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ET DE L'INNOVATION

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Le programme européen pour la recherche et l'innovation





Programme :

10h30 – 10h35 : Accueil et introduction

10h35 – 10h50 : Architecture d'Horizon Europe et contexte politique (Philippe Schild, Senior expert, Commission européenne), suivi d'un Q&A

10h50 – 11h45 : Présentation des 19 appels à projets

11h45 – 11h55 : Questions/réponses

11h55 – 12h10 : Retour d'expérience d'un porteur de projet (Konstantin Sipos & Pierre Brignou - Rescoll)

12h10 – 12h15 : Conclusion



Architecture d'Horizon Europe et contexte politique

Philippe Schild, Senior expert, Commission européenne

Suivi d'un Q&A



HORIZON EUROPE

#HorizonEU

THE EU
RESEARCH & INNOVATION
PROGRAMME

2021 – 2027



PHILIPPE SCHILD

Expert confirmé

RTD.- « Transition vers les énergies propres »
Webinaire Destination 3 Cluster 5

16/06/2021

HORIZON EUROPE

EURATOM

PROGRAMME SPÉCIFIQUE : FOND DE DÉFENSE EUROPÉEN

exclusivement axées sur la recherche et le développement en matière de défense

Actions de recherche

Action de développement

PROGRAMME SPÉCIFIQUE POUR LA RÉALISATION D'HORIZON EUROPE & EIT*

exclusivement axées sur les applications civiles



Pillar I SCIENCE D'EXCELLENCE



Pillar II PROBLÉMATIQUES MONDIALES ET COMPÉTITIVITÉ INDUSTRIELLE EUROPÉENNE



Pillar III EUROPE INNOVANTE

Conseil européen de la recherche

Marie Skłodowska-Curie

Infrastructures de Recherches

- Santé
- Culture, créativité et société inclusive
- Sécurité civile pour la société
- Numérique, industrie et espace
- Climat, énergie et mobilité
- Alimentation, bioéconomie, ressources naturelles, agriculture et environnement

Centre commun de recherche

Fusion

Fission

Centre commun de recherche

ÉLARGIR LA PARTICIPATION ET RENFORCER L'ESPACE EUROPÉEN DE LA RECHERCHE

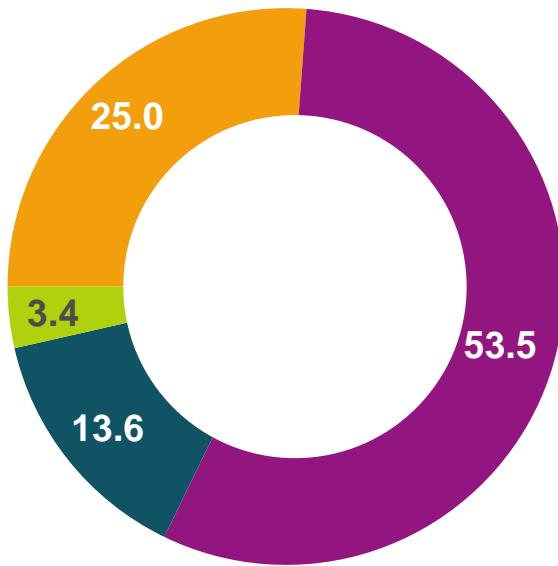
élargir la participation et propager l'excellence

réformer et consolider le système européen de R&I

* Institut européen d'innovation et de technologie (EIT) n'est pas inclus dans le programme spécifique

Horizon Europe Budget: €95.5 milliard (2021-2027)

(incluant €5.4 milliard du plan de relance de l'UE, Next Generation Europe (NGEU) après la COVID-19)

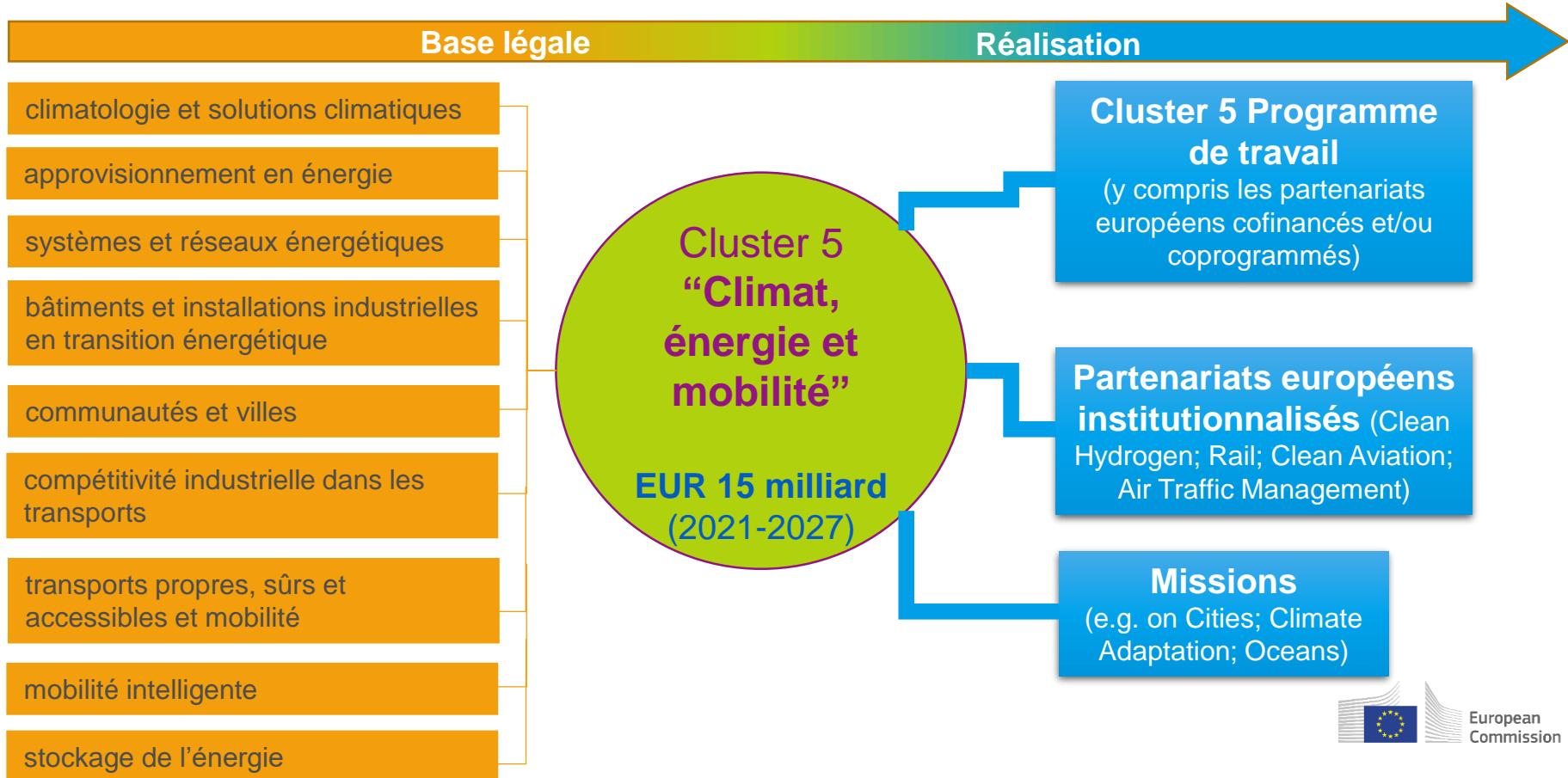


Political agreement December 2020
€ billion in current prices

■ Science d'excellence

■ Problématiques mondiales et compétitivité industrielle européenne

Cluster 5 – vue d'ensemble



Cluster 5 Partenariats

Partenariats institutionnalisés

- Transforming Europe's rail system
- Integrated Air Traffic Management
- Clean Aviation
- Clean Hydrogen

