bridge

General Assembly

22nd, 23rd and 24th March 2022 - Online

CONCLUSIONS AND NEXT STEPS

CONTENT

INTRODUCTION 3

MAIN CONCLUSIONS AND NEXT STEPS 4

Focus Topic Session: DIGITALISATION OF THE ENERGY SECTOR 7

BACKGROUND 7

CONCLUSIONS 7

NEXT STEPS 8

Parallel Session 1 - REGULATION WG 9

BACKGROUND 9

CONCLUSIONS 9

NEXT STEPS 10

Parallel Session 2 - STORAGE 12

BACKGROUND 12

CONCLUSIONS 12

NEXT STEPS 12

Parallel Session 3 - CONSUMER & CITIZEN ENGAGEMENT 13

BACKGROUND 13

CONCLUSIONS 13

NEXT STEPS 14

Parallel Session 4.1 - DATA MANAGEMENT WG 1/2 (22nd March) 15

BACKGROUND 15

CONCLUSIONS 15

NEXT STEPS 15

Parallel Session 4.2 - DATA MANAGEMENT WG 1/2 (23rd March) 16

BACKGROUND 16

CONCLUSIONS 16

NEXT STEPS 16

Parallel Session 5 – Business Models 18

BACKGROUND 18

CONCLUSIONS 18

NEXT STEPS 18

INTRODUCTION

BRIDGE is a European Commission initiative that brings together research and innovation projects that address Smart Grids, Energy Storage, Islands and Digitalisation to create a structured view of cross-cutting issues. The projects are financed by Horizon 2020 and Horizon Europe programmes. BRIDGE is organised along four working groups, namely Data management, Regulation, Business models and Consumer and Citizens engagement. They report on the results of their work and decide on what topics to collaborate on during the coming year(s) at the annual BRIDGE General Assembly. The most recent Assembly took place online on 22-24 March 2022.

The objective of these annual meetings is to share experience and create a better understanding among the BRIDGE projects, learn more about the projects results and help them to strengthen cooperation with a view to establish European best practice standards. BRIDGE aims to stimulate structured dialogues between regulators, authorities and innovation projects on smart grids and energy storage, as well as to facilitate the uptake of innovative technologies in the energy sector. BRIDGE also aims to synthesise and deliver conclusions and recommendations on exploiting the project results that would support, from the energy perspective, the delivery of the Green Deal objectives.

The Assembly was very well attended, with over 200 people in the plenary and around 70 participants at the various parallel sessions that represented 58 projects. This year, on top of the traditional presentation of new projects (5) and lessons learned from the completed ones (5), we looked into bringing closer together communities relevant to the Energy R&I. We had presentations from the ETIP SNET, we learnt about ; the JRC presented the EIRIE platform and two other initiatives came to present themselves and share their latest updates, namely the Clean Energy Transition Partnership and the European Joint Programming Platform Smart Energy Systems (JPP – SES).

The sessions covered the work of the four working groups that are active in BRIDGE as well as the results of the Replicability and Scalability Task Force (which concluded their work). In preparation of future work, we also held sessions dedicated to two key topics - digitalisation of the energy sector and storage.

A video summarising the main aspects and conclusions of the GA will be made available in DG ENER YouTube channel and communicated to the entire BRIDGE community through its newsletter.

This year's GA emphasized that technologies, and technology development, are crucial to achieve our Green Deal objectives. Our energy system needs to change, the technologies we use need to evolve and some of the technologies we need are not yet available at a cost-competitive level. Thus, furthering the R&I activities, scaling up innovative solutions and ensuring their market uptake are instrumental.

The various GA sessions made the link with the EU strategic and policy framework for energy, notably the EU strategy on energy system integration and the upcoming Digitalisation of Energy Action Plan, the 'Fit for 55' package and the latest RePowerEU plan. Representatives of DG Energy presented to the participants the latest developments, stressed the importance to remain aware of and connected to the policy framework, as on the one hand it underpins their work for years to come and, on the other hand, makes good use of the feedback coming from the BRIDGE community. It was stressed that the R&I efforts and related project are central to the clean energy transition and the EU efforts on maintaining the security of energy supply.

Despite the Covid-19 crisis and the difficulties it brought to working conditions and meetings, the projects individually and the Working Groups and Task Forces collectively have shown great resilience and flexibility and delivered on most the planned outcomes (see below for more details). These are excellent achievements that have been possible thanks to the dedication and hard work of the research community, for which the BRIDGE initiative continues to prove that is a key pillar.

