



# **Contribution to the working groups of BRIDGE and other working groups for cooperation between LCE projects - 3<sup>rd</sup> year V1.0**

*Deliverable D3.12*

**23/12/2019**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n°731289

|  |   |  |  |
|--|---|--|--|
| <b>ID &amp; Title :</b>  | D3.12 Contribution to the working groups of BRIDGE and other working groups for cooperation between LCE projects - 3 <sup>rd</sup> year |  |  |
| <b>Version :</b>   | V1.0  | <b>Number of pages :</b>                                     | 21   |
| <b>Short Description</b>   |   |  |  |
| Deliverable 3.12 presents the outcome of the contribution to the on-going BRIDGE cross project working group (WG) activities and other collaborative working groups, task forces (TFs) among LCE projects for the third year of the InterFlex project. |   |  |  |
| <b>Revision history</b>  |   |  |  |
| <b>Version</b>   | <b>Date</b>   | <b>Modifications' nature</b>                                 | <b>Author</b>  |
| V0.1   | 11/10/2019  | Creation   | Altynay Izimova  |
| V0.2   | 31/10/2019  | Actions performed in corresponding WGs and TFs in 2019       | Grégory Jarry, Laura Metenier, Thibaut Wagner, Olivier Genest, Guillaume Lehec |
| V0.3   | 05/12/2019  | Full version sent to TC review                               | Altynay Izimova  |
| V0.4   | 12/12/2019  | Consolidated version following the TC review                 | Altynay Izimova  |
| V1.0   | 23/12/2019  | Final version submitted to EC                                | Christian Dumbs  |
| <b>Accessibility</b>   |   |  |  |
| <input checked="" type="checkbox"/> Public   | <input type="checkbox"/> Consortium + EC  | <input type="checkbox"/> Restricted to a specific group + EC | <input type="checkbox"/> Confidential + EC                                     |
| <b>Owner/Main responsible</b>  |   |  |  |
| <b>Name(s)</b>   | <b>Function</b>   | <b>Company</b>   |  |
| Christian Dumbs  | Project Coordinator   | Enedis   |  |
| <b>Author(s)/contributor(s): company name(s)</b>   |   |  |  |
| Enedis, E.ON, RWTH, TNO, Trialog, Avacon, Accenture, Engie   |   |  |  |
| <b>Reviewer(s): company name(s)</b>  |   |  |  |
| <b>Company</b>   |   |  |  |
| Enedis, E.ON, RWTH, TNO, Trialog, Avacon, Accenture, Engie   |   |  |  |
| <b>Approver(s): company name(s)</b>  |   |  |  |
| <b>Company</b>   |   |  |  |
| Enedis   |   |  | 23/12/2019   |
| <b>Work Package ID</b>   | WP 3  | <b>Task ID</b>   | Task 3.4   |

Disclaimer: This report reflects only the author's view and the Agency is not responsible for any use that may be made of the information it contains.

## EXECUTIVE SUMMARY

This report presents the outcomes of the contribution to the on-going BRIDGE cross project activities, including the conclusions of the workshops and taskforce meetings during the 3<sup>rd</sup> year of the InterFlex project.

This deliverable is an update of Deliverables D3.10 and D3.11 which described the BRIDGE activities during the first and second year of the project and which were submitted to the EC at the end of 2017 and 2018 respectively.

Contribution to the on-going BRIDGE cross project activities is a cooperation of a big number of smart grid and storage projects supported by DG ENER under H2020. The initial target was to ensure a continuous exchange of experiences among the different projects, through four specific Working Groups representing the main areas of interest: Regulation, Data Management, Customer Engagement and Business Models.

The InterFlex consortium delegated eight experts to contribute to the four existing working groups: Accenture and Avacon for Regulation, RWTH, TNO and Trialog for Data Management, E.ON for Customer Engagement and ENGIE and ENEDIS for Business Models.

It is understood that delegated experts are the voice of the whole consortium and bring to the working groups data and knowledge, which have been agreed upon by the whole consortium. In order to implement a dialogue on the BRIDGE initiative between the WG experts and the rest of the consortium, a BRIDGE consultation process has been set up in 2018. This process is detailed in chapter 3 of the present document.

During the BRIDGE General Assembly which was held in Brussels in March 2019, three task forces were newly introduced with focus on: Local Energy Communities, Replicability & Scalability and Joint Communication. The InterFlex consortium delegated Enedis and ENGIE to the Local Energy Communities taskforce, Trialog to the Replicability & Scalability taskforce, and Enedis to the Joint Communication taskforce.

The document is structured in three main chapters.

1. **BRIDGE initiative:** this section provides an introduction and overview of the Bridge initiative and defines the role of the InterFlex project within this initiative.
2. **Outcome of the BRIDGE working groups:** this section presents the different BRIDGE workshops and meetings the InterFlex project participated in, and formulates the different outcomes reached during the third and last year of the InterFlex project.
3. **Outcome of the newly created BRIDGE taskforces and activities (2019).**

Other workshops and collaboration activities among related H2020 projects are presented in deliverable D4.5 Proceedings of yearly workshops towards DSOs, regulatory bodies and other stakeholders - 3<sup>rd</sup> year [1].

