal regrowth. Multifaceted strategies are considered the unique solution for functional restoration by including cell substitution, neuroprotection and axonal growth promotion. RISEUP proposes to attain neuronal functional regeneration after SCI by an unprecedented and unique bio-hybrid-compatible electro-activated and wireless-rechargeable implantable technology. RISEUP introduces high voltage microsecond electric pulses (micropulses) stimulations and low amplitude direct currents on a combination of stem cells (induced neural stem cells and multipotent stromal cells), whose transplantation is facilitated by an innovative scaffold biomaterial. The RISEUP concept is that micropulses, being able to impose and control cytosolic Calcium oscillations, will facilitate cell maturation, survival and neurotrophic factors secretion. Because Calcium signaling is essential for neuronal activity, endogenous neuronal re-connections will also be favored. RISEUP goal, even if ambitious, is concrete due to the multidisciplinary partners' competences, initiating from TRL1 a radically new line of technology (electro-activated, remotely controlled, biocompatible, biodegradable cell-containing implants for the repair of neuronal lesions) establishing its proof-of-principle (TRL3). The long-term vision of RISEUP is the radical change in SCI treatment modality to assure the cure delivery without any machinery connection, dramatically improving patients' quality of life.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 Future and Emerging Technologies (FET)
Data inizio:	01-05-2021
Data scadenza:	31-10-2024
Contributo totale:	€ 2.999.836
Costo eleggibile totale:	€ 2.999.836
Contributo a ENEA:	€ 615.535
Costo eleggibile ENEA:	€ 615.535
Doc. approvazione:	252/2020/SSPT/TECS
Codice atto:	PS5AAV
Resp. scientifico ENEA:	CONSALES CLAUDIA
Unità:	SSPT-TECS-SAM

Attività ENEA:

L'ENEA coordina il progetto, occupandosi anche della gestione degli aspetti organizzativi e manageriali del progetto e del consorzio. Dal punto di vista più strettamente sperimentale, invece, l'ENEA studierà, mediante l'esecuzione di test in vitro, effettuati sulle cellule staminali piastrate sia adese ad una superficie piatta, che sullo scaffold, mantenendo così la loro forma tridimensionale, l'analisi della risposta biologica alla stimolazione elettrica. In particolare saranno valutati i seguenti parametri: · Sopravvivenza, proliferazione, morte cellulare · Cambiamenti dell'espressione genica e modulazione dell'epigenoma delle cellule · Meccanismi di attivazione e trasduzione di segnali intracellulari · Valutazione dell'attivazione della risposta infiammatoria

N. Contratto: 101079303

SALTOpower

European facility on Molten SALT technologies TO power and energy system applications

Coordinatore: UNIV. EVORA (Portogallo) N. Partner: 3

Abstract:

The use of Thermal Energy Storage (TES) in combination with the thermal conversion of solar irradiation – Concentrated Solar Power (CSP) – has long been regarded as an important technological solution for the production of dispatchable electricity. Whereas thermal oil based systems have set the standard in the first generation of commercial CSP Plants, the use of Molten Salts as heat transfer and storage media has been gathering research efforts and is regarded, by the industry, as the foregoing standard for new commercial plants. Molten Salt (MS) research has been deployed along the past decade in Germany and Italy, alongside with the erection of dedicated Research Infrastructure (RI) enabling the study and experimental test of e.g. materials, components or O&M procedures suiting this innovative technological approach. With the recent commissioning of a full-fledged Molten Salt Solar system emulating a commercial MS-CSP Plant in Évora, Portugal has joined this research effort with a new outstanding RI in this field. Gathering the unique experience of two non-Widening partners in the development and operation of the most important MS-RI at European level with the incumbent new RI capacity available in a Widening country, the present proposal aims at enhancing the scientific excellence and innovation capacity of the Consortium in the foregoing exploitation of this outstanding RI. SALTOpower has a strong focus on an enhanced capacity building of researchers going beyond purely scientific capacities, strengthening the research management and administration skills of the Widening RI. By means of enhanced cooperation duly framed on a common research strategy aiming at further developing MS technologies, SALTOpower aims at creating the reference European facility for the development and testing of Molten Salt based technologies for energy storage and dispatchable power production solutions, for the integration of different renewable energy sources, power and gas grids.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Widening participation and spreading excellence
Data inizio:	01-11-2022
Data scadenza:	31-10-2025
Contributo totale:	€ 1.499.011
Costo eleggibile totale:	€ 1.499.011
Contributo a ENEA:	€ 447.000
Costo eleggibile ENEA:	€ 447.000
Doc. approvazione:	128/2022/TERIN
Codice atto:	PK7AAD
Resp. scientifico ENEA:	D'AURIA MARCO
Unità:	TERIN-STSN-SCIS

Attività ENEA:

ENEA è presente in tutti i WPs del progetto ed in particolare avrà la responsabilità del WP2 “Excellence R&D” e del WP4 “Aligned strategy” e dei task 1.3 (Widening Profile); task 2.1 (MS driven Thermo- Electrochemical H2/syngas production); task 3.3 (Mentoring); task 4.2 (Scientific alignement) e task 5.1 (quadrupla elica). ENEA è responsabile dei seguenti Deliverable: D1.5 - Widening Profile Report, D2.1 - MS driven energy system management and power/gas grid integration solutions, D5.1 – Relevant Impacts Report e Milestone MS3 - Widening upgrade MS6- Beyond SoA Know-how, MS15 SALTOpower identity established

N. Contratto: 847552

SANDA

Supplying Accurate Nuclear Data for energy and non-energy Applications

Coordinatore: CIEMAT (Spagna) N. Partner: 35

Abstract:

The project will include experimental measurements of new or improved quality data, evaluation, validation and dissemination of the data to produce libraries that can be used by safety authorities, research institutions, the nuclear energy industry, health organizations, other non-energy applications and the EU society at large. The project will also include in smaller fraction support to detector development, facility setups and samples fabrication to prepare important measurements and validations that are not possible in the time framework of the present proposal but that will be required in near future for the safe and efficient use of nuclear technologies. The selection of topics, isotopes, reactions, measurements, experiments and evaluation has been made taking into account the relevance, expected impact and priorities of the resulting data according to the NEA/OECD and IAEA high priority lists and committees as well as the experience of the participants and of previous EU proposals with large participation of the partners for the present proposal (CHANDA, ANDES,…). The impact has been evaluated from the perspective of a safe, efficient and competitive use of nuclear technologies. In comparison with previous projects, the present proposal proposes to concentrate more efforts on delivering actual results than in the preparation for the future, by enhancing the support to evaluations, validations and actual measurements. Also special attention has been paid to make sure that the topics included cover the non-energy application requiring nuclear data as well as it will cover the needs of the nuclear energy sector. Respecting those principles, the proposal has also tried to be as inclusive to the different EU research groups and countries as possible maintaining the manageability of the project, its efficiency and the maximum quality and relevance of the action and involved partners.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2019
Data scadenza:	31-08-2023
Contributo totale:	€ 3.499.948
Costo eleggibile totale:	€ 4.666.600
Contributo a ENEA:	€ 105.000
Costo eleggibile ENEA:	€ 105.000
Doc. approvazione:	691/2019/FSN
Codice atto:	PF6AAI
Resp. scientifico ENEA:	MENGONI ALBERTO
Unità:	FSN-SICNUC-PSSN

Attività ENEA:

L'ENEA è coinvolta nei work package 2 e 5. Nel WP2 'New nuclear data measurements for energy and non-energy applications - coordinerà le misure di cattura neutronica. Nel WP5 'Nuclear data validation and integral experiments' saranno effettuate misure integrali su attinidi minori presso l'impianto TAPIRO in Casaccia.

N. Contratto: 101059853

SASPAM-SA

Safety Analysis of SMR with PAssive Mitigation strategies - Severe Accident

Coordinatore: ENEA (Italia) N. Partner: 23

Abstract:

Small Modular Reactors (SMR) are one of the key options for the near-term deployment of new nuclear reactors. Currently in Europe there is a growing interest towards the deployment of SMRs, and several activities are underway in many countries preparing for possible licensing needs. In particular, Integral Pressurized Water Reactor (iPWR) are ready to be licensed as new builds because they start from the well-proven and established large Light Water Reactor (LWR) technology, incorporate their operational plant experience/feedback, and include moderate evolutionary design modifications to increase the inherent safety of the plant. However, despite the reinforcement of the first three levels of the Defence-in-Depth (DiD), e.g., with the adoption of passive safety systems, a sound demonstration of Ipwr ability to address Severe Accidents (SA) should be carried out (DiD levels 4-5). The main objectives of the project will be to transfer and adapt such knowledge and know-how to iPWR, in view of the European SA and Emergency Planning Zone (EPZ) analyses. The main elements considered are: (i) the identification of plausible SA scenarios for iPWRs with the related conditions in the vessel and in the containment, (ii) the study of the applicability of the existing experimental databases to iPWR and identify new experimental needs, (iii) the assessment of the capability of internationally recognized European and Non-European computational tools (largely used in Europe) to describe the behaviour of the most promising iPWR designs during SA scenarios, and (iv) the prediction of the resulting radiological impact on- and off-site, taking into account special SA mitigation/management strategies. The expected outcomes of the project will help speeding up the licensing of iPWRs in Europe, as well as the siting processes of these reactors in light of their possible use near densely populated areas.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-10-2022
Data scadenza:	30-09-2026
Contributo totale:	€ 2.991.694
Costo eleggibile totale:	€ 4.276.039
Contributo a ENEA:	€ 342.656
Costo eleggibile ENEA:	€ 456.875
Doc. approvazione:	059/2022/FSN
Codice atto:	PF6AAT
Resp. scientifico ENEA:	MASCARI FULVIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

L'ENEA coordina il progetto e partecipa ai seguenti Work Package (WP): WP1: coordinamento del progetto. WP2: sviluppo di input-deck ed analisi di scenari di incidente severo. WP3: analisi del database sperimentale. WP4: analisi della capacità dei codici di simulare e valutare il contenimento del corium nel vessel. WP5: analisi delle capacità dei codici di simulare il contenimento degli iPWR e caratteriz-zare l'efficacia delle misure di mitigazione. WP6: caratterizzazione dell'Emergency Planning Zone per iPWR. WP7: "communication", "dissemination" ed "exploitation".

