



NETfficient

Storage for Life

NETfficient ID

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What is it about?

Implementing the future of smart energy storage, and management on the island of Borkum in Germany

Programme

The European Union's Research and Innovation Program Horizon 2020 – Societal Challenge of Low Carbon Energy

Duration

January 2015 – December 2018

Main objective

Integration of smart energy storage technologies and an efficient energy management system on the island of Borkum in the North Sea

Partner countries

Belgium, France, Germany, Italy, Spain, Sweden, and United Kingdom

Editorial

Dear Readers,

NETfficient is now in its last year and in this 5th NETfficient Newsletter we are happy to report that finally **all NETfficient installations are now live and operational!**

In the following we will provide you with the latest news and insights from our project. We will also provide you with a preview of the events we are planning to allow you to learn from NETfficient's progress towards a Low-Carbon Smart-Grid with distributed generation and storage.

Our focus is now on making all the learning gained during the past 3 years available to you. New reports can now be downloaded from our website and a study visit, webinars and participation at the Utility Week are being planned – read on for details

Yours sincerely,
The NETfficient consortium

Learn more about NETfficient on our website:

<http://netfficient-project.eu/>

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Project News

NETfficient on Film:

NETfficient was selected to feature in investEU. This campaign was launched in February 2017 by the European Commission's Directorate-General for Communication. Its objective is to make visible the tangible impacts on real projects and real people resulting from EU investment activities. Check out their video on NETfficient's work on Borkum [here](#).

Yet this is only the start of NETfficient's film career - from 12th – 16th of March 2018, NETfficient partner [SEZ](#) together with the professional filmteam [Vollbild](#) visited Borkum to shoot various installations and film interview clips. We now proudly present to you our very own NETfficient-Movie – watch it [here](#).



Figure 1: Markus Schaefer, director of Vollbild shooting the NETfficient-movie

NEW NETfficient Reports available:

We have recently made the following project reports available via the project website:

[D5.14 Regulation analysis and barriers identification report](#)

[D6.2 Report on Technology Watch](#)

[D.6.4 Extract NETfficient Product catalogue](#)

NETfficient's 6th partner meeting at Williams Advanced Engineering, Wantage, UK:

From 23rd- 25th of January 2018, NETfficient held its latest project meeting at the premises of project partner [Williams Advanced Engineering](#) in Wantage (Oxfordshire – UK). The European Commission's project officer also attended. He was pleased about the progress of the project. Afterwards, the consortium enjoyed the opportunity to visit the Williams Grand Prix Collection of racing cars and a tour through the laboratories working on electric vehicles and battery research. See [here](#) for more images.



Figure 2: NETfficient Consortium at WAE-premises

NETfficient partner Fraunhofer ISE honoured by pv magazine:

Prior to the Energy Storage Europe Conference held March 13-15 in Düsseldorf, pv magazine selected 24 exhibitors which convinced its Storage Highlights' jury with their relevance to industry, market impact, contribution to the energy transition and innovation – Fraunhofer ISE's Cell-Booster and the power electronics is ranked 4th! Find out more [here](#) about this technology, which is also being used in NETfficient and which is designed for higher efficiencies, while reducing construction volumes.

NETfficient invited to present at EUSEW

NETFFICIENT has been selected by the EU Project Officers as lighthouse project to share its experiences during the EUSEW18 in the biggest meeting room in front of up to 440 attendees. Together with fellow-BRIDGE-Projects TILOS and INTERFLEX, NETfficient presents and discusses lessons learnt during a dedicated session on batteries entitled "Batteries in energy transition". This session covers batteries at different scales to facilitate an energy transition; aiming at local "green" batteries' supply). If you are in Brussels for EUSEW NETfficient gladly welcomes you to this session.

Project Insights

NETfficient Technologies and Use Cases

Our previous newsletters covered the 5 different Use Cases which NETfficient covers, i.e. private homes, larger buildings, streetlighting, water temperature management for the Borkum Aquarium and medium voltage storage. We now introduce to you the Energy Management Platform (EMP) – the heart at the centre of all these applications: This platform automatically manages distributed generation and storage to optimize local energy use and also to provide energy services to the grid. Its intelligent power management uses forecasts and different optimization layers to manage the charging and discharging of the batteries, and the shifting and switching of loads from household appliances.