The latest BRIDGE newsletter can be found under:

[https://www.h2020-bridge.eu/wp-content/uploads/2019/12/20191211-BRIDGE-December-2019-Newsletter\\_FINAL.pdf](https://www.h2020-bridge.eu/wp-content/uploads/2019/12/20191211-BRIDGE-December-2019-Newsletter_FINAL.pdf)

## TABLE OF CONTENT

|        |   |    |
|--------|---|----|
| 1.     | BRIDGE INITIATIVE.....                                      | 6  |
| 1.1.   | Purpose of the BRIDGE initiative.....                       | 6  |
| 1.2.   | Role of InterFlex within the Bridge initiative .....        | 6  |
| 1.3.   | Benefits and impacts of the BRIDGE initiative .....         | 7  |
| 2.     | OUTCOMES OF THE WORKING GROUPS DURING 2019 .....            | 8  |
| 2.1.   | Regulation .....  | 8  |
| 2.1.1. | Presentation .....  | 8  |
| 2.1.2. | Third year outcomes .....                                   | 8  |
| 2.2.   | Customer Engagement .....                                   | 9  |
| 2.2.1. | Presentation .....  | 9  |
| 2.2.2. | Third year outcomes .....                                   | 10 |
| 2.3.   | Business Models.....  | 10 |
| 2.3.1. | Presentation .....  | 10 |
| 2.3.2. | Third year outcomes .....                                   | 10 |
| 2.4.   | Data Management.....  | 10 |
| 2.4.1. | Presentation .....  | 10 |
| 2.4.2. | Overview over 3 <sup>rd</sup> year outcomes .....           | 11 |
| 2.4.3. | Cybersecurity and resilience topic outcomes.....            | 11 |
| 2.4.4. | TSO-DSO cooperation topic outcomes.....                     | 13 |
| 2.5.   | Other BRIDGE activities: e-mobility.....                    | 15 |
| 3.     | OUTCOME OF THE NEWLY CREATED TASKFORCES AND ACTIVITIES..... | 18 |
| 3.1.   | Local Energy Communities (LEC) Task Force .....             | 18 |
| 3.1.1. | Presentation .....  | 18 |
| 3.1.2. | Outcomes.....   | 18 |
| 3.2.   | Replicability and Scalability Task Force.....               | 19 |
| 3.2.1. | Presentation .....  | 19 |
| 3.2.2. | Outcomes.....   | 19 |
| 3.3.   | Joint Communication Task Force .....                        | 20 |
| 3.3.1. | Presentation .....  | 20 |
| 3.3.2. | Recommendations .....                                       | 20 |
| 4.     | REFERENCES.....   | 21 |

## LIST OF FIGURES

|   |    |
|---|----|
| Figure 1 Summary of the BRIDGE working groups and involved InterFlex partners ..... | 6  |
| Figure 2 BRIDGE Organization chart after the General Assembly, March 2019 .....     | 7  |
| Figure 3 Timeline for the production of the TSO-DSO cooperation report.....         | 13 |

## 1. BRIDGE INITIATIVE

### 1.1. Purpose of the BRIDGE initiative

BRIDGE is a cooperation group involving Low Carbon Energy (LCE) Smart-Grid and Energy Storage projects funded under the Horizon 2020 program. It aims to foster the exchange of information, experience, knowledge and best practices among its members.

BRIDGE intends to provide field experience, feedback and lessons learned from the participating projects to help overcome the barriers to effective innovation. It aims to gather coordinated, balanced and coherent recommendations to strengthen the messages and maximize their impacts towards policy makers in view of removing barriers to innovation deployment.

The BRIDGE process fosters continuous knowledge sharing amongst projects thus allowing them to deliver conclusions and recommendations about the future exploitation of the project results, with a single voice, through four different Working Groups representing the main areas of interest: Regulation, Data Management, Customer Engagement and Business Models.

### 1.2. Role of InterFlex within the Bridge initiative

The coordination with similar EU-funded projects (in particular those which are funded under the same call) to address policy relevant issues - such as regulatory framework, business models, obstacles to innovation is a key component of InterFlex.

According to the InterFlex General Assembly's vote on February 6<sup>th</sup>, 2018 the InterFlex consortium delegated eight experts to contribute to the four existing working groups: Accenture and Avacon to the Regulation WG, RWTH Aachen, TNO and Trialog to the Data Management WG, E.ON to the Customer Engagement WG and ENGIE and Enedis to the Business Models WG. In 2019 the Business model working group did not have any assigned tasks, therefore ENGIE and Enedis put their efforts on the Local Energy Communities taskforce.

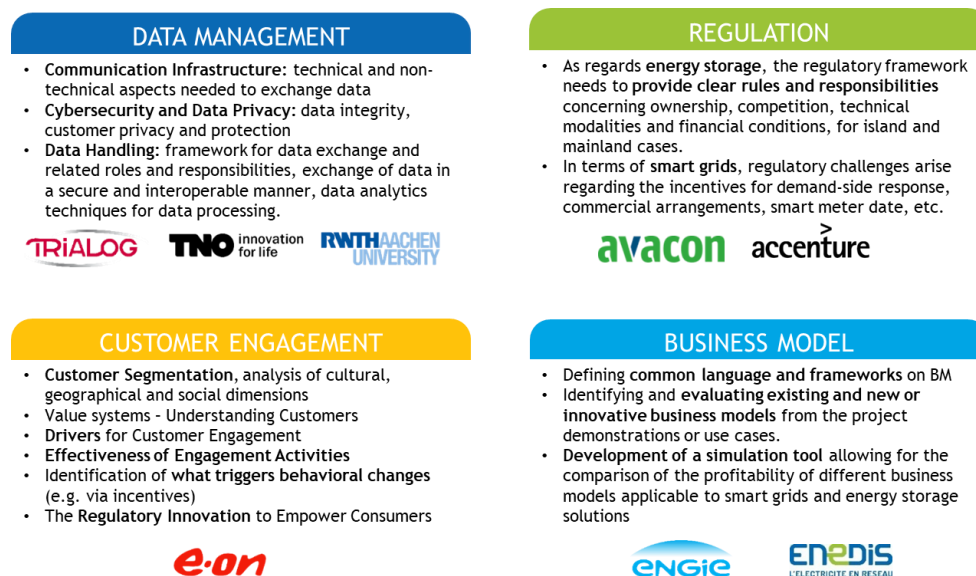


Figure 1 Summary of the BRIDGE working groups and involved InterFlex partners

InterFlex highly contributed to the BRIDGE initiative since InterFlex representatives took strong responsibilities inside the different working groups:

- Trialog was Rapporteur until March 2019 and is now Chair of the Data Management WG;
- Engie was Rapporteur of the Business Model WG until March 2019;
- Accenture is Chair of the Regulation WG since March 2019 and AVACON leads the “Grid” subgroup in the Regulation WG;
- E.ON is involved in the subgroup on “Customer Engagement Cycle” in the Customer Engagement WG.

