ENERGISE: ICT-based ENERgy Grid Implementation – Smart and Efficient:

Publishable Summary: Results of the first project year
April 2016

Summary of the context and overall objectives of the project

With its "low carbon energy" strategy, the European Commission is seeking cost-efficient ways of creating a more climate-friendly European economy. By 2050, the Member States are required to drastically reduce their greenhouse gas emissions. After all, the future of Europe's economy lies with clean technologies.

In a decentralised world of energy generation and consumption, not only the data volume but also the number of data exchanging parties and devices will step up significantly as new applications like smart metering, demand side management or electro mobility will change the interaction of all participants in the energy system. Therefore, the communication infrastructure has to evolve as well and provide the necessary solutions to allow for this evolution in the energy sector.

The core question is, who will provide the necessary services and on which communication infrastructure will these services be realised? One solution might be energy grid operators maintaining their own communication infrastructure built upon existing connections. Another solution could be the use of already deployed public infrastructure like mobile communication operated by the communications providers. Considering the high costs linked to infrastructure deployment, a mix of both solutions and a co-operative approach seems to be the best option.

In the end, the search for the optimal solution is affected by a vast amount of different influencing factors. In order to use possible synergies and achieve a co-ordination between the energy and telco sector many different

stakeholders must get involved. Since the problems are very often of commercial or legal and regulatory origin, a broad discussion is needed. Here not only the voice of the energy and telco grid operators matters but also positions from the regulatory authorities, the concerned ministries and also manufacturers and research institutions.

The goal of the ENERGISE project is to enable this discussion and make information available to all relevant stakeholders. As a Co-ordination and Support Action of the European Commission the main focus is on identifying the different factors which determine if a dedicated or shared communication infrastructure should be used and support the involved stakeholder in their decision-making.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

During the first project year ENERGISE brought together relevant stakeholders from the telecommunications sector, distribution system operators, utilities, industry associations, national regulatory authorities and ministries of Member States. Overall, more than 6000 contact persons from the relevant industries were identified. A substantial penetration of relevant industries was achieved via the project website, personal meetings as well as by workshops and surveys carried out.

At the end of the first year a wide range use case survey was conducted. The survey focused on smart grids in Europe, in particular the role of co-operation between energy and telecommunication industry as well as the use of infrastructure. With almost 300 fully answered

questionnaires from all 28 EU Member States the survey gathered viewpoints from various stakeholders.

The results from the survey mark an important milestone in completing the picture across the ecosystem regarding smart grids in Europe and the view on questions considering co-operation.
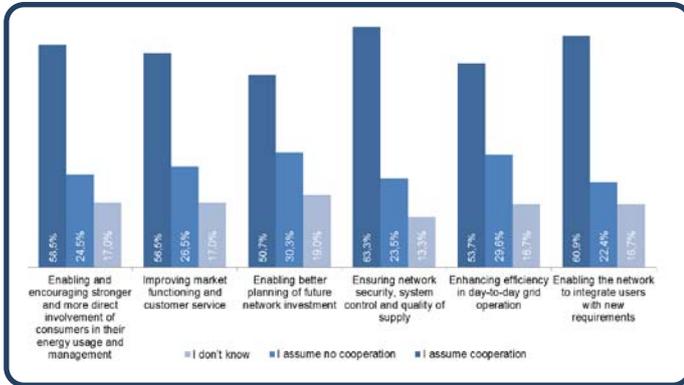
Survey result: Assumption of co-operation for different use-cases

It could be shown that co-operation between the sectors is highly anticipated and that the benefits and synergies surpass the existing hurdles by far. It is also very significant that the barriers for co-operation mentioned by the respondents are not of technical nature but emerge from legal and regulatory insecurity and strategic commercial considerations.

To overcome these issues, a broad discussion between the concerned parties and an unhindered exchange of information is needed. With the workshops organised by ENERGISE and the publication of the survey summary report the first steps in this process have already been taken. Additionally, the project's findings were also disseminated during third party conferences and workshops.

ENERGISE workshop in Berlin

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

Generally, the first year's goal was to identify companies and tangible contact persons in order to establish a relevant community. Moreover, the pursued extensive approach with open surveys and public discussion was intended to map all issues relevant for the ENRGISE key questions. The most important impact was generated by building the community that did not exist before.

Existing telecommunication infrastructure is likely to render smart grid solutions deployment across Europe more efficient, e.g. by sharing infrastructure. However, deciding whether a shared approach to tele-communication use within smart grid solutions deployment is beneficial or even feasible is difficult.

Technical requirements differ substantially across smart grid solutions. Other framework conditions, such as regulation and underlying business models for smart grid solutions also influence the viability of a shared telecommunication infrastructure approach.

With the results from the survey showing the huge potential for co-operation between the energy and telco sector a more detailed look is needed to provide actual assistance for decision makers. To achieve this level of detail, the second year of ENERGISE will focus on a series of case studies. These case studies will describe actual working examples of co-operations that are commercially successful. In the end the stakeholders will be able to use this aggregated information to find possible approaches. Examples similar to their own situation will be made available through a toolbox, in combination with comprehensive evidence why specific solutions are working under the given circumstances. This will allow for a transfer of know-how and experiences across Europe. With the possibility to add and update case studies in the tool a constant improvement and maintenance of the stored information is ensured to keep the data up-to-date.

This will have the following impacts that reach far beyond simple application of the toolkit:

- More efficient use of existing infrastructure for smart grid deployment;
- Facilitation of decision-making processes for all relevant stakeholders;
- Identification of innovative business models by highlighting otherwise unexpected benefits from shared infrastructure use especially on the local level where less pragmatic approaches would not suffice due to high costs or difficult handling.

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