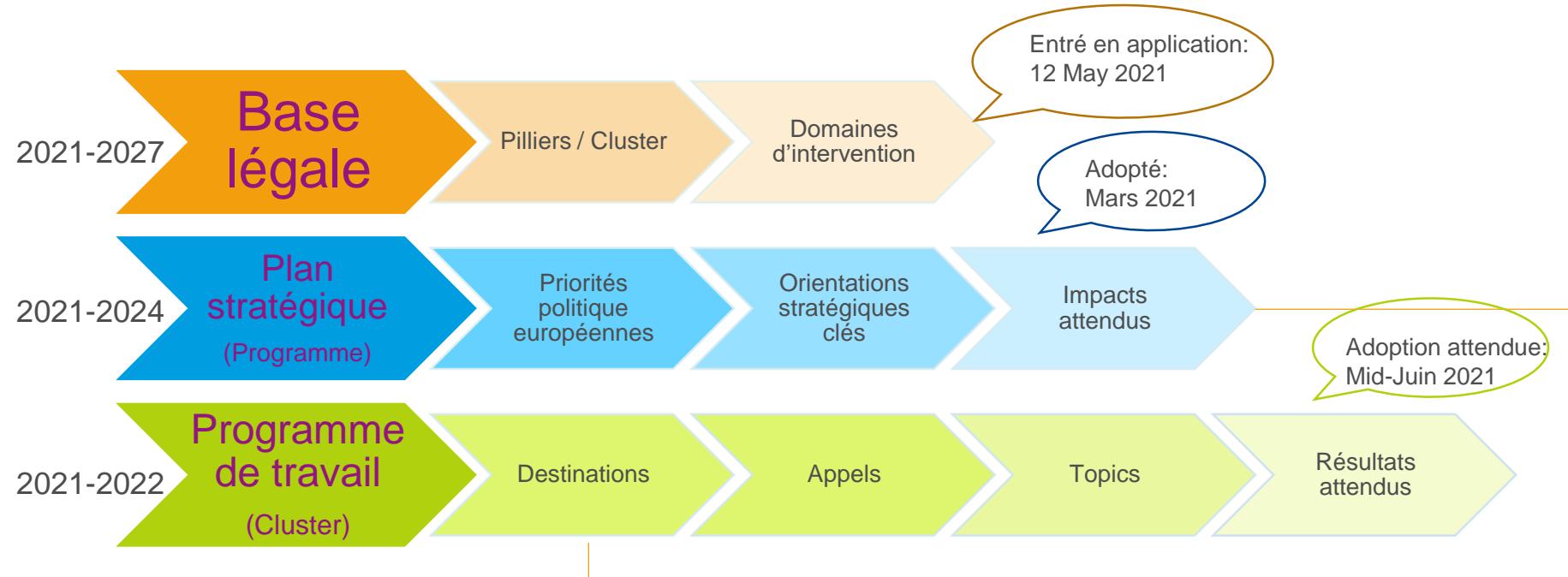
Partenariats cofinancés

- Driving urban transitions to a sustainable future (DUT)
- Clean Energy Transition

Partenariats coprogrammés

- Built4People | People-centric sustainable built environment
- Towards zero-emission road transport (2ZERO)
- Batteries: Towards a competitive European industrial battery value chain for stationary applications and e-mobility
- Zero-emission waterborne transport
- Connected, Cooperative and Automated Mobility (CCAM)

Programme – logique d'intervention



EU Policy priorities

Pacte vert pour l'Europe

- Action pour le climat; énergie propre; mobilité durable; éliminé la pollution; construction et renovation; biodiversité; Industries durables

Une Europe adaptée à l'ére numérique

- Intelligence artificielle; stratégie européenne pour les données; stratégie industrielle pour l'Europe; Cybersécurité

Une économie au service des personnes

- Marché intérieur; Emplois, croissance et investissement

Promotion de notre mode de vie européen

- Union européenne de la santé; Union européenne de la sécurité

Une Europe plus forte sur la scène internationale

- Partenariats internationaux; politique commercial; politique européenne étrangère

Un nouvel élan pour la démocratie européenne

- Veille stratégique; Conférence sur l'avenir de l'Europe

Initiative récentes:

Action pour le Climat

- Loi européenne sur le climat (neutralité climatique d'ici à 2050)
- Plan cible pour 2030 (réduire de 55% GHG d'ici à 2030)
- Paquet législatif 'fit for 55'
- Stratégie européenne d'adaptation climatique
- Plan d'action pour Zero Pollution

Energie

- Stratégie européenne sur l'intégration du système énergétique
- Stratégie européenne sur l'hydrogène
- « Renovation wave for Europe »
- Stratégie européenne sur l'énergie renouvelable en mer

Mobilité

- Stratégie pour une mobilité durable et intelligente

Recherche et Innovation

- Un nouvel Espace Européen de la Recherche

Cluster 5 – Impacts attendus

Transition vers une société et une économie climatiquement neutres et résilientes rendue possible grâce à une science climatique avancée, des voies et des réponses au changement climatique (atténuation et adaptation)

Un approvisionnement énergétique plus efficace, propre, durable, sûr et compétitif grâce à de nouvelles solutions pour les réseaux intelligents et les systèmes énergétiques basés sur des solutions d'énergies renouvelables plus performantes

Transition propre et durable des secteurs de l'énergie et des transports vers la neutralité climatique facilitée par des solutions transversales innovantes

Une utilisation efficace et durable de l'énergie, accessible à tous, est assurée par un système énergétique propre et une transition juste

Autonomie stratégique ouverte en dirigeant le développement de technologies, de secteurs et de chaînes de valeur numériques clés, habilitantes et émergentes

Restaurer les écosystèmes et la biodiversité de l'Europe et gérer durablement les ressources naturelles

Plan stratégique

Faire de l'Europe la première économie circulaire, climatiquement neutre et durable activée par le numérique

Créer une société européenne plus résiliente, inclusive et démocratique

Des systèmes de mobilité sûrs, transparents, intelligents, inclusifs, résilients, neutres pour le climat et durables pour les personnes et les biens

Vers une mobilité climatiquement neutre et respectueuse de l'environnement grâce à des solutions propres dans tous les modes de transport tout en augmentant la compétitivité mondiale du secteur des transports de l'UE

Cluster 5 Work programme - overview

Destination 1 – Climatologie

Science du
climat

Destination 2 – Solution transversales

Batteries

Villes

“Cassure
Technologique”

Engagement
des citoyens et
des parties
prenantes

Destination 3 – Approvisionnemen t énergétique

Energies
renouvelables

Système
énergétique,
réseaux et
stockage

CCUS

Activités
transversales

Destination 4 – Demande énergétique

Bâtiments

Industries

Destination 5 - Solutions propres et compétitives pour tous les modes de transport

Transport
routier zéro
émission road
transport

Aviation

Transport par
voie d'eau

Problèmes de
santé et
d'environneme
nt liés aux
transports

Destination 6 - Services de transport et de mobilité intelligente

Mobilité
connectée,
coopérative et
automatisée

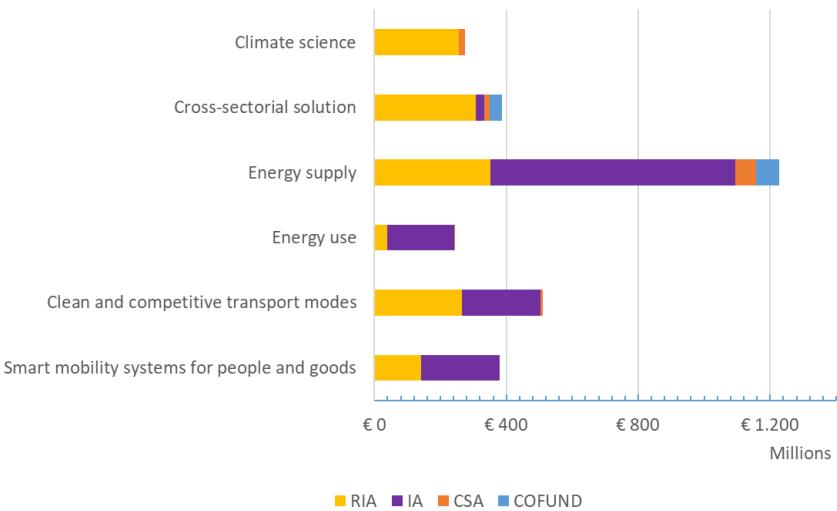
Systèmes de
transport
multimodaux et
durables pour
les passagers
et les
marchandises

Sécurité et
résilience

Cluster 5 Work programme - overview

	Budget (Mio €)	Share of total	Number of topics	Share of total
Climatologie	274.0	9%	17	9%
Solutions traversales	387.5	13%	25	13%
Approvisionnement énergétique	1226.3	40%	67	36%
Demande énergetique	244.0	8%	18	10%
Modes de transport propres et compétitifs	511.0	17%	31	17%
Services de transport et de mobilité intelligente	380.0	13%	28	15%
TOTAL	3022.8		186	

EU contribution per Destination and type of action
(2021-2022, in Mio EUR)



Destination - Sustainable, secure and competitive energy supply

Energies renouvelables

- Favoriser le leadership mondial européen dans les technologies et services d'énergies renouvelables abordables, sûrs et durables en améliorant leur compétitivité dans les chaînes de valeur mondiales et leur position sur les marchés en croissance, notamment grâce à la diversification du portefeuille de services et de technologies renouvelables
- **20 topics en 2021 (335 M€)**
- **24 topics en 2022 (368 M€)**
- **Enjeux :** technologies de rupture, réduction des coûts, efficacité améliorée, réduction des risques, intégration, potentiel d'exportation, durabilité, adoption par le marché

