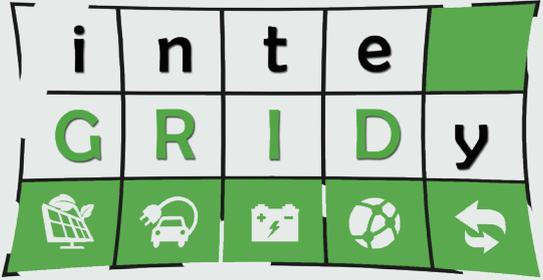
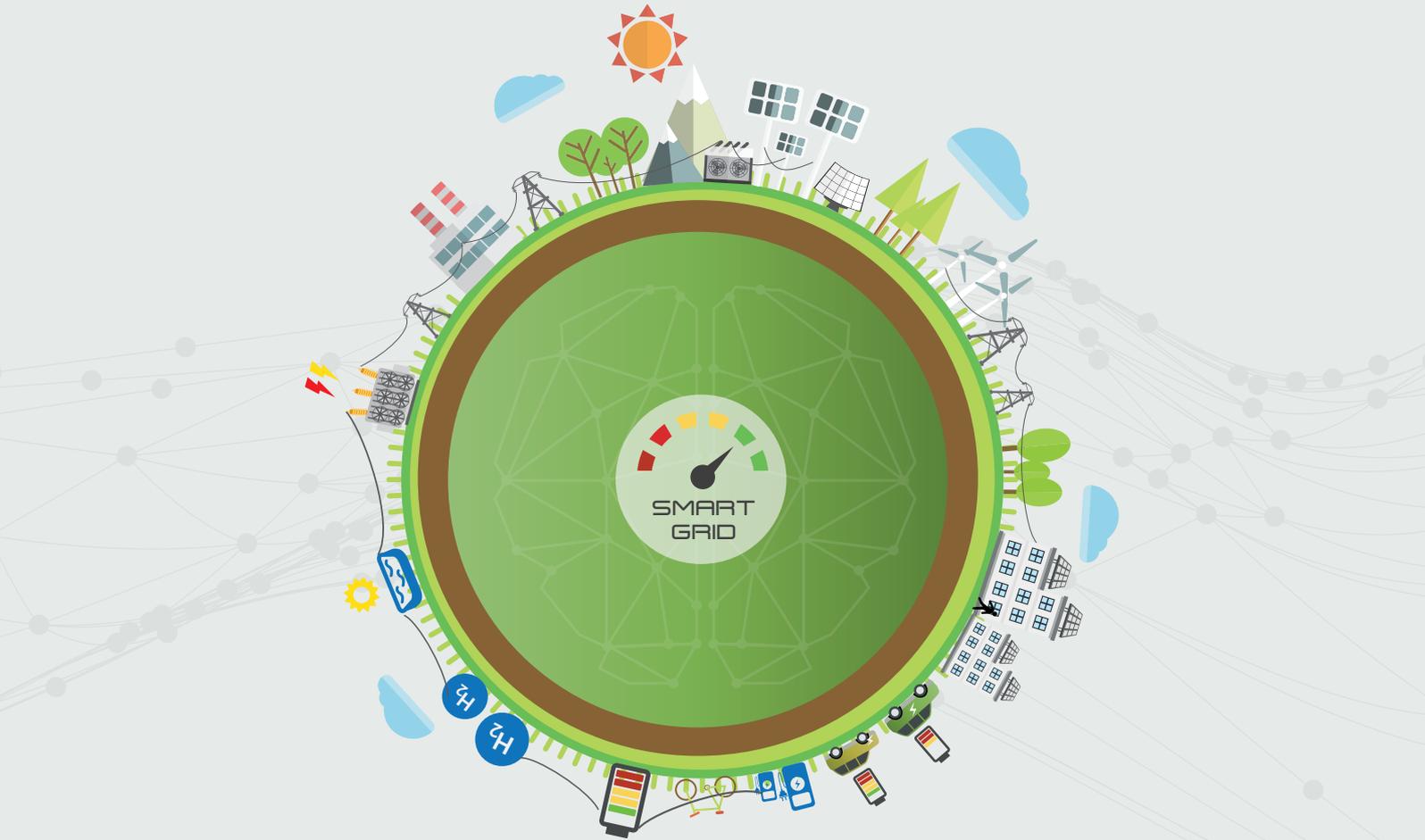


