



local Electricity retail Markets for Prosumer smart grid pOWER services

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Abbreviations and Acronyms

Acronym	Description
GA	Grant Agreement
WP	Work Package

Executive summary

This document reflects the dissemination and communication actions performed during the second year of EMPOWER project. It reviews the measures and actions taken during the second year for spreading the project objectives and evolution.

The main goals of “WP9 Dissemination and communication” are to disseminate the project insights, while capturing and maintaining the attention of stakeholders (authorities, citizens, potential partners). The appropriate channels were already selected during the first year so as to obtain the largest impact. Dissemination actions through these channels have continued during the second year to broaden the impact of the project.

Similarly to the first year of the project and taking into account the large influence Internet has nowadays, a big effort has been put to build the webpage of the project and connect it to the social networks. In addition, several events have been organized and other communication channels like magazines, newsletters or journals have been used to publish EMPOWER vision, objectives and results. For encouraging the dissemination of EMPOWER and reaching potential stakeholders, the project has been presented at several events and flyers have been distributed. Additionally, the Technical Advisory Group (TAG), which was created during the first year of the project, has been expanded. Furthermore, many descriptive videos of the project have been released.

Using all these tools, the messages spread through the dissemination tasks are promoting:

- The creation of innovative, sustainability-focused market solutions that increase prosumer engagement and offer more freedom of choice to electricity consumers.
- The improvement of investments and assimilation of micro-generation in the distribution net among consumers and others by means of the insight established in EMPOWER.
- The SESP role and the micro-market for inclusion in regular business operations.
- The development of functions of the ICT to trigger further exploitation.
- The stimulation of social and environmental mind-shifts and trigger practical initiatives among based on the EMPOWER experience.

1 Introduction

The present report summarises the work done in Task 9.4, “Dissemination and Communication report: year 2”. To contextualise what is going to be disseminated, a brief description regarding the EMPOWER project are introduced. Due to the distributed installation of renewable and therefore intermittent generation the role of distribution system operators (DSO) has become much more important than before the electricity market liberalization carried out in the European Union. To maintain a high level of quality of costumer services and electricity supply, new information and communication technologies are needed and new roles will evolve at the interface between DSO’s, local consumers/prosumers, decentralised electricity suppliers and the transmission operator. Small to medium-scale distributed storage systems on medium and low voltage supply systems level will have to be managed in the future. In this scenario, the EMPOWER project is designing a new market for local trading and involvement of prosumers through a cloud based ICT.

The document is structured as follows. First, the project vision and mission are presented. Then, a brief reference to dissemination and communication in EMPOWER project is detailed. Afterwards, the webpage main updates during the second year are detailed. Next, the presentations, publications, videos and events performed during the second year of the project are reviewed. Also, the social networks state and statistics are shown. The Technical Advisory Group (TAG) evolution and its meeting is also depicted. Finally, the dissemination plan of the project has been revised and updated.

2 Empower vision and mission

The EMPOWER vision and mission were presented in the Grant Agreement, before starting the project.

Nowadays, political goals, consumer engagement and technology developments are leading to a lot of changes at the retail/medium and low voltage side of the electricity market. New technologies are under deployment including appliances for smart metering, distributed electricity generation, home automation/smart appliances/load control, distributed storage and electric vehicles. Such technologies create new challenges for the operation of the distribution networks, due to higher peaks, more dynamics and less predictability. Balancing supply and demand and maintaining power quality in the grid are some of the challenges. These challenges are local and must be solved at the local level.

At the same time we observe a growing engagement from the consumers, who want to take a larger responsibility for a sustainable future regarding energy use. Some places groups of consumers self-organize to create co-operatives in order to be able to take such responsibility.

As described above, deployment of new technologies at retail side creates new challenges for the electricity system. On the other hand the same technologies can also be a main contributor to solving these challenges. However, technological possibilities and consumer awareness are not enough to make this happen.

The consumers and prosumers must be provided with incentives (economic and other) to invest in new technology and to participate in self-generation, demand response programs and other programs that put a value at flexibility. This should be done by development of innovative business models. The contribution from each single consumer and prosumer might be small, so aggregation and coordination must be established efficiently. Such collective/coordinated regimes must ensure confidence for the consumers/prosumers as well as for the DSO in order to maximize potential and hence realize the benefits for the local electricity system, the local community and each participant.

Local market place(s) must be established to exchange the local resources aiming for solution of local challenges and ensuring local cost efficiency. EMPOWER proposes the definition of a new role in the local electricity market, the Smart Energy Service Provider (SESP), with the task to handle the operation of the market place, the coordination

between the participants, economic settlement and offering of services for the market participants. The SESP role can be taken by incumbent roles (like the DSO) or by newcomers (like ESCOS, co-operatives, municipalities, or others). In any case the tasks and responsibilities for the different roles must be defined and the technical and economic interaction between them must be outlined.

Taking into account this vision, EMPOWER aims to “develop and verify a local market place and innovative business models including operational methods to encourage micro-generation and active participation of prosumers to exploit the flexibility that this creates for the benefit of all connected to the local grid.”

3 Dissemination and communication

Dissemination and Communication are proven to be extremely important in a European funded project. An internal document entitled “*Dissemination & Communication. A guide for project participants*” was written during the first year for setting the principles and guidelines mandatory for all the partners, in order to give the Dissemination & Communication activities a common shape and avoid any possible error. This guide has been used for the dissemination and communication activities of the second year.

4 The webpage

The internet was identified from the beginning of the project as a key element for disseminating the EMPOWER among end users, prosumers or anyone interested in it (<http://empowerh2020.eu>). So the language style used in it, although being technical when required, is carefully selected to allow a general comprehension of the project insights for non-technical people. The webpage development has been taking into consideration that it enables:

- Presenting the project to a broad audience
- A way to reach possible stakeholders
- Promoting the project insights and the team
- Spreading press/events/deliverables

Taking into account the before-mentioned, it was concluded that what we needed should be:

- Graphical webpage
- Catchy design
- Easy-to-understand language

The link for accessing the EMPOWER project webpage is:

<http://empowerh2020.eu/>

The structure of the webpage developed during the first year has been kept and the contents of the menus created during the first year have been updated and expanded, specifically with publications, news and events of the second year.

- Home
- The project
- Partners
- Technical publications
- Press & News
- Events
- Friends of EMPOWER
- Contact

To show some of the updates of the webpage a caption for each page menu has been included (Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8)

