Renewables Grid Initiative

Environmental Protection | Communication & Participation | Technology & Design

AWARD

GOOD PRACTICE OF THE YEAR

2018

Imprint

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The Renewables Grid Initiative is a unique collaboration of NGOs and TSOs from across Europe. We promote transparent, environmentally sensitive grid development to enable the further steady growth of renewable energy and the energy transition.

For more information, visit our website: **www.renewables-grid.eu**

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Foreword

Miguel Arias Cañete
EU Commissioner for Climate Action and Energy

As a frontrunner in the implementation of the energy transition, the European Union relies on its interconnected grid to deliver affordable, secure and sustainable energy to all Europeans.

Through our energy policy – notably the ongoing changes provided by the Clean Energy for All Europeans package – we are establishing an updated legislative framework which is both stable and transparent, so as to facilitate the necessary public and private investment in the clean energy transition. This has the added potential of creating jobs and economic growth. Our energy infrastructure should follow in the same direction and at the same speed in order to underpin this transformation and tap into the growing share of renewables being fed into the grid across Europe. A well-interconnected and integrated European grid benefits citizens and local communities by ensuring that our energy crosses borders and it is delivered where it is most needed. The paradigm shift in how we generate and consume our energy makes the cost of doing nothing unacceptable to society as a whole. Indeed, it is more important then ever to harness the trust and participation of active consumers and engaged consumers in this process.

For these reasons, the Commission, together with the Renewables Grid Initiative, is delighted to promote and share outstanding practices in renewables and grid development as a commitment towards tomorrow's clean, inclusive and innovative power system.

For the fifth edition of the Good Practice of the Year award, a record number of projects were submitted across all categories, showing an all-round greater interest in best practices which integrate renewables into the electricity grid. The three categories reflect the pillars of the energy transition. Involving the community in decision-making and educating the younger generation are the focal points in the Communication and Participation category. Technology and Design focuses on ways to improve current and future infrastructure to accommodate the expansion of renewables into the grid. And finally, the Environmental Protection category showcases ways in which we can move forward to meet the growing energy needs of the population, while taking care of the environment that surrounds these projects both direct and indirectly.

I would like to congratulate this year's winners and hope that you inspire others to embrace the clean energy transition. At the same stage, I would like to give a word of thanks and praise to all the projects that were submitted. Their efforts go beyond the normal day-to-day business and reflect the principles of our trans-European energy networks development: transparency, participation, innovation and environmental protection.

Introduction

AWARD GOOD PRACTICE OF THE YEAR

Renewables Grid Initiative

MAZARS

The “Good Practice of the Year” award is presented annually to three innovative and exemplary practices that have contributed to the implementation of the energy transition. Our award has grown: we are already in the fifth year and appreciate the good quality of the many applications we have received over the years. While we consider the award ceremony at the Energy Infrastructure Forum a highlight in our annual calendar and think that the winners deserve all the praise they receive, it is the Olympic spirit that counts: participating is more important than winning. This is why this brochure introduces not only the three winning practices, but also many other interesting submissions and encourages others to replicate their approaches.

The submitted initiatives contribute to the progress of integrating renewables into the grid, support environmental protection or engage the public and other stakeholders in a meaningful way. This year, a record number of projects were submitted from Europe, the UK and North America in the three categories “Technology & Design, Communication & Participation and Environmental Protection”.

Technology & Design

The category Technology & Design saw most submissions this year. Practices varied from innovative pylon and tower designs, to the rethinking of heating systems and integration projects for renewables into the grid. The winner in this category is the WiseGRID project by a consortium of 21 partners. This project is a wide-scale demonstration of integrated ICT services for energy distribution grids in Europe.

Communication & Participation

Local concerns are still among the most important delay factos for infrastructure projects. Affected citizens, local politicians or environmentalists regularly raise concerns about plans for a new power line near their house or municipality. The submissions to the Communication & Participation category reflected the need for

effective solutions to interacting with those affected by grid projects. Many project developers are increasingly focusing on this area and seeking for opportunities to engage with and support local communities.