INTEGRATED SMART GRID CROSS-FUNCTIONAL SOLUTIONS FOR OPTIMIZED SYNERGETIC ENERGY DISTRIBUTION, UTILIZATION STORAGE TECHNOLOGIES



Issue 3 - Feb. 2019



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Dear reader,

We are happy to announce this third issue of our project newsletter. The first one served as project introduction and scenario setting for us to explain our goals and expected impact. The second release described the early achievements in terms of architecture proposal and business modelling early activities. This time, we are delighted to tell you a little bit more on our framework building process.

inteGRIDy project addresses multiple pillars (Demand response, Smartening the distribution grid, Energy Storage and Smart integration of users from Transport) and a wide plethora of technologies (data analysis, modelling/profiling, model-based simulation, HMI, IVPs, etc.) into a complex and layered framework of interoperable tools. The foundations of this framework were set up with the release of the architecture at the end of last year. During the period elapsed since January 2018 until now, all project partners focused on the tool development. Being inteGRIDy an Innovation Action (IA), the goal as per tool development is focused on (1) extending tool functionality beyond the state of the art if applicable, (2) enhancing the TRL level of the previous tool solution (prior to the project) to make it closer to the market and (3) adapt all tools to the reference architecture and, especially, made them inter-operable and able to exchange information and collaborate with other tools either on the same or different layers.

Pilots played a central role on the aforementioned process. Being inteGRIDy a pilot-driven project, we make sure all technical achievements are closely coupled with pilot interests and objectives. Therefore, after actively contributing to the architecture definition, pilots are now in the process of adapting themselves to the framework proposed, fostering the interoperability of solutions.

The next period objectives are set for us to finalize the tool development and initiate the integration process. This latter step will be capital to inteGRIDy outcomes, as we need to make sure all tools can be smoothly integrated one another and able to exchange information and provide value added for pilot owners. We are really looking forward to the next newsletter to tell you more about the outcomes of these processes!

On this issue you will also find, as usual, some interesting news regarding the dissemination events in which inteGRIDy project partners participated and also the presentation of the following 5 partners, namely Lisboa E-NOVA, Energy@Work, Isle of Wight Council, Minus7 and PH Energia. We hope you enjoy reading it as much as we did while writing!

OVERVIEW

integrated Smart **GRID** Cross-Functional Solutions for Optimized Synergetic Energy Distribution, Utilization Storage Technologies

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731268



Topic: LCE-02-2016 - Demonstration of smart grid, storage and system integration technologies with increasing share of renewables: distribution system

Objective: inteGRIDy is integrating existing technologies to implement a **smart grid distribution platform** which offers **"smart grid energy services"** for low voltage (LV) and medium voltage (MV) networks. In business to business (B2B), business to consumer (B2C) and business to business to consumer (B2B2C) market contexts.



Duration: Jan 2017 to Dec 2020

Partners: 30

Countries: 10 (Cyprus, France, Greece, Italy, Portugal, Rumania, Spain, United Kingdom)

Pilots: 10

Total Budget: 15.840.275 €

EU Grant: 12.329.013 €

Coordination entity: Atos

PARTNERS

As the project consortium comprises 30 partners, several newsletters are used to formally present them all.

This third issue introduces the following 5 members, including inteGRIDy's technical coordinator.



www.lisboaenova.org

Portugal

LISBOA E-NOVA AGENCIA MUNICIPAL DE ENERGIA E AMBIENTE DE LISBOA (E-NOVA)

LISBOA E-NOVA is a non-profit association operating under private law that seeks to contribute to the sustainable development of the city of Lisbon through mainstreaming good practices in urban planning, construction, urban management and mobility, involving all the city's key stakeholders, among political decision makers, all major urban stakeholders and the citizens of Lisbon. LISBOA E-NOVA is responsible for the development and monitoring of Lisbon's Energy-Environment Strategy and also coordinates Lisbon's participation in the Covenant of Mayors assuring the communication with the European Commission and the status of results. Within this context Lisboa E-Nova coordinates several projects, both in the technical and communication fields, with which it addresses the sustainability challenges that the Lisbon city faces, raising the awareness of all key stakeholders and motivating their participation in the systematic and continuous improvement of the city's energy and environmental performance.