Forecasting is also used for optimal managing of the NETfficient HESS MV storage. It is a Hybrid Energy Storage system consisting of batteries in combination with Ultra Capacitors. The interplay of these components needs to be tightly managed to gain optimum performance of each. The overall goals is to manage distributed generation and storage to increase grid stability and to maximize the

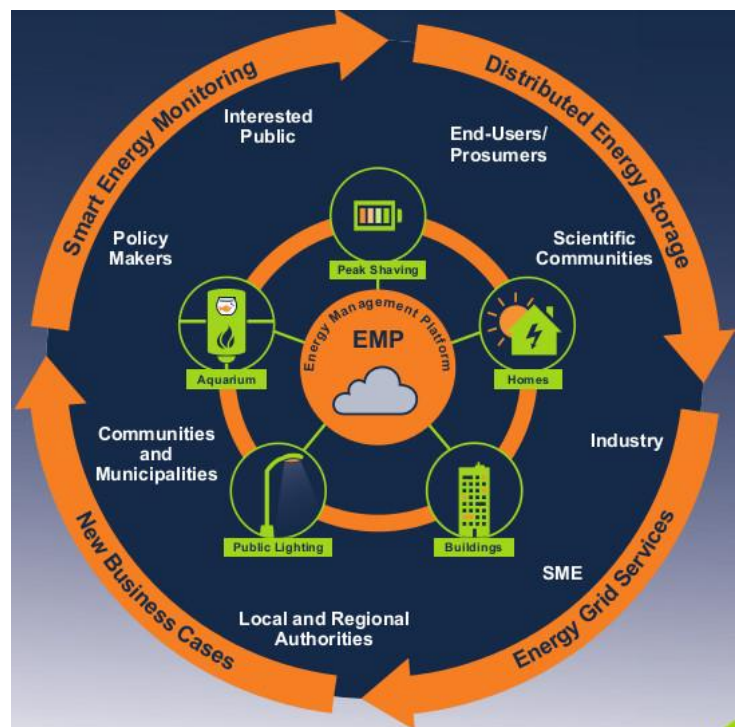


Figure 3: NETfficient Value Chain

profitability of renewable sources, thus achieving greener energy. The overall goal is to manage these within a smart grid and to integrate renewable energy sources into the market in a profitable way. Home consumption/ production is visualized by the overall interface to devices (see Figure 4 for a screenshot). The system is very flexible regarding different PV or battery power. Economic and compact power electronic are being used. As such, this system is well suited to the development of Smart Cities, providing information to the municipality and supporting the optimization of the municipality as a whole. For this reason NETfficient's follower-partner City of Santander in Spain is closely following project progress and exploring ways of transferring aspects of the EMP.

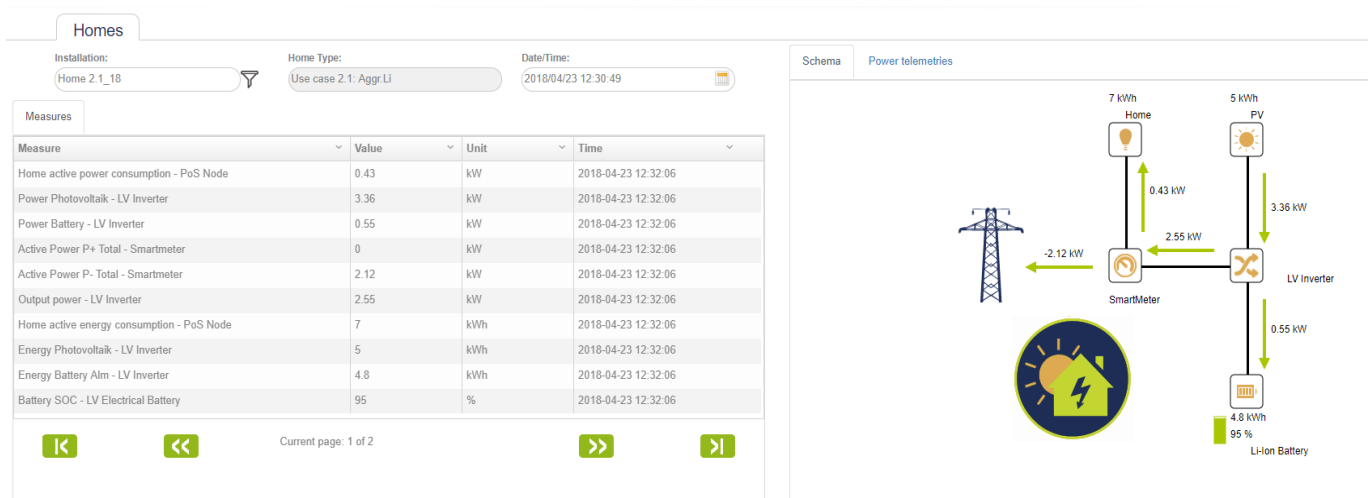


Figure 4: Impression of the Home Energy Synoptic

NETfficient Policy-Insights

Under the lead of NETfficient-partner Fraunhofer-ISE a report was compiled on regulation analysis and barriers identification. The report analyses the regulatory requirements for innovative business opportunities for smart storage systems, such as aggregator models, also known as virtual power plants and RE-direct-supply models. The report also identifies barriers hampering the implementation. It focuses on the five NETfficient use cases, emphasizing matters of ancillary services, battery integration into home energy supply system, battery integration into buildings and general use of electrical storage systems for urban electrical or (indirectly) thermal supply tasks. It covers typical European countries for more detailed analysis, i.e. Germany, Spain, Sweden and the UK. The situation in Germany has received special attention because of the location of the pilot on the German Island of Borkum. The report is available on this [link](#).