The winner in this category, the “Innovative Public Participation” practice from TransnetBW and TenneT, demonstrated a new approach to public participation in Germany’s largest electricity grid project SuedLink. It included an online participation platform using a web-based Geographic Information System (WebGIS), joint planning with local governments, information forums in all regions affected and manifold multimedia information material.

Environmental Protection

Protecting the environment while transforming our energy system is becoming even more important as projects increase in both size and frequency. This year, the submissions in this category focused on remediation and environmental assessments. The winner is the “Smart-Island, Giglio Archipalego” project by Terna, the Italian TSO. The idea of the project is to redevelop and transform old landfill site into a green area for renewable energy production, given the limited space on the island and their reliance on diesel energy.

We would like to extend a thank you to all the diverse and innovative applications we received this year and sincere congratulations to the winners. Your projects are an important part of the vision to build an energy system based on renewables. We would also like to thank the international auditing and advisory company MAZARS for accompanying the evaluation process for the fifth year in a row and our excellent jury of experts who picked the winners.

An Independent Jury of Experts

Gregg D. Ander

President and Managing Director of Gregg D. Ander, LLC

Gregg D. Ander is the President and Managing Director of Gregg D. Ander, LLC, which provides consultative services on a variety of power and energy sector issues. He recently stepped down as the Vice President of Power Strategies at the Energy Foundation in San Francisco, where he oversaw a portfolio of investments including utility generation, distributed energy resources, energy efficiency, and cross cutting (grid integration, finance, data, pricing, business models).

Pierre Jean Coulon

Member of the European Economic and Social Committee (EESC)

Pierre Jean Coulon is the President of the Section "Transport, Energy, Infrastructure and Information Society" of the European Economic and Social Committee (EESC). Previously, he was active as President of the international non-governmental organisation Right to Energy SOS Future, as well as an expert adviser to the United Nations.

Humberto Delgado Rosa

Director for Natural Capital, DG Environment, European Commission

Humberto Delgado Rosa is the Director for Natural Capital, DG Environment, European Commission. Previously he was Director for Mainstreaming Adaptation and Low Carbon Technology in DG Climate Action. He is experienced in European and international environmental policy, particularly in biodiversity and climate change issues.

Patrick Devine-Wright

Professor of Human Geography at the University of Exeter

Patrick Devine-Wright is an expert on public engagement with low-carbon energy technologies and associated infrastructure such as high voltage power lines. He has participated in, and led, several multi-disciplinary research consortia funded by the UK Research Councils and sits on the National Advisory Committee for the Irish power networks company EirGrid and the EU Pilot Project on public acceptance of electricity grids.

Marie Donnelly

Former Director for New and Renewable Sources of Energy, Energy Efficiency and Innovation at DG Energy, European Commision

Within the Directorate General for Energy, Marie Donnelly was responsible for the development of policies and actions on energy efficiency and renewable energy, the coordination of research activities in the field of energy as well as actions aiming at supporting the achievement of the 20-20-20 targets.

Baard Eilertsen

Founder of energy utility advisory company Truebase

Baard Eilertsen is the former CEO & President of Wireless Maingate AB. He created the world's largest and most successful Smart Home solution 100Koll for E.ON. In 2015, Baard started his own advisory company, Truebase AB.

Michael Hogan

Senior Advisor at The Regulatory Assistance Project

Michael works on electricity decarbonisation policy, particularly matters related to market design. He previously led the power programme at the European Climate Foundation. He has 38 years' experience in the electricity industry; leading development and operation of over 13,000 MW of independent power plants on four continents. He earned an MBA from Harvard, ScM (energy policy) from MIT, and BA (Philosophy) and BS (Aerospace Engineering) from University of Notre Dame.

