This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773715

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Grant Agreement No.: 773715

Project acronym: RESOLVD

Project title: Renewable penetration levered by Efficient Low Voltage Distribution grids

Research and Innovation Action

Topic: LCE-01-2016-2017

Next generation innovative technologies enabling smart grids, storage and energy system integration with increasing share of renewables: distribution network

Starting date of project: 1st of October 2017

Duration: 42 months

D7.8 – Final Communication report

Organization name of lead contractor for this deliverable: JR	
Due date:	M42 - 31st of March 2021
Submission Date:	29th of March 2021
Primary Authors	Heribert Vallant (JR)
Contributors	JR, UdG, ICOM, SIN, UPC, EYPESA, CS
Version	Version 1.0

Dissemination Level		
PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Deliverable reviews

Revision table for this deliverable:		
Version 0.9	Reception Date	16th of March 2021
	Revision Date	19th of March 2021
	Reviewers	Andreas Sumper (UPC), Roberto Petite (UdG), Sarà Murlà (UdG)
Version 1.0	Reception Date	24th of March 2021
	Revision Date	26th of March 2021
	Reviewers	Andreas Sumper (UPC), Roberto Petite (UdG)

Contributions of partners

Description of the contribution of each partner organisation to the work presented in the deliverable.

Partner	Contribution
UdG	Deliverable reviewer, contributor to communication activities
UPC	Deliverable reviewer, contributor to communication activities, administrator of Web page and social media channels
SIN	Contributor to communication activities, Management of SIG
JR	Deliverable owner and leader of task T7.1, primary contributor
ICOM	Contributor to communication activities
EYPESA	Contributor to communication activities
CS	Contributor to communication activities

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Acronyms and abbreviations

CS	ComSensus d.o.o.
DSO	Distribution System Operator
ESCO	Energy service company
EU	European Union
EYPESA	Estabanell y Pahisa Energia, S.A.
GM	General Meeting
ICOM	Intracom SA Telecom Solutions
JR	JOANNEUM RESEARCH Forschungsgesellschaft m.b.H.
KER	Key Exploitable Result
KPI	Key Performance Indicator
LCE	Competitive Low-Carbon Energy
SIG	Stakeholders Innovation Group
SIN	Smart Innovation Norway
UdG	Universitat de Girona
UPC	Universitat Politècnica de Catalunya

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Executive Summary

This document describes the communication activities of RESOLVD, which were carried out throughout the duration of the project and compares these with the metrics proposed in the DoA, defined in D7.3 and those already reported and updated in D7.7. This deliverable covers both the activities of the Periodic report (M18), which was already accepted, and also includes further activities performed till the end of March 2021 (M42).

To achieve the communication goals which were specified in D7.3 respectively D7.7, the RESOLVD project utilized a mixture of online and offline media, namely:

- A project website containing both project information and monthly new updates;
- A monthly news article;
- Occasional project communication via the partners' media channels;
- Social media channels (Twitter, LinkedIn, and YouTube);
- Print materials (poster and folder);
- Occasional articles in printed media
- Setup of the Stakeholders Innovation Group

Due to the COVID19 pandemic, communication activities were also impacted and a switch to virtual events was made, nevertheless in summary, all the intended goals, which were planned for the RESOLVD communication activities were achieved. During M1 to M42, the RESOLVD partners carried out a number of communication activities summarized below:

Activity	Amount
Website social media	40 news articles, 735 tweets 18 videos Followers: Twitter: 298 LinkedIn: 111
Press releases	29
Events with Stakeholders	4
Fairs and Conferences visit	19

Table 1: Amount of communication activities

1. Introduction

1.1. Document Objectives

- This document describes all the communication activities performed throughout the duration of the project. Furthermore, the communication activities are compared with the metrics defined in the DoA, D7.3 and D7.7. In contrast to the scientific dissemination activities reported in D7.6, this document outlines the communication efforts to the communities such as:
- Related H2020 Projects;
- Scientific and technical community;
- Power distribution stakeholders (industry, regulators, standardization bodies, etc.);
- Society as a whole.

This document reports on the performed online and offline activities covering the RESOLVD project website, social media channels, and partner sites, as well as by conventional public relation measures like posters, flyers, exhibitions, press releases and meetings.

1.2. Document structure

Chapter 2 lists all the communication activities performed during the project duration. Chapter 3 concludes this report by comparing the communication results achieved with the communication goals specified in DoA, and updated in D7.3 and D7.7.