N. Contratto: 958211

SCRREEN2

Solutions for CRitical Raw materials - a European Expert Network 2

Coordinatore: CEA (Francia) N. Partner: 20

Abstract:

In order to secure the sustainable access to primary and secondary raw materials and particularly Critical Raw Materials (CRMs) in the EU, there is a need for an expert advice to better understand the value chains of the raw materials screened in the CRMs assessment. Making this information freely available, through the SCRREEN knowledge database and the EC Raw Materials Information System, will support decision-making at the EU level on the CRM strategies. In the continuation of SCRREEN, SCRREEN2 will develop and strengthen the SCRREEN expert network in order to cover all raw materials screened in the CRM 2020 assessment. The work was initiated in 2019 to support the EC (validation workshop and creation of an expert database). The SCRREEN network gathers today expertise on primary and secondary resources; production, including exploration, mining, processing, recycling and refining; substitution of CRM; raw materials markets; future demand and supply; materials flows; socio-economic analysis. It covers also strategic value chains and end-use sectors, including batteries, e-mobility, renewable energy, electronics, defence and aerospace. Thanks to clustering and cooperation with other projects/initiatives, SCRREEN2 will develop this network to fill the existing gaps and to mobilize it on two axes through dedicated workshops. First, in order to improve data and knowledge on all screened raw materials, SCRREEN2 will update on a regular basis the raw materials factsheets. It will also publish sector-oriented outlook reports analysing the future supply and demand of raw materials, policy and technology gaps and innovation potential along the raw materials value chains. A work-plan, updated every 6 months, will allow SCRREEN2 to flexibly support the Commission in policy-making related to CRM in general or linked to specific applications or sectors; and to support as well the Commission in the organisation of relevant events.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-11-2020
Data scadenza:	31-10-2023
Contributo totale:	€ 2.999.875
Costo eleggibile totale:	€ 2.999.875
Contributo a ENEA:	€ 75.000
Costo eleggibile ENEA:	€ 75.000
Doc. approvazione:	171/2020/SSPT-SEC
Codice atto:	PS0AAU
Resp. scientifico ENEA:	DE CAROLIS ROBERTA
Unità:	SSPT-SEC

Attività ENEA:

L'ENEA nel progetto svolge le seguenti attività: • Contributor della task 1.1 ‘Network strategy and animation’ •Leader della task 1.2 ‘Network development and cluster’ •Leader della task 6.2 ‘Contribution to low carbon and green technologies’ •Contributor della task 7.3 ‘Policy’ •Contributor della task 7.4 ‘Technology gaps’

N. Contratto: 101060327 ***SEAKNOT***

SEVERE ACCIDENT RESEARCH AND KNOWLEDGE MANAGEMENT FOR LWRS

Coordinatore: CIEMAT (Spagna) N. Partner: 17

Abstract:

Severe Accidents (SA) are known to dominate the risk associated with the commercial production of nuclear energy and a vast amount of esearch has been done for decades in order to practically eliminate SAs with the potential for large early releases. At present time, when some of the knowledge acquired is at risk of being lost (as many specialists have already retired or are retiring) and new approaches for the SA assessment are being explored, it seems appropriate timing to deeply review and document the sound existing background and project it into the future, including an update on experimental research on SA mitigation tools. By putting in place the best resources possible to conduct any needed additional research and by articulating the most efficient ways possible to bring the young generation on board to face near- and mid-term research challenges, the best use of the current SA background with guarantees to target those issues bearing most uncertainties nowadays might be ensured. Therefore, it is of utmost relevance to conduct a firm assessment of the current State-of-the-Art and to pass this onto the generation who are inheriting such legacy. Management, exploitation, and assessment of this knowledge, are the main objectives of the SEAKNOT project. In addition, new emerging research needs, as those concerning Small Modular Light Water Reactors (SMLWR) and Accident Tolerant Fuels (ATF), will be considered. Meeting SEAKNOT objectives requires entails carrying out a deep, critical assessment of the current state of the art of the experimental infrastructure and analytical tools that would be necessary to efficiently tackle the challenges posed. The main expected outcomes will be: a sound and critical analysis of the current knowledge on SA; an update of the experimental research needs remaining; a strengthening of background and skills of young generations in the field.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-10-2022
Data scadenza:	30-09-2026
Contributo totale:	€ 2.158.321
Costo eleggibile totale:	€ 2.726.994
Contributo a ENEA:	€ 79.547
Costo eleggibile ENEA:	€ 106.063
Doc. approvazione:	071/2022/FSN
Codice atto:	PF6AAS
Resp. scientifico ENEA:	MASCARI FULVIO
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA è coinvolta nei seguenti work package: WP1 dedicato allo sviluppo di una Phenomena Identification Ranking Table (PIRT) per incidenti severi. WP2 dedicato alla costruzione di un database di validazione basato sui database esistenti per incidenti severi. WP4 dedicato alla diffusione della conoscenza.

N. Contratto: 101057622 ***SEAWave***

Scientific-Based Exposure and Risk Assessment of Radiofrequency and mm-Wave Systems from children to elderly (5G and Beyond)

Coordinatore: UNIV. THESSALY (Grecia) N. Partner: 15

Abstract:

The pervasiveness and social-economic dependence on wireless technology has steadily increased over the last three decades. Currently, the 5th generation (5G) New Radio (NR) cellular system is being deployed to unlock the potential of new applications that require the connection of many more devices (Internet of Things), higher data rates and low latency (autonomous driving, 'Factory of the Future'). 5G operates in two frequency bands, 5G NR FR1 and 5G NR FR2. Many exposure parameters of 5G are similar to those of 2G-4G. However, there are also many differences that lead to major knowledge gaps, all of which will be addressed by the SEAWave project. SEAWave will (i) quantify the differences in exposure patterns between 2G-4G and 5G for the entire population including children; (ii) provide new tools and instruments for reliable exposure evaluation of base stations, local networks in factories, and end-user devices; (iii) provide the means to minimise exposure; (iv) generate important new scientific data for assessing the health risk from exposure to the new frequency bands (FR2), especially with regard to the potential (co-)carcinogenicity of skin exposure and other hazardous effects; and (v) provide knowledge for effective health risk communication and dissemination to various stakeholders. To achieve these ambitious objectives, the interdisciplinary consortium consists of highly experienced partners with leading expertise in the field who ideally complement each other to achieve maximum impact. European citizens, workers, national public health authorities, European Commission services, regulators, and standardisation bodies will all benefit from the SEAWave results as they will support science-based decisions and policies for the safe deployment and use of 5G and future wireless networks. Project SEAWave is part of the European cluster on EMFs and health.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON EUROPE Cluster 1 - Health
Data inizio:	01-06-2022
Data scadenza:	31-05-2025
Contributo totale:	€ 7.317.777
Costo eleggibile totale:	€ 7.317.782
Contributo a ENEA:	€ 1.913.358
Costo eleggibile ENEA:	€ 1.913.358
Doc. approvazione:	218/2022/PRES
Codice atto:	PS5ABD
Resp. scientifico ENEA:	MANCUSO MARIA TERESA
Unità:	SSPT-TECS-TEB

Attività ENEA:

L'ENEA riveste il ruolo di leader del WP6 e partecipa anche alle attività dei WP 5,7,8,9 e 11. In particolare sono previste le seguenti fasi: • Utilizzo di due diversi modelli murini per valutare l'impatto dell'esposizione cronica (dall'età neonatale a quella adulta) alla frequenza mm del 5G sulla cancerogenesi cutanea, in particolare valutando le incidenze di basalioma e carcinoma a cellule squamose. • Valutazione dei meccanismi molecolari strettamente correlati al rischio di insorgenza di tumori cutanei. • Valutazione dell'impatto dell'esposizione su altri distretti tessutali potenzialmente a rischio come l'ippocampo, l'occhio e il sistema riproduttivo maschile.

N. Contratto: 101061230

SECURE

Strengthening the European Chain of sUpply for next generation medical RadionuclidEs

Coordinatore: NCBJ - NATIONAL CENTER FOR NUCLEAR RESEARCH (Polonia) N. Partner: 18

Abstract:

SECURE project aims to make a major contribution to the sustainability of medical isotope production and its safe application in Europe. It is focusing on promising developments in the design of irradiation targets, production routes for existing and new isotopes in nuclear therapy and diagnostics. Isotopes critical in the success of nuclear medicine are selected and research activities are identified to address some of the major challenges in securing its future availability, with the objectives: 1. to remove critical barriers along the production of its selected alpha and beta emitting isotopes that restrict a sustainable production; 2. to develop a framework of guidance and recommendations that enables exploring the full clinical potential of alpha and beta particle therapy and its safe application; 3. to provide important lessons learned that act as a demonstration case for addressing issues in upscaling and sustained isotope production. At present, Ra-223 is the only radiopharmaceutical which has been granted marketing authorization to treat adults with prostate cancer. This has paved the way for a wider use of other alpha emitters such as Ac-225 or Bi-213. The expected demand of nuclear medicine for novel alpha emitters and beta- emitters requires re-evaluation of their production methods and inventories of target materials and parent radionuclides. The ambition of SECURE consortium is to identify and efficiently use the current resources for new radionuclides, in particular for alpha emitters and the relevant beta emitting theranostic radionuclides. The development of alternative technologies for production of such therapeutic radionuclides for improved patient treatment requires multidisciplinary scientific and technological knowledge including physics, chemistry, material science, machining of target materials, chemistry, biology and radiobiology, radiopharmacy and nuclear medicine. All this chain of expertise is present in SECURE consortium.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-10-2022
Data scadenza:	30-09-2025
Contributo totale:	€ 3.657.175
Costo eleggibile totale:	€ 3.657.175
Contributo a ENEA:	€ 370.719
Costo eleggibile ENEA:	€ 370.719
Doc. approvazione:	070/2022/FSN
Codice atto:	PF1AAL
Resp. scientifico ENEA:	CAPOGNI MARCO
Unità:	FSN-INMRI

Attività ENEA:

L'ENEA, oltre a partecipare al WP5, dedicato all'impatto del progetto, partecipa attivamente a 3 dei 4 WPs tecnico-scientifici: WP1: Sviluppo di bersagli di irraggiamento (Target development) WP2: Vie di produzione (Production routes) WP4: Raccomandazioni per sperimentazioni cliniche e radioprotezione