Catharina Sikow-Magny

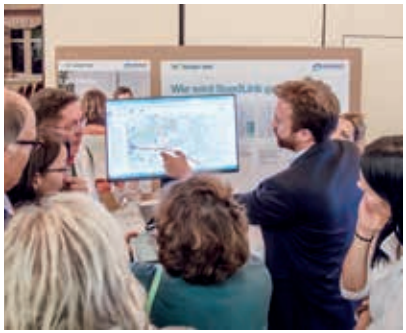
Head of Unit for Networks & Regional Initiatives at DG ENER, European Commission

Catharina Sikow-Magny joined the European Commission in 1997 and is currently the head of unit in charge of Networks and regional initiatives in the Directorate-General of Energy. Before that she coordinated international transport relations team, and has worked on the trans-European network policy, internalisation of external costs, financing and strategic policy research. Before joining the Commission, Catharina Sikow was a team leader and chief economist in LT consultants and Viatek, in Finland, in total for about 10 years.

Communication & Participation

"Innovative Public Participation"

by TransnetBW and TenneT



Innovative and transparent public participation in Germany's largest electricity grid project, SuedLink. The process, which was co-developed with local governments and other stakeholders, included various engagement formats, such as an online platform and info forums.

HIGHLIGHTS

- Online participation platform (SuedLink WebGIS)
- Joint planning with local governments – co-developed the concept for involving local communities and the public
- Engaging 435 municipalities
- Information forums in all regions that are affected by the project

Description:

Long before the start of the official permitting procedure, TransnetBW and TenneT presented possible underground cable corridors in the regions that could possibly be impacted by the project. With the help of a new communications and engagement approach based on openness, transparency and active participation, local knowledge was included into the planning. The public could view all recorded data and post comments via a web-based Geographic Information System (WebGIS) – it was the first time such a special online tool was created and used in a grid project in Germany.

"eGreen Community Solar Project"

by Citizens Energy Corporation

Citizens Energy Corporation, under the leadership of former Congressman Joseph P. Kennedy II, has developed a unique model to reduce electricity bills for low-income households to a cost of 2 cents per kilowatt-hour, using profits from a commercial transmission line. The model includes a partnership with the local utility to integrate more renewables into the grid while cutting down on fossil-fuel emissions and help those that are less fortunate.

HIGHLIGHTS

- Allowing 15.000 low income households to save over $500 a year on their electricity bill ($172 million in savings over the 23 year project)
- Low-rate renewable (solar) energy is made affordable to families in need
- 30 megawatt solar array built on land leased from the local utility, allocating all of the lower to low income households in the area

Description:

In Imperial County in California, Citizens Energy Corporation uses the profits from their ownership of the Sunrise PowerLink, a high voltage green energy line, to bring down the cost of energy for low income families. Two unique features of this project include using profits earned from a transmission line to buy renewable energy for the poor, and the local utility's willingness to virtually net-meter the power, at cost, to their low-income ratepayers.

"VVMplus (Research Project)"

by The Danish Centre for Environmental Assessment at Aalborg University

The project aims to increase social acceptance of renewable energy projects through improvements in the Environmental Impact Assessment (EIA) process by enabling dialogue and including communities in the process.

HIGHLIGHTS

- The mapping of current EIA practices
- Analysis of current conflicts over renewable energy projects and analysis of the barriers and possibilities of working with social impacts in EIAs
- International literature review on the topic
- Development of pilot projects
- Recommendations for EIA practitioners both in regards to renewable energy projects and projects with similar conflicts, such as new transmission power lines

Description:

This project aims at improving practices to increase the local acceptance of renewable energy projects, based on the Danish experience that the transition to renewable energy is increasingly challenged by local opposition to e.g. wind turbines and biogas plants. It focuses on Environmental Impact Assessments (EIA), which is a central arena for dialogue and conflicts concerning renewable energy projects, and thus a valuable tool to improve. The project is based on understanding that social impacts are central to the conflicts, but so far have not played a very significant role in EIA reports and processes. The project seeks to understand these issues and propose recommendations for an improved EIA practice. Project partners include: Department of Wind Energy at The Technical University of Denmark and Nordic Folkecenter for Renewable Energy

"Nobel Grid End User Engagement Strategy"

by Carbon Co-op

A comprehensive end user engagement strategy with a variety of different engagement tools empowering consumers and putting them in the center of the Nobel Grid project.

