



ACTIVITY REPORT 2015



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THE EUROPEAN ASSOCIATION FOR STORAGE OF ENERGY...

- ... is the **voice of the Energy Storage community**, actively promoting Energy Storage in Europe and worldwide
- ... actively supports the deployment of Energy Storage as an indispensable instrument within the framework of the European energy and climate policy to deliver services to, and improve the flexibility of, the European energy system
- ... contributes to building a European platform for sharing and disseminating Energy Storage-related information
- ... supports the transition towards a sustainable, flexible and reliable energy system in Europe





With 41 members from across Europe, the voice of EASE matters and is well-heard. Proper storage solutions are clearly vital to achieving the goal of a sustainable, integrated, and flexible energy market. Unfortunately, for many years, Energy Storage was not recognised as a crucial factor in the global energy transition. This is now changing.

In February 2015, when the Commission put forward its Energy Union Strategy, it was clear that delivering on our EU targets on decarbonisation and share of renewables required fundamentally rethinking the way our market functions. Energy Storage is important to every aspect of the Energy Union, from increasing our energy security to ensuring a more optimal use of our energy infrastructure. It is also important for building the internal energy market, decarbonising the economy, and in our research and innovation of clean-tech solutions.

The State of the Energy Union, published in November 2015, determined that Energy Storage can unleash the full potential

of our existing energy system. When it comes to electricity, storage can help reduce the peak load in the main power lines both for the transmission and distribution grids. Storage can buffer and store the available energy resources, providing gas, electricity or heat security of supply over months and years.

Storage solutions provide flexibility as many storage technologies are scalable and geographically independent. This makes them an attractive solution which can accommodate the needs of various changing generation and consumption technologies. Finally, significant cost reductions have pushed down the price of batteries to one tenth of what it was just 10 years ago. This makes them much more fit for the market.

To best reap the benefits of storage we need to make sure that flexibility is rewarded on the regulatory side and we need to exploit opportunities and synergies between the electricity, gas and heat networks.

We are witnessing an unprecedented increase in the share of renewables in our energy mix. This is of course very good news, but it also requires us to tackle the variability of renewables. The Commission is doing so by promoting investment in new technologies, by better connecting national infrastructures so that energy can flow from where it is generated to where it is demanded, and by putting in place the right regulations so that the market can adjust and investment can follow.

The Commission is looking to release bottlenecks, especially when it comes to private investment. Investments in storage, both for security of supply and grid flexibility, have been challenged by growing risk. This becomes an increasingly important issue, as the cost of variable renewable power is

> the cost of integration. Both need to be kept low to ensure a more affordable and secure energy supply.

slowly shifting from the cost of generation to

We are also working to tackle market distortions. For example, pumped hydro systems are sometimes closed down

because of a lack of profitability, while our energy system needs more storage. Security and flexibility are not sufficiently rewarded for the important services they provide to our energy system.

While existing technologies clearly present important advantages to the market, we must continue exploring innovative solutions and ideas as well as new ways of improving

" The role and importance of storage have been underestimated for too long"



efficiency and cost-effectiveness. Therefore, the Commission has made it a priority to pave the way for new technologies to emerge and help steer it in the areas where they are most needed, such as Energy Storage. The Strategic Energy Technology Plan (SET Plan), announced by the Commission earlier this year, supports technologies with the greatest impact on the EU's transformation to a low-carbon energy system – including storage capacities. Horizon 2020 likewise focusses on grids and storage.

Moreover, the Commission is dedicated to addressing the full integration of close to the market technology with business models, while assessing existing legislation and regulation. This is vital for the rapid implementation of Energy Storage technologies.

The year 2016 will be the Energy Union's 'year of delivery', during which the Commission will present 90% of our actions as part of the Energy Union Strategy. This includes legislation on the new Electricity Market Design and Security of Electricity

Supply, the Energy Efficiency package and the Renewable Energy package.

The relevance of Energy Storage will clearly be reflected in these initiatives, and I am therefore counting on EASE's contributions, knowledge, and expertise. I truly appreciate EASE's support for the Energy Union and look forward to working closely with you in the coming year to help shape a sustainable, integrated and flexible energy market.

Maroš Šefčovič Vice-President of the European Commission in charge of the Energy Union





Energy Storage is such an important topic at this moment! Energy Storage technologies help to achieve a more sustainable, secure and independent energy system, by making the transition to a system with a high share of intermittent Renewable Energy Sources (RES) possible. At EASE, we actively support the deployment of Energy Storage as a fundamental aspect of the European energy and climate policy.