Système énergétique, réseaux et stockage

- Assurer un approvisionnement en énergie rentable, ininterrompu et abordable aux ménages et aux industries dans un scénario de forte pénétration des énergies renouvelables variables et d'autres nouveaux approvisionnements énergétiques à faible émission de carbone.
- Gérer des réseaux énergétiques intelligents et cyber-sécurisés et optimiser l'interaction entre producteurs, consommateurs, réseaux, infrastructures et vecteurs
- **10 topics en 2021 (152 M€)**
- **7 topics en 2022 (181 M€)**
- **Enjeux:** intégration du secteur énergétique, planification et exploitation des systèmes énergétiques, consommateur actif, marchés et communautés énergétiques, numérisation

Captage, utilisation et stockage du carbone

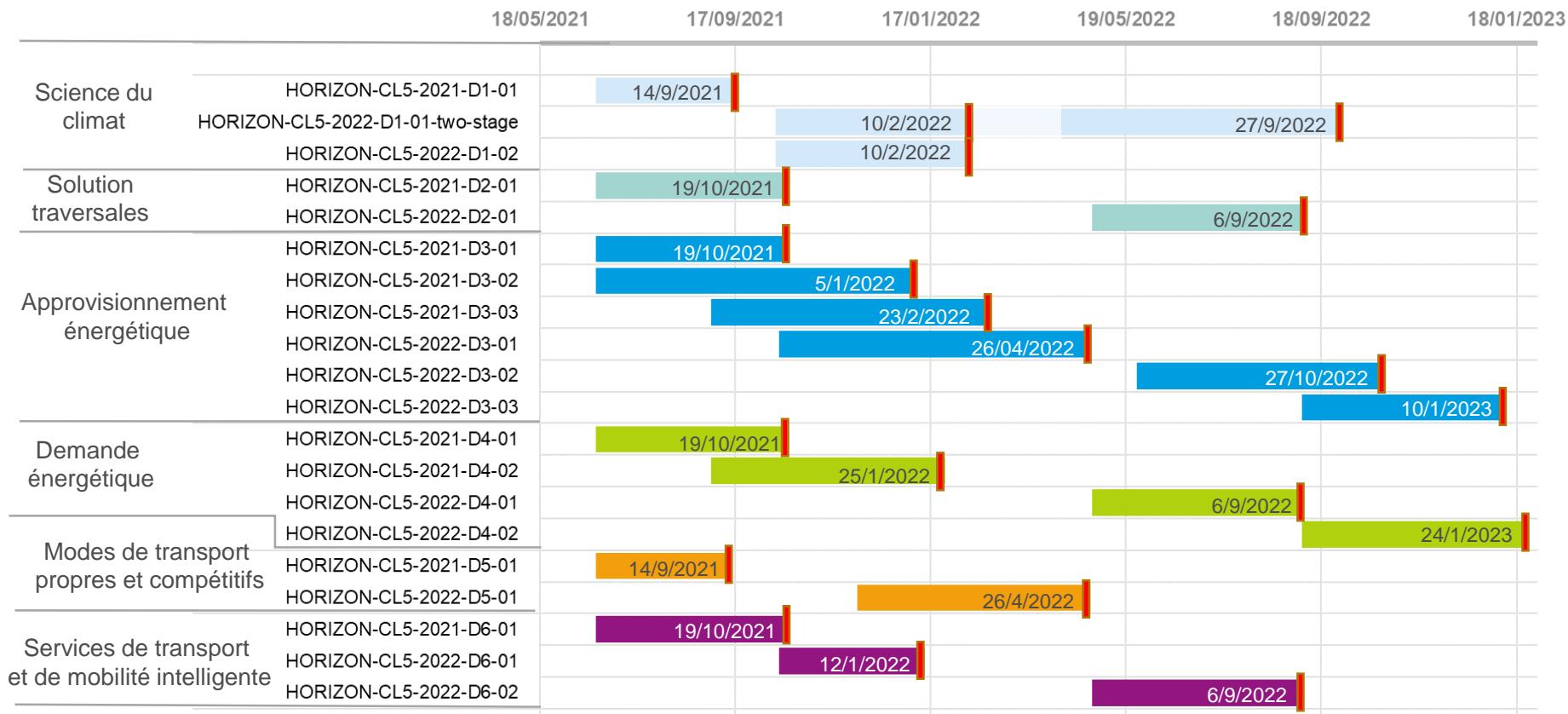
- Accélérer le développement du captage, de l'utilisation et du stockage du carbone (CCUS) en tant qu'option d'atténuation des émissions de CO₂ dans la production d'électricité et les applications industrielles (y compris également la conversion du CO₂ en produits)
- **2 topics en 2021 (32 M€)**
- **1 topic en 2022 (58 M€)**
- **Enjeux:** Hubs CCUS, application dans l'industrie, capture de CO₂

Tranversal

- Services géologiques (2021; CSA; 20 M€)
- Soutiens (2021; CSA; 9.8 M€)
- Partenariat cofinancé pour la transition énergétique propre
- (2021-2027; 210 M€ in total)



Cluster 5 call structure



Ouverture: 24 Juin 2021 / Deadline(s): 19 Oct 2021

Topics	Type d'action	Budgets	Contribution EU attendue par projet	Nombre de projets attendus
		(EUR million)	(EUR million)	
HORIZON-CL5-2021-D3-01-01 Establish the grounds for a common European energy data space	IA	32.00 (1)	Environ 8.00	4
HORIZON-CL5-2021-D3-01-02 Laying down the basis for the demonstration of a Real Time Demonstrator of Multi-Vendor Multi-Terminal HVDC with Grid Forming Capability	CSA	1.00	Environ 1.00	1
HORIZON-CL5-2021-D3-01-03 Interoperability community	CSA	5.00	Environ 5.00	1
HORIZON-CL5-2021-D3-01-04 Clean Energy Transition	COFUND	35.00	Environ 70.00	1
Budget indicatif		73.00		

(1) incluant EUR 16.00 million du fond NGEU

Ouverture: 24 Juin 2021 / Deadline(s): 05 Jan 2022

Topics	Type d'action	Budgets	Contribution EU attendue par projet	Nombre de projets attendus
		(EUR million)	(EUR million)	
		2021		
HORIZON-CL5-2021-D3-02-01 Demonstration of wave energy devices to increase experience in real sea condition	IA	15.00 ¹	Environ 15.00	1
HORIZON-CL5-2021-D3-02-02 Sustainability and educational aspects for renewable energy and renewable fuel technologies	CSA	10.00	Environ 2.50	4
HORIZON-CL5-2021-D3-02-03 Market Uptake Measures of renewable energy systems	CSA	10.00	Environ 2.00	5
HORIZON-CL5-2021-D3-02-04 Novel tandem, high efficiency Photovoltaic technologies targeting low cost production with earth abundant materials	RIA	20.00	Environ 5.00	4
HORIZON-CL5-2021-D3-02-05 Energy Sector Integration: Integrating and combining energy systems to a cost-optimised and flexible energy system of systems	IA	30.00 ²	9.00 to 10.00	3
HORIZON-CL5-2021-D3-02-06 Increasing energy system flexibility based on sector-integration services to consumers (that benefits system management by DSOs and TSOs)	IA	25.00 ³	Environ 8.00	3
HORIZON-CL5-2021-D3-02-07 Reliability and resilience of the grid: Measures for vulnerabilities, failures, risks and privacy	IA	15.00 ⁴	7.00 to 8.00	2

HORIZON-CL5-2021-D3-02-08 Electricity system reliability and resilience by design: High-Voltage, Direct Current (HVDC)-based systems and solutions	RIA	15.00	7.00 to 8.00	2
HORIZON-CL5-2021-D3-02-09 Demonstration of superconducting systems and and pipes	IA	15.00 ⁵	Environ 15.00	1
HORIZON-CL5-2021-D3-02-10 Demonstration of advanced Power Electronics for application in the energy sector	IA	10.00 ⁶	Environ 5.00	2
HORIZON-CL5-2021-D3-02-11 Reinforcing digitalisation related know how of local energy ecosystems	CSA	4.00	Environ 4.00	1
HORIZON-CL5-2021-D3-02-12 Integration of CCUS in hubs and clusters, including knowledge sharing activities	CSA	2.00	Environ 2.00	1
HORIZON-CL5-2021-D3-02-13 Cost reduction of CO2 capture (new or improved technologies)	RIA	30.00	10.00 to 15.00	2
HORIZON-CL5-2021-D3-02-14 Support to the activities of the European Geological Services	CSA	20.00	Environ 20.00	1
HORIZON-CL5-2021-D3-02-15 Support to the activities of the ETIPs and technology areas of the SET Plan	CSA	9.80	Environ 1.00	10
Budget indicatif		230.80		

¹ Of which EUR 7.50 million from the NGEU Fund Source.
² Of which EUR 15.00 million from the NGEU Fund Source.
³ Of which EUR 12.50 million from the NGEU Fund Source.
⁴ Of which EUR 7.50 million from the NGEU Fund Source.

