



Dear Reader,

welcome to the first Bridge newsletter!

What is Bridge about and which newsletter content could you expect?

Bridge is a cooperation of all accepted LCE 6-10 projects funded under Horizon 2020. The target is to evolve a continuous dialogue and exchange of experiences between the different projects. Therefore 4 working groups have been teamed up: Regulation, Data Management, User Engagement and Business Models. The Bridge newsletter will always report about all project news cooperating under the framework Bridge.

We hope you enjoy our news. And if you like to get in touch with us, please feel free to send an email to: Tine Stevens, Tine@think-e.be & Sarah Wolf, sarah.wolf@loptafilm.de

Yours sincerely,
The Bridge Team



BRIDGE coordination team

15 March 2016, last WG3-Regulations meeting in Brussels

The last meeting of WG3-Regulations, one of the WGs of BRIDGE, an initiative to support EC policy development on smart grids and storage, was held 15 March in Brussels, where discussed the progress during the last 6 months. The purpose of the Working Group 3 is to compose, during the implementation period of the H2020 Smart Grids & Storage projects, a framework about recommendations and consultation for regulation issues based on the experience acquired in the LCE projects for better development of the Smart Grids and Storage in Europe while improving and enhancing the cooperation between the H2020 Smart Grids & Storage projects resulting in added value. WG members of 12 research projects acting as Issue Coordinators presented the progress concerning issues. Points concerning the Regulatory and legislation framework stressing the importance of HORIZON 2020 research projects, pilots experience with emphasis on Market Design, Network codes and Safety Environment.

Bridge Working Groups and Coordination Meetings

The four Working Groups (Business Models, Data Management, Regulations & Customer Engagement) met individually in Brussels on 15th March. Participating partners from projects under the H2020 LCE 6-10 2014 Call reported first findings and shared insight so far. The RealValue Project has been playing an active role in Bridge, participating in all four WGs. Project Director Rowena McCappin also acts as Rapporteur for the Business Models WG.

The Bridge Coordination Group meeting took place on 16th March and featured presentations from DG Energy representatives. Matti Supponen gave an insightful overview of his department's work on the Winter Package, including Market Design legislation. Participants from the Business Models Working Groups will be providing Matti with input on this from their projects by the end of April.

The Beneens demo, part of the STORY project, will be fully operational soon!

The Beneens en Zonen BVBA is a medium sized company active in the construction sector, which produces a lot of waste wood and wants to maximize the energy source. For this purpose, a 1.6MW wood fired boiler has been installed. A heat network connects this boiler to various heat users: a 90kWe Organic Rankine Cycle (ORC) electricity generator, offices, workshops, painting rooms, drying rooms, Domestic Hot Water (DHW) systems, etc. E.g., during the winter, the high heat demand from the office buildings can be supplied with high temperature water, directly from the boiler. When the heat demand is lower, it can be covered with low temperature waste heat from the ORC. The network is also equipped with heat storage, more specifically a 50.000l high temperature thermal storage tank, a 20.000l low temperature thermal storage tank, and a 1000l DHW tank. The total peak heat demand is about 1MW above the capacity of the boiler.

The installation of the infrastructure has been completed, save for the ORC generator, which will be connected as soon as the local distribution grid operator upgraded the grid connection for the ORC. The start-up of the boiler, storage systems and heat network is in progress. Before the summer, the system will be fully operational.

Read more at: www.horizon2020-story.eu

The first ELSA stakeholder workshop “Energy Storage with 2nd Life Batteries” is on 2nd and 3rd of May 2016 in Germany!

The project Energy Local Storage Advanced system (ELSA) brings distributed storage solutions to maturity. Its objective is to enable their integration into the energy system and their commercial use. ELSA addresses existing development needs by combining 2nd life batteries with an innovative local ICT-based Energy Management System in order to develop a low-cost, scalable and easy-to-deploy battery energy storage system. The ELSA battery storage system will be trialled at six pilot sites across Europe.

The ELSA consortium wish to invite all interested stakeholders to their first stakeholder workshop titled "Energy Storage with 2nd Life Batteries". This workshop will take place on **the 2nd and 3rd of May 2016** at the **E.ON Energy Research Center of the RWTH Aachen**, one of the six ELSA pilot sites.

While the first day will focus on use-cases for small-and medium-scale storage solutions, the second day will be dedicated to business models. Furthermore, participants will have the opportunity to be part of a tour of the ELSA pilot site in Aachen.

Read more at: www.elsa-h2020.eu

RealValue

The RealValue project has started strongly. This has been helped by the close cooperation between all partners. Smart Electric Thermal Storage (SETS) technology has now been successfully installed in 203 properties in Ireland. Issues with communications have now been overcome and the roll-out of an end-to-end connected solution has begun. A huge amount of experience has been gained from the first tranche of installations; this will be invaluable in helping us reach our target of 800 connected homes.

Recruitment of participants in German and Latvia has got off to an excellent start. In Mannheim, Germany there has been a 20% positive response rate to recruitment letters and home visits are scheduled to take place over the next few weeks. In Latvia, a provisional list of 40 private & commercial/non-residential trial properties has been compiled and technical visits are being carried out.