We started with only 13 members when EASE was created in 2011. Now, at the end of 2015, our association has over 40 members. Since EASE's establishment, both the energy system and EASE have come a long way. Energy Storage is a 'hot topic,' along with electric vehicles, prosumers, demandside management, smart cities and others, all of which depend on Energy Storage to some extent. Even though EASE and the European Commission are in intensive discussion about amendments to the legal framework to enable Energy Storage, there is still a lot of work ahead of us.

The year 2015 was a major one, laying the groundwork for what is to storage finds its rightful place in the energy come in this very important 2016. EASE, across its working groups, focused intensely on preparatory

activities in light of the forthcoming Energy Market Design (EMD) for Europe's energy market - the so-called Winter Package. For us it is very important to get the EMD right for the true value of Energy Storage to be realised and for its full potential to be unlocked for and in the future.

In that regard, EASE has examined the current energy system and legal framework and has come up with a list of technical and regulatory barriers which would need to be overcome to achieve the full integration of Energy Storage and the full

realisation of its potential. During 2015, our output as an association focused on tearing down those barriers, which include, amongst others: the lack of a level playing field; insufficient market access; the lack of a definition of Energy Storage; remuneration not matching the value created; the existence of double fees and taxes; and insufficient incentives except for Research and Innovation (R&I) funding.

The creation of a legal framework dealing with Energy Storage requires agreement on a definition of Energy Storage at the EU level. EASE has therefore dedicated a great deal of time and effort to the topic of defining Energy Storage - and we are in discussion with the Directorate General for Energy (DG ENER) on this. We think Energy Storage should be granted the status of the fourth element of the energy system, besides generation, transmission/distribution and consumption. Our collaboration with DG ENER is focused on finding an easy and

simple definition that can be inserted into the Electricity "As the voice of Energy Storage in Europe, Directive as a first step, that it is our responsibility to ensure that will allow for the integration of unforeseen innovations over the coming years, and that is technologically agnostic.

> We have had many other fruitful exchanges throughout the year with a variety of stakeholders, very importantly with DG ENER, DG Climate Action and the DG Joint Research Centre, as well as with ENTSO-E regarding network codes and a costbenefit analysis for Energy Storage.

> Additionally, the EU-funded Grid+Storage Research, Technology Development and Demonstration (RTD&D) project, in which EASE is partnering with the transmission system operators of ENTSO-E and the distribution system operators of EDSO for

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system of the future"



Smart Grids, is defining a forward-looking RTD&D agenda for 'smart grids' and integrated Energy Storage.

We have consistently worked to tear down the remaining barriers for Energy Storage in all of our endeavours. We truly believe in the importance of Energy Storage for the future energy market.

A heartfelt thank you to all the members and the secretariat of EASE for their hard work throughout the year. Moreover we

like to thank all external stakeholders, especially the European Commission, who support Energy Storage. EASE managed to create tools and messages which will serve as valuable input to the discussion on how best to integrate Energy Storage in the Energy Market Design.

Let's continue to take on that challenge in 2016!

K. Peter Röttgen EASE President

ENERGY STORAGE TECHNOLOGIES

EASE supports all Energy Storage technologies and believes that Energy Storage needs to be addressed agnostically. To better deal with the complexity of Energy Storage technologies, EASE has split the technologies up into five classes: chemical, electrical, electrochemical, mechanical and thermal. The list intends to be illustrative rather than exhaustive.





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Vanadium redox flow batteries are well suited for deep discharge, as they suffer no damage

EASE produced a set of Technology Descriptions, corresponding to the subsets of the five Energy Storage classes. They describe the physical principles, the important components, the key performance data and the design variants, while briefly going into the state of the art of each technology and the expected future developments.



Below are two excerpts from the Hydrogen Technology Description. For the other Technology Descriptions, please check the EASE website: www.ease-storage.eu.

1. Technical description

A. Physical principles

Electrical energy is stored by electrolysing water to produce hydrogen and oxygen. The oxygen is released and the hydrogen is then stored. For grid electrical energy storage applications, the hydrogen is then re-electrified (e.g. via fuel cells) thus recombining hydrogen with oxygen to produce electricity. Heat and water are released as a by-product. Alternatively gas turbines or engines can reconvert hydrogen into electricity as well.