N. Contratto: 101075412

SEETIP

Support to SET Plan Implementation Working Group and European Technology and Innovation Platform for Ocean Energy

Coordinatore: ASSOCIATION EUROPEENNE DE L'ENERGIE DE L'OCEAN (Belgio) N. Partner: 9

Abstract:

SEETIP Ocean's mission is to enhance cooperation and collaboration amongst stakeholders both inside and outside of the European ocean energy sector. This mission is broken down into 6 objectives: 1. Maximise European scientific excellence in ocean energy 2. Make sustainability and the Just Transition an integral part of ocean energy's development 3. Build a deeper understanding of how ocean energy can optimally fit into the wider energy, industrial & infrastructure systems and planning systems, and help realise this integration 4. Empower the SET Plan Ocean Energy Implementation Working Group and other public authorities by monitoring, analysing and reporting annual commentary on the sector's progress 5. Reinforce and expand the ocean energy network through strong outreach actions 6. Continue the work of ETIP Ocean and SET Plan Ocean Energy IWG after the project ends Ocean energy can power European society and economic life with electricity that is renewable, dependable and in harmony with local communities and environments. To reach this potential, sectoral stakeholders must collaborate, share knowledge and avoid duplication of efforts. SEETIP Ocean will do this by supporting the activities of both the European Technology & Innovation Platform for ocean energy (ETIP Ocean) and the SET Plan Ocean Energy Implementation Working Group. The project's objectives will be achieved through coordination actions bringing individuals and organisations together to exchange knowledge, create new knowledge and build more and deeper connections. Widespread knowledge-sharing will be facilitated via webinars and workshops. Based on these exchanges, SEETIP Ocean will publish accessible studies and reports that will be widely disseminated across and beyond the ocean energy sector. The SET Plan Ocean Energy IWG's work will be supported with annual updated information on sector's progress and policy and funding support. Up-to-date and accurate data will inform the IWG's decision-making.

Anno di stipula:	2022
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON EUROPE Cluster 5 - Energy supply
Data inizio:	01-08-2022
Data scadenza:	31-07-2025
Contributo totale:	€ 788.254
Costo eleggibile totale:	€ 788.254
Contributo a ENEA:	€ 67.410
Costo eleggibile ENEA:	€ 67.410
Doc. approvazione:	155/2022/SSPT-MET
Codice atto:	PS2ACK
Resp. scientifico ENEA:	STRUGLIA MARIA VITTORIA
Unità:	SSPT-MET-CLIM

Attività ENEA:

Le attività svolte da ENEA riguardano l'adozione di metriche appropriate ed efficaci per monitorare e valutare i progressi tecnologici e applicativi nel campo dell'energia dal mare. ENEA contribuirà inoltre alla diffusione di competenze tra gli stakeholder del settore e parteciperà alle attività di trasferimento tecnologico del progetto, per stimolare lo sviluppo in ambiti specifici riconosciuti come prioritari.

N. Contratto: 101024254

SER

Social Energy Renovations: Maximizing social impact and boosting clean energy investments in the non-profit sector through de-risking, aggregation, and capacity building

Coordinatore: GNE - GLOBAL NEW ENERGY FINANCES SL (Spagna) N. Partner: 7

Abstract:

In Europe, the non-profit sector employs 28 million full-time workers engaged in education, research, housing, counselling, workforce training and other social activities. The sector remains underserved by the financial industry, making it challenging to obtain funding to undertake clean energy investments. SER brings together 7 organizations from 4 EU countries to maximise social impact by boosting clean energy investments in the non-profit sector. SER intends to design, set up, and implement an innovative de-risking financing mechanism that entails financing and technical standardisation, project aggregation, social impact assessment and credit enhancement. Under SER's financing scheme, an ESCO raises low-cost long-term capital via a forfaiting contracts to a financing instrument coupled with a de-risking mechanism. Social enterprises gain access to affordable sustainable renovations, coupled with technical assistance, while investors gain access to secure, high impact investments aligned with ESG and impact investment criteria. SER is positioned to strengthen social enterprises and generate more than 500M in clean energy investments over the course of 5 years after the project, translating into nearly 9,000 jobs, 24,633 Co2 emissions saved per year and massive social impact involving energy poverty mitigation, improvements in social inequality, health, wellbeing, productivity, financial literacy, and overall social cohesion. The initial focus is on Italy, with further replication foreseen in Bulgaria and France, and exploratory efforts in Germany, Czech Republic, Slovakia, and Poland. SER Consortium represents an ideal mix of partners including a specialized lender, an ESCO, a financing and de-risking advisory, social impact experts, an energy agency and local replicators in Bulgaria and France. SER strengthens the non-profit sector – a key driver in achieving a just and fair clean energy transition and a post-COVID-19 recovery.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-05-2021
Data scadenza:	30-04-2024
Contributo totale:	€ 1.794.423
Costo eleggibile totale:	€ 1.794.423
Contributo a ENEA:	€ 200.280
Costo eleggibile ENEA:	€ 200.280
Doc. approvazione:	11/2021/DUEE-SPS
Codice atto:	PW3AAU
Resp. scientifico ENEA:	FIORINI ALESSANDRO
Unità:	DUEE-SPS-MPE

Attività ENEA:

ENEA partecipa alle attività dei Work Package 1, 2,3,4,5 ed è lead partner del Work Package 3 "Technical Assistance: Training and Community Development". Il WP 3 ha lo scopo di supportare e agevolare le organizzazioni no-profit, ESCO e altri operatori attivi nei settori della finanza etica e verde, nell'effettuare interventi di ristrutturazione sostenibile degli edifici.

N. Contratto: 823802

SFERA III

Solar Facilities for the European Research Area - Third Phase

Coordinatore: CIEMAT (Spagna) N. Partner: 15

Abstract:

The overall objective of this project is to carry on with the work done during the past 8 years for the sustainability of the activities of the European advance solar laboratories involved in SFERA and SFERA 2nd phase, and extend these activities to the new solar laboratories which will bring added value to this European Research Infrastructure for Concentrating Solar Power. The specific goal is to contribute to ensure the long-term sustainability of these European advance solar laboratories, supporting Europe as a global leader in solar research infrastructures. Those activities will include (i) networking activities to further develop the cooperation between the research infrastructures, the scientific community, industries and other stakeholders; (ii) transnational access activities aiming at providing access to all European researchers from both academia and industry to singular scientific and technological solar research infrastructures; and (iii) joint research activities whose sole purpose is to improve the integrated services provided by the infrastructure. All this would contribute to achieve the scientific excellence of these research infrastructures (RIs), strength the interaction between the Concentrating Solar Thermal (CST) industry and these RIs, strength innovation further, develop new activities, and also drive the productivity and competitiveness of the European economy contributing to the creation of new jobs in the CST sector. Furthermore, these activities will contribute to the development of new common standards that will support the CST industry in the development of new components and systems and in the building of new commercial installations. At the same time, these standards will also support the European Commission in the development of the European policy for the CST sector.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-01-2019
Data scadenza:	31-12-2023
Contributo totale:	€ 9.102.631
Costo eleggibile totale:	€ 9.102.631
Contributo a ENEA:	€ 849.997
Costo eleggibile ENEA:	€ 849.997
Doc. approvazione:	67/E/2018/DTE
Codice atto:	PT6AAH
Resp. scientifico ENEA:	GAGGIOLI WALTER
Unità:	DTE-STT-ITES

Attività ENEA:

ENEA in SFERA III offre l'accesso agli impianti dimostratori CSP presenti presso il C.R. Casaccia, secondo quanto previsto nel Work package 5. Inoltre i principali contributi forniti da ENEA riguardano: 1) lo sviluppo di un controllo dinamico e la diagnostica di sistemi integrati per la produzione di combustibili solari; 2) supporto alla definizione delle azioni necessarie per lo sviluppo di un'infrastruttura elettronica europea sulle tecnologie CST; 3) contributo alla definizione delle metodologie per calibrazioni e tecniche di sensori per la determinazione accurata dei parametri di prestazione dei prototipi installati nelle infrastrutture di ricerca incluse nel 'Transnational Access' (TA) del progetto; 4) sviluppo e messa a punto di procedure di test per materiali e componenti di sistemi di stoccaggio termico; 5) sviluppo di tecniche di benchmarking e strategie di ottimizzazione per i reattori a combustibile solare; 6) individuazione di protocolli per la creazione di e-infrastrutture al fine di consentire l'accesso remoto ai centri europei di R&S dedicati alle tecnologie CST; 7) supporto alla trasformazione del consorzio in un istituto di riferimento per CST e alle attività esterne orientate a configurare i Centri di Ricerca operanti sul CST come una struttura legale (EU-SOLARIS ESFRI).

N. Contratto: 814464

Si-DRIVE

Silicon Alloying Anodes for High Energy Density Batteries comprising Lithium Rich Cathodes and Safe Ionic Liquid based Electrolytes for Enhanced High VoltagE Performance

Coordinatore: UNIV. LIMERICK (Irlanda) N. Partner: 16

Abstract:

Si-DRIVE will develop the next generation of rechargeable Li-ion batteries, allowing for cost competitive mass market EVs by transformative materials and cell chemistry innovations, delivering enhanced safety with superior energy density, cycle life and fast charging capability using sustainable and recyclable components.The technology encompasses amorphous Si coated onto a conductive copper silicide network as the anode with polymer/ionic liquid electrolytes and Li-rich high voltage (Co-free) cathodes via processes that are scalable and demonstrably manufacturable within Europe.The components have been demonstrated at TRL3 through preliminary lab-scale analysis, with a clear component improvement strategy to arrive at a TRL5 prototype demonstration by the end of Si-DRIVE. Comprehensive theoretical and experimental studies will probe and control interfacial processes that have heretofore limited Li-ion technologies to incremental gains, guiding materials design and eliminating capacity fade mechanisms.The Si-DRIVE technology will exceed the stringent demands of EV batteries where safety is paramount, by dramatically improving each component within the accepted Li-ion platform and achieving this in a market competitive process with whole of life considerations. The technology will also demonstrate suitability for 2nd life applications at reduced energy density beyond the primary EV lifetime, prior to cost effective materials recycling, consistent with a circular economy.The Si-DRIVE consortium boasts the required academic and industrial partner expertise to deliver this technology and spans material design and synthesis, electrochemical testing, prototype formation and production method validation, life cycle assessment and recycling process development.

