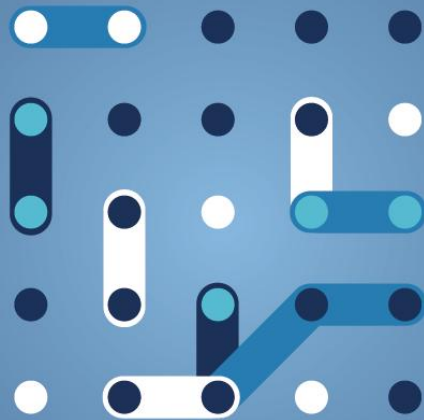


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BRIDGE General Assembly 2026

DAY 1: 23 March 2026

Introduction and Keynote



**Rosalinde Van der
Vlies**

*Director Just Transition,
Consumers, Energy Efficiency
and Innovation
DG ENER*



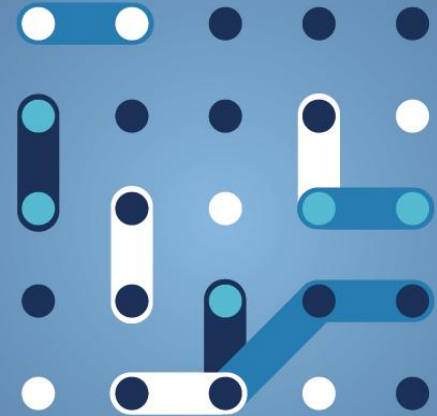
Martin Lange

*Head of Unit - Horizon Europe
Energy
CINEA*



Beatrice Profeta

BRIDGE Secretariat



Introduction and Keynote



**Rosalinde Van der
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*Director Just Transition,
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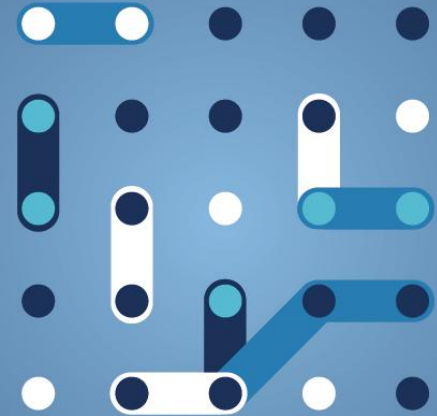
Martin Lange

*Head of Unit C2,
Horizon Europe Energy
CINEA*



Beatrice Profeta

BRIDGE Secretariat





Boosting green growth and
clean industry in Europe

CINEA

BRIDGE General Assembly

Martin Lange

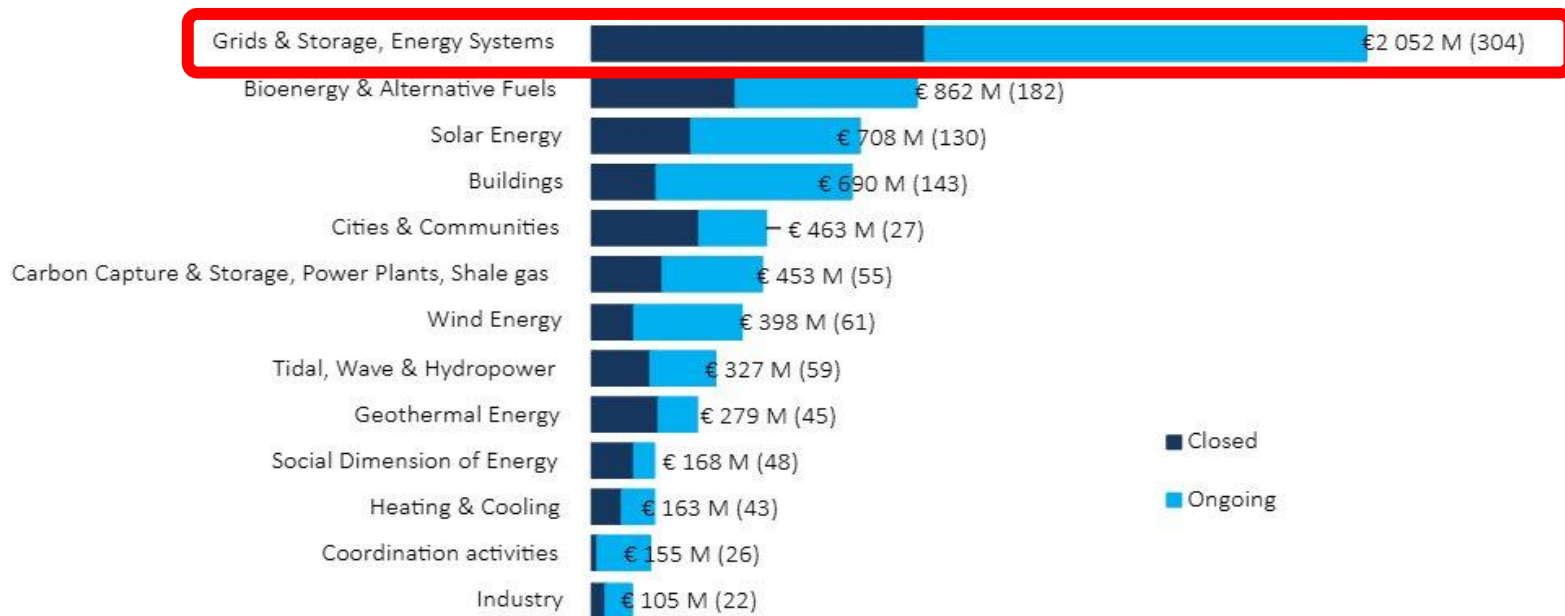
Head of Unit C2 – Horizon Europe Energy

HORIZON Programme



*Value in billion of EUR (at the current prices). Including €5.4 billion from **NGEU – Next Generation Europe** – programme of EU for Recovery from COVID-19 crisis

Horizon Energy Projects* (1145 projects, € 6.8 billion)



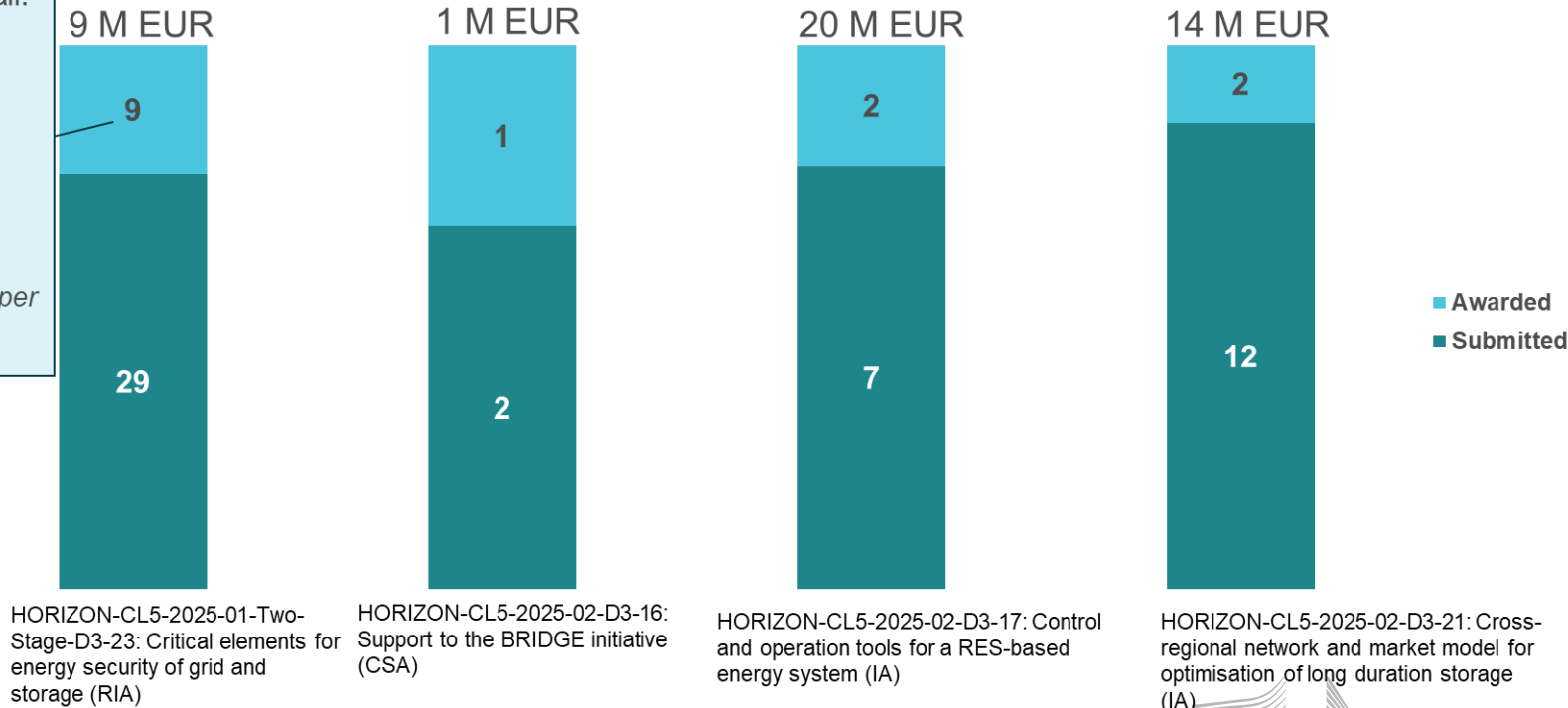
* including projects signed until 01/11/2025.

Horizon Europe: 2025 Work Programme

Deadline 03/09/2025

2 Stage call:
Proposals
above
threshold
after 1st
stage.

(EU
contribution per
grant: 3 M
EUR)



Horizon Europe: 2025 Work Programme

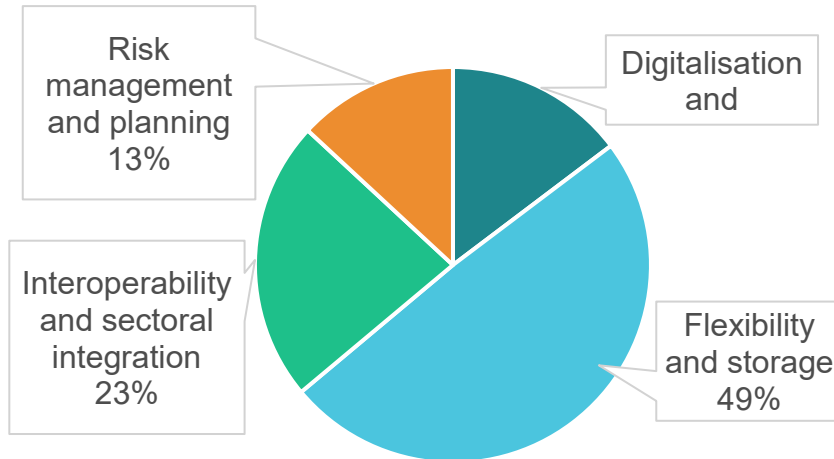
Deadline 17/02/2026

- **HORIZON-CL5-2026-02-D3-18: Next generation distribution substation for increasing the system resilience (IA)**
 - Budget: 18.00 million EUR
 - Projects to be awarded: 2 (9 million EUR per project)
- **HORIZON-CL5-2026-02-D3-19: Innovative solutions for a generative AI-powered digital spine of the EU energy system (IA)**
 - Budget: 16.00 million EUR
 - Projects to be awarded: 2 (8 million EUR per project)
- **HORIZON-CL5-2026-02-D3-20: Innovative tools and services to manage and empower energy communities (IA)**
 - Budget: 20 million EUR
 - Projects to be awarded: 2 (10 million EUR per project)
- **HORIZON-CL5-2026-02-D3-22: Underground Thermal Energy Storage in dense urban areas (IA)**
 - Budget: 18 million EUR
 - Projects to be awarded: 2 (9 million EUR per project)

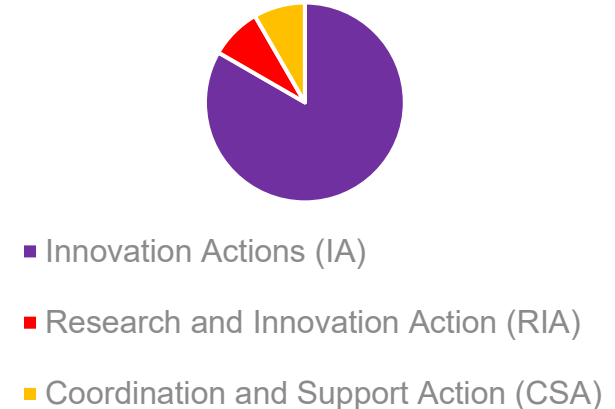
Horizon Europe: 2026 and 2027 Work programme

Energy systems grids and storage
217.5 million EURO available

EU funds available (Million EUR)



Type of Action



Horizon Europe: 2026 and 2027 Work programme

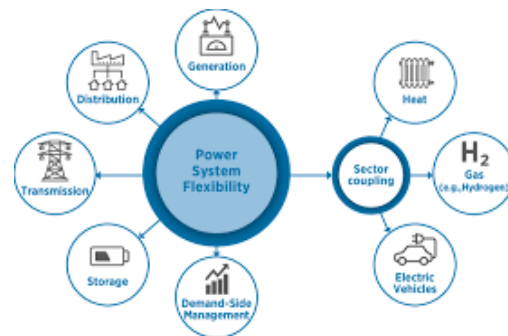
1st Pillar: Digitalisation and automation of the grid infrastructure (32 million EUR)

- **HORIZON-CL5-2026-03-D3-22: AI-driven forecasting algorithms for Grid and Consumer friendly Energy Sharing – Societal Readiness pilot (IA)**
 - Budget: 12 million EUR
 - EU contribution per project: 6 million EUR
 - Deadline: 31/03/2026
- **HORIZON-CL5-2027-02-D3-24: Large scale operational validation and upscaling of state-of-the-art (Generative) AI tools and models powering a next generation digital energy system (IA)**
 - Budget: 20.00 million EUR
 - EU contribution per project: 10 million
 - Deadline: 31/03/2027



2nd Pillar: Flexibility and storage solutions (107 million EUR)

- **HORIZON-CL5-2026-03-D3-19: Affordable and sustainable primary equipment for Future-Ready multi-terminal High-Voltage Direct Current (HVDC) Systems (IA)**
 - Budget: 24.00 million EUR
 - EU contribution per project: between 4 and 12 million EUR
 - Deadline: 31/03/2026
- **HORIZON-CL5-2026-03-D3-18: Grid-forming capabilities for more resilient and RES based electricity grid (IA)**
 - Budget: 20.00 million EUR
 - EU contribution per project: 10 million EUR
 - Deadline: 31/03/2026
- **HORIZON-CL5-2027-07-D3-26: Advanced Distribution Management Systems (ADSM) for more efficient and flexible distribution grids (IA)**
 - Budget: 28.50 million EUR
 - EU contribution per project 9.50 million EUR
 - Deadline: 01/12/2027



Horizon Europe: 2026 and 2027 Work programme

2nd pillar: Flexibility and storage solutions (107 million EUR)

- **HORIZON-CL5-2026-03-D3-21: Novel solutions for off-grid storage of renewable energy for critical infrastructures (RIA)**
 - Budget: 12 million EUR
 - EU contribution per project: 4 million EUR
 - Deadline: 31/03/2026
- **HORIZON-CL5-2027-07-D3-27: Integrated Approaches for Retrofitting Infrastructures with Innovative Energy Storage Technologies (IA)**
 - Budget: 22.50 million euro
 - EU contribution per project: 7.50 million EUR
 - Deadline: 01/12/2027



3rd Pillar: Interoperability and sectoral integration (50 million EUR)

- **HORIZON-CL5-2026-03-D3-20: Hybrid AI-Control Framework for a next-generation grid-scale energy storage and system integration (IA)**
 - Budget 14 million EUR
 - EU contribution per project: 7 million EUR
 - Deadline: 31/03/2026
- **HORIZON-CL5-2026-11-D3-23: Data sharing to support the training and development of AI foundation models in the energy sector (IA)**
 - Budget: 30 million EUR
 - EU contribution per project: 10 million EUR
 - Deadline: 01/12/2026
- **HORIZON-CL5-2027-07-D3-28: Community of practice - Data-Driven Decision-Making in Energy (CSA)**
 - Budget: 6 million EUR
 - EU contribution per project: 6 million EUR
 - Deadline: 01/12/2027

4th pillar: Risk management and planning (28.5 million EUR)

- **HORIZON-CL5-2027-07-D3-25: Advanced Transmission System Operator (TSO) control rooms to enhance grid observability, stability and resilience (IA)**
 - Budget: 28.50 million EUR – EU contribution per project: 9.50 million EUR
 - Deadline: 01/12/2027



Other financial instruments (in CINEA)

Innovation Fund

Technologies in areas such as energy- intensive industries, renewables, energy storage, net-zero mobility and buildings, hydrogen, and carbon capture, use and storage.

Budget: over 40 billion available between 2020-2030

More info:

https://cinea.ec.europa.eu/programmes/innovation-fund_en

LIFE - Clean Energy Transition sub-programme

Targeted at breaking market barriers that hamper the socio-economic transition to sustainable energy,

Budget: nearly 1 billion EUR for 2021-2027

More info:

https://cinea.ec.europa.eu/programmes/life/clean-energy-transition_en

CEF

Projects of Common/Mutual interest under trans-European networks policy and Cross-border projects in the field of renewable energy

Budget: €5.84 billion for 2021–2027 – CEF ENERGY (875 Million EUR)

More info:

https://cinea.ec.europa.eu/programmes/connecting-europe-facility/energy-infrastructure-connecting-europe-facility-0_en



European
Commission



INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

Funded by the EU Emissions Trading System



€40 billion* available
between 2020-2030



grants awarded through
regular calls and auctions



avoid GHG emissions,
boost competitiveness

supporting innovation in:



Energy-intensive
industries



Renewable
energy



Energy
storage



Carbon capture,
use and storage



Net-zero mobility
and buildings

**based on a carbon price of €75/tonne*



INNOVATION FUND

Funded by the EU Emissions Trading System

Deploying

IF25 NZT Call Deadline: 23/04/2026

Innovative commercialisation, demonstration, pilot plant or scale up of technologies, business models and processes that reduce GHG emissions

[Funding and tenders portal](#)

[Q&A](#)

€4
be



Energy-intensive
industries



GHG emissions,
competitiveness



Net-zero mobility
and buildings

*based on a carbon price of €75/tonne

LIFE Clean Energy Transition – Turning Policy into Action



Renewable
Energy
Directive



Energy
Efficiency
Directive



Energy
Performance of
Buildings
Directive



**Mobilise
investment and
private finance**

**Industry, Services
& Products**

**One-Stop-Shops
and Technical
Assistance**

Heating & Cooling

**Building
Renovation
and Building
Performance**

**Energy
Communities**

**Policy Support &
Energy Efficiency
First**

Cities & Regions

**Clean Energy &
Construction Skills**

Energy Poverty

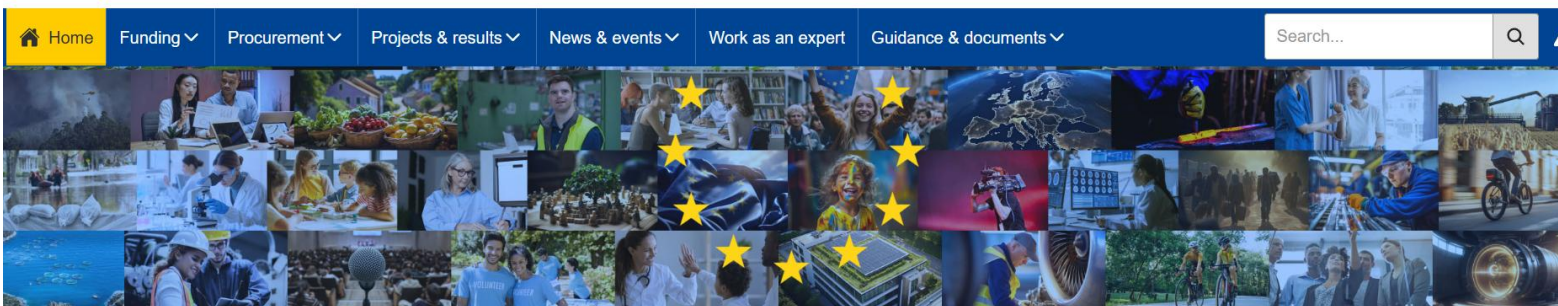


European
Commission

CEF Energy Projects of Common Interest (PCI) and Project of Mutual Interest (PMI) 2014 - 2025: € 8.1bn

Electricity transmission 	Gas 	Hydrogen & Electrolysers 	Smart Grids 	CO2 network 	CB RES 	
61 Actions €304 million	51 Actions €168.9 million	20 Actions €245.9million	2 Actions €3.6 million	19 Actions €95.4 million	13 Actions €75.3 million	Studies 166 Actions €893 million
19 Actions €4.4 billion	19 Actions €1.43 billion		7 Actions €441.6 million	9 Actions €883.3 million	4 Actions €92.2 million	Works 58 Actions €7.25 billion
80 Actions €4.7 billion	70 Actions €1.6 billion	20 Actions €245.9 million	9 Actions €445.2 million	28 Actions €978.7 million	17 Actions €167.5 million	EU funding 224 Actions €8.1 billion

Results of CEF 2025 PCI/PMI call not yet included due to pending grant agreements' signatures



Discover the funding & tenders opportunities

Find out how to participate by following these key steps.

Find calls for proposals

Explore the available EU funding opportunities by searching for calls for proposals within your topics of interest, find partners and submit a proposal.

View projects and results

Browse through EU funded projects and learn about the results. Invest in opportunities and get inspired by the highlights and success stories.

Find calls for tenders

Find business opportunities in the calls for tenders managed by EU institutions, bodies and agencies.

Work as an expert

Proposals and projects need evaluations, monitoring and domain-specific knowledge advice from experts.

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

Thank you



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European
Commission



Introduction and Keynote



**Rosalinde Van der
Vlies**

*Director Just Transition,
Consumers, Energy Efficiency
and Innovation
DG ENER*



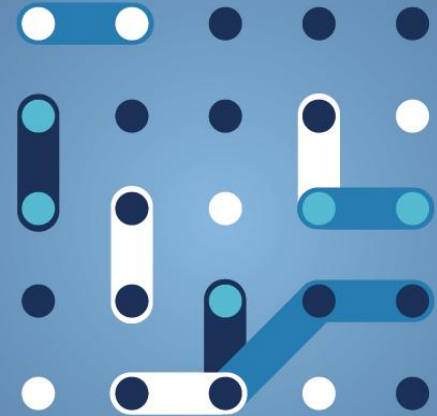
Martin Lange

*Head of Unit - Horizon Europe
Energy
CINEA*



Beatrice Profeta

BRIDGE Secretariat



Monday 23rd of March Agenda Day 1

Time	Session
14:30	Introduction and Keynote: - Keynote speech by Rosalinde Van der Vlies, Director Just Transition, Consumers, Energy Efficiency and Innovation, DG ENER, European Commission: Overview of the policy priorities to support future-proof Europe's grid infrastructure - Keynote speech by Martin Lange, Head of Unit - Horizon Europe Energy, CINEA: Overview of the financing instruments to support the future-proofing of Europe's grid infrastructure - Presentation of the agenda by Beatrice Profeta, BRIDGE Secretariat
15:00	Policy update session on the following topics: - EU Grids package by Eduardo Vega Fanjul, DG ENER (C.4), European Commission - Electrification Action Plan by Andrea Bruno, Policy Officer, DG ENER (C.1), European Commission - Clean Energy Investment Strategy by Evan Walker, Deputy Head of Unit, Chief Economist, DG ENER (A.4), European Commission - Applying the AI Strategy by Antoine-Alexandre André, Legal and Policy Officer – AI Office, DG CNECT (A.4), European Commission
16:00	BRIDGE Projects Speed Dating (interactive session on Success Stories & Lessons Learnt)
16:45	Panel showcasing BRIDGE projects: “Key pillars to reinforce Europe’s energy grids to remain reliable amid rapid electrification, renewable integration, and evolving security threats” - Digitalisation and automation of grid infrastructure by Ferdinando Bosco (TwinEU) - Interoperability and sectoral integration by Edoardo Corsetti (SENERGY NETS) - Flexibility and storage solutions by David Verez (HYSTORE) - Risk management and planning for physical and cyber threats by Néstor Rodríguez Pérez (eFORT)
17:45	Panel: “The work of BRIDGE amid Europe’s energy transition” - Regulatory and market frameworks to enable renewable integration, flexible solutions and sector integration by José Pablo Chaves Ávila, Regulation WG chair - Digitalisation, data exchanges and the use of AI in smart grids by Dune Sebilleau, Data Management WG chair - Competitiveness in smart grids and market uptake of research outputs - with the presentation of the Repository of BRIDGE promising solutions by Andrej Gubina, Business Models WG honorary co-chair - Consumer-centric energy transition by Michael Brenner-Fließner, Consumer and Citizen Engagement WG chair
18:25	Conclusions Day 1 and Group photo
18:30	Networking Aperitivo

Tuesday 24th of March Agenda Day 2

Time	Session	
9:00	Welcome Coffee	
9:15	Welcome and wrap-up from the previous day • Alexandros Kotronaros, Policy Officer, DG ENER, EU Commission • Beatrice Profeta, BRIDGE Secretariat	
9:30	Panel : “The role of AI in the energy grids” – moderation by Natalie Samovich (ENERCOUTIM) • Mark Van Stiphout, Deputy Head of Unit, DG ENER (B.4), European Commission • Rolf Riemenschneider, Head of sector IoT, DG CNECT (E.4.), European Commission • Elissaios Sarmas (NTUA) lead member of the ETIP SNET WG4 Task Force on AI technical applications in power grids • Antonello Monti, Professor and expert on digitalisation and AI, Fraunhofer-Gesellschaft	
10:15	Regulatory barriers from Innovation fund projects • Ugo Miretti, Project Adviser – Innovation Fund unit, CINEA	
10:30	Division into Working Group sessions	Break-out Rooms
10:45	Parallel Session 1 CONSUMER & CITIZEN ENGAGEMENT WG	Parallel Session 2 BUSINESS MODELS WG
12:45	Networking Lunch	
13:45	Joint meeting (DATA MANGEMENT WG & REGULATION WG) Supporting the flagship action of the Strategic Roadmap: establishing the governance of the Common European Energy Data Space (CEEDS)	
14:45	Parallel Session 3 REGULATION WG	Parallel Session 4 DATA MANAGEMENT WG
15:45	Networking Coffee	
16:15	Plenary: “BRIDGE Working Groups – What are the next steps?” • Setting priority actions for BRIDGE WGs aligned to DG ENER strategy with presentations of outcomes of the discussion of the breakout rooms by WG chairs	
17:15	Closing session • Beatrice Profeta, BRIDGE Secretariat • DG ENER, EU Commission	
17:30	End of the Event	

Welcome to the BRIDGE General Assembly!

The event will take place in **hybrid form** over two days

March 23rd
14:30-18:30 CET

March 24th
9:00-17:30 CET

You can use [Linktree](#) to consult the **agenda** and all the necessary information for the General Assembly. In-person participants will also find the link on the badge (QR code).

[Link to join the Plenary Session Day 1](#)

[Link to join the Plenary Session Day 2](#)

[Link to the CCE
breakout](#)

[Link to the BM
breakout](#)

[Link to the REG
breakout](#)

[Link to the DM
breakout](#)



Scan the QR code to consult all the relevant info on the event on Linktree

Welcome to the BRIDGE General Assembly!

Interaction during the event

To interact with speakers, **in-person participants** can **raise their hands**.

Online participants can use the Q&A function on Teams to ask their questions live.

Internet

WiFi: Letsconnect

Psw: Letsconnect

Updates on policy context



Eduardo Vega Fanjul
DG ENER (C.4)



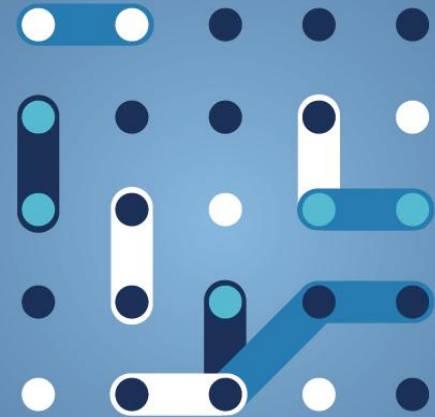
Andrea Bruno
*Policy Officer
DG ENER (C.1)*



Evan Walker
*Deputy Head of Unit,
Chief Economist
DG ENER (A.4)*



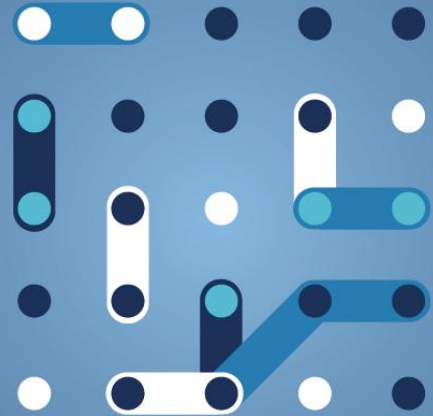
**Antoine-Alexandre
André**
*Legal and Policy Officer,
AI Office
DG CNECT (A.4)*



EU Grids Package



Eduardo Vega Fanjul
DG ENER (C.4)

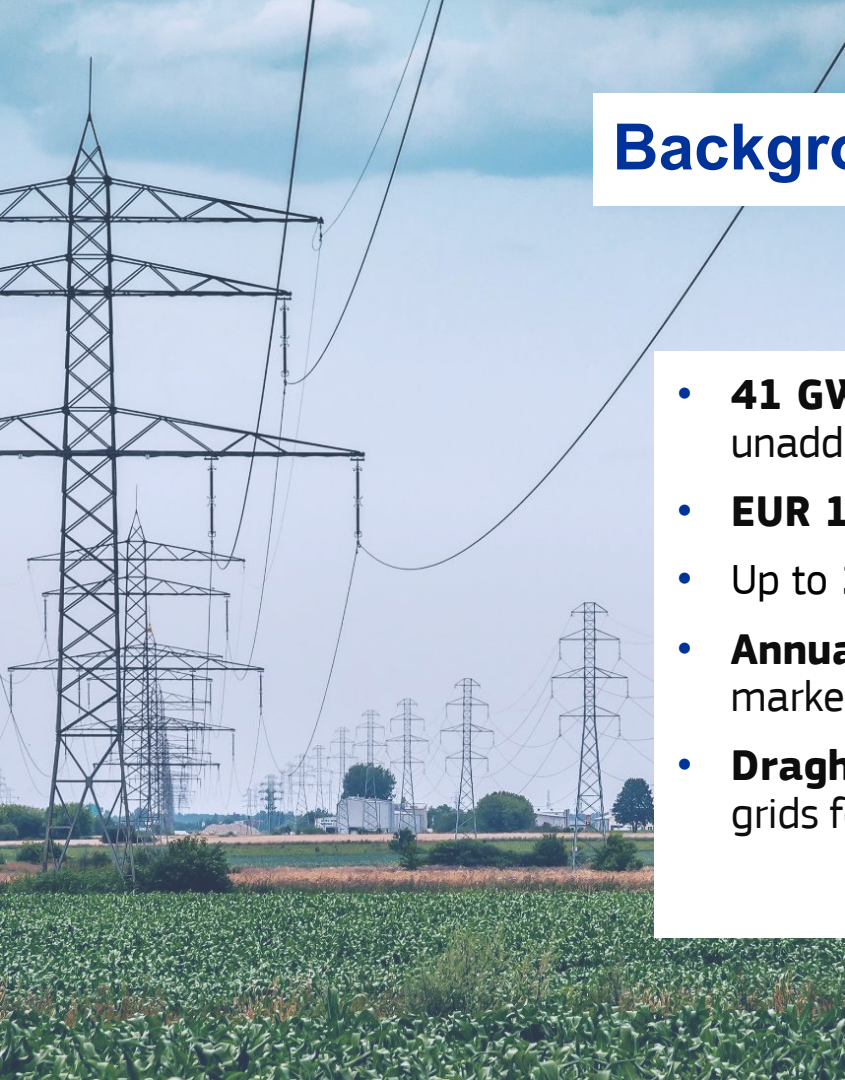




The European Grids Package



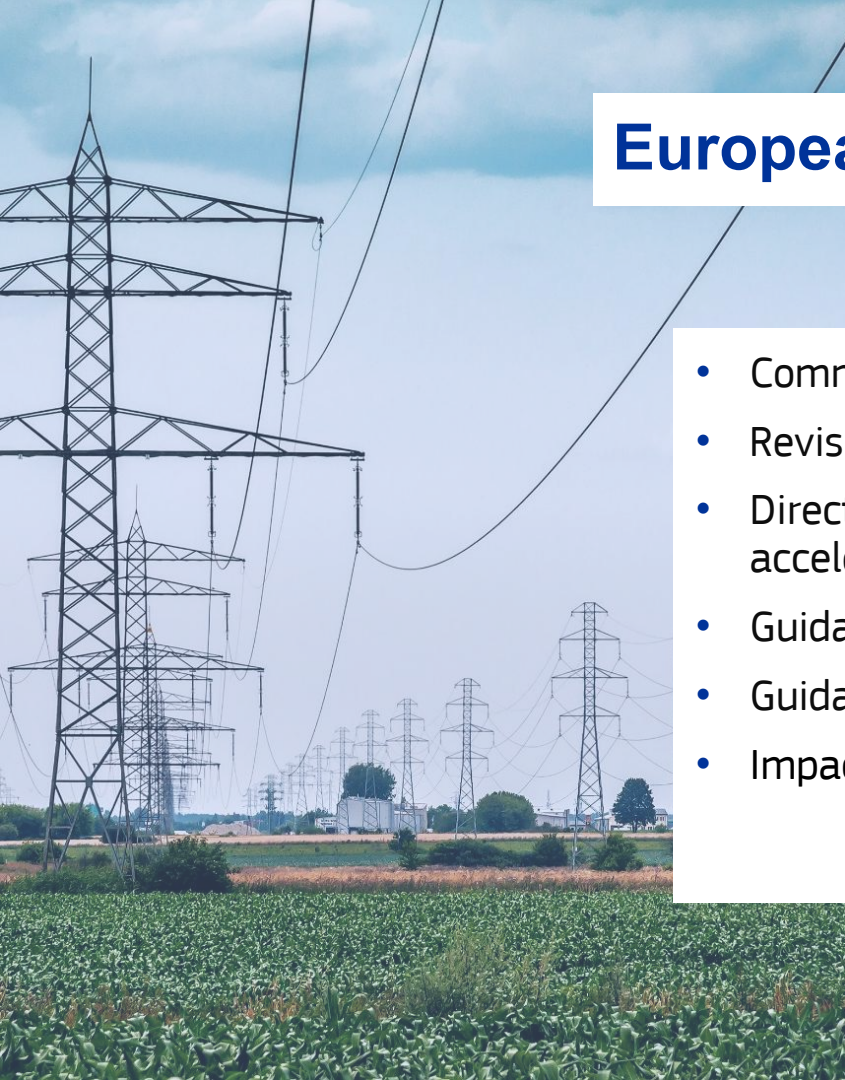
*Eduardo Vega, Policy Officer
DG ENER. C4 –Infrastructure &
Regional cooperation*



Background - European Grids Package

- **41 GW of cross-border electricity needs** risk remaining unaddressed by 2030
- **EUR 1.2 trillion investment needs** estimated by 2040
- Up to **1700 GW** RES projects waiting for **grid connection**
- **Annual cost savings of 40 bn €** through enhanced market integration
- **Draghi and Letta reports** highlight the essential role of grids for competitiveness and the energy transition





European Grids Package - components

- Communication 'European Grids Package'
- Revision of the TEN-E Regulation
- Directive to amend RED, EMD and Gas Directive as regards acceleration of permit granting procedures
- Guidance on efficient and timely grid connections
- Guidance on design of contracts for difference
- Impact Assessment

Recent policy actions, to support smart solutions

- **2022 TEN-E revision** improved the **smart electricity grids category** to further support digitalisation.
- Under **CEF**, Commission already supported **9 smart grid projects**, awarding more than **445 million EUR**.
- Building **70 smart primary substations, 5000 secondary substations**, developing **multiple platforms and system** for a more **efficient control and operation** and installing **thousands of digital devices**.
- 2023 **Grids action plan** and annual Copenhagen forum meetings, focusing on implementation, put forward actions **on Technopedia** to provide better transparency on available technologies and their use, as well as mandate for developing **Smart grid indicators**.

Still, in practice EU sees only limited uptake of smart, digital and grid enhancing technologies

Proposal for a revised TEN-E Regulation

4 main topics:

1. **Better and more coordinated EU cross-border planning framework**, across sectors and EU / national level, ensuring the infrastructure needs are addressed
2. **Maximising the use of existing infrastructure** before investing in new capacity
3. **Accelerating implementation of infrastructure projects**
 1. Financing - ensuring fair and transparent cost-sharing
 2. Streamlined permitting for PCIs and PMIs
4. **Security and resilience of our cross-border energy infrastructure**, new category to support existing transmission critical network elements

➤ **Other elements:**

- **Update of the hydrogen category** to mirror latest policy developments
- Facilitating projects of mutual interest with Energy Community and EEA partners
- Simplification measures

Proposal for a revised TEN-E Regulation

Maximising the use of our grids

The **European Grids Package** includes proposals to:

- Ensure **priority treatment for « non-wire solutions » and alternatives to grid development** in grid planning both at EU and national levels
- Requirement to explain how alternatives were considered in the **TYNDP** and in national **transmission network development plans**
- Including **upgrades of existing infrastructure to increase the available grid capacity or improve the efficiency of grid operation** in the scope of TEN-E
- **Guidance on efficient and timely grid connections** to further support efficient grid utilisation (including connection charges, network tariffs)

Follow-up of the Grids Action Plan: Technopedia

- Following up on the Grids Action Plan, the Technopedia platform was launched at the end of 2025.
- Joint ENTSO-E & EU DSO Entity initiative to identify and showcase innovative grid technologies
- Focused on technologies deployed or tested in the European electricity grid
- It currently provides more than **30 concrete use cases** where digital and smart technologies improved grid performance in Europe.
- Aims to enhance:
 - Replicability
 - Innovation uptake
 - Knowledge sharing across Europe
- **Applications for the Second edition will be launched approx. 1 April to end May**, to be published by the end of this year. It should further broaden the scope of technologies and provide powerful examples to grid operators, as well as regulatory authorities.
- <https://dso-tso-technopedia.eu/>

Thank you



23.03.2026

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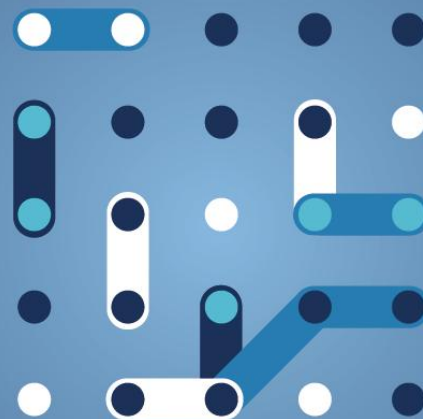
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Electrification Action Plan



Andrea Bruno
Policy Officer
DG ENER (C.1)



Electrification Action Plan

BRIDGE General Assembly

23 March 2026

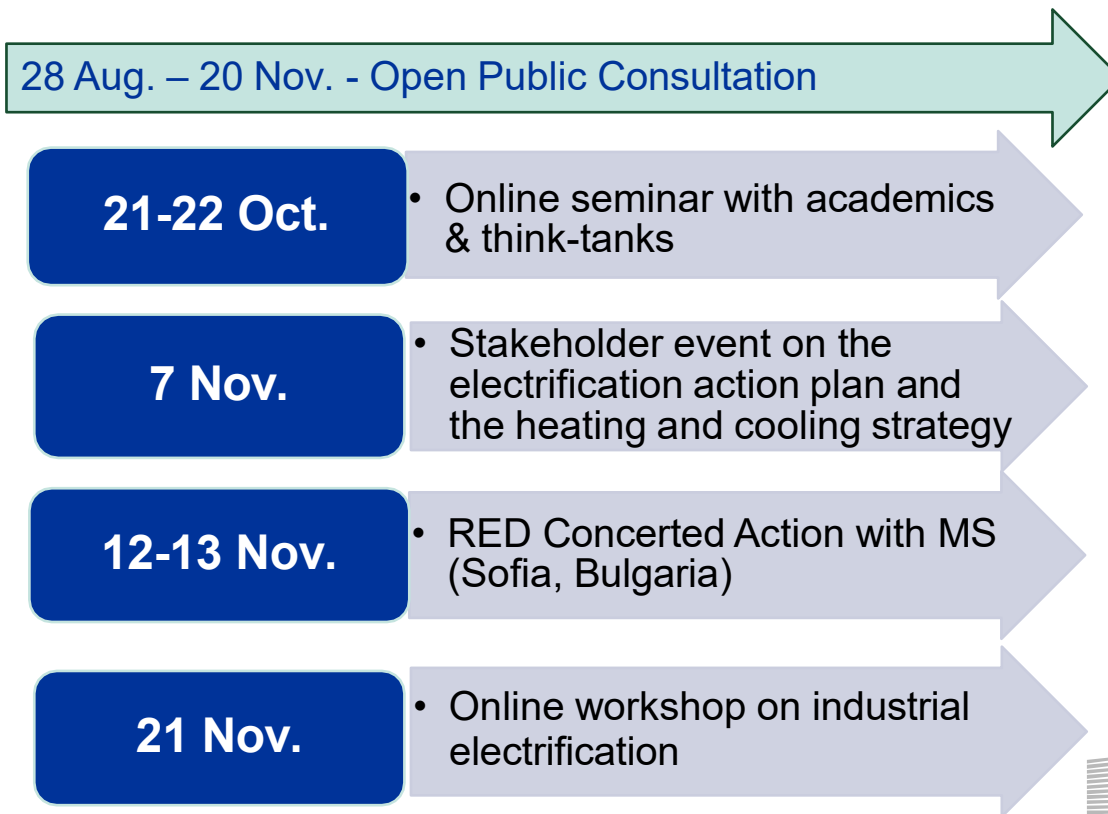
Andrea Bruno, Policy Officer

DG ENER.C1

Agenda

1. Stakeholder consultation
2. Objectives and key areas
3. Key elements of the Action Plan
4. Wrap-up

Stakeholder consultation activities





Objectives

- Competitiveness: Reduce our reliance on imported fossil fuels and price spikes impacts
- Efficiency and sustainable innovation: EVs and heat pumps are 2-4 times more efficient than fossil-fuel alternatives.
- Affordability: with the right conditions, electricity-based solutions can already be cheaper to own and use than fossil alternatives

➔ Good policy reasons for driving up the rate of electrification beyond today's 23%.