MAIN CONCLUSIONS AND NEXT STEPS

With BRIDGE running for more than six years now, we can consider it as a well stablished and successful organisation that is attracting an ever-increasing interest.

With respect to the general organisation of BRIDGE:

1. BRIDGE can only work if the projects effectively participate in its activities and contribute to the relevant deliverables. To support that, the policy and project officers in DG Energy and CINEA, together with the BRIDGE Secretariat will continue to facilitate the membership and participation of projects in BRIDGE and to report about it.
2. The BRIDGE General Assembly (and initiative as a whole) is open to cooperation with other initiatives, external projects, and platforms such as the **ETIP SNET**, the **Clean Energy Transition** and the **JPP SES.** BRIDGE projects were invited to consider getting involved in international collaboration on smart grids development, with special regard to the International Smart Grids Action Network[1] and the Green Powered Future Mission[2]. It is important to strengthen the sharing of experiences and identify potential synergies and areas of common action. The European Commission and the BRIDGE secretariat will therefore continue to **involve external stakeholders,** in a flexible manner, to define common priority topics, synchronise efforts and optimise the global use of resources to achieve a sustainable energy transition.
3. Sharing data, experiences, working methods and best practices were highlighted as an important added value of BRIDGE in many sessions. Optimal ways to facilitate this deserves additional attention, as the number of projects, organisations and persons involved in BRIDGE continue to expand. The Commission (JRC and ENER), with PANTERA H2020 project, BRIDGE and ETIP SNET are working together to develop the *Knowledge Management and Sharing Platform* (The European Interconnection for Research Innovation & Entrepreneurship (EIRIE) Platform - https://ses.jrc.ec.europa.eu/eirie/en). Further activities and discussions will be necessary for improving and optimising it will be held, as well as considerations on how to make it most useful for all the BRIDGE projects.

   Replicability and scalability of project solutions, including exploitation make an important part of the project progress reviews. All BRIDGE projects are requested to clearly present in their reports KER (key exploitable results), who is going to exploit the results, exploitation pathways and stakeholders involved. *More information on how to implement replicability and scalability methodologies is presented in the Scalability and Replicability Task Force – Guidelines for implementing the prescribed technology – report that can be downloaded in the BRIDGE online site.*
   Additionally, all projects report on their BRIDGE involvement during the respective reporting period, including both technical contributions and allocated resources. Active contribution to the BRIDGE community, as well as a high potential to produce replicable and scalable solutions are important features that add not only to the value of the individual projects, but also strengthen the initiative as a whole. This acts as a win-win lever and emphasize the European added value.

[1] ISGAN is an initiative of the Clean Energy Ministerial, as well as a Technology Collaboration Platform of the International Energy Agency. To learn more visit: ISGAN - Homepage (iea-isgan.org)

[2] The Green Powered Future Mission was launched in 2021 by Mission Innovation. To learn more visit: Green Powered Future Mission – Mission Innovation (mission-innovation.net)

With respect to the individual sessions:

1. **Digitalisation** (as a focus topic): The European Commission intends to publish the Digitalisation of Energy Action Plan (DoEAP) in QIII 2022. The Bridge working groups presented valuable input and recommendations and will continue to interact with the Commission services on the key topic of digitalisation. The aim of the future exchanges will include:
    a. identifying Bridge deliverables that are suitable to be scaled up for being used in all new Bridge projects or even beyond the Bridge community (e.g. integrate them in EU policy actions such as the data exchange governance framework);
    b. proposing R&I topics for the future EU programmes (notably Horizon Europe and Digital Europe); and
    c. supporting the future implementation of the DoEAP
2. The **Regulatory working group will take contact with all member projects in the coming weeks** to request feedback, in particular on interest in and contribution to the topics to be addressed in 2022, the work plan, and the contact point(s);
3. The **Data Management working group** will cover in 2022 the following topics and activities:
    a. **Use-case repository**: technical platform; governance
    b. **Data Exchange Reference Architecture (DERA)**: practical tools for implementation; cross-sector data spaces; data governance
    c. **Reference framework: Generic Business Processes (GBPs)**; role model (HEMRM); semantics
    d. **BRIDGE User Group**: liaisons; standards landscape ; support and education
    e. **Interoperability of home appliances**: standards and adapters; common languages; similar functionalities
4. The **Consumer and citizen engagement working group will kick off its work**, based on the agreed priority topics, which were discussed in a meeting **on 01 April 2022**.
    a. The Subgroup Indicators of Engagement will create a baseline of indicators that includes information about interaction between indicators, their evolution over time and their contextualisation.
    b. The Subgroup development and use of Smart Tools will focus on the type of tools (awareness raising vs. action oriented) to better promote the energy transition and the use of design thinking as an enabling method for Smart Tools development. Also, it will identify best practices for replicability and scalability
    c. The Subgroup Strategies of Engagement will merge insights from stakeholder categorization with strategy mapping and will consider the issue of flexibility (changing strategies as project proceeds) and contextual factors