The communications infrastructure is of vital importance to RealValue. In Germany, Ireland and Latvia call centres and dedicated email addresses have been set up to deal with customer queries. RTU staff are receiving training to enable them to provide technical support and help participants to use SETs properly to achieve maximum comfort and cost-effectiveness, since this type of heating is not well-known in Latvia.

Two SETS have been installed in an RTU laboratory, connected to the aggregator platform in testing mode and in April SETS will be installed in a Latvenergo feeder point for demonstration and testing purposes.

Read more at: www.realvalueproject.com

The project NETfficient uses smart algorithms to perform an advanced public lighting energy management

The lighthouse project NETfficient will implement *“Energy and economic efficiency for today’s smart communities through integrated multi storage technologies”* on the German island of Borkum in the North Sea.

The project is driven by five use cases among which is defined the use of the findings and project outcomes in the public lighting system. The main goal of this use case is to connect the system to the

smart grid to monitor the loads, increase consumption of locally produced energy and enable grid support.

Some of the most innovative features of the project are the algorithms in charge of performing a smart energy management in an aggregated way. One of these is the algorithm designed to manage the public lighting system of any city basing on the key idea of using throughout the night, the stored energy produced from a PV generator during the day.

Read more at: <http://www.netfficient-project.eu>

The project Smarter EMC2 successfully completed the first year!

SmarterEMC2 implements ICT tools that support the integration of consumers through Demand Response services and the integration of DG/RES through Virtual Power Plants. These tools take into account the Smart Grids Architecture Model (SGAM) as well as the future structure of the Distribution Network, as described by the relevant EU bodies and organizations. The project explores whether the existing telecommunication infrastructure is sufficient to support in mass scale the emerging business models and Smart Grid services. Also, the project supports standardization activities by proposing adaptation to data models of market-oriented and field-level standards.

The activities of the consortium during the first year of the project were mainly focused on *Smart Grid Domain Exploration, Requirements Assessment and ICT Tools Conceptualization*.

Read more at: www.smarteremc2.eu

The project NAIADES aims to become the main *Na-ion technology* joining point!

The NAIADES project aims to develop and demonstrate the ambient Na-ion battery under realistic conditions as an effective alternative to the Li-ion battery for stationary Electric Energy Storage (EES) application.

The overall purpose of this project is to develop a battery technology based on the sodium ion technology for sustainable EES that would bring a radical decrease in cost with respect to the lithium ion technology while ensuring sustainability and performance in terms of safety, cycle life, and energy density.

The project's website is expected to become, not only the central point of information about the NAIADES project, but about any project related to the Na-ion technology in the world.

Read more at: www.naiades.eu

The project TILOS took part at the Paris Climate Change Conference!

TILOS is a European Innovation Project. The project's main goal is to demonstrate the potential of local / small-scale battery storage to serve a multi-purpose role within an island micro-grid that also interacts with a main electricity network.

The project Tilos is against climate change and this is probably one of the strongest messages that TILOS wants to spread. Many island regions around the globe are particularly vulnerable to the adverse effects of climate change, already suffering from extreme weather events. To combat the causes of climate change, TILOS will develop a RES-based storage and DSM solution, applicable to numerous islands worldwide.

The 21st UNFCCC (United Nations Framework Convention on Climate Change) Conference of Parties took place in December 2015 and has been hailed as a historic success leading to an agreement for climate change mitigation among ~200 countries. TILOS has been among a few flagship projects for the EU Representation in COP21 and the project's poster decorated the EU Pavilion which has been visited by thousands of attendees. Dr K. Chalvatzis (UEA) participated in COP21 as representative of TILOS. The Paris Agreement will have a positive impact for worldwide innovation in the energy sector and the TILOS project will be best placed to reap the benefits of the new developments.

Read more at: www.tiloshorizon.eu

The project ENERGISE provides survey results / 2nd ENERGISE workshop on “Communications Infrastructure Strategies for Smart Grid Applications”

As part of the second stakeholder dialogue within the ENERGISE project, TÜV Rheinland and WIK Consult presented the current results from the first project year. The first comprehensive survey of shared use communications infrastructure for smart grids amongst stakeholders from the telecommunications sector and from the energy sector within the EU is unique in this form. It includes basic evaluation on future development and assessment on use cases and models of cooperation for smart grids from all of the 28 EU Member States.. The results show the different potential of co-operation and joint infrastructure deployment for digital networks in the individual countries. The full results are available on the [ENERGISE Homepage](#).

Presently, a steadily increasing amount of Renewable Energy Sources is being connected to distribution networks. In the future, distributed generation could be managed together with local storage for providing local compensation and services to the system. By the same token, demand side management could help smoothing the daily load curve profiles, thus reducing the need for reserve procurement. A delicate point is the interface between transmission and distribution, which has to be managed in a coordinated manner between TSOs and DSOs in order to achieve an overall efficiency target. DSOs on one side have to retrieve resources for local services (e.g. voltage support, congestion management), on the other side could function as a collector of services for the whole system, to be then managed in coordination with the adjoining TSO. A strict real-time coordination is necessary between the different subjects in charge to provide ancillary services, and in particular the ones connected to secondary and tertiary regulation.