Electrification Action Plan Key areas

- Facilitate electrification by addressing system-level challenges, e.g. matching generation and demand, electricity/gas price ratios
- Propose measures to address specific barriers for end-use cases: industry, transport and buildings

System-level related aspects

Key topics/ action areas:

- **Access to clean and affordable electricity** - make sure increased demand is matched by new supply, and doesn't drive up prices;
 - EU electricity mix 2025: wind and solar 30%, renewables 48%, nuclear 23%, fossil sources 29%. The growth in renewables and nuclear will have to be much faster than the reduction in fossil fuels.
 - E.g. by linking new supply with new industrial demand promoted with Power Purchase Agreements. PPAs need to be more accessible.
- **Foster flexibility** (demand side response and storage) to better integrate variable renewables and increase efficiency
- **Reducing the electricity/gas price ratio** by acting on electricity bill components (network tariffs, levies and taxes), phase-out of fossil fuel subsidies

End use sectors - industry

Key topics/ focus areas - heat-based industrial processes

- Prioritise specific sectors according to electrification potential with existing and upcoming technologies – roadmaps
- Step up innovation efforts to bring new electrification technologies, in particular high-temperature processes
- Role of financing incentives, de-risking tools (e.g. uptake of PPAs)
- Exploiting flexibility potential (via demand response & energy storage)



End use sectors – transport

Key topics/ focus areas

Road transport:

- Smart charging wherever possible
- Bring bidirectional charging to life
- B2B charging, notably flexibility services in depots
- Role of public procurement

Other modes of transport:

- Ports as energy hubs
- Electric ferries
- Electric short-distance aviation



End use sectors – buildings and data centres

Complementary with Heating and Cooling Strategy e.g. district heating, waste heat recovery, renewable heat (geothermal, solar thermal).

Accelerate the efficient electrification of buildings:

- Financing for heat pump deployment
- Transparency along the value chain
- Enlarging the pool of skilled workers
- Awareness raising and consumer empowerment
- Unlocking flexibility potential of buildings



Efficient electricity use by data centres:

- Leverage use of Power Purchase Agreements
- Boost renewable self-consumption, storage and micro-grids
- Promote flexible operation of Data Centres

Thank you



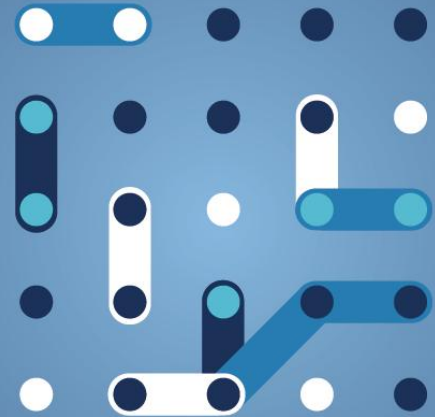
Unit C1 – Renewables and Energy System Integration Policy
Directorate-General for Energy

Clean Energy Investment Strategy



Evan Walker

*Deputy Head of Unit,
Chief Economist
DG ENER (A.4)*



Clean Energy Investment Strategy

European Commission · March 2026

Agenda

01

Policy Context & Background

EU climate targets, investment scale, structural barriers

02

Strategy Objectives

Four objectives to mobilise private capital for energy transition

03

Action 1 – Capital Markets Access

Strategic Infrastructure Fund, securitisation, hybrid bonds

04

Action 2 – Loan Securitisation

Portfolio securitisation & Growth for Energy programme

05

Action 3 – De-risking Innovation

Clean tech, SMRs, energy efficiency, financing coordination

06

Action 4 – Investment Dialogue

Energy Transition Investment Council

07

Discussion Questions

Key questions for Working Group participants

EU Climate Commitments & Investment Scale

55%

GHG reduction by 2030

2050

Climate Neutrality Target

€660bn

Annual investment needed
2026–2030

Key policy drivers: European Green Deal (2020) · Clean Industrial Deal (2025) · Affordable Energy Action Plan

Investment gap: Annual average was €240bn (2011–2021). Needs to rise to €695bn/year by 2031–2040. **Public resources alone cannot meet these needs.**

Mobilising Private Capital for the Energy Transition

Visibility & Scale

Improve predictability of EU energy investment pipelines and connect project developers with private investors

Capital Markets

Facilitate greater participation of institutional investors through securitisation and investment-grade assets

Public De-risking

Strengthen targeted risk-sharing mechanisms to enhance bankability and accelerate innovative clean energy technologies

Structured Dialogue

Establish ongoing dialogue between policymakers, financial institutions and investors to align instruments with market needs



Three Instruments to Unlock Grid Financing

Strategic Infrastructure Investment Fund (SII Fund) · €500m EIB equity platform

Equity co-investment platform alongside private infrastructure investors. EIB anchors with up to €500m to crowd in private capital for critical grid infrastructure.

Operator Securitisation Facility (OSF) · Regulated Revenue → Immediate Liquidity

SPV acquires rights to future regulated cashflows, providing operators with immediate cash while SPV notes give institutional investors a long-term income stream. Public ownership of physical assets is preserved.

Individual Origination

Single large TSO/DSO securitises its own revenue stream — simpler structuring, concentrated exposure

Multi-Origination (Pooling)

Multiple operators pool regulated revenues to reach institutional 'ticket size' — more complex but broader market appeal

Hybrid Bonds · Equity Treatment on Regulatory Balance Sheets

EIB acts as anchor investor in hybrid bond issuances. Crucially, this debt is classified as equity for regulatory purposes — boosting the operator's debt capacity without breaching leverage covenants or degrading credit ratings.

Freeing Up Bank Balance Sheets for Grid Lending

Bank Capacity Release via Securitisation

Incentivise commercial banks to securitise existing loan portfolios and sell the resulting securities to institutional investors — freeing balance sheet capacity for fresh grid operator lending.

Preferred Structure

✓ True Sale Securitisation

Loans are transferred outright to an SPV, removing them from bank balance sheets entirely. Clean, complete risk transfer — maximises new lending headroom.

~ Synthetic Securitisation (secondary)

Uses credit default swaps to partially hedge credit risk — loans stay on-balance sheet. Less effective at freeing lending capacity; used only where true sale is legally constrained.

Growth for Energy Programme

EIB-led intermediated lending programme to scale up financing for smaller, more fragmented Distribution System Operators (DSOs) through regional and local commercial bank partners.

DSO Focus

Targets operators too small to access capital markets directly — the most fragmented segment of the grid financing challenge

Bank Partnerships

Works through local/regional banks that already have DSO relationships, leveraging existing credit infrastructure

EIB Scaling Role

EIB provides wholesale funding and credit enhancement to partner banks, multiplying lending capacity across the network

Ticket Size

Aggregation approach helps achieve investment scale appropriate for institutional engagement



Catalytic Public Funding for Emerging Tech

Next-Generation Clean Technologies

Venture debt & equity (InvestEU) for:

- Long-Duration Energy Storage (LDES)
- Floating offshore renewables
- Ocean energy & tidal
- Other pre-commercial clean tech

Horizon Europe & Innovation Fund grants for demonstration projects.

Small Modular & Advanced Reactors

EIB Group venture debt instruments targeting:

- SMR and AMR fuel cycle infrastructure
- Associated supply chain development
- Early commercial deployment stages

Supports EU SMR Strategy objectives on nuclear diversification.

Scale-Up Europe Fund

Addresses the 'valley of death' for deep-tech energy:

- Mobilises private investment for high-growth cleantech
- Targets disruptive technology scale-up
- Launched under EU Startup & Scaleup Strategy

Bridges gap between early-stage VC and infrastructure finance.

Energy Efficiency as a Service · €500m Pilot

€500m pilot initiative for EEaaS business models — shifting upfront capex to service contracts. Expanded InvestEU EIF Sustainability Guarantee to support EE investments. European Competitiveness Fund may provide longer-term aggregation via a dedicated Energy Efficiency Accelerator.

Coordination of Public Financing Schemes

Commission to strengthen coordination between EU and national financing via Energy Union Task Force and the Energy Transition Investment Council. Objective: eliminate duplication, improve cross-border project co-financing, and align national promotional bank mandates with EU priorities.



Launching Q2 2026

A structured feedback platform between institutional investors, Member States and the Commission — building on the proven Investors Dialogue on Energy model.

Identify Barriers

Pinpoint structural and regulatory barriers to private investment. Translate market feedback into actionable policy changes.

Improve Coordination

Align EU and national financing instruments. Eliminate duplication between InvestEU, CEF, Innovation Fund and national schemes.

Shape Future Policy

Ensure upcoming legislative and financial initiatives are designed from the outset to facilitate large-scale private capital mobilisation.

Dedicated Sub-Group

Focuses specifically on optimising resource use across the EIB Group, International Financial Institutions (IFIs) and National Promotional Banks — strengthening public finance coordination to maximise leverage of private capital alongside EU instruments.



Clean Energy Investment Strategy

Key Takeaways

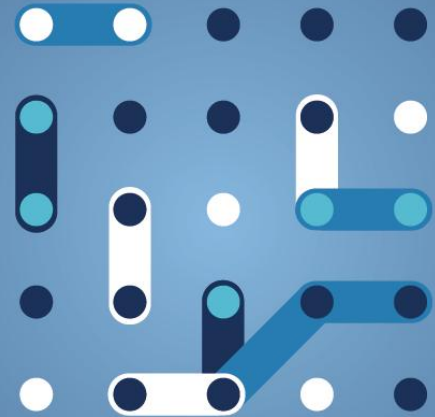
- €660bn+ annual investment required — far beyond public resources alone
- Four strategic actions to unlock large-scale private capital
- EIB Group commits €75bn over three years as key partner
- Energy Transition Investment Council to sustain policymaker–investor dialogue

Applying the AI Strategy



Antoine-Alexandre André

*Legal and Policy Officer,
AI Office
DG CNECT (A.4)*





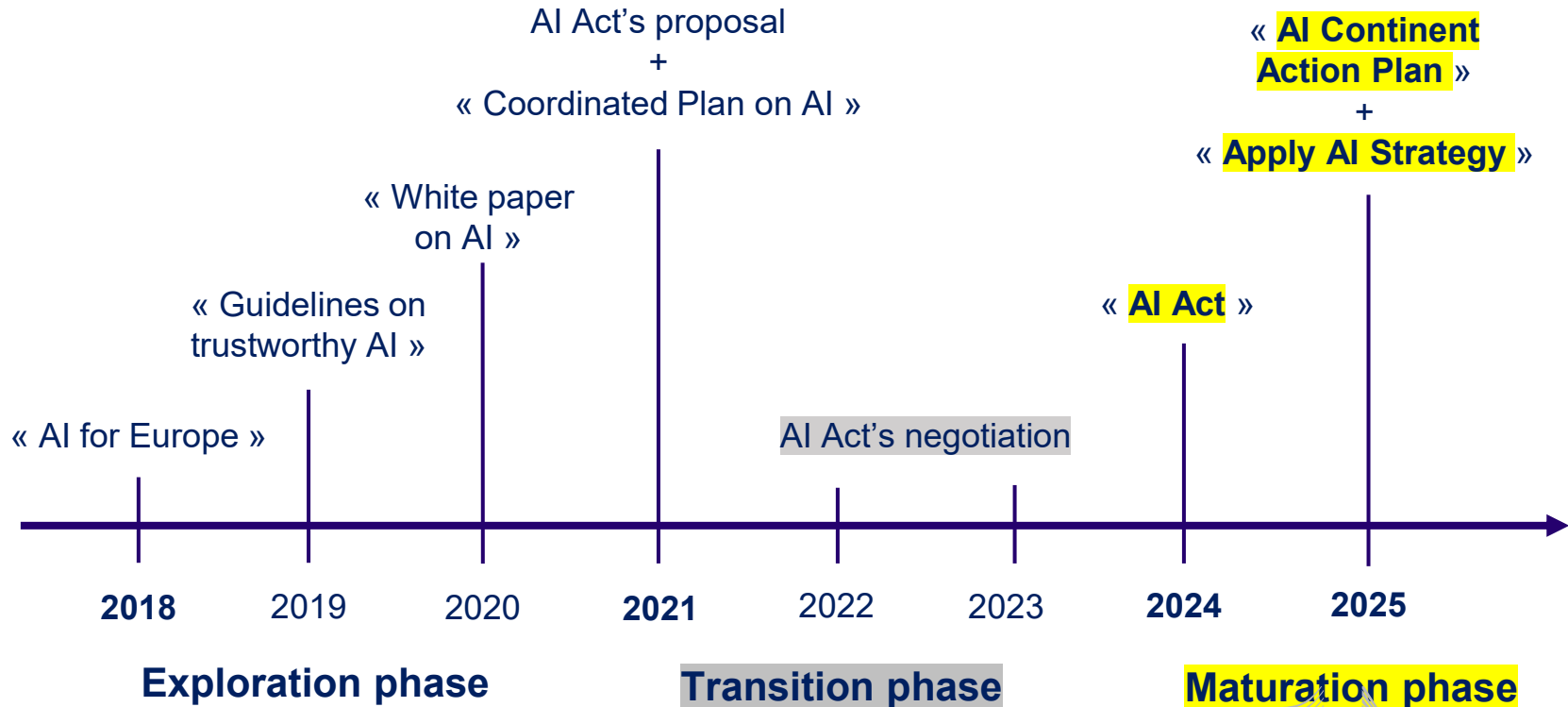
The European approach to AI policy making

Antoine-Alexandre André, AI Office



EUROPEAN ARTIFICIAL
INTELLIGENCE OFFICE

European AI policy: 7 years of work in 1 slide



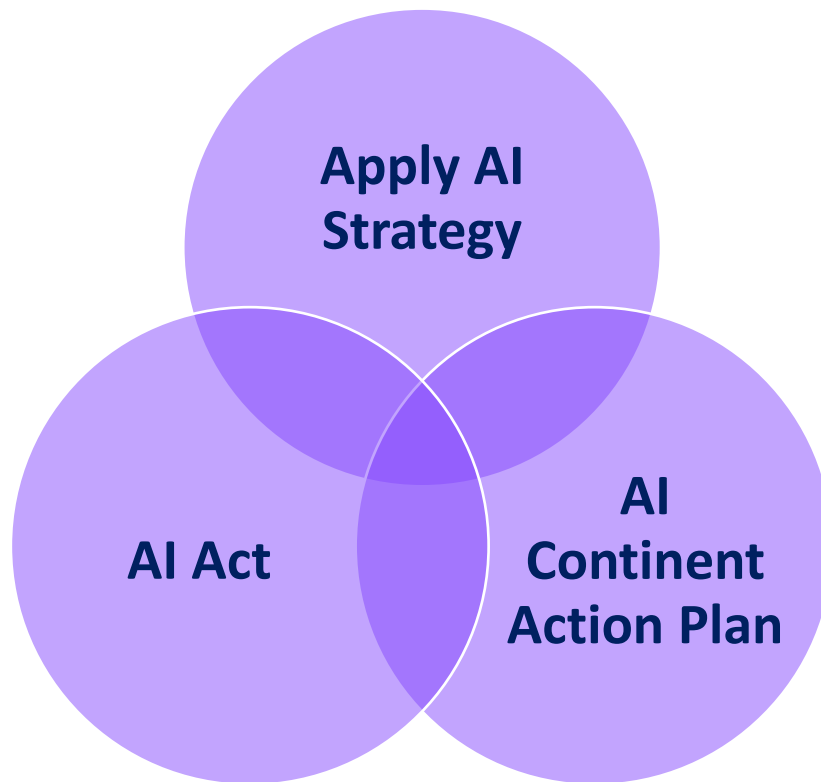
Two sides of the same coin

All AI policies are based on **one key baseline assumption**:

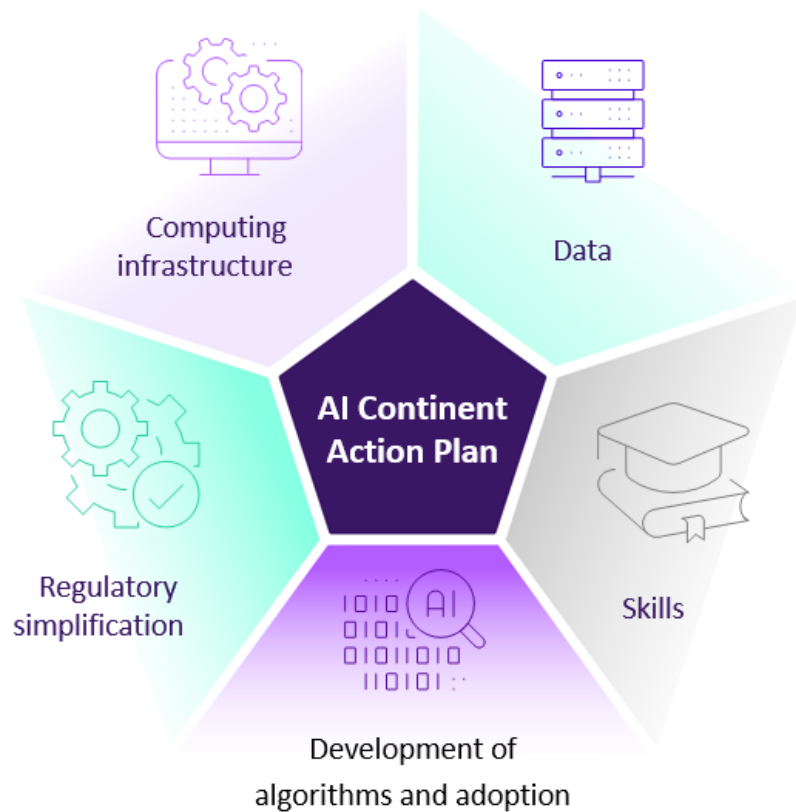
For AI to be adopted, we need to create both



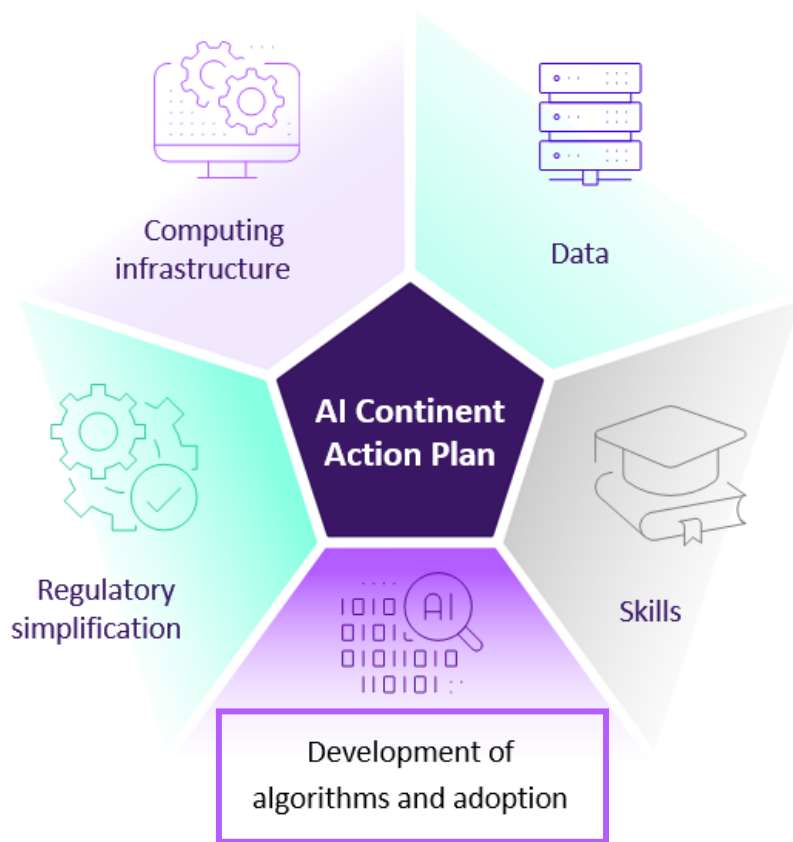
European approach to AI policy making



The AI Continent Action Plan



Particular focus on the last dimension: the Apply AI Strategy



Starting points:

- **Only 13.5% of EU companies** were using AI in 2024
- AI is a “general-purpose” technology: **redesigning processes is necessary**
- **Competitiveness gains are distributed differently** across sectors

Changing perspective and encouraging relevant integration

Promote AI First

- for AI to become a source of competitive advantage it should always be considered when faced with challenges

Double-down our efforts in strategic sectors

- Tailored actions to specific sectoral needs all along the AI value chain

Set-up a bottom-up continuous process

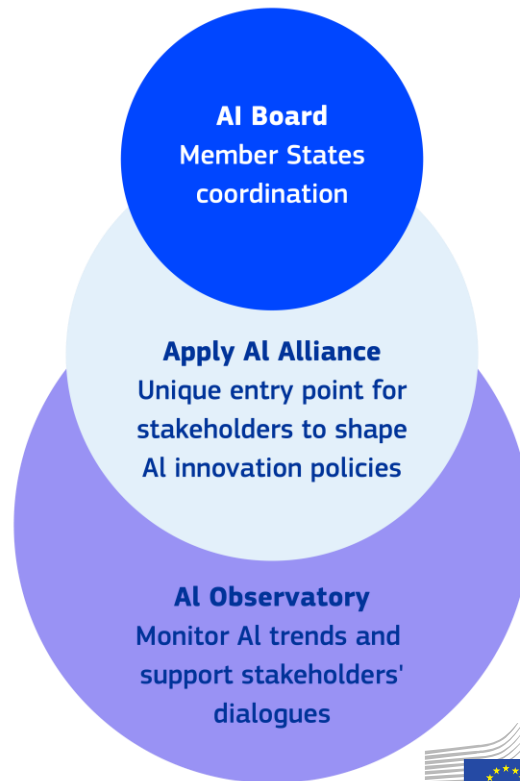
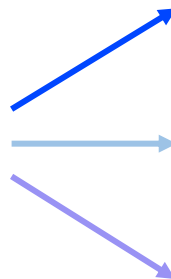
- Understanding the impact, requirements and scalability of concrete use cases



**Enhance
competitiveness
+
Buy European**

Common metrics -> improved dialogue -> better policies

**Stronger coordination
on AI-related policies**



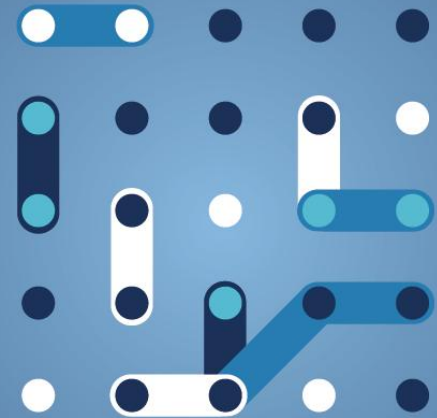
Thank you



EUROPEAN ARTIFICIAL
INTELLIGENCE OFFICE

BRIDGE Projects Speed Dating

Success Stories & Lessons Learnt



BRIDGE Projects Speed Dating

Success Stories & Lessons Learnt



Witold Krasny
Digital4Grids
EDDIE (DM)



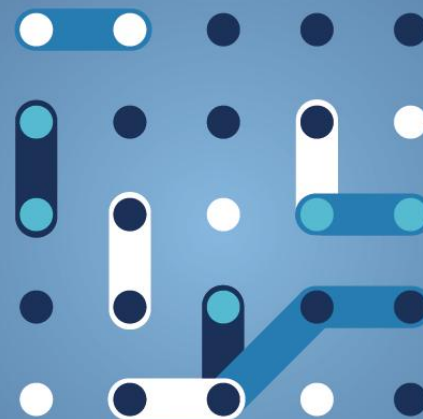
Fayaz Ahmed
R2M Solution Srl
MASTERPIECE (BM)



Quentin Donnette
Smarten
FEDECOM (REG)



Albert Sabater
Universitat de Girona
RESCHOOL (CCE)



Panel session : Key pillars to reinforce Europe's energy grids

Moderated by **Andrea De Angelis**, *BRIDGE Secretariat*



Ferdinando Bosco
*Engineering Group
TwinEU*



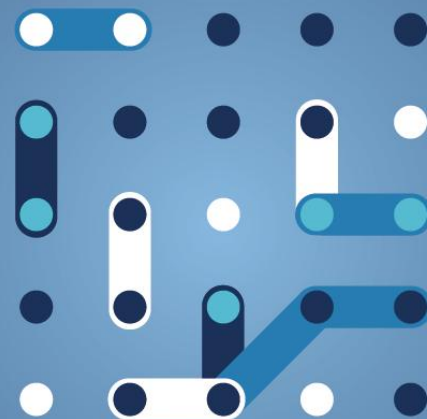
Edoardo Corsetti
*RSE
SENERGY NETS*



David Verez
*Wattega
HYSTORE*



Néstor Rodríguez Pérez
*Universidad de Comillas
eFORT*



Panel session: The work of BRIDGE amid Europe's energy transition

Moderated by **Elena Gallo**, BRIDGE Secretariat



**José Pablo
Chaves Ávila**
Chair
Regulation WG



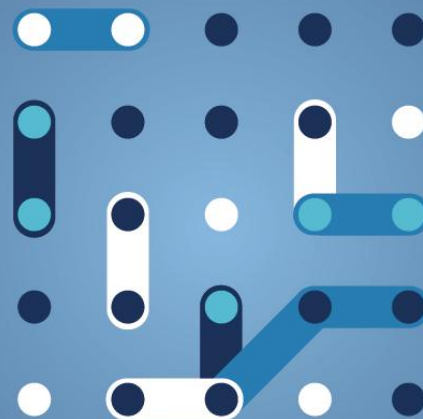
Dune Sebilleau
Chair
Data Management WG



Andrej Gubina
Honorary Co-Chair
Business Models WG

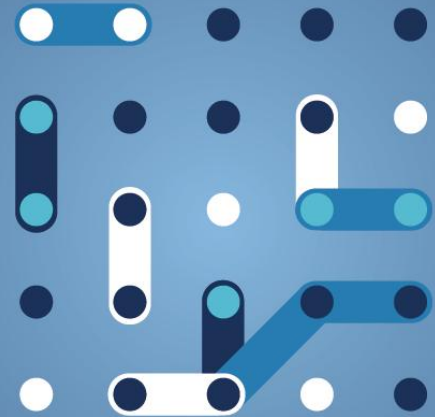


Michael Brenner-Fließer
Chair
Consumer and Citizen
Engagement WG

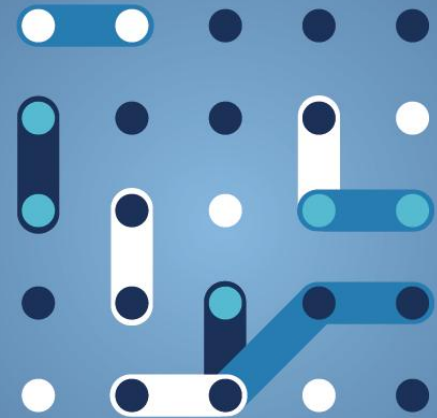


Group photo

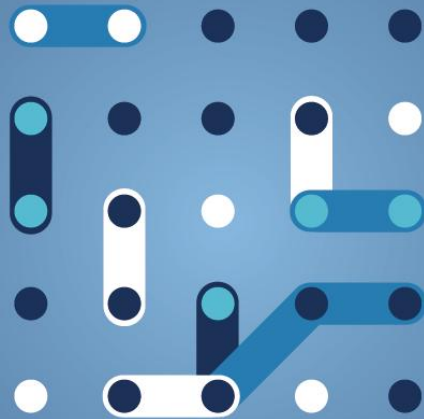
Please come on stage!



Networking Aperitivo



bridge

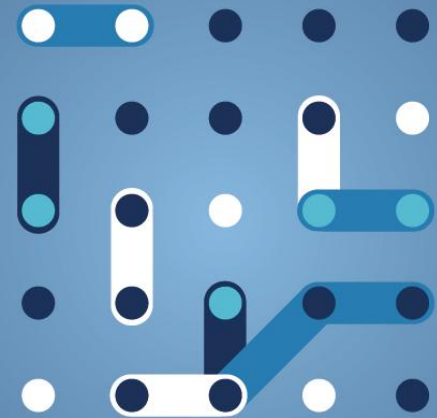


**BRIDGE General
Assembly 2026
DAY 2: 24 March 2026**



Networking Coffee

Meet here at 9:15



Tuesday 24th of March Agenda Day 2

Time	Session	
9:00	Welcome Coffee	
9:15	Welcome and wrap-up from the previous day • Alexandros Kotronaros, Policy Officer, DG ENER, EU Commission • Beatrice Profeta, BRIDGE Secretariat	
9:30	Panel : “The role of AI in the energy grids” – moderation by Natalie Samovich (ENERCOUTIM) • Mark Van Stiphout, Deputy Head of Unit, DG ENER (B.4), European Commission • Rolf Riemenschneider, Head of sector IoT, DG CNECT (E.4.), European Commission • Elissaios Sarmas (NTUA) lead member of the ETIP SNET WG4 Task Force on AI technical applications in power grids • Antonello Monti, Professor and expert on digitalisation and AI, Fraunhofer-Gesellschaft	
10:15	Regulatory barriers from Innovation fund projects • Ugo Miretti, Project Adviser – Innovation Fund unit, CINEA	
10:30	Division into Working Group sessions	Break-out Rooms
10:45	Parallel Session 1 CONSUMER & CITIZEN ENGAGEMENT WG	Parallel Session 2 BUSINESS MODELS WG
12:45	Networking Lunch	
13:45	Joint meeting (DATA MANGEMENT WG & REGULATION WG) Supporting the flagship action of the Strategic Roadmap: establishing the governance of the Common European Energy Data Space (CEEDS)	
14:45	Parallel Session 3 REGULATION WG	Parallel Session 4 DATA MANAGEMENT WG
15:45	Networking Coffee	
16:15	Plenary: “BRIDGE Working Groups – What are the next steps?” • Setting priority actions for BRIDGE WGs aligned to DG ENER strategy with presentations of outcomes of the discussion of the breakout rooms by WG chairs	
17:15	Closing session • Beatrice Profeta, BRIDGE Secretariat • DG ENER, EU Commission	
17:30	End of the Event	

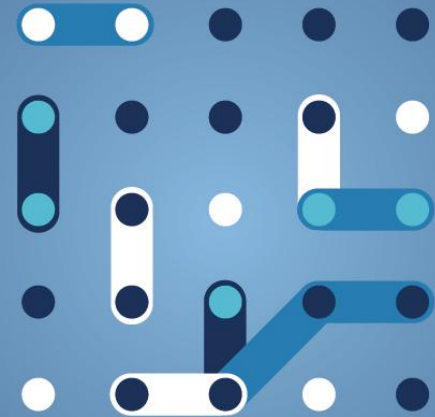
Welcome and wrap-up from the previous day



Alexandros Kotronaros
Policy Officer
DG ENER



Beatrice Profeta
BRIDGE Secretariat



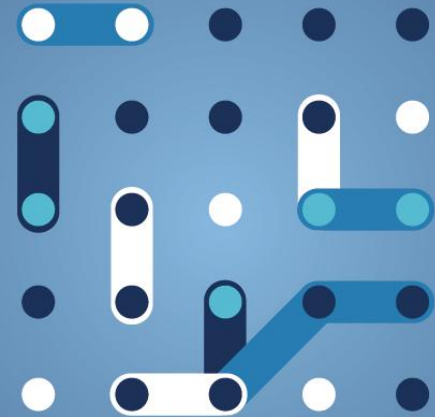
Welcome and wrap-up from the previous day



Alexandros Kotronaros
Policy Officer
DG ENER



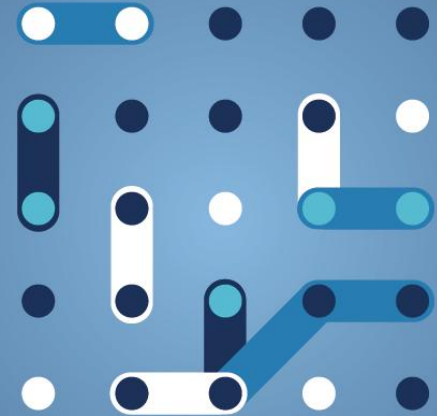
Beatrice Profeta
BRIDGE Secretariat





Panel session: The role of AI in the energy grids

Moderated by **Natalie Samovich** (ENERCOUTIM)



Panel session: The role of AI in the energy grids

Moderated by **Natalie Samovich** (ENERCOUTIM)



Mark Van Stiphout

Deputy Head of Unit
DG ENER (B.4)



Rolf Riemenschneider

Head of sector IoT
DG CNECT (E.4)



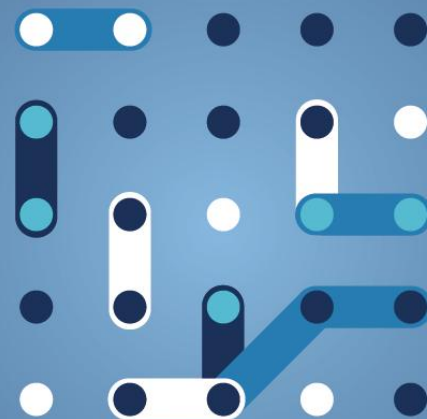
Elissaios Sarmas

NTUA



Antonello Monti

Fraunhofer-Gesellschaft

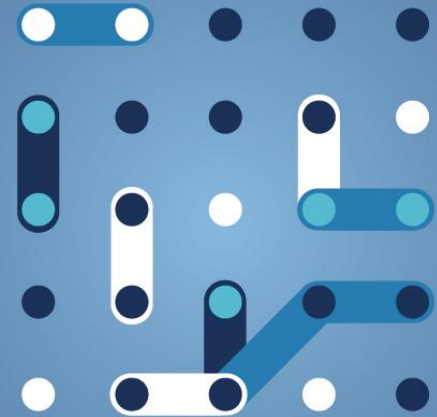


Regulatory barriers from Innovation fund projects



Ugo Miretti

*Project Adviser – Innovation
Fund unit
CINEA*



Regulatory barriers from Innovation fund projects

Ugo MIRETTI – Project Adviser, Innovation Fund, CINEA

BRIDGE General Assembly, 24 March 2026

Welcome to CINEA



> 65 billion 2021-2027



> 600 staff by 2027



> 4000+ projects by 2027

Funding a green future for Europe



European
Commission

CINEA: in service of the EU Green Deal



Cleaning our Energy system



Making transport sustainable for all



Renovating buildings



Transforming our economies and societies



Working with nature to protect our planet and health



Leading the third industrial revolution

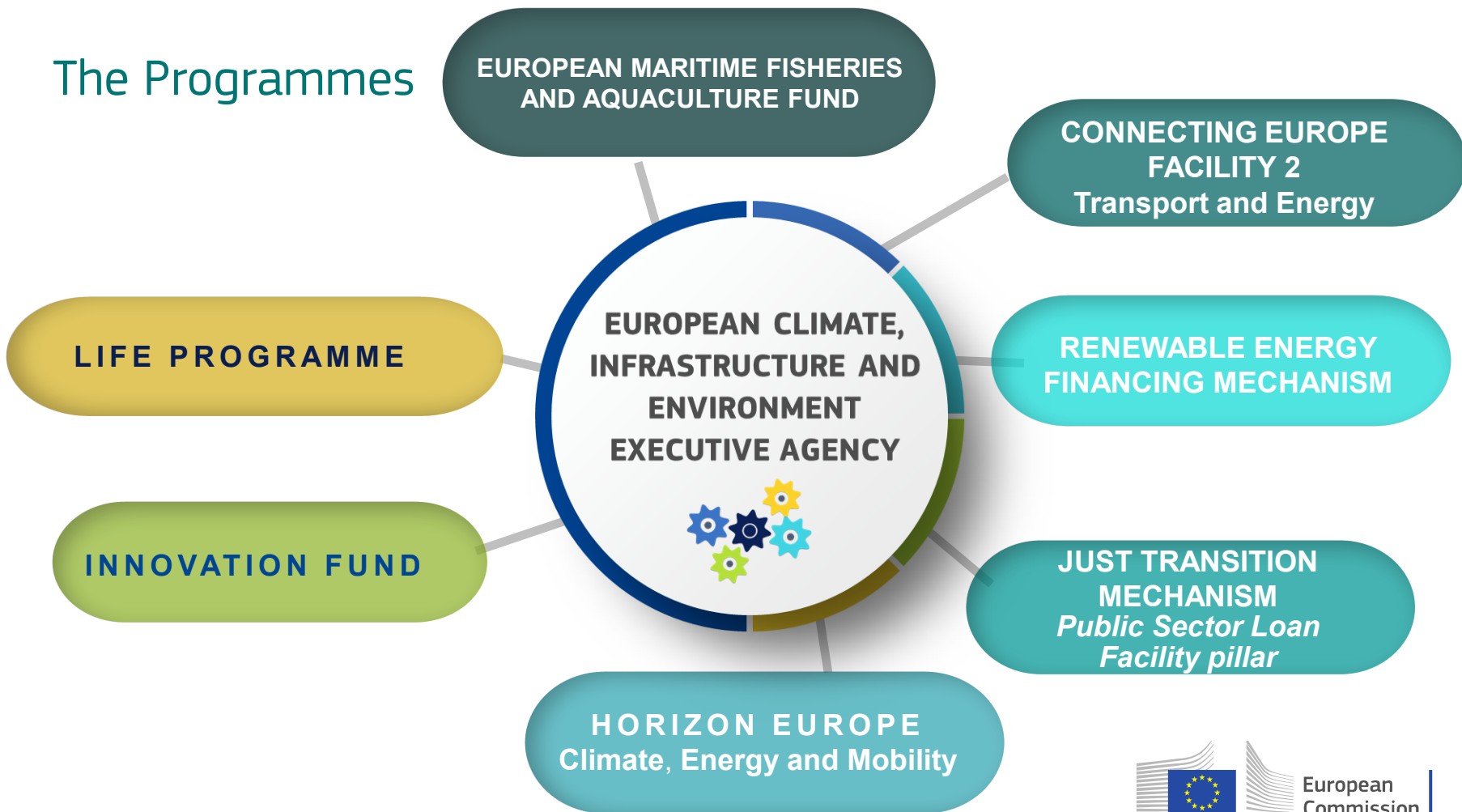


Boosting global climate action



European
Commission

The Programmes



The Innovation Fund in a Nutshell



INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

Funded by the EU Emissions Trading System



€40 billion* available
between 2020-2030

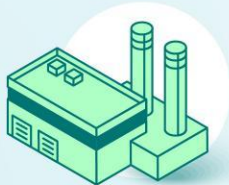


grants awarded through
regular calls and auctions



avoid GHG emissions,
boost competitiveness

supporting innovation in:



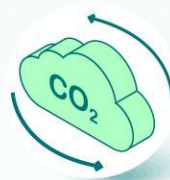
Energy-intensive
industries



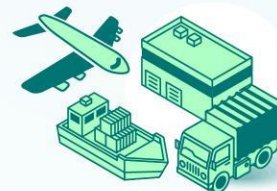
Renewable
energy



Energy
storage



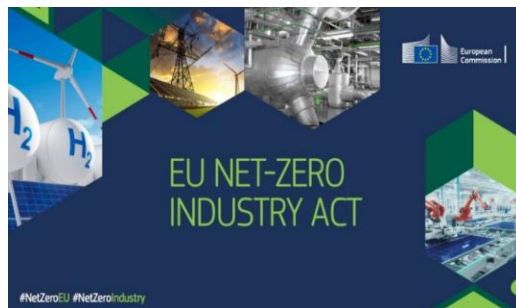
Carbon capture,
use and storage



Net-zero mobility
and buildings

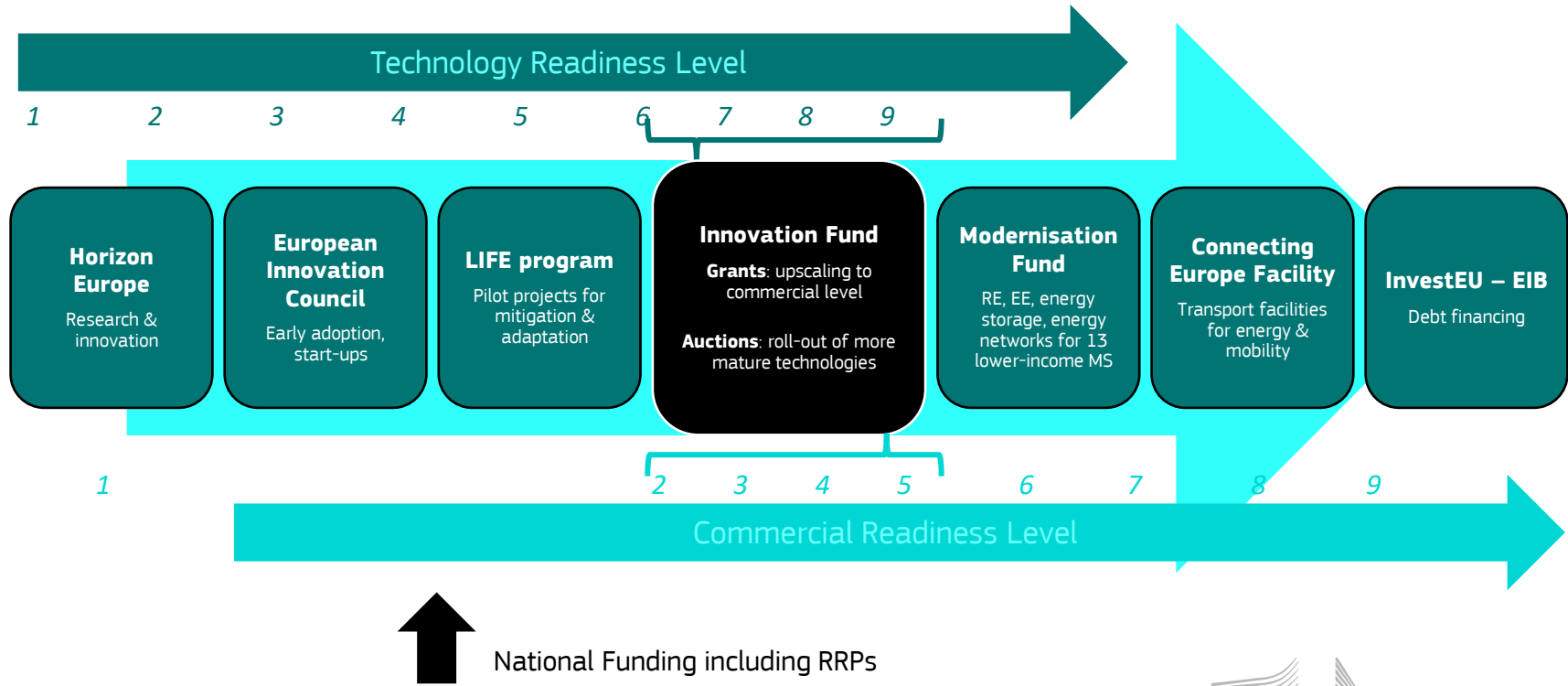
**based on a carbon price of €75/tonne*

The Innovation Fund supports urgent policy priorities



- **Net-Zero Industry Act:** clean tech manufacturing (€0.7 billion in 2022, €1.4 billion in 2023, 1.7 billion in 2024) – *IF24 Call (dedicated topic) + IF24 Battery*
- **European Hydrogen Bank:** domestic auctions for renewable hydrogen under the Innovation Fund
- **Wind Package:** clean tech manufacturing topic & Project Development Assistance (PDA)
- **Strategic Technologies for Europe Platform (STEP):** STEP Seal for funded projects
- **Industrial Carbon Management (ICM) Strategy:** support CCUS deployment since 2020
- **Clean Industrial Deal:** Innovation Fund is central tool to support investments in industry decarbonisation