⁵ Of which EUR 7.50 million from the NGEU Fund Source.
⁶ Of which EUR 5.00 million from the NGEU Fund Source.

Important websites

Cluster 5 draft work programme 2021-2022 (version of 21 May 2021):

<https://ec.europa.eu/transparency/expert-groups-register/core/api/front/document/51842/download>

!!! This draft has not been adopted or endorsed by the European Commission !!!

Information event on cluster 5 calls

<https://he-cluster5.b2match.io/>

Funding & Tender Portal

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>

Information:

HorizonEU

Commissioner Mariya Gabriel: @GabrielMariya

Director-General Jean-Eric Paquet: @JEPaquetEU

DG Research and Innovation: @EUScienceInnov @EU_H2020

<https://www.facebook.com/EUScienceInnov/>

Horizon Magazine: @HorizonMagEU

Horizon Europe website: <http://ec.europa.eu/horizon-europe>

European Innovation Council: <http://ec.europa.eu/research/eic>

European Research Council: <https://erc.europa.eu/>





Thank you!

HorizonEU

<http://ec.europa.eu/horizon-europe>



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Cluster 5 Climat, Energie, Mobilité

Focus sur la destination 3



Destination 3 : « Un approvisionnement énergétique durable, sûr et compétitif »

Impacts (« expected impacts ») visés : « favoriser le leadership mondial de l'Europe dans le domaine des technologies et des services liés aux énergies renouvelables abordables, sûres et durables en améliorant leur compétitivité dans les chaînes de valeur mondiales et leur position sur les marchés en croissance, notamment par la diversification du portefeuille de services et de technologies liés aux énergies renouvelables », notamment en :

- Favorisant le leadership mondial européen dans les technologies et services liés aux énergies renouvelables abordables, sûres et durables en améliorant leur compétitivité dans les chaînes de valeur mondiales et leur position sur les marchés en croissance
- Garantissant un approvisionnement énergétique rentable, ininterrompu et abordable dans un scénario de forte pénétration des énergies renouvelables variables et d'autres nouveaux approvisionnements énergétiques à faible teneur en carbone.
- Accélérant le développement du captage, de l'utilisation et du stockage du carbone (CCUS) en tant qu'option de réduction des émissions de CO₂ dans la production d'électricité et les applications industrielles



1^{ère} sous-partie : « Favoriser le leadership mondial de l'Europe dans le domaine des technologies d'énergie renouvelable abordables, sûres et durables »

Objectifs (« main impacts ») visés :

- Disponibilité de technologies et de systèmes disruptifs en matière d'EnR & de carburants renouvelables en vue du remplacement des technologies énergétiques d'origine fossile.
- Réduction du coût & amélioration de l'efficacité des EnR & des carburants renouvelables et de leurs chaînes de valeur.
- Dégradation des risques liés aux EnR & carburants renouvelables en vue de leur exploitation commerciale
- Meilleure intégration des EnR & les carburants renouvelables dans les secteurs consommateurs d'énergie
- Renforcement de la base scientifique européenne et du potentiel d'exportation européen des EnR grâce à la collaboration internationale (notamment avec l'Afrique)
- Durabilité accrue des chaînes de valeur des EnR & des carburants renouvelables, en tenant pleinement compte des aspects sociaux, économiques et environnementaux
- Adoption plus efficace par le marché des technologies liées aux EnR & aux carburants renouvelables.



Destination 3 : Les appels de 2021

Version définitive

Topic	Topic title	Type of action	TRL (by the end of the project)	Budget 2021 (en M€)	Expected UE contribution per project (M€)	Expected number of grants	Call opening date	Deadline
HORIZON-CL5-2021-D3-02-01	Demonstration of wave energy devices to increase experience in real sea condition	IA	//	15	Around 15.00	1	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-02	Sustainability and educational aspects for renewable energy and renewable fuel technologies	CSA	//	10	Around 2.50	4	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-03	Market Uptake Measures of renewable energy systems	CSA	//	10	Around 2.00	5	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-04	Novel Tandem, high efficiency Photovoltaic technologies targeting low cost production with earth abundant materials	RIA	5	20	Around 5.00	4	24/06/2021	05/01/2022



HORIZON-CL5-2021-D3-02-01: Demonstration of wave energy devices to increase experience in real sea condition

IA

Budget AAP : 15M€

Budget/projet : 15M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

!: Dérogation nombre de pages

Expected Outcome (all)

- Demonstrated performance and reliability of wave energy devices producing comparable and public results using international metrics
- Improved knowledge on operating wave energy devices, their availability, maintainability; sharing project data
- Reduction of the LCOE in line with the SET Plan targets (using a recognized calculation methodology)
- Reinforced industrial supply chain in Europe
- Attraction of private investors to the sector and reduction of the cost of their investment by presented evidences and credible key performance indicators.

Scope : demonstrate wave energy devices in real sea conditions for long periods of time (12-24 months); utilise verified key subsystems by comprehensive dry testing (finalized in the first year and prior to any at-sea deployment) to reduce risks. Aspects to be addressed: industrial design and manufacturing processes, circularity of (critical) raw materials, scalability, installation methods...; present an environmental monitoring plan during the demonstration action. A go/no go decision before the deployment phase and advised by independent experts (after deliverables assessment).



HORIZON-CL5-2021-D3-02-02 : Sustainability and educational aspects for renewable energy and renewable fuel technologies

CSA

Budget AAP : 10M€

Budget/projet : 2.5M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

Expected Outcome (all)

- Enhance and promote sustainability by addressing social and environmental aspects of renewable energy and renewable fuel technologies at a global level (to meet Green Deal priorities).
- Support the development of training and reskilling efforts in these sectors, while identifying challenges to realize the deployment of Green Deal ambitions.
- Support and promote circularity concepts and approaches.

Scope: coordinate the stakeholder community and propose concrete actions to promote and accelerate the development of sustainable solutions for renewable energy and renewable fuel technologies (including circularity-by-design); set up and initiate a structured programme to promote an innovative multi-disciplinary approach on teaching (engage with European universities); special consideration to gender balance issues; develop and run an industry-academia programme focused on hands-on training. It requires the effective contribution of SSH disciplines and experts.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-03 : Market Uptake Measures of renewable energy systems

CSA

Budget AAP : 10M€

Budget/projet : 2M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

Expected Outcome (some of the following):

- Facilitate the wider uptake of renewable energy systems in the energy, industrial and residential sectors.
- Contribute to provide a basis for policy-makers and stakeholders for developing more informed RES policy and for analysing about the market dynamics when including all renewable energies.
- Contribute to the development of markets and respective financial frameworks that can operate efficiently and incentive-compatible while accommodating massive shares of renewables.
- Increase societal acceptance of renewable energy facilities and installations through science-based evidence and tools.

Scope: to develop solutions addressing at least 2 of the expected outcomes, either for the entire renewable energy market or focusing on a specific energy sector (electricity, heating, cooling or renewable fuels). Other aspects possibly to address: issues related to specific geographical region, to acceptance of RES due to cultural heritage landscape particularities, self-consumption, international aspects). The proposed solution needs to have a wide potential for reapplication and long term viability; inspired by other successful approaches already tested. Involve/engage relevant stakeholders; SHS contribution.



HORIZON-CL5-2021-D3-02-04: Novel tandem, high efficiency Photovoltaic technologies targeting low cost production with earth abundant materials

RIA (TRL final 5)
Budget AAP : 20M€
Budget/projet : 5M€
Ouverture : 24/06/2021
Deadline : 05/01/2022

Expected Outcome (all)

- Demonstrate tandem technologies for efficiencies beyond the single-junction Shockley–Queisser limit (~29%).
- Increase the potential of tandem technologies; earth abundant materials for mass production at low manufacturing cost.
- Minimise the impact of PV on landscape and environment by increasing its energy yield/m².
- Contribute towards establishing a solid European innovation base and a competitive, continuous and coherent PV value chain.

Scope: to develop tandem cells and modules that will reach efficiencies >30%, offer the same lifetime and degradation rate as standard crystalline panels at only marginally higher cost. Develop novel concepts based on earth abundant materials that optimise PV cell and module architecture, increase durability, decrease losses; employ simple, scalable and low cost processing techniques; deliver proof-of-concept for equipment development; ensure compliance with the relevant standards at laboratory scale; perform device/module real-life characterisation for reliability and energy yield assessment; perform LCA.