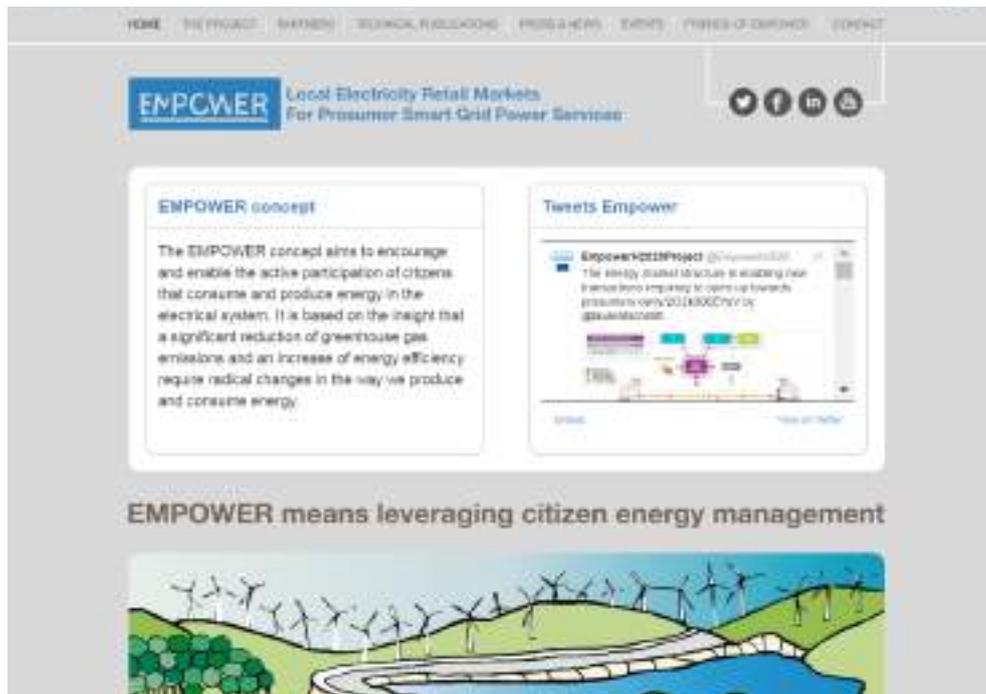


Figure 1: Home page caption



Figure 2: The project page caption



Figure 3: Partners page caption

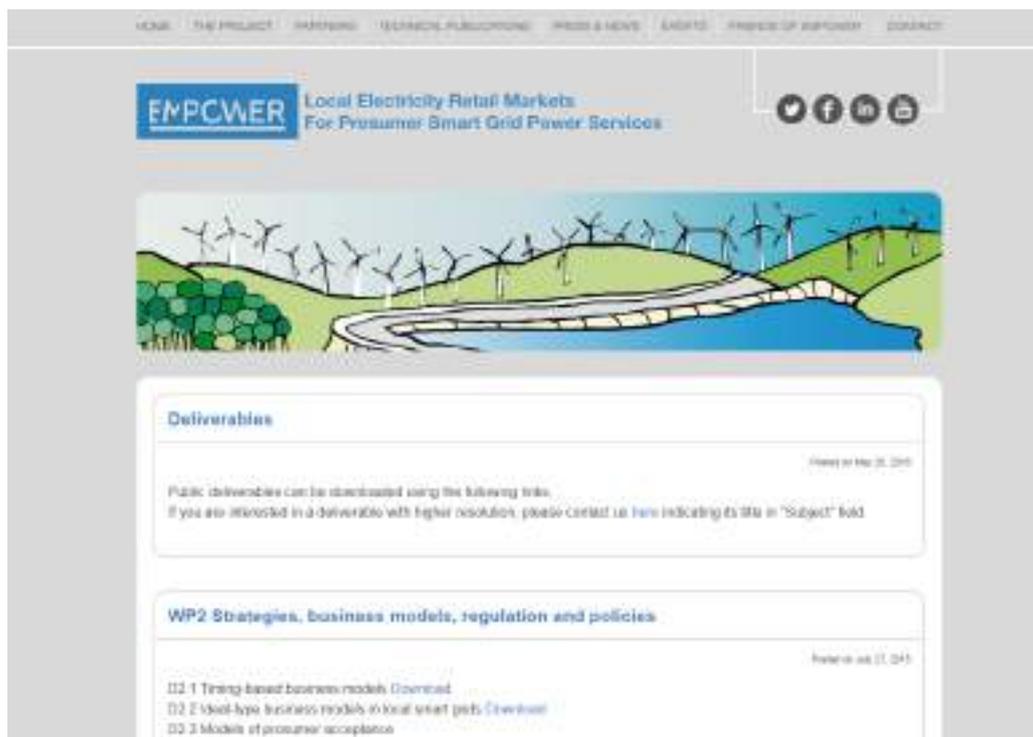


Figure 4: Technical publications page caption (submenu Deliverables)



Figure 5: Press and news page caption

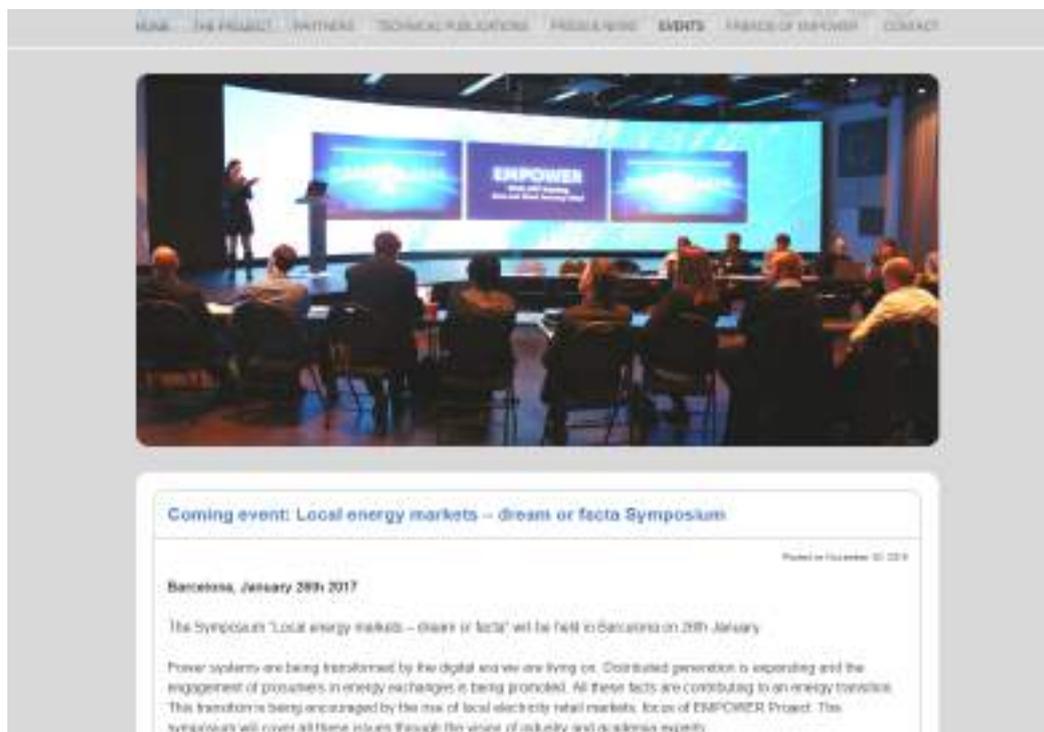


Figure 6: Events page caption

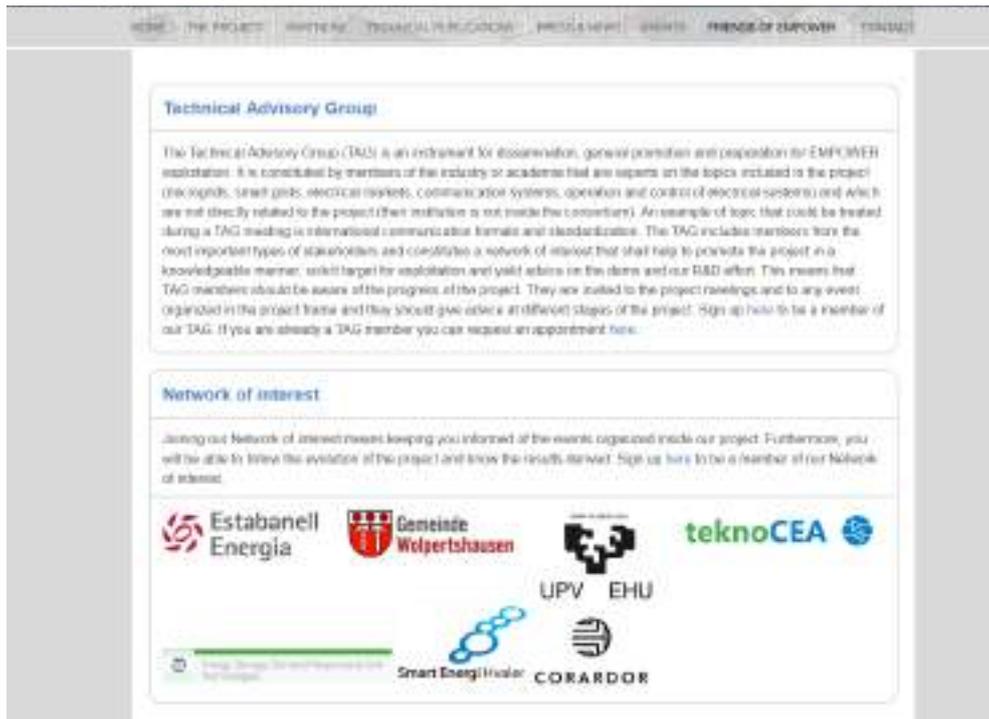


Figure 7: Friends of EMPOWER page caption

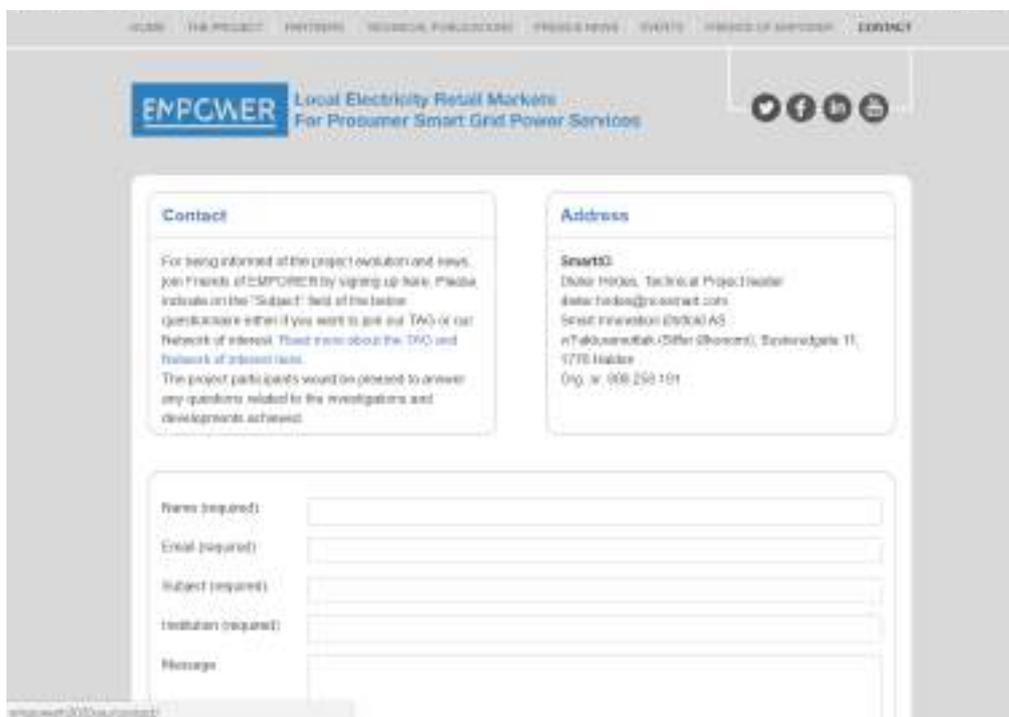


Figure 8: Contact page caption

5 Presentations, publications, videos and events

Dieter Hirdes, the Technical Project Leader of EMPOWER, has continued the dissemination actions of the first year through more than 20 presentations for explaining the EMPOWER project in different cities. They are listed below:

- 2016-01-27 Halden Municipality Meeting
- 2016-01-28 Schneider Electric Meeting
- 2016-03-15 INEA BRIDGE WG DB meeting Brussels
- 2016-03-16 INEA Bridge meeting Brussels
- 2016-03-17 Oslo Municipality Meeting
- 2016-03-30 NHO H2020 Conference
- 2016-04-20 Bulgarian start-ups delegation
- 2016-04-20 Statnett Meeting
- 2016-05-26 St.Gallen REM Forum Management Conference
- 2016-06-01 Eliaden Energy Conference
- 2016-06-07 TATA Power Trading Delegation visit
- 2016-06-08 Østfold County Meeting
- 2016-06-09 Industry 4.0 German Norwegian Trade Council Conference
- 2016-06-27 Tata Power Skype Meeting
- 2016-07-01 Kongsberg Digital Meeting
- 2016-07-04 Statkraft Innovation Meeting
- 2016-08-11 Schneider Electric Meeting
- 2016-08-30 Bulgarian delegation visit
- 2016-09-05 Solutions-Hamburg
- 2016-09-22 Irene Johansen Member of Parliament Meeting
- 2016-10-11 Ministry of Climate and Environment Meeting
- 2016-10-13 NVE Energy Days Conference

- 2016-10-19 DG Energy Manuel Sanchez Meeting
- 2016-10-27 German Norwegian Energy Forum Berlin
- 2016-11-02 NCE Smart Partner Conference
- 2016-11-08 ENOVA Halden Meeting
- 2016-11-24 German Journalists Delegation 3 days visit
- 2016-11-28 Jonas Gahr Støre - Leader Arbeiderpartiet

Additionally, other dissemination actions performed during the second year include

- Written publications (see Table 1)
- Presentations in Workshops/Conferences, videos and other dissemination activities (see Table 2)
- Video releases (see Table 3)
- Events (see Table 4)

English title	Type of publication	Authors	Date of publication
Europe's electricity becomes intelligent! Also in Wolpertshausen	Press release		January 2016
How to use the business model composer for EMPOWER business modeling	Brochure	Moritz Loock, Rene Bohnsack	January 2016
Timing-based business models for flexibility creation in the electric power sector	Article	Thorsten Helms, Moritz Loock, Rene Bohnsack	May 2016
Frame sequences and rule dynamics: Evidence from corporate venture processes in the power sector	Article	Moritz Loock, Emma Reuter, Daniel Bartl	June 2016
Business model quality: towards an ecological rationality view	Article	Moritz Loock	July 2016
Norway is pushing the development of innovative smart grid solutions	Article	Dieter Hirdes	December 2016

Table 1. List of written publications

English title	Type of event/release	Associated publication	Author	Date of publication	Place of publication	Partners involved	Frame/event title
Research project presentation	Participation to a Conference	research project presentation	Reuter	03-03-2016	Amherst, Massachussets	UNISG	Research visit at Umass Amherst's Isenberg School of Management
TAG Workshop in “7th St. Gallen Forum for Management of Renewable Energies”	Organisation of a Workshop	panel discussion	Reuter and Loock	27-05-2016	St Gallen	UNISG	7th St.Gallen Forum for Management of Renewable Energies
7th St.Gallen Forum for Management of Renewable Energies	Organisation of a Conference	Not applicable	Not applicable	26-27,05,2016	St Gallen	UNISG	7th St.Gallen Forum for Management of Renewable Energies
Reinventing the Utility: Successful Strategic Renewal in the Energy Industry	Participation to a Conference	panel discussion	Reuter and Loock	27-05-2016	St Gallen	UNISG	7th St.Gallen Forum for Management of Renewable Energies
Electricity micromarkets with community electricity storage	Participation to a Workshop	Presentation	Pol Olivella	09-02-2016	Berlin	UPC	1st International Community Electricity Storage Workshop
The vision of EMPOWER H2020 project: Storage needs of Smart Energy Service Providers	Participation to a Workshop	Presentation	Pol Olivella	02-05-2016	Aachen	SmartIO	First ELSA stakeholder workshop: Stakehodlers needs and expectations regarding small- and medium- scale storage solutions

Day-ahead micro-market design for distributed energy resources	Participation to a Workshop	Presentation	Pol Olivella	April 2016	Leuven	UPC, SmartIO and eSmart	IEEE International Energy Conference 2016
Preconference St. Gallen Forum for Management of Renewable Energies	Participation to a Conference	Presentation	Knut H. Johansen	26.05.16	St. Gallen	eSmart	7th St.Gallen Forum for Management of Renewable Energies
TAG Workshop in “7th St. Gallen Forum for Management of Renewable Energies”	Participation to a Workshop	Speaker at Workshop 7 EMPOWER to the people	Knut H. Johansen	27-05-2016	St Gallen	eSmart	7th St.Gallen Forum for Management of Renewable Energies
Districts Energy Association - Annual Meeting (DEFO)	Participation to a Workshop	Presentation	Knut H. Johansen	31.05.-01.06.2016	Røros, Norway	eSmart	
Strategic Innovation in the Energy Industry	Workshop with different presentations	presentations/ workshop	Emma Reuter, Moritz Looch	May 2016			
Strategic Transformation in the German Energy Industry	Workshop with different presentations	presentations/ workshop	Emma Reuter, Moritz Looch	September 2016			
the EMPOWER project	video the explains the EMPOWER project	video	Moritz Looch	April 2016	Internet	St. Gallen University	

business models for EMPWOER	video that explains business models for EMPOWER	video	Emma Reuter/ Moritz Loock	July 2016 (still subject to revision, not the final version)	Internet	St. Gallen University	
using the business model composer for EMOWER	video that explains how to use the business model composer for EMPOWER (and the EMPOWER teaching case)	video	Moritz Loock	July 2016 (still subject to revision, not the final version)	Internet	St. Gallen University	
Total upheaval in the energy industry?	Participation to a Conference	Speaker/Presentation	Knut H. Johansen	31.05-01.06.2016	Røros, Norway	eSmart	Districts Energy Association - Annual Meeting (DEFO) of Renewable Energies
A journey with new business models, big data, disruption and artificial intelligence	Participation to a Conference	Speaker/Presentation	Knut H. Johansen	02.06.2016	Oslo, Norway	eSmart	Leader's Day 2016 - How to lead successfully in today's market?
Smart City Workshop	Participation to a Workshop	Presentation	Knut H. Johansen	2016	Barcelona, Spain	eSmart	
Local market design workshop	Organisation of a Workshop	Panel discussion	Bernt, Jay and Pol	2016	Oslo, Norway	SmartIO eSmart TAG	

Micro-markets and EMPOWER project	Organisation of a Workshop	Webinar	Pol Olivella	02.11.2016	Barcelona, Spain	SmartIO UPC	KIC InnoEnergy webinar
EMPOWER project	Participation to an Event other than a Conference or a Workshop	Panel discussion	Mònica Aragüés, Pau Lloret, Andreas Sumper, Roberto Villafáfila	15.11.2016- 17.11.2016	Barcelona, Spain	CITCEA- UPC	Smart City Expo World Congress
EMPOWER project	Participation to an Event other than a Conference or a Workshop	Panel discussion	Mònica Aragüés, Pau Lloret, Andreas Sumper, Roberto Villafáfila	15.11.2016- 17.11.2016	Barcelona, Spain	CITCEA- UPC	European Utility Week
EMPOWER project	Participation to an Event other than a Conference or a Workshop	Panel discussion	eSmart	15.11.2016- 17.11.2016	Barcelona, Spain	eSmart	Smart City Expo World Congress

Table 2. List of presentations, videos and other dissemination activities

English title	Link	Published in	Announced in
EMPOWER concept explained	https://www.youtube.com/watch?v=zO07tNSh6Tw	Youtube channel	EMPOWER webpage Twitter Linkedin Facebook
EMPOWER business model composer explanation	https://www.youtube.com/watch?v=T_9cX8N4jwg&t=2s		
EMPOWER business models through a whiteboard animation	https://www.youtube.com/watch?v=XhLFgJWnB7c&t=5s		
EMPOWER H2020	https://www.youtube.com/watch?v=IIN7_zOX2wk&list=PLqYCCUDc43YkolUoXZrdBE1DYQ1KObj7		

Table 3. List of released videos

Frame/event title	Type of event	Partners involved	Place	Date	Brief description
Local Market Design Workshop	Workshop	SmartIO	Oslo	15-10-2016	<p>The EMPOWER Project has come up with a new market design model for distribution networks called Local Market. The principal purpose of Local Markets is to promote the installation of distributed renewable generators without compromising on grid operation while still engaging consumers, prosumers and producers to trade their electricity and flexibility locally.</p> <p>The concepts to be presented have been developed in Work Package 6 “Market Design” with the main objective of “exploring the theories on the micro-market and capitalize on former research related to market design and trading in a smart grid setting”.</p>
“Disrupt yourself or be disrupted”, in “7th St. Gallen Forum for Management of Renewable Energies”	Pre-conference Workshop	UNISG SmartIO CITCEA-UPC	St. Gallen	26-04-2016 – 27-04-2016	<p>Decentralized renewable energy production and storage will soon revolutionize the energy sector. Energy produced, consumed and traded locally requires local energy markets. This is exactly what the EMPOWER project is developing: a new model for local energy markets and a software platform for local energy trading.</p>

“EMPOWER to the people!” in “7th St. Gallen Forum for Management of Renewable Energies”	Workshop	UNISG SmartIO CITCEA-UPC	St. Gallen	26-04-2016 – 27-04-2016	
TAG Workshop in “7th St. Gallen Forum for Management of Renewable Energies”	TAG Workshop	UNISG SmartIO CITCEA-UPC	St. Gakkeb	26-04-2016 – 27-04-2016	In St. Gallen, the EMPOWER project invites experts from its Technical Advisory Group (TAG) and participants from the St. Gallen Forum to the EMPOWER TAG Workshop. This participants will be updated on the project’s status and are invited to contribute to the next generation local trading platform. The workshop will address the following topics: What is EMPOWER H2020? State-of-the-art local energy markets research, Microgrids and local energy markets, EMPOWER Local Market Design, EMPOWER Architecture and ICT core of the EMPOWER Project. Finally there will be a discussion including Exploitation – how will EMPOWER commercialize.