The three-years long project SmartNet aims at comparing possible architectures for optimized interaction between TSOs and DSOs: exchange of information for monitoring and for acquisition of ancillary services (reserve and balancing, voltage regulation, congestion management), both for local needs and for the system.

Three physical pilots are also developed to demonstrate modalities for exchanging monitoring signals between transmission and distribution networks and flexibility services that can be offered by entities connected to distribution by exploiting thermal inertia of indoor swimming pools and distributed storage facilities of radio-base stations used for telecommunication.

The consortium, under technical and administrative management by RSE, is formed by a well equilibrated mix of 22 partners from 9 European Countries, among which 2 transmission system operators, 3 distribution system operators, 2 manufacturers and one telecommunication company.

Read more at: smartnet-project.eu

UPGRID project launches four large Smart Grid demonstrations in Spain, Portugal, Sweden and Poland

The demonstrations will be running until the end of 2017, with the goal of providing the electrical system with new products and services to enhance the management and operation of LOW Voltage (LV) and Medium Voltage (MV) distribution networks.

The **Spanish demonstrator** is being carried out in Bilbao, in the North of Spain, and involves more than 190.000 consumers. It is mainly focused on LV dispatching, deployment of multiservice and manageable PRIME subnetworks and empowering consumers by providing information. The **Portuguese demonstrator** is being carried out at Parque das Nações in Lisbon, and involves 13.450 residential consumers. Apart from some subfunctionalities related to LV network management, it approaches active demand topics (i.e. end user engagement through the deployment of Advanced Metering Infrastructure (AMI) and Home Energy Management Systems (HEMS) and market design (i.e. engagement of stakeholders through a neutral access platform). The **Swedish demonstrator** is being carried out in

Åmål, a rural area in the South of Sweden, and involves almost 600 consumers. It is mainly focused on LV network monitoring and control and smart metering data utilization, stressing the objective of testing the interoperability of equipment from different manufacturers with the LV Network Management System. The **Polish demonstrator** is being carried out in Gdynia, in the North of Poland, and involves 14.700 consumers. It is focused on increasing the LV and MV network observability, improving the LV network management enhancing reliability of power supply and distributed generation management in LV network. In addition to this important milestone, the project has already delivered some comprehensive reports; first one is about the technical framework that defines the scope of the demos. Then, another one on non-technical barriers for deploying smart grid technologies, a third one on applicable standards and a gap analysis and recommendations about it, and a last one on valuable KPIs to evaluate the impact of Smart Grids demonstration projects. Moreover, there is a significant ongoing research work to develop technical solutions (e.g. LV and MV state estimators, load and generation forecasting, fault location, etc.) under different interoperable approaches complementary to the ones that the DSOs might be deploying today.

Read more at: upgrid.eu

The project NOBEL GRID's main challenges is to contribute to the EU's goal of CO2 reduction of 80% by 2050!

One of NOBEL GRID's main challenges is to contribute to the EU's goal of CO2 reduction of 80% by 2050, towards an optimal smart energy system with flexibility in demand and distributed electricity generation by 2035.

The project NOBEL GRID's objective is to democratise the electric grid through technology. The project is especially centred on the role and empowerment of consumers/prosumers, involving key actors in the distribution grid including Distribution System Operators (DSOs), Cooperatives and Retailers, Aggregators and Energy Services Companies (ESCOs). It intends to improve efficiency and flexibility in grid management while ensuring lower prices for consumers, self-sufficiency in electricity production and the clean supply of electricity. The open platforms and smart meters promote the development of applications that will improve the quality of life and level of cooperation for citizens.

With a consortium of 20 partners from 11 countries, Nobel Grid aims to develop, deploy and evaluate advanced tools and ICT services to all these actors in the Smart Grid and retail energy market in order to ensure shared benefits from cheaper prices, more secure and stable grids and new clean energy.

Read more at: nobelgrid.eu

The new project STORE&GO aims to bring the Power-to-Gas technologies to a level to be integrated in the daily operation of European energy grids!

The project is based on the demonstration of three different Power-to-Gas concepts in Germany (Falkenhagen), Switzerland (Solothurn) and Italy (Troia), each concept involving innovative methanation technologies adapted for the respective demonstration site. The operation will focus on the integration of these Power-to-Gas plants into the power, heat and gas grids for further transport and distribution. This way, renewable methane can be fed into the existing natural gas grid in a climate-neutral way without any restrictions, and can thus be made available for a broad range of customer applications. About 70 million industrial and private customers in Europe are currently supplied by a gas grid 2.2 million kilometres in length. The plant operation will be complemented by extensive accompanying research activities in technological, economic and legal areas. These activities will help to reduce barriers for the market entry and to accelerate the market uptake of Power-to-Gas storage technologies.

The project spells out as “Innovative Large Scale Energy **STORagE** Technologies & Power-to-Gas Concepts after **Optimisation**” The consortium follows a multidisciplinary approach with academic and industrial partners in the field of energy supply, plant engineering and construction, economics and social sciences.

Read more at: www.storeandgo.info



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