2^{ème} sous-partie : « Systèmes, réseaux et stockage d'énergie »

Objectifs (« main impacts ») visés :

- Flexibilité et résilience accrues du système énergétique basée sur des technologies améliorées et/ou nouvelles, permettant notamment de planifier et d'exploiter simultanément différents réseaux pour différents vecteurs énergétiques de manière coordonnée
- Améliorer la satisfaction des consommateurs et la flexibilité accrue du système, en permettant aux consommateurs de bénéficier de services basés sur les données et de faciliter leur engagement dans la transition énergétique
- Améliorer les technologies de stockage de l'énergie, en particulier le stockage de la chaleur mais aussi d'autres comme l'electrochimie, la chimie, la mécanique et l'électricité.
- Favoriser le marché européen des nouveaux services énergétiques et des nouveaux modèles commerciaux, ainsi que les interfaces normalisées et ouvertes testées des dispositifs énergétiques
- Permettre des solutions plus efficaces et efficientes pour le transport de l'énergie off-shore grâce aux nouvelles technologies de transmission de l'électricité (technologies supraconductrices, électronique de puissance, solutions de réseaux hybrides courant alternatif/continu, MT HVDC).



Destination 3 : Les appels de 2021

Version définitive

Topic	Topic title	Type of action	TRL (by the end of the project)	Budget 2021 (en M€)	Expected UE contribution per project (M€)	Expected number of grants	Call opening date	Deadline
HORIZON-CL5-2021-D3-01-01	Establish the grounds for a common European energy data space	IA	5-7	32	Around 8.00	4	24/06/2021	19/10/2021
HORIZON-CL5-2021-D3-01-02	Laying down the basis for the demonstration of a Real Time Demonstrator of Multi-Vendor Multi-Terminal HVDC with Grid Forming Capability: Coordinated action	CSA	//	1	Around 1.00	1	24/06/2021	19/10/2021
HORIZON-CL5-2021-D3-01-03	Interoperability community	CSA	//	5	Around 5.00	1	24/06/2021	19/10/2021
HORIZON-CL5-2021-D3-02-05	Energy Sector Integration: Integrating and combining energy systems to a cost-optimised and flexible energy system of systems	IA	6-8	30	9.00 to 10.00	3	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-06	Increasing energy system flexibility based on sector-integration services to consumers (that benefits system management by DSOs and TSOs)	IA	7-8	25	Around 8.00	3	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-07	Reliability and resilience of the grid: Measures for cybersecurity, vulnerabilities, failures, risks and privacy	IA	5-6	15	7.00 to 8.00	2	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-08	Electricity system reliability and resilience by design: High-Voltage, Direct Current (HVDC)-based systems and solutions	RIA	5-6	15	7.00 to 8.00	2	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-09	Demonstration of superconducting systems and elpipes	IA	8	15	Around 15.00	1	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-10	Demonstration of advanced Power Electronics for application in the energy sector	IA	5-6	10	Around 5.00	2	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-11	Reinforcing digitalisation related know how of local energy ecosystems	CSA	//	4	Around 4.00	1	24/06/2021	05/01/2022



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-01-01 : Establish the grounds for a common European energy data space

IA (TRL final 5-7)
Budget AAP : 32M€
Budget/projet : 8M€
Ouverture : 24/06/2021
Deadline : 19/10/2021
!: Dérogation nombre de pages

Expected Outcome (all)

- Higher degree of interoperability between data platforms.
- Energy data made available and re-usable.
- Enable new market roles, market participants and energy communities.
- Demonstrated implementations of Energy Data Spaces, exploiting open standards related to data-packages, interfaces, protocols, platforms and procedures.
- Enabling new digital solutions and services supporting the energy transition.
- Increased acceptance and participation of consumers on data sharing for energy services.

Scope: develop, validate, demonstrate an Energy Data Space that enables access to and use of energy data, comparison with different solutions: interfaces for the exchange of information; pilot innovative solutions for a common EEDS, covering the full energy value chain; accommodate Digital Twins at grid level and outside, facilitate real-time operations; create a market place for data-driven energy services, increase the potential for investing in green energy; protection of personal data, cybersecurity and data rights; interoperability with other projects of this call.



HORIZON-CL5-2021-D3-01-02 : Laying down the basis for the demonstration of a Real Time Demonstrator of Multi-Vendor Multi-Terminal HVDC with Grid Forming Capability: Coordinated action

CSA

Budget AAP : 1M€

Budget/projet : 1M€

Ouverture : 24/06/2021

Deadline : 19/10/2021

Expected Outcome (all)

- Solid foundation to ensure investments in DC technologies for the European electricity network for the energy transition.
- Agreement among stakeholders and planning for the demonstration of a Real Time Demonstrator of Multi-Vendor Multi-Terminal HVDC with Grid Forming Capability (first real-life full scale installation in Europe).
- New way of framing the European energy system (on- off-shore) architecture and topology.
- Provide new pathways to offshore energy and development.

Scope: to support all the multiple preparatory tasks, which will lead to a global agreement among stakeholders and define the detailed planning for the full-scale industrial demonstrator. It includes: coordination and organization of a platform involving all stakeholders; compatibility of modelling tools towards interoperability; model sharing between TSOs; legal framework; roles and responsibilities on interoperability issues.



HORIZON-CL5-2021-D3-01-03: Interoperability community

CSA

Budget AAP : 5M€

Budget/projet : 5M€

Ouverture : 24/06/2021

Deadline : 19/10/2021

Expected Outcome (all)

- Ensure continuity of the ongoing interoperability of energy services related activities.
- Ensure horizontal coordination and support, sustainable up-take of the energy services, data spaces and digital twins.
- Support and disseminate a common framework for testing interoperability across running projects; Harmonise interoperability testing procedures
- Increased interoperability of energy services, data and platforms, both at the function and business layers.

Scope: facilitate the coordination and alignment of projects and support interaction between the various related initiatives happening at European and National level: support a community of practice (including interoperability expertise); development of IT/ICT, evolution of relevant standards and all activities impacting interoperability, virtualisation and digital twins, data spaces (provide a forum); industrial and working groups' efforts. Create a repository of best practices; develop an Interoperability Maturity Model, create a network of interested parties, and eventually, setting up a distributed European ecosystem of centres for the Interoperability testing of data driven energy solutions (take into account existing initiatives).



HORIZON-CL5-2021-D3-02-05 : Energy Sector Integration: Integrating and combining energy systems to a cost-optimised and flexible energy system of systems

IA (TRL final 6-8)
Budget AAP : 30M€
Budget/projet : 9-10M€
Ouverture : 24/06/2021
Deadline : 05/01/2022
!: Dérogation nombre de pages

Expected Outcome (most of the following)

- Demonstrated benefits of sector integration in different geographic, climate and economic conditions.
- Improved planning of integration of power, heat, gas, industry with a production site(s) of renewable energy.
- Optimised operations of coupled networks (e.g. electricity vs. heating).
- Validated tools and platforms enabling effective sector coupling as tested in large demonstration projects.
- Consolidated methodology to evaluate the impacts on OPEX, CAPEX and overall value creation connected to the integration of flexibility from storage and other energy flexibility solutions.

Scope: demonstrate the benefits of the integration at local (distribution networks) and at national level (transmission networks) of different elements: electricity and gas networks, district heating and cooling and long term energy storage systems (hydrogen, Power-to-X, thermal storage, hydro-storage); mobility systems, EEI and/or industrial cluster. Develop 2 or 3 pilots in different MS/AC; consortia from public authorities, urban stakeholders, infrastructure providers, knowledge institutions, planners, entrepreneurs, societal actors and citizens.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-06 : Increasing energy system flexibility based on sector-integration services to consumers (that benefits system management by DSOs and TSOs)

IA (TRL final 7-8)
Budget AAP : 25M€
Budget/projet : 8M€
Ouverture : 24/06/2021
Deadline : 05/01/2022
!: Dérogation nombre de pages

Expected Outcome (most of the following)

- New business models for market parties based on energy services and revenue streams for consumers.
- Enable market parties to provide flexibility services to network operators and the wholesale market based on competitive markets.
- Increased application of digital technologies to support consumers and market parties to market their flexibility.
- Increased availability of flexibility sources for TSOs and DSOs and enable them to develop markets for flexibility and interact with many distributed resources at the same time based on seamless data exchange and interoperability.
- Facilitate scaling up the platforms and markets to spread its use (as easy as possible for suppliers, aggregators or consumers directly to offer grid services based small-scale and large-scale assets/devices on these markets).
- Better understanding of market models and regulatory measures that can promote new business models.
- Contribution to better informed investment decisions by network operators and tariff setting models by NRAs, as flexibility markets and new business models can postpone or avoid new investments making better use of existing assets.

Scope: test and develop further already demonstrated solutions for data-driven energy services for consumers, in cooperation with different actors: prosumers, aggregators, TSOs, DSOs, owners of assets that can provide flexibility like batteries, heating/cooling systems, charging point operators, gas systems.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-07: Reliability and resilience of the grid: Measures for cybersecurity, vulnerabilities, failures, risks and privacy

IA (TRL en fin de projet 5-6)
Budget AAP : 15M€
Budget/projet : 7-8M€
Ouverture : 24/06/2021
Deadline : 05/01/2022
!: Dérogation nombre de pages

Expected Outcome

Demonstration of increased energy system reliability and resilience, preventing or ensuring rapid recovery following disturbances such as faults, cyberattacks, terrorism or similar at all relevant levels.