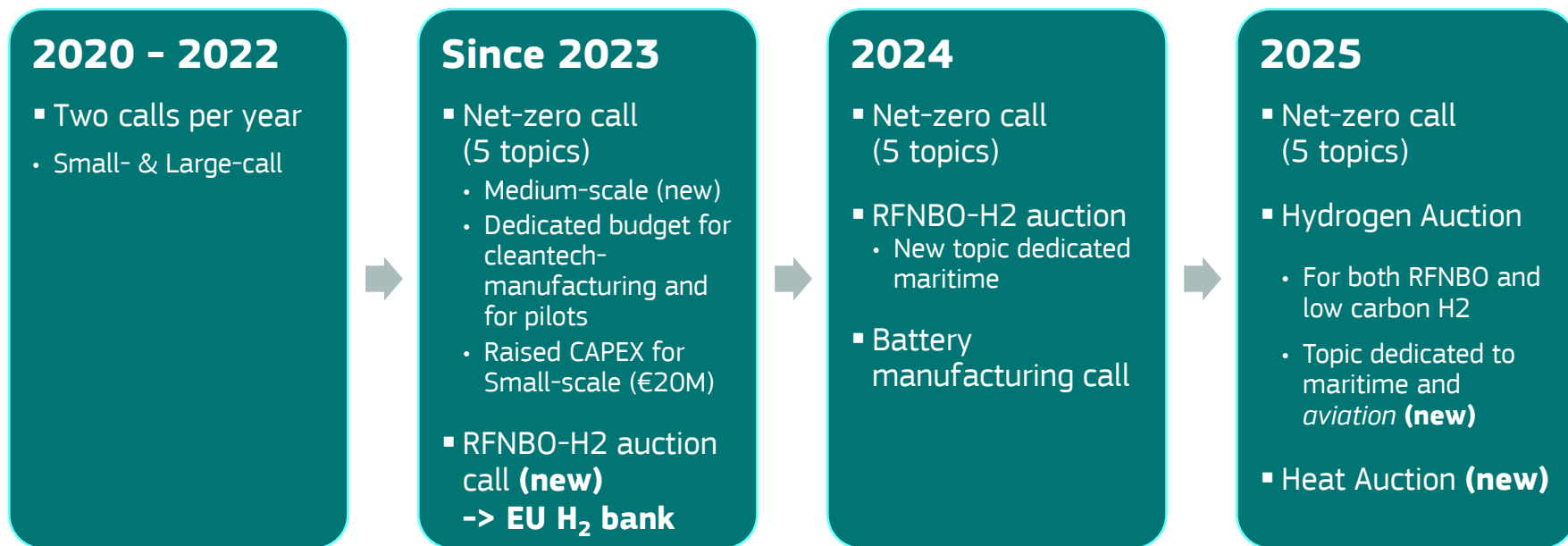
A targeted project portfolio



TRL & CRL are indicative

Evolution of the Innovation Fund

Adapting to an evolving industrial and political context



11 calls successfully closed, ~2000 proposals received, over €15.8 billion awarded

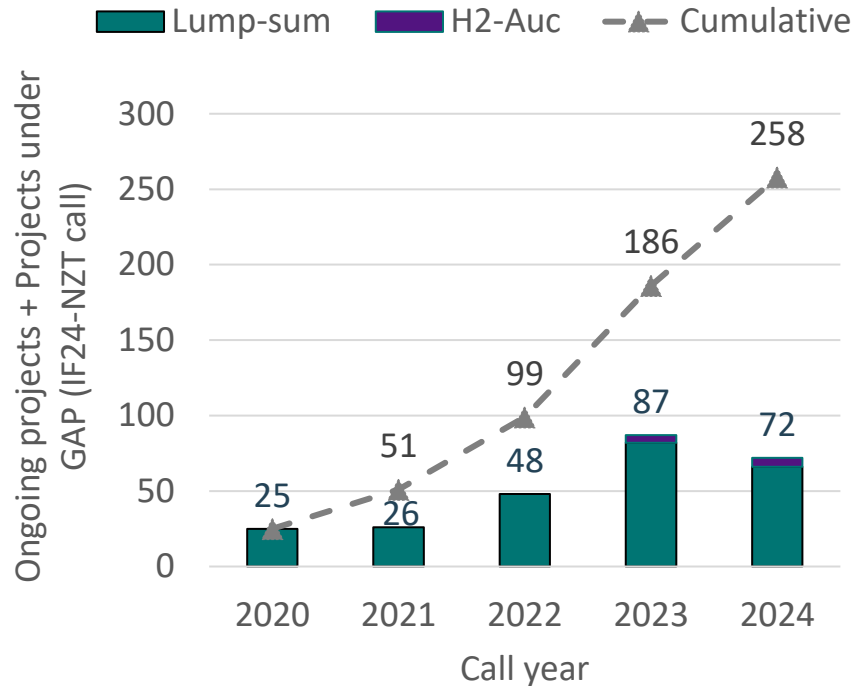


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Commission

Innovation Fund – portfolio growth

Steady growth :

- **10x** more projects than in 2020
- ~80% of all selected proposals (325) are still active
->ongoing or under GAP
- H2 AUC: slower growth than expected



Innovation Fund in a nutshell

Ongoing projects + Projects from IF24 calls*



258 projects

197 ongoing +
61 under GAP



~€14.6 billion

€11.7 billion allocated
+ €2.9 billion under GAP

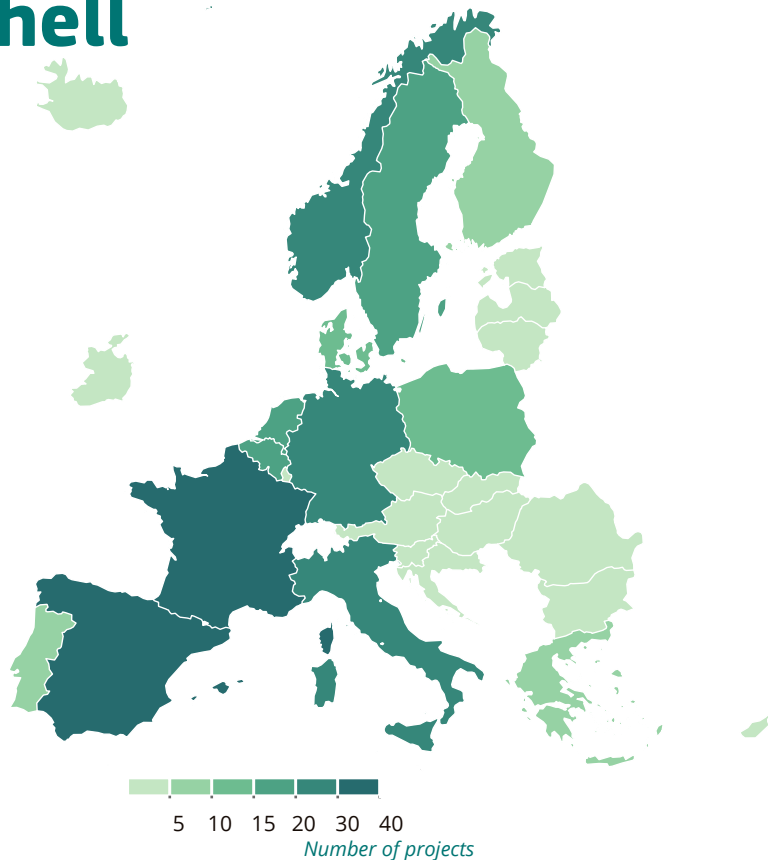


28 countries



~ **1 145 MtCO₂e**
to be avoided**

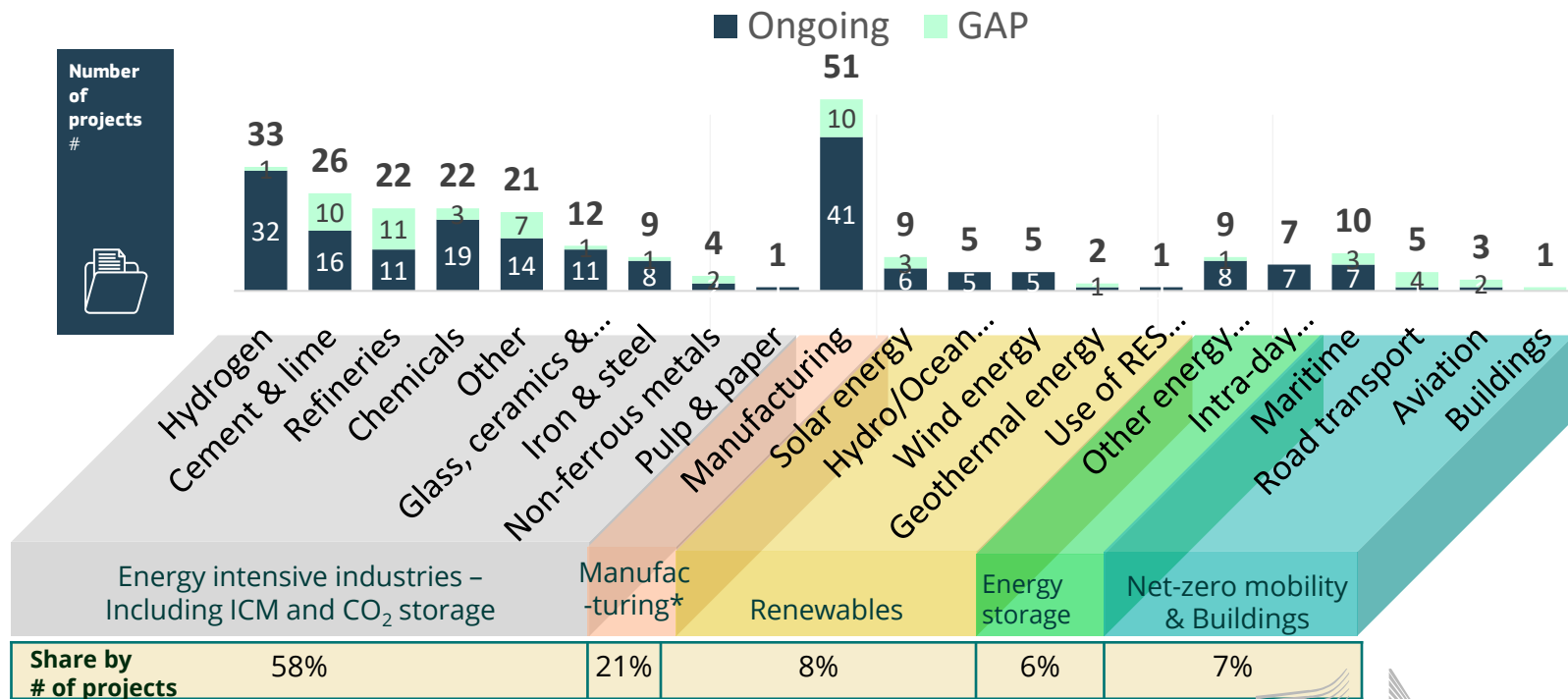
23 sectors



New country in portfolio: Romania
New sector: Buildings

- *Projects ongoing as of 31/12/2025 + projects invited for GAP from IF24 NZT call
- ** GHG emissions avoidance estimated, according to the relevant GHG methodology

Innovation Fund projects by sector



- GAP : Grant Agreement Preparation
- Status ongoing projects by end of Q4-2025 + 61 projects under GAP from IF24-NZT call
- Projects allocated to sectors related to manufacturing of components for renewable energy, energy storage and energy intensive industries are shown under manufacturing.



Permitting and the Innovation Fund

A Survey on Permitting among IF projects was launched in late 2024 for two reasons:

Bottom up, IF projects reported difficulties with permits. A big issue: Financial Close is due at year 4 (final!).

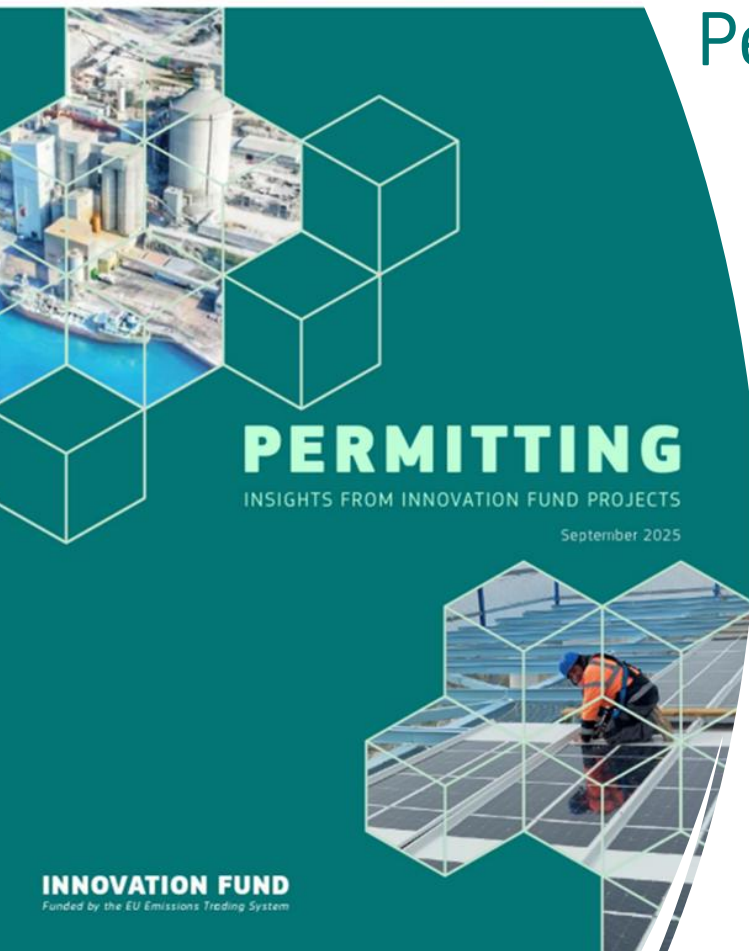
Top down, the EU Net Zero Industry Act aimed to simplify permitting processes.

¾ of IF projects provided very detailed replies (the others were too “young” to).

The results of the Survey were:

- Included (succinctly) in the 2025 [Innovation Fund Knowledge Sharing Report](#).
- Presented, discussed and validated at a [dedicated workshop](#).
- Used to substantiate the [Industrial Accelerator Act](#) (esp. its IA).
- Published in full in the....

Innovation Fund Permitting Report



In depth analysis of permitting through a survey and dedicated workshops



Detailed information on the type of permits, relevant authorities, effort and impact on projects



Analysis by Geographical dimension and cluster (RES, Hydrogen, energy intensive industries, ICM, energy storage and manufacturing)



Identification of the main permitting challenges.



Presentation of lesson learned and useful practices.



[Read the report here](#)

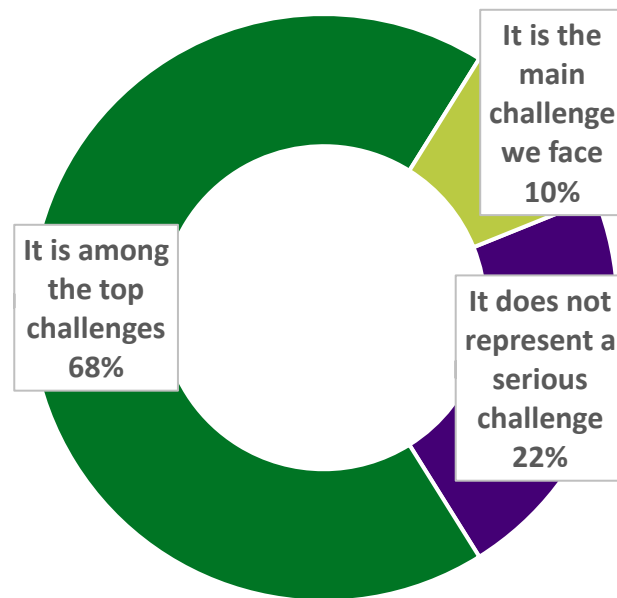
The main takeaway

In general, the results suggest that regulatory barriers are a vital issue for low-carbon projects.

Main challenge for 1/10, among top challenges for 2/3!

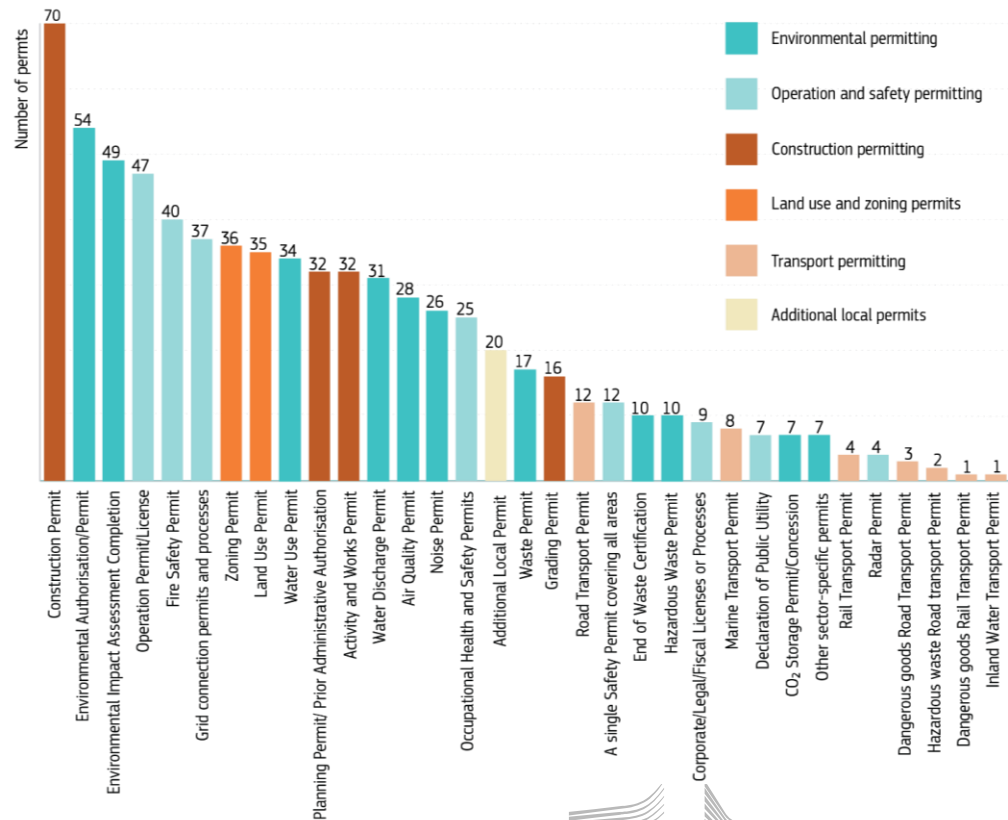
Note that “permitting” was used in a broad sense: covering not only explicit permits such as construction, but also authorizations and certifications (e.g., RFNBO or end of waste).

How respondents rank permitting as a challenge



Which, how many permits

- **Most Innovation Fund projects** require new permits or updates.
- Implementing the 90 projects requires the management of over **700 distinct permits**, an average of more than 7 per project.
- This is an underestimate. Some permits needs emerge late.

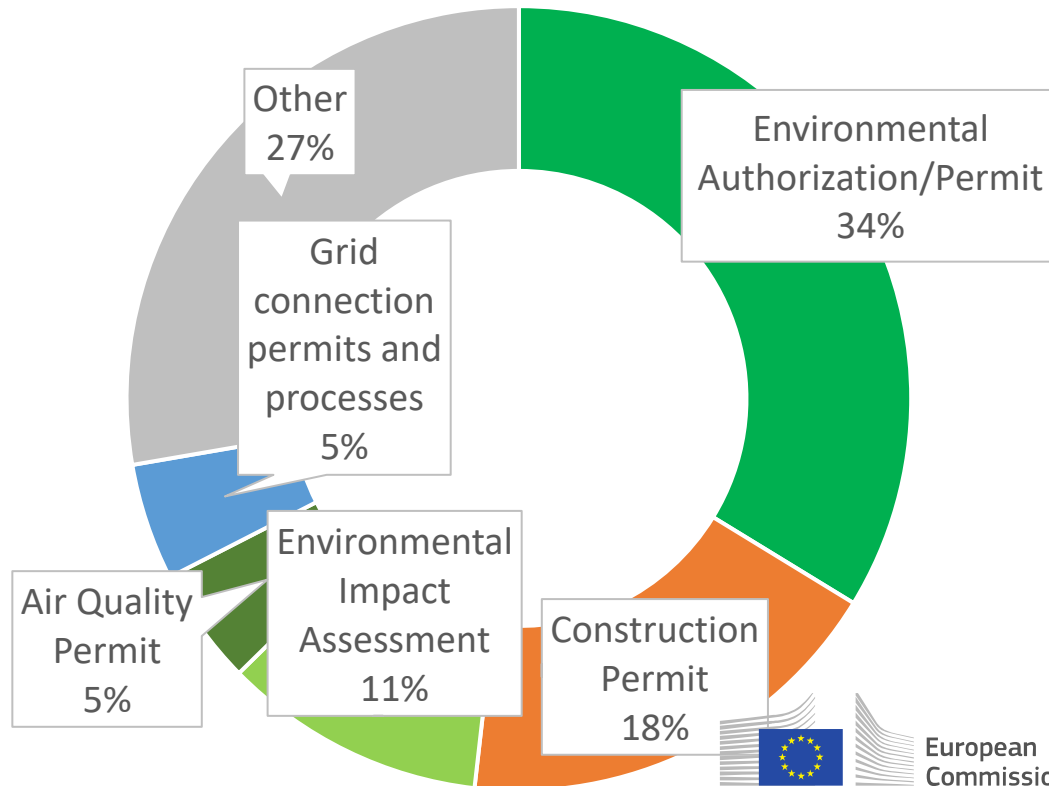


The permits considered most burdensome / time consuming

Environmental permits are identified as the most burdensome to obtain, followed by construction.

But the results vary substantially by sector and location.

Grid connection issues are just 5% but... There are strong (inter)dependency issues with them:



What causes issues I

The replies suggest that:

- **The scale of the effort itself** is an issue (number of permits, authorities involved, documents needed; amount of time, with 16 months needed to file; complexity of tasks; etc.)
- **Interdependency** also emerges (a permit may be needed before applying for another, and work has often to be sequential)
- Dependency on permits **outside of the project scope** can have serious impacts (47% affected) (e.g., infrastructure such power lines, transmission stations or grid connections).
- Also **underestimation** of the time and effort required plays a role (15 out of 28 projects which finalised permitting took over a year longer than expected)

What causes issues II

Most importantly:

Many issues are due to the **novelty of the solution** (64% of the projects are first-of-a-kind)

- **Permitting procedures** are often designed for existing technologies
- The **lack of harmonised standards** or **specific legislation** hampers projects introducing new processes
- **Capacity constraints** in the authorities are more serious for first of a kind projects (which deemed their capacity as low/very low in 27% of cases). Example: innovative RES project: back of the queue!)

Specifically on grids

About 40% of IF projects need to deal with grid connection permits/processes

While only 5% of projects identified grid connection as most **burdensome**, grid issues are vital for many:

- Energy Storage: 1. One in four is strongly dependent on “external” procedures (grid dev.) 2. Maturity of the regulatory framework is key: both technically and contractually (e.g., role of prosumers, grid-scale storage providers)
- Renewable Energy: permitting is top issue; esp. for first of a kind projects (no methodology, capacity constraints in the authorities). Often: grid application only at end (after EIA, etc.), causing delays.
- EIIs and esp. Hydrogen: power-lines development and grid connection are vital for electrification, H2 production and H2 use (both within and outside of their scope)



Summary of the main challenges and solutions identified

Main challenges	Potential solutions
Scale of the effort in terms of time, complexity and resources needed. Interdependency of different permitting procedures. Dependency on external permits. Framework designed for existing technologies. Lack of harmonised standards and common interpretation of rules.	Increase the capacity of authorities and coordination among them. Simplify interaction with authorities. Agree on a time plan at the start of the procedure and/or maximum time to grant. Increase flexibility and digitalisation. Special regime for pilot/strategic projects for decarbonisation.

Main conclusion

The regulatory framework design is key for the energy transition.

This requires not only focusing on specific, vital issues (BATs, energy market design, product certifications..)

But also on systemic ones.

A Hydrogen project can depend on the development of power lines, on the grid connection process, on the construction of a pipeline to deliver its H₂, on the RED III transposition, on the BAT ref. document of its client...

As recognised by the Industrial Accelerator Act, actions is needed both on nitty-gritty details and on the broad regulatory framework.



Thank you

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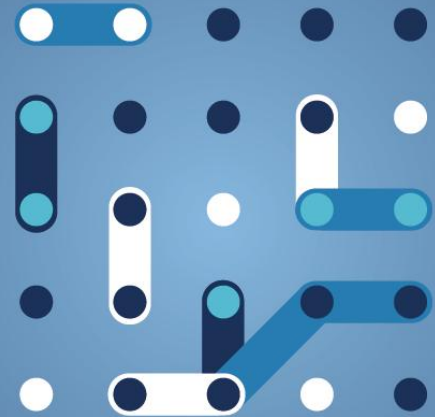
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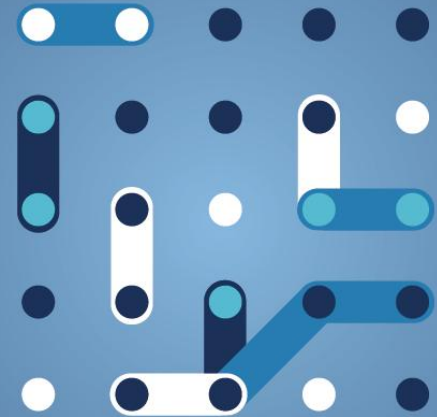
Division into Working Group sessions





Breakout rooms for WGs discussion

Parallel Session 1 & 2



Break-out



Timing: 2 hours



Room 1 – WG Consumer and Citizen Engagement

Moderator: Michael Brenner-Fließer

Secretariat support: Ilaria Orfino

[Link to the CCE breakout](#)

Room 1



Room 2 – WG Business Models

Moderator: Andrej Gubina

Secretariat support: Radu Lupascu

[Link to the DM breakout](#)

Room 2



Please join your WG's room. For people not involved in either WG, please join either breakout room according to your interest.

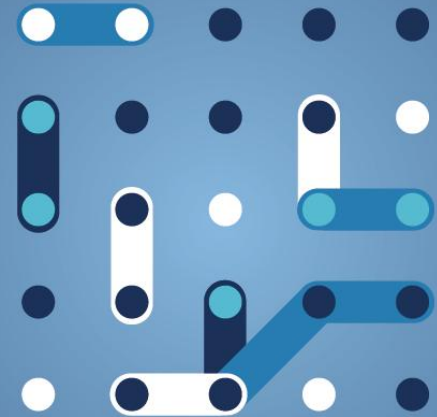


European
Commission



Breakout rooms for WGs discussion

Parallel Session 1 – Consumer & Citizen
Engagement WG



WG Consumer and Citizen Engagement



Facilitating citizen engagement in European R&I projects towards triggering, and leveraging the action of consumers and citizens in the energy landscape.

Focal points are smart tools, indicators, and engagement strategies.

Consumers and citizens are crucial actors to consider and engage when aiming to realize a just and sustainable energy transition in Europe – and beyond.

Technologies will only be accepted and taken up, if consumer needs are met and consumer concerns are mitigated.



>80 projects



**>170 people
involved**

WG Consumer and Citizen Engagement

	<u>Actions</u>	<u>Objectives</u>	<u>Outcome</u>
01	Smart Tools	Interoperable tools that can serve the needs of a rapidly digitalizing energy system. Launch of the Smart Tools Knowledge Hub. Support for Emerging Technologies.	• Knowledge Hub structure and initial input • AI developments and compliance frameworks • Digital Twins & Natural Language Interfaces • Projects spotlight
02	Indicators of engagement	Creating a scientific sound and practical relevant methodology of selecting and measuring indicators of engagement.	• Identification of theories of engagement for I indicators selection • Extension of collection of indicators • Special focus on the role of emotions within engagement
03	Strategies of engagement	Deeper analyse of AI and engagement and inclusivity and engagement. Identify challenges, failures and success factors associated with the SoE trough workshops and capacity-building sessions	• Technology side: AI, system optimisation, technical performance • Society side: trust, agency, comfort, ease of use, accessibility, perceived benefits • Balancing needed: engagement, inclusivity, social readiness

Consumer and Citizen Engagement



**Michael Brenner-
Fliesser**
Chair



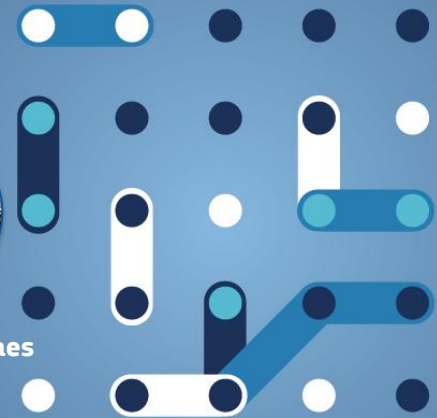
Valeria Palladino
*Task leader
Strategies of Engagement*



Anastasis Tzoumpas
*Task leader
Smart Tools*



Juliana Magalhaes
*Task Leader
Indicators*



Program for CCE breakout session

2h session	Topic	Description	Speakers
45 min	Presentation of last year's achievement within the 3 Subgroups	• Introduction plan for the session (3 min) • Introduction by Hadrien Thebault, DG ENER (5 min) • Presentation for each sub-group (10 minutes + 4 minutes discussion per each sub-group) (Activity, main outcomes, lesson learned) • Strategies of engagement • Indicators of Engagement • Smart Tools	• Michael Brenner-Fliesser • Valeria Palladino • Anastasis Tzoumpas • Juliana Magalhaes
60 min	Interactive session: Discussing relevant topics for next year	• Presentation of relevant topics from Working Group (10 min) • Presentation of topics for subgroup (15 minutes) • Interactive session: • Voting on most interesting topics (10 min) • Future pathways for the most interesting topics (15 min)	• Michael Brenner-Fliesser + subgroup leaders
15 min	Outcomes from the discussion	• Discussion of the results and wrap-up of the activities for the next years (10 min) • Final remarks and conclusions (5 min)	• Michael Brenner-Fliesser

Indicators of Engagement



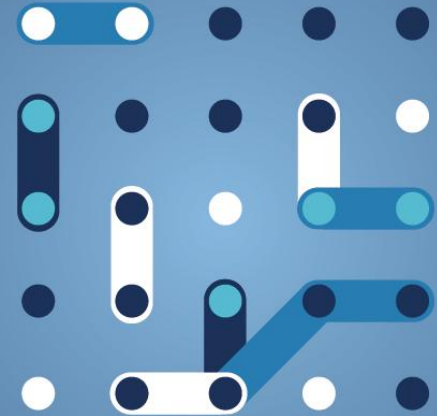
Carlos Montalvo Corral
TNO
Drive2X



Emmanuel Fragniere
HES-SO
O-CEI



Juliana Magalhaes
HES-SO
O-CEI



Indicators of Engagement

Main focus

- Identify & harmonise engagement indicators
- Compare project approaches (DRIVE2X, XL-Connect, FLOW)
- Build common ontology for indicators
- Explore feasibility of shared data space
- Support cross-project learning & alignment

Methods

- Cross-project workshops (sharing experiences, comparing approaches)
- Presentation of project cases (DRIVE2X, XL-Connect, FLOW)
- Review of qualitative + quantitative methods (surveys, interviews, experiments)
- Mapping indicators across projects (usage, attitudes, norms, agency, emotions)
- Consolidating a preliminary common ontology
- Identifying shared variable definitions & measurement scales
- Discussing benefits & barriers of a future data space (FAIR, GDPR, interoperability)



Why engagement indicators matter

We are building a common language for engagement across Europe

- From fragmented approaches → **shared indicators**
- From assumptions → **measurable engagement**
- From isolated projects → **collective learning**

Focus areas:

- Indicator harmonisation
- Cross-project comparison
- Emotions & human dimension

How we worked

- Literature review
- Case studies
- Interviews & workshops
- Cross-project analysis

Indicators of Engagement – Key findings

- Inventory of **social acceptance approaches** across projects.
- Shared **methodologies and engagement indicators** among Horizon initiatives.
- Strengthened **cross-project collaboration and knowledge exchange**.
- Integration of **qualitative and quantitative analysis methods**.
- Foundation for **future interdisciplinary work on systemic acceptance**.



Examples of Types of indicators

Behavioral

- Participation, actions taken, usage data

Cognitive

- Awareness, knowledge, understanding

Emotional

- Motivation, trust, attachment

Main outcomes examples

The Human Dimension

- Engagement shaped by **social context**
- Influenced by **values, norms, and interactions**
- Not only individual → but **systemic**

The role of the EV driver

Spread across the use cases, there are various pains and gains for potential end users of V2X technology.

Their preferences for - and experiences with the technology can be seen as part of a complex network of stakeholder interests, values and motivations that influence its adoption. A visualization is given in figure 1.1.

Although this study focuses on the end user (S1), interrelations between stakeholders are important intersections to map additionally.

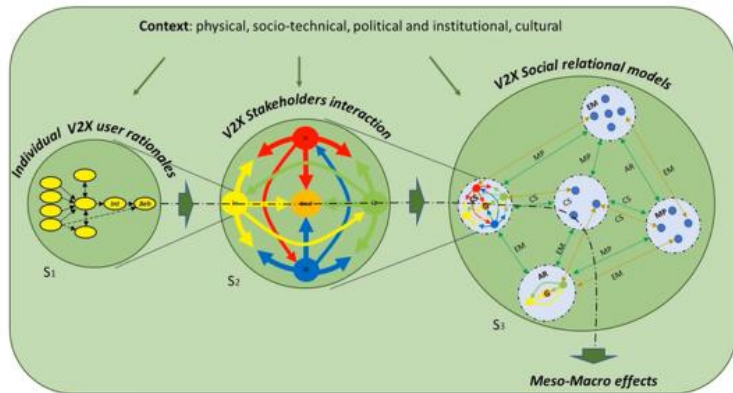


Figure 1.1: Overview of stakeholders and interactions, adapted from Montalvo (2022)

Main outcomes examples

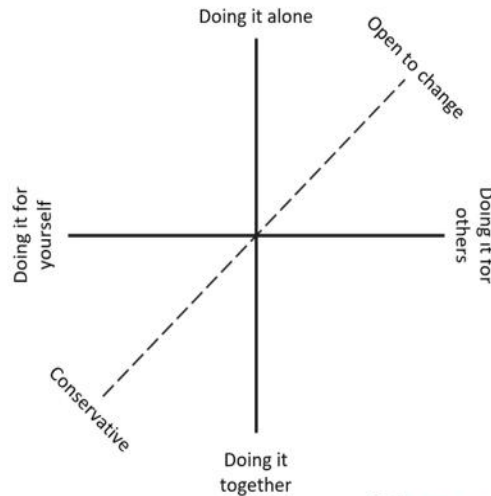
Segmenting engagement

- Engagement varies across **personas**
- Influenced by:
 - Values
 - Social orientation
 - Openness to change

Persona axes

To be able to define unique personas, we now turn to the differences between values and approaches to social norms. The value clusters and social norms that resulted from the analysis of the interviews can roughly be plotted along 2 axes with opposing attitudes. Horizontally, we see a split between self-oriented, or egoistic values and self-transcending values. Vertically, we depict the opposing approaches from a societal viewpoint where the individualistic mindset alternates with a communal approach.

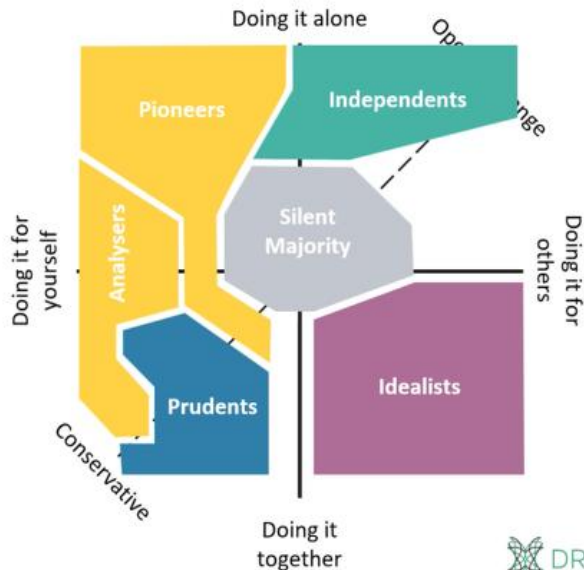
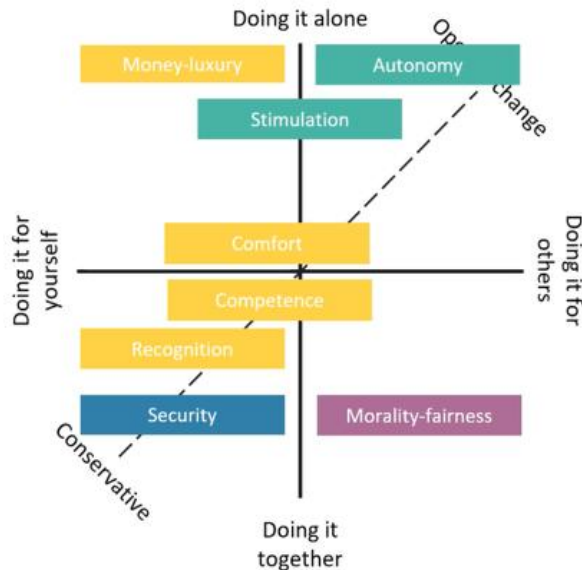
This delineation of the values strongly aligns with the interrelations of individual values as proposed by the work of Schwartz and colleagues discussed earlier. From this work, we can define another axis that runs diagonally and embodies a tension between conservatism and openness to change.



Main outcomes examples

Segmenting engagement

To arrive at the persona archetypes, we plotted all the value clusters on the axes of which we present a depiction on the left. Following this process, we roughly outline a set of six persona archetypes on the right, linking the value clusters in a way that make the personas distinct yet exhaustive.



Main outcomes examples

Measuring: Intervention Design

M. Bielig et al.

Journal of Environmental Psychology 95 (2024) 102284

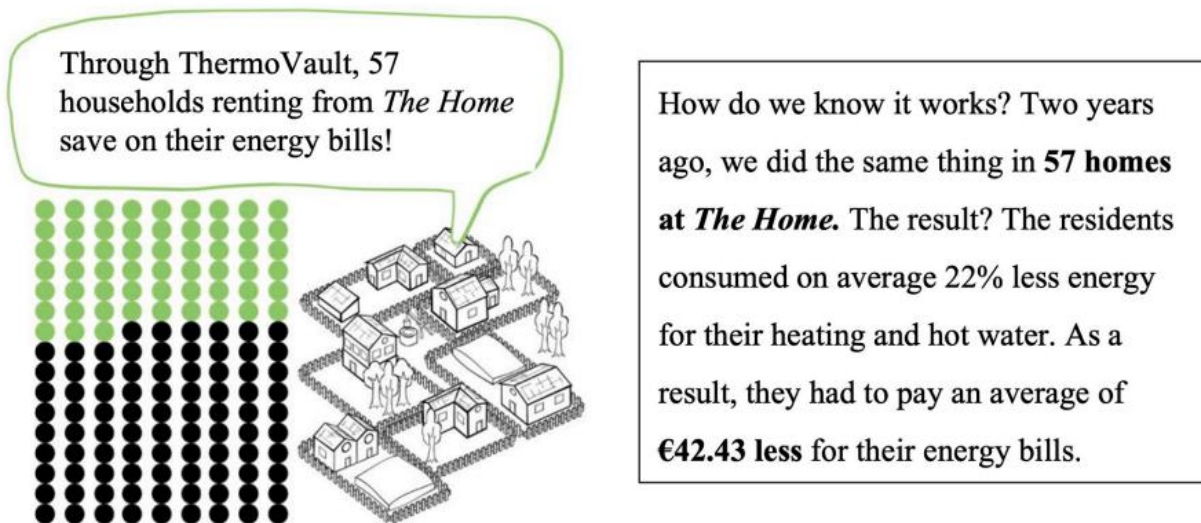


Fig. 1. Intervention design (added to letter, see Appendix for context).

Main outcomes examples

Measuring: Quasi-Experimental

„CONTROL“



Vs.

INTERVENTION

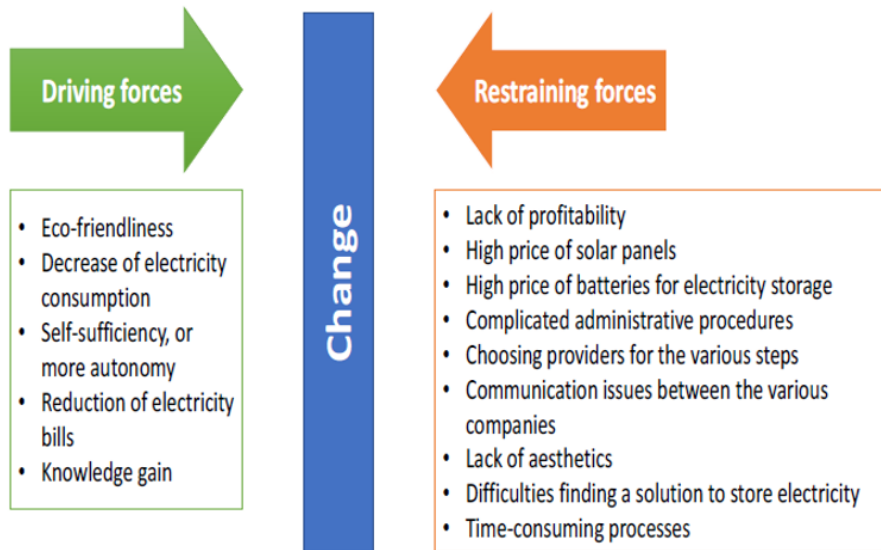


Main outcomes examples

Measuring: Field Forces Analysis

Qualitative Studies

- Methods: interviews; focus groups; in-pilot ethnography
- Artefacts: codebook; personas; journey maps
- Actor-Network maps (stakeholders + relations)
- Scenario extraction with Polygones and VALDA
- Output: attribute list + hypotheses



Main outcomes examples

Measuring: Card-based Conjoint Analysis

Quantitative surveys

- Identify attributes and levels from prior qualitative insights
- Use stratified sampling across key segments and locations
- Provide multilingual instruments
- Ensure ethics and data-protection compliance
- Estimate individual utilities and segment differences

You decide to live in apartment building A.

This building is **not connected** to the regional electricity grid. It is self-sufficient.



This building's electricity mix is **entirely composed of renewable energies**, mainly solar power via photovoltaic panels.

Electricity consumption is charged dynamically: prices are adapted to supply and demand over the current period.



Regarding electricity consumption data, **only one person** in the building, who is responsible for compiling consumption reports, has non-anonymous **access to this data** for all households. Other residents do not have access to consumption data.

On the consumption reports, there is **no comparison** of one's own consumption with that of other households.



Once a **year**, all the residents meet to discuss electricity-related issues.

In the building, electricity consumption is **not monitored by detailed regulations**. There are only a few general rules.



Each household has a quota (quantity of electricity available) that must be respected. The quota is set according to the number of people living in the household and the surface area of the apartment.



The building's residents **are involved in managing** the infrastructure.



Electricity used in common areas, for example for washing machines or recharging electric bikes, is **evenly distributed** over the consumption of each household, independently of the actual consumption of each household in these areas.

Fig. 3. An example of a card (of 6) programmed in Sphinx.