InterFlex representatives in BRIDGE are the voice of the whole consortium and bring to the working groups data and knowledge which have been agreed upon by the whole consortium.

| BRIDGE ORGANIZATION CHART                     |                                |   |                                     |                                       |   |  | InterFlex members   |
|---|--------------------------------|---|-------------------------------------|---------------------------------------|---|--|---------------------|
| Project officer                               |                                | Mark Van Stiphout<br>Eric Lecomte<br>Adas Pangonis (INEA)               |                                     | Working Groups                        |   |  |                     |
| Support action                                |                                | Nicolas Peraudeau<br>Coralie Badajoz<br>Stéphanie Petit<br>Iliaria Rosa |                                     | Regulations                           | Business Models                           | Data Management  | Customer Engagement |
| WG chair                                      |                                |   |                                     | Helena Gerard<br>Gregory Jarry        | Lola Alacreu                              | Olivier Genest   | Alvaro Nofuentes    |
| EC coordinator                                |                                |   |                                     | Katarzyna Gryc<br>Dana Dutlanu (INEA) | Eric Lecomte<br>Mariana Stantcheva (INEA) | Cristobal Irazoqui<br>Patricia Arsene<br>Mariana Stantcheva (INEA) | Liliane Banczyk     |
| Task Forces                                   |                                |   |                                     |                                       |   |  |                     |
|   | TF/Topic leader                | EC coordinator  |                                     |                                       |   |  |                     |
| Energy Communities & Self-consumption         | Leen Peeters<br>Ludwig Karg    | Sana Kronberga (main contact)<br>Jan Steinkohl<br>Olav Begir            | X                                   | X                                     | X   | X  |                     |
| Replicability & Scalability                   | Rafael Cossent<br>Lola Alacreu | Eric Lecomte (main contact)   |                                     | X                                     |   |  |                     |
| Joint Communication                           | Thomas Mikkelsen               | Liliane Banczyk (main contact)<br>Adas Pangonis (INEA)                  |                                     |                                       |   |  | X                   |
| Topics / Questions to be addressed by the WGs |                                |   |                                     |                                       |   |  |                     |
| TSO-DSO Cooperation                           | See next columns for WG leader | Manuel Sanchez<br>Constantina Filiou<br>Jakub Fijalkowski               | X<br>Helena Gerard<br>Gregory Jarry |                                       | X<br>Kalle Kuke                           |  |                     |
| Cybersecurity – Resilience                    | See next columns for WG leader | Stefan Moser<br>Michaela Kollau<br>Domenico Ferrara                     |                                     |                                       | X<br>Olivier Genest                       |  |                     |

Figure 2 BRIDGE Organization chart after the General Assembly, March 2019

### 1.3. Benefits and impacts of the BRIDGE initiative

The benefits of contributing to the BRIDGE initiative are multiple.

For the InterFlex project and all the participants:

- Benefit from field experience, feedback and lessons learned by the participating projects when coping with barriers to innovation;
- Shape collective recommendations for policymakers with the aim of removing barriers to the deployment of innovation;
- All projects speak in a single voice, which in turn strengthens their message and maximizes the impact for policymakers;
- Create new contacts for future collaboration with other members of the group.

For the policymakers and regulators:

- Benefit from coordinated, balanced and coherent recommendations from the participating Research & Innovation projects; with a focus on non-technical issues hindering innovation deployment;
- Allows the comparison of non-technical barriers to innovation in different countries and the learnings from the diverse experiences of the most current and relevant EU-funded projects.

## 2. OUTCOMES OF THE WORKING GROUPS DURING 2019

### 2.1. Regulation

#### 2.1.1. Presentation

The Regulation Working Group's purpose is to compose, during the implementation period of the H2020 Smart Grids & Storage projects, recommendations and consultation for regulation issues based on the experience acquired in the projects for better development of the Smart Grids and Storage in Europe. A parallel objective will be to define issues that will improve and enhance the cooperation between the H2020 Smart Grids & Storage projects resulting in added value.

It addresses the various regulatory issues coming from the H2020 projects:

- In regards to energy storage, the regulatory framework needs to provide clear rules and responsibilities concerning ownership, competition, technical modalities and financial conditions, for island and mainland cases.
- In terms of smart grids, regulatory challenges arise regarding new market design options, leading to new services, business models and roles for system operators.

#### 2.1.2. Third year outcomes

On March 12<sup>th</sup> - 13<sup>th</sup>, the 35 Bridge Horizon2020 projects joined the Bridge General Assembly organized by the European Commission.

The work groups' chairs presented their latest reports during a plenary session, which was followed by 7 deep dive sessions on specific topics:

- Innovation in network management: data, services, TSO-DSO cooperation
- Energy Communities & Self-consumption
- Replicability of projects: best practice as a basis for a common methodology? / Can projects use each other's solutions? How to scale up?
- Cybersecurity & Resilience
- Organizing joint communication and events among projects

Task forces were created to tackle the actions agreed on during the session.

The Regulation WG was asked to produce a report on key issues for TSO-DSO cooperation.



Following this General Assembly, new chairs were appointed for the Data Management and the Regulation workgroups. A member of the InterFlex project was nominated for the Regulation (Grégory Jarry, Accenture).