Anno di stipula:	2019
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 NMBP Nanotechn., Adv Materials, Adv Manufacturing and Processing, and Biotech
Data inizio:	01-01-2019
Data scadenza:	31-01-2023
Contributo totale:	€ 7.999.493
Costo eleggibile totale:	€ 7.999.493
Contributo a ENEA:	€ 509.748
Costo eleggibile ENEA:	€ 509.748
Doc. approvazione:	124/2018/SSPT-PROMAS
Codice atto:	PS3ABI
Resp. scientifico ENEA:	APPETECCHI GIOVANNI BATTISTA
Unità:	SSPT-PROMAS-MATPRO

Attività ENEA:

ENEA riveste un ruolo centrale nello sviluppo degli elettroliti ed è leader del WP 2 interamente dedicato ai materiali elettrolitici. In particolare, le attività dell'ENEA nell'ambito del progetto prevedono: i) progettazione, sintesi e purificazione di nuovi liquidi ionici per sistemi al silicio; ii) caratterizzazione chimico-fisica ed elettrochimica dei liquidi ionici preparati; iii) preparazione di elettroliti costituiti dai liquidi ionici più promettenti; iv) caratterizzazione chimico-fisica ed elettrochimica degli elettroliti; v) ottimizzazione della formulazione degli elettroliti; vi) selezione degli elettroliti da utilizzare nello sviluppo di membrane polimeriche iono-conduttrici.

N. Contratto: 818431 ***SIMBA***

Sustainable innovation of microbiome applications in food system

Coordinatore: LUKE - NATURAL RESOURCES INSTITUTE FINLAND (Finlandia) N. Partner: 23

Abstract:

As the world population is continuously increasing, the supply of food with equal accessibility has become a major issue and future challenge. Microbes are unexploited tool to increase food productivity and quality. The objective of SIMBA project is to harness complex soil and marine microbial communities (microbiomes) for the sustainable production of food. SIMBA will focus on two interconnected food chains, i.e. crop production, aquaculture. SIMBA will first launch an in silico phase in order to analyze the further pre-existing microbiome databases and earlier studies, to identify the best microbiome layout capable of supporting food chain quality and productivity. Microbiome-tailored interventions will be specifically developed including soil, plant, fish, aquaculture and food/feed processing towards optimal layout as defined in the modelling step, as follows: i) Identified optimal microbiome consortia will be designed and tested in lab, pot and field trials to improve plant productivity and health; ii) Marine microbiomes will be applied to facilitate sustainable aqua and agriculture; iii) Optimal microbe/microbe consortia will be used to convert raw-materials and residuals to high quality food, feed or finally to energy. In a final intervention step, these interactions will be monitored and tested in field, aqua-culturing, fish feeding and human studies, measuring the impact on microbiome consortia, interactions in association with factors evaluating their efficacy in terms of improving food security, productivity, quality, safety, sustainability, nutritional and health aspects. "Near to market" microbiome applications for sustainable food systems will be provided thanks to the interdisciplinary and cross-sectional nature of the proposal and the active role of small and medium sized enterprises (SMEs).

Anno di stipula:	2018
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Food Security, Sustainable Agriculture and the Bioeconomy
Data inizio:	01-11-2018
Data scadenza:	31-10-2023
Contributo totale:	€ 10.000.000
Costo eleggibile totale:	€ 10.373.932
Contributo a ENEA:	€ 737.419
Costo eleggibile ENEA:	€ 788.669
Doc. approvazione:	98/2018 - 169/2022 - 222/2022/SSPT-BIOAG
Codice atto:	PS1AAQ
Resp. scientifico ENEA:	BEVIVINO ANNAMARIA
Unità:	SSPT-BIOAG-SOQUAS

Attività ENEA:

L'ENEA è responsabile del Work Package 2 e collabora a sette dei nove WP del progetto per l'esecuzione di attività di ricerca, di scaling-up industriale, disseminazione e management. In particolare, nel WP 2 l'ENEA si occupa del coordinamento delle attività delle prove in serra e in campo; analisi dell'effetto di consorzi microbici promotori della crescita delle piante sul microbioma del suolo in relazione a diversi fattori biotici e abiotici.

N. Contratto: 101006667

SO-FREE

Solid oxide fuel cell combined heat and power: Future-ready Energy

Coordinatore: ENEA (Italia) N. Partner: 9

Abstract:

The overall objective of SO-FREE is the development of a fully future-ready solid oxide fuel cell (SOFC)-based system for combined heat and power (CHP) generation. This means a versatile system concept for efficient, near-zero-emission, fuel-flexible and truly modular power and heat supply to end users in the residential, commercial, municipal and agricultural sectors. Beyond the primary objective required by the call topic – i.e. the delivery of a pre-certified SOFC-CHP system allowing an operation window from zero to 100% H2 in natural gas and with additions of purified biogas – the SO-FREE project will endeavour the realization of a standardized stack-system interface, allowing full interchangeability of SOFC stack types within a given SOFC-CHP system. This interface design will be taken to the International Electrotechnical Commission (IEC) as a new work item proposal (NWIP) for international standardization. In such a way all commercial barriers to full and free competition between SOFC stack suppliers and system integrators aim to be levelled. Furthermore, this interoperability will be proved by doubling the required demonstration period: two systems will be run for 9 months each, each operating, alternately, two different stacks, which will be exchanged between the two systems. One system will be operated to assess compliance with all applicable certification requirements of a TRL 6 prototype, defining the outstanding pathway to full product certification; the other system will run at TRL7 (demonstration in operational environment) providing combined heat and power with natural gas with injections of hydrogen. As a final proof of robustness and flexibility, the two stacks integrated in each of the two systems (one developed by AVL, the other by ICI Caldaie) will be characteristic of the extreme ends of the spectrum of SOFC operating temperatures: 650°C (Elcogen) and 850°C (Fraunhofer IKTS).

Anno di stipula:	2021
Tipo progetto:	FCH2-RIA
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2021
Data scadenza:	31-08-2024
Contributo totale:	€ 2.739.094
Costo eleggibile totale:	€ 3.045.355
Contributo a ENEA:	€ 324.500
Costo eleggibile ENEA:	€ 324.500
Doc. approvazione:	201/2020/TERIN
Codice atto:	PK4AAF
Resp. scientifico ENEA:	MC PHAIL STEPHEN JOHN
Unità:	TERIN-PSU-ABI

Attività ENEA:

L'ENEA coordina il progetto e partecipa ai seguenti Workprogramme (WP): WP1: Coordinamento tecnico del progetto armonizzando le attività di ricerca del consorzio all'interno del progetto e L'ENEA sarà inoltre l'interfaccia tra il consorzio e la Fuel Cells and Hydrogen Joint Undertaking (FCH JU), soggetto . WP2: Attività sperimentali volte a validare le prestazioni dei due tipi di stack operati in condizioni definite dall'architettura dei due sistemi. WP5: Gestione del piano di disseminazione e valorizzazione del know-how e del prodotto generato nel progetto, diffusione nei mercati e promozione del prodotto facendo leva sulle piattaforme dedicate Europee, mediante l'organizzazione di workshop e la pubblicazione di articoli. Proposta di standardizzazione dell'interfaccia stack-sistema in ambito normativo internazionale.

N. Contratto: 101036910

StoRIES

Storage Research Infrastructure Eco-System

Coordinatore: KIT KARLSRUHER INSTITUT FUER TECHNOLOGIE (Germania) N. Partner: 17

Abstract:

According to the European Green Deal goals, new energy storage technologies will supply more flexibility and balance in the grid, providing a back-up to intermittent renewable energy and contribute to seasonal energy storage challenges. Above all, the main challenge for energy storage development is economic. In order to achieve more performing, competitive and cost effective energy storage devices, the project fosters a European ecosystem of industry and research organisations on energy storage technologies aimed at developing novel concepts and technologies. StoRIES brings together a consortium of 32 beneficiaries from 17 countries: ESFRI facilities, technology institutes, universities and industrial partners to jointly improve the economic performance of storage technologies. Members of the European Energy Research Alliance and from the industry lead European Association for Storage of Energy are establishing the core of this world-class European ecosystem. The main objectives of StoRIES are linked to the energy storage development by providing access to world-class research infrastructures and services, with a focus on improving materials for devices and optimizing hybrid energy systems with a view to make energy technologies more competitive and reducing costs. In addition, StoRIES focuses on the analysis of socio-technical and environmental aspects of new developments and systems and provides training and education on these issues. By promoting complementary expertise, interdisciplinary cooperation and a broader exchange of knowledge and technologies throughout the academic world and with industry, StoRIES will significantly improve the technological basis for energy storage applications. Furthermore, StoRIES will establish an ecosystem with international peer partners from Research and Industry to foster open science and promote new energy technology standards.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-11-2021
Data scadenza:	31-10-2025
Contributo totale:	€ 6.999.980
Costo eleggibile totale:	€ 7.001.439
Contributo a ENEA:	€ 413.031
Costo eleggibile ENEA:	€ 413.031
Doc. approvazione:	217/2021/TERIN
Codice atto:	PK4AAM
Resp. scientifico ENEA:	PAOLETTI CLAUDIA
Unità:	TERIN-PSU-ABI

Attività ENEA:

ENEA svolge attività relative a: . gestione dei dati (WP1 - task leader per FAIR Data); . fornire accesso a infrastrutture di livello mondiale (WP2 – 3 Infrastrutture di ricerca); . Sviluppo di strumenti per tecnologie ibride (WP3 – dai materiali ai sistemi); . Definizione della roadmap (WP3); . Attività sulla valutazione della sostenibilità (WP4).