D. Design variants (non exhausitive)

Different design variants are defined according to the utilisation. Here below the example of an alkaline (or PEM) electrolyser.



Some technologies can achieve efficiencies above 80% with heat valorisation.

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APPLICATIONS

Energy Storage provides many important benefits to the energy system. It can be integrated at various levels, from power generation to transmission and distribution to the consumer. Energy Storage does not fit neatly into any of these three segments but plays a role in all of them. Indeed, one of the most valuable attributes of Energy Storage is that most of its devices offer several services along the entire energy value chain. Therefore, Energy Storage is often referred to as the fourth element of the energy system.

For example, Energy Storage applications can complement intermittent power generation in several ways by:

- Improving the reliability of production planning and output forecasting.
- Optimising integration of wind generators into the medium voltage grid at their point of connection.
- Alleviating grid disturbances in regions of high wind penetration, e.g. when generation halts abruptly.
- Storing large amounts of wind energy in times of excess production, thereby avoiding curtailment.

To illustrate the uses and benefits of Energy Storage, EASE identifies and describes a comprehensive set of Energy Storage applications and organises them by segment of the energy system. As this is a living document, it is updated regularly.



Transmission



Participation to the primary frequency control Participation to the secondary frequency control Participation to the tertiary frequency control Participation to angular stability Investment deferral

Improvement of the frequency stability of weak grids

Distribution

Capacity support Reactive power compensation Distribution power quality Limitation of upstream disturbances Intentional islanding Contigency grid support Dynamic local voltage control





Customer Services

Contuinity of energy supply End-user peak shaving Time-of-use energy cost management Particular requirements in power quality Compensation of the reactive power Limitation of upstream disturbances



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MARKET DESIGN

In September 2014, European Commission President Mr Jean-Claude Juncker announced the objective of establishing an EU Energy Union and appointed Mr Maroš Šefčovič as the Vice-President overseeing this project along with Mr Miguel Arias Cañete, the European Commissioner for Climate Action and Energy. The Energy Union will provide EU citizens with more affordable energy, greater energy security, sustainability and competitiveness by creating an integrated European energy market and while achieving the EU's climate goals for 2030: a reduction in greenhouse gas emissions by at least 40% compared to 1990 levels; a binding target for renewable energy of at least 27% of primary energy; and an indicative energy efficiency target of at least 27%, compared to the business-as-usual scenario.

The great challenge for the decarbonisation of the EU's energy mix is the integration of intermittent renewable energy sources (RES) into the existing energy system. To achieve this integration the energy system will need to become more flexible. Multiple sources of flexibility, including Energy Storage, will need to be deployed to meet this challenge.

To achieve its full potential, however, Energy Storage requires an appropriate EU regulatory framework. EASE thus calls for the creation of a fair market design, based on the concepts of a level playing field and technology neutrality. This design fully values Energy Storage services, remunerating the added value of faster and more accurate devices, and allows them to participate competitively in the European energy market.

In July 2015, the European Commission's DG ENER conducted a public consultation on "A New Energy Market Design" as part of its 2015 'Summer Package' of initiatives. The consultation will result in proposed revisions to the EU's 'Third Energy Package', which will be part of its 2016 'Winter Package' of initiatives due in December.

EASE supports the European Commission's efforts to reform the energy market design (EMD) and to make it 'fit' for Energy Storage. EASE would welcome, in particular, the recognition of Energy Storage as a major force in balancing the system, in further enabling RES integration, in delivering increased and necessary flexibility and in allowing for investment deferral within the networks of transmission system operators (TSOs) and distribution system operators (DSOs). In addition, price fluctuations provide an opportunity to properly remunerate flexibility and capacity options, such as Energy Storage.

Policies should be formulated in such a way that Energy Storage can develop into a competitive flexibility option.

To help advance the discussions surrounding EMD reform, EASE has identified a set of barriers which currently hamper the generation of a fair revenue stream for Energy Storage.

No level playing field

- regulation of existing energy system components, (e.g., RES)
- relationship to existing energy system components

Insufficient market access

- network codes
- openness, competition inter alia, access to bulk markets

System position of Energy Storage

- lack of definition of Energy Storage
- lack of certainty whether unbundling prohibits Energy
 Storage ownership
- underestimated potential for heat storage

Remuneration not matching value creation

- for flexibility and capacity
- for additional Energy Storage services
- for regulated markets (TSO/DSO)

Unacceptable implementation

• fees and taxes

Insufficient incentives, excluding R&I funds

Lack of technical standards

• interfaces

EASE has high expectations that several of these barriers will be addressed by the reforms included in the proposed revisions to the EU's 'Third Energy Package'.