In July, the Regulation workgroup published a report presenting recommendations on selected regulatory issues based on experience and knowledge.

The issue-oriented approach used in 2018 by the workgroup was revised in order to deliver targeted recommendations addressing specific regulatory issues. Five issue “blocks” were defined, which are illustrative of the Working Group’s activities so far:

- Storage ownership and procurement of storage services;
- Storage valorization;
- Safety and environment;
- New market design options, leading to new services, business models and roles for system operators;
- Specific regulatory aspects for island cases.

For each of these five key issues, recommendations were formulated by ad-hoc subgroups of the WG on Regulations, coordinated by one or several members of the WG.

InterFlex played a key role as coordinator of the *New market design options, leading to new services, business models and roles for system operators, requiring increased coordination between system operators* subgroup.

In parallel, in July, the newly appointed Regulation and Data Management working group chairs launched surveys to refine understanding of how the projects tackle the TSO-DSO cooperation topic (as requested by the European Commission during the General Assembly). The outcomes from that survey were used as a basis for a workshop organized in Brussels on October 23<sup>rd</sup> with the projects involved in each workgroup (see section 2.4.4 for details). The results from the survey and the recommendations emerging from the workshop’s discussions were presented on October 24<sup>th</sup> in a session organized by the European Commission, ENTSOe, E.DSO and ERA-Net Smart Energy Systems dedicated to Flexibility markets of the future and TSO-DSO cooperation.

The results were summarized in the EU’s ‘TSO-DSO coordination’ report, published in December 2019 under reference D3.12.f of the Intensys4EU project (Bridge Regulation and Data Management Working groups).

## 2.2. Customer Engagement

### 2.2.1. Presentation

Customer engagement processes are evaluated through knowledge sharing between H2020 Smart Grids & Storage projects to identify successful strategies and methods in addition to potential barriers related to customer engagement. Hence, the overall goal of the Customer Engagement Working Group (CEWG) consists in formalizing a series of recommendations to the EC in relation to the Customer Engagement field of knowledge.

### 2.2.2. Third year outcomes

During this period a secondary questionnaire has been sent out to the customers in Simris. The result is presented in a report “Customer Survey - Report Simris 2019”, which is partially included in the InterFlex lessons learnt deliverable D8.12 (relevant parts).

The report refers to questions related to the following topics (below):

- Customer Segmentation, analysis of cultural, geographical and social dimensions
- Value systems - Understanding Customers
- Drivers for Customer Engagement
- Effectiveness of Engagement Activities
- Identification of what triggers behavioural changes (e.g. via incentives)
- The Regulatory Innovation to Empower Consumers

## 2.3. Business Models

### 2.3.1. Presentation

The Business Model group 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 development of a simulation tool allowing for the comparison of the profitability of different business models applicable to smart grids and energy storage solutions is being developed and tested by the Working Group members

### 2.3.2. Third year outcomes

After the release of the 2018 report, this working group had no activities assigned for 2019.

## 2.4. Data Management

### 2.4.1. Presentation

The Terms of Reference of the Data Management WG define three main themes of cooperation:

- Communication Infrastructure, embracing the technical and non-technical aspects of the communication infrastructure needed to exchange data and the related requirements
- Cybersecurity and Data Privacy, entailing data integrity, customer privacy and protection
- Data Handling, including the framework for data exchange and related roles and responsibilities, together with the technical issues supporting the exchange of data in a secure and interoperable manner, and the data analytics techniques for data processing

In past years, the WG has published:

- A first report on “Barrier identifications and high level recommendations” (2016).
- A second report on “Smart Grid Technical Requirements from 5G” (2017).
- A third report on the “Characterization of flexibility services” (2017-2018).
- A fourth report on “Data handling” (2018-2019)

#### 2.4.2. Overview over 3<sup>rd</sup> year outcomes

During the BRIDGE General Assembly in March 2019, two topics were defined for the Data Management WG (see Figure 2):

- Cybersecurity & resilience;
- TSO-DSO cooperation, together with Regulation WG.

For these two topics, the approach has been the same:

- A questionnaire has been prepared and validated by European Commission officers;
- This questionnaire has been sent to BRIDGE projects in July 2019;
- Answers from projects have been gathered until beginning of September;
- A first internal workshop has been held in Brussels on September 16<sup>th</sup> and 17<sup>th</sup>;
- The results have been presented and discussed with the EC on October 23<sup>rd</sup> and 24<sup>th</sup>.

In order to allow proper cooperation on these two topics, two subgroups have been defined:

- Cybersecurity subgroup, led by Trialog;
- TSO-DSO cooperation, led by Elering (Estonian TSO), in which Trialog has been an active contributor.

#### 2.4.3. Cybersecurity and resilience topic outcomes

The questionnaire prepared by Cybersecurity subgroup covered three main topics:

- Cybersecurity experience within H2020 projects
- Feedback on EC recommendations<sup>1</sup> for cybersecurity in Energy sector
- Expectations for cybersecurity certification framework

Answers from 13 projects (over 21 registered), including InterFlex, have been gathered.