NETfficient Study visit

NETfficient welcomes you on the beautiful North Sea island of Borkum and opens the doors to its pilot installations on 14-15 June 2018. Enjoy the island setting and experience innovative energy storage technologies, smart grids, intelligent energy supply systems powered by renewables during a 2-days study visit. The study visit is addressed to energy experts and users from the energy sector as well as decision makers and other interested stakeholders. Apart from gaining a comprehensive understanding of the project, you will have sufficient time to explore the different pilot installations throughout the island. You will receive exclusive insights into state-of-the-art energy technologies, including different energy storage solutions and smart energy management systems. NETfficient experts present technical talks, workshops and site visits, offering ample opportunity for questions, discussions and knowledge sharing. For more information and registration click [here](#).

NETfficient Events

[NETfficient Study Visit](#): We offer the opportunity to view the NETfficient installations on Borkum during a two days Study-Visit 14-15 June 2018. The Study-Visit is designed to appeal to a technical audience of energy experts, planners and installers. Decision makers from utility companies and municipalities are also invited. We are now taking bookings on the above link.

[EU Sustainable Energy Week \(EUSEW\), Brussels, 5-7 June 2018](#). NETfficient will be represented at this year's EUSEW, as described above. The theme of this year's conference is 'lead the clean energy transition'. There will be a Policy Conference, on 5-7 June including (on the first day) the ceremony of the annual EU Sustainable Energy Awards, and a chance to share ideas and good practice in the Networking Village on 6-7 June.

NETfficient Final Project Event: our consortium has decided to tag our final event on to the [European Utility Week, Vienna 6-8 November 2018](#). We will host a NETfficient stand with exhibits showing details of our installations, show videos and provide the opportunity to meet our experts. NETfficient will also be represented within the summit conference and "hub" programmes.

[Intersolar](#): Fraunhofer represents NETfficient at the Intersolar in Munich 20-22 June 2018. Come and visit them at their stand to talk about their work on NETfficient and on utility scale batteries.

NETfficient Webinars – now being planned – keep an eye on our [website](#) for details

Related Events

[Berlin Energy Days, May 07 – 09, 2018, Berlin, Germany:](#) Berlin Energy Days is a conference with the parallel fair Energy ImpulsE which covers the topics of energy efficiency, renewable energy, energy supply and energy services.

[AnyPLACE Project Final Event, Wednesday, 16th May 2018 16:00, Dörentrup, Germany:](#) The project AnyPLACE develops a modular energy management system capable monitoring and controlling local devices according to the preferences of end-users. It will present the final project results and discuss conclusions and recommendations resulting from Anyplace2020. See here for further information.

[CEBIT 2018 – Business, Leads, Ideas, June 11 – 15, 2018, Hannover, Germany:](#) As a triple-punch event featuring exhibits, conferences and networking, CEBIT covers the digitization of business, government and society from every angle.

[The transition to a flexible electricity market” Symposium, 11th of July in ENDESA: Roger de Flor 38-52, 08018, Barcelona, Spain:](#) The symposium will cover issues and propose solutions to the increasing integration of Renewable Energy Sources in the existing electricity transmission network. It

presents the visions of SmartNet participants, academic experts and professionals from the electricity sector with long expertise in the subject. The programme is available [here](#).

[Global District Energy Days, September 25 – 27, 2018, Helsinki, Finland:](#) This two and half days event is an opportunity to discuss major issues of importance for European and Global District Energy sectors across a range of technical and commercial issues.

[Sustainable Places Conference Aix-Les-Bains, France; 27-29 June 2018](#) Sustainable Places conference is an annual international conference on the science and technologies behind energy for smart buildings and cities towards the market uptake of solutions for decarbonization and resource efficiency.

[Nordic Edge Expo 2018, Stavanger, Norway, 25 - 27 September 2018:](#) In just three years, Nordic Edge has established itself as the most significant Smart City event in the Nordics. From 500 participants in 2015 to 4500 visitors in 2017! This year's theme is "Smart with a heart." which emphasizes the quest that smart cities and societies are all about the citizens.