What we learned

- Engagement is a **multi-dimensional construct**
- Effective measurement requires **mixed-method approaches**
- Engagement outcomes are **context-dependent**
- **Interdisciplinary collaboration** is essential for robust indicators
- Lack of **shared definitions and frameworks** limits comparability

Annual report structure (V1.0)

1. Introduction & Purpose

(why indicators matter; what the report aims to do; scope of citizens/consumers/EV–V2X engagement)

2. Conceptual Foundations & Indicator Categories

(main theoretical families: socioeconomic, behavioural, attitudinal, norms, agency, relational models, emotions)

3. Current Indicators & Ontology Proposal

(summary of indicators used in DRIVE2X, XL-Connect, FLOW; grouped variables; preliminary harmonised ontology)

4. Data Space Requirements & Recommendations

(benefits of FAIR data; challenges; key needs: standards, trusted access, ethics, incentives)

Indicators of Engagement – Next steps/Topics next year

- Meeting to discuss themes for next year
- Contributions to the report by five main projects undertaken in past year
- Attendance to Bridge GA: strategies to be implemented
- Elaboration of new topics and strategy for next year
 - Socio-technical integration
 - Systemic engagement (acceptance can be passive) and engagement is closer to the readiness concept.
 - Interdisciplinary engagement
 - Securitization of critical energy infrastructures and oil crisis
 - Indicators: On beneficial usage of AI and implicit sociotechnical risk

Strategies of Engagement



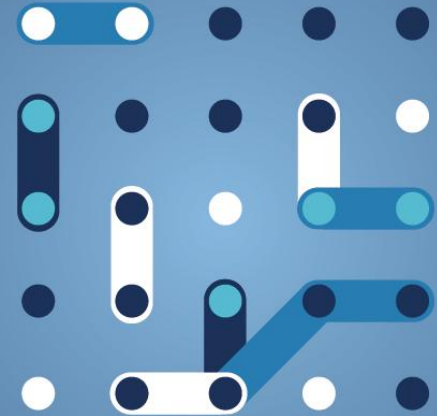
Valeria Palladino
ENEA
EU-DREAM



Yamina Guidoum
LOMARTOV
Air4NRG



Takis Ktenidis
SEALAB – University of West Attica
BD4NRG



Strategies of Engagement

Main focus

- Analyze 4 topics: AI and engagement, inclusivity, capacity building, social acceptance and social readiness
- Gain knowledge and analyze the various engagement strategies applied in European Energy R&I projects
- Identify challenges, failures and success factors associated with these strategies
- Collect and forming best practice

Methods

- Literature review and desktop research
- Analysis of the responses to a member survey
- Analysis of engagement strategies utilized by the member projects through knowledge sharing sessions during our 7 monthly meetings
- CAPACITY BUILDING, USER ENGAGEMENT & INCLUSIVITY workshop: open workshop for WG CCE members to discuss capacity building and inclusivity related to user engagement
- SOCIAL ACCEPTANCE, SOCIAL READINESS AND AI ADOPTION workshop: open workshop for WG CCE members to discuss social acceptance, social readiness related to AI adoption

Contents

1. **Action meetings:** 25/06/2025, 24/09/2025, 24/10/2025, 26/11/2025, 17/12/2025, 28/01/2026 and 25/02/2026
2. **Member survey:** to collect projects general information, their SoE and to select topics for the workshops (31 Horizon Europe projects participated)
3. **Knowledge sharing sessions:** 6 projects presented their SoE during monthly meetings
4. **Workshops:** “Capacity building, user engagement and inclusivity” – 19/02/2026
“Social Acceptance, Social Readiness and AI Adoption” – 16/03/2026
5. **Annual report** – SoE section

SoE – Survey Main outcomes

Engagement Challenges

65–70% Projects report difficulties with user participation, trust and behavioural change

Current Practices

-  **40% Inclusivity focus**
Projects address vulnerable groups and differentiated user needs
-  **25–30% Capacity building**
Limited structured training for facilitators and intermediaries
-  **Main engagement formats**
Workshops and pilot activities, often without systematic training

Emerging Trend AI in engagement

Currently used mainly for:

- data analysis
- personalised services

Rarely used for participatory engagement

SoE – Survey Main outcomes

Inclusivity growing, but uneven

Recognition of vulnerable users is increasing, but inclusivity is not yet systematically integrated across projects

Social readiness rarely assessed

Few projects explicitly evaluate social readiness or societal acceptance, despite challenges related to user trust and participation

AI in engagement emerging

Digital tools are appearing in several projects, raising questions about transparency, trust and accessibility

Beyond TRL

Survey results highlight the need to complement TRL with stronger focus on societal adoption and engagement capacity



Implications for 2025/2026

Priorities for the SoE include:
AI and engagement - Inclusivity strategies - Social acceptance



SoE – Knowledge sharing sessions findings

Name Project	Project Topic	Target Group	Strategies of Engagement	Challenges	Lesson Learnd/ Effectiveness
ThumbsUp (2023-2026)	Thermal Energy Storage adoption	Valladolid test-site residents & EU homeowners	On-site and online surveys; motivational (financial & environmental) messaging; Social norm messaging	TES perceived as new and uncertain; lack of clear impact information; skepticism toward performance;	Environmental framing; social norm increase WTP (Willingness to Pay) increase; clear impact communication is crucial
BeFlexible (2022-2026)	Boosting engagement to increase flexibility	Prosumers, end customers, aggregators, market actors	Tailored value propositions; co-creation; interviews & KPI-based monitoring	Low participation in flexibility; trust and literacy gaps; ensuring long-term adoption	Value propositions drive engagement; mixed qualitative-quantitative evaluation useful
Hycool_IT (2023-2026)	Cooling & management for IT infrastructures	Data center & facility managers, CPU manufacturers	Social media; conferences and events; scientific publications, workshops and project website	Difficulty in reaching a sufficient number of stakeholders and convincing them about the proposed solutions	Events effective but mainly academic; building and maintaining an active stakeholder list needs continuous effort.
DR-Rise (2023-2027)	Residential demand response	SMEs in energy communities (incl. vulnerable groups)	Motivation surveys ; co-creation; energy & digital literacy training	DR adoption barriers; vulnerable group inclusion; language & distance across pilots	Economic incentives + co-design build trust, acceptance and long-term engagement
DYMAN (2024-2027)	Cooling center	Developers, HVAC integrators, data centre managers, policymakers	Conferences & events; publications; EIC Cooling Portfolio clustering; demos and media outreach	Stakeholder engagement; addressing IPR/patent concerns; maintaining long-term engagement with limited resources	Multi-channel dissemination increases visibility; publications and demos strengthen credibility; continued post-project communication
GLocalFlex (2023-2026)	Consumer flexibility in power system	Residential buildings & tertiary buildings, aggregators	Co-creation with social housing providers; app guidance; gamification; financial incentives; community events; newsletters; sociological interviews	Low trust; limited time and technical knowledge; need for simple communication; long-term participation	Simplicity and clear actions increase participation; gamification and financial reward; co-creation strengthens acceptance; community-based incentives; sociological follow-up



SoE – Workshop “Capacity building, user engagement and inclusivity”

“SUPERSHINE project ”

WHAT WORKED

Co-design & co-decision → trust & ownership
Hybrid engagement (digital + workshops) → wider reach
Local facilitators → language & cultural proximity
Inclusive, gender-sensitive, intergenerational methods
Financial support + job opportunities

CHALLENGES/ BARRIERS

Scepticism toward renewables
Engagement drops if limited to design phase → trust fragile
Need continuous communication for renewable acceptance
Ensuring all groups feel included → requires deliberate methods
Financial/affordability concerns
Adapting methods to different ages/genders/cultures

“DEDALUS project ”

WHAT WORKED

Co-creation + technical workshops → trust & understanding
Human mediation via trusted local actors → better participation
Comfort-focused engagement → aligns with users' daily routines
Simple, clear language & interfaces → accessibility for all

CHALLENGES/ BARRIERS

Fear of loss of control & indoor comfort concerns
Low digital literacy → some users struggle with tools
Engagement must start early and continue throughout implementation
Balancing local tailoring with scalable approaches



SoE – “Capacity building, user engagement and inclusivity” - Takeaways

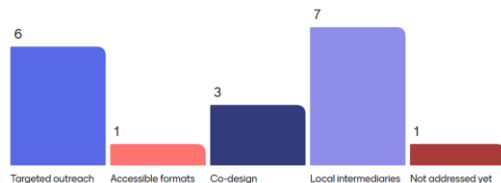
Expert Input: Johanna Höffken, TU/e

Engagement is a continuum	Acceptance as an evolving process	Capacity building as social practice	Energy justice as expanded responsibility
Focus on how people engage, not just if they engage	Built through trust, interaction, and adaptation	Driven by participation and shared understanding	Ensure fairness, inclusion, and societal impact

In your experience, which factor most supports capacity building?



How do you ensure inclusivity in your engagement activities?



◆ KEY BARRIERS

Trust & privacy
Recruitment & retention
Tech complexity
Representation gaps

◆ REALITY CHECK

Inclusivity is operational — not structural

◆ WHAT WORKS

Continuous engagement
Peer learning
Trust-building
Local intermediaries and Targeted outreach

◆ CORE INSIGHT

Engagement is a process — not an event

◆ SHIFT REQUIRED

From one-off actions → to integrated systems

**FINAL
DISCUSSION
FINDINGS**

SoE – Workshop “Social Acceptance, Social Readiness and AI Adoption”

“REEFLEX project ”

WHAT WORKED

Engaged stakeholders via interactive **workshops**

Co-created AI-driven energy solutions

Built trust through participatory activities

Early pilots tested acceptance & concerns

AI optimized energy flexibility & market participation

CHALLENGES/ BARRIERS

Low AI understanding & technical literacy

Hard to **translate workshops into action**

AI risk perception & safety concerns

Aligning algorithms with **societal goals**

Balancing diverse expectations in limited time

Fragmented governance & slow regulation

“DATACELLAR project ”

WHAT WORKED

Strong citizen engagement and **co-creation**

Integration of Social Sciences and Humanities and STEM

Effective use of AI and XAI

User-support tools (assessment)

Increased awareness and collaboration

CHALLENGES/ BARRIERS

Integrating technical and social aspects

Maintaining user engagement

Low trust and understanding of AI

Data quality and bias issues

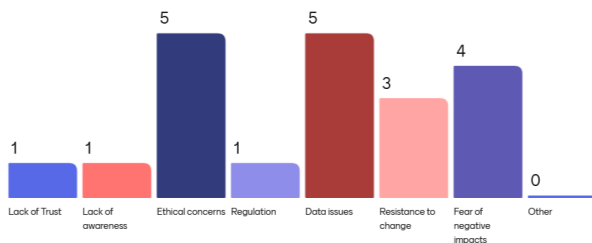
Regulatory and financial constraints

SoE – “ Social Acceptance, Social Readiness and AI Adoption” – Takeaways

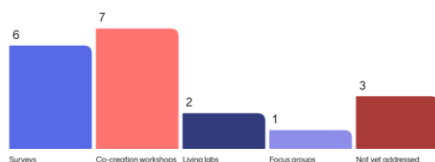
Expert Input: Mihaela Mirea, LOMARTOV

Tech readiness ≠ societal readiness	Governance matters	Efficiency vs. impact	Fragmented regulation, limited transparency	Build trust early
High TRL solutions can fail without public trust and acceptance	AI in energy systems requires strong regulation and oversight	Optimization can conflict with societal needs and create risks	Barriers to responsible AI adoption in energy systems	Engagement and explainable AI are key to legitimacy

What is the main barrier to AI adoption in your context? (select one or more)



How do you currently assess social readiness, based on the following categorize? (select one or more)



◆ KEY BARRIERS

Low trust & citizen engagement
Difficulty sustaining participation
Limited access to local communities

◆ REALITY CHECK

AI is already widely used across projects
Social pilots are growing

◆ AI ADOPTION CHALLENGES

Ethical concerns & data issues
Resistance to change
Fear of negative impacts

◆ WHAT WORKS

Co-creation & participatory approaches
Gamification & structured frameworks
Explainable AI to build trust

◆ CRITICAL INSIGHT

Barriers are social — not technological
Social readiness is not yet systematic

**FINAL
DISCUSSION
FINDINGS**

Strategies of engagement – Lessons learned

LESSONS LEARNED

- **Engagement is often treated as a formality**, yet effective cases show it must be continuous and embedded
- **Co-creation works**, but only when power-sharing is real, not symbolic
- **Local actors are indispensable**, while top-down approaches consistently underperform
- **Inclusivity is acknowledged but rarely operationalised** in a systematic way
- **AI is increasingly used**, but mainly for **technical optimisation** rather than genuine participation
- **Trust-building** requires time and consistency, which most projects underestimate
- **Need for more standardised** approaches and frameworks (e.g. ISO) to support comparability and scalability

KEY OBSTACLES

- **Engagement remains project-driven and short-term**, with no continuity beyond pilots
- **Participation is difficult to sustain**, often dropping after initial phases
- **Low trust persists**, especially around AI, data use, and energy systems
- **Social readiness is largely not assessed** nor integrated into project design
- **Limited digital and technical literacy** creates exclusion risks
- **Representation gaps**: the same “easy-to-reach” stakeholders are repeatedly engaged
- **Regulatory and governance fragmentation** slows down real-world implementation
- **Disconnect** between technical development and societal needs

Strategies of Engagement – Next steps

1. **Annual report finalisation**
2. **Workshops** bringing together the other subgroups or associations to discuss key topics
3. Continue work on **knowledge hub** and/or disseminate our work more widely
4. **Comparative session** where 3–4 projects present and discuss their approaches on a specific topic (creation for small cluster)
5. **Promote our SoE activities** in an artistic way on the projects website

Annual report structure

1. Scope of the work + Who are we? (survey answers)
2. Methodologies of work
3. Literature review (Capacity building, inclusion, AI and social acceptance)
4. Good practices from the knowledge sharing sessions
5. 1st workshop insights – “Capacity building, user engagement and inclusivity”
6. 2nd workshop insights – “Social Acceptance, Social Readiness and AI Adoption”
7. Conclusion and Recommendations
8. How can be useful for the SoE/ how can you use it

Smart Tools



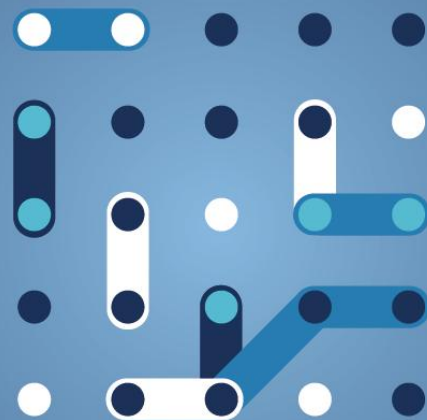
Anastasis Tzoumpas
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Anna Pinnarelli
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Pasquale Vizza
University of Calabria



Smart Tools Sub-Group: Scope

Mission: fostering digital solutions that empower energy users and communities.

Develop replicable, secure, user-friendly, and interoperable tools that can serve the needs of a rapidly digitalizing energy system.

Smart tools are essential for enabling prosumers, consumers, and energy communities to actively engage in the energy transition.

The subgroup identified key thematic areas guiding its work:

- Smart tool development methodologies
- User co-creation and participatory design
- Harmonization and interoperability
- AI integration and ethical frameworks
- Data security and trust
- Replicability, scalability, and societal impact

The subgroup laid the foundation for a **Smart Tools Knowledge Hub:**

collaborative, structured repository to share insights, solutions, and methodologies across BRIDGE projects.



Activities overview

Action Meetings: 7/10/2025, 11/11/2025, 2/12/2025, 13/1/2026

Surveys: a preliminary survey for project mapping

Knowledge hub: collaborative, structured repository to share insights, solutions, and methodologies across BRIDGE projects.

Workshops:

- ✓ 1st BRIDGE CCE WG Smart Tools Workshop (5th of March at 14.30 CET) - AI developments and compliance frameworks
- ✓ 2nd BRIDGE CCE WG Smart Tools Workshop (12th of March at 14.30 CET) - Digital Twins, and Natural Language Interfaces

Annual report: Smart Tools section

Knowledge Hub

Functionalities and structure

Support the development, adoption, and replication of digital solutions across the EU energy ecosystem.

The primary functionalities of this hub will be to:

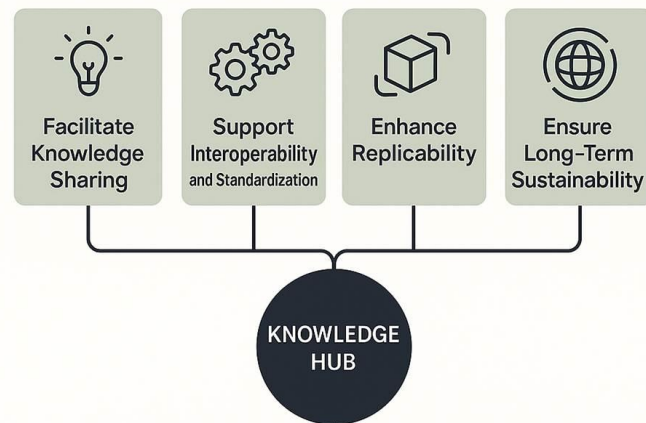
Facilitate Knowledge Sharing: Aggregate and disseminate best practices, methodologies, and lessons learned from EU-funded projects.

Support Interoperability and Standardization: Provide reference frameworks and data models to harmonize efforts across initiatives.

Enhance Replicability: Enable stakeholders to adapt smart tools to various contexts and regional needs.

Ensure Long-Term Sustainability: Act as a continuously evolving resource that extends beyond the lifecycle of individual projects.

Knowledge Hub Functionalities



Knowledge Hub

Technical Domains



Digital Twin Platforms

Enable virtual representations of systems for simulation, monitoring, and optimization

AI & Machine Learning



Support data-driven insights, prediction, and automation



Big Data Analytics

Process and extract value from large volumes of heterogeneous data

Decision Support Systems



Assist stakeholders in informed decision-making



Visualization Dashboards

Offer intuitive, user-friendly interfaces for monitoring, controlling, and interpreting system states

IoT & Edge Devices



Collect real-time data from the field and support decentralized computation

Core Components of the Knowledge Hub

Smart Tools Repository

Methodologies & Best Practices

Thematic Knowledge Base

Interoperability Testbed



European
Commission

Knowledge Hub status update

Tool Maturity Levels (TRL)



Most tools are in the Operational or Pilot Demonstration phase (TRL 6-8).



1st Workshop: AI/ML in Energy Tools & EU AI Act

Navigating the intersection of advanced AI/ML algorithms in energy tools
with the legal requirements of the EU AI Act



AI/ML Integration in Energy Tools

How projects are deploying AI for optimisation, forecasting & user engagement



EU AI Act Compliance

Understanding obligations for energy sector AI systems
— risk classification & requirements



Explainable AI (XAI)

Making AI-driven decisions transparent and understandable to end users



Ethics & Data Security

Responsible AI deployment: bias mitigation, privacy, and user trust



European
Commission

2nd Workshop – Digital Twins & NLI

Focus: Exploring the role of Digital Twins in virtual representation and Natural Language Interfaces (NLIs) in improving user-centric interactivity for energy systems



Digital Twins for Energy

Virtual representation of buildings, microgrids & DERs
— enabling predictive control & scenario analysis



Natural Language Interfaces

LLM-powered conversational interfaces for energy
advisory services and operator assistance



Interoperability & Data Spaces

How Digital Twins connect with data spaces, GAIA-X
and EU energy data infrastructure



User-Centric Interactivity

Making complex energy systems accessible to non-
technical users through intuitive interfaces



Smart tools – Main outcomes

- Smart tools are no longer optional — they are essential infrastructure for participatory, decentralised energy systems.
- AI integration is accelerating, but ethical frameworks and compliance pathways remain underdeveloped in many EU R&I projects.
- Sustainability and transparency are prerequisites for user trust — both ethically and legally under the EU AI Act.
- Cross-project collaboration and the Knowledge Hub are the most efficient paths to compliance and innovation sharing.
- Projects benefit most from early user engagement, iterative development, and standardised data formats and protocols.
- The BRIDGE CCE Smart Tools Subgroup is well-positioned to support projects navigating this rapidly evolving landscape.

Smart Tools 1st Workshop – Key Findings

- AI-driven decision-making is widely adopted across projects, but integration depth and maturity vary significantly.
- Most projects reference the EU AI Act, but implementation of compliance measures remains nascent or ad hoc.
- “Trust” and “privacy” are the top user concerns identified across smart tool survey respondents.
- Only ~30% of projects report being fully prepared for EU AI Act compliance; most are at early or intermediate stages.
- Most requested support: compliance templates & checklists, legal/regulatory expert sessions, and peer learning across BRIDGE projects.
- Compliance awareness is growing: projects recognise the need to embed AI governance from the design stage, not as an afterthought.

Smart Tools 2nd Workshop – Key Findings

- AI-driven decision-making is widely adopted across projects, but integration depth and maturity vary significantly.
- Digital Twins are maturing into active decision-making agents - not just monitoring dashboards.
- NLI is the critical missing link between technical DT outputs and citizen-level engagement and action.
- Semantic interoperability (CIM, SAREF, DTDL) is the top technical bottleneck - projects must agree on standards early.
- EU Energy Data Spaces (GAIA-X, IDSA) provide the governance architecture - BRIDGE projects should align DT data models now.

Smart Tools – Lessons learned

AI Compliance & Ethics

1

EU AI Act is law

High-risk AI in energy systems face binding obligations — documentation, oversight, transparency & bias management are mandatory

2

XAI is both ethical and strategic

Explainable AI builds user trust and regulatory confidence — integrate it from the design stage, not as an afterthought

3

GDPR + AI Act alignment

Both frameworks apply simultaneously — use ALTAI self-assessment and combine DPIA with AI risk assessment

4

Shared learning is essential

BRIDGE projects should pool compliance experiences via the Knowledge Hub — avoid duplicating compliance work



Smart Tools – Lessons learned

AI Compliance: Practical Steps for BRIDGE Projects

A structured approach to AI Act compliance for energy R&I projects:

1

Classify your AI system

Determine risk category — does your AI interact with critical energy infrastructure? Does it affect users' fundamental rights?

2

Document AI systems

Maintain technical documentation: intended purpose, performance data, training data characteristics, known limitations

3

Implement XAI mechanisms

Integrate explainability tools (SHAP, LIME) — users must understand AI-driven decisions affecting their energy usage

4

Ensure Human Oversight

Design override mechanisms — humans must be able to intervene in automated energy dispatch and DR decisions

5

GDPR + AI Act alignment

Combine data protection impact assessments (DPIA) with AI risk assessments — use ALTAI self-assessment checklist

6

Bias testing & monitoring

Test for demographic bias in ML models — implement fairness metrics and continuous monitoring during deployment



Annual report structure

4 Smart Tools

4.1 Scope of the Work

4.1.1 Refined Mission and Thematic Focus

4.1.2 Key Focus Areas for 2025

4.2 Methodology of Work

4.2.1 Data Collection

4.2.2 Collaborative Sessions

4.2.3 Workshops

4.2.4 Projects spotlight

4.3 Smart Tools Inventory: Key Insights and Analysis

4.3.1 Overview of Profiled Tools

4.3.2 Tool Maturity Analysis

4.3.3 Stakeholder and Lifecycle Mapping

4.4 Key Deliverable: The Smart Tools Knowledge Hub

4.4.1 Mission and Primary Functionalities

4.4.2 Core Components and Technical Domains

4.4.3 Repository Structure

4.5 Key Topics and Cross-Cutting Themes

4.5.1 AI Developments and Compliance

4.5.2 Digital Twins, Data Spaces, and Interoperability

4.5.3 Replicability, Scalability, and Standardization

4.6 Conclusions

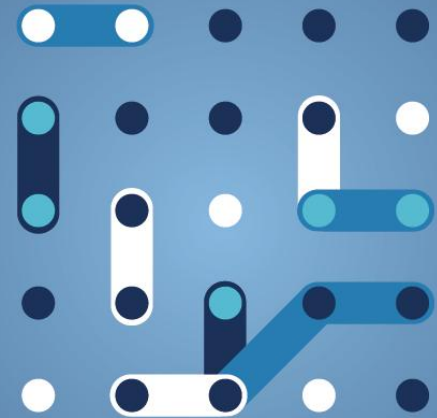
4.7 Next Steps



Smart Tools – Next steps

- **Annual Report (Smart Tools section):** First draft available.
- **Cybersecurity & Data Security for AI Energy Tools:** Launch a dedicated working stream on secure AI deployment for energy applications.
- **AI Ethics in Energy Tools:** Develop practical governance frameworks and guidance for ethical AI deployment in citizen-facing energy tools.
- **Knowledge Hub expansion:** Integrate Digital Twins and NLI tool profiles; explore alignment with Indicators data space.
- **Cross-WG collaboration:** Deepen coordination between Smart Tools and Indicators subgroups on common ontologies and shared metrics.

Developing next year's program



Some initial reflections

- With regards to the energy transition, **technically we know relatively well how things can be done**
- What we are **currently lacking is the uptake of our solutions by the people**
- From our research we know that citizens want **trust, ease of use, comfort, agency and benefits** from new solutions (just helping the climate is not sufficient). This is not always delivered by the technical developments. Specific aspects of technical developments can **hamper the development and/or are difficult to bring under one hat**:
 - AI solutions might allow increasing automatisisation, ease of use and probably also comfort, but it can decrease trust and (human) agency
 - Making systems super safe might decrease the ease of use and automatisisation possibilities
 - Personal benefits (aka money) might not be as high as wished by citizens
- A **balancing of these aspects is difficult but needed** and can be assisted by:
 - Early involvement of citizens and true consideration of citizens feedback (which makes the planning of projects very complicated)
 - Long-term replication and uptake strategies (and the question how we can measure early on the uptake potential of solutions)
 - Societal Readiness

Interactive session

For each subgroup (mentimeter + discussion) - 35 minutes (total):

- 1. Proposal and evaluation of topics from subgroup leaders (mentimeter)*
- 2. Proposal of topics from WG members (mentimeter)*
- 3. Reflection: why are these topics important for you? (discussion)*

WG level (discussion) - 15 minutes:

- 4. Identification of priorities, proposal of tools and of possible output*



Interest in topics for 2026 – 2027 work plan

Topics

01

How to design projects to allow for continuous citizen engagement?

02

Long term engagement

03

AI

04

Increasing and ensuring trust

05

Capacity building

06

Energy literacy

07

Societal readiness

08

Digital twins

09

Vulnerable groups

10

Energy Poverty

Strategies of Engagement: potential relevant topics

**AI and
engagement**

**Medium-term engagement
and how to institutionalize
engagement**

Inclusivity

**New methodologies to engage
and application exercises**

**Stakeholder
engagement on Highly
Technical Content**

Smart Tools: potential relevant topics

Cybersecurity and data security for AI
energy tools

AI ethics and governance in citizen-facing
energy tools

Digital Twins and Natural Language Interfaces for citizen
engagement

Semantic interoperability and EU Energy
Data Spaces alignment

Knowledge Hub expansion and cross-
WG collaboration

Indicators of Engagement: potential relevant topics

Socio-technical integration

Systemic engagement (acceptance can be passive) and engagement is closer to the readiness concept.

On beneficial usage of AI and implicit sociotechnical risk

Interdisciplinary engagement

Securitization of critical energy infrastructures and oil crisis



Interactive discussion

To vote for and suggest relevant topics for next year, in person participants and online participants can scan the QR Code to participate in the pool through Mentimeter



Scan for the Metimeter
Or insert 1881 4667 on menti.com

You will be invited to:

- ***Vote for your preferred topics***
- ***Suggest additional topics***
- ***Justify and disucss your answers***

Discussion at WG level

What are the **priorities**?

Which tools should we use?

What outputs should we produce?

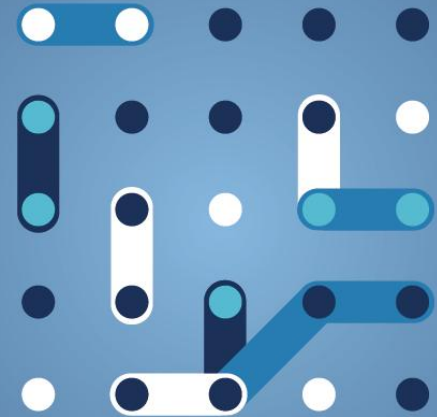


Next steps at WG level

- Compile information for the report
- Define focus topics for the next circle
- Increase relevance of our work for projects
- Getting the knowledge-hub operational

Breakout rooms for WGs discussion

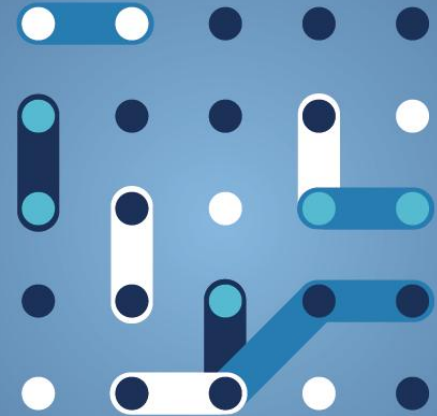
Parallel Session 2 – Business Models
WG





Breakout rooms for WGs discussion

Parallel Session 2 – Business Models
WG



Program for BM breakout session

Topic	Duration	Description	Speaker
Business Models WG overview	5 minutes	Overview of objectives and participation to the WG	Andrej Gubina, honorary co-chair
Task 1	15 minutes	Workplan 2025 achieved (Objective, activity, main outcomes, lessons learned)	- Gonçalo Mendes, LUT University, DriVe2X - Luisa Matos, LUT University, DriVe2X
	30 minutes	Discussion and set up of activities for 2026	
Task 2 + 3	10 minutes	Workplan 2025 achieved (Objective, activity, main outcomes, lessons learned)	Rafael Rodrigues, D4P, COP-PILOT
	20 minutes	Discussion of results: Repository	
	20 minutes	Discussion and set up of activities for 2026	
2025 Wrap up and vision conclusion	20 minutes	Wrap up of vision for each task and preparation of speech for last session	Andrej Gubina, honorary co-chair

WG Business Models



The Working Group on Business Models aims at **defining common language and frameworks around business model** description and valuation, identifying and evaluating existing and new or innovative business models from the project demonstrations or use cases. The efforts of the Working Group are directed towards two specific areas of interest, namely:

- The **design of tools to evaluate the benefit and values of the services and solutions** developed in the activities of the projects, including the investigation of the tools to capture business ideas and build the Business Model and the quantification methods for Business Models benefits of services and solution under various Use Case scenarios.
- **Designing a business model** that better incorporates the integration of the data value chain and the monetisation of data, where better observability creates additional social value.

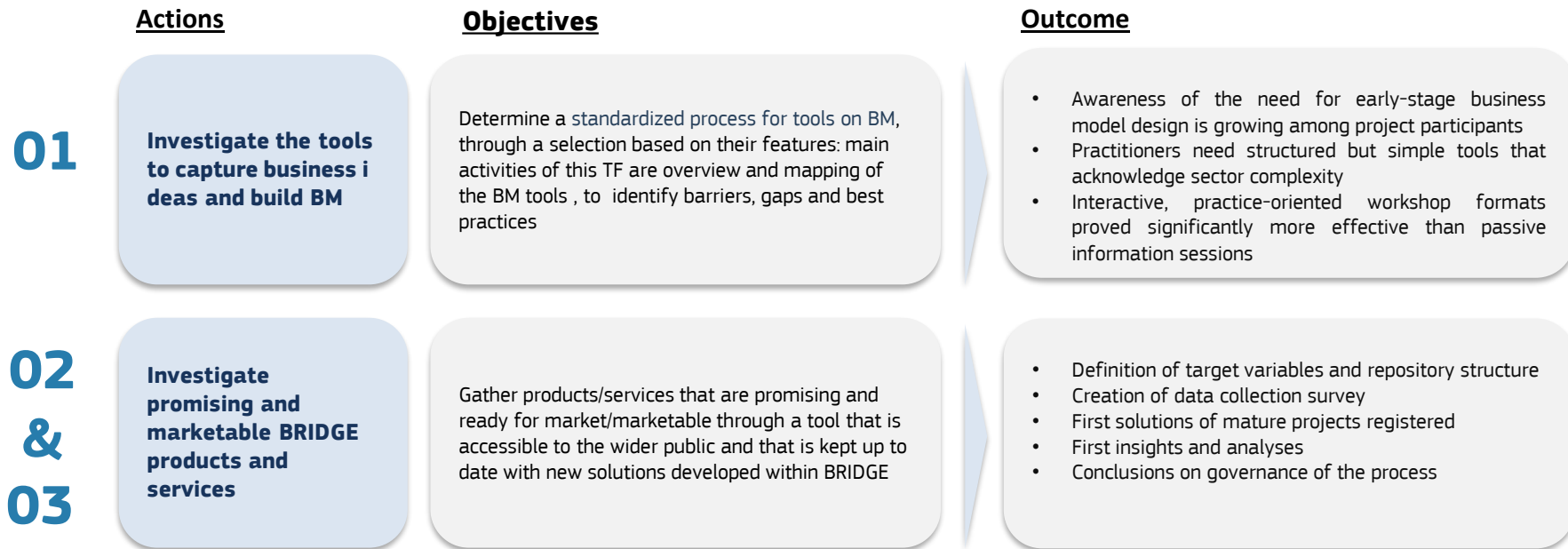


>80 projects



**>180 people
involved**

WG Business Model





Task 1 update: Investigate the tools to capture business ideas and build BM



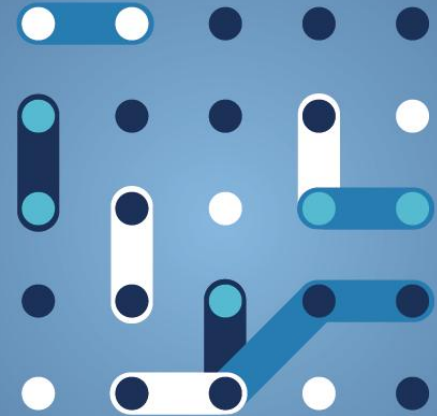
Cláudia Marante
*Catolica Lisbon SBE
exPEDite*



Gonçalo Mendes
*LUT University
DriVe2X*



Luisa Matos
*LUT University
DriVe2X*



Task 1

Main focus

- Increase awareness among R&I projects to the relevance of designing viable and sustainable BMs early on, with a dynamic approach, maturing it through the project life cycle.
- Co-design a Business Model Handbook (BMH), including useful templates, best practices, project examples, etc., to support business model mapping and design
- Encourage a sustainable value creation mindset for R&I activities
- Empower and equip participants with essential tools for developing successful BMs

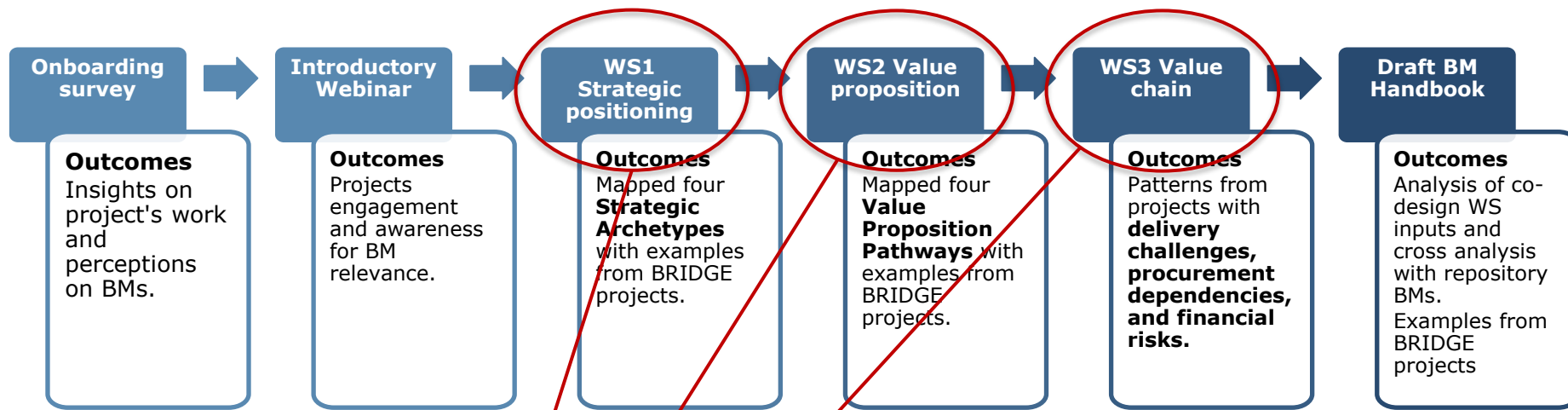
Methods

- Onboarding survey
- Introductory webinar
- **SV² Multilevel BMI framework** dedicated to smart energy projects
- Interactive online event with audience engagement
- Stakeholder consultation and co-design workshops (x3)

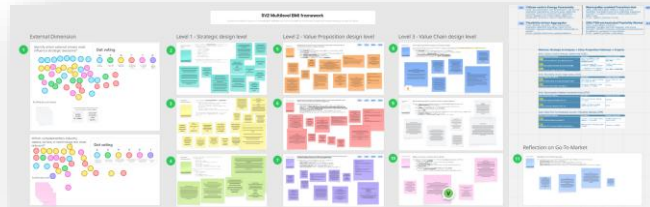
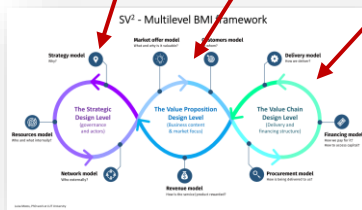
Task 1 – Contents

- Framework and tools
- Main outcomes and results
- Lessons learned
- Next steps
- Annual Report Structure

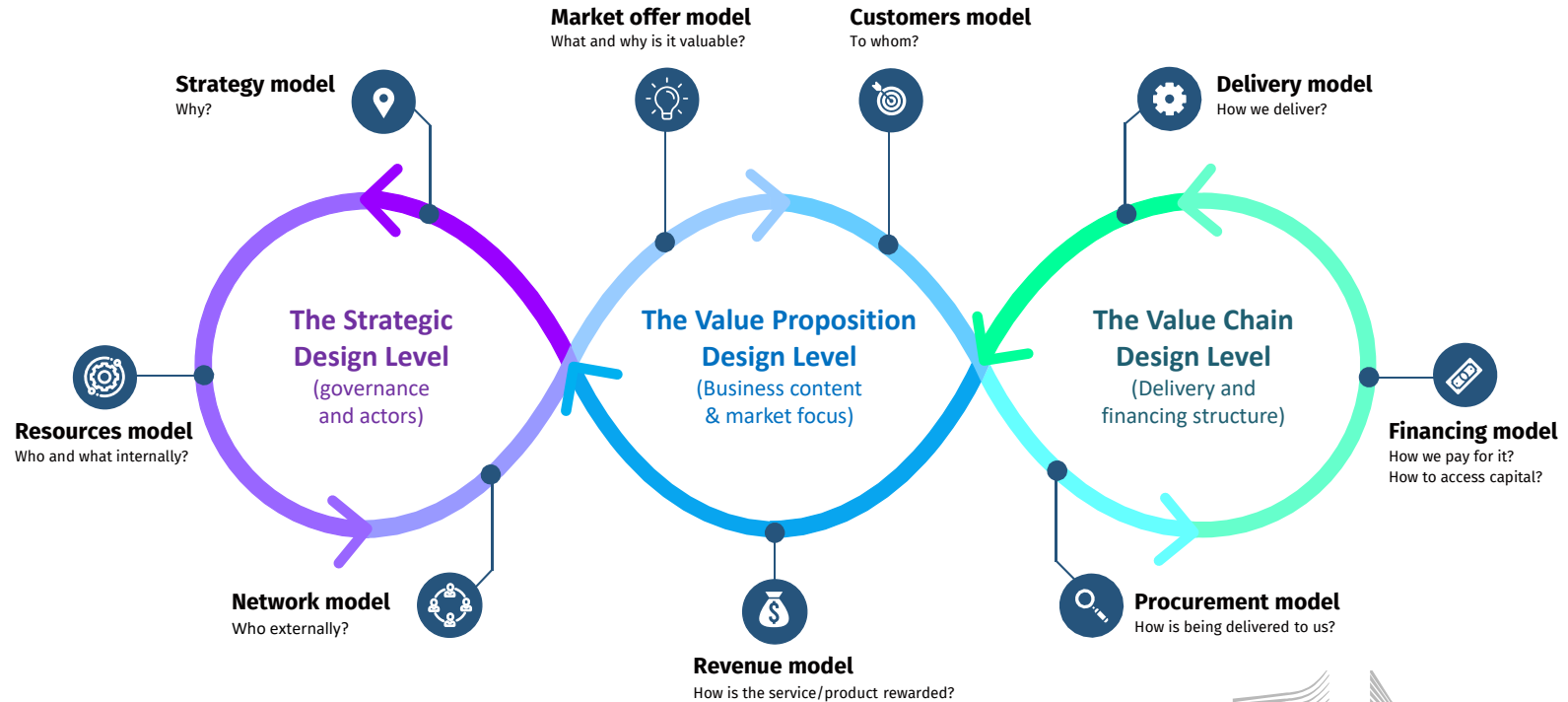
Task 1 – Main outcomes



Tools and BM journey framework

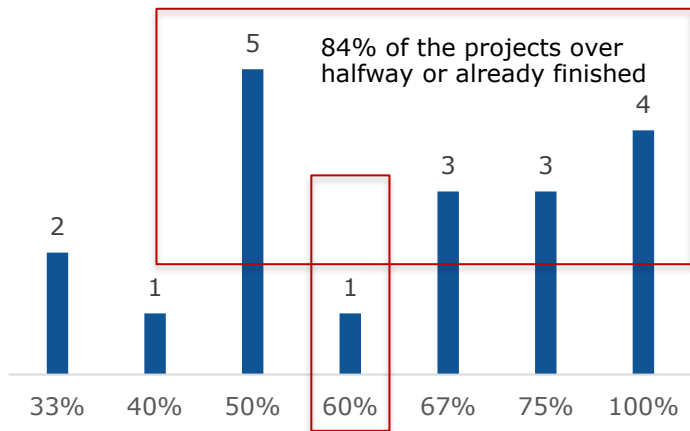


SV² framework



Task 1 – Survey results (1)

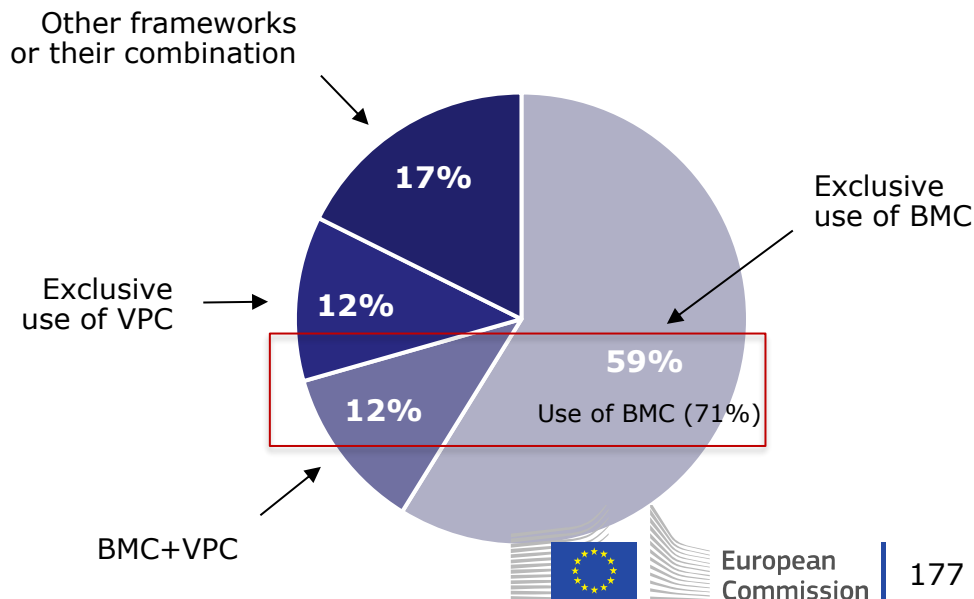
Level of completion of the projects (%)



Only 1 project out of 19 did NOT consider/was not developing BMs

Overwhelming majority is currently developing BMs by using the BMC

What framework(s)/tool(s) does the project use to develop BMs?