Table 4. List of events

Finally, it is worth referring two special publications. One is going to be proposed to the publisher (Wiley) and could have a large impact. It is a book focused on local energy markets and business models. Its edition would be coordinated by Andreas Sumper, Pol Olivella, Bernt Bremdal, Moritz Loock.

On the other hand the first Newsletter of the project has been released. The first page of the Newsletter is shown in Figure 9. Its publication has allowed to disseminate the project insights and the steps done so far. Furthermore, it has enabled to announce coming events, while capturing the attention of possible TAG members and institutions that could join our network of interest: Friends of EMPOWER.

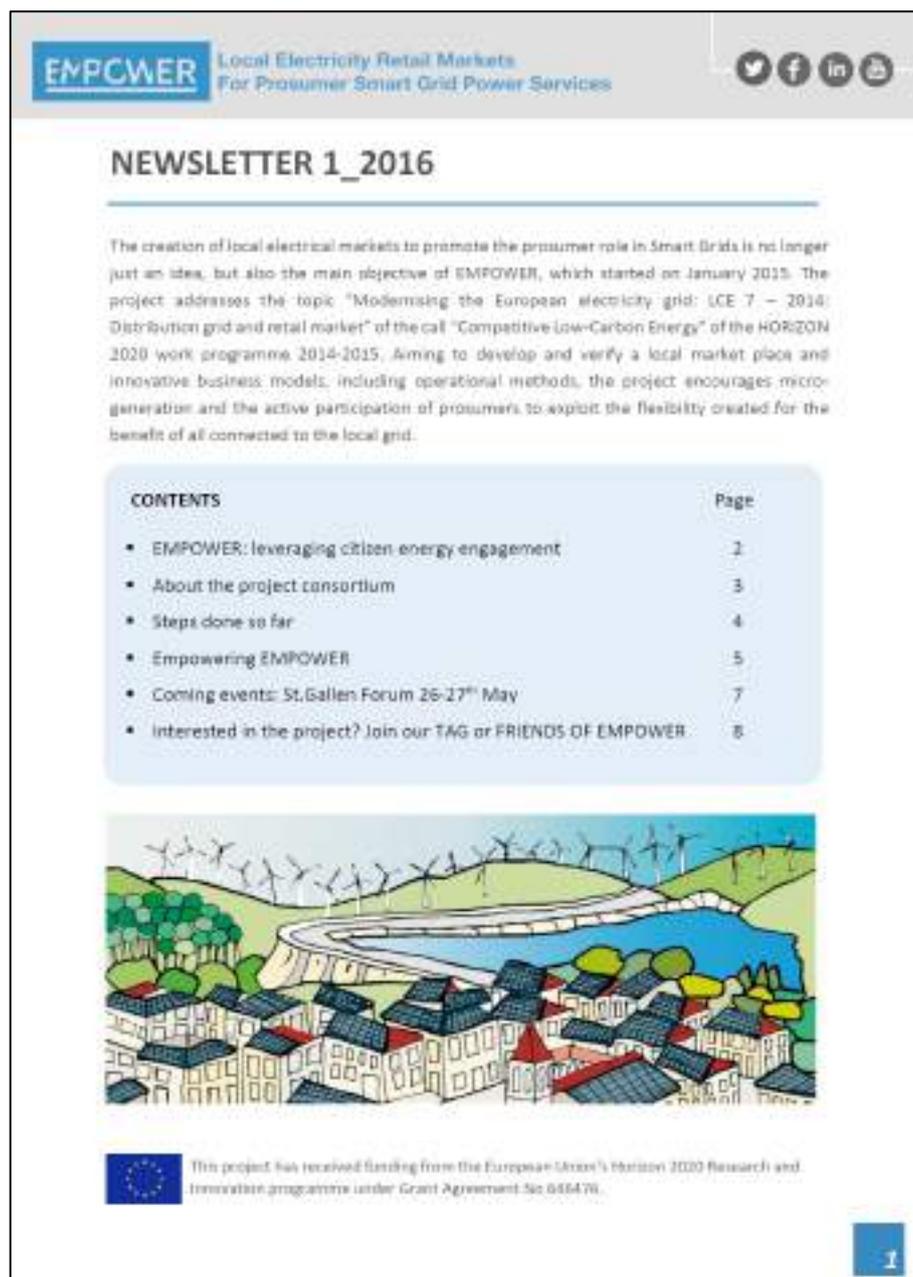


Figure 9: First page of the project Newsletter

Among the events, the Symposium “Local energy markets – dream or facta” is not included as done because it will be taking place in Barcelona on 26th January 2017. However, most of the actions to disseminate the event were performed during 2016. The draft of the programme is depicted in *Figure 10*. A broad audience is expected including Energy companies, DSOs, researchers, students, etc.

Thursday, 26th January 2017
Barcelona, ETSEIB,
Universitat Politècnica de Catalunya, UPC BarcelonaTech.

**X INTERNATIONAL CONFERENCE
ON ENERGY INNOVATION**

"Local energy markets – dream or facta" Symposium

On behalf of the H2020 European project EMPOWER, Innoenergy MSc, SENSE and MSc, Smart Cities and CITCEA-UPC, we are pleased to invite you to the "Local energy markets- dream or facta" Symposium. Power systems are being transformed by the digital era we are living on. Distributed generation is expanding and the engagement of prosumers in energy exchanges is being promoted. All these facts are contributing to an energy transition. This transition is being encouraged by the rise of local electricity retail markets, focus of EMPOWER Project. The symposium will cover all these issues through the vision of industry and academic experts.

8:00	Registration
9:00	Welcome, Neus Cònsul (Director of ETSEIB, UPC)
9:15	EMPOWER project and pilots, Dieter Hirdes (SmartID, Norway)
9:45	Universal Smart Energy Framework, John Hodemaekers (USEF, The Netherlands)
10:30	Coffee break *
11:00	Business Models, Emmanuelle Reuter (Univ. St. Gallen, Switzerland)
11:20	Market design, Bernt Brendal (SmartID, Norway)
12:20	ICT platform, Stig Odegaard Ottesen (eSmart, Norway)
12:40	Architecture, Roberto Vilafraña (CITCEA-UPC, Spain)
13:00	Enabling local market technologies: V2G, B2G and IDPR, Daniel Haredero (CITCEA-UPC, Spain)
13:30	Panel discussion
14:00	Closure

* Initiated by CITCEA-UPC using funds of the EMPOWER H2020

smart innovation platform, Schneider Electric, MIEMA, Freshnet energi, Newen, eSmart SYSTEMS, UNEF, CIT UPC, teknoCEA, Universitat St. Gallen, ACCIÓ

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 646476.

Figure 10: Draft of the programme of the EMPOWER Symposium event to be held in Barcelona

6 Social network profiles

EMPOWER is available in different social networks: Twitter, LinkedIn, Facebook and Youtube. All the social networks are accessible from the home menu of the webpage of the project. On the other hand, the Youtube channel has been used for uploading videos explaining the project and the business models developed.

All the social media (and webpage) have been monitored since their creation through Google analytics, so as to know how their successfulness and take actions based on the publications having more impact.

The list of performance indicators considered for the monitoring are the number of visits/clicks visits/clicks for the webpage and the number of followers on Twitter, Facebook and LinkedIn. LinkedIn. Also, the number of project generated tweets being bookmarked and retweeted and and the Number of “likes” and commentaries on Facebook and LinkedIn are being analysed. All analysed. All this data has been obtained with Google Analytics. These parameters are reflected in Figure 12-

Figure 15 for the webpage. Regarding the Twitter account, Figure 15 depicts the number of tweets, mentions followers during the second year.