MARKET DESIGN

In October 2015, EASE responded to the above-mentioned public consultation on "A New Energy Market Design".

Key points in EASE's consultation response included:

- An EU-level definition of Energy Storage is lacking.
- Where price spikes are deemed undesirable, capacity remuneration mechanisms (CRMs) could be a sustainable, long-term way to complement energy markets and signals. Energy Storage needs to be fully understood to create the right conditions for their participation in capacity mechanisms.
- Dispatchability of RES can be achieved by including Energy Storage devices.
- A specific market that rewards fast-reacting ancillary services should be considered.
- As Energy Storage is both a consumer (charging) and a generator (discharging), they are often subject to double fees and taxation.
- Importance of ENTSO-E/EASE cooperation in the Cost-Benefit Analysis for the energy Storage transmission grid development projects in the framework of the Ten Year Network Development Plan.
- Distribution system operators (DSOs) could take an active role in managing the distribution network, favouring market solutions. If such solutions are not available, DSOs should be allowed to operate Energy Storage and demand-side response resources.

EASE also submitted an accompanying paper calling for a separate asset category for Energy Storage systems – the fourth element of the energy system next to generation, transmission and distribution and consumption – with accompanying rules and regulations. This new asset category should recognise the contribution Energy Storage systems can make to system security, loss reduction and the provision of other ancillary services

As regards the important issue of the lack of a common EU definition of Energy Storage, EASE has been cooperating with DG ENER in the formulation of an appropriate definition of Energy Storage which would allow harmonisation of the concept across the Member States.

A Saft Intensium® Max 20M, li-lon containerised system, has been deployed as part of the Eurogia+ ILIS project to demonstrate grid-connected Energy Storage for an industrial scale photovoltaic plant in Spain. The main goal of this project is to improve the electric behavior of a PV plant by adding a li-lon MW scale storage unit and reduce the levelised cost of energy.



HYDROGENICS

SWISSGA

Concentrated Solar Power + Molten Salt Storage. The use of storage systems gives to this renewable technology the capability to be dispachable.

> In Falkenhagen in the state of Brandenburg (Prignitz), there is a demonstration plant of Uniper Energy Storage for storing wind energy in the natural gas grid.

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EASE has been working towards a fair Market Design for over a year now. The most important steps were:



In cooperation with DG ENER, a round-table discussion on Energy Storage took place in May 2015 at the Berlaymont building of the European Commission in Brussels. There was a wide agreement regarding the need to further develop the market and legislative framework, thereby enabling the necessary flexibility solutions in the energy system. The challenging market and insufficient regulatory environment were identified as common obstacles for the deployment of optimal flexibility solutions irrespective of the technology employed.

EASE submitted its answer to the EMD Consultation in October 2015. Our most important message: a separate asset category for Energy Storage needs to be created and a common definition of Energy Storage set on the EU level.

CONSULTATION

FLORENCE FORUM

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EASE attended the 29th meeting of the European Electricity Regulatory Forum in Florence, Italy, which was preceded by the "New energy market design conference" to discuss the European Commission's 'Summer Package' of policy proposals.

EASE has been involved in the development of the electricity network codes since its creation in 2011, publishing a number of position papers and formal submission during all stages of the code development process. For example, based on EASE's evidence-based submissions related to the frequency containment reserve (FCR) provisions of the draft System Operation network code in mid 2015, the European Commission proposed favourable revisions to the draft code text to be adopted in comitology by the Electricity Cross-border Committee. Other draft network codes that EASE worked to influence in 2015 included the Electricity Balancing Network Code and the Emergency and Restoration Code.

Network Codes

GlenDim

UANTUM

The 'Quantum' Smart Electric Thermal Storage System is a smart space and water heating energy management system which is designed to use lowcost, low-carbon energy from renewable sources. Quantum's demand side management functionality also brings flexibility to the energy system by storing heat from renewable electricity generated at times of high supply and low demand, turning it into cheap, efficient heat only when it's needed. Quantum is fully controllable and designed for integration into smart grid control.