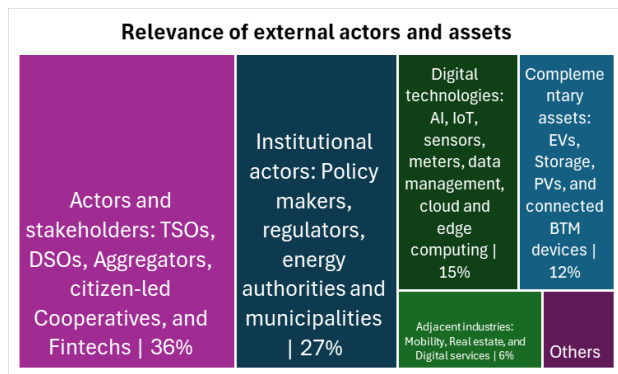
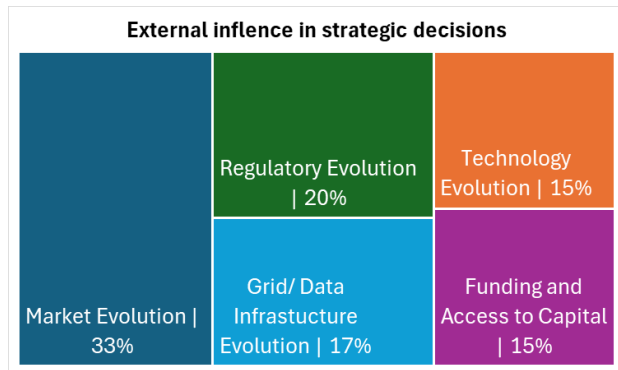
Task 1 – Survey results (2)

- *Do you recognize the value of developing business models in R&I projects?*
 - **Strong consensus:** BMs widely seen as essential for translating R&I results into real-world impact and commercialization
 - **Key themes:** Commercial viability, KERs, High TRLs, scalability, stakeholder alignment, and post-project sustainability
- *What are the key barriers?*
 - ✓ **Limited understanding and engagement** (research-focused mindset)
 - ✓ **Institutional and regulatory fragmentation** (funding gaps, reliance on subsidies)
 - ✓ **Skills and capacity gaps** (limited expertise, weak BMs development)
 - ✓ **Non-replicable models** (non-scalable, weak alignment with real world)
 - ✓ **Data complexity and contextual sensitivity** (difficult techno-economic validation)
 - ✓ **Multi-value complexity** (difficulties in building business cases)



Strategic positioning WS1 | Results

1 External Drivers



2 Strategic intents

- Citizen participation a core driver/ key for adoption
- Dual financial motivations: cost reduction/ new revenues
- Flexibility optimisation as a technical priority
- Local decarbonisation connected to user engagement
- Emerging intents: autonomy, resilience, sustainable mobility

3 Internal resources and capabilities

- Digital/data capabilities are essential
- Organisational capacity is critical
- Physical assets are relevant, but integration is more important
- Regulatory and market expertise are often externalised
- Social engagement and energy literacy remain major gaps

4 Network and ecosystem configurations

- Community-led (REC/EnCom)
- Municipality-driven
- Aggregator/retailer-led
- DSO/TSO-centric
- Technology providers as enablers

Value proposition design WS2 | Results

5 Market offer insights and patterns

- Digital optimisation is core (EMS, dashboards, forecasting, data-driven decision support)
- Transparency and visibility is very relevant (community dashboards, clear benefits, real-time data)
- Flexibility as a key product ((DR, V2G, arbitrage, grid support)
- Autonomy and resilience priority (shared PV, storage, local optimisation)
- Integrated services (energy, mobility, circular economy, digital)

6 Customer model insights and patterns

Main customer segments

- Citizens, prosumers, EnerCom
- Municipalities, public authorities
- SMEs and industrial actors
- DSOs, TSOs, aggregators

Common needs

- Lower/more predictable energy costs
- Reliability, simplicity, and clarity
- Tools that reduce complexity
- Trust, transparency, and control

Recurring barriers

- Low energy literacy
- Technical and regulatory complexity
- Lack of clear incentives
- Distrust of automation & new models

Trust mechanisms

- Community governance
- Transparent data and rules
- Demonstrations and pilots
- User-friendly digital tools

7 Revenue model insights and patterns

Direct revenues

- Subscriptions
- Software licensing
- Energy sales
- Service fees

Indirect revenues

- Bill savings
- Energy arbitrage
- Peak reduction and avoided OPEX
- Avoided grid reinforcement

Community-based revenues

- Dividends
- Local reinvestment
- Shared savings
- Social return and local employment

Market-based revenues

- Flexibility markets
- Spot/balancing markets
- V2G trading
- Grid services



Value chain design WS3 | Results

8 Delivery model key patterns

Critical Processes: Onboarding, data pipelines, forecasting, monitoring, communication, governance, support.

Operational Risks: Poor data quality, interoperability failures, unpredictable user behaviour, poor governance and communication.

Scalability risks: Support capacity collapses first, Engagement declines without incentives, Technical variability explodes, Governance becomes unsustainable

9 Procurement model key patterns

External Dependencies: HW (EVs, batteries, sensors), EMS, smart meter data, DSOs, municipalities, aggregators.

Risks: Vendor lock-in, interoperability issues, supply chain delays, regulatory bottlenecks, underperforming assets.

Mitigation Strategies: Modular procurement, open standards, supplier redundancy, early regulatory engagement, long-term partnerships, behavioural training to guide user actions.

10 Revenue model insights and patterns

Main Cost Drivers: CAPEX (hardware, prototypes), OPEX (support, hosting), digital development, compliance, integration, support for vulnerable users.

Funding Mechanisms: Grants, municipal budgets, cooperative shares, blended finance, industrial partnerships.

Financial Risks: Long payback periods, regulatory uncertainty, immature markets (flexibility, V2G, P2P), underestimated support costs, supply chain volatility.

Risk-Reduction Strategies: Modular scaling, bundling mature and innovative services, transparent performance data, early prototypes, diversified funding.



Strategic Archetypes | Value Proposition Pathways | Projects

Value Proposition Pathway	Projects (examples)
Strategic Archetype 1) Citizen-Centric Energy Community (CEC)	
Pathway A) Community Flexibility & Energy Sharing Service	MASTERPIECE, COMPILE, INNO-TREC, DriVe2X
Pathway B) Local Renewable Generation & Autonomy Bundle	COMPILE, Bluebird, DriVe2X
Pathway C) Social Value & Engagement Package	INNO-TREC, MASTERPIECE
Strategic Archetype 2) Flexibility-Driven Aggregator (FdA)	
Pathway A) Demand Optimisation & Energy Arbitrage Service	Bluebird, INNO-TREC, EV4EU
Pathway B) Forecasting & Grid Support Intelligence	WindTwin
Strategic Archetype 3) Municipality-Enabled Transition Hub (MTH)	
Pathway A) Integrated Energy & Mobility Services	NEVERFLAT, EV4EU, DriVe2X
Pathway B) Circular Economy & Seasonal Services	Reboat
Strategic Archetype 4) DSO/TSO Orchestrated System Flexibility Market (SFM)	
Pathway A) Local Flexibility Market Enablement	COMPILE, Bluebird, EV4EU, DriVe2X
Pathway B) Integrated Grid Services & Digital Infrastructure	PEDvolution, COMPILE

Task 1 – Sneak peek into BMH

TOC draft

- 0. Preface
- 1. Introduction to BMI in Energy Systems
- 2. Strategic Design Level
 - 2.1 Framework implementation
 - 2.2 Strategic Intents
 - 2.3 Resources & Capabilities
 - 2.4 Network & Ecosystem Configurations
 - 2.5 Strategic Archetypes
- 3. Value Proposition Design Level
 - 3.1 Framework implementation
 - 3.3 Market Offer Model
 - 3.4 Customer Model
 - 3.5 Revenue Model
 - 3.6 VP Pathways by Strategic Archetype
- 4. Value Chain Design Level
 - 4.1 Framework implementation
 - 4.2 Delivery Model
 - 4.3 Procurement Model
 - 4.4 Financial Model
- 5. External Drivers
- 6. Go to Market Strategy
- 7. Cross Cutting Patterns and Lessons Learned
- 8. Hands-on advice for non-business experts
- 9. Case Studies from BRIDGE Projects
- 10. Templates & Worksheets (Toolkits)
- 11. Final Recommendations
- 12. Annexes



BMH - 10. Templates & Worksheets

Fillable
worksheets

Guiding
instructions

Example
completions
from BRIDGE
projects

Level 1	STRATEGIC DESIGN	Strategy Model	Resources Model	Network Model
		Why? • Example from BRIDGE • Text	Who and what internally? • Example from BRIDGE • Text	Who externally? • Example from BRIDGE • Text
Level 2	VALUE PROPOSITION DESIGN	Customers Model	Market Offer Model	Revenue Model
		To whom? • Example from BRIDGE • Text	What and why is it valuable? • Example from BRIDGE • Text	How is the service/product rewarded? • Example from BRIDGE • Text
Level 3	VALUE CHAIN DESIGN	Delivery Model	Procurement Model	Financing Model
		How do we deliver? • Example from BRIDGE • Text	How is it being delivered to us? • Example from BRIDGE • Text	How do we pay for it? How to access capital? • Example from BRIDGE • Text



Task 1 – Lessons learned

- There is **growing acknowledgment of the importance of BMs** design from the early start of the project and how to implement it
- Project participants need **structured, simple but well guided design tools**, acknowledging the complexity of deploying BMs in this sector
- Interactive, **practice-oriented sessions proved highly engaging** and seem to facilitate learning opportunities and real project examples

Task 1 – Next steps

- Complete the analysis of series of WS (including incorporation of non-synchronous feedback) and **fine-tune key outcomes**
- Prepare and circulate **draft of BMH**, post-BRIDGE GA
- Final version of the **BMH** towards the summer
- Reflect on how to leverage and turn BMH into **an easy-to-use/practical tool** for use by future projects

Annual report structure

Draft

2. TASK 1: INVESTIGATION OF THE TOOLS TO CAPTURE BUSINESS IDEAS AND BUILD BM

2.1 Scope of the work 

2.2 Methodology and framework 

2.3 Onboarding survey 

2.4 Co-design workshops 

2.5 Business Model Handbook Development 

2.6 Contribution to BRIDGE Working Groups 

2.7 Conclusions 

Discussion questions

1. *How effective was Task 1's work in raising awareness towards importance of BMs in R&I and supporting BM design?*
2. *What are your plans regarding the adopted BM framework?*
3. *How useful and practical you think the Business Model Handbook (BMH) can be??*
4. *In which topics should Task 1 focus on for next year?*



**Scan for the Metimeter
Or insert 1371 6663 on
menti.com**

Task 2+3 update: Identification of promising and marketable BRIDGE products and services



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UBITECH
ODEON



Rafael Rodrigues

Digital for Planet
COP-PILOT



Athanase Vafeas

Dowel Innovation
LocalRES



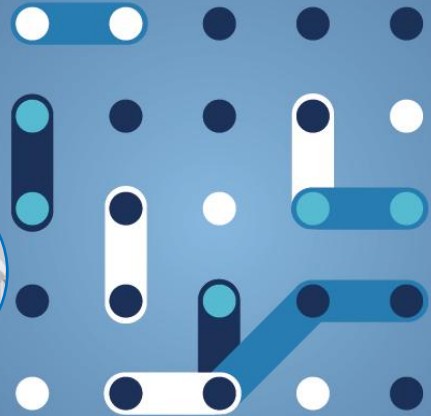
Natalie Samovich

Enercoutim
INSIEME



Habib Nasser

RDIUP
FlexCHESS



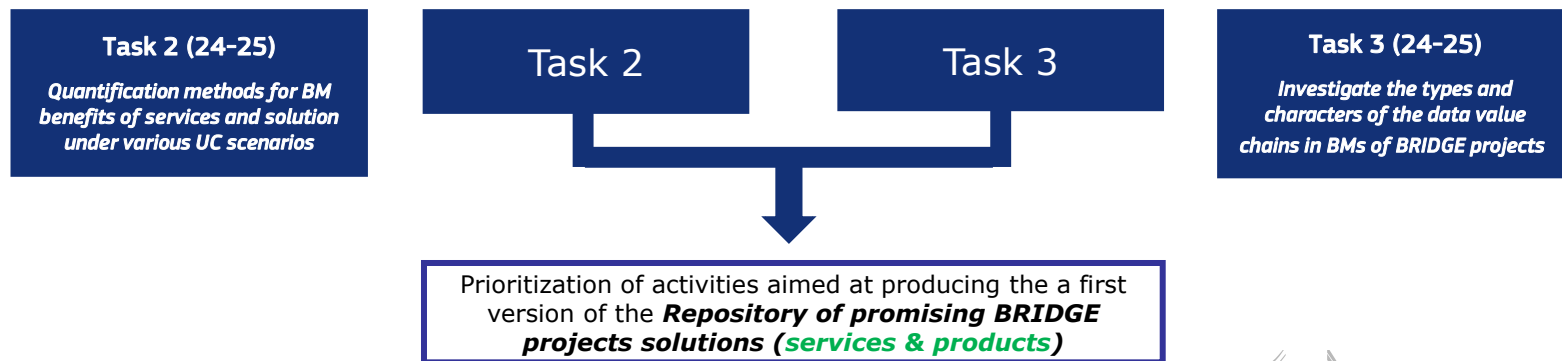
Task 2+3 – Contents

1. *Last years' request*
2. *Description the work done*
 - *What was the process?*
3. *Description of the status*
 - *Where are we now?*
4. *Results*
5. *Statistics*
6. *Discussion on the Repository*
7. *Mentimeter and feedback from the participants*

A new organisation of the WG activities for 2025-2026

Following the General Assembly 2025, the European Commission requested the Business Models WG, to focus effort on developing a tool that gathers all solutions developed by BRIDGE projects that are close or ready for the market, with assistance from the Secretariat.

The following organisation was proposed to accomodated the EC's request:



Task 2+3: Promising and marketable BRIDGE products and services



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Questions: Q1) how to define what is a 'promising and marketable solution? Q2) how to identify them? Q3) which characteristics to record in the repository? Q4) which resources to maintain a regular update of the repository? Q5) how to facilitate discoverability and showcasing of solutions?



Topics: market readiness and uptake of a selection of solutions developed by BRIDGE projects; Knowledge sharing and cross-WG collaboration; Data collection, validation, and compliance (GDPR/CCPA); Continuous monitoring and updating mechanisms.



Expected outcomes: A pilot repository (e.g. Excel) of BRIDGE products/services, tagged by market readiness and uptake potential validating the proposed functional objectives on a sample representative of Bridge projects (e.g., visibility of innovation outputs for policymakers, industry, and other stakeholders; ensure cross-WG synergies ; support for market uptake of BRIDGE innovations; sustainable governance model for maintenance and long-term availability



Objectives: O1) to create a structured repository of promising and marketable BRIDGE solutions (products, services, components) that is fitting to the users' needs, regularly updated by the Bridge community. O2) the repository enables side work to this task 2+3, e.g. analysis of business models of the solutions



Methodology: Step 1) to identify the expected users of the repository and their specific needs; Step 2) to validate the scope, the functional objectives and governance (roles & responsibilities); Step 3) to collect records from a sample of projects and propose a pilot on a limited scale; Step 4) to assess the collection & repository design process for expansion; Step 5) to define GDPR compliant protocols for update.



Possible collaborations: foster collaboration (1) among Working Groups (WGs) and with the Commission; (2) with the targeted Bridge projects.



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Task 2+3: Investigate promising and marketable BRIDGE products and services

Task 2+3 (new)	Activities
Definition: Investigate promising and marketable BRIDGE products and services Output: Repository of promising BRIDGE solutions	1. Kick-off meeting with WG leadership to validate the scope of the repository, the workplan (surveys, interviews, meetings) and gather feedback/interest from WG participants.
	2. Define roles and responsibilities within the leadership to compile, maintain and update the repository, as well as engagement responsibilities.
	3. Data collection: Define pool of projects, liaise with leaders from other WGs for suggestions and choice validation, consolidation of the array of variables to be included, identification of possible sensible data and ensure compliance with laws on data protection (GDPR/CCPA, user consent).
	4. Drafting of the repository will be carried out with support of the Secretariat. Complementary material for dissemination (e.g., fact sheets) could be produced.
	5. Possible collaboration with other WGs and knowledge sharing
	6. Disseminate a first draft by beginning 2026 for feedback from the Commission and Projects. Integrate feedback and continue working.
	7. BM WG to act as penholder of the repository, updating the list of BRIDGE solutions that meet requirements for inclusion and implementing improvements on a routinely basis.

Repository of promising BRIDGE solutions

Purpose: Gather products/services that are promising and ready for market/marketable

Form: An easily accessible and user-friendly tool at the disposal of the BRIDGE community which is constantly updated with new solutions.

Task 2+3: Repository of promising solutions

Process to Define and Validate Repository:

- ✓ Initial Discussion with WG Leaders
- ✓ Draft Proposal Shared and Reviewed
- ✓ Feedback form DG ENER & CINEA
- ✓ Data collection
- ✓ Preliminary results and analysis
- Final results of first round of data collection
- Submission to annual report

✓ Save a backup on your local computer (disable if you are using a public/shared computer)

Repository Business Model Working Group

Fields marked with * are mandatory.

Disclaimer

The European Commission is not responsible for the content of questionnaires created using the EUSurvey service - it remains the sole responsibility of the form creator and manager. The use of EUSurvey service does not imply a recommendation or endorsement, by the European Commission, of the views expressed within them.

Repository Business Model Working Group

The purpose of this questionnaire is to collect structured and comparable information on the most promising products and services developed within BRIDGE projects. It aims to create a comprehensive repository that highlights innovation potential, market readiness, and exploitation strategies across projects. The information collected will help identify synergies, promote best practices, and enhance visibility of products and services within the energy innovation community, ultimately contributing to the effective uptake and scaling of project results at EU level.

To build the Repository of promising products and services, the following assumptions are made:

- Only solutions from mature BRIDGE projects recently concluded or approaching their conclusion are considered. In this first iteration, **projects ending between September 2025 and June 2026** have been selected from the BRIDGE database and have been sent this questionnaire.
- The questionnaire interrogates projects about their developed products and services. **A maximum of 3 products and/or services** may be selected by each project. You are required to fill out the survey as many times as the number of products/services you would like to report.
- For example, if you would like to report on 3 products/services, which is the maximum, you need to fill in the survey 3 times for each of them).

General Information - Description

This section provides the essential **descriptive information** required to identify, classify, and contextualize each product/service.



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Task 2+3: Repository of promising solutions

28 projects selected to contribute repository*

2LIPP

AdvanSiC

Blades2Build

COMMUNITAS

Data Cellar

DEDALUS

EDDIE

EV4EU

Every1

FlexCHESS

FLOW

HVDC-WISE

INTERSTORE

Intnet

ISLANDER

i-STENTORE

localRES

MAESHA

MASTERPIECE

PARMENIDES

R2D2

RE-EMPOWERED

RESCHOOL

RESONANCE

SERENE

SUREWAVE

SYNERGIES

XL-Connect

*In **green** all project that have contributed to the Repository (18/28)

Reported solutions 25

Repository Structure

- *Survey Assessment*
 - Product Characterisation (tech, TRL)
 - Governance (ownership, model)
 - Partnerships (ecosystem, gaps)
 - Market Potential (users, sectors, IP)
 - Business Model (revenue, costs, channels)
 - Supporting Evidence (pilots, demos)

Repository

- *The result is a working tool:*
 - *Currently in Excel format, with 49 columns*
 - *It was designed **to be a repository** and not only a questionnaire*
 - **Calibration** is ongoing and initial PoC is validated
 - *UX is easy to use*
 - *UI is the next step*

Repository Snapshot

Columns refer to descriptors from the description to exploitation features

**1 entry = 1
key
exploitable
result
submitted by
a BRIDGE
project**

BM_WG_Repository_06.03

Search for tools, help, and more (Option + C)

Rafael Rodrigues

File Home Insert Share Page Layout Formulas Data Review View Help Draw

Comments Catch up Editing Share

12

	A	B	C	D	E	F	G	H	I	J
1	Alias	repository_BM_WG								
2	Export Date	3/6/2026 18:00								
3										
4	Project Acronym	Project Description	Product/service title	Product/service descri	Please select the techn	Other technologies - p	Please select the achie	Is the product/service	Please indicate the nar	Please indicate
5	MASTERPIECE	MASTERPIECE project i	MAPS Digital Energy Ci	The MAPS Digital Ene	1. Energy management systems;2. Data space TRL 8		No			MAPS SpA
6	Int:net	Across the EU, organis	IntPPC - Interoperabil	In a nutshell, IntPPC pr	2. Data spaces and int	Social network	TRL 6	No		B.A.U.M. Consu
7	ISLANDER	Borkum is an island of	Power Electronics for	This KER focuses on po	1. Energy management systems;5. Energy stor		TRL 7	No		ZIGOR CORPOF
8	Every1	Every1 is a Horizon Eur	Cost-Benefit Analysis	(A structured methodol	1. Energy management systems;2. Data space TRL 7			Yes	INESC-TEC; Joanneu	Research
9	Blades2Build	Blades2Build evaluates	Holcim ECOPact Concn	Holcim ECOPact Concn	12. Other	Recycling end of life w	TRL 8	No		The demonstra
10	ISLANDER	ISLANDER paves the w	Advanced IT tool for th	The Advanced IT Tool i	1. Energy management systems;5. Energy stor		TRL 7	No		AYESA
11	ISLANDER	ISLANDER paves the w	Smart Energy and Flexi	The Smart IT platform	1. Energy management systems;3. AI-based fc		TRL 7	No		AYESA
12	i-stentore	The project is examinir	Energy Management S	Through a Digital platf	1. Energy management systems;2. Data space TRL 7			No		Univeristy of M
13	DEDALUS	DEDALUS develops dat	FLEXIT - Flexibility Inte	FLEXIT is a machine-le	1. Energy management systems;3. AI-based fc		TRL 7	No		FLEXIT foregrov
14	Every1	Every1 enables inclusi	Learning materials	Various learning mater	12. Other	Every1 develops no te	TRL 6	No		The Open Univ
15	EDDIE	The European Distribu	EDDIE, AIIDA	The European Distribu	2. Data spaces and interoperability platforms; TRL 7			Yes	Idea, enterprise architecture and futur	
16	RE-EMPOWERED	RE-EMPOWERED has d	ecoMicrogrid	ecoMicrogrid is an EM	1. Energy management systems;4. Smart met		TRL 7	Yes	ICC5-NTUA, PROTASIS SA	
17	Interstore	InterSTORE aims to sin	InterSTORE Data Space	Interstore Data Space	(2. Data spaces and interoperability platforms		TRL 7	No		Engineering Ing
18	COMMUNITAS	COMMUNITAS will pro	Knowledge base for en	The project will deliver	11. Apps for demand-side flexibility		TRL 7	Yes	Centre for New Energy Technologies (f	
19	R2D2	R2D2 aims at improving	ARGOS	autonomous maintena	12. Other	autonomous maintena	TRL 7	No		ETRA
20	DATA CELLAR	Data Cellar aims to bui	DATA CELLAR Platform	DATA CELLAR provides	2. Data spaces and interoperability platforms; TRL 6			Yes	QUE, CERTH, CTIC, CEA, LINKS, CIRCE,	
21	RESCHOOL	RESCHOOL is a Europe	There are several servi	Mainly one EMS for ea	1. Energy management systems;2. Data space TRL 6			Yes	Bamboo, Local Life and OpenRemote	
22	SYNERGIES	SYNERGIES brings forw	Energy Data space and	The SYNERGIES Energy	2. Data spaces and interoperability platforms		TRL 7	No		Suite5 Data Int
23	FLEXCHESS	FlexCHESS is a Horizon	Flexchess Platform	FlexCHESS is an energy	1. Energy management systems;2. Data space TRL 6			No		AMU
24	Masterpiece	MASTERPIECE develop	Ecoop	ECOOP is a web platfor	1. Energy management systems;2. Data space TRL 6			No		RDUP

Content

Workbook Statistics

100%

Repository Snapshot

Columns refer to descriptors from the description to exploitation features

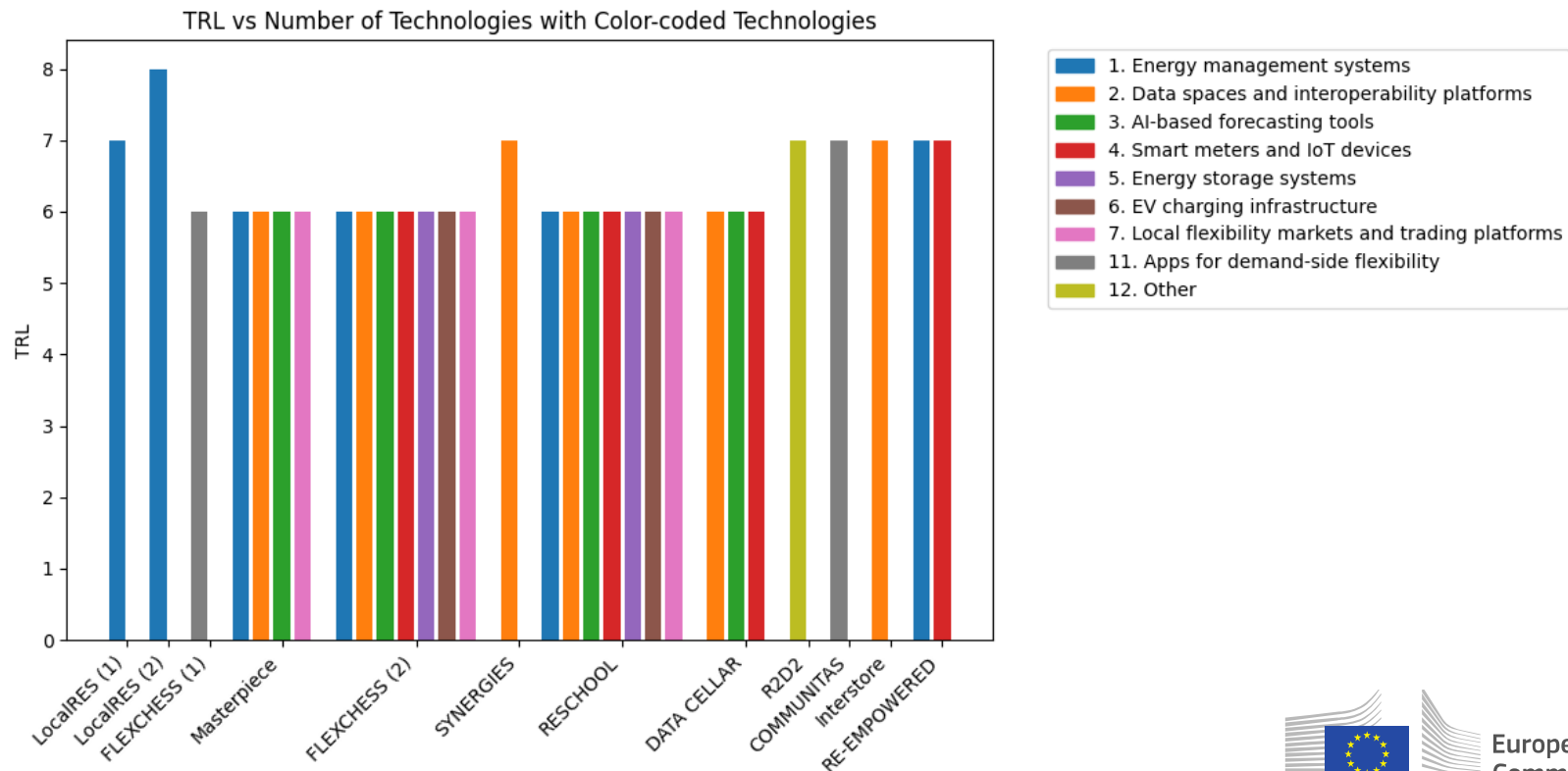
Explored routes:

**1 entry = 1
key
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result
submitted by
a BRIDGE
project**

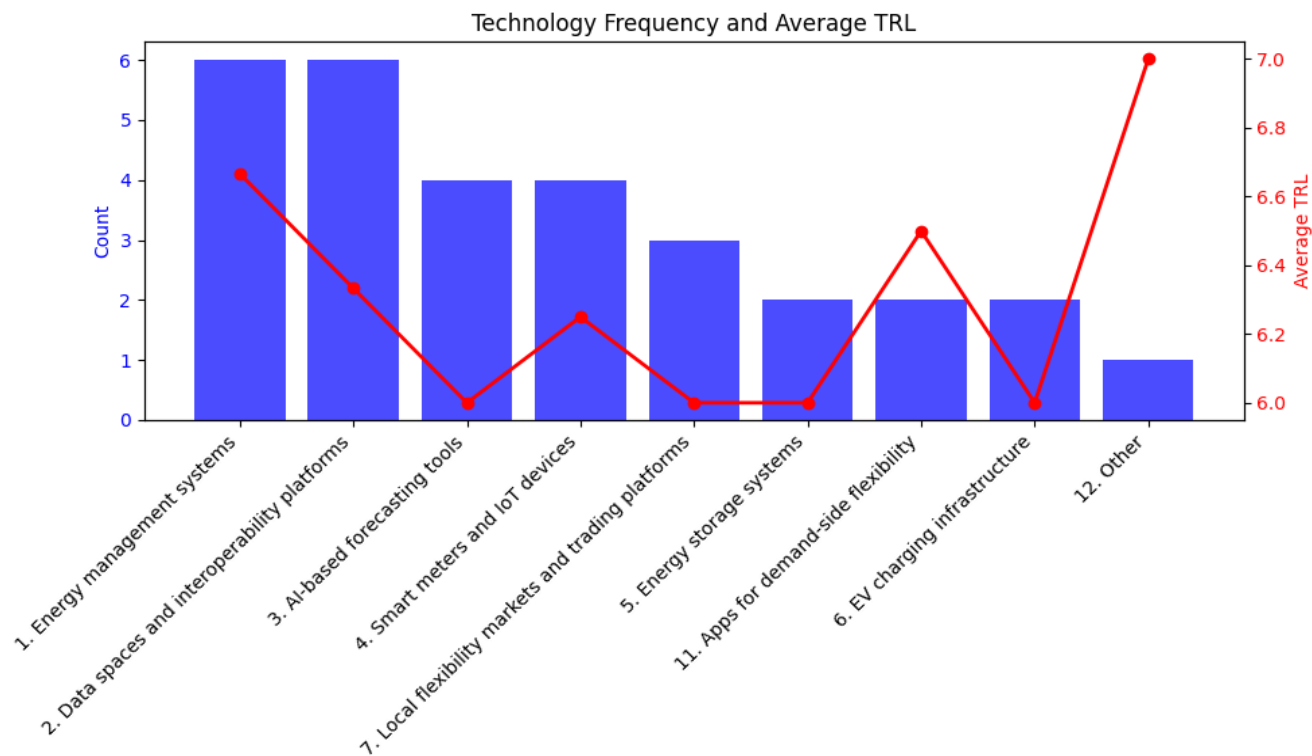
Alias	Export Date	Project Acronym	Project Description	Product/service title	Product/service description	Please select the tech	Other technologies - p	Please select the achie	is the product/service	Please indicate the nar	Please indicate
1. Alias	repository_BM_WG										
2. Export Date	3/6/2026 18:00										
3.											
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22. SYNERGIES		FLEXCHES	FLEXCHES is a Horizon	Flexchess Platform	Flexchess is an energy	1. Energy management systems;2. Data space TRL 6	No			AMU	
23. FLEXCHES											

- 1) Statistics on coverage on collected entries: first insights (next slides)
- 2) Lessons on usability of the prototype (data collection/quality/automatisation)
- 3) Analysis on the value fulfilled and targeted users for improvement

First insights and analyses (1/4)

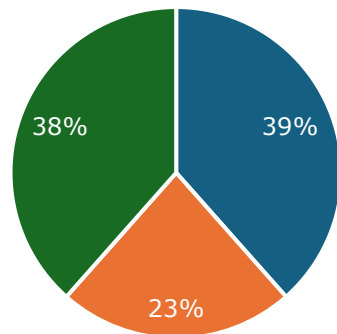


First insights and analyses (2/4)



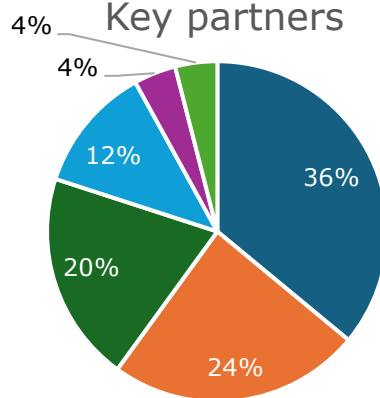
First insights and analyses (3/4)

Governance



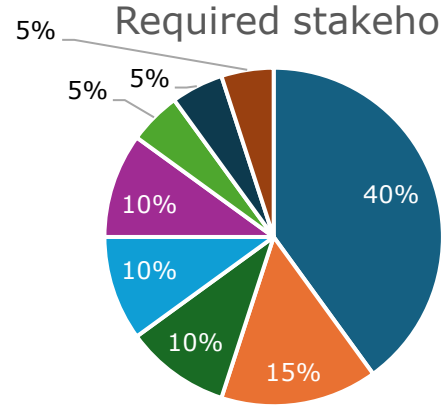
- Centralised decision-making
- Decentralised decision-making
- Shared decision-making

Key partners



- Industrial partners
- Academic/research institutions
- End-users & communities
- Public companies
- Energy providers
- Public authorities

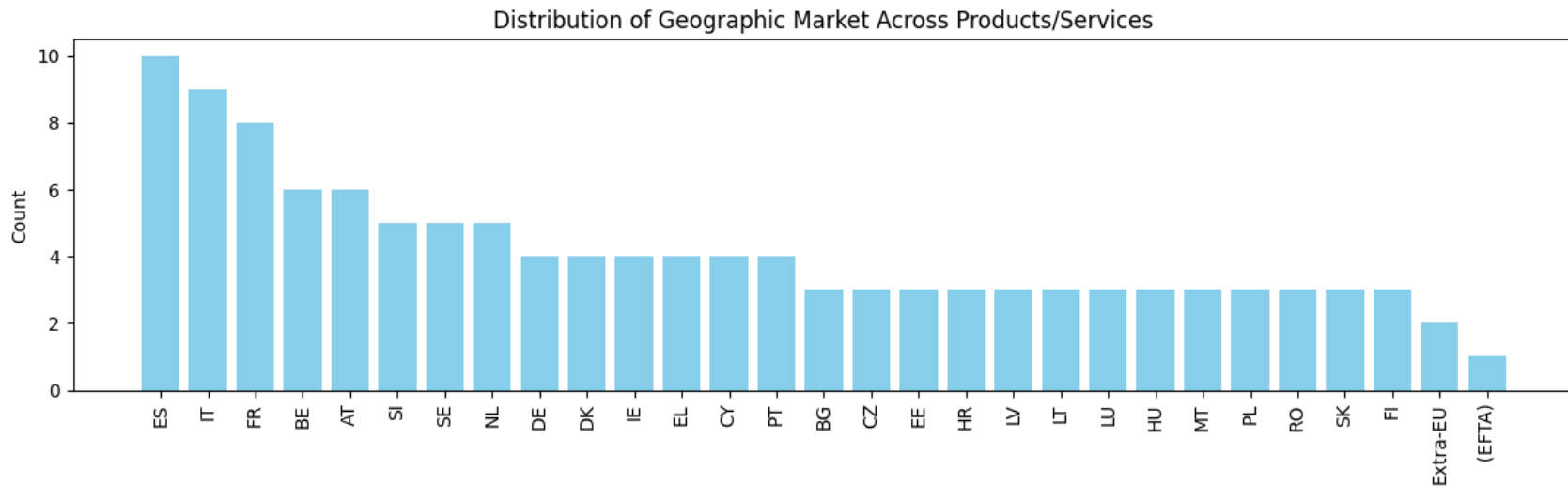
Required stakeholders



- End-users & communities
- Industrial partners
- Public companies
- Media & communication
- Other
- Civil society/NGOs
- Academic/research institutions
- Public authorities



First insights and analyses (4/4)



Task 2+3: Promising and marketable BRIDGE products and services (workplan)

Date	Activity
 October 2025	- Identify the expected <u>users</u> of the repository and their specific needs. - Validate the <u>scope</u>, functional objectives and governance (roles, responsibilities).
 November 2025	- Identify a first sample of target projects and propose a pilot repository (Excel) on a limited scale - Collect feedback for DG ENER and CINEA on repository structure
 December 2025	<u>Assess</u> the collection & repository design process for expansion of the limited scale pilot - Contact selected projects to gather contributions - Submission of first draft of Repository to DG ENER/CINEA for review (within annual report)
 January 2026	<u>Data collection</u>
 February - March 2026	First insights and analyses for GA dissemination
 April-June 2026	Explore publication possibilities (collaboration with Data Management WG)

Discussion on repository: Insights and conclusions

- *Insights and reflection points on:*
 - *The governance of the tool*
 - *Possibilities to automate the process (data collection, data quality)*
 - *From the task leaders' members of the projects that were included in the first round of data collection (LocalRES, EDDIE, Masterpiece, FlexCHESS): how do you feel about the repository, what potential do you see, what improvements do you see?*
- *Commission feedback*
 - *To what extent is the proptotype aligned with the initial expectations and next steps*

Discussion on repository results

1. *Do you find the Repository useful? (please elaborate why and how)*
2. *What potential do you see for future applications of this tool in the BRIDGE community? (e.g. matchmaking)*
3. *What improvements do you suggest? (governance, accessibility, involvement, data collection)*
4. *Besides maintaining the Repository which topics of interest to your project should Tasks 2 and 3 focus on?*



**Scan for the Metimeter
Or insert 1371 6663 on
menti.com**

Task 2+3 – Main outcomes

- *Working Repository*
- *Initial List of promising and marketable Bridge products and services*

Task 2+3 – Lessons learned

- *The Repository structure, took significant effort to create, it need to capture the requested information, while being easy to maintain over time.*
 - 1-Define what to capture
 - 2-Iterate
 - 3-Define target projects
 - 4-Collect (Survey proof to be the more suitable format)



Task 2+3 – Next steps

- *Repository CI/CD (maintenance)*
- *Improvements on <User Interface> (assessment of collaboration with Data Management WG)*
- *Full analysis in the annual report*

Annual report structure

TASK 2+3 : IDENTIFICATION OF PROMISING AND MARKETABLE BRIDGE PRODUCTS AND SERVICES

S.1 Introduction of the Task

S.2 Proposed goals for 2025/2026

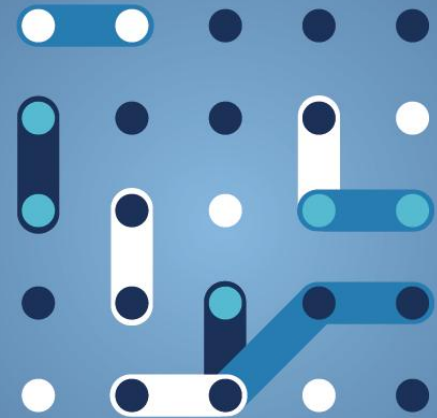
S.3 Proposed methodology

S.4 Results of analyses carried out on the Repository

S.5 Insights, and recommendations

S.6 Conclusions

Developing next year's program



Task 1 – Proposed Topics

- *Consolidate and validate strategic BM archetypes and value proposition pathways with extended data*
- *Transform BMH tool into a dynamic, responsive, live tool*
- *Explore the potential from AI and ML to enhance BM journey experience*

Task 2+3 - Proposed Topics

- *Consolidate the repository*

Next steps

Task 1

- *Complete analysis, circulate BMH draft, finalize ahead of Summer*
- *Reflect on how to leverage and turn BMH into an easy-to-use/practical tool for use by future projects*

Task 2+3

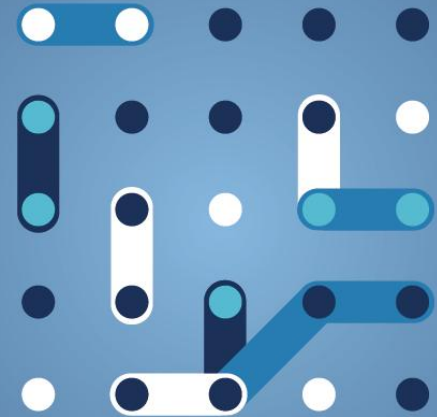
- *Complete analysis, share repository draft preview*
- *Improve the repository based on the collected feedback*



12:45 – 13:45

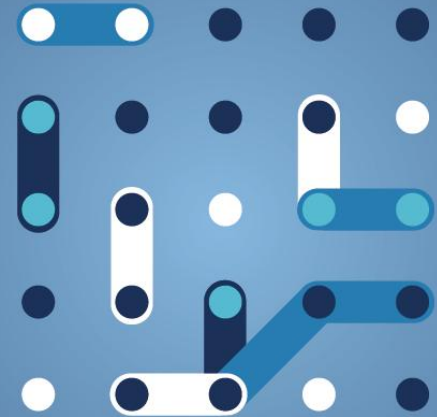
Lunch

Meet here at 13:30



Joint Session

Regulation & Data Management



Data exchange in EU energy policy

DG ENER.B4 – Digitalisation, Competitiveness, Research & Innovation

Data exchange in EU energy policy



European
Commission

Strategic Roadmap Digitalisation and AI in energy

Pillar I: Energy for AI

- Integrating sustainably the data centres into the energy system
- Energy performance of data centres (DCEEP)

Pillar II: Digitalisation & AI for energy

- Support investment in a smart energy system
- Deploy AI across the energy value chain

Pillar III: Data for AI

- Common European energy data space

Horizontal enablers

- Safety, security and trust in digital and AI solutions
- AI for cybersecurity and supply chain security
- Skills and capabilities
- International cooperation

Governance layer

- Targets, indicators and national pathways
- Monitoring, reporting and dialogue



Problem definition

- Fragmented data models, formats, ontologies, and interfaces
- Fragmented mechanisms for identification, authentication, consent management
- Inadequate and outdated infrastructure & cybersecurity vulnerabilities
- High transaction costs and immature business models
- Delayed or partial national transposition and implementation of EU legislation
- Lack of governance mechanisms for defining, coordinating, and enforcing data-exchange processes and interfaces
- Limited awareness, trust, and acceptability of data-sharing practices

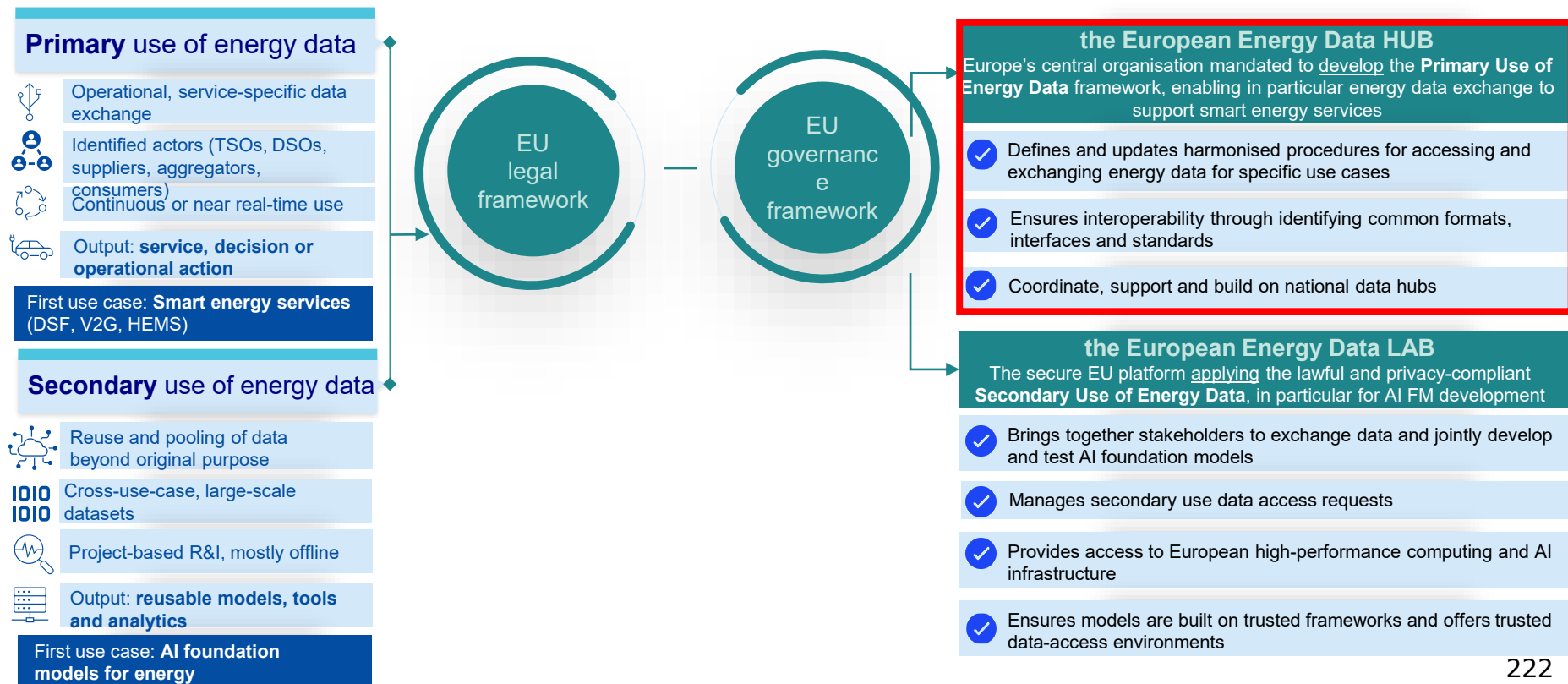


Input-1: make the case for CEEDS

- Quantified evidence: what are the overhead costs for SMEs, researchers, consumers for access to data?
- Technical vs regulatory: What extent of the problem is regulatory? How it impedes single market? How it impedes scaling EU services?
- Cost benefit analysis: cost for data integration vs benefits from competitive flexibility markets?
- National vs EU-level: Why EU layer is needed? What are the cost of cross border data exchange; will an EU layer simplify or complicate data exchange?
- Baseline scenario: How the situation might evolve if no action is taken?
- **Overall**: quantified evidence from the ground, concrete examples including costs



Common European Energy Data Space (CEEDS)



Input-2: Scope of work for the Energy Data Hub

The BRIDGE Report on Energy Sharing recommends that the EU-level governance layer should “harmonise existing terminology, establish a clear framework for data access, ownership, privacy and cybersecurity, outline legal requirements to ensure compliance with EU law, and offer guidelines for Member States on how to implement the EU data-governance framework.”