HIGHLIGHTS

- End user engagement strategy created and implemented to empower and improve capacity of householders instead of offering incentives or payments
- Innovative engagement formats, such as energy socials, monthly meetups, or a multidisciplinary conference reached 2,000 people; over 10,000 people reached with blogs
- 200 end users sign up for new equipment installation

Description:

The project Nobel Grid is used to test out new smart meter equipment and understand interactions with the new technology. It aims to involve the end users actively and holistically. Therefore, a comprehensive engagement strategy has been developed and implemented, including many innovative elements: for example, a cultural festival reached a wide audience through food, music, workshops, debates and discussion; end users tested and played with energy monitoring hardware and software in monthly meetups; a multidisciplinary conference bringing together open source developers, families and community activists. The implementation of the strategy has been successful in recruiting a large number of participants for tests sites and project components (i.e. batteries, smart meter extensions) and in influencing the project to improve its end results.

"ElectriCITY – an Educational Package for Schools"

by Elia in cooperation with Flemish DSOs

ElectriCITY is a school package designed by Elia to educate primary and secondary students on the importance of the energy transition.

HIGHLIGHTS

- Package was developed in cooperation with a group of teachers and included a power point presentation, a board game that explains the idea of connecting energy producers and consumers and supplementary study materials (student bundle)
- 3.800 educational boxes have been distributed, other regions have shown interest in expanding the project and the game will be translated into other languages (French, German)
- First educational package in Belgium that includes information about the energy transition and grid issues Europe is currently facing

Description:

The intention of this project was to teach the younger generation all aspects of the energy sector, the importance of the energy transformation and renewable energy, so that they will be able to make informed decisions as adults. Elia consulted with a group of teachers while developing the content and organised several feedback moments together with its partners (DSOs, environmental NGOs) before the packages were finalised. One part of the package – the board game – encourages practical problem solving, considering multiple actors and the environment. It has multiple difficulty levels and caters to many different ages. Annual updates of the teaching materials will be made available online.

"EntreREDes"

by Red Eléctrica de España

EntreREDed (Education From Childhood Towards a Sustainable Energy Model and Responsible Consumption) is a digital education platform which acts as a question and answer game that allows children to work out concepts related to the function, needs and challenges of the energy system in a playful and entertaining manner.

HIGHLIGHTS

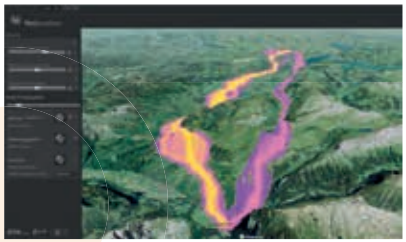
- The game has over 8,500 questions
- It has resulted in the participation of more than 8,300 Spanish students
- 98% of students recommended the use of entreREDes at school as educational support
- UNITY (a videogame technology) was used to achieve maximum virtual quality

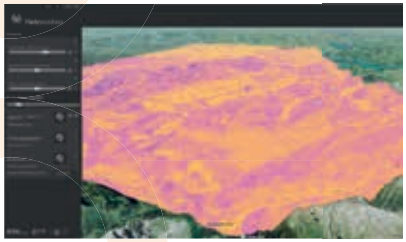
Description:

The project aims to educate school aged children about how the electricity system works, with the goal of helping the society to make informed decisions, encouraging dialogue and citizen participation as adults. The game, developed by the Spanish TSO Red Eléctrica is teaching children the responsible use of energy, and giving them information on renewable energy and smart grids. The tool developed together with experts and teachers is the first of its kind in the Spanish market. It does not need internet to be played and it is available for PC, iOS and Android. Moving forward, questions may be translated into English to allow for a broader audience and another dimension of learning.

"3D Decision Support System (3D DSS) for planning power lines"

by Swissgrid and ETH Zurich





The 3D DSS considers the interests of different stakeholders and supports decision-makers in finding a consensus solutions for determining the optimal route for a new power transmission line. This can increase support of affected citizens and shortens the time needed for the approval procedure, which in turn, accelerates the grid modernisation required for the European energy transition.