In inteGRIDy project, LISBOA E-NOVA is responsible for the pilot implementation in Lisbon in direct coordination with the technical partners of the proposal.



www.energyatwork.it

Italy

ENERGY@WORK SOCIETÀ COOPERATIVA a R.L. (E@W)

Energy@Work is an innovative non-profit start-up organisation founded in 2014 thanks to a funding of 1.250.000,00 € under the Italian PON cooperative society. It is located in Brindisi, Apulia, Italy. The main goals for Energy@Work are the exploitation of researchers' activities, protecting national young excellences in research, promoting on its own territory and abroad technological research and innovation.

The scope of Energy@Work is to fill up existing gap between applied and industrial research, supporting partners during development of high technological products or services, disseminating and validating results, promoting partnerships between public and private entities.

In inteGRIDy project, Energy@Work coordinate the activities on the Italian pilots, giving support in order to reach and deliver the ambitious objectives and disseminate the project's results talking with the regional and national stakeholders.



www.iow.gov.uk

United Kingdom

ISLE OF WIGHT COUNCIL (IWC)

The Isle of Wight Council (IWC) is a Unitary Authority which provides a wide range of services to a local population of 140,000 and some 5,000 businesses. It is the authority for highways, education, planning and licensing and provides social care services for adults and children.

IWC is also responsible for strategic planning for the Isle of Wight and has produced "Eco Island" as its Sustainable Community Strategy. Specifically, Eco Island has targets for the Island to become self-sufficient in renewable electricity generation and to have the lowest per capita carbon footprint in England by 2020. IWC also is working with the local community to make the Isle of Wight the first sustainable region in the UK.

In inteGRIDy project, IWC is responsible for the coordination of local activities being delivered by other partners on the Isle of Wight. Also, IWC is directly responsible for the production of a business model for a community-led venture which will provide grid balancing services and ensure that community members are actively involved in this part of the energy system.



www.minus7.co.uk

United Kingdom

MINUS7 LIMITED (M7)

Minus7 offers the first building-integrated hybrid heating solution specifically designed for the UK climate. British engineered and BBA approved, the Minus7 System utilizes the best of solar thermal, photovoltaic, heat pump and energy storage technology in one appealingly simple solution. The system works in 3 parts – a roof, solar energy processor which includes a heat pump and thermal stores. All the domestic hot water and heating a building requires is available on demand giving a complete stand-alone heating solution.

The main role of M7 in inteGRIDy project is to optimise the grid balancing elements of its zero-carbon home heating system and undertake a field trial in 10 properties to test the technical and commercial application of the system. The system includes micro generation of heat and electricity through embedded PV and uses grid electricity to run the heat pump. Furthermore, develop the software and control strategy for a DSM hub in which you can communicate with each system and turn them off and on dependent on electricity load you want added/removed from the grid. Finally, M7 is developing the interface protocols to take instruction from the grid and monitor the performance of the system over the period of the project and modify the control strategy and approach to optimize performance.



www.energiasimples.pt

Italy

PH ENERGIA Lda. (PHE)

PH Energia, Lda is a SME committed to think and market energy solutions to consumer, commercial and industrial applications. It make use of experienced and knowledgeable team in the energy sector, in both business and academic field, to develop and integrate both services and products that present a valuable proposal.

Through their brand Energia Simples, it sells energy in the Portuguese market, residential, business and industrial. With an innovative, digital and straightforward approach to the customer service, based on openness and trust, it offers one-to-one advice and support to every customer. Also introduced market indexed tariffs, charging over the daily energy market price a transparent spread, in each month, to the domestic segment.

Fully committed to the environment and efficiency PH Energia invests in a push market strategy that looks forward to market micro-production centres using solar energy and technology that monitors and process information, proving efficient, economically and environmentally, in all segments.

In inteGRIDy project, PH Energia, Lda is responsible for the pilot implementation in Lisbon, in direct coordination with the technical partners of the proposal.

KEY ACHIEVEMENTS

PLOIESTI PILOT PROGRESS

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Ploiesti Pilot aims at ensuring a Demand Response (DR) system where building energy management and control systems can operate based on critical peak pricing or other DR programs that could be implemented as part of the Energy Integrated Information System (EIIS).