Figure 11: Caption of the twitter account on 12 December 2016

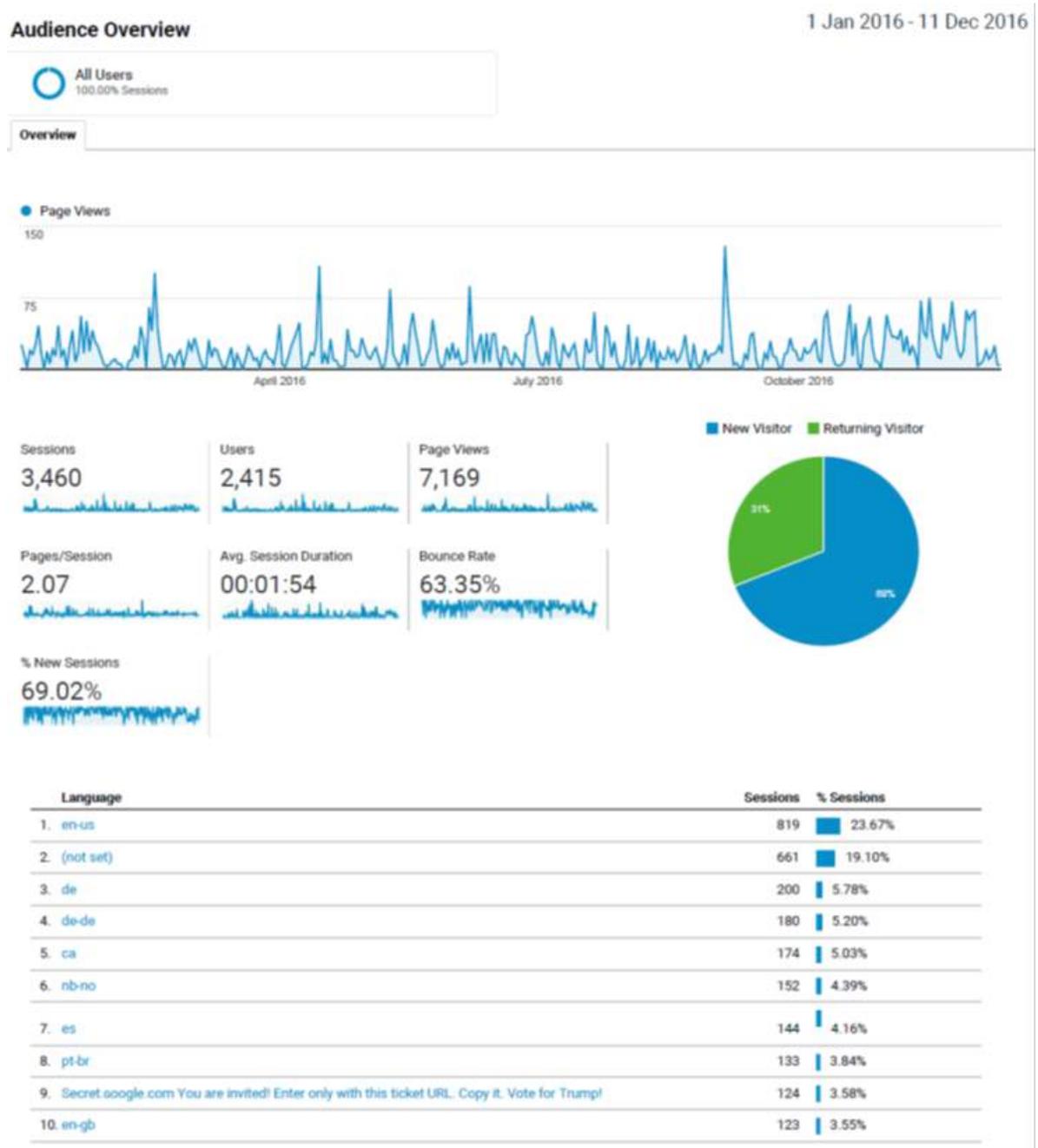


Figure 12: Statistics of EMPOWER webpage during the second year, from Google Analytics

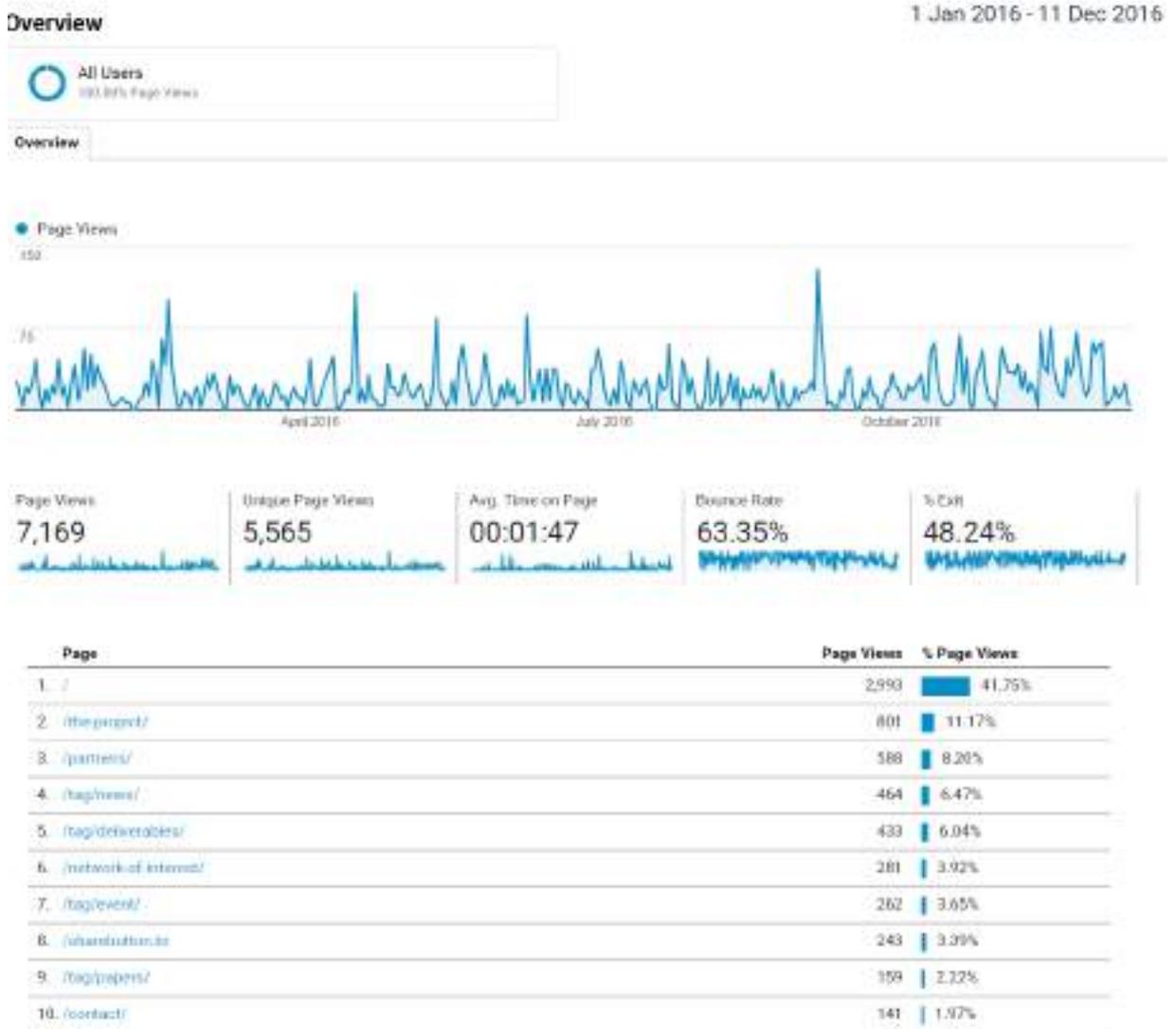


Figure 13: Statistics of EMPOWER webpage during the second year, from Google Analytics