HIGHLIGHTS

- The 3D DSS reduces the time needed to identify different corridor and path alternatives
- The 3D DSS determines the optimal, most accepted route for a new power transmission line among different stakeholders
- The 3D DSS illustrates the proposed new transmission line in 3D from the perspective of the direct affected individual to increase acceptance by intuitive, realistic perception
- The 3D DSS computes the estimated construction costs for the planned transmission line

Description:

The 3D DSS computes the optimal corridor and path for a new transmission line based on the interests of different stakeholders. By doing this, different alternatives can easily be compared to identify the solution that best meets the requirements of a great number of stakeholders. Results are illustrated in 3D, which helps affected citizens to imagine how the future line will look like. In that way, transparency is fostered, which in turn, increases the acceptance and saves time and money.

"Plataforma Tejo"

by MédioTejo21, Agência Regional de Energia e Ambiente do Médio Tejo e Pinhal Interior Sul

Platforma Tejo is an investment mechanism used to facilitate sustainability projects in the Médio Tejo region in Portugal. The programme works as a tool to pair investors with investment opportunities in the renewable energy sector, while creating relationships between citizens and promoting the development of the region with respect to sustainability and renewable energy.

HIGHLIGHTS

- The practice covers 25 municipal buildings and swimming pools involving 15 municipalities and 7 investors
- The total amount of renewable energy produced under this project has been 601.5 megawatt-hours/year and reduced carbon emissions by 175.084 tons/year

Description:

In order to promote the region as a prime location for renewable energy, Plataforma Tejo was created to match investors with investment opportunities. It is an innovative platform with a participatory approach that includes investors, renewable energy producers and technologies. Communication occurred through meetings, exhibition and newspaper articles promoting the region and its potential for renewable energy projects.

Technology & Design

"WiseGRID"

by 21 partner project consortium

The project aspires to transform the European grid while reducing complexity and allowing participation with a set of technologies such as storage, electric vehicles, distributed energy resources integration and demand response. By doing so, the consortium hopes that the project will set an example for energy democracy where cooperatives and small and medium-sized enterprises can have a fair right to participate in the energy market.

HIGHLIGHTS

- Development of consumer-centric competitive demand response mechanisms, business models and regulatory recommendations
- Development of advanced monitoring methods of the distribution grid, and utilisation of Virtual Power Plants and micro-grids as balancing assets
- Development of services for charging electric vehicles

Description:

WiseGRID integrates, demonstrates and validates advanced ICT services and systems in the energy distribution grid in order to provide secure, sustainable and flexible smart grids and give more power to the European energy consumer. Its main objective is to provide a set of solutions and technologies to increase the smartness, stability and security of an open, consumer-centric European energy grid. The project will combine an enhanced use of storage technologies, a highly increased share of renewable energy sources and the integration of charging infrastructure to favour the large-scale deployment of electric vehicles.

"SmartNet"

by 22 partner project consortium

A simulation platform to compare TSO-DSO coordination schemes that enables the participation of distribution network resources to ancillary services markets plus three technological pilots experimenting concrete technical solutions to enable ancillary services provision from distribution networks.

HIGHLIGHTS

- Development of a simulation platform with 2030 scenarios for Italy, Denmark and Spain
- Cost-Benefit Assessment (CBA) on five TSO-DSO coordination schemes
- Regulatory analysis of national and EU barriers and boosters
- 3 pilot demonstration sites (Italy, Denmark and Spain)

Description:

The project addresses the need to find answers and propose new practical solutions to the increasing integration of renewable energy sources in the existing electricity transmission network. This technological development is not only affecting the structure of the electricity markets, but also the interactions between grid operators and national and local level (TSOs and DSOs). The SmartNet project provides optimised instruments and modalities which improve the TSO-DSO coordination, the exchange of information for monitoring and for the acquisition of ancillary services (reserve and balancing, voltage balancing control, congestion management) from subjects located in the distribution segment (flexible load and distributed generation).