N. Contratto: B.PRJ.RT.827

STYX

STAND-OFF DETECTION OF HYBRID THREATS CONTAINING EXPLOSIVES

Coordinatore: FOI SWEDISH DEFENCE RESEARCH AGENCY (Svezia) N. Partner: 4

Abstract:

The project STYX aims at developing and test systems for detecting and identifying explosive threats, such as mprovised Explosive Devices (IEDs), fast and from a stand-off distance. Recently, an increased awareness of threats from “grey zone” hybrid warfare has emerged, these threats include the use of IEDs by military or para-military/adversary networks, which can both reside and operate cross border. Such IED threats are a significant challenge for Member States Armed Forces and will be a cause of hazard for civilians. They also have the potential to severely disrupt both military and civilian logistic support, damage critical infrastructures (e.g. military bases, government buildings, air bases/airports, harbours, power plants, chemical industry, oil/fuel depots, …) and affect strategic lines of communication (e.g. bridges, roads, railways, ferries, …). In this way, these “grey zone” hybrid threats will be more complex than route clearance threats that Armed Forces have encountered in previous military operations (e.g. Afghanistan or Iraq). Key capabilities, to ensure an enhanced Force Protection, require fast, accurate and safe techniques to detect, identify and defeat/neutralize explosive threat devices. Therefore, the aim of the project is to identify new sensors for fast stand-off detection of existing and new types of explosives embedded in IEDs and other explosive threats. Such sensors should be able not only to detect the explosive but also to identify it, in order to minimize false positive alarms. Stand-off sensors for both trace and bulk explosives will be considered. The STYX project will be a starting point for research and development of novel stand-off detection sensors for explosives applied to hybrid warfare scenarios, aiming to reach TRL 5-6. It will strengthen the European knowledge base for future advanced stand-off detection equipment, materials and their applications. At the end of the project, both technological system development as well as the work done in testing and evaluation, will contribute to the long term goal of increasing the overall capability to tackle explosives used in hybrid warfare.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes European Defence Agency CAPTECH
Data inizio:	15-12-2021
Data scadenza:	14-12-2025
Contributo totale:	€ 700.000
Costo eleggibile totale:	€ 1.400.000
Contributo a ENEA:	€ 350.000
Costo eleggibile ENEA:	€ 700.000
Doc. approvazione:	491/2021/PRES
Codice atto:	PF7ABT
Resp. scientifico ENEA:	SANTORO SIMONE
Unità:	FSN-TECFIS-DIM

Attività ENEA:

L'ENEA partecipa in quasi tutte le attività del progetto con particolare contributo nello sviluppo di un sensore per la rivelazione in tracce di sostanze energetiche (esplosivi e loro precursori) che possa operare in tempo reale e a distanza nel WP300. Questo nuovo sensore implementerà una soluzione tecnica innovativa nel rimuovere la fluorescenza emessa dal substrato utilizzando un laser ad impulsi ultra corti con relativa catena elettronica veloce. Sempre nello stesso WP300, il laboratorio DIM collabora con il Fraunhofer ICT ai test sulla tecnica SERS. Una dimostrazione finale è prevista dopo il terzo anno a cui a seguire ci sarà una valutazione dei dati acquisiti.

N. Contratto: 1234

SUPREME

developing tools for SUstainable food PRoduction in mEditerranean area using MicrobEs

Coordinatore: UNIV. CAGLIARI (Italia) N. Partner: 8

Abstract:
SUPREME is a project funded under the EU ERANET-MED program. It aims at favoring the set up of a sustainable agricultural production frame, addressing vulnerable communities living in semi-arid and arid areas in the Mediterranean. The project objective is to combat soil impoverishment and to reduce the use of water, fertilizers, and pesticides by means of microbiome potential to stabilize soil and promote plant growth under adverse conditions. This project addresses local communities distributed over 6 different areas of the Mediterranean (Italy, Jordania, Cyprus, Greece, Tunisia, and Algeria) that have been increasingly challenged by water scarcity and by low agricultural productivity due to the scarce bio-geochemical functions of soils. Stakeholders have underlined that a change in soil management (e.g. in the direction of organic agriculture) needs to take place to ensure sustainability. Different soils and crops (tomatoes, sunflowers, onions, legumes such as faba beans and vetch, barely, wheat or high biomass leading grasses like sorghum, health crops and cereals as konjac, orchidaceae, amaranth and quinoa) will be considered in the test sites. The project's scope will be achieved through integration of state-of-the-art biotechnologies and leading edge characterization, monitoring and modeling tools, accessed through an innovative, interactive web-based observation system. The outreach strategy of SUPREME is to create a co-production frame between researchers, farmers and policy makers, which aims at bridging the gap between research, real needs and policy aims.

Anno di stipula:	2019
Tipo progetto:	ERANET COFUND
Programma UE:	Settimo Programma Quadro Euratom (2007-2013) ERA-NET
Data inizio:	01-09-2017
Data scadenza:	31-08-2022
Contributo totale:	€ 831.959
Costo eleggibile totale:	€ 1.100.607
Contributo a ENEA:	€ 120.000
Costo eleggibile ENEA:	€ 240.000
Doc. approvazione:	79/2019/SSPT-PROTER
Codice atto:	PS4ABS
Resp. scientifico ENEA:	SPROCATI ANNA ROSA
Unità:	SSPT-PROTER-BIOGEOC

Attività ENEA:
L'attività ENEA è relativa alla preparazione di formule microbiche 'su misura' da utilizzare come inoculanti per la promozione della crescita di specie botaniche agronomiche coltivate nei paesi partecipanti al progetto, con l'obiettivo della sostituzione dei fertilizzanti chimici e riduzione dell'utilizzo dell'acqua di irrigazione (Algeria, Giordania, Cipro e Italia).

N. Contratto: 101059479

TANDEM

Small Modular ReacTor for a European sAfe aNd Decarbonized Energy Mix

Coordinatore: CEA (Francia) N. Partner: 18

Abstract:

Small Modular Reactors (SMRs) can be hybridized with other energy sources, storage systems and energy conversion applications to provide electricity, heat and hydrogen. SMR technology thus has the potential to strongly contribute to the energy decarbonisation in order to achieve climate-neutrality in Europe by 2050. However, the integration of nuclear reactors, particularly SMRs, in hybrid energy systems is a new R&D topic to be investigated. In this context, the TANDEM project aims to provide assessments and tools to facilitate the safe, secure and efficient integration of SMRs into smart low-carbon hybrid energy systems. It proposes to specifically address the safety issues of SMRs related to their integration into hybrid energy systems, involving specific interactions between SMRs and the rest of the hybrid systems; new initiating events will have to be considered in the safety approach. An open-source "TANDEM" model library of hybrid system components will be developed in Modelica language to build a hybrid system simulator which, by coupling, will extend the capabilities of existing tools implemented in the project. TANDEM intends to focus on two main study cases corresponding to hybrid system configurations covering the main trends of the European energy policy and market evolution: a district heating network and power supply in an urban area, and an energy hub serving energy conversion systems, including hydrogen production, in a regional perspective. TANDEM will provide assessments on SMR safety, hybrid system operationality and techno-economics. Societal considerations will also be encased by analyzing the European citizen engagement regarding SMR technology safety. The work will result in technical, economic and societal recommendations and policy briefs on the safety of SMRs and their integration into hybrid energy systems for industry, R&D teams, TSOs, regulators, NGOs and policy makers. The TANDEM consortium will involve 17 partners from 8 countries.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-09-2022
Data scadenza:	31-08-2025
Contributo totale:	€ 3.372.401
Costo eleggibile totale:	€ 3.781.490
Contributo a ENEA:	€ 140.375
Costo eleggibile ENEA:	€ 159.125
Doc. approvazione:	073/2022/FSN
Codice atto:	PF6AAZ
Resp. scientifico ENEA:	LOMBARDO CALOGERA
Unità:	FSN-SICNUC-SIN

Attività ENEA:

ENEA sarà coinvolta nei seguenti work package: • WP2: Modelling for the simulation of the hybrid system behaviour, dedicato allo sviluppo dei modelli necessari alla simulazione del comportamento del sistema ibrido di test a effetti separati (SET) e combinati (CET). Task 2.1: si contribuirà a definire la strategia da adottare per la modellazione e per condurre le simulazioni. Task 2.4: ENEA svilupperà il modello CATHARE dell'intero sistema che dovrà essere impiegato per le analisi da condurre nel WP4. • WP4 dedicato ad analisi di transitorio ed incidentali da condurre per dimostrare l'affidabilità e la sicurezza dell'intero sistema.

N. Contratto: 956831

TEXTAROSSA

Towards EXtreme scale Technologies and Accelerators for euROhpc hw/Sw Supercomputing Applications for exascale

Coordinatore: ENEA (Italia) N. Partner: 18

Abstract:

To achieve high performance and high energy efficiency on near-future exascale computing systems, a technology gap needs to be bridged: increase efficiency of computation with extreme efficiency in HW and new arithmetics, as well as providing methods and tools for seamless integration of reconfigurable accelerators in heterogeneous HPC multi-node platforms. TEXTAROSSA aims at tackling this gap through applying a co-design approach to heterogeneous HPC solutions, supported by the integration and extension of IPs, programming models and tools derived from European research projects, led by TEXTAROSSA partners. The main directions for innovation are towards: Enabling mixed-precision computing, through the definition of IPs, libraries, and compilers supporting novel data types (including Posits), used also to boost the performance of AI accelerators Implementing new multilevel thermal management and two-phase liquid cooling Developing improved data movement and storage tools through compression Ensure secure HPC operation through HW accelerated cryptography Providing RISC-V based IP for fast task scheduling and Ips for low-latency intra/inter-node communication These technologies will be tested on the Integrated Development Vehicles mirroring and extending the European Processor Initiative ARM64-based architecture, and on an OpenSequana testbed. To drive the technology development and assess the impact of the proposed innovations TEXTAROSSA will use a selected but representative number of HPC, HPDA and AI demonstrators covering challenging HPC domains such as general-purpose numerical kernels, High Energy Physics (HEP), Oil & Gas, climate modelling, and emerging domains such as High Performance Data Analytics (HPDA) and High Performance Artificial Intelligence (HPC-AI)

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 JTI - EuroHPC
Data inizio:	01-04-2021
Data scadenza:	31-03-2024
Contributo totale:	€ 2.051.376
Costo eleggibile totale:	€ 6.012.709
Contributo a ENEA:	€ 219.135
Costo eleggibile ENEA:	€ 795.125
Doc. approvazione:	38/2021/TERIN
Codice atto:	PK3AAA
Resp. scientifico ENEA:	CELINO MASSIMO
Unità:	TERIN-ICT

Attività ENEA:

Il contributo di Enea al progetto verte nell'area tecnico-scientifica dell'High Performance Computing con particolare riguardo allo sviluppo di ambienti di programmazione, all'ottimizzazione del processo di raffreddamento e al porting delle applicazioni su architetture parallele. In particolare ENEA è leader di due workpackage, il n. 1 e il n. 8, gestiti da TERIN-ICT. Il laboratorio TERIN-PSU-IPSE è coinvolto nella caratterizzazione e valutazione delle performance di raffreddamento dei sistemi di calcolo.