- Participation in CEEDS: compulsory through regulation or voluntary?
- Semantic interoperability: common roles, definitions, and vocabulary hubs (flexibility passports, digital product passports)
- Technical interoperability: common interfaces, standards or APIs for (regulated) data exchange platforms in standardising data exchanges among DSOs, TSOs, charge point operators, service providers, OEMs of EMS systems, smart appliances, EVs, and consumers.
- Cross-border/cross-sector interoperability: connect National Data Hubs or other sectorial data spaces
- Support services: documentation, data marketplaces, contractual frameworks, interoperability verification/testing services
- Trust framework: access and usage policies, regulatory compliance, and identity management (eIDAS, Business wallets)
- Observability and monitoring: logging and traceability of data exchanges, monitoring of service availability and reliability, and oversight of regulatory implementation
- **Overall**: operational recommendations for a pan-European data sharing infrastructure based on existing technologies



Thank you



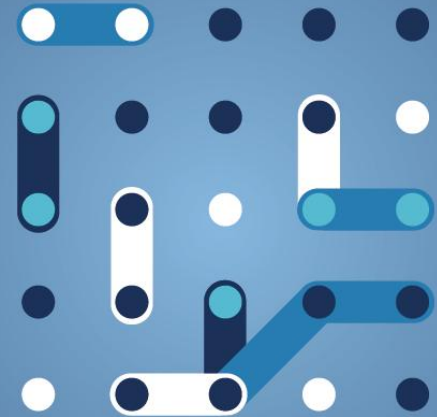
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Breakout rooms for WGs discussion

Parallel Session 3 & 4



Break-out



Timing: 1 hour



Room 1 – WG Regulation

Moderator: *José Pablo Chaves Ávila*

Secretariat support: *Eleonora Rebora*

[Link to the REG breakout](#)

Room 1



Room 2 – WG Data Management

Moderator: *Dune Sebilliau*

Secretariat support: *Andrea De Angelis*

[Link to the BM breakout](#)

Room 2



Please join your WG's room. For people not involved in either WG, please join either discussion room according to your interest.

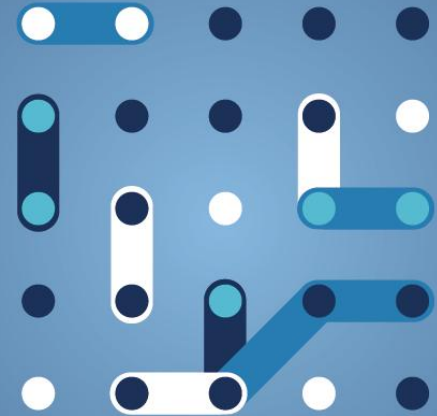


European
Commission



Breakout rooms for WGs discussion

Parallel Session 3 – Regulation WG

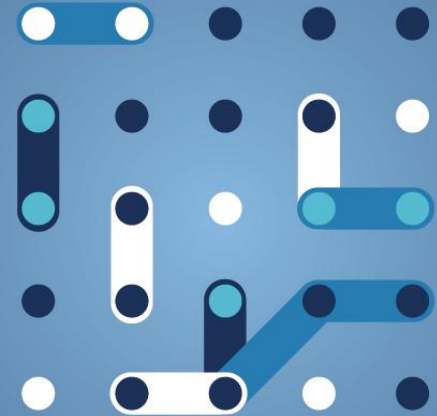


Program for REG breakout session

Duration	Topic	Description	Speakers
60 min	Joint session	With Data Management WG	DG ENER contact points, WG chairs and leaders
40 min	2025-2026 Annual activity report	- Working Group Overview - Presentation of new co-chair - Overview of Actions - Discussion on contents/open points - Definition of possible topics for new year - Timetable for publication of annual report 2025	- Karine Laffont-Eloire / Quentin Donnette - Eliana Ormeño / Matteo Troncia - David Verez / Edoardo Corsetti - Santiago Gallego
20 min	2026-2027 Developing next year's program	- Assessing interest on proposed topics for 2026-2027 - Discussion on proposals for new topics and actions - Assessing interest in leading/co-leading actions	José Pablo Chaves Ávila

Regulation Working Group

Overview



WG Regulation



The Regulation Working Group focuses on **various regulatory aspects in the energy sector to identify best practices and provide recommendations**. The Working group structures its activities addressing the regulatory challenges related to:

- **Market access** by exploring the elements that need to be addressed and would need further elaborations
- Peer to peer and energy sharing
- **Collective flexibility** to the grid in the context of overall market design, understanding the potential value of energy communities and peer to peer energy sharing
- **Sector coupling and integration**, addressing key barriers within the regulatory and market framework between various energy carriers and services across sectors to unlock synergies beneficial to consumers, market actors, and the overall system.
- **Market coordination and integration**, assisting system operators in grid preparation for 2030 by identifying how the absence of an integrated market hinder potential synergies in a more interconnected system, limiting the potential of recently developed energy and flexibility services, markets, and platforms



>55 projects



>110 people
involved



Results 2025/26

	<u>Actions</u>	<u>Objectives</u>	<u>Outcome</u>
01	Energy sharing and peer-to-peer	What is the role of peer-to-peer and energy communities to enable access to markets for active customers?	✓ Regulatory overview (collaborative document) ✓ 3 meetings ✓ Recommendations (joint policy brief)
02	Energy and flexibility market coordination and integration	What practices impact energy and flexibility markets across EU countries, based on quantitative evidence? How can EU-funded projects improve the coordination of flexibility acquisition mechanisms?	✓ Results from the Survey on the coordination of flexibility acquisition mechanisms. ✓ Lessons learnt, best practices and recommendations.
03	Support the potential synergies coming from increased sector coupling	Which are current regulatory barriers that limit the potential of sector coupling and sector integration?	✓ Survey on Barriers to sector integration ✓ Lesson learnt, and recommendations
04	Support the system operators to prepare the grid for 2030	Which innovations are needed to advance processes and tools of network planning and network operation?	✓ Survey on tool for network

Knowledge sharings 2025 - 2026

The regulation WG has organised, in additionl to all regular WG activities, four **Knowledge Sharing** sessions

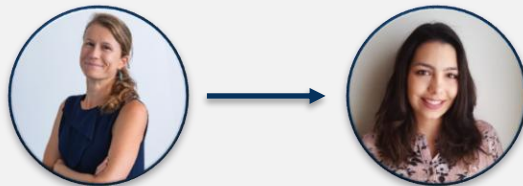
Session number	Date	Topic	Projects presenting
1	17 th October 2025	How P2P and energy communities can enable citizens and end-users to access energy markets and provide flexibility service	•FEDECOM •STUNNED
2	28 th November 2025	Flexibility acquisition mechanisms	•ENFLATE •FLOW
3	12 th December 2025	Network regulation, market mechanisms and coordination between stakeholders	•AHEAD •SENERGYNETS
4	23 th January 2026	Decarbonization scenarios, climate scenarios & grid planning and where are the DSO's problems hidden. Presentation of the EDSO/GEODE paper on revenue regulation	•FLOW •OPENTUNITY

New co-chair



Katerina Drivakou will take over from Karine Laffont-Eloire as WG Co-Chair.

**Thank you Karine
for your great work!!**



Action 1

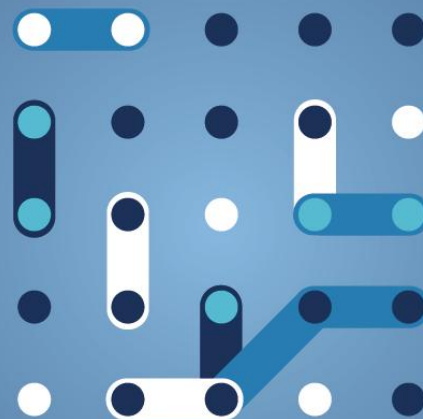
P2P and energy communities



Karine Laffont-Eloire
DOWEL Innovation
LocalRES



Quentin Donnette
SmartEN
FEDECOM



Action 1: P2P and energy communities

Objectives



- Collect/ update inputs from BRIDGE projects about national regulation on P2P and energy communities (market access, provision of flexibility) and their lessons learnt from the pilots (barriers, good practices...)
- Foster the sharing of knowledge between projects
- Identify research gaps and develop recommendations

Collaborations



- ETIP SNET WG: *Alignment call with ETIP SNET's WGs about their paper on energy communities*
- CA-RES project: participation to session 6 of the project plenary meeting on the 12th November on the topic: *Consolidating Insights: Optimising Enabling Frameworks for Self-Consumption and Energy Sharing in Member States*

Contributing projects

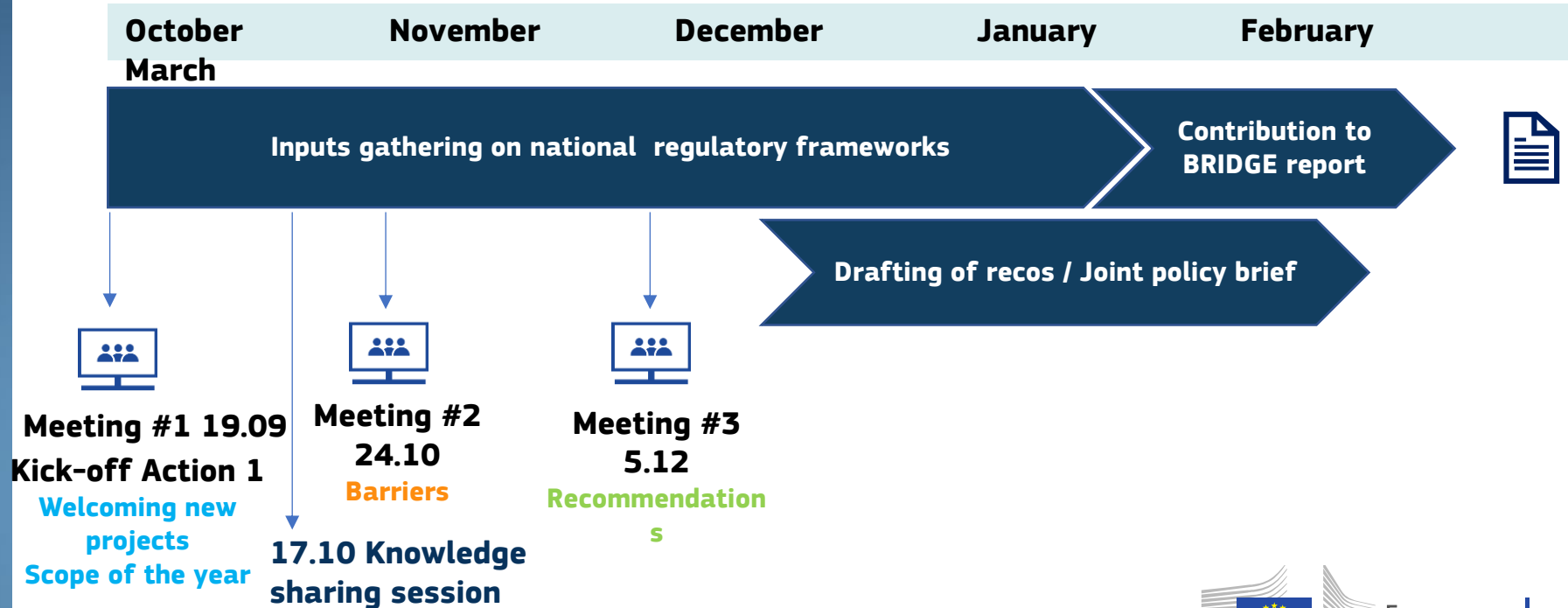


CELINE
Intelligent
FEDECOM
STUNNED
LocalRES
U2Demo
DATA CELLAR
HVDC4ISLANDS

EU-DREAM
FlexChess
AHEAD
HYSTORE
Opentunity
Sociarem
THUMBS UP
ODEON
PEDvolution



Overview of activities



Action 1 – Main outcomes

- **Scope of interest for the participating projects** : access to local energy markets (or other relevant markets) thanks to P2P or through energy communities
- **Barriers identified:**

 REGULATION	 MARKET	 FINANCIAL
Several legal frameworks apply at the time (e.g. energy sharing, energy communities, P2P, RES ownership/ installation)	Current markets are not always adapted to the wide consumer heterogeneity	The value of flexibility is not always clear, and how much different flexibility mechanisms contribute to this value
Regulatory complexity and uncertainty (frequent changes)	The role of aggregators is not defined in many MS	Cost of equipment to control load
 TECHNICAL	 SOCIAL	
Great diversity between the different Member States legal framework (lack of replicable models)	Interoperability challenges , e.g. on semantical level	User acceptance & trust
Lack of national regulatory framework for P2P trading in most of MS	Differences between users in terms of uptake of digital tools	Energy & data literacy
National regulatory constraints for energy sharing , e.g. on sharing coefficients		Long-term engagement



Action 1 – Lessons learned

- **Collaborative work: review of national regulation on market access through P2P & energy communities**
 - Inputs received from Austria, Belgium, Finland, France, Germany, Italy, Portugal, Spain, Switzerland
 - **Key points:**
 - **P2P trading frameworks emerging**, e.g. Austria explicitly allows peer-to-peer trading between active customers since since December 2025. In Belgium (Brussels), P2P is recognised in the country as one of the three schemes for energy sharing
 - **Energy communities widely recognised but mainly focused on self-consumption**: market access is limited or requires intermediaries such as suppliers or aggregators.
 - **Market participation remains mostly indirect**: Access to wholesale, balancing or flexibility markets generally requires aggregators or suppliers due to minimum bid sizes and balancing obligations.
 - Local energy exchange is mostly implemented as an extension of retail markets (i.e. **additional contractual layer** within the existing retail electricity market)



Action 1 – Recommendations

On market access

- Ensure that each European DSOs sets up an **open data space** with a clear data protection framework
- Streamline the set-up of **regulatory sandboxes** which will enable the development, testing, comparison of the effectiveness of local flexibility markets
- Remove barriers that prevent the **access to power exchange** (e.g. minimum bid requirement, technical/ digital requirements).
- Remove barriers related to **capacity limitation for injection of surplus to the grid**
- **Simplify grid tariffs** for energy communities, especially for storage
- Create **national Working Groups** bringing together competent authorities, market actors, representatives of energy communities/ active citizens as well as EU funded projects

In general for EnC & energy sharing

- Enable the development of advanced solutions through a **comprehensive set of rules governing energy sharing**
- Ensure **consumer protection rights** (horizontal and sector consumer rights) for energy sharing agreements between active consumers
- Review **voting rules in condominiums** for the installation of PV
- Set up **One Stop Shops** or similar structures to provide financial and technical support to municipalities to engage with energy sharing projects



Action 1 – Next steps

- **Publication of Joint Policy Brief (6 projects are currently involved), which details the list of recommendations**
- **Identification of topic of interest in the coming year: suggestions are welcome!**
- **Finalisation of contribution to Annual Report**

Annual report structure

1. Introduction: scope, regulatory background, methodology, participating projects
2. Regulatory overview
3. Barriers identified by projects
4. Recommendations
5. Consumer rights
6. Conclusion

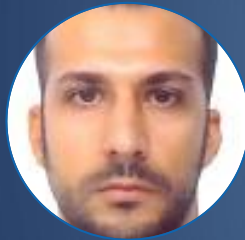
Action 2

Model-based assessment of energy and flexibility market coordination and integration



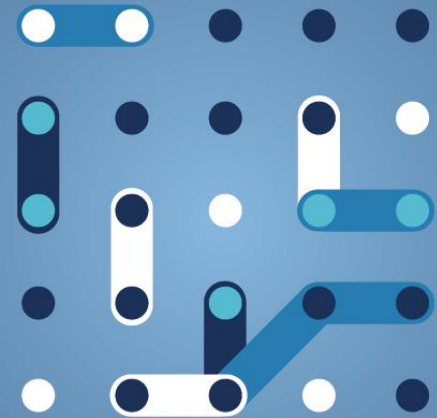
Eliana Ormeño

*Comillas Pontifical University
BeFlexible*



Matteo Troncia

*Comillas Pontifical University
BeFlexible*



Action 2: Model-based assessment of energy and flexibility market coordination and integration

Objectives



- To analyse the **best practices and barriers influencing the development and implementation of energy and flexibility markets** across EU countries, **based on quantitative evidence**.
- Review **proposals and implementation experiences** from EU-funded projects **to formulate recommendations that foster the coordination of flexibility acquisition mechanisms**.

Collaborations



- ETIP SNET – Task Force on Flexibility Provision by Buildings and Industry
BRIDGE presented use cases in the TF workshops and will contribute to the drafting of the final paper.

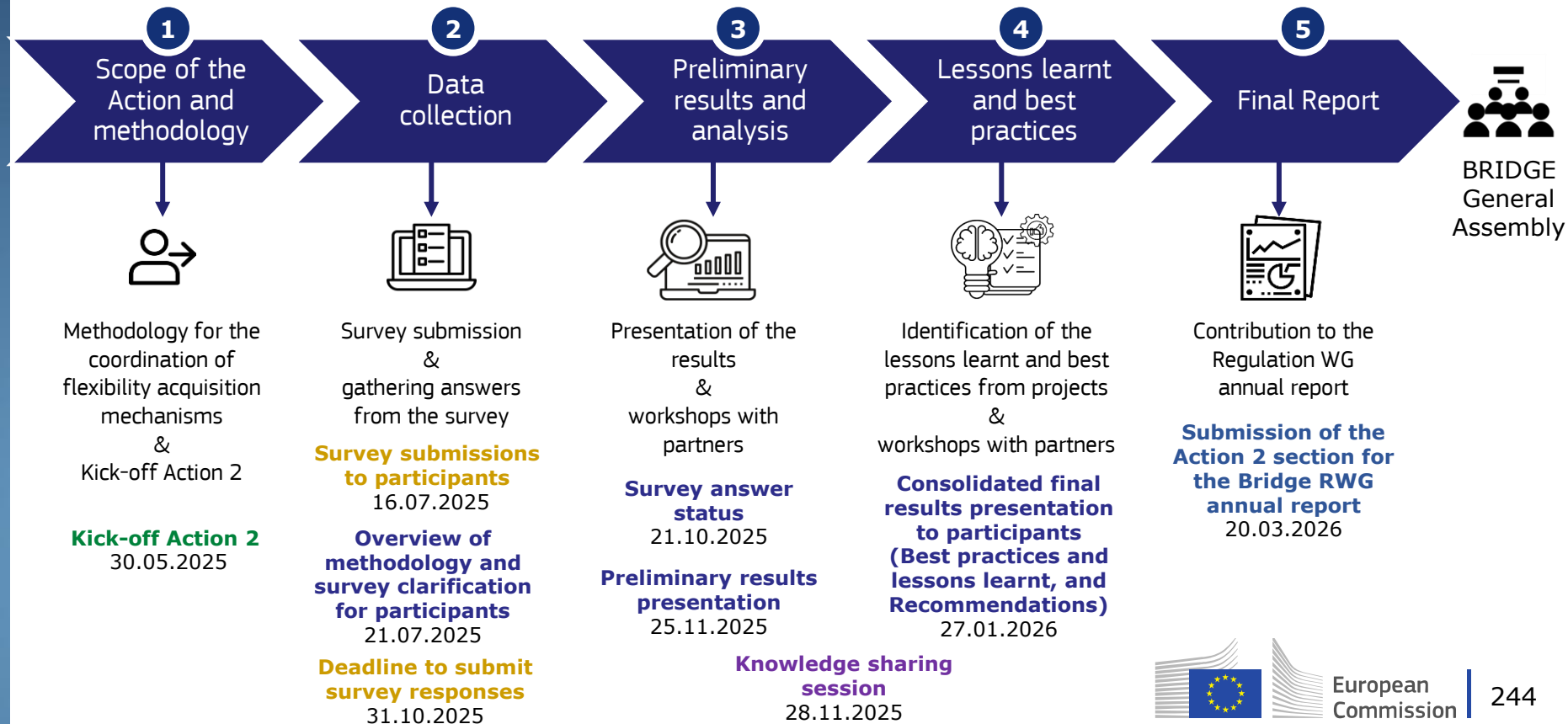
Contributing projects



BeFlexible
PEDvolution
AHEAD
FLOW
THUMBS UP
DATA CELLAR
SENERGY NETS
REEFLEX
STREAM
EU-DREAM
EVELIXIA



Overview of activities



Action 2 – Main outcomes

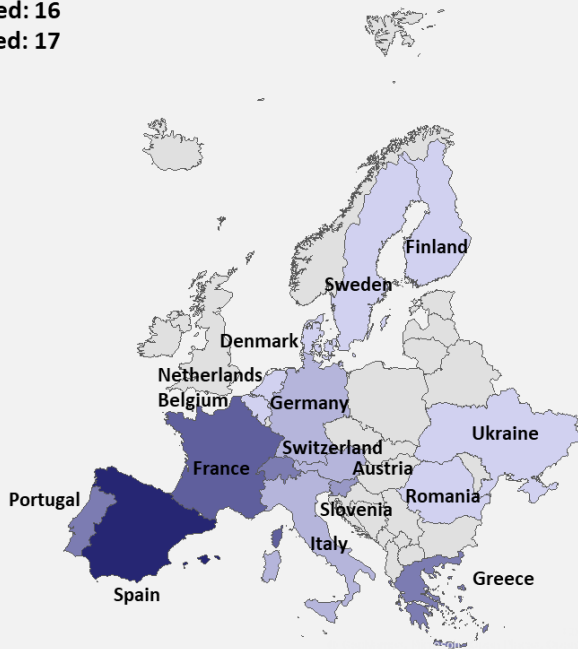
Total survey responses received: 23

PARTICIPATING COUNTRIES

Number of Demos 1 7

Countries involved: 16

Projects involved: 17



Flexibility acquisition mechanisms currently assessed by projects:



Projects' views on the need for coordination of flexibility acquisition mechanisms:



Scored combinations of mechanisms by targeted service:

Congestion management

1) Dynamic distribution network tariffs + Local flexibility markets

2) Dynamic distribution network tariffs + Local flexibility markets + Flexible connection agreements

Voltage Control

1) Local flexibility markets + Rule-based mechanisms

2) Local flexibility markets + Flexible connection agreements + Cost-based mechanisms

Action 2 – Lessons learned



Flexibility, acquisition mechanisms and services:

- Flexibility procurement is a **key priority for addressing current DSO challenges**.
- Across projects, **LFMs are the most widely** assessed mechanism, while **congestion management is the main service targeted**, ahead of voltage control.

Technical and operational information of DERs:

- **Flexibility is inherently multi-technology**, involving a large range of demand-side resources.
- **Aggregation and demand-side management are central** to enabling this flexibility, but **limited corrective measures** for DER misbehaviour still reveal **gaming-risk gaps**.

Coordination of flexibility acquisition mechanisms and the type of services:

- The deployment of multiple mechanisms is mainly driven by regulatory conditions, resource availability and market design limits.
- **Coordination between flexibility acquisition mechanisms is widely recognised as necessary**, but still constrained by regulatory, economic and technical barriers.
- **For congestion management**, coordination of interest centres on **network tariffs and LFMs** as complementary mechanisms, while **voltage control tends to require more local mechanisms**.



Action 2 – Recommendations



Flexibility, acquisition mechanisms and services:

- Support the move from pilots to implementation through **clear regulation, harmonised evaluation and sandboxes**.

Technical and operational information of DERs:

- **Flexibility** procurement **should remain technology-agnostic**, enabling diverse DER participation and aggregation strategies.
- Define **clear compliance and penalty rules to reduce gaming risks** and ensure reliable DER participation.

Coordination of flexibility acquisition mechanisms and the type of services:

- **When multiple mechanisms coexist, clear coordination guidelines are needed** to ensure consistency in designs and operation.
- **Improve regulatory clarity, incentives, data, automation and interoperability.**
- **Harmonised modelling approaches** are needed to assess interactions, synergies and trade-offs across mechanisms and services.
- The coordinated use of mechanisms across services should be encouraged **to exploit synergies**, while their **interactions** should be continuously **monitored to prevent conflicting signals and inefficiencies**.



Action 2 – Next steps

- **Completion of the contribution to the Annual Report**
- **Topic of interest for the coming year:**
 - Coordination and harmonization of multiple flexibility acquisition mechanisms & markets, including quantitative results.

Annual report structure

- Sent to participating projects acting as reviewers: 11/03/2026
- Review deadline: 18/03/2026
- Submission of the final section of A2 report: 20/03/2026
- Section of A2 report:



Regulation Working Group
Annual Activity Report 2025-2026

Table of Contents

3. Action 2 – Model-based assessment of energy and flexibility market coordination and integration	2
3.1 Introduction of the Action.....	2
3.2 Methodology adopted in Action 2	2
3.3 Projects Participating in the Action 2.....	4
3.4 Lessons learnt and best practices	4
3.4.1 Flexibility, acquisition mechanisms and services	4
3.4.2 Technical and operational information of DERs.....	5
3.4.3 Coordination of flexibility acquisition mechanisms	6
3.5 Recommendations and feedback from projects	9
3.6 Model-based outcomes: Experience from the BeFlexible project	11
3.7 Conclusions and Final Remarks	12



Action 3

Supporting the potential synergies coming from increased sector coupling, sector integration, system integration



Diana Moneta

*RSE
FLOW*



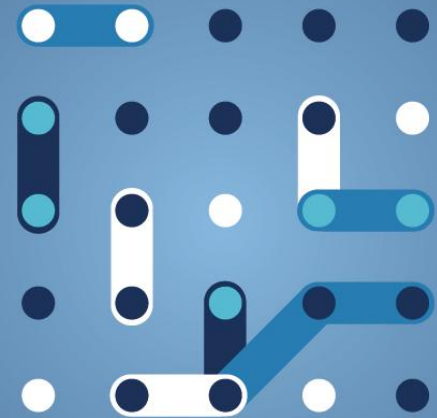
David Verez

*Wattega
HYSTORE*



Edoardo Corsetti

*RSE
SENERGY NETS*



Action 3: Support the potential synergies coming from increased sector coupling, sector integration, system integration

Objectives



Develop or update regulatory recommendations for:

- Overcoming fragmentation in permitting
- Enhancing sector coupling integration into market structures
- Improving flexibility frameworks for multi-energy systems

Collaborations



- Coordinated joint sessions with other Actions and other WGs
- Strengthen Stakeholders engagement



Contributing projects

AHEAD

STREAM

WindTwin

FLOW

InterSCADA

DATA CELLAR

EU-DREAM

EV4EU

NaturSEA

PEDvolution

PARMENIDES

SENERGY NETS

HVDC4ISLANDS

eFORT

NEVERFLAT

ENFLATE

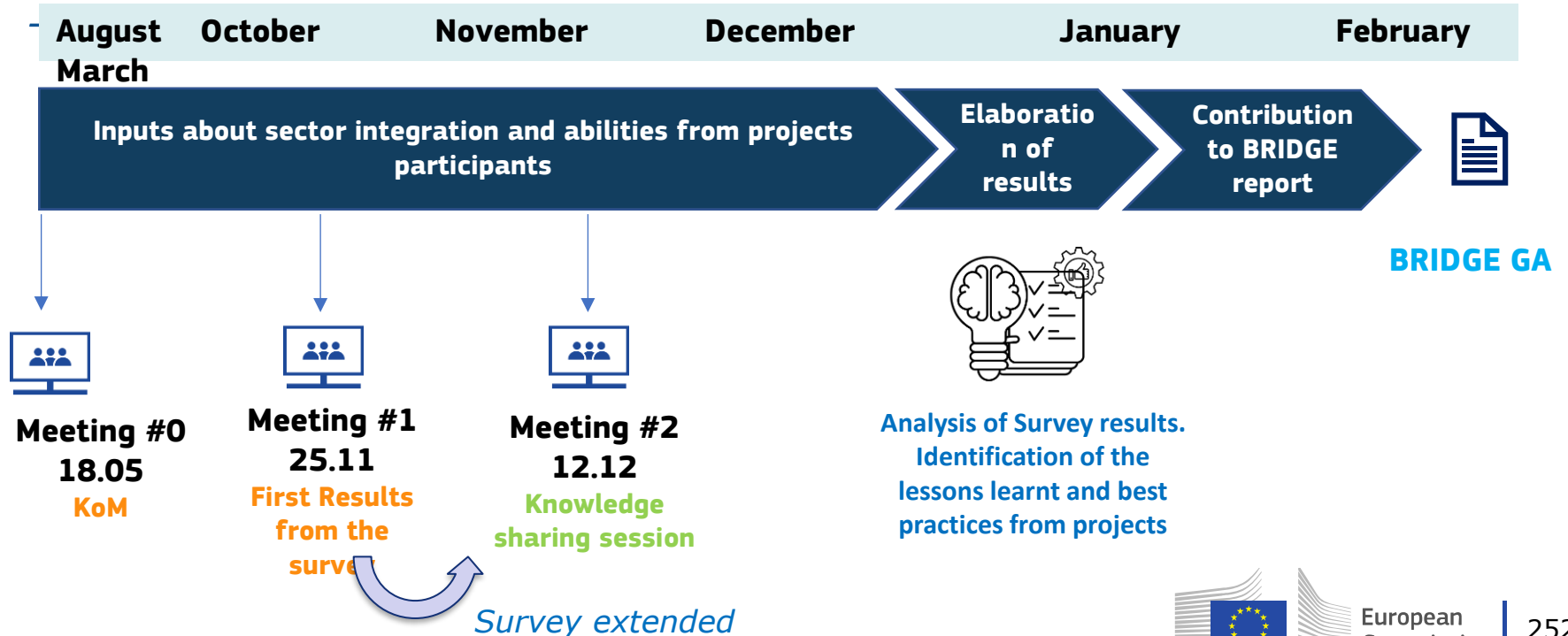
SINNOGENES

EV4EU

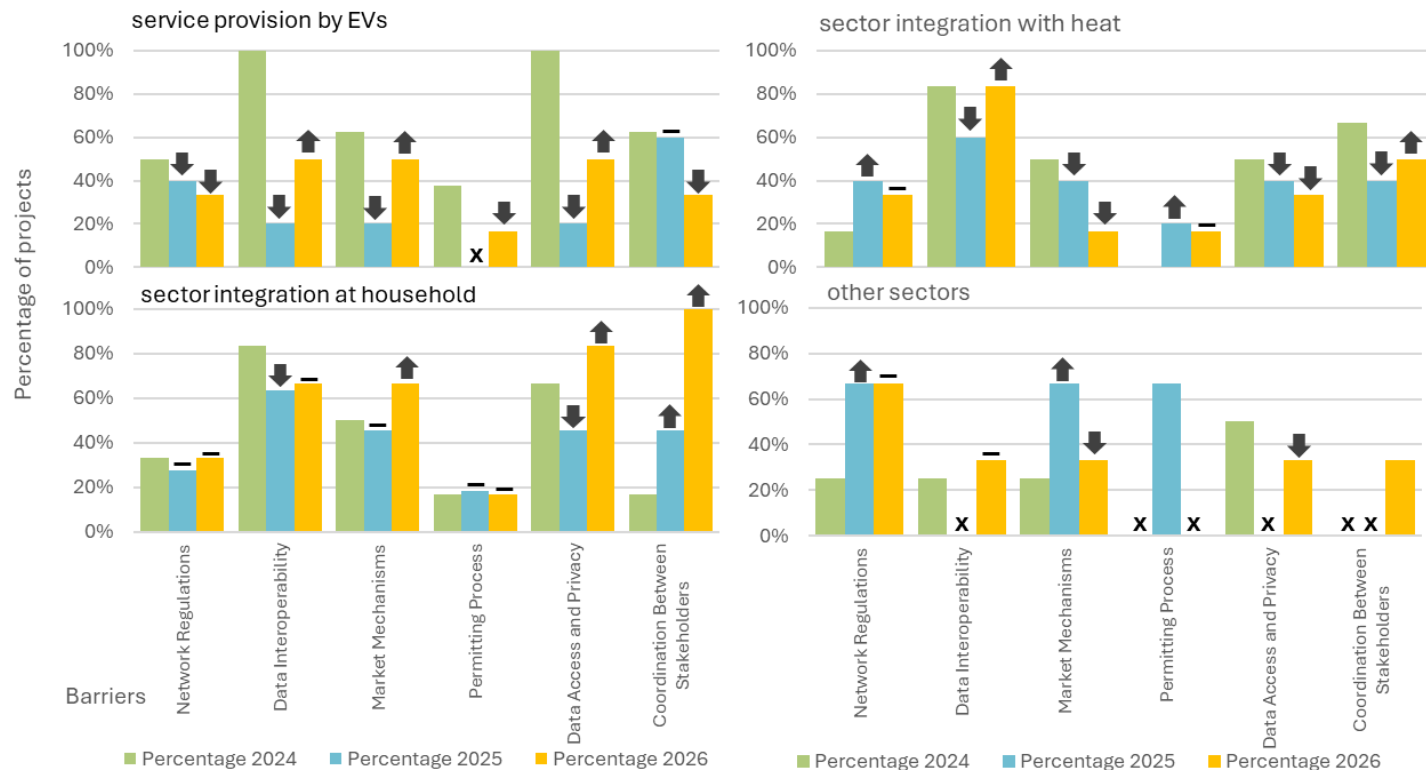
THUMBS UP



Overview of activities



Survey 2024-2025-2026



Action 3 – Lessons Learned

- **Sector coupling** is now an operational necessity for a cost-efficient, resilient decarbonised energy system; technology is advancing quickly, but regulatory and organisational frameworks lag behind.
- **Integration challenges evolve with maturity:** early pilots struggle with governance and stakeholder alignment, while advanced cases increasingly confront interoperability limits and market-design constraints.
- **Barriers differ by context:** households face coordination and data governance issues; heat sector coupling is limited mainly by lacking interoperability standards; other sectors face restrictive network regulation and poor integration between different energy markets; EV services show more maturity but still require coordinated progress on markets and data.
- **Data issues**—interoperability, access, privacy—**are a systemic obstacle** across all sectors; progress requires coordinated regulatory reform, harmonised standards, and governance models enabling actor coordination and scalable cross-sector services.



Action 3 – Recommendations

- **Regulation**

- Increase the participation to energy and flexibility markets by lowering the minimum threshold
- Reform the tariffs structure to overcome cross-sector coordination gap
- Increase the coordination between TSO and DSO

- **Market**

- harmonize as far as possible differences among European market mechanisms

- **Household**

- Ensure the complete integration of household (e.g., heat pump, solar energy panels, etc) developing empowering data-driven and user-friendly digital solutions/tools for consumers
- Introduce novel set of market mechanisms supporting consumer (direct) access in energy markets

- **Interoperability**

- Missing interoperability standards in AFIR (e.g., OCPP, OCPI etc.) for V2G.

- **Data availability**

- Introduce standardized and common grid code for V2G between countries



Action 3 – Next steps

- Finalisation of contribution to Annual Report
- Section of the topic of interest for the coming year: Sector Integration/Coupling remains a relevant topic for the strong support to decarbonization and RES penetration
- FLOW project is close to its end, then it will complete its contribution as co-lead (D. Moneta)



Annual report structure

ACTION 3 – SUPPORT THE POTENTIAL SYNERGIES FROM INCREASED SECTOR COUPLING/SECTOR INTEGRATION/SYSTEM INTEGRATION

- 1. Introduction to Action 3*
- 2. Methodology*
- 3. Results from the Survey*
- 4. Recommendations*
- 5. Conclusion and next steps*

Action 4

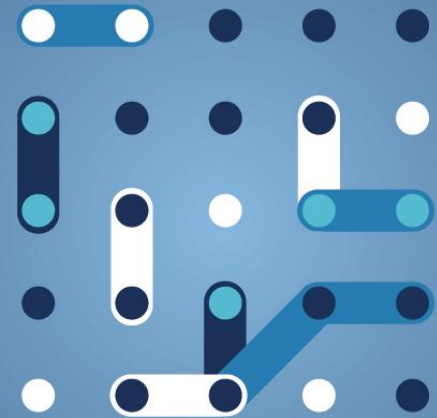
Support the system operators to prepare the grid for 2030



Santiago Gallego
*I-DE
BeFlexible*



Miguel Ángel Ruiz
*Comillas Pontifical University
BeFlexible*



Contents

Objectives



- Projects working on the topics provide knowledge and share their experiences
- Understanding the challenges and what is working from projects
- Propose recommendations for improving processes

Topics in scope:

Which innovations are needed to advance processes/tools of network planning and network operation? flexibility as part of network planning, tradeoff between grid investment and flexibility, congestion management, remuneration mechanisms for SOs

Collaborations



- ETIP SNET
- E.DSO



Registered Projects /

Contributing

AHEAD

OPENTUNITY

Beflexible

SENERGY
NETS

effort

ENFLATE

Flexchess

FLOW

TwinEU



European
Commission

Action 4 – Methodology

	Date	Activity
	Jun 6 th , 2025	Questionnaire submission of remuneration schemes Received responses: Flexchess (SL), FLOW (IT), ENFLATE (CH, GR pending), AHEAD (IT, PT, SL), e-FORT (SP), OPENTUNITY (SL), SENERGY NETS (IT, SL), TWIN EU (GR) BeFlexible (FR, IT, SE, SP, PT, UK)
	Oct 28 th , 2025	Presentation of results (final & preliminary) from the previous questionnaires workshop with participants
	Jan 23 rd , 2026	Knowledge session with presentations from FLOW project and Opentunity, Flexchess, Eclipse projects). Presentation of the EDSO/GEODE paper on revenue regulation.
	Feb, 2026	Submission of Action 4 section for the Bridge RWG annual report
	April 2026	The BeFlexible project will come to an end and, consequently, will cease to lead Action 4.

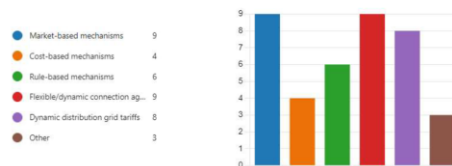
Action 4 – Main outcomes

- Three questionnaires were proposed:

1st questionnaire

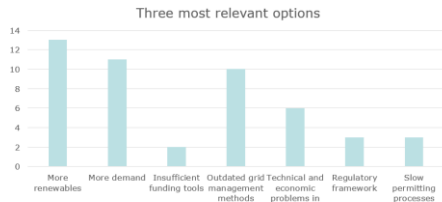


Which type of flexibility mechanisms are currently used by DSOs in your country / studied in your project?