"CECOVEL (Electric Vehicle Control Centre)"

by Red Eléctrica de España

CECOVEL (Electric Vehicle Control Centre) is Red Eléctrica's control center for the monitoring and control of electricity demand for the recharging of electric vehicles. Since January 2017, CECOVEL allows the safe and efficient integration of electric vehicles, even in scenarios of massive implementation.

HIGHLIGHTS

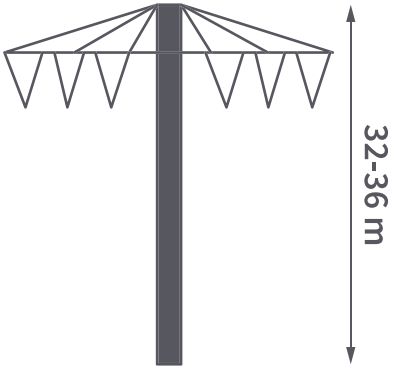
- Development of Supervisory Control And Data Acquisition system (SCADA)
- Intelligent charging management
- Integration of renewable energy and efficiency improvement
- Development of new technological tools to operate the control center

Description:

The aim of the CECOVEL is the safe and efficient integration of electric vehicle (EV) demand into the electricity system. EVs represent a unique opportunity to improve the efficiency of the electrical system as a whole, thanks to the flexibility of its recharging system. CECOVEL monitors and controls the electrical system of EVs in real time, thereby allowing the integration of specific data in scenarios of massive implementation with the safety criteria that the electricity system requires.

"CompactLine"

by 50Hertz as a leading partner of a syndicate of seven companies and institutes



Development of a compact 380 kV overhead line that minimises the impact on the surroundings and allows continuous operation during maintenance.

HIGHLIGHTS

- Development of a space-optimised 380kV overhead line with the help of a study and series of tests on structural, static and visual aspects of three transmission towers designs with different insulator configurations
- Process was accompanied by a series of interviews and workshops with stakeholder groups and a public acceptance study
- Installation of a compactLine pilot

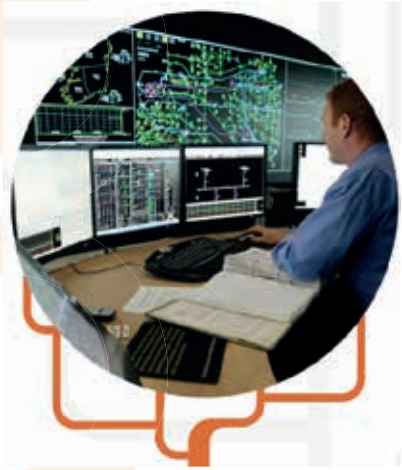
Description:

Increasing demand and the emergence of renewable energy have led to the need for new transmission lines technologies with increasing capacities and reduced tower heights. This project implements a new pylon design concept with several advantages: compact design in terms of both tower height and corridor width, reduced lateral movement due to wind on the conductors, high stakeholder approval rates.

"DS3 System Services"

by EirGrid

A programme offering financial incentives for conventional and renewable generation to provide flexible services in order to meet the challenges of operating the electrical system in a secure manner while achieving Ireland's 2020 renewable electricity targets.



HIGHLIGHTS

- Contracting 107 units to provide eleven system services
- Improving on existing approaches by including non-conventional technologies
- Some non-conventional technologies proven to be capable of providing existing services (e.g. wind units for reserve services)

Description:

As an island with a low level of interconnection, there are considerable challenges in trying to operate the power system with a high level of renewables. However, EirGrid wants to not only have a high level of renewable generation installed on the power system, but also want to be able to use it to its maximum level. DS3 System Services is a central part of EirGrid's DS3 programme (Delivering a Secure, Sustainable electrical System), which is designed to ensure that EirGrid can securely operate the power system with increasing amounts of variable non-synchronous renewable generation.