N. Contratto: 101059408

TITANS

Tritium Impact and Transfer in Advanced Nuclear reactorS

Coordinatore: CEA (Francia) N. Partner: 21

Abstract:

The TITANS (Tritium Impact and Transfer in Advanced Nuclear reactorS) multidisciplinary project is built to contribute to Research and Innovation to “improve knowledge on tritium management in fission/fusion facilities” and provide ”robust science to EU safety regulators, radiation protection authorities and decision makers”. TITANS will answer the main challenges of the call: i) Tritium permeation description and associated modeling, ii) tritium measurement, iii) mitigation of tritium release, iv) gain expertise on dismantling activities, v) improve knowledge in radiotoxicity and radiobiology, both combined to dosimetry specific to each biological model studied. The TITANS work program is established from the results obtained in the former EU TRANSAT project and thanks to scientific discussion within TRANSAT SAC, TITANS members and external experts from EU/broader countries. TITANS will improve modelling tools to assess tritium inventory/migration in nuclear fission/fusion reactors in order to identify where the new barrier concept developed within TITANS are needed to limit the spread of tritium. The tritium release during dismantling of tritium-contaminated setup will be evaluated with the help of innovative tritium inventory measurement techniques developed within TITANS. Finally, to ensure tritium circular economy, a mobile device for tritiated water processing will be developed. At last, human and environmental toxicity impacts after an accidental release of tritiated particles will be assessed through studies on i) the behaviour of aerosols in the environment, ii) biological effects on a mussels population, iii) biokinetics by the skin route and iiii) genotoxic effects on human lung macrophages. In order to estimate a dose-response relationship, a dosimetric study specific to each organism or cell type will be carried out. This 3 years project with a 3 M€ allocated budget gathers 21 partners from European countries and UK all involved in tritium activities.

Anno di stipula:	2022
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	Euratom2027 Euratom fissione
Data inizio:	01-09-2022
Data scadenza:	31-08-2025
Contributo totale:	€ 2.843.297
Costo eleggibile totale:	€ 2.843.297
Contributo a ENEA:	€ 197.225
Costo eleggibile ENEA:	€ 197.225
Doc. approvazione:	095/2022/FSN
Codice atto:	PF3AAH
Resp. scientifico ENEA:	TOSTI SILVANO
Unità:	FSN-FUSTEC-TEN

Attività ENEA:

Il progetto vede il coinvolgimento dell’ENEA nei seguenti Work Packages: - WP1, Proposals for enhancement of barriers against tritium permeation and tritiated waste management, - WP2, Tritium inventory management and modeling - WP4, Dissemination, Communication & Stakeholders Engagement

N. Contratto: 754586

TRANSAT

TRANSversal Actions for Tritium

Coordinatore: CEA (Francia) N. Partner: 18

Abstract:

TRANSAT (TRANSversal Actions for Tritium) is a 4-year multidisciplinary project built to contribute to Research and Innovation on ""cross-cutting activities"" needed to ""improve knowledge on tritium management in fission and fusion facilities"". It proposes actions answering the following main challenges addressed by the call: i) tritium release mitigation strategies, ii) waste management improvement, iii) refinement of the knowledge in the field of radiotoxicity, radiobiology, and dosimetry. To evaluate the scientific tasks to be covered by TRANSAT, all the open issues of the tritium cycle that are not yet tackled by European research activities or former studies have been determined. This general picture has been constrained to crosscutting fusion and fission activities. Concerning release mechanism, tritium migration/permeation in massive samples are studied in dedicated rigs. Associated modelling takes place in the project in order to improve the level of confidence in predictive tools developed for tritium behavior in reactors. A special insight is also put in the release of tritium from tritiated particles coming from dismantling activities. Permeation barriers (active barriers and coating concepts) as well as treatment of the operational tritiated gases are assessed and their applicability to fusion and fission purposes is analyzed. Improvement in waste management is also covered by means of new concept studies for tritiated waste confining packages and by new accurate methodologies for tritium inventory assessment in metallic and soft house-keeping waste. Finally, a dedicated part of the project focuses on radiotoxicity, radioecology, radiobiology and dosimetry on tritiated particles produced during dismantling whose impacts have not yet been addressed. 18 Partners are participating in TRANSAT from all the European countries involved in tritium activities."

Anno di stipula:	2017
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 - Euratom Euratom fissione
Data inizio:	01-09-2017
Data scadenza:	28-02-2022
Contributo totale:	€ 3.999.260
Costo eleggibile totale:	€ 5.068.135
Contributo a ENEA:	€ 464.889
Costo eleggibile ENEA:	€ 618.451
Doc. approvazione:	112/2017/FSN
Codice atto:	PF3AAC
Resp. scientifico ENEA:	TOSTI SILVANO
Unità:	FSN-FUSTEC-TEN

Attività ENEA:

Le attività ENEA riguarderanno in particolare lo studio dei meccanismi di diffusione, assorbimento e rilascio del trizio nei materiali, lo sviluppo di barriere contro la permeazione del trizio e lo studio dei processi per il trattamento di correnti gassose triziate generate nei reattori a fissione e fusione.

N. Contratto: 958352

TRICK

PRODUCT DATA TRACEABILITY FROM CRADLE TO CRADLE BY BLOCKCHAINS INTEROPERABILITY AND SUSTAINABILITY SERVICE MARKETPLACE

Coordinatore: FRATELLI PIACENZA SPA (Italia) N. Partner: 29

Abstract:

In EU a garment is worn an average of 3 times in its life, with €400 Bln lost a year discarding clothes which can still be worn and 92 Mln tons of waste, 87% of clothes ending up in landfills. But due to growing awareness on ethical and environmental impacts, 66% of consumers are ready to pay more for sustainable products . TRICK will provide a complete, SME affordable and standardised platform to support the adoption of sustainable and circular approaches: it will enable enterprises to collect product data and to access to the necessary services on a dedicated marketplace, open to third party solutions. TRICK demo will be run in 2 highly complex and polluting domains: textile-clothing as main pilot and perishable food for replication. EC estimates that up to 10% of the 88 million tons of food waste generated annually in the EU are linked to date marking, with associated costs estimated at €143 billion. Secured traceability will rely on the data needed for the preferential certification of origin (PCO), used for duty calculation. It will be certified by Customs as member of the consortium, representing anti fraud public forces. The data extracted by the fiscal documents for the PCO will be integrated with the bill of materials, saved in the Blockchains (BC) per each lot of production to grant traceability continuity, and with the additional ones to enable the six services provided by TRICK: traceability, circular assessment, PEF, health and social assessment, A.I. for anti counterfeting. BC will secure information through the whole process, ending to consumers for informed purchasing. Data confidentiality and privacy will be granted by the exploitation of Blockchains smart contracts while the adoption of different technologies will be solved by the development of Blockchain interoperability connectors between the two BC providers. End users will cover the whole TC value chain, from raw materials to recycling.

Anno di stipula:	2021
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Climate Action, Environment, Resource Efficiency and Raw Materials
Data inizio:	01-05-2021
Data scadenza:	30-04-2024
Contributo totale:	€ 7.997.854
Costo eleggibile totale:	€ 9.600.449
Contributo a ENEA:	€ 374.000
Costo eleggibile ENEA:	€ 374.000
Doc. approvazione:	113/2021/TERIN
Codice atto:	PK5AAF
Resp. scientifico ENEA:	CIACCIO GESSICA
Unità:	TERIN-SEN-CROSS

Attività ENEA:

ENEA partecipa ai seguenti work package: . WP1 (Use Case Requirements); . WP2 (Development of TRICK platform); . WP3 (Blockchain design and implementation); . WP4 (B2B marketplace development and service implementation); . WP7 (Communication and dissemination) . WP8 (Management).

N. Contratto: 875187 ***USER-CHI***

innovative solutions for USER centric CHarging Infrastructure Fact Sheet

Coordinatore: ETRA INVESTIGACION Y DESAROLLO SA (Spagna) N. Partner: 24

Abstract:

USER-CHI aims at unlocking the massive potential of electromobility in Europe. This will be achieved by: (1) integrating different innovative charging technologies with a holistic perspective; (2) putting the user at the centre and empowering it; (3) exploiting the synergies between electromobility and the process of greening and smartification of the grid which is taking place to achieve the energy transition in Europe, (4) integrating the technological tools, business models and regulatory measures which will transform the elements cited above into an actual, working ecosystem which improves the user experience of EV drivers beyond the current levels of ICE vehicles drivers, whilst at the same time makes financially attractive for the relevant private and public actors the large scale deployment of Europe's required user centric charging infrastructure. USER-CHI will boost a large-scale e-mobility market take up in Europe, by means of developing integrated smart solutions, novel business models and new regulatory framework conditions, which will be demonstrated and validated in 5 urban areas all along the European territory: Barcelona metropolitan area (Spain), Rome (Italy), Berlin (Germany), Budapest (Hungary), and Turku (Finland). These 5 sites act as connecting nodes of the key Mediterranean and Scandinavian-Mediterranean TEN-T corridors, while their different sizes, complementary contexts and e-mobility maturity level offer a holistic view of e-mobility in Europe, facilitating the scalability and replicability of the demonstrated solutions. Since large scale replication and transferability of USER-CHI results is one of the cornerstones of the project, a replication city has been included in each of the TEN-T corridors involved in the project: Murcia (Spain) in Mediterranean corridor and Florence (Italy) in Scandinavian-Mediterranean corridor. This, together with the involvement of EUROCITIES will maximise the project impact even after its completion.