2. Communication Report

The communication activities are divided into online activities covering web appearances, social media activities and newsletters, and offline activities – the traditional paper passed material that was produced and utilized by the partners at different events.

2.1. Online

2.1.1.Website

The project website (https://resolvd.eu) is active since month 1 of the project. It was initially deployed with limited information, but from month 2 (D7.2 Project website) onwards, it became fully operative and contains a complete and updated information of the project.

Figure 1 shows an overview of the audience of the RESOLVD website. From the beginning of the project until March 5th, 2021, approximately 4500 users visited the website. The typical retention time per session was 1:36 minutes, with an average of 2.16 pages being called. Around 12% of users visited the RESOLVD website at least twice. There are two significant peaks in visits, one at the end of May 2020 with 160 users and the other one at the end of February 2021 with 336 users, which correlates with the e-Demo Day and the Final event.

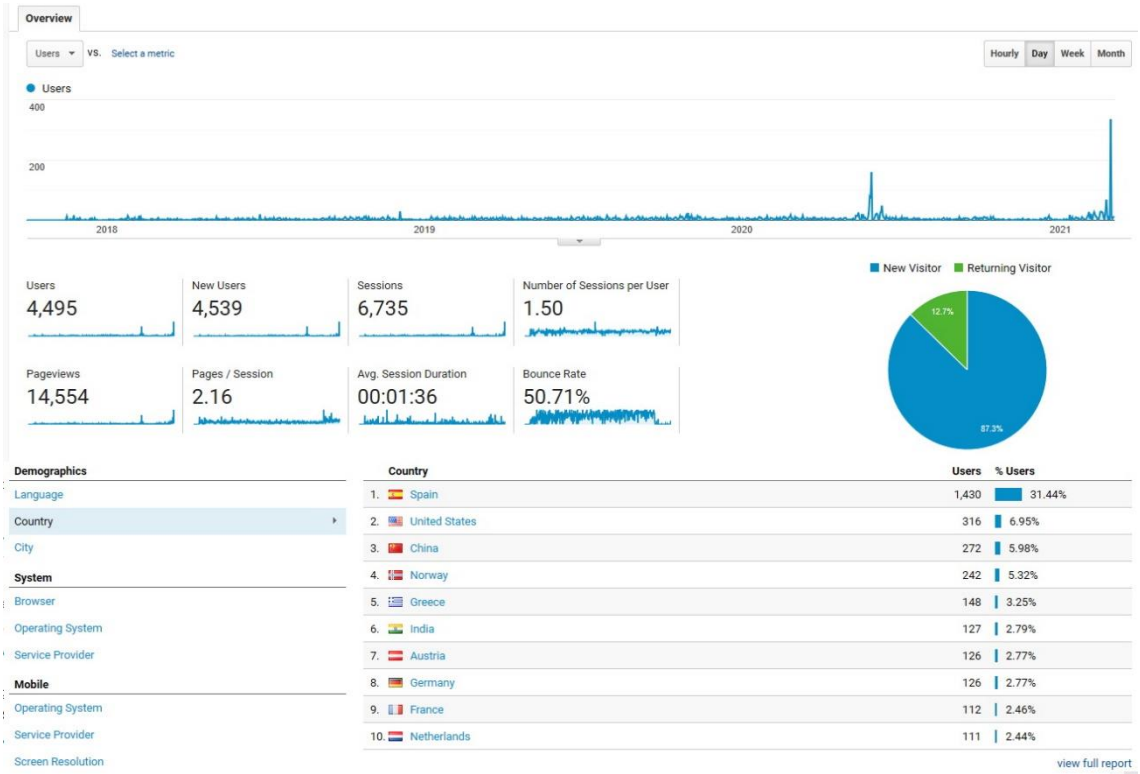

Figure 1 RESOLVD website audience

2.1.2.News Articles

2.1.2.1. News on the website

Periodic non-scientific news articles were published on the website describing different aspects of the project, preliminary results, public appearances as well as partners' presentations. In total, 40 news articles were published throughout the project duration.