Scope (all 4 + 2 additional)

All the following:

1. Demonstration of measures to minimize TSO and DSO risks, vulnerabilities and of priority strategies and measures against nature and man-made hazards, terrorism, climate-related extreme events, weather, migration, etc.
2. Application of advanced information technologies in system development, operation and asset management.
3. Application of digital technologies for ensuring operational data quality and demand patterns recognition improving data access and information acquisition for maintenance operators.
4. Development of shared knowledge basis within European area concerning threats, vulnerabilities, methods, for entire systems

At least two:

1. Development and application of technology for the identification and authentication of energy IoT devices, authentication of origin in spare part management, trading certificate infrastructures, protection relay configuration and micro grid management.
2. Development, testing and demonstration of advanced intrusion detection and prevention systems for energy infrastructures.
3. Dedicated strategies for enhanced security and resilience at DSO and TSO level.
4. Development and application of methodologies for automation of grid maintenance, advanced human-machine interfaces, and of data validation processes automation by applying emerging technologies.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-08: Electricity system reliability and resilience by design: High-Voltage, Direct Current (HVDC)-based systems and solutions

RIA (TRL en fin de projet 5-6)
Budget AAP : 15M€
Budget/projet : 7-8M€
Ouverture : 24/06/2021
Deadline : 05/01/2022

Expected Outcome (all)

- HVDC technologies contribution achieving climate neutrality of the electricity generation sector.
- HVDC interconnections can act as a firewall blocking the spread of disturbances while permitting the interchange of power.
- Mastering HVDC technologies will open new business horizons for European companies in the global clean energy markets.
- Increased electricity system reliability and resilience throughout the overall interconnection system.

Scope

Demonstrate the reliability & resilience of the energy system, by addressing at least two of the following:

1. Proposals of optimal grid architecture concepts using HVDC and related demonstrated advantages
2. Real-time monitoring and assessment of the level of system stability and vulnerability against disturbances of future AC systems
3. Reliability model for HVDC and its impact on the overall transmission system reliability
4. Technical-economic benefits of the HVDC interconnection solution with the “firewall” functionality in combination with other advantages
5. Simulation, real time demonstration of 1) the avoidance/containment of cascading effects and resilience to cyberattacks or faults & 2) the co-ordinated use of HVDC-connected RES for containment of cascading faults and contribution to system restoration.
6. Evaluation of 1) the impact on system reliability & 2) the use of HVAC fault location and monitoring systems for cables in HVDC.
7. Development of 1) novel pre-fault monitoring systems for the evaluation of the actual status of the HVDC cables and accessories & 2) new dielectric materials for the insulation of HVDC cables and accessories aiming at achieving higher capacity transfer capabilities.
8. Proposals for highly reliable design and manufacturing of HVDC cables and accessories and related demonstrated advantages.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-09: Demonstration of superconducting systems and elpipes

IA (TRL en fin de projet 8)
Budget AAP : 15M€
Budget/projet : 15M€
Ouverture : 24/06/2021
Deadline : 05/01/2022
! : Dérogation nombre de pages

Expected Outcome (all)

- New SCTL technologies to upgrade & expand the electric grid to meet requirements imposed by the increasing penetration of renewables.
- Use of different superconductor technologies with different cooling medium, power rating and lengths.
- Increased power transfer capability within existing right of ways.
- Test and validate the transmission of bulk power not achievable with current cable technologies.

Scope

Concur to demonstrate the reliability of the technology and its applicability in the grid network.

- Demonstration of up to $\pm 100\text{kV}$, up to 1 GW power, superconducting system (HTS) up to 5 km onshore.
- Demonstration of $\pm 100 \text{ kV}$, up to 1 GW power, superconducting system up to 100 km, offshore.
- Demonstration of a SCTL based on MgB₂ LH₂ cooled, for DC with a length up to 1 km and above, onshore.
- Cable design and simulation of kA range faults, power reversal response, loss calculation and demonstration for protections of SCTL.
- Technical-economic benefits of the SCTL demonstrated compared with traditional (overhead lines, XLPE cable).
- Investigate the feasibility and applicability of elpipes with technical economic analysis, use cases, etc. for high transfer rates in identified corridors.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-10: Demonstration of advanced Power Electronics for application in the energy sector

Expected Outcome (all)

- Production, test and validation of WBG-based switching semiconductors such as Silicon Carbide (SiC) for HVDC – MVDC converter applications in converter stations.
- Reduced size of components and equipment for offshore / onshore applications.
- Reduced cost of WBG-based semiconductors such as Silicon Carbide (SiC).

Scope

Produce, test and validate WBG-based based switching semiconductors such as Silicon Carbide (SiC) for converter station application:

- Production of SiC based semiconductors for HVDC – MVDC converter applications.
- Converter board design and production.
- Simulation & analysis of the impact of the actual passive components used in WBG components circuitry; development of strategies & innovative techniques to upgrade them for better adaptation to the afore-mentioned working conditions.
- Analysis of the impact of fast transients from power electronics on other electrical components that were not originally designed to endure such stresses.
- Series modules assembly for converter application.
- Simulation and real time testing and validation of the converter with WBG-based switching semiconductor.
- Technical-economic assessment of the benefits provided by WBG-based compared to Silicon-based switching semiconductor of converters.

IA (TRL en fin de projet 5-6)

Budget AAP : 10M€

Budget/projet : 5M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

!: Dérogation nombre de pages



HORIZON-CL5-2021-D3-02-11: Reinforcing digitalisation related know how of local energy ecosystems

CSA

Budget AAP : 4M€

Budget/projet : 4M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

Expected Outcome (all)

- Increased autonomy of local ecosystems to participate in the decentralisation of energy systems and energy transition.
- Increase the number of participants in flexibility markets.
- Cover the gap on knowledge around digitalisation of energy services + contribute to the reskilling & upskilling of individuals/organizations.
- Facilitate the creation of a network of parties interested in joining forces for public procurement of energy related digital services.

Scope

- Create an upskilling and reskilling training program, centred on the digitalisation of energy and covering needs of local ecosystems centred on, among others, DSOs, city operators, connected active consumers and local/regional
- Contribute to capacity building of energy community members and to the support of citizens in understanding the steps to follow to create an energy community.
- Establish a cluster organization at local level for energy relevant digital technologies such as, but not only, Artificial Intelligence, Internet of Things, cybersecurity, big data, edge computing, data communications or blockchain.
- Provide extensive training in all Member States/Associated Countries and make the developed/used training material
- Take into account, and collaborate with, the ongoing EDDIE project from the Erasmus + program, relevant initiatives by Digital Innovation Hubs, EC Digital Education action plan and any other initiative geared in the same direction.
- Investigate, and if the reaction is positive, create a network of parties interested in joining forces for public procurement of digital services.



3^{ème} sous-partie : « Captage, utilisation et stockage du carbone (CCUS) »

Objectifs (« main impacts ») visés :

- Accélération du déploiement de l'infrastructure pour les hubs et clusters de CCUS.
- Mise à jour du corpus de connaissances faisant autorité sur la mise en relation des sources industrielles de CO2 avec les sites de stockage potentiels "bancables", afin de renforcer la confiance des décideurs et des investisseurs.
- Faisabilité avérée de l'intégration du CCUS dans les installations industrielles.
- Réduction du coût de la chaîne de valeur du CCUS
- Mise en place de cadres adéquats pour la mesure, la surveillance et la vérification (MMV) des projets de stockage, afin de documenter la sécurité du stockage et l'acceptation de la technologie par le public.



Destination 3 : « Captage, utilisation et stockage du carbone (CCUS) »

Topic	Topic title	Type of action	TRL (by the end of the project)	Budget 2021 (en M€)	Expected UE contribution per project (M€)	Expected number of grants	Call opening date	Deadline
HORIZON-CL5-2021-D3-02-12	Integration of CCUS in hubs and clusters, including knowledge sharing activities	CSA	//	2	Around 2.00	1	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-13	Cost reduction of CO2 capture (new or improved technologies)	RIA	6	30	10.00 to 15.00	2	24/06/2021	05/01/2022

Destination 3 : Aspects transversaux

Topic	Topic title	Type of action	TRL (by the end of the project)	Budget 2021 (en M€)	Budget 2022 (en M€)	Expected UE contribution per project (M€)	Expected number of grants	Call opening date	Deadline
HORIZON-CL5-2021-D3-01-04	Clean Energy Transition	COFUND	//	35	35	Around 70.00	1	24/06/2021	19/10/2021
HORIZON-CL5-2021-D3-02-14	Support to the activities of the European Geological Services	CSA	//	20		Around 20.00	1	24/06/2021	05/01/2022
HORIZON-CL5-2021-D3-02-15	Support to the activities of the ETIPs and technology areas of the SET-Plan	CSA	//	9,80		Around 1.00	10	24/06/2021	05/01/2022



HORIZON-CL5-2021-D3-02-12: Integration of CCUS in hubs and clusters, including knowledge sharing activities

CSA
Budget AAP : 2M€
Budget/projet : 2M€
Ouverture : 24/06/2021
Deadline : 05/01/2022

Expected Outcome

Demonstrate the necessary requirements for CCUS integration in carbon-intensive industries and promote knowledge sharing activities.