Anno di stipula:	2020
Tipo progetto:	IA - Innovation Action
Programma UE:	HORIZON 2020 Transport
Data inizio:	01-02-2020
Data scadenza:	31-01-2024
Contributo totale:	€ 14.263.188
Costo eleggibile totale:	€ 17.486.866
Contributo a ENEA:	€ 345.375
Costo eleggibile ENEA:	€ 345.375
Doc. approvazione:	76/E/2019/DTE
Codice atto:	PT4AAB
Resp. scientifico ENEA:	ANDRENACCI NATASCIA
Unità:	DTE-PCU-STMA

Attività ENEA:

Within this task detailed EV charging infrastructure models will be designed properly defining and formalizing their flexibility characteristics and their control and response capabilities to be integrated in the smart grid. Modelling activities will tackle all necessary components and will incorporate capacity and flexibility parameters for local grid optimization. On the other hand, this task will deliver algorithms and models for profiling of EV batteries and charging infrastructure for optimal charging and discharging actions. Analysis of battery energy storage system solution dedicated to the peak load shave will be also considered, with a particular attention to the re-use of exhausted EV batteries (second-life). This task will focus mainly on the solutions available in the USER-CHI demo sites, with special attention to the integration of new electric mobility modes

N. Contratto: LIFE18 PRE IT 003

VEG-GAP

Vegetation for Urban Green Air Quality Plans

Coordinatore: ENEA (Italia) N. Partner: 8

Abstract:
VEG-GAP project aims to develop a strategy for providing new reliable information in support of designing urban Air Quality Plans (AQPs) considering the urban ecosystems/vegetation characteristics. Specifically, the new information will regard the assessment of 1) the contribution of vegetation ecosystems both as a source and sink of air pollution in urban areas; 2) the urban vegetation ecosystems' effects on air temperature (urban heating and cooling patterns) and 3) its impact on air quality for the most relevant pollutants. This information will allow a better understanding and evaluation of the possible risks and benefits for human health and ecosystems themselves associated with air pollution changes induced by vegetation/ecosystems changes.

Anno di stipula:	2018
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes LIFE (2014-2020)
Data inizio:	03-12-2018
Data scadenza:	03-05-2022
Contributo totale:	€ 1.000.000
Costo eleggibile totale:	€ 1.673.668
Contributo a ENEA:	€ 195.709
Costo eleggibile ENEA:	€ 326.182
Doc. approvazione:	406/2018/PRES
Codice atto:	PS2ABB
Resp. scientifico ENEA:	MIRCEA MIHAELA
Unità:	SSPT-MET-INAT

Attività ENEA:

L'ENEA organizza, monitora e coordina tutte le attività del progetto. Il Laboratorio SSPT-MET-INAT svolgerà attività modellistiche necessarie per produrre informazioni per vari stakeholder che renderenno più evidente la relazione tra la gevetazione l'inquinamento atmosferico, a diverse scale, in diverse condizioni metereologiche e climatiche e per diversi scenari delle emissioni antropiche. ENEA valuterà il loro impatto sulla salute umana e sulla vegetazione al fine di creare un quadro di riferimento per altri progetti nazionali ed internazionali nell'ambito delle iniziative SMART cities, Green infrastructures, Nature-based solutions in cities. ENEA collabora con il progetto LIFE PREPAIR che mira ad implementare le misure previste dai piani regionali e dall'Accordo di Bacino su scala maggiore e a rafforzarne la sostenibilità e la durabilità dei risultati. ENEA coordinerà con i partner anche le attività di comunicazione e disseminazione dei risultati del progetto.

N. Contratto: EDIDP-SVTE-2020-047

VERTIgO

Virtual Enhanced Reality for inTeroperable traIning of CBRN military and civilian Operators

Coordinatore: ASSOCIAZIONE SAFE (Italia) N. Partner: 9

Abstract:

VERTIgO will develop a simulation platform for military CBRN training, which integrates a Virtual Reality headset and a CBRN mask for enhanced realism. The project “Virtual Enhanced Reality for inTeroperable traIning of CBRN military and civilian Operators” (VERTIgO) supports an integrated approach to conflicts and disaster relief by virtualization and simulation of CBRN (chemical, biological, radiological and nuclear) defence training. The project’s overall objective is the validation of a European Exercise Simulation Platform (EESP) for virtual reality (VR) applications to CBRN training, complemented by the prototyping of an ad-hoc hardware solution, which integrates a VR headset and CBRN mask for enhanced realism and user experience.

Anno di stipula:	2021
Tipo progetto:	N/A - Non applicabile
Programma UE:	Other programmes EDIDP (2019-2020)
Data inizio:	01-12-2021
Data scadenza:	30-11-2023
Contributo totale:	€ 2.598.416
Costo eleggibile totale:	€ 2.736.614
Contributo a ENEA:	€ 120.236
Costo eleggibile ENEA:	€ 120.236
Doc. approvazione:	154/2021/FSN
Codice atto:	PF7ABR
Resp. scientifico ENEA:	GUARNERI MASSIMILIANO
Unità:	FSN-TECFIS-DIM

Attività ENEA:

Nel progetto ENEA con il laboratorio DIM ricoprirà due ruoli di strategica importanza essendo cosviluppatore della piattaforma di virtualizzazione 3D con specifiche competenze, oltre a contribuire con le proprie competenze alla definizione ed individuazione di possibili scenari in cui ambientare gli addestramenti in ambito soprattutto di eventi nucleari. DIM svolgerà anche il ruolo di utilizzatore della piattaforma stessa per addestrare il proprio personale deputato ad interventi in ambito CBRN sul territorio nazionale, come previsto nei piani dell’Ente.

N. Contratto: 952433

VIDIS

VIRTUAL CENTRE FOR DISTRIBUTED ATMOSPHERIC SENSING FOR REDUCTION OF POLLUTION PRESSURES

Coordinatore: VINCA INSTITUTE OF NUCLEAR SCIENCES (Serbia) N. Partner: 4

Abstract:

Air quality still poses a challenge to health, ecosystems and climate in Europe, despite decades of positive developments. Since the adoption of the first EU legislation on ambient air, the process knowledge has increased, the remote and in-situ observing technologies have undergone major developments, and new potent ICT infrastructures have emerged. Low cost sensing technologies have enabled a paradigm shift in air quality monitoring, triggering new research needs and opportunities in order to underpin the new capabilities. VIDIS will develop strategic partnership of VINCA Institute (SR) with leading international counterparts known for research on low-cost sensing (ENEA (IT), NILU (NO), Queensland University (AU)). VIDIS will establish scientific collaboration and networking and generate new knowledge that will allow the society to meaningfully utilize the new technologies, e.g., the emerging democratized data collection. VINCA is recognized in atmospheric research and in-situ monitoring including low-cost technologies. In order to fully capitalize on and improve this expertise, there is a need to establish a strategic partnership with institutions excellent in areas VINCA has been pursuing. VIDIS will improve observing capabilities and develop quality systems needed to ensure meaningful data integration. It will develop artificial intelligence and machine learning methods allowing to integrate the new types of data into existing information systems. Building on methods and data collected from ongoing projects of all partners, VIDIS will establish collaborative research, education, training and dissemination activities, early stage researcher training and mobility, and support early stage researcher career development also in research administration and stakeholder contact. This will increase the innovation capacities of VINCA and partners, improve VINCA's collaborative potential, and contribute to excellence of European research and innovation.

Anno di stipula:	2020
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Spreading Excellence and Widening Participation - WIDESPREAD
Data inizio:	01-11-2020
Data scadenza:	31-10-2023

Contributo totale:	€ 899.125
Costo eleggibile totale:	€ 946.250
Contributo a ENEA:	€ 194.125
Costo eleggibile ENEA:	€ 194.125

Doc. approvazione:	95/2020/DTE
Codice atto:	PT1AAW
Resp. scientifico ENEA:	DE VITO SAVERIO
Unità:	TERIN-FSD-SAFS

Attività ENEA:

ENEA metterà a disposizione i dati rilevati dai sensori MONICA (MONItoraggio Cooperativo della qualità dell'Aria), dotati di strumenti di intelligenza artificiale che hanno permesso di realizzare vere e proprie mappe della qualità dell'aria ad altissima risoluzione spazio-temporale durante le campagne di monitoraggio. L'ENEA è leader del work package 3 nel quale è in particolare responsabile dell'organizzazione di contributi on-line di base per le summer schools coordinamendo i contributi dei diversi partner. Partecipa inoltre ai work package: ? WP1: sviluppo del centro VIDIS che collegherà le 4 istituzioni partecipanti con competenze complementari integrandole in un Sistema di conoscenze sinergico alla creazione e al supporto di ricerche cooperative (progetti) e di programmi di training e sviluppo competenze per gli early stage researchers; ? WP2: incrementare l'esperienza del partner Widening Country (VINCA) e la leadership dei partecipanti supportando la diffusione delle competenze complementari su atmospheric science and air pollution assessment (QUT), Air Pollution Modeling (NILU) Artificial intelligence and machine learning (ENEA) . Scientific training per early stage researchers.

N. Contratto: 101006715

VIPERLAB

Fully connected virtual and physical perovskite photovoltaics lab

Coordinatore: HELMHOLTZ-ZENTRUM BERLIN FUR MATERIALIEN UND ENERGIE GMBH (Germania) N. Partner: 15

Abstract:

VIPERLAB identifies perovskite PV as the key emerging technology that will be the lever for a future market penetration of EU-based PV production with lowest costs and lowest carbon footprint. Therefore, through facilitated and coordinated access to the best EU perovskite infrastructures and the use of advanced data mining approaches, VIPERLAB will stimulate European academic and industrial researchers to work together on the research and development of the next generation of solar cell technology, which will accelerate the perovskite PV technology development in Europe. Top-level material synthesis, state-of-the-art device design and development, as well as standardized testing methods, simulation methods, and databases will be the main services offered in order to validate at lab-scale and at pre-industrial-scale, the technology that will form the backbone for EU PV recovered worldwide leadership all along the value chain. VIPERLAB will boost this ambition for the emerging perovskite community by providing transnational and virtual access aiming to: (1) combine European top-ranked, relevant and complementary perovskite PV infrastructures to foster perovskite solar cells and module development and testing. Facilitate access to these perovskite-focused infrastructures for the community of EU PV academia and industry; (2) connect and support the starting European perovskite community through physical and virtual infrastructures and through targeted networking activities and (3) further develop physical and virtual perovskite infrastructures, build an up-to-date database on materials and devices, on long-term performance and on environmental and economic impact (enabling evidence-based commercial and political decision making. Hence, VIPERLAB will build up a close dialogue with the emerging perovskite industry with the help of new initiatives such as EPKI as well as more established players such as the European solar industry association Solar Power Europe.