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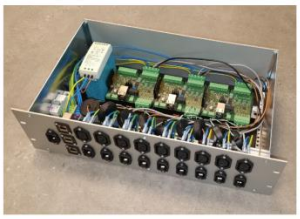
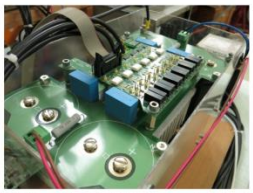
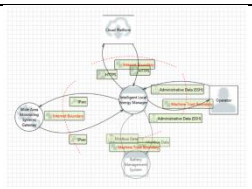
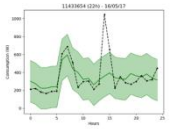
No.	Description	Date	Content
1	UdG, Kickoff Meeting	October 2017	 Kick off meeting was a success
2	CS,GM2	February. 2018	 The 2nd Global Meeting
3	EYPESA, partner description	March. 2018	 Estabanell and RESOLVD: shaping the LV grid of the future
4	EYPESA, Use cases	May 2018	 RESOLVD use cases: 7 smart steps to increase distributed renewable generation in the LV grid
5	CS, Partner description	May 2018	 ComSensus: enabling real-time distribution grid observability
6	ICOM, Conference: ENERGYCON 2018	June 2018	 INTRACOM TELECOM presented during ENERGYCON 2018 conference

7	UPC, Partner, and WP2 description	July 2018	 CITCEA (UPC) is contributing to the RESOLVD in the power electronic device
8	ICOM, GM3	September 2018	 The 3rd Global Meeting of the RESOLVD Project
9	ICOM, Partner description	October 2018	 Intracom Telecom: Facilitating integration and interplay in the DSOs' IT ecosystem
10	JR, Partner description and information security	January 2019	 JOANNEUM RESEARCH: Thread Modelling forms the basis of RESOLVD Cyber Security building blocks
11	UDG, Partner description Partner and WP3 description	January 2019	 University of Girona: energy forecasting, fault detection and grid scheduling algorithms considering grid observability constraints
12	JR, Conference: Data Centre Hybrid	June 2019	 Presentation about how the security by design approach in RESOLVD

13	UPC, Conference: Modern Power Systems	June 2019	 CITCEA was presenting the Methodology for the sizing of a hybrid energy storage system in lov voltage distribution grids The 6th International Conference on Modern Power Systems will be held on Cluj-Napoca, Romania, from 21st to 23rd of May 2019. The main purpose of the Conference is to throw a bridge between recent advances of research on modern power...
14	ICOM, WP4 description	June 2019	 Intracom Telecom: Design of the software platform to host the innovative algorithms of the project and facilitate integration For the last few months we were heavily working on designing the RESOLVD software platform. This platform is responsible for: Transparent integration with legacy systems (i.e. MDMS, SCADA, GIS), the Power Electronic Devices (PEDs), supervision and analytics services as well...
15	UPC, GM 4	July 2019	 The 4th Global Meeting of the RESOLVD Project in Barcelona The 4th Global Meeting of the RESOLVD Project has been held in Barcelona on Feburary 27th and 28th 2019. This event has been organized by CITCEA research group of the UPC. The meeting has been hosted by the UPC at...
16	JR, Conference: Mission Innovation Austria	July 2019	 Mission Innovation Austria Week 2019 The Mission Innovation Austria Week which took place in Oberwart, Austria from May 6th – 10th 2019 brought together international leaders, ideas generators and those configuring tomorrow's energy solutions. More than 400 people from 16 nations used this opportunity to...
17	UPC, Review Meeting	July 2019	 Review Meeting in Barcelona On 27th of June the review meeting of the H2020 project took place in Barcelona at the UPC facilities. In this meeting, our Project Officer Eleni Kontorinakou could see the advances of the first 18 months of the project...
18	EYPESA, WP5 Description	September 2019	 Estabanell and the smart LV grid: making it real Our mission, in Estabanell Distribució is to find new ways to improve and upgrade the electrical infrastructure applying the principles of innovation and sustainability. With this objective, we are a member of the RESOLVD project consortium and we are excited...

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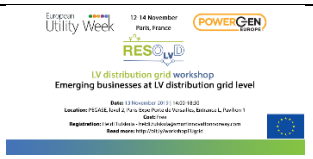
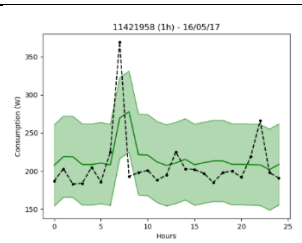
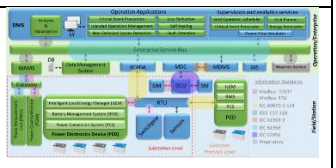
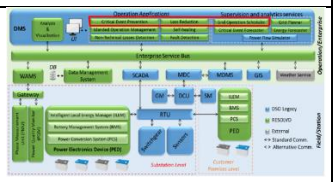
19	SIN, Partner Description	September 2019	
20	Announcement European Utility Week 2019	October 2019	
21	UPC, Panel Session on ISGT Europe Conference –	October 2019	
22	SIN, New Business Models, Project Exploitation and standardization	January 2020	
23	UdG, Forecasting algorithms: from evaluation to implementation	February 2020	
24	CS, Functional and operational requirements	February 2020	
25	UdG, LV grid Operation scheduler provider	March 2020	
26	JR,6th Global Meeting	March 2020	