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HORIZON 2020 GRID+STORAGE PROJECT

In December 2014, EASE, with a consortium composed of five other international partners (Technofi, EDSO for Smart Grids, ENTSO-E, RSE and Vito), was selected by the European Commission to support DG ENER in defining a European Research, Technology Development and Demonstration (RTD&D) strategy in the area of Strategic Energy Technology (SET) Plan activities relative to smart grids and integration of Energy Storage, with a 2-year project called GRID+STORAGE.



The project focusses on the development of two "3-year Implementation Plans" for identifying the short-term RTD&D priorities and an "Integrated RTD&D Roadmap 2016-2025" for research, demonstration and market uptake of technologies integrating storage solutions into the grid RTD&D activities. The overall aim is to support a more efficient distribution of RTD&D programmes for the implementation of the new structure of the SET-Plan - aiming at accelerating the deployment of low-carbon technologies - in this area by providing prioritised Roadmaps and a detailed analysis of ongoing activities.



During the first year of the project, the following activities were successfully implemented:

A Public Consultation for the Implementation Plan 2016-2018, based on the existing EEGI and EASE/EERA RTD&D Roadmaps, for:

- Identifying Energy Storage functionalities able to enrich the network RTD&D topics.
- Monitoring past and ongoing RTD&D projects.
- Ranking RTD&D projects according to the needs of the system operators.

A draft and final Implementation Plan (IP) 2016-2018, publicly available on the Grid+Storage website. This integrated IP is based on:

- The IP 2016-2018 already published by ENTSO-E.
- The draft IP 2016-2018 provided by EDSO for Smart Grids in early 2015.
- RTD&D topics identified by EASE in its own RTD&D Roadmap.
- A set of parallel analyses of:
 - the ongoing RTD&D activities performed at European level by transmission and distribution systems;
 - the upgraded EEGI Roadmap approved by the EEGI in February 2013;
 - upgraded priorities which have emerged from the network operator joint activities in the past GRID+ support action which ended in late 2014;
 - the past and ongoing RTD&D activities on Energy Storage integration into energy systems, a scan of which was also performed during the GRID+ support action.

The existing transmission system operators (TSOs) and distribution system operators (DSOs) IPs have been reexamined to identify the possible use of Energy Storage solutions which could enrich or complement the RTD&D topics pre-identified by ENTSO-E and EDSO. To these topics, EASE added a few more, specifically dedicated to the integration of Energy Storage.

Nine knowledge exchange workshops are scheduled, aimed at emphasising the scaling and replication potential of the experimental or simulation results obtained during the RTD&D projects, while protecting intellectual property rights by involving industry in the description of the project results in the existing Knowledge Sharing Platform (KSP) GridInnovationonline.

The approach used in the Grid+Storage project is a collective and transparent approach that involves four main activities:



Join us for the next steps and deliverables in 2016:

- Second Public Consultation for the 10-year Integrated RTD&D Roadmap.
- By June 2016, draft and present the 10-year Integrated RTD&D Roadmap (2016-2025), inserting Energy Storage solutions into grid RTD&D activities. In this Roadmap the grid operators and Energy Storage

players consider the integrated aspects of their RTD&D efforts to encompass three dimensions:

- Functional integration of storage-based solutions within the power system: RTD&D activities addressing how Energy Storage solutions can make end-to-end functionalities more efficient.
- Temporal integration of storage-based solutions: RTD&D activities shaping the lifecycle of the integrated solutions in terms reliability and technoeconomic performances as well as manufacturability.
- Spatial and environmental integration into the most complex electricity system worldwide: a fine-tuning of the optimal scale and an adjustment to local climates and areas.
- Second "3-year Implementation Plan 2017-2019" for identifying new topics for the possible use of storage solutions in the electricity system.

Henrik Dam, policy officer at DG ENER, Directorate C, at the Lille Workshop in November 2015

Be involved in the definition of future RTD&D activities about smart grids and Energy Storage: read our technical monitoring of on-going projects and support the topic selection for the implementation plan 2016-2018.

For more information on the project and to get involved, please visit the Grid+Storage website: www.gridplusstorage.eu.



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Comparison Comparison Comparison EASE - Activity Report 2015

2015 IN CIRCLES





EASE STRUCTURE

EASE has several bodies dedicated to the various aspects of Energy Storage and the associated challenges and opportunities.