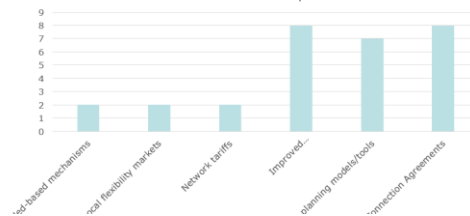


2nd questionnaire

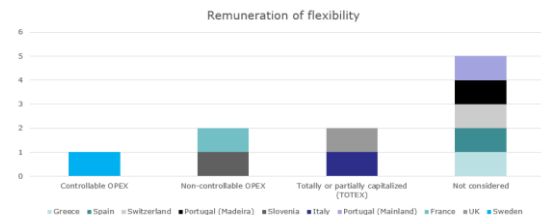
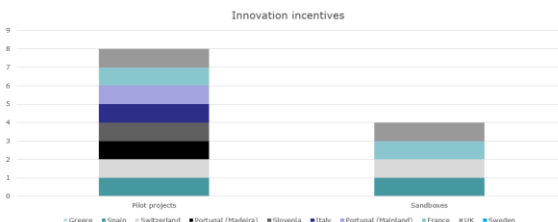
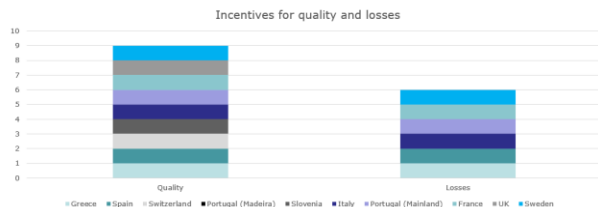
Question: What do you think is the biggest challenge SOs face when designing their network in the next five years?



Question: Which measures used by SOs do you think need to be adopted more quickly?



3rd questionnaire on DSO remuneration



- A final knowledge sharing session was organised with the participation of projects Flow and Opentunity. It was also presented the E.DSO/GEODE paper “Revenue Regulation for Electricity DSOs.”

Action 4 – Lessons learned

Context: Support the system operators to prepare the grid for 2030.

Projects had the opportunity to answer to **three different questionnaires:**

- **Mechanisms currently used by DSOs.**
- **Challenges and solutions for DSOs.**
- **Remuneration schemes for DSOs.**

Regulatory frameworks generally support innovation (pilot projects and sandboxes). However, remuneration schemes can hinder innovation once temporary support ends.

Concrete learnings from projects and DSOs:

- **Flow project:**

Results are highly dependent on the grid and the input for the profiles.

Congestion Analysis and Hosting Capacity Analysis can help DSOs to assess future scenarios.

- **Opportunity:** Hidden constraints are multifactorial (regulatory, institutional, coordination complexity,...)
- **E-DSO/GEODE paper “Remuneration schemes for DSOs”:** All the 7 principles must be adequately implemented (analysis show that are good examples in every country).

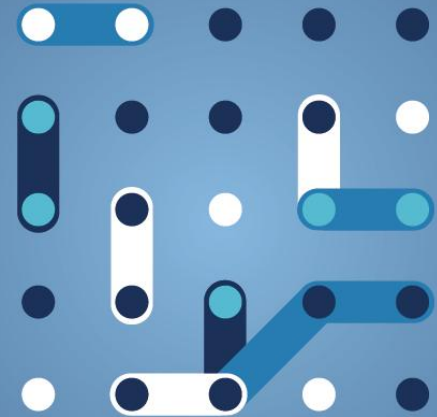
Annual report structure

Section 5 of the Annual Activity Report: **"Action 4 – Support the system operators to prepare the grid for 2030."**

- **5.1 Introduction of the Action.**
- **5.2 Methodology adopted in Action 4.**
- **5.3 Flexibility mechanisms for DSOs and their trade off with investments.**
- **5.4 Innovations needed to advance processes and tools of network planning and network operation.**
- **5.5 DSO remuneration schemes**
- **5.6 Conclusions**



Developing next year's program



Interest in topics for 2026-2027 work plan

01 Coordination of flexibility tools

02 Data spaces (suggested by Mark)

03 Energy sharing

04 V2G integration

05 Sector coupling and markets

06

07

08

09

09

Preferred Relevant Topics

To vote for relevant topics for next year, in person participants and online participants can **scan the QR Code** to participate in the pool through Sli.do.



Scan for the Sli.do
The event code is
#3246366



Please specify which topics should the WG focus in the following year, that are of interest for your project

Leadership renewal

Role	Name	Project	Ending
Chair	José Pablo Chaves Ávila	BeFlexible	September 2026
Co-chair & Action 1 leader	Karine Laffont-Eloire	LocalRES	April 2026
Action 1 leader	Quentin Donnette	FEDECOM	Extended to 2027
Action 2 leader	Matteo Troncia	BeFlexible	September 2026
Action 2 leader	Eliana Ormeño	BeFlexible	September 2026
Action 3 leader	Diana Moneta	FLOW	June 2026
Action 3 leader	David Verez	HYSTORE	June 2027
Action 3 leader	Edoardo Corsetti	SENERGY NETS	August 2026
Action 4 leader	Santiago Gallego Amores	BeFlexible	September 2026
Action 4 leader	Miguel Ángel Ruiz Hernández	BeFlexible	September 2026

***Katerina Drivakou
will take the role***



Expression of interest for leadership

- *The WG is searching for **leaders and co-leaders** interested in leading current or possibly new actions of the WG.*
- *Please answer the following [survey](#) to express your interest in joining the leadership group of the WG*



The survey is currently still open and the WG welcomes any possible interest to become action leaders or co-leaders.

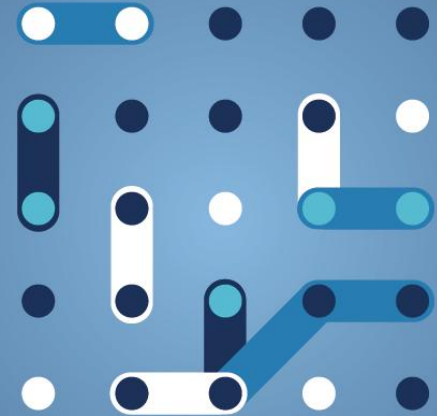
Next steps

- *April 2026: Review of the 2025-2026 Regulation WG Report*
- *April 2026: Define the next Actions and leaders for 2026-2027*
- *April 2026: Agree with other WGs and organizations (ETIP_SNET) to explore collaboration opportunities. Including the joint questionnaire on Data Spaces together with Data WG.*
- *May 2026: Define the work plan for 2026-2027 with Action Leaders including the knowledge sharing sessions and joint actions*
- *June & July 2026: Kickstart the activities for 2026-2027*
- *Sep 2026- Feb 2027: Core work plan development*
- *Feb 2027: Drafting of the Regulation Working Group Report*

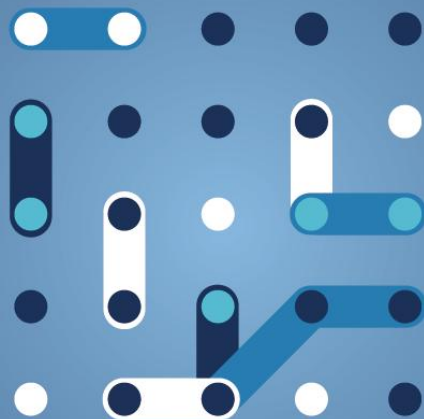


Breakout rooms for WGs discussion

Parallel Session 4 – Data Management



bridge



Data Management WG

General assembly on 24th of March, 2026

Dune Sebilliau

Trialog / Hedge-IoT

WG Chair

Leader of Action #3

Lola Alacreu

ETRA / ENERGENIUS

Leader of Action #1

Eric Lambert

EDF / O-CEI, OMEGA-X,
ENERSHARE & DATACELLAR

Leader of Action #4

Krzysztof Piotrowski

Leibniz IHP / ebalance-plus

WG Co-Chair

Leader of Action #5

Laurent Schmitt

Digital4Grids / EDDIE

Leader of Action #2

Gianluca Lipari

EPRI Europe / AGISTIN,
EU-DREAM, AI-EFFECT

Leader of Action #6

Agenda

13:45-14:45	Common workshop with Regulation working group	All participants
14:45-14:50	Introduction Activities at WG level	Dune Sebillieu, WG Chair Krzysztof Piotrowski, WG co-chair
14:50-14:55	Action #1: BRIDGE use-case repository	Lola Alacreu, Action #1 leader
14:55-15:00	Action #2: Data Exchange Reference Architecture	Laurent Schmitt, Action #2 leader
15:00-15:05	Action #3: Reference framework	Dune Sebillieu, Action #3 leader
15:05-15:10	Action #4: BRIDGE Standards User Group	Eric Lambert, Action #4 leader
15:10-15:15	Action #5: Interoperability of home appliances	Krzysztof Piotrowski, Action #5 leader
15:15-15:20	Action#6: AI	Gianluca Lipari, Action #6 leader
15:20-15:30	Questions and answers	All participants
15:30-15:40	Workshop restructuring of the DMWG	All participants
15:40-15:45	Conclusions and next steps	Dune Sebillieu, WG Chair



Introduction & WG-level activities

Dune Sebillieu, Data Management WG Chair

These initiatives are funded by



BRIDGE initiative & Data Management WG

Launch date

2016

N° of countries involved

39

N° of participating organisations

2237

N° of projects

105 183

SINCE 2016

Accumulated EU funding

€1.6bn

Time frame of the calls

2014-2024



Communication Infrastructure to exchange data (technical and non-technical)



Cybersecurity and Data Privacy



Data Handling, including the framework for data exchange and related roles and responsibilities



Smart Grids



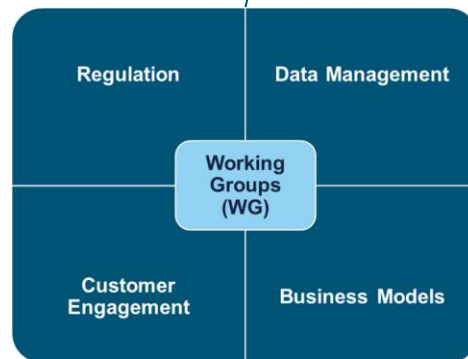
Energy Storage



Islands

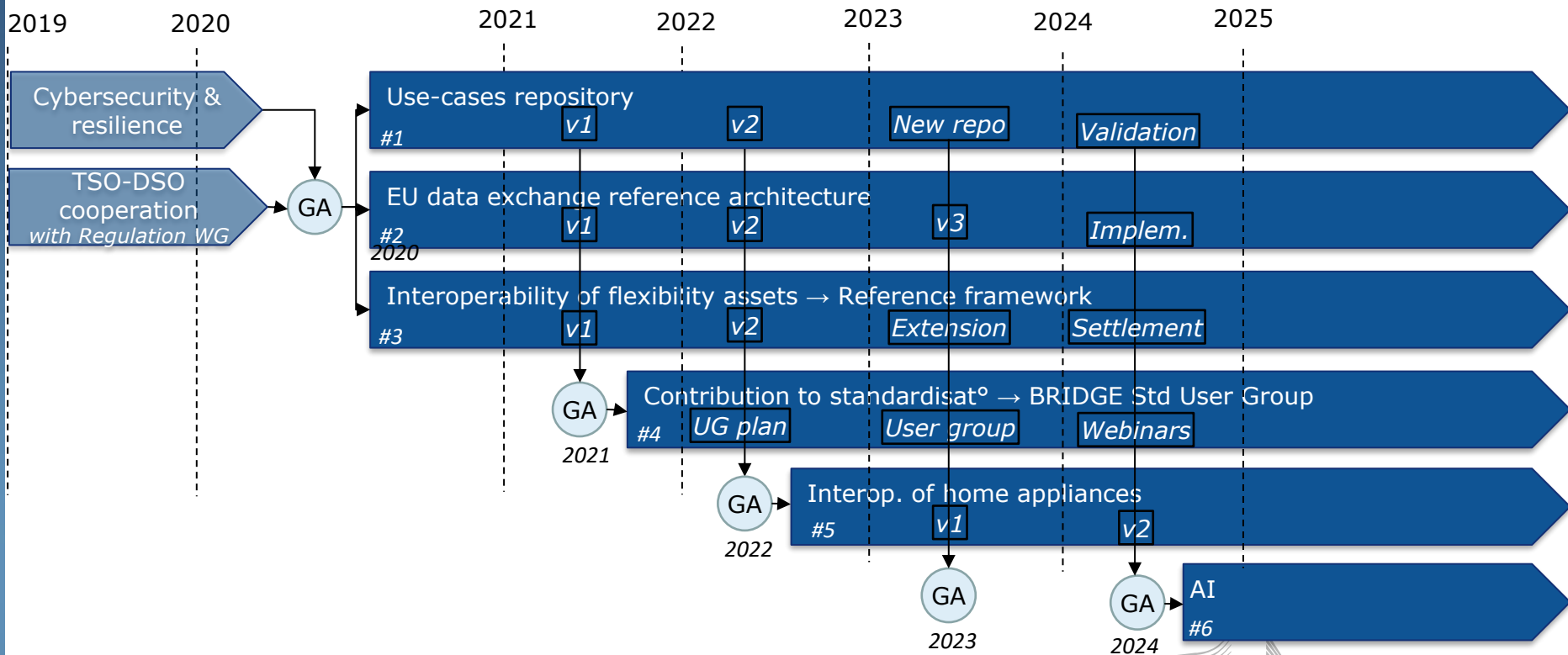


Digitalisation

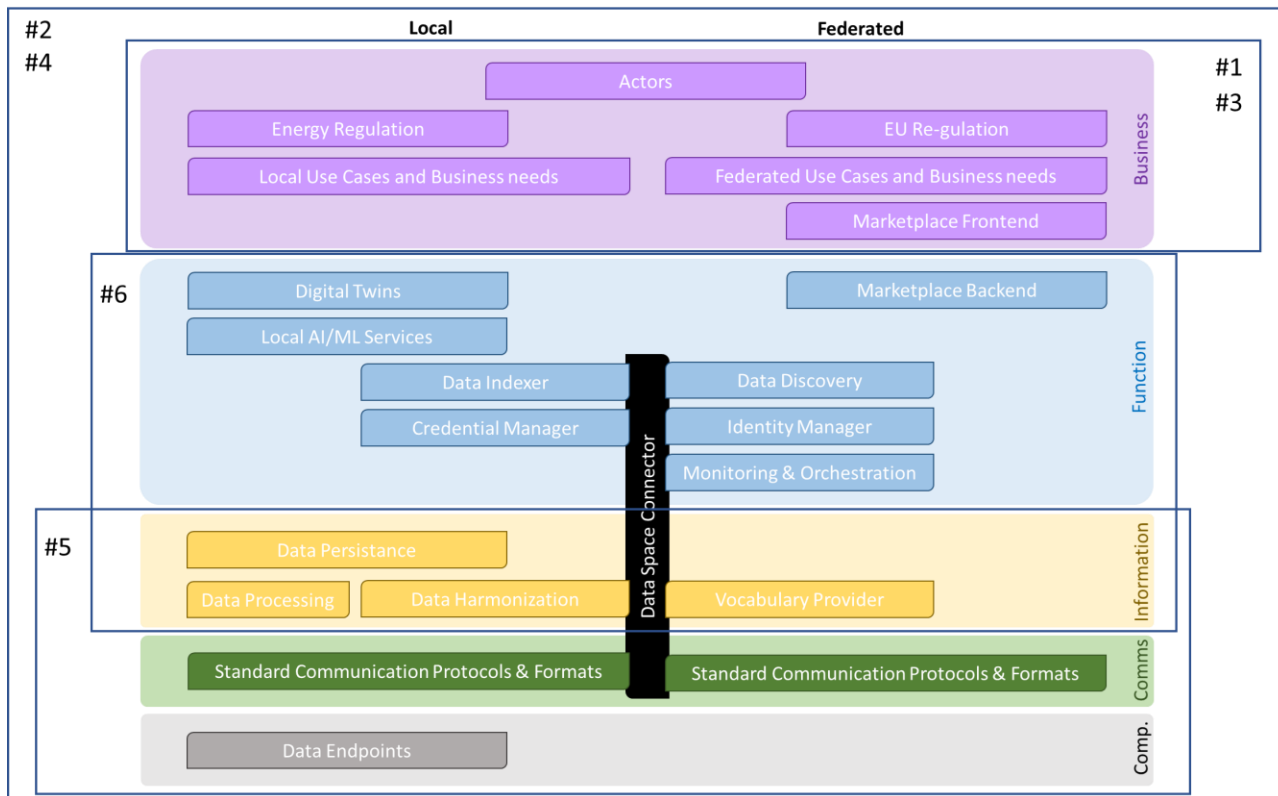


European
Commission

On-going actions since 2019



Correlation between DMWG Actions



Report 2025-2026

- **1 common report drafted:**
 - Actions update
 - Next steps
 - Synergies within Bridge
 - Link with other initiatives



Action 1

Action#1: Use Case Repository

- The **BRIDGE use-case repository, based on IEC 62559**, was created to simplify and homogenise the definition of use cases for users with different background and to provide an overall view of all the projects UC in a simple format.
 - **Share best practices and state-of-the-art among Bridge projects**
 - **Foster shared knowledge in the Horizon energy community**
- The new Repository is live since last September and integrated in **Smart Electricity System portal under JRC domain**:

<https://ses.jrc.ec.europa.eu/use-cases>

Action#1: Use Case Repository

- All Bridge projects can contribute uploading UCs
 - Contact DMWG Action#1 to participate!
- UCs have to follow IEC 62559-2 template !
- Guidelines and F.A.Q. are available
- Accept to publish UCs content on JRC platform
- All UCs will be evaluated before publication
 - Quality check and proof reading

Action#1: Use Case Repository

JRC Smart Electricity Systems

[Home](#) | [About us](#) | [Activities](#) | [Projects](#) | [Laboratory](#) | [News & Events](#) | [Publications](#) | [Maps & Tools](#) | [EIRIE](#) | [European Energy Storage Inventory](#)

[European Commission](#) > [JRC SES](#) > [Maps & Tools](#) > [Use Case Repository](#)

Use cases

The **BRIDGE use-case repository**, based on IEC 62559, was created to simplify and homogenise the definition of use cases for [BRIDGE](#) members with different background and to provide an overall view of all the projects use cases in a simple format. Based on this, the **European Commission recommended to integrate this repository with existing EC platforms**, to make it fully operational, increase its use and visibility and facilitate the maintenance and security. After preliminary versions and updates the use case repository initially accessible under EIRIE platform is now available here.

The BRIDGE members, under the coordination of the **Action#1 of Data Management Working Group**, are allowed to publish their use cases following an iterative process aimed at ensuring the completeness and quality of the contents.

Navigate through the Use Cases available in the Repository

[Go to UC Repository](#)

[Manage your use cases](#)

Do you need any update of your use cases? you can manage them in [your personal space](#).

<https://ses.jrc.ec.europa.eu/use-cases>

JRC Smart Electricity Systems

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[European Commission](#) > [JRC SES](#) > [Maps & Tools](#)

Maps & Tools

Discover here the different tools we built to monitor, test and assess smart electricity systems and technologies



[Use cases repository](#)

Action#1: Use Case Repository

Public
Repository

Visitors can
view only the
published UCs

Visitor

Uses cases

Before [creating a new use case](#), contact Action#1 of the Bridge Data Management Working Group to coordinate your contribution mailing to secretariat@horizon-bridge.eu

Filter by

Use case ID

Name of the use case

Horizon Project

Apply

Uses cases (4)

Use case ID	Name	Latest update	Horizon Project
Maesha - UC1	Frequency control	05-08-2025 08:20:45	Maesha
RESONANCE - UC1	Automated Implicit Demand Response	04-07-2025 13:57:19	RESONANCE
ebalanceplus - UC6	Intentional Islanding after cascading failures	20-06-2025 11:10:35	ebalanceplus
UC12	Emergency & Restoration - Over-frequency protection module	14-03-2025 09:01:30	R2D2

Public access, no need to login



European
Commission

Action#1: Use Case Repository

Author

Personal Area in Repository

- Follow the Guidelines and read F.A.Q.
- Select 1 or more UCs from your Project
- Send feedback for improvement

Evaluator

Full view of Repository

- Guidelines for Evaluation
- Review and send comments to Author
- Publish UCs
- Collect feedback for improvement

ECAS login + Action1 leader authorization
2FA → EU Login Mobile app → EU Portal

Action#1: Use Case Repository

GUIDELINES

https://ses.jrc.ec.europa.eu/sites/default/files/2025-10/bridge-uc-repository---guidelines-for-uc-creation_v1.1.pdf

PART A - DESCRIPTION OF THE USE CASE REPOSITORY

PART B - GUIDELINES FOR USE CASE CREATION AND EVALUATION

F.A.Q.

<https://ses.jrc.ec.europa.eu/use-case-faq>

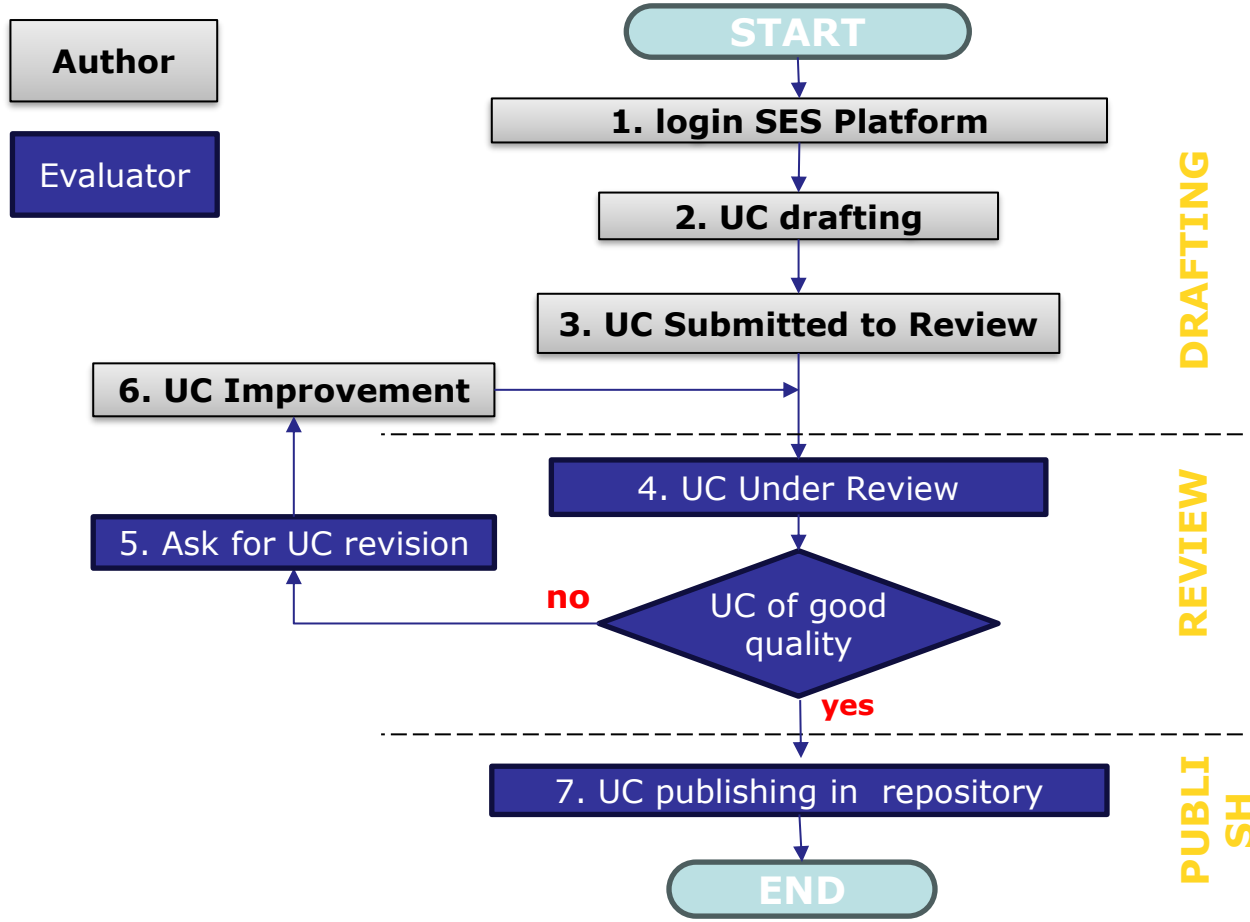
FAQ's

Here you can find the FAQ:

What is the Use Case Repository?	+
What kind of data is stored in the Use Case Repository?	+
Who can access the Use Case Repository?	+
Who can create a Use Case in the Repository?	+
How can I contribute to the Use Case Repository?	+
How is data privacy ensured?	+
What is the procedure for publishing a Use Case?	+



Action#1: Use Case Repository



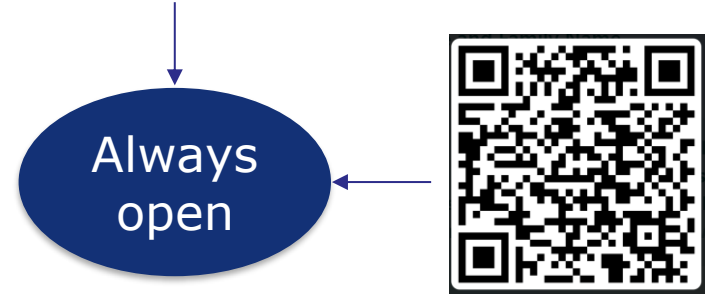
The process of creating and evaluating UCs is based on separate and distinct sessions in which author and evaluator can alternately edit and review a UC.

Action#1: Use Case Repository

Expression of interest in Action#1: survey 2025 = 37 persons

Action1 Questionnaire: <https://forms.office.com/e/bv1wyzB5AC?origin=lprLink>

- ECAS ID
- Author? Evaluator? Both?
- Time Availability



Only 12 of 37 answers to Action1 questionnaire
and actively contribute to the Repository

Action#1: Use Case Repository

Active Contribution in Action1?

**At least 1 UC creation/review completed
and published (to be included
in the annual report)**

- **WE NEED VOLUNTEERS!**
 - Email me or the Bridge secretariat if you want to participate
- We are now in the 1st iteration of UC creation/review

Plan for 2026-2027

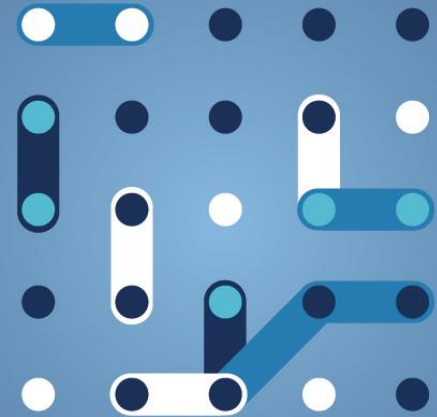
- To seek additional volunteers to ensure the repository's ongoing growth and quality.
- Updating and confirming the list of evaluators.
- Continues with the creation and evaluation of the UCs in the repository.



Action 2

EU Data Exchange Reference Architecture

Laurent Schmitt, Action #2 Leader



Annual activity report

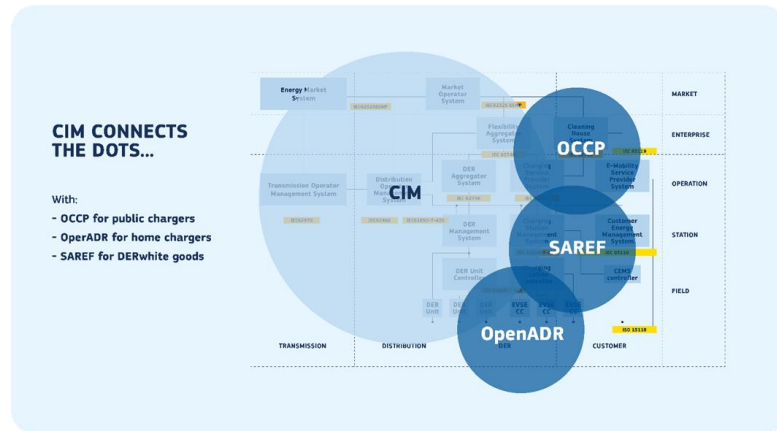
Data Management Working Group

Action #2: Data Exchange Reference Architecture (DERA)

- Development of a reference DERA3.1 Data model and associated ontology
- Coordination and alignment exchanges with key projects (Platone, Onenet, Eddie, Omega-X, Interstore, FlexOffer, Intnet, Decodit, TwinEU) and initiatives (Flexibility code drafting and new D4E)
- Alignment with ETSI-CEN-CENELEC methods as well as D4E reference usecases to anticipate standard extensions
- Contribution to the IDSA Intnet whitepaper on dataspace interoperability
- Launch of a data modelling community to support new project deployments (on-going monthly meetings) and GitHub to share data models and profiles

Key objectives for Action #2 in 25-26

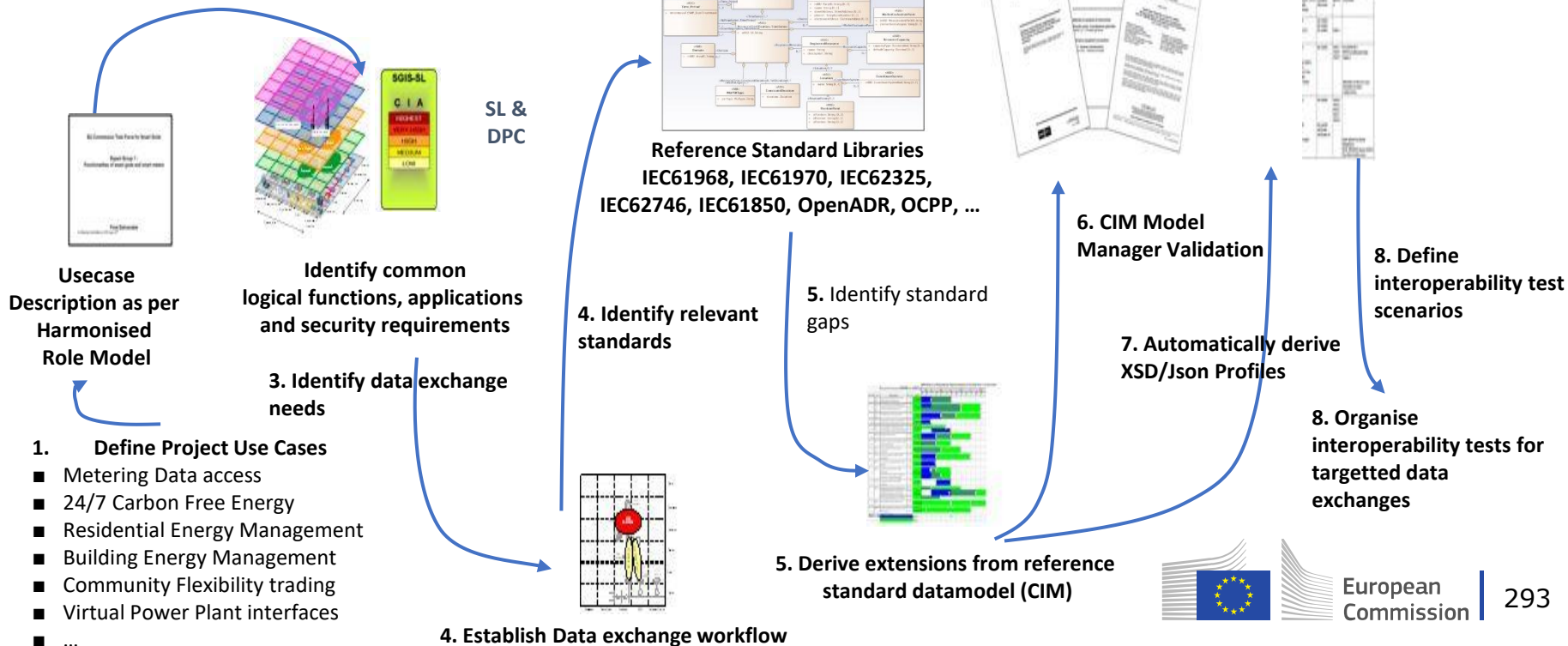
- Grow the data modeling team and number of projects engaged into the community
- Align with other on-going initiatives: D4E, interop tests, data spaces, ontologies, ...



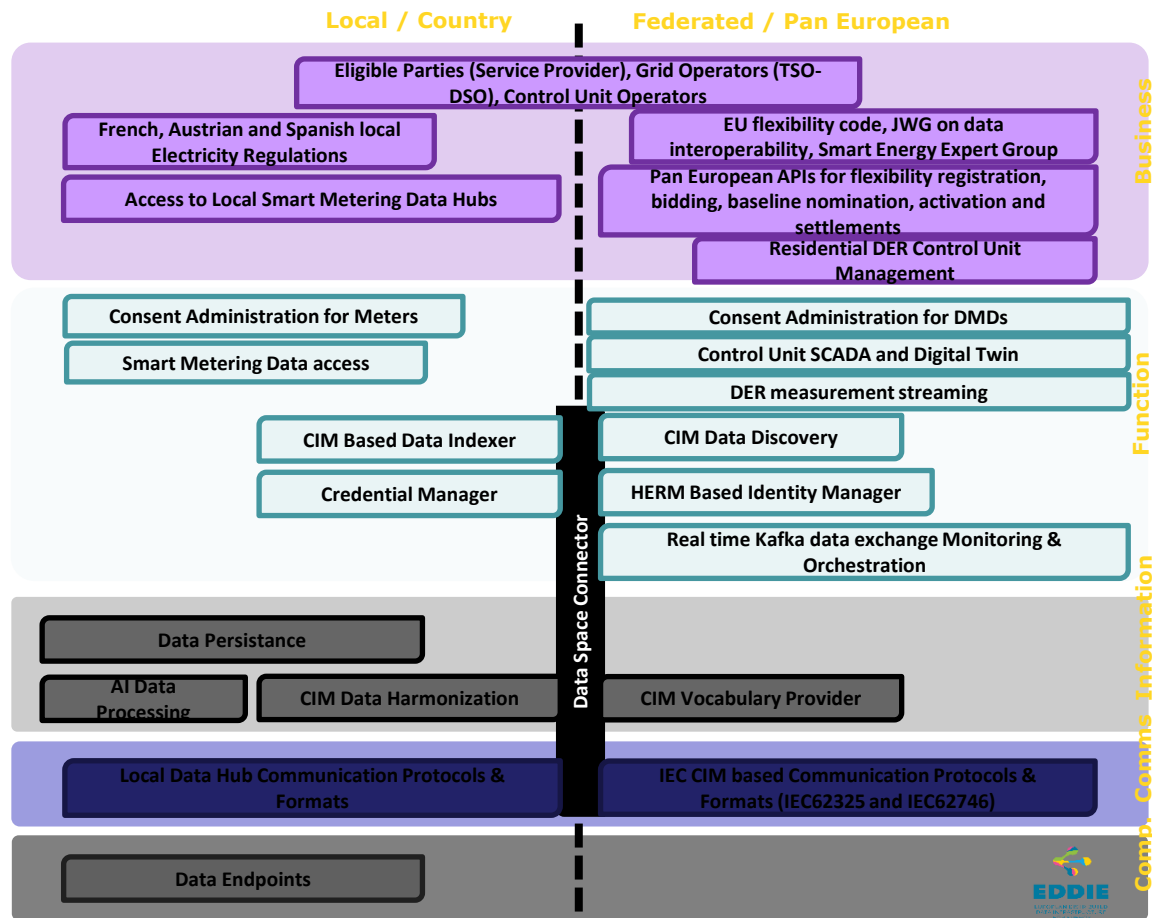
Reference DERA Implementation Methodology

2. Usecase mapping

Map Project usecase to the reference SmartGrid Architecture Model, data protection classes and security levels



Mapping with key Data exchange services



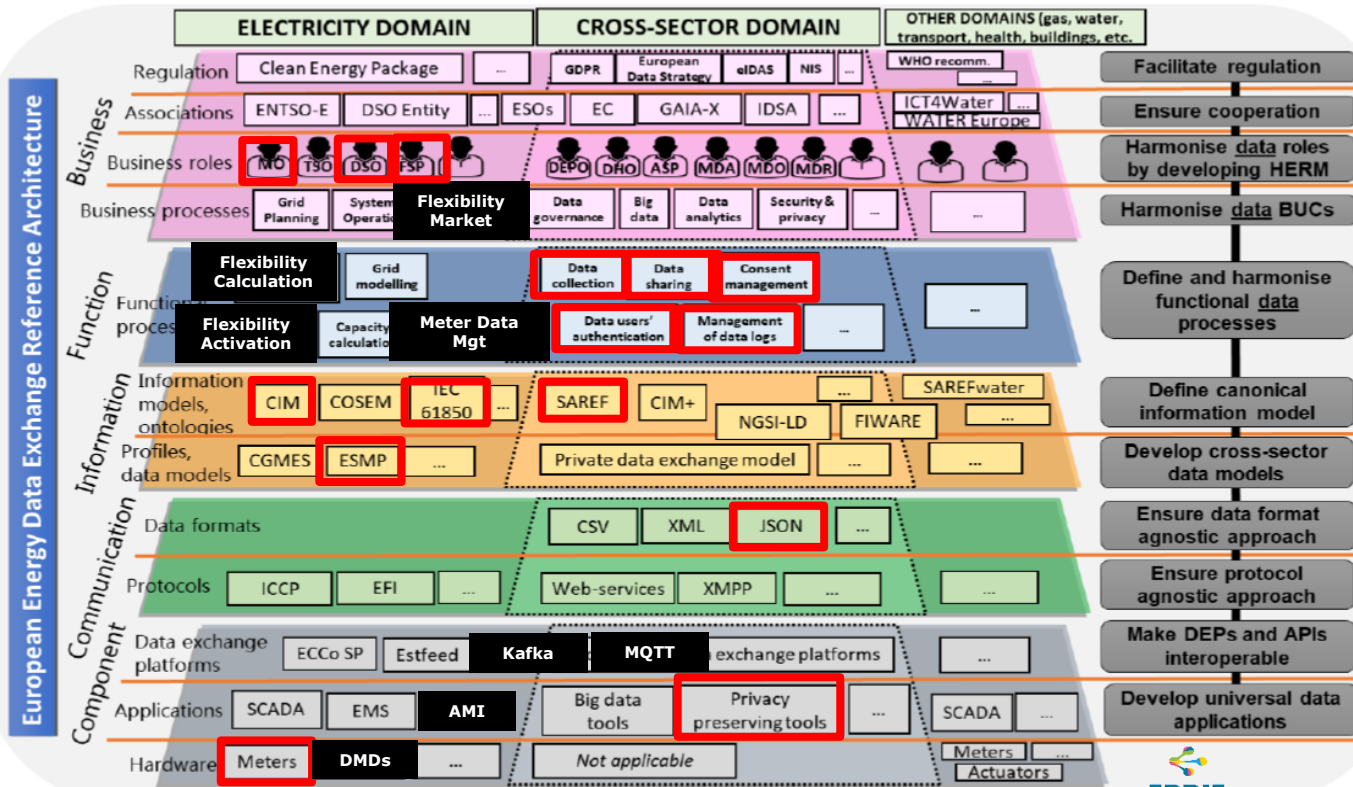
Key input required from project architecture teams to join the Bridge DERA data modelling community

Typical example from Eddie project



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Usecase mapping with IEC SGAM layers



Typical example from Eddie project

New Bridge data modelling tools and libraries



Information Model design
according to CIM Model
manager guidelines



Information Model design
according to CIM Model
manager guidelines

Opensource
Implementations



Reference CIM data model

DERA CIM Based
Vocabulary hub
+
Bridge library for logical
functions and apps
+
Data exchange service
library

Specific project extension



Core Bridge DERA
Modelling support team

GitHub for DERA Data
model management

Central project data
model

Automatic Profile
generation

Mapping with other
relevant standard data
models

UML to xsd/json as per
IEC62361-100/104

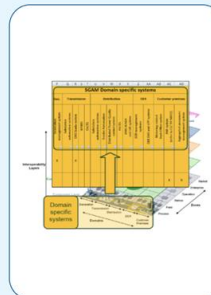
Support to Bridge/CEEDS
Project Deployment
Teams

Support from the
opensource community



METHODOLOGY FOR INTEROPERABILITY

- The system interoperability testing method should cover conformance testing, defining relevant "profiles" and "test use cases"
- Domain specific systems should be clearly identified as well as associated data exchange interfaces.



Irrelevant

The implementation has no features in common with the specification. (So the question of conformance not a rise).



Consistent

The implementation has some features in common with the specification, and those features are implemented in accordance with the specification. However some features in the specification are not implemented, and the implementation has other features that are not covered by the specification.



Compliant

Some features in the specification are not implemented, but all features implemented are covered by the specification, and are in accordance with it.



Conformant

All the features in the specification are implemented in accordance with the specifications, but some more features are implemented that are not in accordance with it.



Fully Conformant

There is full correspondence between specification and implementation. All specified features are implemented in accordance with the specification and there are no features implemented that are not covered by the specification.



Non-Conformant

Any of the above in which some features in the specification are implemented not in accordance with the specification.



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First message released and shared with the IEC TC57 WG21 community

EDDIE Data Modelling



EDDIE

Starting points

Model requirements

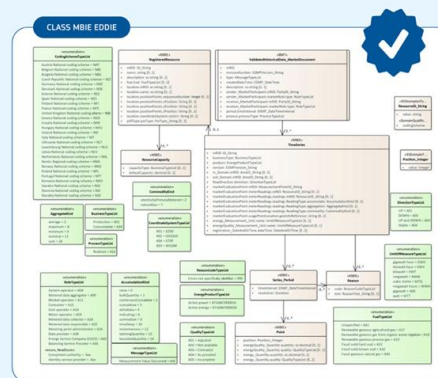
- Published Implementing regulation (COM/2021/803)
- New Implementation Regulations in progress (demand response)

Inputs used

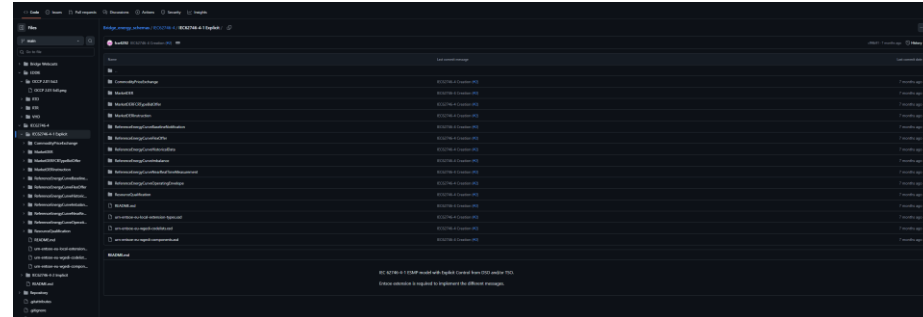
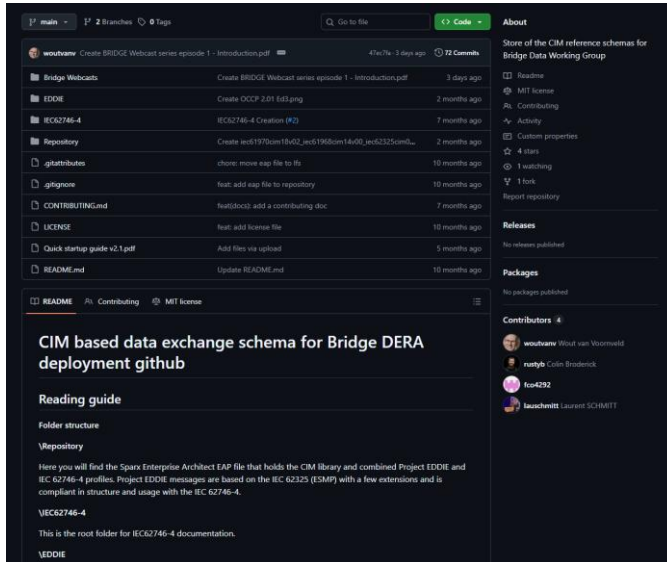
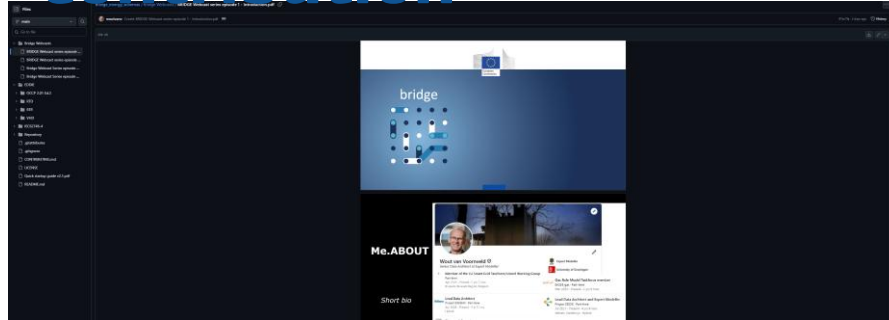
- Interface and OneNet results
- IEC62325-351 Ed.3 ESMP Profile
- Permission class from IEC/WG16 ENTSO-E CIM for retail market Subgroups work on Procedures For Access To Metering And Consumption Data
- IEC62746-4 Profile DMD ex-ante measurement telemetry IEC TC57 WG21

Work in progress

- OCCP alignment with CIM
- OpenADR alignment with CIM



Open Github environment in place for contribution



Targetted actions for 2026

- Support DERA project implementations with data engineering tools, for. Ontologies, methodologies, best practices :
 - Refine DERA reference data ontologies developping from CIM and SAREF ontologies
 - Identify reference test usecases to support semantic interoperability tests of the next Common European Energy Dataspace developments in coordination with EU Data4Energy expert group
 - Develop the opensource community / release critical tooling as opensource to support coordinated developments
- Get return of experience from Projects on first implementations
 - Engage interested Horizon and Digital Europe projects to join our Bridge working group
 - Support project architecture team to implement DERA APIs / Facilitate deployment of DERA architecture as a service framework through interested project
 - Expand project modeller implication trough the core DERA modelling team / Feedback on necessary DERA improvements

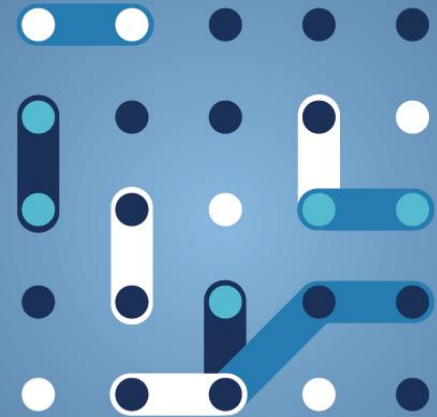
Plan for 2026-2027

- Establish an (inter)active community on the use of common message creating tooling (CimConteXtor/SyntaxGen).
- Having an operational developers team to support solving tooling issues and work on enhancement requests from the BRIDGE Github community.
- Expanding the group of functional experts that can help assist EU projects demands with best practices and on-the-job guidance.