5. **STORAGE** - There is no specific working group focusing on storage. Nonetheless, a group of interested experts from relevant projects will work together to address the topic in a coordinated manner. Over the next months, the activity will address the following topics:

Short survey to be prepared by the support team & EC to identify who does what within BRIDGE projects on storage:

- what storage (sub-)type and how is integrated in each project, purpose of R&I, lessons learned, key storage expert of the project
- questions about possible experts who could periodically consult EC and liaise with permanent WGs

BRIDGE Projects will provide one page on storage aspects per project (character number in survey will be limited)

This is to be followed by basic mapping of projects and selection of the initial group of 5 experts.

The objective is to align ongoing actions and priorities within other stakeholder groups addressing storage such as: ETIP SNET WG2 – Storage, EASE – European Association for Storage of Energy or Batteries Europe. The Info exchange interaction between these different storage R&I forums will be streamlined before summer break

6- Considering that the **Business Models WG was re-launched late in 2021, it started its activities later than the rest of WGs, this WG will dedicate the next months to finalise the work on the report on:**

a. the Investigation of relationship of Use Cases (UC) and cross-domain Business Models.

The activities will then focus on the next topic to be addressed:

b. Design of tools and repositories to evaluate the benefit of the services and solutions and to better include data value chain observability.

The Commission will aim to provide an update of the work plans and next steps by June 2022 to the BRIDGE Community, following feedback on the first steps as identified above that are due for May 2022.

Focus Topic Session: DIGITALISATION OF THE ENERGY SECTOR

BACKGROUND

The goal of this session was to collect further views from the Bridge working groups (WGs) in support of the preparation of the upcoming Digitalisation of Energy Action Plan (DoEAP). DG ENER introduced the topic and briefly presented the main components considered for the DoEAP. The chairs of the four WGs presented some overall views and comments on behalf of the respective groups. Finally, a panel discussion concluded the session.

CONCLUSIONS

- **Data management** – there are already available some products that need to be scaled up and to ensure their wider use, including through standardization.
- Ensuring interoperability is a key aspect, which needs to cover all the relevant levels of interoperability (according to the SGAM model).
- Open data and solutions can support interoperability and scalable solutions.
- **Regulation** - is key in deployment, complementing and underpinning digitalisation, e.g. access to data, design of market products, cross-border and regional cooperation, monetising flexibility.
- Integration of the energy system is needed and access to data is key (e.g. availability of grid data, monitoring and observability). Thus, investments and new tools for data access and management are needed.
- A lot of data is already available. Thus, sharing and reusing it is key. However, in doing so we need to make sure that we share only the data that is needed (e.g. for flexibility) and not overburden the IT networks by sharing data that is not necessarily needed elsewhere.
- A mapping is needed: generated data versus needed data, shared and used by whom and for which purposes.
- Assuming the data is available and shared, we need to put in place proper tools to valorise it and create innovative energy services, with consumers at their core.
- From a regulatory perspective there are three main types of data: metering data, grid data, market data. Each type has its own specificities and challenges.
- **Consumers** - need to remain at the centre, retain control of their data, be empowered (and feel involved, care for that) and skilled. They could help further designing the energy systems and organizing the energy markets.
- Competition on the market should work, consumers should not be captive to e.g. platforms. Clear legal frameworks for energy communities still need to be completed.
- **Business models** - should support all these developments, including interoperability, data access and sharing, cybersecurity. This will be done for better system integration and security (including by the establishment and use of interoperable platforms for innovative services).
- Clear options should be presented to consumers, so they can choose from a ‘menu’. Consumers are not in the best position to propose themselves new business models.
- **Horizontal matters:**
  - There are major benefits, but also challenges regarding the digitalisation of the energy sector. Thus, the DoEAP has a clear need and value in coordinating actions.
  - The WGs are not only interested, but also fully prepared to contribute to it. They already table valuable inputs.