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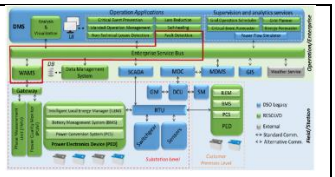
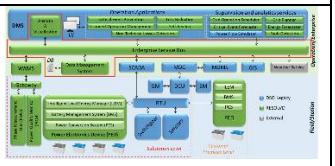
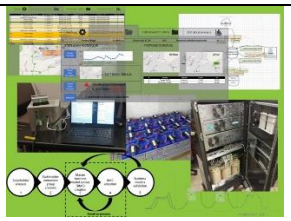
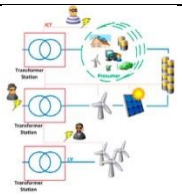
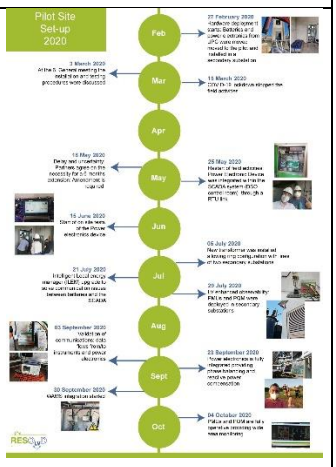
27	UdG, WAMS, and Fault Detection Application applied to an efficient LV grid monitoring	March 2020	
28	ICOM, Tools for Enterprise Integration & Data Analytics in RESOLvD	May 2020	
29	UPC, Getting the best from complementary battery types – Power Sharing Algorithm	June 2020	
30	UPC, A software solution to manage the whole PED solution and to satisfy advanced energy services.	June 2020	
31	e-demo day summary	July 2020	
32	JR, Cyber security guidelines for RESOLVD	November 2020	
33	RESOLVD Pilot Site	December 2020	

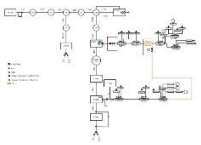
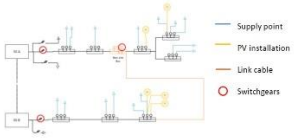
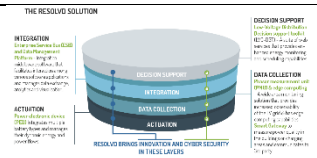
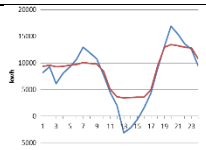
34	CS, Decision support for self-healing (fault detection and localization)	December 2020	
35	CS, Sensor infrastructure	January 2021	
36	EYPESA, Real Scenarios	February 2021	
37	RESOLVD Final Event	February 2021	
38	SIN, Business Models	March 2021	
39	EYPESA, Testing Results	March 2021	
40	UdG, RESOLVD Conclusion	April 2021	in preparation

Table 2: News articles published

2.1.2.2. Consortium Members' Channels

The consortium members disseminated in total 24 posts via their website and additional tweets via retweeting the RESOLVD Twitter messages via their corporate media channels. The following text lists the activities performed via the website.

2.1.2.2.1. UDG

- https://exit.udg.edu/project/resolvd/
- https://www.udg.edu/ca/udg/detall-noticies/eventid/746
- https://exit.udg.edu/the-2nd-global-meeting-of-the-resolvd-project/
- https://exit.udg.edu/my-retrospective-of-the-pac-world-conference-2019-laiz-souto/
- https://www.udg.edu/en/udg/detall-noticies/eventid/15119