Anno di stipula:	2021
Tipo progetto:	RIA - Research and Innovation Action
Programma UE:	HORIZON 2020 European Research Infrastructures
Data inizio:	01-06-2021
Data scadenza:	30-11-2024
Contributo totale:	€ 5.520.125
Costo eleggibile totale:	€ 5.520.125
Contributo a ENEA:	€ 376.610
Costo eleggibile ENEA:	€ 376.610
Doc. approvazione:	28/2021/TERIN
Codice atto:	PK0AAC
Resp. scientifico ENEA:	ROCA FRANCESCO
Unità:	TERIN

Attività ENEA:

L'ENEA partecipa alle attività del progetto con un ruolo cruciale in quanto: - è responsabile, del WP5-NA2 Communication, dissemination, exchange and training; - ha il ruolo di Communication & dissemination manager per il progetto ed ha sviluppato direttamente procedure e strumenti quali sito il web del progetto, la Knowledge Exchange Platform, e le strategie di comunicazione tramite canali scientifici e media - offre inoltre le infrastrutture Tandem PSK/si Lab e CRESCO computing lab.

N. Contratto: 952593

WASTE2H2

Waste to Hydrogen

Coordinatore: INSTITUTO POLITECNICO DE PORTALEGRE (Portogallo) N. Partner: 4

Abstract:

The WASTE2H2 proposal field of action is hydrogen as a sustainable energy vector and waste valorization in a circular economy approach. Characteristically, Hydrogen can be produced using diverse resources including fossil fuels, such as natural gas and coal, biomass, non-food crops, nuclear energy and renewable energy sources, such as wind, solar, geothermal, and hydroelectric power to split water. Hydrogen could be produced from waste biomass by thermal gasification processes followed by clean and purification stages of syngas produced. This area has an enormous potential for society descarbonisation and development of circular economy. This diversity of potential supply sources is the most important reason why hydrogen is such a promising energy carrier. WASTE2H2 aims to enhancing the scientific and technological capacity of IPPortalegre in clean and purification of thermal gasification syngas in order to produced hydrogen, and at raising staff's research profile and excellence by twinning with three well established and leading research institutions: Royal Institute of Technology, in Sweden; Italian National Agency for New Technologies, Energy and Sustainable Economic Development, in Italy and; Karlsruhe Institute of Technology, in Germany. This will allow mutual learning and knowledge transfer activities, cross-fertilization and networking opportunities and increased opportunities for research collaborations. The resulting enhanced capabilities and status of IPPortalegre, would in turn contribute to the change of its economic landscape, giving new opportunities for development and job creation, strengthening and enhancing the positioning of Portugal as an important player in applied scientific research in the respective field.

Anno di stipula:	2021
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Spreading Excellence and Widening Participation - TWINNING
Data inizio:	01-01-2021
Data scadenza:	31-12-2023

Contributo totale:	€ 899.719
Costo eleggibile totale:	€ 899.719
Contributo a ENEA:	€ 166.500
Costo eleggibile ENEA:	€ 166.500

Doc. approvazione:	77/2020/DTE
Codice atto:	PT4ABD
Resp. scientifico ENEA:	MC PHAIL STEPHEN JOHN
Unità:	DTE-PCU-SPCT

Attività ENEA:

Le attività che l'ENEA svolgerà all'interno del progetto Waste2Watts si possono riassumere e sintetizzare nei seguenti punti: • WP1: definizione di una strategia per la creazione di un network di relazioni professionali e competenze sul tema • WP2: ospitare visite lavorative di breve termine e partecipare ai workshops tematici • WP3: ospitare giovani ricercatori per la formazione per periodi fino a 2 mesi • WP4: ampliare e attivare reti di contatto professionali • WP5: individuare e partecipare a bandi di finanziamento • WP6: organizzazione di una conferenza finale e disseminazione

N. Contratto: 826234

WASTE2WATTS

Unlocking unused bio-WASTE resources with loW cost cleAning and Thermal inTegration with Solid oxide fuel cells

Coordinatore: ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE (Svizzera) N. Partner: 10

Abstract:

WASTE2WATTS (W2W) will design and engineer an integrated biogas-Solid Oxide Fuel Cell combined heat and power system with minimal gas pre-processing, focusing on low-cost biogas pollutant removal and optimal thermal system integration. Eleven partners from 4 leading biogas countries join efforts to these objectives: 2 biogas cleaning SMEs, 3 SOFC manufacturing SMEs, a biogas expert SME and 5 leading research and education centres in SOFC characterisation and modelling, and in biogas use as a fuel. Two cleaning approaches and hardware will be developed: one for small scale units (5-50 kWe), where a huge unutilised biogas potential resides (millions of farms, bio-wastes from municipalities) - here sulphur compounds (H2S and organic S) are removed by an appropriate solid sorbent matrix; one for medium-to-large scale units (=500 kWe), which is the existing scale of landfill biogas and large bio-waste collection schemes - here sulphur compounds and siloxanes are removed among others by a novel cooling approach. For both cases the hardware will be built and installed on real biogas-sites treating different wastes. Gas analytics will validate the approaches. A 6 kWe SOFC system from a partner will run on a real agro-biogas site connected to the small scale sorbents cleaning unit. Cost projections for high volume production for both the cleaning and SOFC systems will be conducted. A detailed full system model will be implemented, considering the biogas feedstock, composition fluctuations (and dilution) and pollutant signatures, and optimizing thermal integration with biogas-inherent CO2 (for dry-dominant reforming) and digester heating, with the targets to maximise net electrical efficiency and minimise cost. An Advisory Board consisting of biogas producing SMEs will accompany the project to facilitate market access and support the post-project multiplication of the developed solutions.

Anno di stipula:	2019
Tipo progetto:	N/A - Non applicabile
Programma UE:	HORIZON 2020 JTI - Hydrogen
Data inizio:	01-01-2019
Data scadenza:	31-03-2023
Contributo totale:	€ 1.681.603
Costo eleggibile totale:	€ 1.681.603
Contributo a ENEA:	€ 155.063
Costo eleggibile ENEA:	€ 155.063
Doc. approvazione:	71/E/2018/DTE
Codice atto:	PT4AAV
Resp. scientifico ENEA:	PUMIGLIA DAVIDE
Unità:	DTE-PCU-SPCT

Attività ENEA:

L'ENEA è coinvolta nei seguenti WP: WP2 'Selezione e testing di materiali sorbenti per il clean up dei vari tipi di biogas'; WP3 'Selezione e analisi di catalizatori commerciali per il preforming del biogas purificato, con particolare attenzione alla reazione di dry reforming ed alla loro selettività, stabilità e resa rispetto a tale reazione. Testing di celle singole SOFC alimentate con biogas diretto e/o pre-reformato, valutando prestazioni, degrado e possibili effetti di contaminazione da residui di specie contaminanti attraverso il set-up dedicato per la misura di gradienti termini e chimici; WP4 'Life Cycle assessment applicato al sistema biogas/clean-up/SOFC e confrontato con sistemi ICE); WP5 'Gestione del piano di disseminazione e valorizzazione del know-how e del prodotto generato nel progetto, diffusione nei mercati e promozione del prodotto facendo leva sulle piattaforme dedicate europee, mediante l'organizzazione di workshop, la pubblicazione di articoli, la produzione di un filmato promozionale'.

N. Contratto: 845958 ***X-tendo***

eXTENDing the energy performance assessment and certification schmes via a mOdular approach

Coordinatore: UNIV. TECHNICAL WIEN (Austria) N. Partner: 13

Abstract:

X-tendo will support public authorities to transition to next-generation energy performance certification (EPC) schemes,including improved compliance, reliability, usability and convergence. The key output of the project will be the X-tendotoolbox, a freely available online knowledge hub that will be continued also beyond the project duration. It will contain 10innovative EPC features ranging from a smartness and a comfort indicator to building logbooks and how to improve EPCdatabases. For each feature the toolbox will include: (1) solution concepts and good practice examples, (2) description ofmethodological approaches, (3) calculation tools, and (4) implementation guidelines and recommendations. A selection oftwenty-nine test projects in nine different member states will demonstrate the potential of each feature as part of morereliable next-generation EPC schemes across the EU.Intensive stakeholder engagement, experience exchange activities, continuous dissemination and an ambitious exploitationstrategy will maximize X-tendo's impact across the EU. Direct impact on (future) policy making will be achieved by (1)understanding end-users and their needs, (2) engaging with public bodies covering at least 75% of the EU building stock, (3)close collaboration between policy makers and technical, communication and financial experts, (4) outreach to EU-wideinitiatives such as the Concerted Action on the EPBD and the European Energy Network, and (5) assessing the viability ofpolicy implementation.Improved and next-generation EPC schemes and the innovative handling and use of EPC-related data will push the markettowards better performing buildings and facilitate the interaction between building owners, the construction industry and thefinance sector. The combination of the expertise of the project partners and the actions and outputs of the project will steerEPC schemes across Europe to the next-generation requirements

Anno di stipula:	2019
Tipo progetto:	CSA - Coordination and support action
Programma UE:	HORIZON 2020 Energy
Data inizio:	01-09-2019
Data scadenza:	31-08-2022
Contributo totale:	€ 2.057.278
Costo eleggibile totale:	€ 2.057.278
Contributo a ENEA:	€ 66.756
Costo eleggibile ENEA:	€ 66.756
Doc. approvazione:	18/2019/DUEE-SIST
Codice atto:	PW4AAB
Resp. scientifico ENEA:	ZANGHIRELLA FABIO
Unità:	DUEE-SIST-NORD

Attività ENEA:

L'ENEA effettua nel progetto una serie di test case con l'obiettivo di dimostrare l'applicabilità delle caratteristiche EPC di prossima generazione. L'ENEA applica su edifici reali alcuni moduli del toolbox verificando l'applicabilità delle caratteristiche da sviluppare nell'ambito del progetto e l'utilità del toolbox che sarà messo a disposizione dei decisori politici.

ENEA Servizio Promozione e comunicazione
Grafica in copertina: Paola Carabotta
Giugno 2023


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