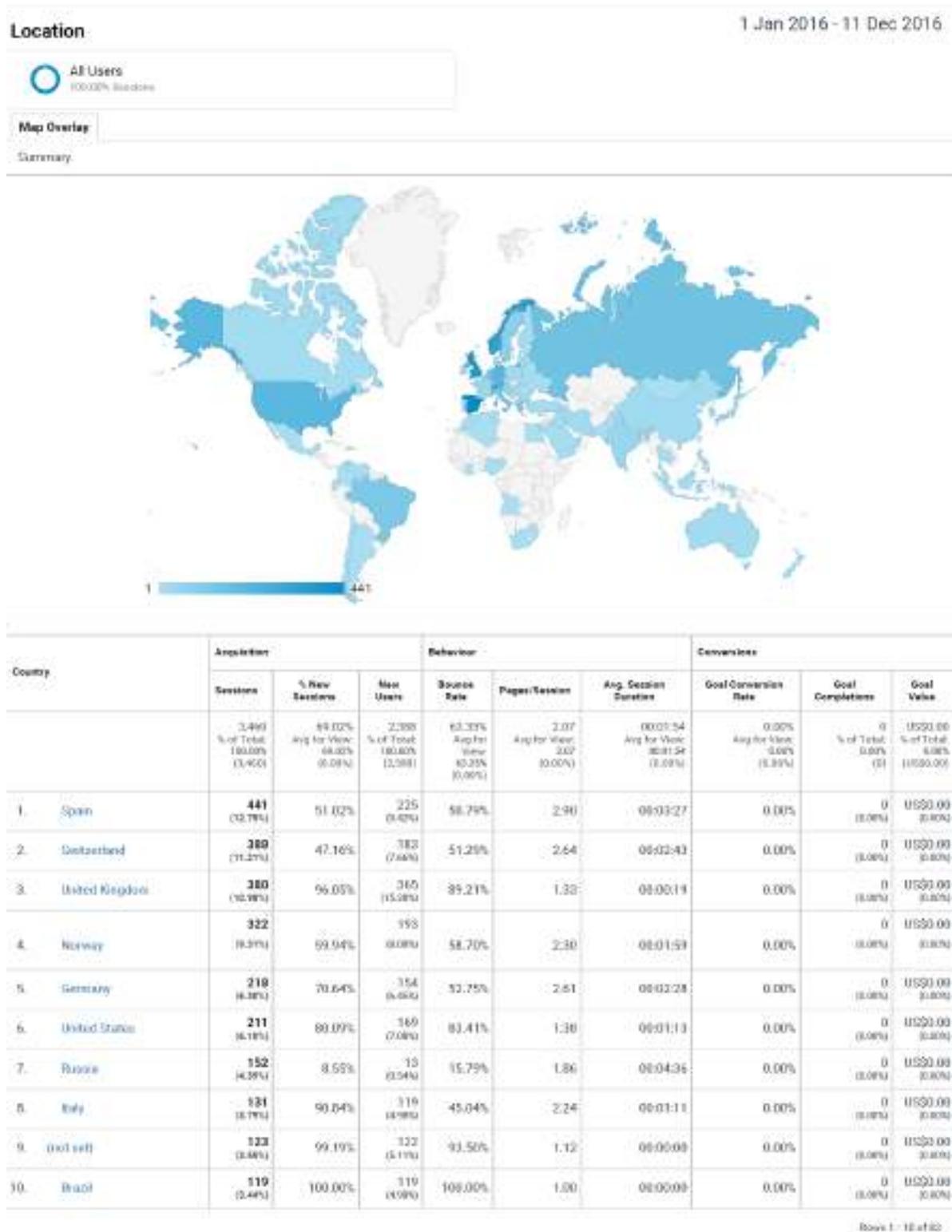


Figure 14: Location and characterization of EMPOWER webpage visits, from Google Analytics

MONTH	TWEETS	PROFILE VISITS	NEW FOLLOWERS	TWEET IMPRESSIONS	MENTIONS
1	1	124	0	981	0
2	12	380	0	3547	11
3	4	165	0	3499	11
4	13	320	0	5811	19
5	39	357	0	26200	18
6	13	437	0	7455	11
7	1	170	10	5536	0
8	4	184	5	3358	3
9	23	407	14	4749	29
10	6	368	10	4691	4
11	6	174	10	3584	8
12	2	204	7	1557	2
TOTAL	124	3290	56	70968	116

Figure 15: Twitter statistics during the second year of the project

7 Technical Advisory Group

During the first year of a Technical Advisory Group, the so-called TAG, was created. During the second year, more contacts have been reached and the number of TAG members has increased. At the moment, the persons contacted that agreed to become TAG members are: Carmen Gimeno (GEODE Secretary General), Johannes Vollmer (GEODE Policy Manager), Mark Buckner (Group Leader of Power & Energy Systems at Oak Ridge National Laboratory) and Xavier Farriols (Head of the Energy Business of Factor Energia), Rikiya ABE (CEO of Digital Grid Consortium and Professor at Univ. Of Tokyo), Christian Kunze (Swissgrid), Øivind Berg (Institute for energy technology, Norway).

The first TAG meeting successfully took place in St. Gallen University during the “Forum for Management of Renewable Energies”, on 27th May 2016. A caption of the programme is depicted in Figure 16. Then, a summary of the results of the meeting is presented.

Although some actions for enlarging the TAG have been performed during 2016, it should still be increased in size and should have more regular meetings. To do so, other format of meetings rather than physical ones –which are not always possible due to travel arrangements and busy agendas of the invited members- is being thought, for instance online. At the moment, the following TAG meetings are being scheduled:

- Physical TAG meeting for the beginning of 2017, linked to the Symposium that will be taking place in Barcelona (27th January).
- Online meeting on middle 2017, to comment the progress of the project.
- Online meeting at the end of 2017, to draw conclusions and future steps of the project.

EMPOWER TAG WorkshopH2020 project – Grant agreement n° 646476

EMPOWER TAG Workshop at the St. Gallen Forum for Management of Renewable Energies 

Friday 27th May at 13:45 h

Workshop 7
EMPOWER to the people! (organized by EMPOWER)

Moderation ■ Prof. Bernt A. Bremdal, Norwegian Centre of Expertise Smart Energy Markets
Speakers ■ Knut H. Johansen, CEO eSmart Systems AS
 ■ Prof. Andreas Sumper, CITCEA - Universitat Politècnica de Catalunya
Venue ■ Room 9.2 C, second floor



This workshop will address the following topics: What is EMPOWER H2020? State-of-the-art local energy markets research, Microgrids and local energy markets, EMPOWER Local Market Design, EMPOWER Architecture and ICT core of the EMPOWER Project. Finally there will be a discussion including Exploitation – how will EMPOWER commercialize.

Agenda

1. What is Empower H2020? (Andreas Sumper) 15 min. Overall explanation of the project.
2. State-of-the-art local energy markets research, Microgrids and local energy markets – pioneers (Bernt Bremdal), 15 min
3. EMPOWER Local Market Design (Bernt Bremdal), 15 min.
4. Presenting the Empower Architecture (Andreas Sumper) 15 min.
5. ICT core of the Empower Project (Knut Johansen), 15 min.
6. Discussion including Exploitation – how will EMPOWER commercialize (Bernt Bremdal, Andreas Sumper, Knut Johansen & all) 45 min.

 This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 646476

Figure 16: TAG meeting in St. Gallen University

7.1 Summary of the results of the EMPOWER TAG Workshop at the St. Gallen Forum for Management of Renewable Energies

Friday 27th May at 13:45 h -16:00 h This event was moderated by Bernt Bremdal. Notes were taken by Andreas Sumper.

First, an introduction round has been done.

1. What is Empower H2020? (Andreas Sumper, Presentation)

WP9 leader Andreas Sumper explained the overall goals and other key data of the Project to the TAG. The project is designing an ICT platform for facilitating local electricity trading

2. State-of-the-art local energy markets research, Microgrids and local energy markets – pioneers

3. EMPOWER Local Market Design (Bernt Bremdal, joint presentation)

Bernt Bremdal is defining the concept local market. Multitagent systems are dominating the actual research. The first initiatives on microgrids are coming from the US Army for reliability reasons. Community initiatives and cooperates are present. It's all about how easy it is to participate for normal people. Value is not equal to price.

In the second part of the presentation Bernt Bremdal introduces de SESP. The local market function of the SESP is explained in detail. The SESP is operating an inner and the outer market. Local prosumer and the SESP have flexibility.

Question: How is the market participation done: manually or automatically.

Answer: Automatically

Question: Where should be the SESP? DSO, community etc.?

Answer: Ownership is important.

4. Presenting the Empower Architecture (Andreas Sumper, presentation)

Andreas Sumper present the SGAM Methodology in order to design the SESP. This pres

Questions: How is this implemented?

Answer: The next presentation shows the results of the implementation. It is based on modules that is laying on an existing platform.

Comments on Standards: SGAM has be implemented to enable standardization of the information and communication system. Further works on standardization in general has to be done.

5. ICT core of the Empower Project (Knut Johansen, presentation)

Knut Johansen is presenting the ICT platform for the SESP. It is based on Microsoft Azure. Knut is showing some examples of the ICT platform.

6. Discussion including Exploitation – how will EMPOWER commercialize (Bernt Bremdal, Andreas Sumper, Knut Johansen & all)

Question: In Norway the meterdata is collected by the DSO. How is this implemented in the Empower model.

Answer: The Empower platform is flexible in this sense. The roles can be changed.

Question: From the German point of view: There is the DSO, SESP and supplier. The supplier has to authorize the SESP. Did you analyse these legal issues?

Answer: We have analysed the legal issues, but there is also a change in legislation and regulation. It is difficult area, there are a lot of different legislation. But the experience form other sectors such barriers can be overcome.

Question: How are the Pilot regions prepared to be active in the project?

Answer: In Norway, the FEN is very active and part of the pilots are in place. Public Buildings are integrated and about 100 customers will be integrated in the system.

Question: As prosumer, do I have a choice of the device to be integrated?

Answer: Yes, it is possible.

Comment: The local market will be only on lower and medium voltage grid, never transmission system.

Comment: The TSO should go to the real time pricing

Question (from remote): SESP is a good idea. How is the business model for the SESP?

Answer: The basic idea is to establish a shopping club. Services will be sold as well.

Question: Is it possible to have the SESP in the traditional utility model?

Answer:

The SESP could be a traditional player adding these services.

8 Business awareness creation

Make business leaders and future business leaders aware of the EMPOWER project and the opportunities that arise from EMPOWER is of central concern for the project. While the different actions have been listed in the list of communication activities (**¡Error! No se encuentra el origen de la referencia.** in Section 5), the EMPOWER activities of business awareness creation concern different levels. In the following, we provide a systematic overview over how EMPOWER creates business awareness:

- **Teaching regular students and future business leaders:** An important tool that accompanies our awareness creation efforts for future managers, and which we have developed, is the EMPOWER case study. Within the case study, students learn about the EMPOWER concept, and develop business models for the EMPOWER market design. The case study is applied in various teaching activities at the Bachelor and Master-level. To illustrate, we have used the case study in this year's CEMS program, which is among the top ten pre-experience Master programs in management in the global Financial Times ranking. Besides the EMPOWER case study also the Business Model Composer is used for this type of business awareness creation. Further the EMPOWER project contains the frame for different BA and MA theses (for more details see the list of communication activities).
- **Teaching executive students and current business leaders:** The case study is further used to educate current managers in the energy industry, such as executives in closed or open executive education programmes such as <https://www.renewable-energy-management.ch>, in which a module on business modeling for EMPOWER has been developed and taught (for more details see the list of communication activities).
- **Outreach and personal interaction with the business community:** An important part of the business awareness creation actions in EMPOWER is the organization of interactive workshops with practitioners. An important pillar for this type of business awareness creation are for instance the various annual EMPOWER workshops at the St. Gallen Forum for Management of Renewable Energies. These workshops attract international business leaders and make

them aware of the business opportunities that arise from EMPOWER (for more details see the list of communication activities). Furthermore, we regularly engage with companies at the local and regional level. For instance, we presented the EMPOWER concept to utility companies, to trade and service companies in Switzerland. We further regularly participate in industry events, as for instance, the national conference for renewable energies in Switzerland (e.g. the AEE conference).