The expected outcomes include monitoring and control of the operation of DR programmes in order to decrease the peak of power consumption, engaging consumers in DR, testing and validating the concept of a Distribution System Operator (DSO) as a user of demand-side flexibility.

Within the EIIS application the consumer behaviour will be analysed to increase flexibility of energy consumption using specific DR intelligent algorithms. The final goal of approach is providing trade flexibility solutions.

On the operational level (Fig.1), EIIS implements two DR use cases, one for eight residential users and another one for two office buildings. The information is collected from smart meters and other sensors like smart plugs, HVAC. Home appliances will be monitored with smart plugs and each home electricity consumer will be identified for an accurate DR engagement.

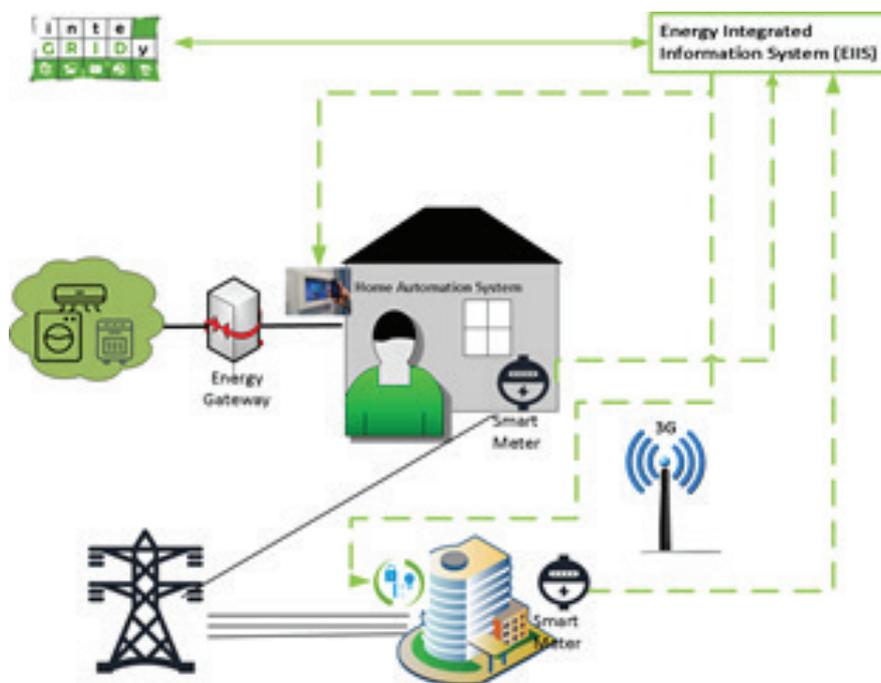


Fig. 1

On a technical perspective, the Romanian pilot has the major functional components presented in (Fig. 2) as architectural layers: data collection; data processing and data presentation.

Based on the two prospects mentioned above Ploiesti Pilot aims at implementing the EIIS, a solution to automate the process of DR based on smart meters infrastructure and optimizing the process workflow from the data collection and

metering to data processing based on DR methods and algorithms.

The core integration platform will handle several DR profiles, which could then be tested. Such an implementation could then serve as a main starting point for latter more complex DR profiles, like Demand Side Management (DSM) and bring elements of automated decision-making, based on various profiles or criteria.