The **General Assembly** and the **Executive Board** are responsible for all association-wide decisions, whereas the Committees and the underlying Coordination Group (CG), Working Groups (WGs) and Task Forces (TFs) are involved in more topic-specific decisions and tasks.

The **Technology and Value Assessment Committee**, chaired by Luis Costa (GE), is the main committee responsible for acquiring and delivering hard data.

The **Strategy Committee**, chaired by Michel Matheu (EDF), is dedicated to developing and executing a medium- and longterm vision, outlook and perspectives on the development of policies related to Energy Storage and its industry in Europe.

The **Communications Committee**, chaired by Michael Lippert (Saft), has as its mission to inform external stakeholders about the benefits Energy Storage has to offer.





Treasurer Hugh Logue, Gaelectric

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SECRETARIAT

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After 4 years of dedication as the EASE Policy Officer, Ms Maria João Duarte left the Association in September 2015. The EASE

Secretariat and members thank her for her dedication in setting-up EASE and for being the backbone of the association for all these years.

She was replaced by Ms Julia loannou.



Maria João Duarte Policy Officer



Patrick Clerens Secretary General



Julia Ioannou Policy Officer



Jean-Michel Durand Technical Advisor



Tom De Latte Communication Officer



Michela Bortolotti Operations Officer



Maria-Laura Trifiletti Project Manager

PARTNERS

EASE is continuously in discussion with partners who share the same goal of contributing to the development of a sustainable energy system.

One example of is the biannual meetings with interested European National Energy Storage Associations. In these meetings, information is exchanged, support is given to valuable initiatives and shared fields of interest are discussed. In 2015, representatives from Austria, Germany, Italy, the Netherlands, Portugal and the UK came together in Brussels to discuss the market value of Energy Storage with and without support for Renewable Energy.

EUROPEAN NATIONAL ENERGY STORAGE ASSOCIATIONS



EUROPEAN AND GLOBAL PARTNERS



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To follow, an update from some of our national partners on what happened in their countries in 2015. Updates from the other national partners will follow in the next reports.

GERMANY

The German Federal Association of Energy Storage (BVES) represents the interests of companies in the Energy Storage industry in the fields of

electricity, heat and mobility. As an industry association, BVES is a dialogue partner for politics, administration, science and the public.

In the recent years, BVES has managed to establish the subject of Energy Storage on the German political agenda. Now it is time to create a regulatory framework for an open market environment for Energy Storage. For this purpose, 2015 was important for the following issues and milestones:

Prequalification for battery storage systems to participate in the balancing market

Since the early summer 2015, BVES has been in intensive dialogue with transmission system operators, the Federal Ministry of Economics, the Federal Network Agency and the European Commission. The one-sided burden for Energy Storage related to stricter technical capacity requirements compared to fossil fuel power plants is clearly at odds with a non-discriminatory and technology-open access to the balancing market. Clarification is needed on how to establish an objectively uniform standard for all technologies and a verifiable, transparent and non-discriminatory procedure for pregualification.

Electricity Market Act

Much of the work of the association in 2015 was focused on the development process of the new Electricity Market Act. Next to positioning itself on the Green Paper, the White Paper and the Ministry's working draft, BVES stressed during numerous events and bilateral talks the need to fully consider energy storage as a flexibility option and to free it from the double tax burden.

The federal government's resolutions regarding the Electricity Market Act in December 2015 were the culmination of a successful year. All contents and demands that BVES has raised in numerous discussions at the federal state level were taken up.



THE NETHERLANDS

In 2015, Energy Storage NL (ESNL) saw the light. Both our website and LinkedIn Group welcome a high number of visitors. Moreover, the website

acts as showroom for our members.

The year's highlight was the Energy Storage Day, which took place on the 7th of October at the Energy Tradeshow in 's Hertogenbosch. With nearly 300 visitors, the event became a stunning success. With short pitches seven ESNL members presented their technologies. The Government Innovation Agency for Energy praised the ESNL initiative, and expressed its contentment with a clear and single reference point for Energy Storage for the Dutch "Topsector Energy."

In September 2015, Energy Storage NL presented the results of a study on obstacles for Energy Storage in the Netherlands. On the basis of this study, amongst others, ESNL began liaising with the Dutch Ministry of Economic Affairs about the adjustment of the rules and regulations regarding Energy Storage. An important objective for ESNL is the evaluation and phasing out of the "salderingsregeling": a Dutch law that allows solar panel owners to offset their self-generated power against the electricity they tap from the grid.