- There was a wide agreement cross-WGs: Establishing and using the use case repository (as proposed in Data WG) is very beneficial for several purposes – establishing data flows and actors involved, inputs for business models etc.
- It was suggested focus on innovation on cross-cutting topics: consumers (empowerment, engagement, help and simplify their involvement, educate), and cross-sector business models.

NEXT STEPS

- The Commission intends to publish DoEAP in QIII 2022;
- Bridge WGs will continue to interact with the Commission services on the topic of digitalisation of energy. This cross-cutting topic will be present in the future work of the WGs. The aim will include:
  - identifying Bridge deliverables that are suitable to be scaled up for being used in all new Bridge projects or even beyond the Bridge community (e.g. integrate them in EU policy actions such as the data exchange governance framework);
  - proposing R&I topics for the future EU programmes (notably Horizon Europe and Digital Europe); and
  - supporting the future implementation of the DoEAP;
- Bridge WGs will continue to coordinate and cooperate with each other to develop topics of common interest (including the ones identified in the session - the use-case repository, ensuring a consumer-centric approach, cross-sector business models).

Parallel Session 1 - REGULATION WG

BACKGROUND

During 2021, the BRIDGE Regulatory WG worked on five main actions in support of a robust and future proof market design. Several challenges exist where additional innovation and related regulatory recommendations are beneficial. The challenges were presented at the start of the session and were the basis of the work performed in the different actions of the Regulatory WG in 2021.

Recommendations and best practices were presented related to: **1) Product design for system services, including harmonisation needs; 2) The role of energy communities to provide system services; 3) Cross-border cooperation and network planning; 4) Market integration and flexibility mechanisms; 5) Local market design**.

In the second part of the session, introduction was given by the European Commission on the ongoing initiative to draft a new Network Code/amend existing Network Codes to fill possible regulatory gaps to support the uptake and use of flexibility. The session ended by a debate with the action leaders and representatives of TSO and DSO organisation on the main barriers to be solved to support the uptake of flexibility and which solutions, from their research, should be put forward.

CONCLUSIONS

The main conclusions highlighted during the session could be summarized as follows:

1. To facilitate the efficient use of flexibility in the system, it is crucial to develop harmonised system services and flexibility products that deliver for all the relevant stakeholders. To do so, requirements from the system needs to be carefully addressed while the concerns of flexibility providers should be taken on board from the start, in order to maximize the use of the flexibility potential available. A precondition for harmonisation of products and services starts with the use of common definitions of services, products and product attributes in scope, both for R&D purposes but also for establishing robust regulatory recommendations.
2. For the development of successful, innovative and efficient services within energy communities, it is important to remove regulatory barriers for collective flexibility and/or participation of flexibility from the low voltage grid to different flexibility services. In addition, it is important to educate citizens on the energy issue, to include them from the earliest stages of service development and to continuously interact with them to adapt services to their needs, so that as little disturbance as possible in their daily life will be caused. In addition to regulatory changes, the design of appropriate business models and engagement strategies will be essential.
3. The provision of more intelligent technologies for Transmission System Operators (TSOs) and Regional Coordination Centres (RSCs) is of extreme importance for ensuring European System security, which will have a beneficial effect that will feed the rest of the electricity system. Also, the us of flexibility in network planning will need to be further established and could contribute to stability and security of supply.
4. There are multiple flexibility mechanisms to unlock flexibility. There is no one-fit-all approach for defining the most appropriate mechanism or to design the specifications of a certain mechanism. Overall, flexibility mechanism design has to consider the specificities of a certain problem, grid, available flexibility,…and should be based on a consumer-centric approach to ensure the highest social acceptance, data confidentiality, meeting specific digitalization requirements.
5. Some specific aspects need to be considered when designing local flexibility markets for DSOs, such as the local character, the need to include network information, the option to include LT reservation of flexibility

and the integration with other flexibility solutions such as dynamic connection agreements, dynamic grid tariffs and technical solutions using grid assets. Further R&D is needed to define how different flexibility mechanisms need to be designed to maximally unlock flexibility from the end consumer.