"MIGRATE (Massive InteGRATion of power Electronic devices)"

by 24 partner project consortium

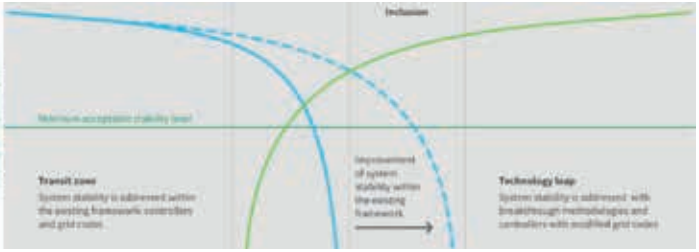
MIGRATE is the largest TSO research project on European level including twelve TSOs from eleven different countries with the objective of developing and validating solutions for managing a pan-European High Voltage Alternate Current (HVAC) transmission system with a high penetration of power electronic devices.

HIGHLIGHTS

- Modelling, simulation, and generic test cases of transmission system dynamic behaviour under high power electronic penetration
- New protection schemes for a grid with 100% power electronic penetration and relevant recommendations
- Design and validation of mitigation measures

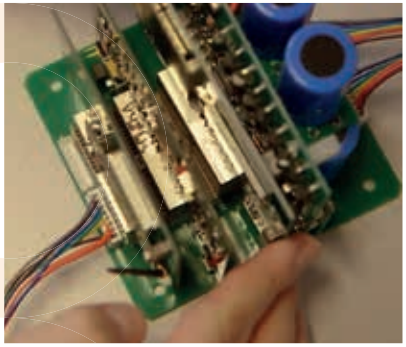
Description:

By 2020, several areas of the HVAC pan-European transmission system will be operated with extremely high penetrations of Power Electronics(PE)- interfaced generators, thus becoming the only generating units for some periods of the day or of the year – due to renewable (wind, solar) electricity. This poses several challenges, which the project addresses together with manufacturers, universities and research centres.



"Dynamic Line Rating (DLR)"

by Ampacimon



Demonstration of Ampacimon's suite of products on Elia's interconnectors, assessing the thermal rating of transmission lines by direct physical measurements and increasing their available capacity.

HIGHLIGHTS

- Extracting more value from existing grid infrastructure and enhancing their utilisation
- Foreseeing congestion issues and addressing them through low cost configuration options - as opposed to construction of new lines
- Providing short-term visibility required to anticipate operation security issues
- Day-ahead forecasting deployed in real scale for the first time worldwide (enabling increased energy transfers across borders, including day-ahead transactions)

Description:

Power lines and transformers are operated using a specific rating which determines the maximum constant current (allowed load) of a line. Grid operators take into account this thermal limit to determine the available transmission and distribution capacity. To exploit available latent capacities in the line, Ampacimon has developed a suite of products which bring an assessment of the actual thermal rating by direct physical measurements. This has significantly increased imports and exports in Belgium (around 10% of available import/export capacity), and resolved congestions, and reduced re-dispatching and curtailment costs.

"District energy efficient retrofitting"

by CARTIF

Renovation of the district heating system, façade retrofitting, and deployment of a monitoring platform.

HIGHLIGHTS

- Holistic district retrofitting action in combination with sound business models with the residents in the centre of the process
- Innovative technology integration (district heating, monitoring, renewable energy resources, web-services, building information modelling, key performance indicators) in a unique and large demo site
- Monitoring system to control data in real time assuring the achievement of pre-defined goals
- Dissemination of the knowledge and lessons learned shared at EU level

Description:

Torrelago is a residential district located in Laguna de Duero (Spain), formed by 31 buildings. The practice is part of a wider project, CITyFiED, which involves façades retrofitting, renovation of the district heating system and deployment of a monitoring platform. A full refurbishment of the energy system has been carried out in order to increase the performance of the Torrelago district and cover the needs in terms of space heating and domestic hot water. The old district heating networks have been merged, installing a new biomass thermal plant with thermal output of 3.5 megawatt. New variable flow pumps were installed together with smart meters at dwelling level. In addition, a micro co-generation system (combined heat and power - CHP) was also implemented to generate 33 kilowatt of electric power and 73.4 kilowatt of thermal energy. Finally, the new facilities are controlled by a new integrated energy management system.