Based on these answers, a first draft report has been released on October 11<sup>th</sup> 2019, with the following structure:

---

<sup>1</sup> Commission recommendation on cybersecurity in the energy sector (C(2019) 2400 final), published on April 2nd 2019 (<https://ec.europa.eu/energy/en/topics/energy-security/critical-infrastructure-and-cybersecurity>)

|          |  |
|----------|--|
| <b>1</b> | <b>INTRODUCTION</b>  |
| <b>2</b> | <b>PARTICULARITIES OF THE ENERGY NETWORK</b>                               |
| 2.1      | DESCRIPTION OF THE THREE PARTICULARITIES DEFINED IN EC REQUIREMENTS        |
| 2.2      | FEEDBACK FROM PROJECTS ON THESE PARTICULARITIES                            |
| 2.3      | ADDITIONAL MEASURES WITH RESPECT TO TELECOMMUNICATION NETWORKS             |
| 2.4      | IMPACT ON COST   |
| <b>3</b> | <b>EXPERIENCE OF BRIDGE PROJECTS ON CYBERSECURITY</b>                      |
| 3.1      | DESCRIPTION OF THE PANEL OF PROJECTS                                       |
| 3.2      | CYBERSECURITY ISSUE(S) FACED DURING THE PROJECTS                           |
| 3.3      | RELEVANCE OF POSSIBLE SOLUTIONS  |
| 3.3.1    | <i>Cybersecurity as a service</i>  |
| 3.3.2    | <i>Cyber-hygiene</i>   |
| 3.3.3    | <i>Cybersecurity certification framework</i>                               |
| 3.4      | AXIS TO BE EXPLORED AND POTENTIAL TOPICS FOR FUTURE R&I CALLS              |
| <b>4</b> | <b>DETAILED FEEDBACK ON EC RECOMMENDATIONS FOR CYBERSECURITY IN ENERGY</b> |
| 4.1      | RELEVANCE  |
| 4.2      | GENERAL BARRIERS   |
| 4.2.1    | <i>Cost, complexity and effort</i>   |
| 4.2.2    | <i>Multitude of heterogeneous devices and systems</i>                      |
| 4.2.3    | <i>Proprietary systems</i>   |
| 4.3      | SPECIFIC BARRIERS  |
| <b>5</b> | <b>CONCLUSION</b>  |
| <b>6</b> | <b>ANNEX: QUESTIONNAIRE ON CYBERSECURITY AND RESILIENCE</b>                |

Five main recommendation have been established:

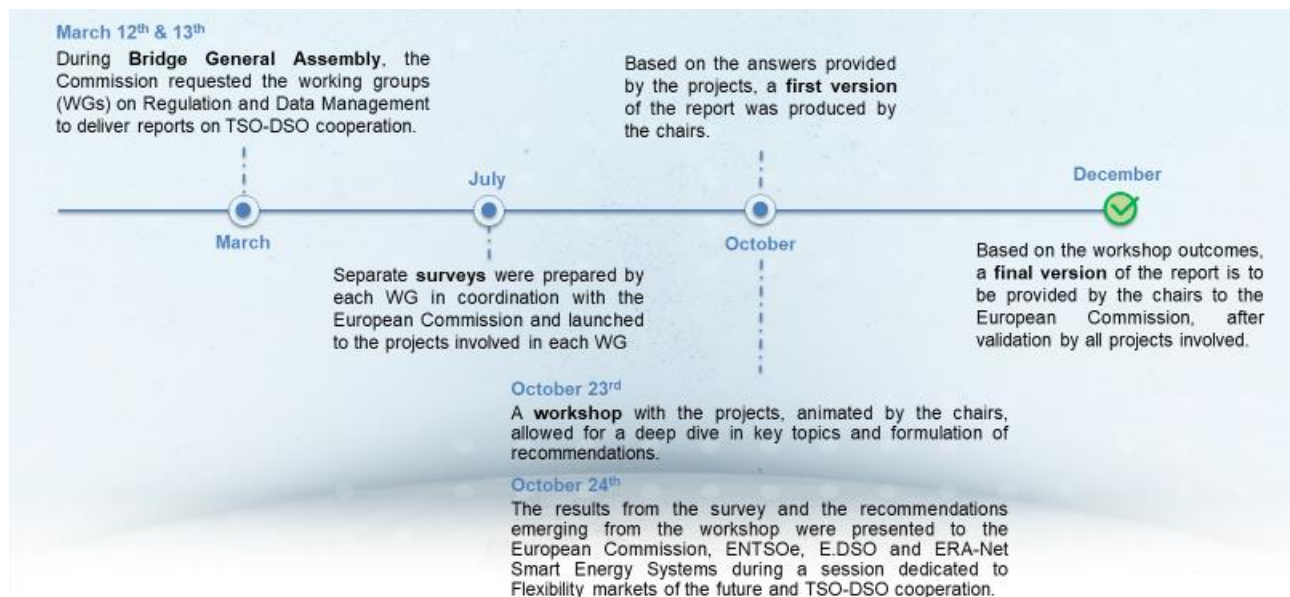
- To take care of complexity, cost and required effort when considering cybersecurity recommendations for energy sector.
- To develop a certification framework with a focus on: definition of minimal requirements for devices/products; development of tools, processes and guidelines for audit and tests; process and lifecycle management.
- To develop and demonstrate attack detection, situational awareness, incident management and resilience systems.
- To share threat intelligence information (past or current attacks) between relevant actors to help them preparing and reacting successfully.
- To promote best practices, such as cyber-hygiene, at every level of the concerned organizations.

The content of the report has been discussed during the October 23<sup>rd</sup> workshop in Brussels. Based on this workshop and the feedback from the EC and from BRIDGE projects, a final version of the report entitled 'Cybersecurity and Resilience' was published in December 2019 under reference D3.12.e of the Intensys4EU project (Bridge Data Management Working group)..

#### 2.4.4. TSO-DSO cooperation topic outcomes

The TSO-DSO cooperation is a topic identified as key by the European Commission. As such, as mentioned earlier in this document, a dedicated report was requested to Bridge Data Management and Regulation working groups in order to map the interactions between the network operators (TSOs & DSOs), either between the same type of operators or between TSO and DSO, to identify the main issues faced by the projects and to formulate recommendations.