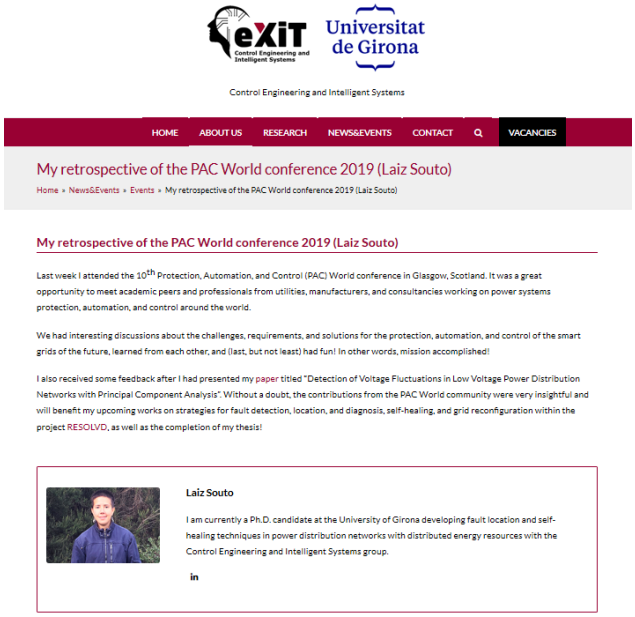


Figure 2: Screenshot from the UdG website

2.1.2.2. UPC

- https://cit.upc.edu/en/portfolio-item/resolvd/
- https://www.cit.upc.edu/newsletter/2018_09/nws_70_en.pdf
- https://cit.upc.edu/en/featured/smart_grids_improve_the_efficiency_of_grids
- https://futur.upc.edu/21602998

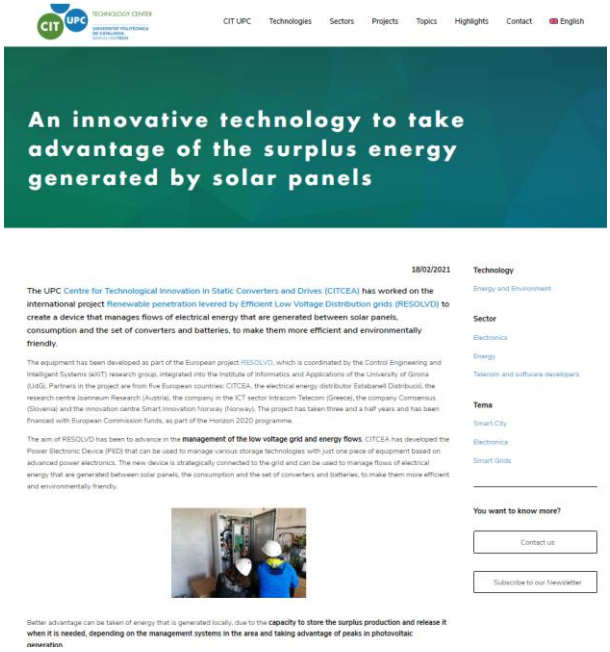


Figure 3: Screenshot from the UPC website

2.1.2.3. SIN

- https://en.smartinnovationnorway.no/news/resolvd-final-event-resulted-in-new-insight-

and-ideas/

- https://en.smartinnovationnorway.com/news/the-resolvd-final-event-is-coming-up/
- https://www.smartinnovationnorway.com/resolvd-2017-2020/
- https://en.smartinnovationnorway.com/resolvd-2017-2020/
- https://en.smartinnovationnorway.com/digitizing/resolvd-smart-innovation-norway-wins-9th-eu-project/
- https://smartinnovationnorway.no/digitalisering/smart-innovation-norway-lander-sitt-niende-eu-prosjekt/

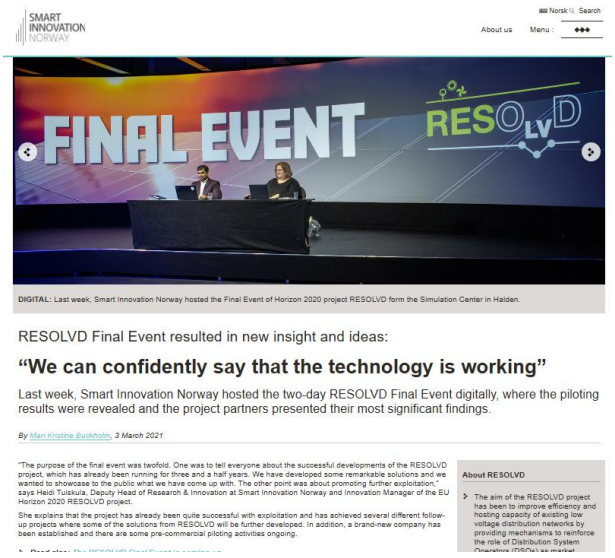


Figure 4: Screenshot from the SIN website

2.1.2.2.4. JR

- RESOLVD startet in die abschließende Phase
- RESOLVD e-Demo Day
- Mission Innovation Austria Week 2019
- Cyber Security - Grundbaustein der Digitalisierung
- Cyber-sichere Energiespeicher – Sichere Anbindung von Speicherlösungen an das Verteilnetz
- Cyber Security für Smart Services
- Neues H2020 Projekt RESOLVD gestartet