6. In view of the discussion on the amended/new NC for flexibility, it is important to determine if a certain barrier needs new regulation or needs further implementation of existing regulation. In case of new regulation, it needs to be determined if an amendment of the existing NCs or a new NCs is most appropriate. Overall, it remains important to find the right balance between harmonized European regulation and national regulation in order not to block innovation.
7. Important attention points to further unlock the use of flexibility for system needs were highlighted:
    a. business models for flexibility providers does not allow sufficient value stacking, resulting in non-viable business models – there is need for smart integration of different markets/services across time and voltage levels to facilitate the value stacking needed to offer flexibility in an economic sustainable way.
    b. The use of flexibility by DSOs is new and not yet implemented at large scale. This implies a need for standardized requirements of products, services, local market processes but also related processes for data access, data sharing,..to be put in place.
8. Smart solutions are needed to support the wide use of flexibility, ensuring interoperability, smart coordination between all stakeholders, inclusion of consumer flexibility while keeping the highest standards for network planning, operation and overall security and quality of supply. Innovations in R&D projects are a valuable source to test in a safe environment the innovations needed. The outcome of these R&D projects should be actively communicated and discussed with the R&D community, representatives of system operators, policy makers and regulators.

NEXT STEPS

1) The BRIDGE Regulatory WG will reach out to find synergies and options for cooperation with ETIP SNET and ISGAN.
    a. Meeting to be organized between BRIDGE Regulatory WG, ISGAN and ETIP SNET in April 2022 to define common topics of interest + define how cooperation will happen in practice (joint workshop, joint paper,…). Focus will be on actions that could take place in 2022.

2) The BRIDGE Regulatory WG would like to organize a focused interaction between BRIDGE Projects, representatives of ACER, EC and Sector organisations of SOs.
    a. Goal of the meeting: present and discuss best practices, recommendations and solutions that could be in support of the ongoing initiative for an update of existing NCs or the new NC on Flexibility.
    b. Timing of this workshop would be the second or third quarter of 2022. Main topics
    c. Main topics in scope: market access, product design and market processes (procurement, activation, settlement)

3) The BRIDGE Regulatory WG will continue the cooperation with other BRIDGE WG to maximize synergies:
    a. Meeting to be scheduled in Q2 2022 between chairs of different WGs to define cross-cutting topics where a joint initiative could be beneficial (common report, joint workshop,…)
    b. Topics flagged during the session:
        i. **Consumer-centricity:** joint action between Regulatory WG and Consumer and Citizen Engagement WG to determine for which actions a joint initiative is valuable

ii. **Sector integration** -> joint activity with Data Management WG and Business Model WG to determine 1) for which business model value is the highest 2) what are implications for data and 3) what should be adapted in the regulatory framework to maximize the potential

iii. **Use case repository**: **harmonisation** efforts by streamlining definitions on products, services, market concepts, collective actions,… -> output could be part of building blocks use case repository – joint action with Data Management WG

4) **Preparation Work Plan Bridge Regulatory WG:**

a. The work plan will use the structure of 2021 as a basis, but the individual actions will be refined in the coming weeks. Project representatives part of the Regulatory WG will be contacted by the end of April to answer a survey to highlight which topics will be a priority for their project in 2022. Based on the outcome of this survey, priority actions will be defined and action leaders assigned.

Parallel Session 2 - STORAGE

BACKGROUND

(RES-) storage is more important than ever in current crisis situation and given “Fit for 55” legislation in the pipeline.

No mapping currently exists on who does what on storage within BRIDGE projects. BRIDGE brochure provides some information, but more is needed in this respect. Therefore, technical expertise from BRIDGE projects should feed more effectively into policy-making on storage. Next occasion for that would be a possible EC Staff Working Document on Storage. Also European Court of Auditors expressed interest to have better information on storage, in particular battery storage.

Big interest on EC side to have closer exchange with BRIDGE projects on storage, including 3 SET-Plan DGs and 2 executive agencies. There is also a clear need to bring closer 3 R&I storage-related fora followed by DG-ENER: BRIDGE, Storage WG of ETIP-SNET, Stationary integration WG of Batteries Europe. Other storage-related EU fora to be considered at a later stage. CONCLUSIONS

Commission aims to have a clearer mapping of storage aspects within the BRIDGE projects.

It also needs a small group of key BRIDGE experts (~5) to provide it with ad hoc punctual advice. Work of permanent WGs of BRIDGE would still include storage, but experts from the small experts group can provide facilitation.