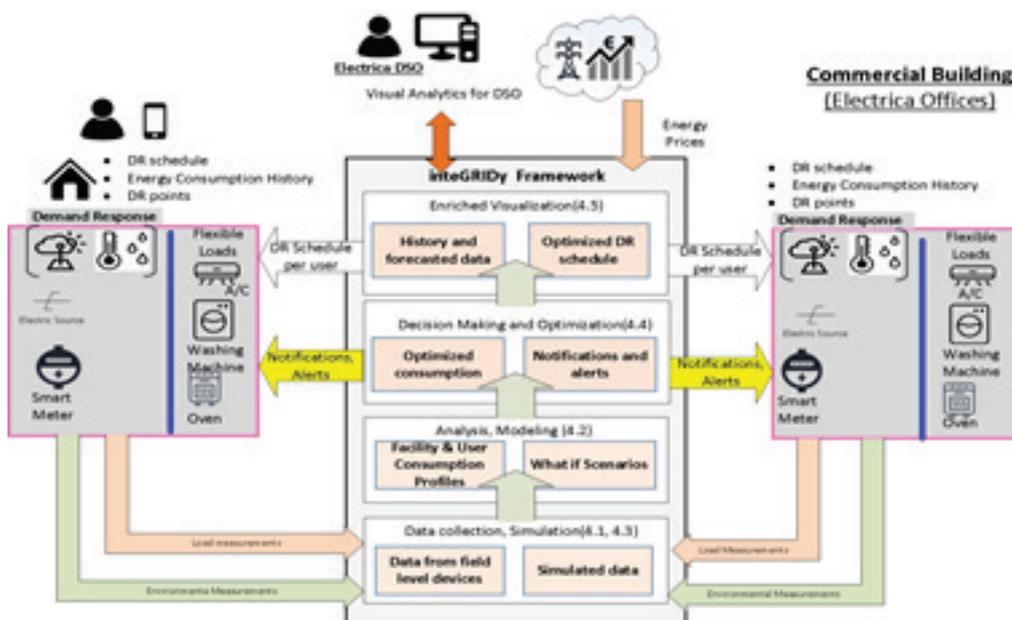


Fig. 2

PROJECT NEWS

InteGRIDy has just concluded its second year during which key milestones and results were achieved.

To start, **the 1st inteGRIDy Project Review** meeting was successfully held on September 2018 at the EC premises and led by the Project Officer Mr. Francesco Liberati. The team presented in detail the work done so far, demonstrating results, facts and achievements covering months 1-18 of the project.

Moreover, the project partners contributed to spread the projects results through different events and publications. Among other events, inteGRIDy was represented by the Politecnico di Milano at the 12th International Renewable Energy Storage Conference (**IRES2018**) held in March in Dusseldorf (Germany).

CERTH participated in the 5th International Conference on Control, Decision and Information Technologies (**CoDIT 2018**) held in Thessaloniki (Greece, April 10th-13rd, 2018) representing inteGRIDy project with the paper "Supervisory Control of Energy Distribution at Autonomous RES-powered Smart-grids using Finite State Machine Approach".

Energy@Work was invited to participate in the **European Researcher's night** that took place in Apulia (Italy) on September 28th, 2018.

A Special Session in the framework of **Medpower 2018 conference** was conducted by TREK, SOREA, CERTH and FOSS, who provided a high-level overview of InteGRIDy project as well as details on three inteGRIDy pilot sites, namely St-Jean(FR), Nycosia(CY) and Thessaloniki(GR)

Our colleagues from SUNLIGHT and ATOS actively collaborated with an inteGRIDy booth during the **European Utility Week** that took place in Vienna (Austria) in November 2018.



Medpower 2018 conference



European Utility Week

NEXT STEPS AND EVENTS



InteGRIDy plenary meeting

19-21/02/2019

Thessaloniki, Greece

The 5th Plenary Meeting and General Assembly for the inteGRIDy project will take place on 19, 20 and 21 February, 2019 hosted by CERTH. This time all participants will get together in Thessaloniki (Greece) to discuss the project progress, giving special focus on the preparation of the small-scale and large-scale pilots.



ATEE Conference

28-30/03/2019

Bucharest, Romania

The 11th edition of IEEE Conference “Advanced Topics in Electrical Engineering” (ATEE) will take place on 28-30 March 2019 at the University POLITEHNICA of Bucharest.

ATEE is the forum that stimulates active and effective exchange of information between researchers in various areas of theoretical and applied electrical engineering. Key leaders from private and state owned companies involved in will also be in attendance.

Link: <http://atee.upb.ro/atee2019/index.php?action=index>



2nd International Colloquium on Smart Grid Metrology

09-12/04/2019

Split, Croatia

The Second International Colloquium on Smart Grid Metrology organized by the University of Zagreb and the University of Split and the Colloquium supported by the Croatian Cigre Section will be held in Split, Croatia, from 9th to 12th April, 2019.

This event gathers international experts in precise metrology infrastructure for effective development and deployment of smart grids as well as in broad range of its accompanying applications in ubiquitous wireless and optical sensors, smart cities and vehicles, medicine, signal processing, machine learning, energy management and beyond.

Link: <https://smagrimet.org/>

Atos

SIEMENS



@inteGRIDy_H2020



www.integridy.eu



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