Scope

- Include the elaboration of detailed plans for the integration of CCUS in hubs and clusters linked to CO2 storage sites via hubs, pipeline networks and shipping routes, with due attention to national and border-crossing permitting and regulatory issues.
- Mapping and understanding the nature and longevity of emission sources, identification of transport corridors and modalities, and performing initial impact assessments, and developing local business models for delivery of CO2 capture, transport, utilisation and/or storage, within promising regions is important. Industrial clusters may include, for example, power generation, cement and steel factories, chemical plants, refineries, waste-to-energy plants, and hydrogen production facilities.
- Assessment of cost-effective storage capacity in the selected regions is important.
- Study interactions between CCUS hubs-and-clusters, renewables-based integrated energy systems, and/or circular production modes
- Close cooperation across the CCUS value chain, as well as engagement with local stakeholders, is paramount and so is knowledge exchange across CCUS projects.
- Identify and involve relevant end users, public authorities and societal stakeholders and aexiste their concerns and needs.
- Continue the activities of the existing European CCUS project network .



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-02-13: Cost reduction of CO2 capture (new or improved technologies)

RIA (TRL en fin de projet 6)
Budget AAP : 30M€
Budget/projet : 10 à 15M€
Ouverture : 24/06/2021
Deadline : 05/01/2022

Expected Outcome (all)

Significant step-change advances in CO2 capture rates, reductions in energy penalty and cost of CO2 capture as well as facilitating safe and economic integration into industrial clusters - which will in a short timeframe allow the uptake of CCUS in the power sector and energy intensive industries.

Scope

- Pilot demonstration of advanced CO2 capture technologies that have a high potential for increasing capture rates and efficiency, while reducing energy penalty and improving cost-efficiency of the whole capture process.
- Test operating conditions and operational flexibility, and provide proof of the reliability and cost-effectiveness of these concepts, whilst at the same time evaluating the cost, technical requirements and operational and safety impacts on the industrial facility and the associated transport and storage infrastructure.
- State credible and clearly defined targets and key performance indicators (KPIs) for the energy penalty reduction, the capture rate and the relative capital and operating costs of the capture process.
- Pursue Environmentally benign technologies and address their environmental impact in view of future scaling up.
- Include a balanced technology development with an assessment of the societal readiness towards the proposed innovations
- Include aspects of circularity and best use of resources.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-01-04 : Clean Energy Transition

COFUND

Budget AAP : 70M€ (2021-2022)

Budget/projet : 70M€

Ouverture : 24/06/2021

Deadline : 19/10/2021

Expected Outcome (all)

1. Increased directionality of clean energy transition research and innovation in Europe in line with the SET Plan by a shared pan-European vision regarding the goal and direction of the required system transformation processes adapted to regional needs and availability of renewable energy resources
2. Evidence based energy and climate policy formulation
3. A wider systemic transition and energy supply required for the climate transition in all sectors of society; enabling the transition of the built environment, transport, industry and other sectors to clean, low carbon energy;
4. An innovation ecosystem for Europe's transition to clean energy and contribute to a resource-efficient energy system, both from an ecological and economic standpoint;
5. A building block to a zero-emission energy system for the decarbonisation of transport, buildings, industry, agriculture in the specific European environment;
6. Increased engagement of consumers and prosumers and in appropriate demand-response mechanisms and its integration in the energy system;
7. And finally, an energy system that meets the needs of different parts of society, in different geographical locations (urban and rural) and different groups.



Destination 3 : Les appels de 2021

Version définitive

HORIZON-CL5-2021-D3-01-04 : Clean Energy Transition Partenariat Co-financé

Scope

The Clean Energy Transition Partnership (CETP) aims to empower the energy transition and contribute from a R&I perspective to the EU's goal of becoming the first climate-neutral continent by 2050. To achieve this ambitious goal, Europe needs to embark into a transformative process of both the energy system and its supporting technologies, as well as of the society. Key enabling and disruptive technologies, as well system innovation are essential for this transition.

The Clean Energy Transition Partnership will address the following areas: Development of clean and affordable energy production and conversion technologies; development of a climate neutral, flexible and robust energy system; storage and its integration in the energy system; resource and energy efficiency and circular flows in the energy sector for an ecologically sustainable energy system; a just and inclusive energy transition; sector integration and coupling; and digital transformation.

The partnership is expected to collaborate closely with the following European Partnerships:

- Clean Hydrogen, Built Environment and construction, European industrial battery value Chain and Driving Urban Transition within the Cluster Climate, Energy and mobility;
- Smart Networks and services, Clean Steel –Low carbon steelmaking, Carbon Neutral and Circular Industry and Geological Services for Europe within the Cluster Digital, Industry and Space;
- Circular Bio-based Europe within the cluster Food, Bioeconomy, Natural Resources, Agriculture and Environment;
- And the Climate-KIC and InnoEnergy EITs;

Premiers appels conjoints lancés par les agences nationales en 2022. En France, ANR et ADEME (en préparation).

COFUND

Budget AAP : 70M€ (2021-2022)

Budget/projet : 70M€

Ouverture : 24/06/2021

Deadline : 19/10/2021



HORIZON-CL5-2021-D3-02-14: Support to the activities of the European Geological Services

Expected Outcome (all)

- Improved evidence-based decision-making & long-term sustainable management of Europe's subsurface
- Comprehensive inventory of harmonised data on primary raw materials in Europe, resulting in a higher level of independence for Europe.
- Comprehensive inventory of information on geothermal energy resources and subsurface storage capacities for sustainable energy carriers and sequestration of CO₂, based on common and national scale assessment criteria and standardised reporting.
- Improved appraisal, protection and sustainable use of Europe's groundwater resources & improved adaptation of coastal zones
- Strong & sustainable network of national Geological Survey organisations to provide knowledge and services on a Pan-European level.

Scope

- Re-evaluation of European resources in primary raw materials and mining waste
- Developing a database and harmonised data on mineral resources and reserves, integrated in or linked to the EC managed geoportals
- Developing an EU International Centre of Excellence on Sustainable Resource Management
- Building and maintaining an integrated European geothermal resources database
- Deploying and maintaining a European storage atlas for CO₂ and sustainable energy carriers
- Transnational, harmonised data gathering, monitoring and evaluation of groundwater dynamics and groundwater quality.
- Collate and integrate geological and climate related information and data to assess and map coastal vulnerability
- Develop a research agenda to help achieve expected impacts, coordinate/integrate/align R&I programmes of European geological surveys.
- Develop a user-friendly digital Europe geological information system, and disseminate accurate, up-to-date, relevant and impartial data
- Transform these data into decision support information and intelligence
- Create a strong network of geological surveys, and develop a permanent structure in the form of a Geological Service for Europe

CSA

Budget AAP : 20M€

Budget/projet : 20M€

Ouverture : 24/06/2021

Deadline : 05/01/2022



HORIZON-CL5-2021-D3-02-15: Support to the activities of the ETIPs and technology areas of the SET-Plan

CSA

Budget AAP : 9,8M€

Budget/projet : Around 1M€

Ouverture : 24/06/2021

Deadline : 05/01/2022

Expected Outcome (both)

- Consolidation of strong and sustainable networks in the different technology areas covered through the SET Plan & its integrated roadmap.
- Cooperation among ETIPs and similar stakeholders fora, support to existing SET Plan Implementation Plans and advancement towards more interconnected activities

Scope

- Support ETIPs and/or IWGs and/or stakeholders fora of one sector, taking into consideration the specific needs of the sector they address and the emerging policy priorities for their implementation as well as the coordination with other initiatives/projects, in order to avoid overlaps.
- Ensure the participation companies, research and civil society organisations, universities and European associations in ETIPs, IWGs and stakeholders fora
- Develop and implement robust outreach approaches and societal engagement actions to span across the EU and associated countries.
- Pay special attention to the key challenges of the European Green Deal
- Contribute to the goals of the European Research ERA in the field of energy, in particular regarding how to incentivise investing in R&I
- Develop a dissemination/exploitation strategy & implement dissemination and networking activities with other existing ETIPs and IWGs.