NEXT STEPS

Short survey to be the support team & EC to identify who does what within BRIDGE projects on storage:

- what storage (sub-)type and how is integrated in each project, purpose of R&I, lessons learned, key storage expert of the project
- questions about possible experts who could periodically consult EC and liaise with permanent WGs

BRIDGE Projects will provide one page on storage aspects per project (character number in survey will be limited)

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Parallel Session 3 - CONSUMER & CITIZEN ENGAGEMENT

BACKGROUND

The Consumer and Citizen Engagement Working Group (CCE WG), previously Consumer Engagement, is part of the BRIDGE initiative and aims at creating a structured cross-cutting understanding of the role and methodologies of engagement in European R&I projects.

CONCLUSIONS

In 2022 the Working Group on Citizen and Consumer Engagement decided to review and update the structure of the working groups and focus topics. As a result of this analytic and discursive exercise the CCE WG decided to further explore the issue of engagement in European R&I projects by focussing on three core aspects, i.e. indicators of engagement, use and development of smart tools and strategies of engagement.

Collectively, the following knowledge gaps and issues were identified which the Working Group aims to tackle during the year 2022 and until the General Assembly in 2023:

Indicators of engagement	This Subgroup will collect indicators of consumer engagement tackling the following areas: • Baseline of indicators • Interaction of indicators • Indicators over time • Contextualization of indicators
Smart Tools	This Subgroup will collect an exhaustive list of tools and technologies supporting consumer participation and the way tools are supporting the involvement of consumers. It will cover the following areas: • Type of tools (awareness raising vs action oriented) • Design Thinking as enabling method • Replicabilty and scalability • Identification of best practices
Strategies of Engagement	This Subgroup will collect strategies and methods used by the projects to engage consumers and citizens through collective action schemes. • Merge insights from stakeholder categorization with strategy mapping • Consider issue of flexibility (changing strategies as project procedes) and contextual factors • Explore collaboration with other WGS (BM & Regulations)

NEXT STEPS

Planning and alignment

The WG has set out a meeting schedule, both on subgroup, WG level and leader's level. Monthly SG level meetings, and bi-monthly leaders and WG level meetings will ensure the alignment of the WG. This provides a structured working environment while simultaneously allowing future potential readjustments.

Defining Deliverables

To deliver concrete and (policy-) relevant output/input to relevant stakeholders both within and outside the EC the WG will further concretize her intended deliverables during the upcoming meetings (May/June). The scope agreed during the GA and subsequent leader's and SG meetings provides the broader framework for this.

Reaching out

To make sure BRIDGES' knowledge fruits are reaped the WG will reach out to sister WGs. To do so, the Consumer & Citizen Engagement Working Group will work on more direct communication channels between projects and working groups. More precisely, the CCE WG will get in touch and explore potential collaboration with:

- The Data Management Working Group
- The Business Models Working Group
- The Regulatory Working Group

The first meetings are planned to take place in early summer.

Parallel Session 4.1 - DATA MANAGEMENT WG 1/2 (22nd March)

BACKGROUND

Interoperability of demand-side flexibility and home appliances: Based on the work done in BRIDGE since 2020 on the interoperability of flexibility assets, and the on-going or upcoming activities from InterConnect H2020 project (interoperable and smart homes and grids), EC DG Energy and Joint Research Center (JRC) (energy smart appliances) and IntNet HE project (interoperability community support action), the purpose of this session was to discuss about practical solutions to enable the interoperability of demand-side flexibility and home appliances, at several levels: (1) use-cases and system design, (2) interoperability framework for smart grid and smart homes and (3) interoperability testing and certification.

CONCLUSIONS

Regarding the interoperability of flexibility assets:

- The common denominator between the projects should be the roles and processes: the Generic Business Processes (GBPs) developed as part of Action #3 are a good starting point and should be further enhanced (beyond flexibility + cross-sector) and shared beyond the Data Management WG
- The flexibility settlement is complex and should be further studied

Regarding the interoperability of home appliances:

- Many work has been performed since 2012 (Ecodesign WP, JRC SGIL, SMART studies (⇒ SAREF), InterConnect) and further work is planned (IntNet, OneNet forum, LCA Data, SmartBuilt4EU, …)
- Several projects have faced the issue of interoperability of home appliances: most project rely on adapters and a common language. Functional and technical synergies between projects should be explored (incl. open source repository of adapters?).