The timeline for the production of the TSO-DSO cooperation report is the following:



*Figure 3 Timeline for the production of the TSO-DSO cooperation report*

The questionnaire prepared by TSO-DSO Cooperation subgroup covered four main topics:

- Data models
- Common Information Model
- Data platforms and systems
- TSO-DSO, TSO-TSO and DSO-DSO data

Answers from 14 projects (over 21 registered), including InterFlex, have been gathered.

Based on these answers, a joint report has been prepared in coordination with Regulation WG. A first draft has been released on October 17<sup>th</sup> 2019, with the following structure:

|        |   |
|--------|---|
| 1.     | INTRODUCTION  |
| 2.     | DESCRIPTION OF THE PANEL OF PROJECT S   |
| 2.1    | INTRODUCTION  |
| 2.2    | PRELIMINARY ANALYSIS OF THE PROJECTS' SCOPE                                   |
| 3.     | MAIN FINDINGS   |
| 3.1    | SERVICES AND PRODUCTS PROVIDED BY THE PROJECTS                                |
| 3.1.1  | <i>Services developed</i>   |
| 3.1.2  | <i>Products designed to provide the services</i>                              |
| 3.1.3  | <i>Clean Energy Package compliance</i>  |
| 3.1.4  | <i>Simulations / demonstrations of the services and/or products developed</i> |
| 3.1.5  | <i>Value pockets of services and beneficiary actors</i>                       |
| 3.1.6  | <i>Forecasting models definition</i>  |
| 3.1.7  | <i>Voltage level</i>  |
| 3.2    | MARKET DESIGN   |
| 3.2.1  | <i>Coordination models considered</i>   |
| 3.2.2  | <i>Timeframes in scope</i>  |
| 3.2.3  | <i>Mechanisms developed</i>   |
| 3.2.4  | <i>Market concepts developed</i>  |
| 3.2.5  | <i>Roles of stakeholders</i>  |
| 3.2.6  | <i>Pricing rule</i>   |
| 3.2.7  | <i>Allocation principle</i>   |
| 3.2.8  | <i>Consideration of grid constraints in coordination models</i>               |
| 3.2.9  | <i>Barriers for the realization of concepts</i>                               |
| 3.2.10 | <i>Possible market distortions</i>  |
| 3.2.11 | <i>Joint procurement</i>  |
| 3.3    | ROLE MODELS   |
| 3.3.1  | <i>Market roles</i>   |
| 3.3.2  | <i>Data roles</i>   |
| 3.4    | DATA EXCHANGES  |
| 3.4.1  | <i>Main challenges</i>  |
| 3.4.2  | <i>Data types</i>   |
| 3.4.3  | <i>SGAM approach</i>  |
| 3.4.4  | <i>Data models, formats and communication protocols</i>                       |
| 3.4.5  | <i>Focus on CIM</i>   |
| 3.4.6  | <i>Data platforms</i>   |
| 3.4.7  | <i>Interoperability</i>   |
| 3.4.8  | <i>Transparency and data access</i>   |
| 4.     | Conclusion and recommendations  |

Fourteen recommendations have been established by Data Management WG, regarding Role models, Data models, Common Information Model (CIM), Data platforms, Use-cases, Interoperability and Transparency.

The Regulation workgroup's survey, and the report issued on its basis, give an overview of:

- The range of products and services developed and tested by the projects
- The coordination models and market design
- The role models used

This analysis is followed by recommendations on specific topics highlighted during October 23<sup>rd</sup> workshop, notably:

- In the field of network planning, further work to be done on the coordination between TSO and DSO and the inclusion of flexibility;
- Many projects that use role models start from the Harmonized Role Model (developed by ENTSO-E and the associated organisations EFET and ebIX) and adapt these models further to the particular needs of the project in order to describe their innovations. It is advised to map the changes made by the different projects: this information could be used for future revisions of the HRM and ebIX model, and shared with the projects at their start to facilitate a definition of roles common to all demos.
- Clarification of the market operator role is required: follow up with the projects what are the arguments developed in favour or against commercialization of certain activities related to market operation.



- Regulation evolution appears as the main challenge for demos' replicability. Among the regulatory barriers, the evolving role of the DSO is considered as major. Therefore, beyond allowing DSOs to use flexibility, it is advised to actively incentivize the DSOs to use flexibility via for example:
  - Remuneration mechanisms (OPEX/CAPEX)
  - Regulatory sandboxing
  - Promotion of good examples from projects where the use of flexibility is considered cost efficient
- Standardization of products for flexibility is worth discussing further. Indeed, standardization decreases complexity for flexibility providers and increases price transparency. However, a more flexible approach could be a better trade-off, e.g. by defining products ranges or by moving away from products towards a definition of flexibility as a set of technical parameters.

The content of the above-mentioned report has been discussed during the October 23<sup>rd</sup> and 24<sup>th</sup> workshops in Brussels. Minutes of the workshop held on October 23<sup>rd</sup> have been published on the BRIDGE website under: [https://www.h2020-bridge.eu/wp-content/uploads/2019/11/20191023\\_Minutes-BRIDGE-Topics-Meeting\\_vf.pdf](https://www.h2020-bridge.eu/wp-content/uploads/2019/11/20191023_Minutes-BRIDGE-Topics-Meeting_vf.pdf).

Based on these workshops and the feedback from the EC and from BRIDGE projects, a final version of the report entitled 'TSO-DSO Coordination' was published in December 2019 under reference D3.12.f of the Intensys4EU project (Bridge Regulation and Data Management groups)..

## 2.5. Other BRIDGE activities: e-mobility

This section provides a brief description of the works and output of the Parallel session 4 "Smart charging and Electromobility" which was held during the BRIDGE General Assembly in Brussels in March 2019.