- **Publications and outreach to the business and academic community:** The activities also contain broader outreach, as through the writing, publication and diffusion of EMPOWER-related findings. In this respect, we also participate in academic conferences and workshops, as for instance, the annual Strategic Management Society. At these conferences, we also organized panel discussions with leading executives (e.g. Strategic Transformation in the German Energy Industry at the Strategic Management Society 2016). These endeavors helped to ensure knowledge transfer between academia and the industry. Business awareness creation through broader communication contains publications, as well as videos, interviews and also individual consulting and meetings with business leaders that want to know more about EMPOWER (for more details see the list of communication activities).

9 Keeping the timeline

The strategy reflected in next tables aims to keep the webpage and social networks updated with a certain frequency so as to maintain the communication enabled through these channels. The main actions to achieve it are presented in Table 5.

Resource	Frequency of updates	Type of content
Website – main pages including video front page.	Around 4 months	Information about project objectives, strategies and expected results.
Archive	Dependent on project and dissemination plan.	Deliverables and articles
Events	Dependent on project and dissemination plan.	News about events
Press room	Monthly	Any publication about achievements made
Network of interest	Monthly	Names of people and organizations that support the project.
YouTube	Around 6 months	Videos about the project
Facebook	Weekly updates and when need demands. Requests for input from followers at uneven intervals.	Blog entries and popular updates about the project that require more than 160 characters.
LinkedIn	Weekly updates and when need demands. Requests for input from followers at uneven intervals.	Blog entries and research/ business oriented updates about the project that require more than 160 characters.
Twitter	Daily	Brief updates about the project, often with a reference to more substance found elsewhere. Retweets of input from followers and those followed.

Table 5 Chart showing planned update frequency

10 Dissemination plan review

Actions that are unique to the dissemination part of the overall process and not part of the general communication act are detailed below, separated by the partners in charge. Those that have been achieved have their status marked in green, those that have been postponed or changed have been marked in blue and those that have not been carried out yet have been marked in grey if the reason is that they are planned as future actions and in red if they have not been done yet.

- **UPC and SmartIO**

Dissemination action	Why	To whom	When	How	Partner in charge	Evaluation method	Status
Prepare papers to be presented at IEEE PES Innovative Smart Grid Technologies Conference Europe ENERGYCON	To spread information regarding the project and technology approach, the conceptual view	People around the world of the Smart Grids	M18	Paper proposal	UPC/SMARTIO	Acceptance for publication	DONE
			M24				ON-GOING
			M36				
Publish article in ew-Energiewirtschaft (DE) Gemeindeblatt Wolpertshausen	To spread information regarding the project and technology approach	DSO	2015	Paper proposal	UPC/ NEWEN	Acceptance for publication	DONE
Participation to H2020 Programme meetings, to be organized by the DG Connect	To share information regarding the project and technology approach between the participants	H2020 Programme participants	2015 2016 2017	Presentation	UPC/ SMARTIO / UNISG	Oral presentation / workshop	ON-GOING
Presentation of the EMPOWER goals and concept at the annual meeting of the Norwegian Smart Grid Center	To promote the ideas, goals and rationale behind the project	Norwegian DSO's, TSO's and ICT companies	M4	Presentation	SMARTIO	Oral presentation	DONE
Press coverage "Energiteknikk" (Energy Technologies)	To promote the ideas, goals and rationale behind the project	Norwegian DSO's, TSO's and ICT companies	M4	Article	SMARTIO	Publication	DONE

Preparation of a one-day Symposium/conference on Active distribution systems	To spread information regarding the project and technology approach	TSO / DSO / ESCO / Producers / Prosumers	M15 M25	Presentation	UPC	> 150 assistance	ON-GOING
Presentation at the Norwegian Smart Grid Conference	To present the SESP and market concept	Nordic DSO's, TSO's and ICT companies	M9	Presentation	SMARTIO	Publication	DONE
Prepare 2 papers to be presented at IEEE Powertech Europe	To spread information regarding the project and technology approach, especially on power electronic findings	DSO / ESCO	M24 M25	Presentation	UPC	Acceptance for publication	ON-GOING
Generate presentation to the members of EDSOs for Smart Grids	The bigger DSO's are members of EDSO rather than GEODE. The presentation will show the project status.	To the participants in the summit	M21 M25	Presentation	UPC	To succeed means to be accepted for making the presentation	Postponed to M25
Prepare presentation at CIREN (International Council on Large electric Systems) Conference	Yearly event for scientific progress in the field of communications for electricity utilities	DSO / TSO	M21 M25	Presentation of the project by means of the Video and Distribution of the newsletter	UPC/SMARTIO	Acceptance for publication and / or oral speech at conference	Postponed to M25
Generate presentation of the project status to the members of GEODE	DSO's are the potential customers	To the General Assembly and to the individual members	M22 M25	Paper proposal	UPC	Number of presentations and number of requests for information after the mailing	Postponed to M25
To present the project to engineers of different specialties having relation with the local markets	The engineers working in the rural areas can be interested in developing the new business models, or supporting the local entrepreneurs for its development	Engineers already involved in rural activities	M32	Paper proposal	UPC/ SMARTIO/ UNISG	Participation in the blog and visits to the website	
Prepare presentation and 2 papers at IEEE PES General Meeting.	To spread information on the findings during the whole	DSO / ESCO	M22 M27	Presentation of the project by means of the Video and	SMARTIO/UPC	Acceptance for publication	Postponed to M27

	project from the power system and power delivery point of view,			Distribution of the newsletter, not only within the session but also via GEODE mailing			
Prepare presentation at Barcelona Smart City EXPO	Knowledge must be spread for the success of the project	People around the world of the Smart Grids	M34	Presentation of the project by means of the Video and Distribution of the newsletter	UPC	Number of contacts amount the public of the presentation	
Prepare presentation at IEEE AMPS Conference	To spread information regarding the project and technology approach	TSO	M22 M26	Technical presentation of the project and diffusion of the website.	UPC	Acceptance for publication	Postponed to M26
Publish article in ew-Energiewirtschaft, Germany	To spread information regarding the project and technology approach	DSO	M34		UPC/ NEWEN	Acceptance for publication	
Organization of demonstration in the field	To show the project results, under actual situation and working environment, to interested parties	DSO / TSO / ESCO / All	M24 M25	Paper proposal	UPC	Number of demos, number of attendees.	ON-GOING
Generate a paper to be published in "Automática e Instrumentación" magazine or IEEE PES Magazine	To spread out general results and findings of the project,	TSO / DSO / ESCO / Citizen	M23	Presentation and proposal for 2 conference papers	UPC	Acceptance for publication	DONE

▪ **UNISG**

Dissemination action	Why	To whom	When	How	Partner in charge	Evaluation method	Status
Participation to H2020 Programme meetings, to be organized by the DG Connect	To share information regarding the project and technology approach between the participants	H2020 Programme participants	2015 2016 2017	Presentation	UPC/ SMARTIO / UNISG	Oral presentation / workshop	ON-GOING
Preparation of a Business Day attached to the One Day Symposium	To spread out the prosumer concept for managers	Managers/Decision makers	M15	Presentation	UNISG	>100 assistance	DONE
To present the project to engineers of different specialties having relation with the local markets	The engineers working in the rural areas can be interested in developing the new business models, or supporting the local entrepreneurs for its development	Engineers already involved in rural activities	M32	Paper proposal	UPC/ SMARTIO/ UNISG	Participation in the blog and visits to the website	
Publish in different Journals and magazines	To spread findings of the project that could not be published during the project	All	M31	Poster in 2015 Presentation in 2016	All	Acceptance for publication	ON-GOING
Scientific Papers in Journals	To spread findings from the power system and power delivery point of view	People around the world of the Smart Grids	M18	Paper proposal	All	Acceptance for publication	DONE
			M24				DONE
			M36				

Business awareness creation seminars from UNISG

Dissemination action	Where	To whom	When	How	Partner in charge	Evaluation method	Status
Business awareness creation seminar 1	St. Gallen	Executives from the European renewable energy industry	May, 18-21 2015	Seminar	UNISG	Number of assistance	DONE
Business awareness creation seminar 2	St. Gallen	Executives from the European renewable energy industry	May 2016	Seminar	UNISG	Number of assistance	DONE
Business awareness creation seminar 3	Barcelona	Business representatives from Spain	Fall 2016	Seminar	UNISG	Number of assistance	