PORTUGAL

In May 2015, the association was invited by the Director-General of DG Energy of the European Commission, Dominique Ristori, to participate in the Energy Storage High Level Roundtable in Brussels.

EnergyIN was also present at the self consumption workshop during the Sustainable Energy Week that took place in in Brussels. Additionally, EnergyIN participated and made a presentation about Energy Storage in Portugal and Europe at the Smart Urban Expoconference, in July in Badajoz, Spain. In October the association made a presentation about self consumption in Portugal and Europe, at Expoenergea in Mérida, Spain.

In Portugal, the generation of electricity for self-consumption and use associated with the respective production unit, with or without connection to the grid based on renewable or non-renewable technologies, is regulated by Decree-Law no. 153/2014, of 20th October.

In addition to Decree-Law no. 153/2014, in 2015, the regulatory regime for self-consumption, namely legal procedures and tariffs has been established through three new ordinances.

Energy Market Design Winter Package

While the formal period of public consultation to provide input to the European Commission for the formulation of their Energy Market Design reform proposals closed in October 2015, EASE and other stakeholders supportive of Energy Storage will continue to provide argumentations and evidence through informal submissions and advocacy events until the autumn of 2016.

Grid+Storage Regional Workshops

Following the two workshops held in 2015, seven regional knowledge sharing workshops will be organised by the Grid+Storage project consortium in early 2016. The purpose of the workshops is to foster professional networking and the exchange of experiences across EU, national and/or regional RTD&D projects involving smart transmission and distribution grids and the integration of Energy Storage solutions. The nine workshops are organised in collaboration with the ERA-Net Smart Grids Plus initiative.

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Energy Storage Student Award

Following a suggestion by its members, EASE is proud to launch the "Energy Storage Student Award". This award will be given to the MSc or PhD student who has shown the greatest promise in the field of Energy Storage.

The award winner will be granted a free entrance to the Energy Storage Global Conference (as well as travel and accomodation) where he/she will be able to network with the Energy Storage Community. In addition, they will be invited to present their thesis to the relevant committees and, perhaps, help conduct research relevant to one of EASE's many task forces.

The secretariat will publish a call for papers on the EASE website and via the EASE Twitter account (@EASE_ES). Additionally, the call will be forwarded to all EASE partners and contacts in academia.

EASE Media Engagement

Now that EASE has joined the Twittersphere with the creation of @EASE_ES, the association will actively engage the media – both social and traditional – to help disseminate EASE messages. In this framework, press meetings will be organised, in which the Brussels-based press will be informed of the hurdles facing Energy Storage and their possible solutions.

Energy Storage Global Conference 2016 27-29 September 2016

In partnership with the U.S. Energy Storage Association, EASE will be organising a three-day conference on 27-29 September 2016. The first day, organised with the support of the EC's DG Joint Research Centre (JRC), will focus on Energy Storage technology and applications. The second day will focus on the varying regulatory approaches to the treatment of Energy Storage across the EU, the United States and Asia-Pacific, attempting to draw 'lessons learned' and to promote 'better regulation.' The third day will focus on commercial 'best practice' in the deployment of Energy Storage.

For more information and to register, please visit www.esgc.org.

28.09.2016 Gala Dinner in the Atomium (optional)



27.09.2016 - Energy Storage Technologies

Driver

DG JRC of the European Commission

Draft agenda

12:30	Site Visits (TBD)
12:30	Networking Lunch
13:30	Workshop Sessions
15:30	Coffee Break
15:45	Workshop Sessions
16:45	Wrap up



28.09.2016 - Energy Storage Enablers

Driver

DG ENER of the European Commission

Draft agenda

09:00 Welcome and Opening Statement 09:20 Keynote Speech SESSION 1 09:30 11:00 COFFEE BREAK 11:30 SESSION 2 12:30 LUNCH 13:30 SESSION 3 COFFEE BREAK 15:30 SESSION 4 16:00 17:00 Lessons learned/observations from Day 2

29.09.2016 - Energy Storage Drivers

Drivers

EASE and ESA

Draft Agenda

- 09:00 Welcome and Opening Statement
- 09:15 Keynote Speech
- 09:30 SESSION 1
- 10:30 SESSION 2
- 11:30 COFFEE BREAK
- 12:00 SESSION 3
- 13:00 LUNCH
- 14:00 SESSION 8
- 16:00 Lessons learned/observations from Day 3
- 16:15 Closing remarks

Contended of Contended Storage Global Conference Explaining I Exchanging I Enabling Brussels I 27th to 29th September 2016

The organisation reserves the right to make changes to the programme.