This session started with a presentation on Electromobility and Smart Charging policies. Manuel Sanchez Jimenez (DG-ENER) presented some main bullets from the Energy Legislation a.o.:

- Ensure fair market access for **new service providers (e.g. aggregators)** that can manage EV charging and trade flexibility of EV users on energy markets
- Enables also **DSOs to procure flexibility**
- Encourages regulators to introduce **time-differentiated network tariffs**

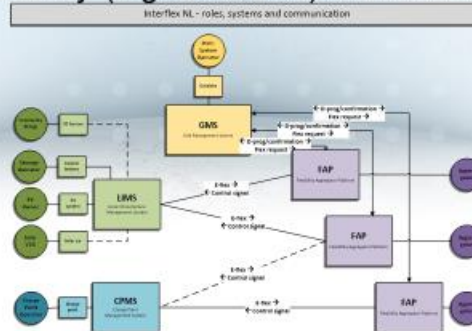
Katarzyna Gryc (DG MOVE) mentioned the importance of standards for eMobility. Emphasis was put on the fact that there is a variety of protocols, but lots of them are not yet standards (from IEC, CEN-CENELEC or ETSI). She also showed a picture (source not yet found) of the project EVroaming4EU [2], that showed all the protocols used in the eMobility, but that picture also made clear that a universal/standardized link with the smart grid energy domain (e.g. an aggregator) is also not yet there.

After this four projects presented their activities on eMobility: INVADe, SMILE, WiseGRID and InterFlex. Joost Laarakkers (TNO) showed for the Interflex project the following three slides:

## INTERFLEX – Dutch Pilot



- DSO services like **congestion management** by using local flexibility (from EVs and a large battery)
- Partners: Enexis, ElaadNL, TNO (+ local parties Jedlix, Sympower and Croonwolter&Dros)
- Architecture: multiple **commercial flexibility aggregators** offering their load and flexibility **per congestion point** to DSOs, with a **variable penalty**, to ensure uncertain flexibility (e.g. from EVs) is also being offered!



## Smart charging and Electromobility 1/2



Real pilot scenario field tests are still running and to be analyzed

Initial lessons learned or solutions investigated

- Simulation learns using local flexibility and take into account local grid load prevents grid peaks that otherwise can be 50% higher
- Enable Aggregators to exploit flexibility on energy markets and
  - force (how: market or regulation) aggregators to support DSOs (e.g. with a small amount of their consumers flexibility)
  - P.S. Using flex only on energy market will decrease energy bill, but increase of network cost is then more or less equal !!!
  - > then just as well don't be active (or allow that) on energy markets

Data sharing

- Aggregated charge profiles to be exchanged with DSO (location of demand in grid, not per user or EV)
- User should actively accept the smart charge service
- Standardized information objects or standards needed
  - For flexibility, congestion, e-mobility, ... (e.g. with EFI, USEF and OCPI)
  - See also <https://www.interflexstrijp.nl/het-project>





## Smart charging and Electromobility 2/2



### Technical bottlenecks

- Availability of SoC and flexibility of EVs,
- DSO grid information,
- local flex market (and mechanism) to be available and adopted

### Regulatory barriers and considerations

- Introduce variable distribution tariffs (e.g. load based)
  - Taxation becomes then also much more variable, this will make business models using flexibility more attractive and effective
  - Smart charging to be more attractive for CSOs (charge spot operators)
- Enforce unlocking flexibility of all devices consuming more than e.g. 1000 kWh/year (EVs, HeatPump, Airco's, ...)
  - This enables decreasing grid peak loads and reinforcements, and also reduce storage requirements (now and in the future)



These slides connected well to the remarks from the EC on aggregators, flexibility for DSOs, and variable tariffs. It led more or less to the conclusion that: “specific eMobility dynamic distribution tariffs are needed”. Manuel considered this to be feasible since EV charging infrastructure is beside energy legislation also under mobility legislation (Alternative Fuels Infrastructure Directive).

On electric vehicle charging, the EC wants to see the emergence of standards on communication protocols and charging stations. The vision presented for smart charging essentially consists of optimizing charging times according to the market price (and tariffs). Ancillary services for the TSO have not been mentioned.

The EC is waiting for proposals from stakeholders to facilitate the deployment of electric vehicles and charging stations. A call for feedback has been expressed.

Several players explained that GDPR regulation is an issue and a regulatory brake. However, CE confirmed that it is not an option and explained why this regulation is useful for the consumers and must be obeyed.

### 3. OUTCOME OF THE NEWLY CREATED TASKFORCES AND ACTIVITIES

#### 3.1. Local Energy Communities (LEC) Task Force

##### 3.1.1. Presentation

The LEC Task Force gathers volunteers from all four working groups of the Bridge Initiative. Based on all involved H2020 field experience, the purpose of this TF is to:

- Work on the definition of LEC's regarding the different perception of the concept in members states
- Analyze the impacts of this trend to meet energy transition European objectives, for the customers, and in general for the global energy system
- Analyze the different hurdles to be overcome for LEC to become a reality

Eventually, the TF aims at providing enlightening analysis for the EC to decide what are the next steps regarding research or demonstrators, and to help national regulators to transpose the concept of Citizen Energy Communities and Renewable Energy Communities introduced by the Clean Energy package.

Even if most of the involved projects are dealing with electrical systems, the TF aims at addressing energy in general.

##### 3.1.2. Outcomes

The TF wants to bring a bottom-up approach at this stage: any form of LEC, or project considered as such by its initiator, will be analyzed regardless its compliance with the CEP, in order to better understand the perception of the concept.

The work between contributors is enabled by the use of Expera Platform of ERA-Net. The first request was a questionnaire aiming at gathering information on the degree of maturity regarding LECs regulation and development for as many member states as possible. This questionnaire was submitted to the TF members in July 2019.