Environmental Protection

"Smart Island – Giglio Archipelago"

by Terna Plus Srl

Redevelopment of a landfill into a green area for renewable energy power production on Giannutri Island in Italy.

HIGHLIGHTS

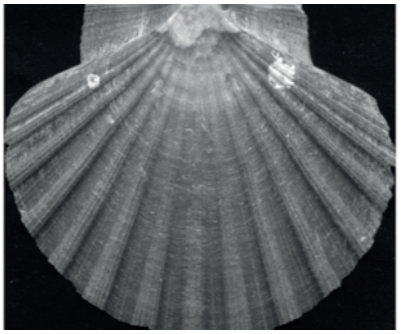
- Creation of photovoltaic fields to reduce the impact of humans on the island and reduce the dependence on diesel fuel
- Implementation of an automatic cover system in order to eliminate solar reflective glare in specific hours of the day
- Covering 30% of the island's electricity needs with photovoltaic power plants and storage systems

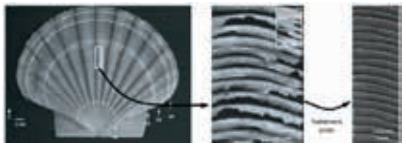
Description:

The aim of the project was to reduce CO2 emissions, while considering the limited space that exists on an island. The project which was designed together with the local municipality, DSO, utility, park authority, regional authority and national agency for cultural heritage seeks to decrease the island's current dependence on fossil fuels. It will lead to the environmental rehabilitation of the interested area and can both be scaled up on the same island and repeated in the same context on other islands in the area.

"Natural High-Tech: The Great Scallop as an Environmental Sensor"

by RTE and TBM Environnement





This project is assessing whether temporarily increased turbidity and noise levels caused by the installation of new subsea cables have an impact on seabed ecosystems. Growth ring rates and behavior of Great Scallop (Pecten maximus) are used as indicators for such impacts since they are particularly sensitive to changes in their environment.

HIGHLIGHTS

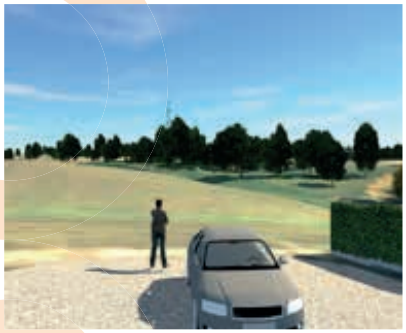
- The practice addresses an important knowledge gap: very little research has been conducted on the role of increased turbidity and noise linked to the installation of transmission cables in seabeds so far
- The global distribution of marine mollusks suggests that this approach could be applicable in most marine environments and contribute to improving practices in future offshore wind farms

Description:

This project is assessing the potential impact of temporarily increased turbidity and noise levels on seabed ecosystems. The French TSO RTE in collaboration with TBM Environnement are testing whether changes in the growth record of organisms naturally present in the area can serve as indicator of ecosystem disturbances linked to the installation of transmission cables in shallow coastal marine areas. The submitted practice is the result of several years of interdisciplinary research on Great Scallop growth ring.

"Implementation of a Comprehensive Green-Area-Concept"

by Amprion, Menschen unter Strom and Biologische Station Hagen



The creation and implementation of a comprehensive green-area-concept as part of a dialogue driven participation and planning process for a new substation between the TSO and citizens.

HIGHLIGHTS

- The project led to improved relationships between Amprion, communities and stakeholders
- A solution was found that was supported by all the parties involved within an eight months timeframe between kick-off and the agreement
- Environmental measures included the maintenance of existing pathways for both human beings and animals, comprehensive noise protection measures during construction, and sight protection measures for the new and old substation

Description:

The project was developed with the aim of having a joint planning and participation process between Amprion, stakeholders and the local community for the design, implementation and construction of a substation. It was developed in cooperation with a multitude of stakeholders, such as a nature conservation organisation, a citizens' initiative, political, governmental and administrative representatives, and external landscape experts.

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