NEXT STEPS

- Pursue the work on Reference Framework / GBPs, beyond flexibility, in cooperation with other WGs and as an input to the BRIDGE use-case repository
- Investigate flexibility settlement in current and past projects, but also existing initiatives and SDOs
- Cooperate with BRIDGE user group on standards (catalogue/landscape, contribution, …)
- Characterize the solutions used by BRIDGE projects to achieve home appliances interoperability, in particular the used “common languages” and the developed adapters
- Investigate the functional commonalities of home appliances among BRIDGE projects

Parallel Session 4.2 - DATA MANAGEMENT WG 1/2 (23rd March)

BACKGROUND

Scale-up and replication of the energy (and cross-sector) data exchange at EU level: Based on the work done in BRIDGE since 2020 on the EU data exchange reference architecture (DERA), the use-case repository and the contribution of BRIDGE projects to standardisation, the purpose of this session was to discuss about activities enabling the scale-up and replication of the energy and cross-sector data exchange at EU level from several interoperability angles: (1) mapping the demonstrations to EU data exchange reference architecture (2) alignment and synergies from using a cross-projects repository of use-cases and (3) facilitating the market processes through standardisation.

CONCLUSIONS

Regarding the BRIDGE data exchange reference architecture (DERA 2.0):

- The main target of the session was to discuss on next steps. However, it could be concluded that while the reference architecture is quite mature (though probably can never be "ready") its practical usability should be considered. Also, it was recognised that DERA is a useful building block of the Data Space and should be therefore considered in DoEAP.

Regarding the BRIDGE use-case repository:

- The validation of the use case repository has been an iterative process that allowed the projects to evaluate the tool and send feedback for improving the repository in the new versions.
- To increase the visibility of the repository and ease its maintenance, it will be integrated with the new BRIDGE website when fully operational.

Regarding the BRIDGE contribution to standardisation:

- BRIDGE projects explore complex models, that might not be addressed by existing standards. This is why new solutions are often developed in these projects, however is it first important to better educate on how to identify and apply the right set of standards. CEN/CLC/ETSI CG-SG can help on this matter.
- For BRIDGE projects, the expected benefits from BRIDGE User Group are to easily suggest changes to standards and to get support on standards use e.g. on CIM modelling.

NEXT STEPS

- Better integrate the activities from all the Data Management WG Actions
- Contribute to the Digitalisation of Energy Action Plan (DoEAP), in particular with the DERA
- Continue the work on the Data Exchange Reference Architecture (DERA)
    - Develop a practical tool for implementing DERA in individual projects: architecture modelling? continue pilot implementation? improve visualisation?
    - Focus on (cross-sector) data spaces: engage closely new projects on Energy Data Spaces, complement DERA with services of e.g. Gaia-X and Data Space Business Alliance
    - Add a data governance layer to the reference architecture

- Set the governance, tools and processes to support a wider use of the BRIDGE use-case repository by current and future projects and beyond the Data Management WG:
    - Migrate the UC repository to the new BRIDGE website, once it is released
    - Define the future governance: how the codebase will be managed? how the new requests will be processed? who will support the users? who will moderate the content of the use-cases? how the use-cases lifecycle will be considered? etc.
    - Explore and prioritize additional identified items: group the use-cases; integrate the UC repository into the HEU work programme; use a standard vocabulary (roles, functions) for UC description; open access beyond BRIDGE; align with Smart Grid Task Force (SGTF) use cases.
- Set-up the BRIDGE User Group and its liaison with CEN/CLC/ETSI CG-SG & ENTSO-E CIM EG, and launch its first activities: education of BRIDGE projects on CG-SG methodology and standards, support of BRIDGE projects on standards' use, discussion on standards maintenance requests, …

Parallel Session 5 – Business Models

BACKGROUND

The Business Models Working Group (BM WG) has been successfully reactivated in summer 2021 after a two-year hiatus following the completion of the main activities. While some of the associated topics were addressed during that period by the newly established Task Forces, concentrated activities on business model definition and investigation were identified and posed as a requirement in H2020 and HE calls.

The relaunch of the BM WG has seen 41 projects and 93 individuals expressing interest to cooperate in the BM WG, as many BRIDGE projects address the business-, economic- and general value-oriented aspects of the services and activities pursued. The reactivation of the BM WG aimed to leverage the work already done in these projects.