Action 3

Reference Framework

Dune Sebilleau, Action #3 Leader



Reference framework

- *7 Generic Business Processes (GBP)*
 - Flexibility for SO through open market
 - Flexibility for SO via prior bilateral agreement
 - Flexibility for BRP portfolio optimization
 - Flexibility for energy community optimisation
 - Implicit flexibility using dynamic steering signals
 - Energy monitoring and energy management
 - P2P Trading in energy community
- *Functions and interfaces*
- *1 sub-process : settlement*
 - **Settlement guidelines**
- *Standards used in the GBPs*

Actions 2025-2026

T3.1: Further improve the Reference Framework and its GBPs

- **Guidelines for the use of the reference framework**
- **Boundaries definition**

Active
contributors

T3.2: Continue refining the Generic Actor List and harmonizing it with use case definitions

- **Transfer the topic to another initiative**

Active
contributors

T3.3: Developing methodologies for standard stacking to improve interoperability

- **In collaboration with actions 4 and 5**
- **Interactions between types of standards**

Active
contributors

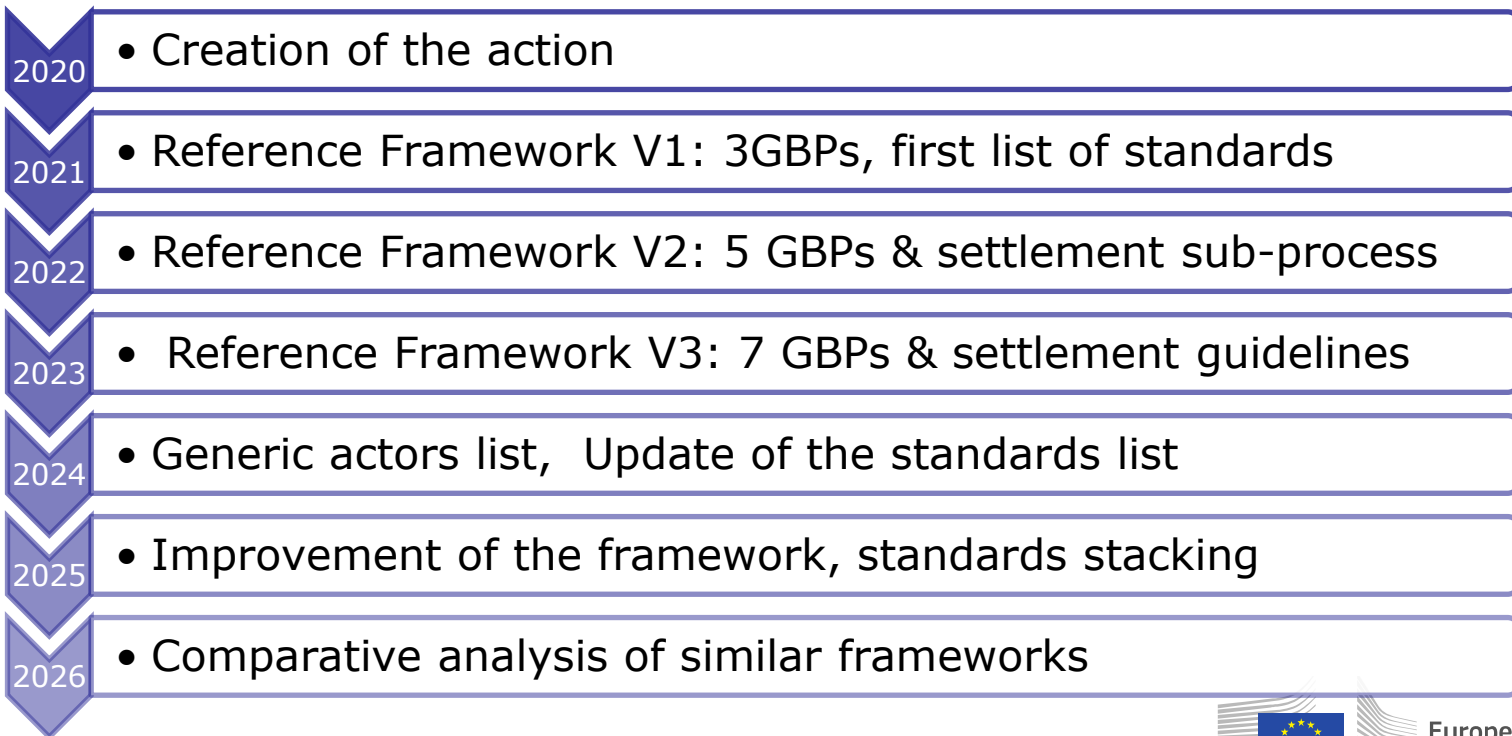


Plan for 2026-2027

Focus on the links with other frameworks

- Identify similar frameworks
 - *From AIOTI, IEC, SEEG D4E, CEN/CENELEC, Joint working group ENTSO-E/EU-DSO ...*
- Compare frameworks to the Bridge Reference Framework
 - *Overlaps, complementarity, inconsistencies*
- Define the scope of the Reference framework
 - *Establish links with other initiatives*
 - *Identify gaps in the framework*
- Improve the projects participation
 - *Provide a process for the onboarding of projects*

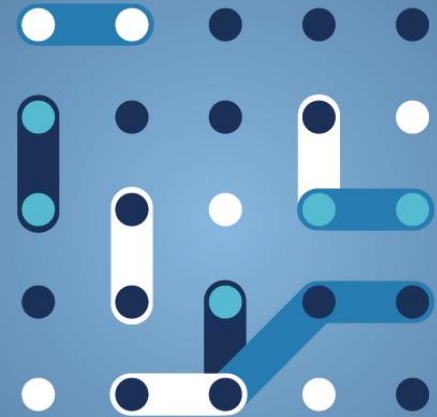
Reference framework: Evolution



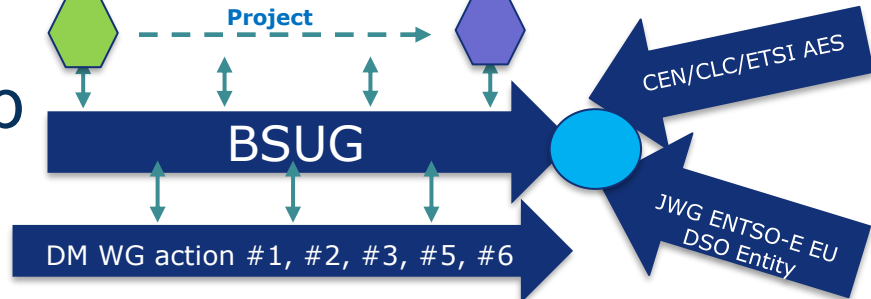
Action 4

BRIDGE Standards User Group

Eric Lambert, Action #4 Leader



Bridge Standards User Group



- Improve WG connection to projects:
 - Continue to get presentations from Projects
 - Standard Starter Kit (IEC 63097, IEC 63200, IEC 62913-1, IEC 62559-2/3, IEC 62357-1, ...) with dedicated **webinars**
- Support DERA implementation with practical tools, incl. Ontologies, methodologies, best practices :
 - Data Space Energy projects to expose their Semantic Interoperability results (methodology, Return of experience on used ontologies, code components, data sets and transformation tools, ...)
- Identify relevant protocols & standards, Code Components:
 - Cybersecurity landscape and link with AIOTI
 - Flexibility
 - Interoperability of Home Appliances
 - Data Space standards
 - ...
- Get return of experience from Projects on some standards and identified problems
 - Feed CEN/CLC/ETSI **All Electric Society** CoG (former Smart Grids Coordination Group)

Actions 2025-2026

- Continue cooperation with different initiatives: CEN-CENELEC-ETSI AES, JWG ENTSO-E EU DSO entity
 - Review documents
 - Common activities
- Update valuable external resources (IEC SyC Smart Energy, ENTSO-E CGMES webinars, DERLab, ...)
- Update of the **repository of code components** and figure out what has been reused
 - Collect feedback on standards from Bridge projects
 - Gather contributions to standards
- Update webinars (<https://t.ly/n9aiQ>) :
 - for instance list of webinars on **semantic interoperability test between 5 Energy Data Spaces projects**, webinars of standards for Data Spaces, ...
 - 32 videos : Number of views under expectations... (131 highest ...)
- Coordinate with other Bridge DM WG actions
 - Try to establish a survey in order to figure out if this action is still relevant and/or need to merge with other Bridge DM WG actions

BRIDGE Standards User Group Webinars

Plan for 2026-2027

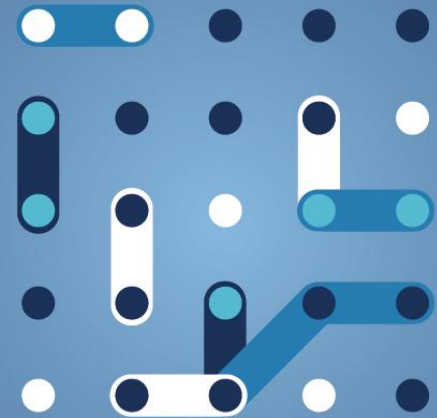
- *Contribute to reinforce Project on-bording process*
 - *What is asked to projects on standards contribution ?*
- *New webinars ? (ENTSO-E CIM WG, IEC TC13/SC23K architecture, ...)*
- *Focus on the links with other Bridge Data Mgt Actions*
 - *Action #1*
 - *Role Model alignment with JWG ENSO-E EU DSO Entity HEMRM*
 - *Propose new UCMR functionalities (62559-3 import/export, ...)*
 - *study reusability of the UCMR solution ?*
 - *Action #2, #3, #5 : standards usage feedback*
- Reinforce the link with JWG ENTSO-E EU DSO Entity (**Flexibility**)
- Reinforce the link with CEN/CLC/ETSI AES CoG
 - Contribute to AES CoG Standardisation subgroup
 - List of standards supporting **flexibility**
- How **AI** can help BRIDGE Standardisation User Group ?



Action 5

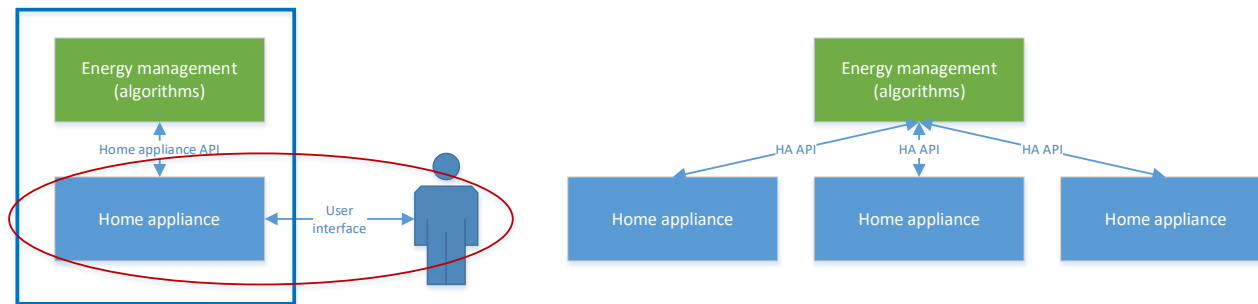
Interoperability of home appliances

Krzysztof Piotrowski, Action #5 Leader



Action #5 – The focus

We focus on the interaction between the diverse home appliances and the energy management layer



This interaction covers

- Medium – communication technologies and protocols
- Language – data semantics, formats and protocols

Over all the steps of the relevant lifecycle (set-up, security onboarding, use, maintenance)

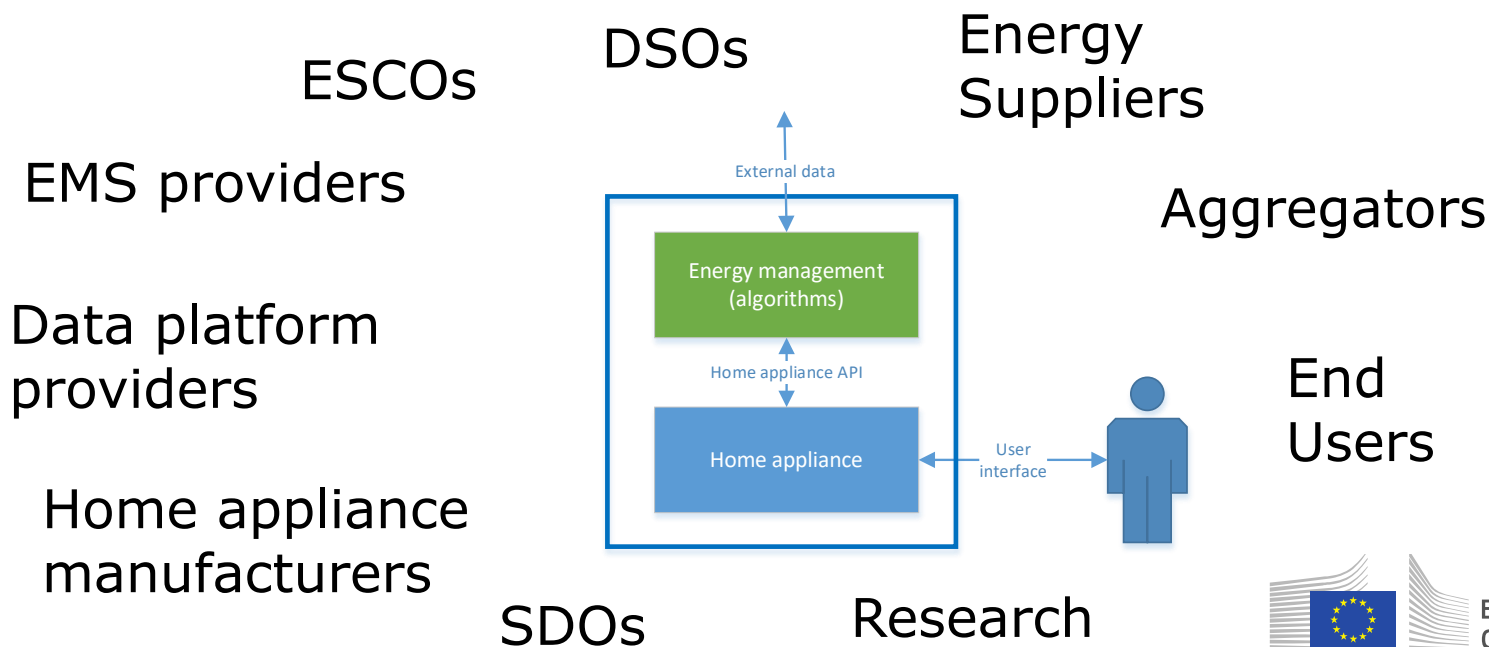
Action #5 investigates these activities for and within the BRIDGE projects

- From different perspectives, i.e., being users or providers of interoperability supporting solutions

Action #5 – The diversity in the roles and interests

There are multiple interest groups that are interested in influencing and / or using it

- With potentially different focus – different purpose



Action #5 – The approach

As in the previous years the Action #5 approach is focused on the following points:

- Common terms
 - to clearly describe the area of interest within the major context (link to Action #1 and Action #3)
- A survey among the BRIDGE projects – to capture the projects' state and needs
 - Identification of projects' products to support interoperability of home appliances
 - Identification of relevant standardization and harmonization activities (link to Action #4)
 - Identification of gaps and problems and monitoring trends
- Presentations of project products – solutions and approaches to support interoperability
- Integration in the DERA and Framework context (Endpoints) – link to Action #2 and Action #6
- Monitoring and supporting external activities
 - JRC CoC on Interoperability of energy smart appliances
 - Mercury
 - SEEG – D4E (D4E – STL – CoW)

Action #5 – Plan for 2026/2027

All BRIDGE participants are asked to reply to the survey

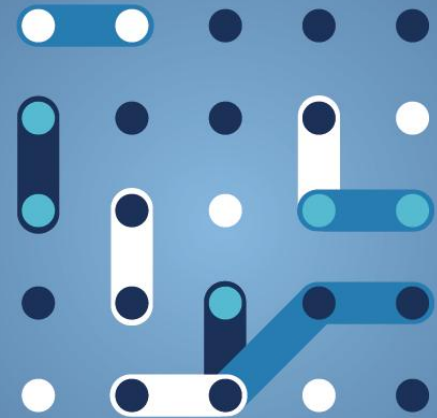
Active Action #5 members meet once a month

- **We present and discuss approaches provided by the projects**
- **We discuss the external activities towards HA interoperability**
- We analyse the survey responses from all participants
- We plan what to put into the report this year
- We work on the survey questions and the report

Action 6

Artificial Intelligence

Gianluca Lipari, Action #6 Leader



Motivation of the Action #6

- Rapid growth of AI applications in energy systems
- Need to understand how BRIDGE projects are using AI
- *Ensure alignment with EU strategies (Digitalisation of Energy Action Plan, EU AI Act)*
- *Address practical challenges: data availability and quality, data synthetization, interoperability, trustworthiness*
- Build a common ground for responsible, impactful AI across projects

Activities Carried Out so far

- Designed and disseminated a comprehensive AI survey
- Engaged over **30 BRIDGE projects** in the survey
- Held coordination and discussion sessions
- Performed consolidated analysis of survey results
- *Discussed priorities and next steps*

Analysis of survey results

Survey Highlights:

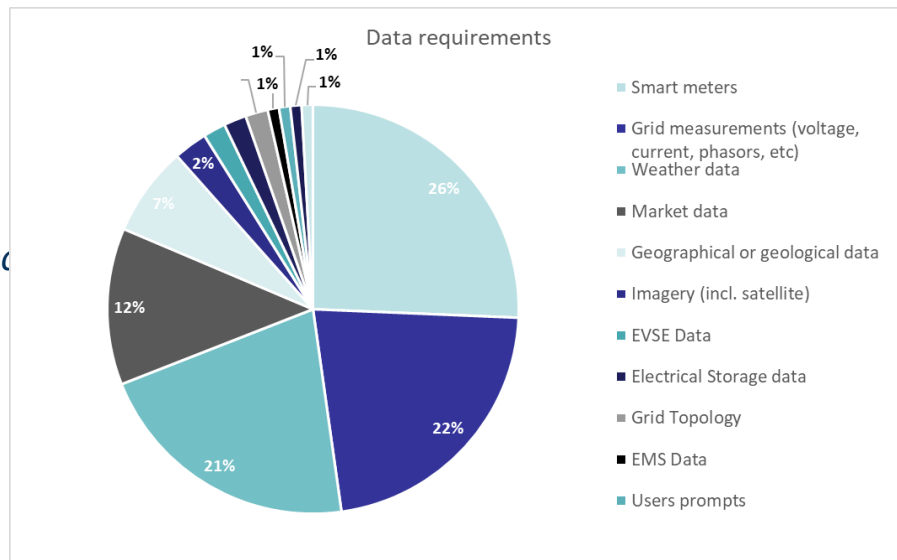
- 34 responses from BRIDGE projects
- *Main AI domains: forecasting, optimization, predictive maintenance, customer analytics*
- *Maturity levels:*
 - 15% TRL 1–3
 - 44% TRL 4–5
 - 41% TRL 6–7

Top Challenges:

- **Data availability & quality** (34% combined)
- *Model training* (10%)
- Explainability & trust (9%)

Top Benefits:

- *Improved* decision-making
- Efficiency gains
- Accuracy improvements
- Cost reductions

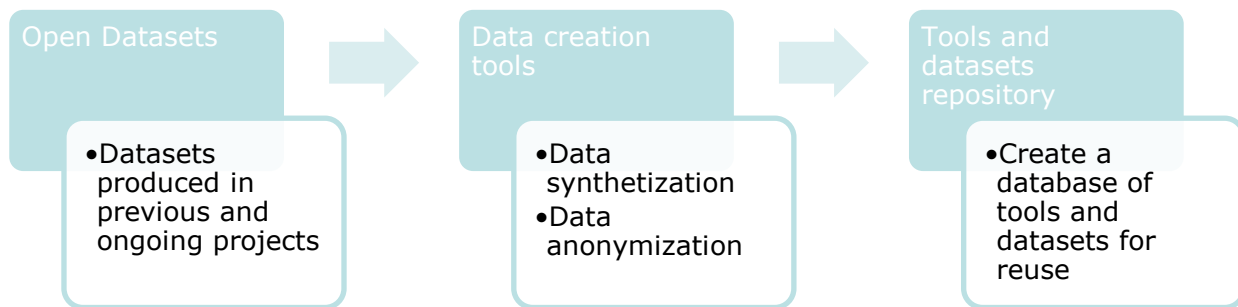


Goals and Expected Outcomes in 2025/2026

- Address **data availability and accessibility challenges** for AI applications
- Identify previous or ongoing projects that developed **tools for data synthesis** or created **open datasets**
- Promote **knowledge sharing and reuse of resources** across BRIDGE projects
- Foster cross-WG collaboration on AI governance, interoperability, and data availability

Plan for 2026-2027

- Need to collect open datasets and data synthesis/anonymization methods
- Initial mapping of relevant projects and initiatives
 - Create a database or Excel table to collect datasets and tools
 - Datasets: type of data, access policies, storage location, limitations for usage
 - Data creation tools: focus on synthesis and anonymization; document source data and generation options



- Define and develop concrete outputs
 - Identify and agree on key deliverables such as policy briefs, white papers, thematic workshops, discussion sessions



Questions & answers

All participants

These initiatives are funded by





Workshop : restructuring of the DMWG

All participants

These initiatives are funded by



Slido

<https://app.sli.do/event/9WD8b6VCXeYYATXpgK15ug>



- *What are the most relevant actions in the DMWG?*
- *What links between actions do you foresee?*

Restructuration suggestions

Actions restructuration:

- Integration action #3 with actions #2 #4 could facilitate the link with external initiatives
- Link actions #1 and #3 to integrate the generic use cases

Co-leading roles within actions to support organisation

- 0.5-1 day per month dedicated to organisation

Regroup the liaison works

Organise a physical meeting



Conclusion & Next Steps

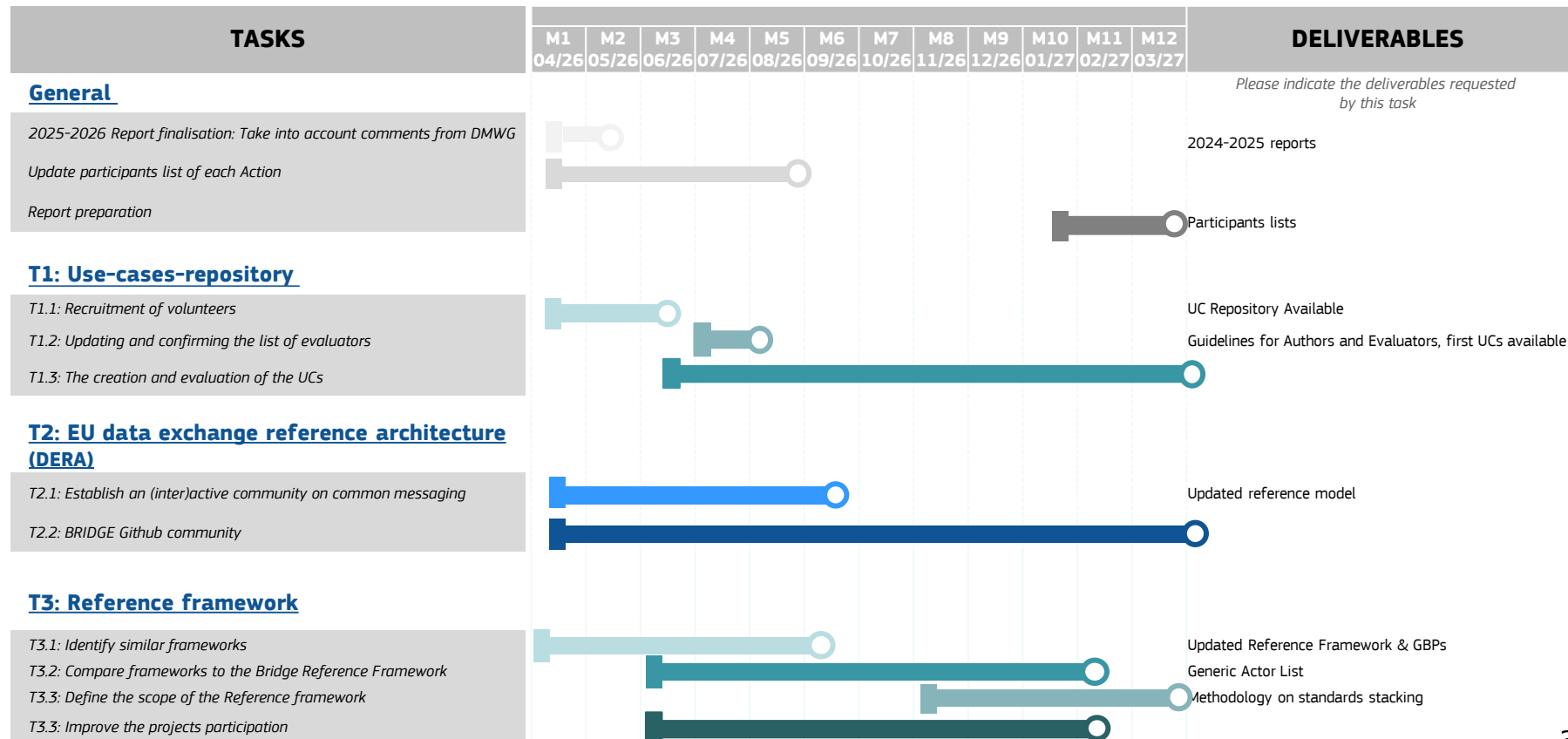
Dune Sebilliau, Data Management WG Chair

These initiatives are funded by



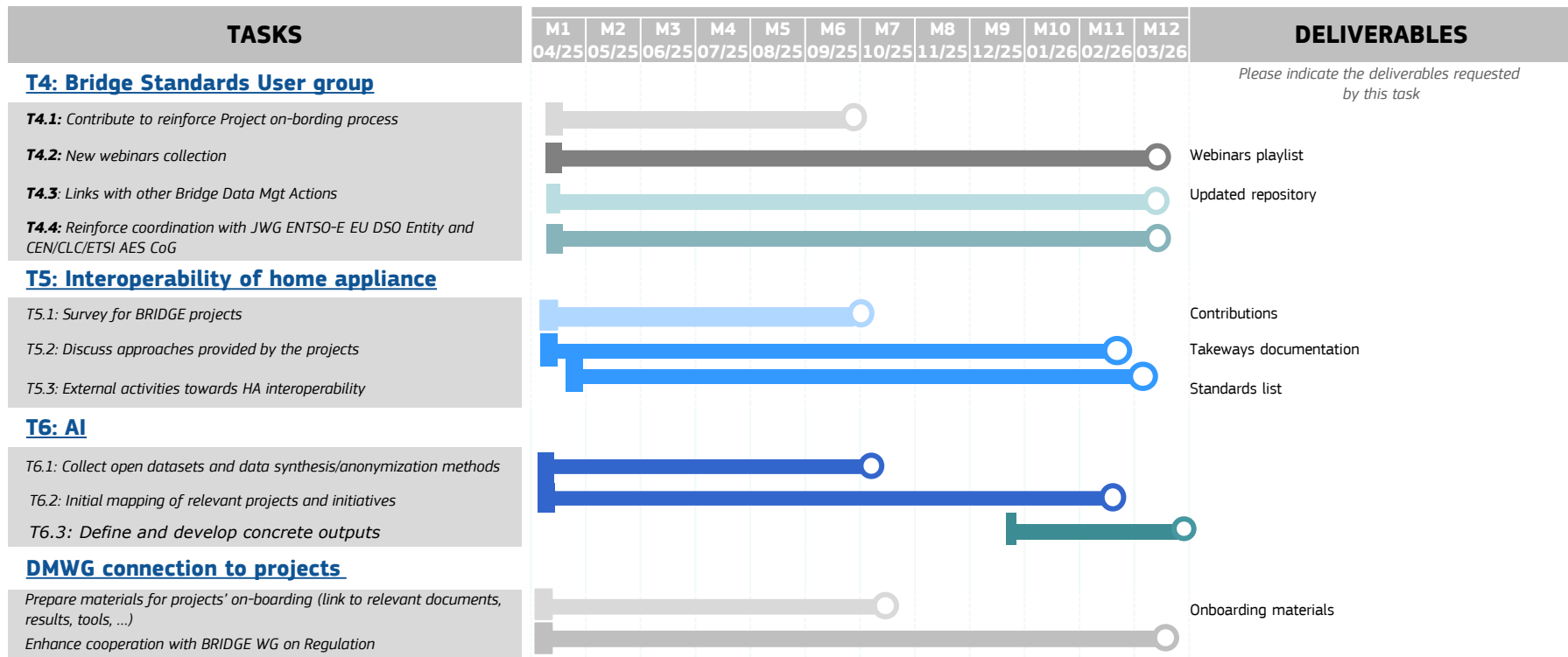
Workplan

Data Management



Workplan

Data Management





Data management & Regulation

All participants



These initiatives are funded by

Leads on collaborations

Involvement on European flexibility regulations

Regulations on Data

Regulations on AI

How to get involved in the making of regulations: Express concerns or propose improvements?

- **How to get engaged from the technical side to make the regulations meaningful?**

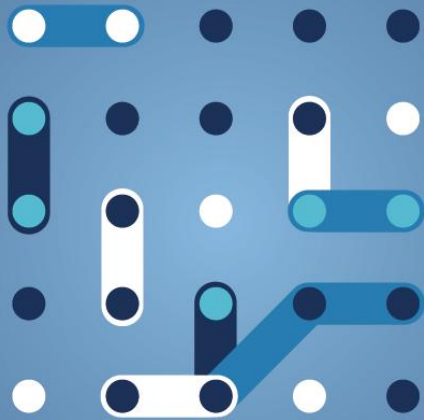
Regulations vs standardisation: role of each, pros and cons

- **JRC CoC: stands in the middle**



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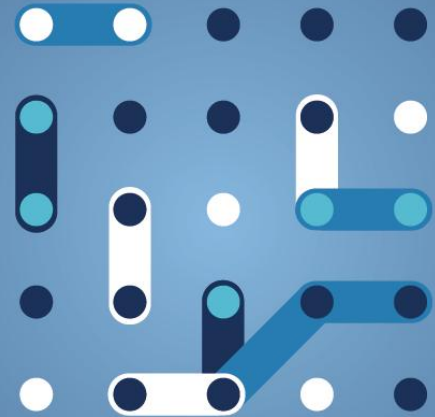


Thank you!



Networking Coffee

Meet here at 16:15



Plenary: “BRIDGE Working Groups – What are the next steps?”

Moderated by Elena Gallo, BRIDGE Secretariat



**José Pablo Chaves
Ávila**
*Chair
Regulation WG*



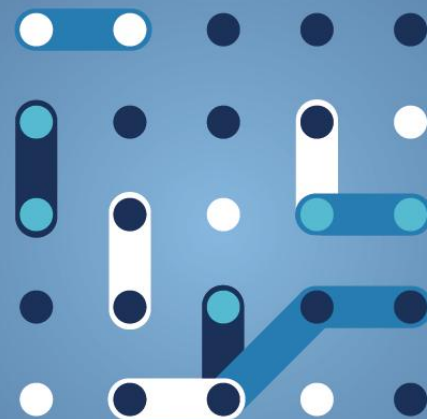
Dune Sebilleau
*Chair
Data Management WG*



Andrej Gubina
*Honorary Co-Chair
Business Models WG*



**Michael Brenner-
Fließer**
*Chair
Consumer and Citizen
Engagement WG*



Plenary: “BRIDGE Working Groups – What are the next steps?”



**José Pablo Chaves
Ávila**
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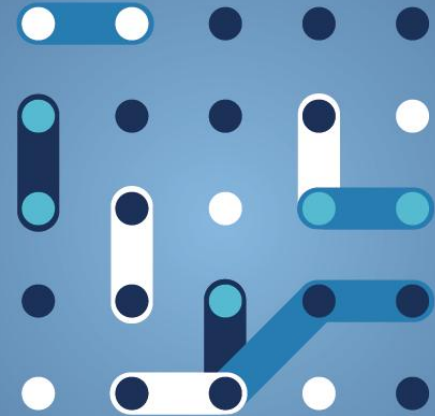
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Fließer**
*Chair
Consumer and Citizen
Engagement WG*



Outcomes of the discussion – Regulation WG

01

Lessons learned 2025

- ✓ **Energy communities** are widely recognised but mainly **focused on self-consumption**: market access is **limited** or requires intermediaries such as suppliers or aggregators.
- ✓ **LFMs are the most widely assessed mechanism**, while congestion management is the main service targeted
- ✓ **Aggregation and demand-side management are central to enabling this flexibility**, but limited corrective measures for DER misbehaviour still reveal **gaming-risk gaps**.
- ✓ **Remuneration schemes can provide diverse incentives to DSOs to (not) use flexibility** and plan under uncertainty

02

Recommendations 2025

- ✓ Set-up of **regulatory sandboxes** for development, testing, comparison of flexibility solutions
- ✓ Remove barriers that prevent the **access to electricity markets for small participants**
- ✓ Development of **comprehensive set of rules governing energy sharing**
- ✓ Define clear **compliance and penalty rules to reduce gaming risks for providing flexibility**
- ✓ The **coordinated use of mechanisms across services** should be encouraged to exploit synergies

03

Next activities 2026

- ✓ Joint Action with **Data Spaces** with Data Management Working Group
- ✓ **Energy Sharing** (P2P, Energy Communities, etc.)
- ✓ **Coordination and harmonization of multiple flexibility acquisition mechanisms & markets**, including quantitative results.
- ✓ V2X?
- ✓ Sector Coupling and market coupling?



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Plenary: “BRIDGE Working Groups – What are the next steps?”



**José Pablo Chaves
Ávila**
*Chair
Regulation WG*



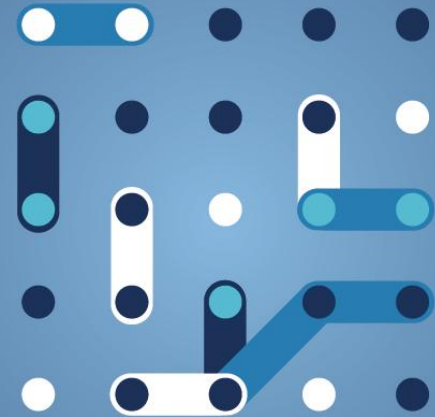
Dune Sebilleau
*Chair
Data Management WG*



Andrej Gubina
*Honorary Co-Chair
Business Models WG*



**Michael Brenner-
Fließer**
*Chair
Consumer and Citizen
Engagement WG*



Outcomes of the discussion – Data Management

01

Lessons learned 2025

- ✓ Coordination and alignment with external activities is essential
- ✓ Need more engagement from the projects

02

Objectives 2026

- ✓ Collaborate with JWG ENSO-E EU DSO Entity, CEN/CLC/ETSI AES CoG, AIOTI,ETIP SNET, IEC, SEEG D4E...
- ✓ Improve the participation and involvement of projects
- ✓ Continue contributions to the tools and

03

Next activities 2026

- ✓ Establish and animate liaisons with external activities and Bridge working groups
- ✓ Re-structuration of the DMWG
- ✓ Provide directions for participation and Contribute to onboarding
- ✓ Improve and contribute to Use case repository, BRIDGE Github community, Common message creating tooling, DERA, Reference framework, webinars playlist, HA interoperability
- ✓ Collect feedback from the contributors to the UC repository to promote the improvement of the tool
- ✓ Collaboration with Actions and WGs to evaluate centralisation of knowledge sharing tools

Plenary: “BRIDGE Working Groups – What are the next steps?”



**José Pablo Chaves
Ávila**
*Chair
Regulation WG*



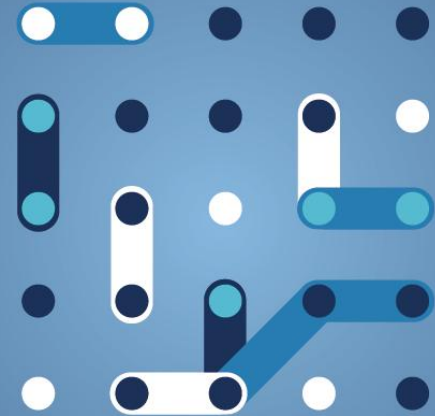
Dune Sebilleau
*Chair
Data Management WG*



Andrej Gubina
*Honorary Co-Chair
Business Models WG*



**Michael Brenner-
Fließer**
*Chair
Consumer and Citizen
Engagement WG*



Outcomes of the discussion – Business Models

01

Lessons learned 2025

- ✓ Early-stage business model thinking is still the exception, not the norm.
- ✓ The BRIDGE portfolio has strong technology but weak commercialisation infrastructure.
- ✓ The repository revealed a clear smart-grid-focused, digitally-distributed portfolio
- ✓ Regulatory barriers and funding gaps were identified as the twin systemic blockers to market uptake

02

Objectives 2026

- ✓ Business Model Handbook: provide draft after GA, final by summer, test and validate it by BM WG projects
- ✓ Business Model Repository: Reduce number of items/ increase practicality
- ✓ Finish the annual report

03

Next activities 2026

Task 1: Business Model Handbook

- ✓ Involve projects from the beginning - share BMH to them from the start
- ✓ Data visualisation for the repository - Establish a connection with the 4 archetypes + pathways defined in Task1

Task 2 and 3: Business Model Repository

- ✓ Pick up a few good examples (e.g. 3 champions) from repository and showcase them
- ✓ Explore integrations with the repository of use cases in DM WG
- ✓ Sharing best practices from the BMR to Technopedia

Plenary: “BRIDGE Working Groups – What are the next steps?”



**José Pablo Chaves
Ávila**
*Chair
Regulation WG*



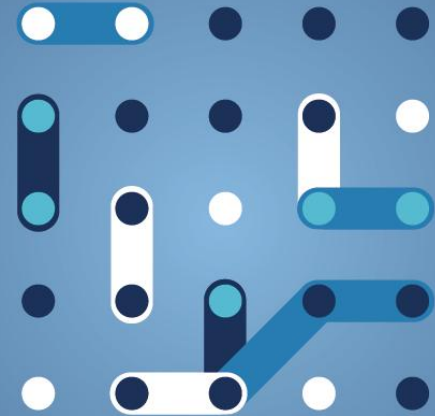
Dune Sebilleau
*Chair
Data Management WG*



Andrej Gubina
*Honorary Co-Chair
Business Models WG*



**Michael Brenner-
Fließer**
*Chair
Consumer and Citizen
Engagement WG*



Outcomes of the discussion – CCE

01

Lessons learned 2025

- ✓ Engagement still is challenging for many projects
- ✓ Meaningful co-creation can help us overcome the challenge
- ✓ Engagement is a multidimensional concept (including emotions)
- ✓ AI can be a vehicle to support us in engagement, but we need to be careful how we apply it
- ✓ We have not yet succeeded in making our results accessible

02

Objectives 2026

- ✓ Societal Readiness concept
- ✓ AI from a citizen perspective
- ✓ Empowerment/ energy literacy/ digital literacy
- ✓ Ensuring a just transition
- ✓ Making our outputs more accessible

03

Next activities 2026

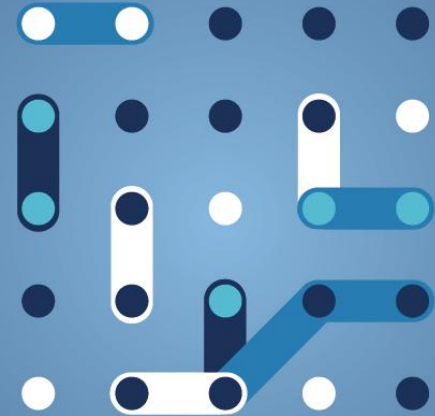
- ✓ Finalise the report of this circle
- ✓ Further develop the knowledge hub
- ✓ Narrow down focal topics for the next circle



Closing session

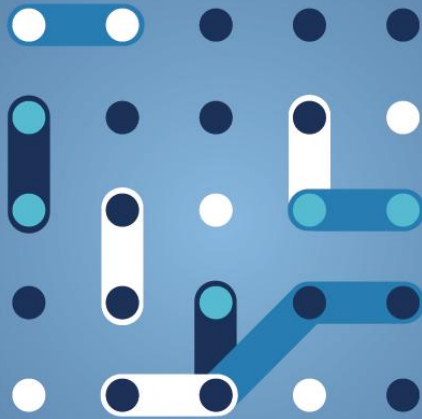


Beatrice Profeta
BRIDGE Secretariat





bridge



Thank you!