In parallel of this questionnaire, Expera platform was opened to the TF members in August 2019. Thanks to a deep pre-analysis of the chair team of the TF, the work has been organized around 10 questions/living documents (and a living document to be filled by examples of LEC/project of LEC):

1. What are CEC and REC?
2. Which potential for renewable use can be triggered by a CEC or RC in addition to existing schemes?
3. What would be the benefits and options for a CEC to operate its own (sub) grid?
4. To what extent can a CEC or REC be superior in relation to existing means and measures of citizen involvement?
5. Which overall cost savings can be expected from CECs compared to existing schemes?
6. What are feasible tariffs to allow for the implementation of a CEC as part of the overall energy system?
7. How can candidates be supported to establish a CEC or REC?
8. What are requirements to ICT solutions for the implementation of a CEC or REC?

9. How can data collection and management be limited and data security be ensured in a CEC or REC?
10. What is the existing national situation on Energy Communities in the context of the Clean Energy Package?

The Task Force members met in Bruxelles on September 25<sup>th</sup> to agree on these ten questions and to share views on how to address them. An analysis of the examples and answers to the questionnaires gathered so far were also presented.

The minutes of this meeting have been published on the BRIDGE website under: [https://www.h2020-bridge.eu/wp-content/uploads/2019/11/20190925\\_Minutes-TF-EC-meeting\\_vf.pdf](https://www.h2020-bridge.eu/wp-content/uploads/2019/11/20190925_Minutes-TF-EC-meeting_vf.pdf).

Interflex partners involved in the TF were all represented at the first meeting and fed living documents on the Expera platform, through examples in France, or inputs to address the ten questions.

The results of the work were summarized in the Bridge report entitled 'Energy Communities in the EU' published in December 2019 under reference D3.12.d of the Intensys4EU project (Bridge Task Force Energy Communities).

## 3.2. Replicability and Scalability Task Force

### 3.2.1. Presentation

The BRIDGE Initiative has identified several new task forces including members from the different working groups (see Figure 2). Thus, the Replicability & Scalability task force has been created.

Trialog joined this task force to provide inputs on the ICT SRA methodology, in relation to the work jointly performed by AIT and Trialog in the InterFlex task 3.2.

The BRIDGE Replicability & Scalability task force has two main goals:

1. Develop a draft methodology providing common guidelines for H2020 projects to perform a SRA
2. Develop ideas on how to define the scope and implementation of a SRA toolbox and a repository with experiences and best-practices from past and ongoing projects.

### 3.2.2. Outcomes

A first request for contributions, dated June 2019, has been submitted to the task force members to:

1. Identify the expectations and motivations of the task force participants and
2. Perform a first mapping of the methodological approaches to perform a SRA within the H2020 projects.

The outcomes of this survey are:

- The task force is in position to support on-going projects and its goals are well aligned to tackle the expectations from H2020 projects,
- A single common detailed methodology may not be practical or feasible
- The task force may provide two types of support: guidelines or support to find best practices and data provision/exchange or guide to open data sources.

With these objectives, a second request for contributions, dated August 2019, has been submitted to the task force members to:

1. Identify different dimensions that may be analyzed within each SGAM layer and
2. Gather information on methodologies used and key lessons learned for SRA in past and ongoing projects (H2020, FP7, others).

Trialog has replied to both requests, to provide inputs from InterFlex. In particular, a brief description including the different steps of the ICT Scalability methodology has been provided. This methodology is part of the InterFlex deliverable D3.8: further inputs will be provided. A Task force meeting was held on November 12<sup>th</sup>, 2019 in Paris, InterFlex was represented by Frédéric Mesureur from Trialog, meeting minutes have been published on the BRIDGE website under:

[https://www.h2020-bridge.eu/wp-content/uploads/2019/12/20191112\\_Minutes-TF-SRA-meeting\\_VF.pdf](https://www.h2020-bridge.eu/wp-content/uploads/2019/12/20191112_Minutes-TF-SRA-meeting_VF.pdf).

The results of the work were summarized in the Bridge report entitled ‘Draft methodological guidelines to perform a scalability and replicability analysis’, published in December 2019 under reference D3.12.g of the Intensys4EU project (Bridge Task Force Replicability & Scalability Analysis).

### 3.3. Joint Communication Task Force

#### 3.3.1. Presentation

The Joint Communication Task Force was founded based on the common observation of the participants in the Bridge General Assembly (March 2019) that joining forces for the dissemination of the respective H2020 project activities would be very fruitful.

All H2020 projects comprise project-related dissemination work packages, leading to parallel actions based on ephemeral project names to promote project activities and achievements. A joint communication could favour the general awareness of the EU’s high investment in energy-related research and innovation activities and foster collaboration within Europe.

Major activities and events to be covered by such coordination actions were identified to be:

- the EU presence at the yearly European Utility Week: projected implication of the Joint Communication TF in organizing and structuring the EU project zone, in collaboration with Dowel and Clarion
- an H2020 dissemination action at the InterSolar in Munich (June 2020)
- development of common dissemination tools for the respective H2020 projects

#### 3.3.2. Recommendations

A task force leader has been assigned during the General Assembly in March 2019, whereas no significant task force activity has started to date.

It is recommended to schedule a Joint Communication task force meeting rapidly to designate an operational task force leader and define the working program for 2020.

## 4. REFERENCES

- [1] InterFlex H2020, «D4.5 Proceedings of yearly workshops towards DSOs, regulatory bodies and other stakeholders - 3rd year,» 2019.
- [2] EVroaming4EU, «EVroaming4EU. About the project.,» 2019. [En ligne]. Available: <https://www.evroaming4.eu/about-us/>. [Accès le 11 Novembre 2019].
- [3] Google, “Google Maps,” 2017. [Online]. Available: <https://www.google.com/maps>. [Accessed September 2017].
- [4] Wikipedia, “Wikipedia,” 2017. [Online]. Available: <https://en.wikipedia.org/wiki/Simris>. [Accessed September 2017].