The topic at which the work in the year 2021 aimed was **Investigation of relationship of Use Cases (UC) and cross-domain Business Models.** The work was structured around the following three distinct Tasks:

- **Task 1**: Definition of the Value Analysis Methodology, covering the relationship of Use Cases, Business Models, Services, Actors, and value chain segments
- **Task 2:** Define Identify the best practice for monitoring and impact analysis of Use Case demonstrations using standardized Key Performance Indicators.
- **Task 3**: Highlight concrete results from projects, and identify good practices and possible barriers to be used in benchmarking (e.g. examples of benefits).

The three tasks jointly prepared a questionnaire that was launched online in December 2021 and sent to over 50 projects. From those, 32 responses were received and the insights complemented the results of the desktop research and the WG participants' contribution to prepare the first year report of the BM WG.

CONCLUSIONS

Main key statements of the work in 2021

Task 1: **Define the Value Analysis Methodology, covering the relationship of Use Cases, Business Models, Services, Actors, and value chain segments**

The task has introduced clustering of projects and identification of current situation, barriers and trends to identify a common Business Canvas. The clusters employed included:

- Demand response
- Flexibility provision
- Energy Communities
- Bulk RES selling.

Task 2: **Identify the best practice for monitoring and impact analysis of Use Case demonstrations using standardized Key Performance Indicators.**

Among the key insights of this task were:

- Foundation for KPI development is solid and Horizon projects are resulting in excellent library of Key Performance Indicators (KPIs) associated with smart grid use cases.
- There WG is well positioned to continue to build KPI library and develop dashboards and visualizations to derive maximum value from the KPIs.
- Indicators used in the KPIs should be correlated with category descriptors (Stakeholders, Domains or Categories, Smart Grid Technologies and Systems, High Level Use Cases, Value Propositions, Primary Objectives, Secondary Objectives).

Task 3: **Highlight concrete results from projects, and identify good practices and possible barriers to be used in benchmarking.**

Among the good practices identified by the Task are:

- In BM tools, the BM canvas is the most frequently used tool.
- The most useful BM development approach are targeted workshops.
- Key Exploitable Results & IPR: while some projects have several well defined KERs from the very beginning, in most projects they are typically defined in the last third of the project duration.
- There are currently no common tools or methodologies to characterize KERs.
- The identified barriers include:
    - Regulatory barriers: market access, legislative, participation in markets;
    - Digitalization barriers: integration and handling of data, followed by privacy.

Overall Conclusions

1. Business models are always highly context-specific and reflect the geographical, cultural as well as economic and regulatory aspects of any Member State.
2. There is a need to have new, innovative tools and solutions to facilitate the energy challenges, business models that facilitate the regulatory process and link these to specific KPIs to be utilized in the future by other EU projects.
3. A repository of use cases and business model patterns would be helpful for new projects as well as external stakeholders to see concrete examples that they can relate to in their own business.
4. KPI development: There is an opportunity for on-going library development identifying standards calculations for KPIs. KPI categorization will help but the KPI definitions should be dynamic as innovation happens both in business and technology. Definition of a standard process could be helpful for the creation of new business models and for capturing their benefits.
5. It is important to have different / multiple value streams and to identify the type of created value (energy, grid etc). This value should also consider social values and the revenue streams of non-energy (consumer oriented) services.
6. Due to the perceived lack of some regulatory aspects that could support such new BM, regulatory sand-boxes should be proposed that could facilitate the tests of new ideas/approaches.

NEXT STEPS

In the year 2022, the work of the WG will focus on finalizing the report on the **Investigation of relationship of Use Cases (UC) and cross-domain Business Models**. The activities will then focus on the next topic to be addressed, namely **Design of tools and repositories to evaluate the benefit of the services and solutions and to better include data value chain observability**.

The work will be based organically on the findings of the previous topic and will include design of tools to evaluate the benefit/value of the services/solutions developed in the project activities, including new, more tailored tools to build BM as needed (BM canvass, radar…). Such tools will allow for proper quantification of benefits for the right remuneration of competing solutions. This will also require definition of baseline scenarios needed for comparison of services/solutions. To improve value creation observability, the tools will allow for data value chain integration and data monetization, creating additional social benefit.

Regarding the leadership structure, Ms. Alessandra Cuneo is stepping down as the Co-chair of the BM WG due to personal reasons. We will elect a new co-chair and refresh the task leadership as needed.