Retour d'expérience

**Konstantin Sipos & Pierre Brignou
Rescoll**



CUSTOM-ART
Partner's presentation

Kick-Off meeting
Sept 21nd, 2020



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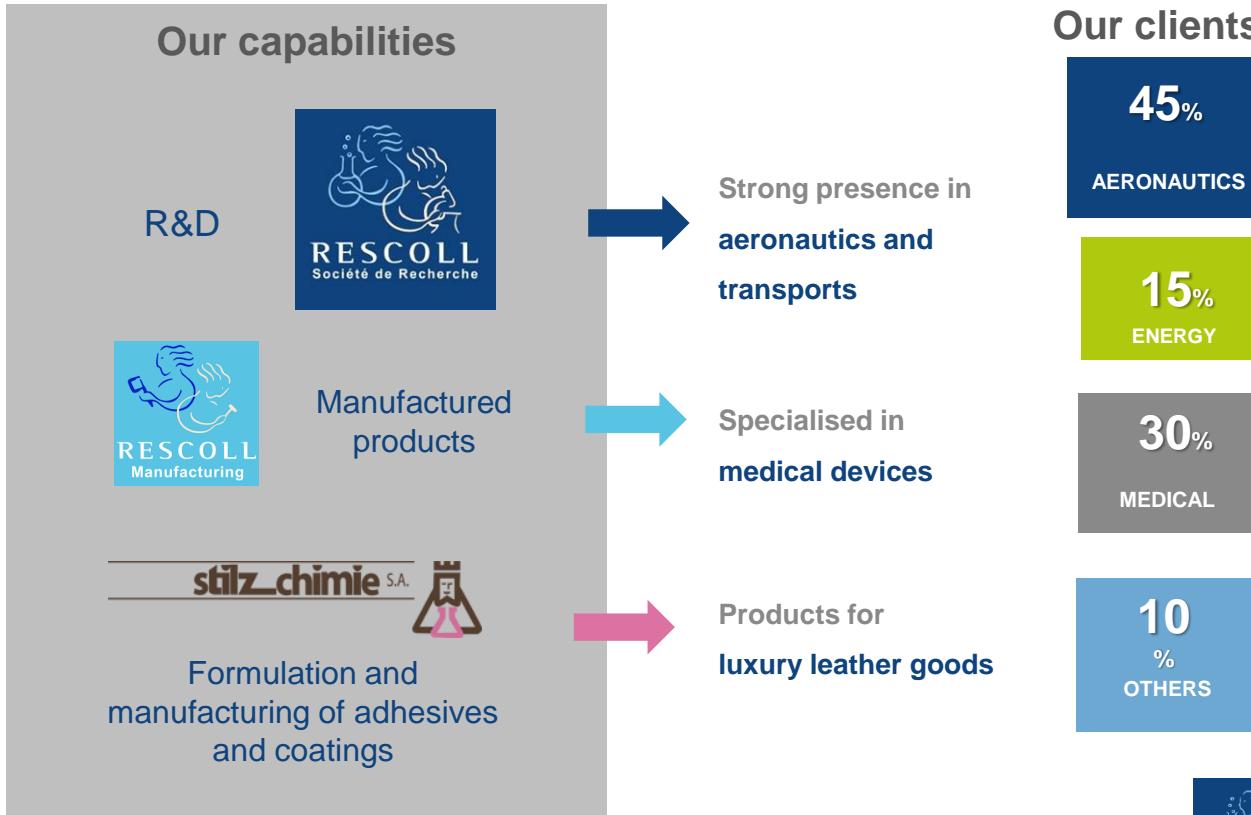


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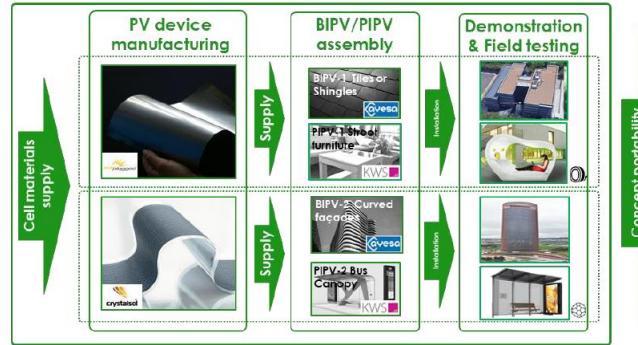
No	PARTICIPANT ORGANIZATION NAME (TYPE)	COUNTRY
1	INSTITUT DE RECERCA EN ENERGIA DE CATALUNYA – IREC (RTD) – PROJECT COORDINATOR	SPAIN
2	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW - IMEC	BELGIUM
3	EMPA – MATERIALS SCIENCE AND TECHNOLOGY - EMPA	SWITZERLAND
4	TALLINN UNIVERSITY OF TECHNOLOGY - TALT	ESTONIA
5	UNIVERSITY OF OLDENDURG - UOL	GERMANY
6	HELMHOLTZ-ZENTRUM BERLIN - HZB	GERMANY
7	OXFORD BROOKES UNIVERSITY - OBU	U.K
8	ITALIAN NATIONAL AGENCY FOR NEW TECHNOLOGIES, ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT - ENEA	ITALY
9	CENTRE TECHNIQUE INDUSTRIEL DE LA PLASTURGIE ET DES COMPOSITES - IPC	FRANCE
10	UPPSALA UNIVERSITET - UU	SWEDEN
11	CRYSTALSOL - CRYSTALSOL	ESTONIA
12	IMRA EUROPE - IMRA	FRANCE
13	AYESA ADVANCED TECHNOLOGIES - AYESA	SPAIN
14	ECO RECYCLING - ECOR	ITALY
15	SUNPLUGGED - SUN	AUSTRIA
16	RESCOLL - RESCOLL	FRANCE
17	KWS SCHIESTL - KWS	AUSTRIA

Call: H2020-LC-SC3-2020-
RES-IA-CSA
Budget 8 M€
Grant 7 M€



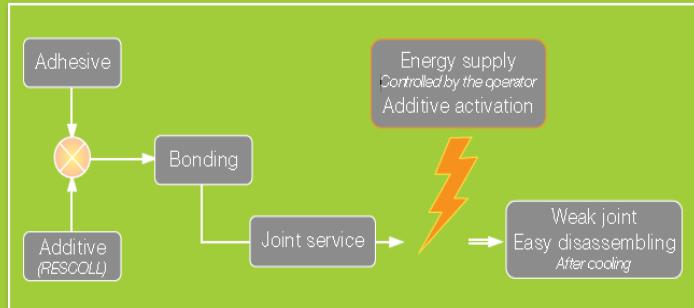
"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952982"





RESCOLL'S TECHNOLOGIES IN THE PROJECT

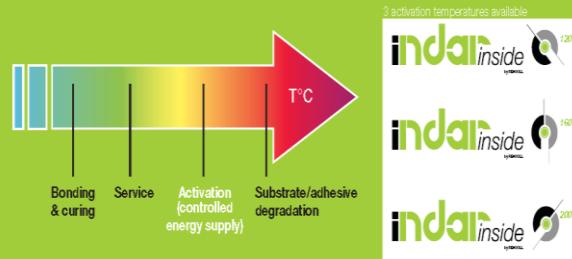
- Patented process for dismantling of an adhesive joint



Bonding operation

No modification of shelf life and ageing of the adhesive formulation (H7, etc.)

- Activation temperature tuned to the bonding specifications



3 Temperature ranges (100°C, 160°C, 200 °C)

Compatible with various adhesive types



OTHER RESCOLL'S TECHNOLOGIES IN ENERGY

Batteries:

- Polyzion (fp7)
- Green Li-ion (HZ 2020)
- iModBat (HZ 2020)

Wind Mills:

- Ice&Wind (National Grant)

Thermoelectrics:

- Thermoprint



For further information:

More information

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Email : sipos@rescoll.fr
Tel : + 33 6 28 33 02 57



Conclusion



Où trouver les informations utiles ?

Le site de la Commission européenne

- Les appels (funding & tenders)
- Les statistiques (dashboard)
- Les projets financés (cordis)
- Les événements (funding & tenders)

Deux webinaires à (re)voir

- How to prepare a successful proposal in HE ?
- A successful proposal for Horizon Europe: Scientific-technical excellence is key, but don't forget the other aspects

Le site français Horizon Europe du MESRI

- Les appels
- Les événements :
- Les fiches pratiques juridiques & financières

Pour questions relatives au cluster 5 (climat/énergie) :
pcn-climat-energie@recherche.gouv.fr

Pour être informé en temps réel sur twitter et LinkedIn:
@PCN_Climat_Ener et PCN Climat/Energie

Demandez votre inscription à la liste de diffusion du PCN Climat/Energie (par email)



Ne ratez pas nos autres webinaires

Webinaires thématiques :

- **17 juin – Destination 3, 2/2** « Un approvisionnement énergétique durable, sûr et compétitif »
- **18 juin – Destination 2** « Solutions intersectorielles pour la transition climatique »
- **22 juin – Destination 4** « Utilisation efficace, durable et inclusive de l'énergie »

Plus d'informations et inscriptions ici

Les info-days de la Commission, notamment sur le Cluster 5 :

Plus d'informations ici

Le brokerage event pour le cluster 5 :

Plus d'informations ici



Merci de votre attention !