Business awareness creation seminar 4	Naples Falera	European Business scholars	Summer 2016	Seminar	UNISG	Number of assistance	DONE
Business awareness creation seminar 5	Oslo	Business representatives from Norway	Spring 2017	Seminar	UNISG	Number of assistance	
Business awareness creation seminar 6	St. Gallen	Executives from the European renewable energy industry	May 2017	Seminar	UNISG	Number of assistance	

▪ **NewEn**

Dissemination action	Why	To whom	When	How	Partner in charge	Evaluation method	Status
Publish article in ew-Energiewirtschaft (DE)	To spread information regarding the project and technology approach	DSO	2015	Paper proposal	UPC/ NEWEN	Acceptance for publication	DONE
Prepare presentation at VDE Congress, Germany session or paper)	To spread information to DSO and ESCO and discuss the project	DSO / ESCO	M22	Participating in one of their internal meetings about RES. In Oct 2013 will be invited to join the TAG.	SMARTIO/NEWEN	Acceptance for publication and / or oral speech at conference	
Publish article in ew-Energiewirtschaft, Germany	To spread information regarding the project and technology approach	DSO	M34	Technical presentation of the project and diffusion of the website.	UPC/ NEWEN	Acceptance for publication	
Publish in different Journals and magazines	To spread findings of the project that could not be published during the project	All	M31	Poster in 2015 Presentation in 2016	All	Acceptance for publication	
Scientific Papers in Journals	To spread findings from the power system and power delivery point of view	People around the world of the Smart Grids	M18	Paper proposal	All	Acceptance for publication	DONE
			M24				ON-GOING
			M36				

Communications actions are detailed below, separated by the partners in charge. Those that have been achieved have their status marked in green, those that have been postponed or changed have been marked in blue and those that have not been carried out yet have been marked in grey if the reason is that they are planned as future actions and in red if they have not been done yet.

- UPC

Communication actions	Why	To whom	When	How	Evaluation method	Responsible	Status			
Press releases	To spread information regarding the project, the consortium, the approach, enabling interactions and feedbacks	All	M2	Press release to major newspapers specialized magazines and Journals	Publication of the article	UPC	DONE			
			M12				DONE			
			M24				DONE			
			M36							
Activate the project website and the social networks profiles		All	M3	Ongoing report concerning the aims and results of the project	Release of the website, social network profiles opened	UPC	DONE			
Generate and release the Project Video	To spread information regarding the project and technology approach, enabling interactions and feedbacks	All	M3	Present the project aims, expected results and outcomes	Release of the video	UPC	DONE			
Generate the Project Flyer and Project Poster		All	M3		Release of the Project Flyer and Poster	UPC	DONE			
Prepare and hold Project workshops in Brussels-St Gallen		GEODE members	M6		Number of attendees, number of contributions	UPC	DONE			
Conference and Innovation Days on Local Smart Grids	To spread information regarding the project and technology approach to a big audience	All	M30	Present the concept and results of the project	Number of attendees, number of contributions	UPC				
Generate the Project newsletter	To spread information regarding the project and demonstration		M12				newsletter	Publication and distribution	UPC	DONE
			M24							ON-GOING
		M36								

Include reference to the project in partners' websites	Inform customers, providers and partners of the projects, expected results and outcomes	All	M3	Information and links in partners' websites	Publication	all	DONE
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- **SmartIO**

Communication actions	Why	To whom	When	How	Evaluation method	Responsible	Status
Prepare and hold Project workshops in Norway	To spread information regarding the project and technology approach, enabling interactions and feedbacks	Norwegian Smart Grid Centre	M19	Present and discuss concept of SESP and the project	Number of attendees, number of contributions	SmartIO	DONE
Include reference to the project in partners' websites	Inform customers, providers and partners of the projects, expected results and outcomes	All	M3	Information and links in partners' websites	Publication	all	DONE
Present project results in at least 10 international conferences	To spread information regarding the project and results	Industry and Scientific community			Presentation held	all	

- **MIEMA**

Communication actions	Why	To whom	When	How	Evaluation method	Responsible	Status
10 minutes of project diffusion in TV news coverage in a Local TV	To have a broader audience	Citizens	M24 M36	To reach notoriety and gain audience	10 minutes in Local TV	UPC SmartIO	
5 minutes of project diffusion in TV news coverage in a Regional/National TV		Citizens	M24	To reach notoriety and gain audience	5 minutes in national TV	NewEn	

11 Conclusions

This report has presented the dissemination and communication actions performed in EMPOWER project during the second year (from January 2016 until December 2016). The steps taken during the second year for spreading the project objectives and evolution have been reviewed. These steps include webpage updates, the TAG expansion, video releases, organisation and attendance to events, publications and the dissemination and communication actions through social networks, newsletters,

workshops and conferences. All these instruments have had a significant impact, especially after 4 video releases, leading to a significant increase of the interest and engagement of citizens for participating in the local energy markets being shaped. The contribution of business awareness creation actions has also been key for disseminating the project.

Finally, although the dissemination and communication is successfully having an impact (the broad audience being reached is reflected in Table 6), it is worth admitting an effort during 2017 needs to be made to expand The TAG members and increase the number of TAG meetings.

Table 6 Audience

Type of audience	Share	Number of people
Scientific Community (Higher Education, Research)	40%	600
Industry	30%	450
Civil Society	5%	75
General Public	5%	75
Policy Makers	5%	75
Media	5%	75
Investors	5%	75
Customers	5%	75
Other	0	0

classification

European Commission recommended media

Publications

Horizon Magazine
<http://horizon-magazine.eu/>

HORIZON is the EU Research & Innovation magazine. It is covering the latest developments in EU funded research and innovation, communicating the priorities and achievements of EU-funded research, its impact on citizens' lives and its contribution to the EU goals of smart and sustainable growth. It is written by independent journalists on behalf of DG Research & Innovation and is updated at least three times a week with new articles.

For story suggestions or questions to the editor, e-mail: RTD-PUBLICATIONS@ec.europa.eu

Project stories
<https://ec.europa.eu/programmes/horizon2020/en/newsroom/551/>

Articles about selected EU-funded research projects, which led to breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market, at the same time contributing to economic growth and creating jobs, and tackling societal challenges.

Please contact your Project Officer about any interesting project outcomes. Furthermore a journalist contracted by the European Commission may contact you.

research*eu results magazine
www.cordis.europa.eu/research-eu/magazine_en.html

This print magazine features highlights from the EU-funded research and development projects. It is published 10 times per year in English, and covers mainly the research areas of biology and medicine, Social sciences and humanities, energy and transport, environment and society, IT and telecommunications, industrial technologies and space.

Please contact your Project Officer about any interesting project outcomes. Furthermore a journalist contracted by the European Commission may contact you.

research*eu focus
www.cordis.europa.eu/research-eu/research-focus_en.html

This print magazine covers in each issue a specific topic of research interest. It features articles on EU policies, initiatives, programs and projects related to research and technological development and their exploitation. It is published at irregular intervals up to six times a year in English. Exceptionally, it may be available in other European languages as well.

Please contact your Project Officer about any interesting project outcomes. A journalist contracted by the European Commission may contact you.

Newsletters
www.ec.europa.eu/research/index.cfm?pg=publications&lg=en
Co-publications or editorial partnerships

Newsletters are published by the European Commission for different research areas.

Please contact your Project Officer to get more information on how to publish something in a specific newsletter. Please contact your Project Officer to discuss the possibilities.

The European Commission works with private publishers and international organizations to promote the dissemination of relevant publications. Scientific publications and books, including conference proceedings, may be co-published in this way.

Audiovisual

Futuris Magazine
<http://www.euronews.net/sci-tech/futuris/>

Short documentary-style television magazine in various languages, appearing at least 22 times on the EuroNews channel throughout Europe.

EuroNews has editorial independence, but we are in contact with them to suggest good stories. Since it is television, this is interesting for visually appealing projects and demonstration activities. Please contact your Project Officer if you would like your project to be put forward.

Events

Events on the Commission's Research & Innovation website
www.ec.europa.eu/research/index.cfm?pg=conferences&filter=all

This website displays research and innovation-related conferences and events.

You can submit an event by using the "Suggest an event" functionality which is available on the left-hand side of the website.

Events on the CORDIS website
www.cordis.europa.eu/news/home_en.html

Conferences and events organised by the European Commission

This website displays research-related conferences and events.

Throughout the year, the European Commission (co-organizes a variety of conferences, both in Brussels and elsewhere. These may include exhibition areas or sessions at which you could present your work.

Submitting an event requires one-time registration on the CORDIS website

Please contact your Project Officer if you have suitable exhibition items (prototypes, demonstrators)

Open access publishing

www.openaire.eu

The Open Access Infrastructure for Research in Europe is an electronic gateway for peer-reviewed articles and other important scientific publications (pre-prints or conference publications).

You may submit your publications to www.openaire.eu

Online news

Headlines on the Commission's Research & Innovation website
www.ec.europa.eu/research/info_centre/all_headlines_en.cfm

Headlines report on recent developments in research and innovation in Europe and beyond and are devoted purely to projects. Suitable stories to be published on the site are selected on a daily basis.

You may submit your news (by means of a press release, event announcement or otherwise) via CORDIS wire

<http://cordis.europa.eu/wire>

CORDIS Wire
<http://cordis.europa.eu/wire/>

CORDIS Wire provides registered users with a simple interface to publish articles on the CORDIS website's News and Events service. All articles are moderated by CORDIS editors before publication.

Requires one-time registration at
<http://cordis.europa.eu/wire>

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