EASE Workshop on Energy Market Design for Energy Storage 25 May 2016

With the support of Directorate B and Directorate C of DG ENER, EASE is organising a workshop on 25 May 2016 to generate additional input and stakeholder recommendations for the EMD reform proposals being formulated by DG ENER. The agenda will feature presentations from EU-funded R&I projects which include identifying regulatory barriers to the timely and economically viable deployment of Energy Storage.

European Union Sustainable Energy Week 17-13 June 2016

Together with EUROBAT, SolarPower Europe, Eurelectric and the European Heating Industry Association, EASE will organise a session on: "The role of Energy Storage in enabling consumers to generate, consume and store electricity from renewables". This session will take place on the

PowerGen Europe/Renewable Energy World Europe 21-23 June 2016

The PGE/REWE conference, organised in Milan, will - for the first time - feature a dedicated Energy Storage Day. In addition to supporting the day's organisation, the EASE secretariat will also be present at the conference with a booth to answer questions of interested participants.

DG ENER Smart Grids Task Force Expert Group 3 workshop on Energy Storage 29 June 2016

Following on from its participation in this expert group, EASE volunteered, along with three other participants (ENTSO-E, EDSO for Smart Grids and Eurogas), to organise a workshop on Energy Storage on 29 June 2016. For the agenda, EASE will be looking into commercial deployments and R&I demonstration projects, asking the project leaders to identify regulatory hurdles to the deployment of Energy Storage.

European Utility Week 15-17 November 2016

EASE, as member of the programme committee, will be contributing to the programme of the European Utility Week to ensure an adequate representation of Energy Storage technologies at the conference. Next to this support, Mr Patrick Clerens will be chairing and moderating a panel.







2015 was another exciting and successful year for EASE. The European energy system is advancing towards an energy future based on clean, variable and renewable power generation, smarter and more reliable networks, empowered consumers, and competitive, interdependent European energy markets. However, achieving the full potential of Energy Storage is crucial in order to successfully transition to the energy system of the future.

To reach the EU's energy and climate goals, as well as the targets agreed in Paris at COP21 in December 2015, significant investments in our energy infrastructure are needed. According to some estimates, some \notin 200 billion will have to be invested in energy annually in the next decade. A degree of certainty and predictability is a prerequisite for all types of investment, and Energy Storage is no different. In the dynamic energy landscape this predictability is sometimes difficult to come by. This is especially true for new players in the field, such as Energy Storage. Although the need for Energy Storage has been clearly recognised today and the necessity to implement it into our energy system is widely acknowledged, questions about the how and the when remain.

One of EASE's primary objectives is to foster the creation of a fair market design which adequately remunerates rendered services and allows for a natural market uptake of storage-based solutions. To ensure that both policy and industry recognise and enable the benefits of Energy Storage to flourish to the fullest extent, we need to provide a clear policy framework and to tear down the barriers to Energy Storage. This is why EASE strives to clarify the role of Energy Storage in our energy system and continues to raise awareness of its potential and value.

This year, EASE worked on the definition of Energy Storage in the electricity vector and continued to liaise with the European Commission to include this in a revised Electricity Directive. Another big moment for EASE came in February with the launch of the Grid+Storage consortium, which won the B2.16 2014 call of the Horizon 2020 Energy Work Programme for 2014-2015 and in which EASE is a partner. By the end of 2016, Grid+Storage will deliver a prioritised Roadmap to further determine the path and distance Energy Storage still has to go to reach its position as an equitable part of the energy system.

All of EASE's efforts in 2015 paved the way for the Energy Union's 'year of delivery' in 2016, during which the Commission plans to present the lion's share of the actions laid out in the Energy Union Strategy.

Following the success of the first Energy Storage Global Conference in 2014, EASE will organise a second edition of the Conference in September 2016, this time in Brussels. I hope that I will be able to welcome you there to discuss Energy Storage and the exciting possibilities that it brings along. I strongly believe that the exchange of expertise and experience is the key to create a new and improved energy system for us all.

See you soon,

Patrick Clerens

MEMBERS

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