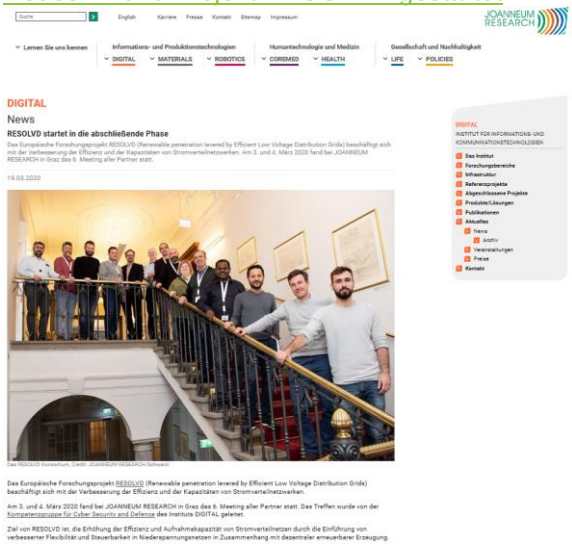


Figure 5: Screenshot from the JR website

2.1.2.2.5. ICOM

- Presentation of the project on the corporate web page
- Communication of the participation in ENERGYCON 2018, where RESOLVD was presented in the corporate newsletter.
- Communication of the RESOLVD project in the corporate newsletter.

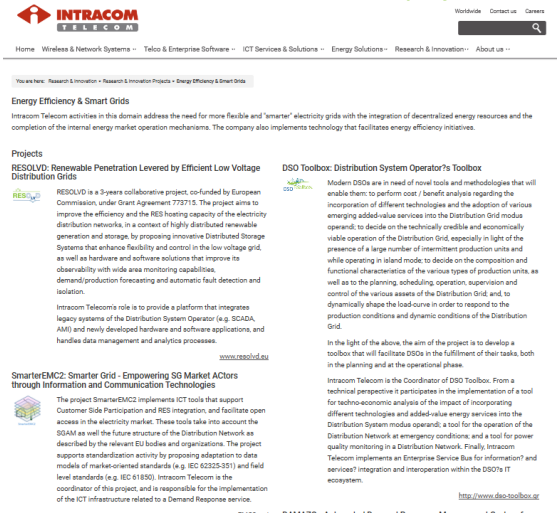


Figure 6: Screenshot from the ICOM website

2.1.2.3. Other Media Channels

2.1.2.3.1. UDG

- UdG has continued promoting RESOLVD activities, including blog news, events, etc., in its social media; Twitter (@eXiT_UdG) and linked-in (https://www.linkedin.com/company/exit-udg/)

2.1.2.3.2. EYPESA

- https://aiguasol.coop/es/jornada-tecnica-integracion-de-energias-renovables-en-la-red/
- http://eco-bot.eu/2019/02/11/estabanell-discusses-eco-bot-with-students/
- https://www.lavanguardia.com/monograficos/excelencia-empresarial/estabanell-un-referente-europeo-de-innovacion-en-el-ambito-de-la

2.1.3.Newsletter

The project created 4 newsletters that were sent to the RESOLVD news subscribers.

- Newsletter 01 – September 2019
- Newsletter 02 – June 2020
- Newsletter 03 – November 2020
- Newsletter 04 – February 2021

Figure 7: RESOLVD Newsletters

2.1.4.Social Media

Social media channels were set up, and the communication strategy was performed according to the Communication Plan D7.3 and respectively the Communication Plan Update D7.7. The social media accounts are maintained by UDG, and published content was provided by the partners. The hashtag #RESOLVD_EU was used to post content via these social media channels.

2.1.4.1. Twitter

The Twitter social media channel was created (https://twitter.com/RESOLVD_EU) and achieved the targets expected at this stage of the project. After the first 41 months of the project, RESOLVD has reached 298 followers, becoming really active in tweeting news. Until March 5th 2021, in summary, 735 tweets were published.

Figure 8: RESOLVD Twitter account

2.1.4.2. LinkedIn

A LinkedIn group was created and used to connect to and inform stakeholders and other field professionals about the forthcoming of RESOLVD. By March 5th 2021, the LinkedIn channel reached 111 followers and also achieved the goal of 100 planned followers.

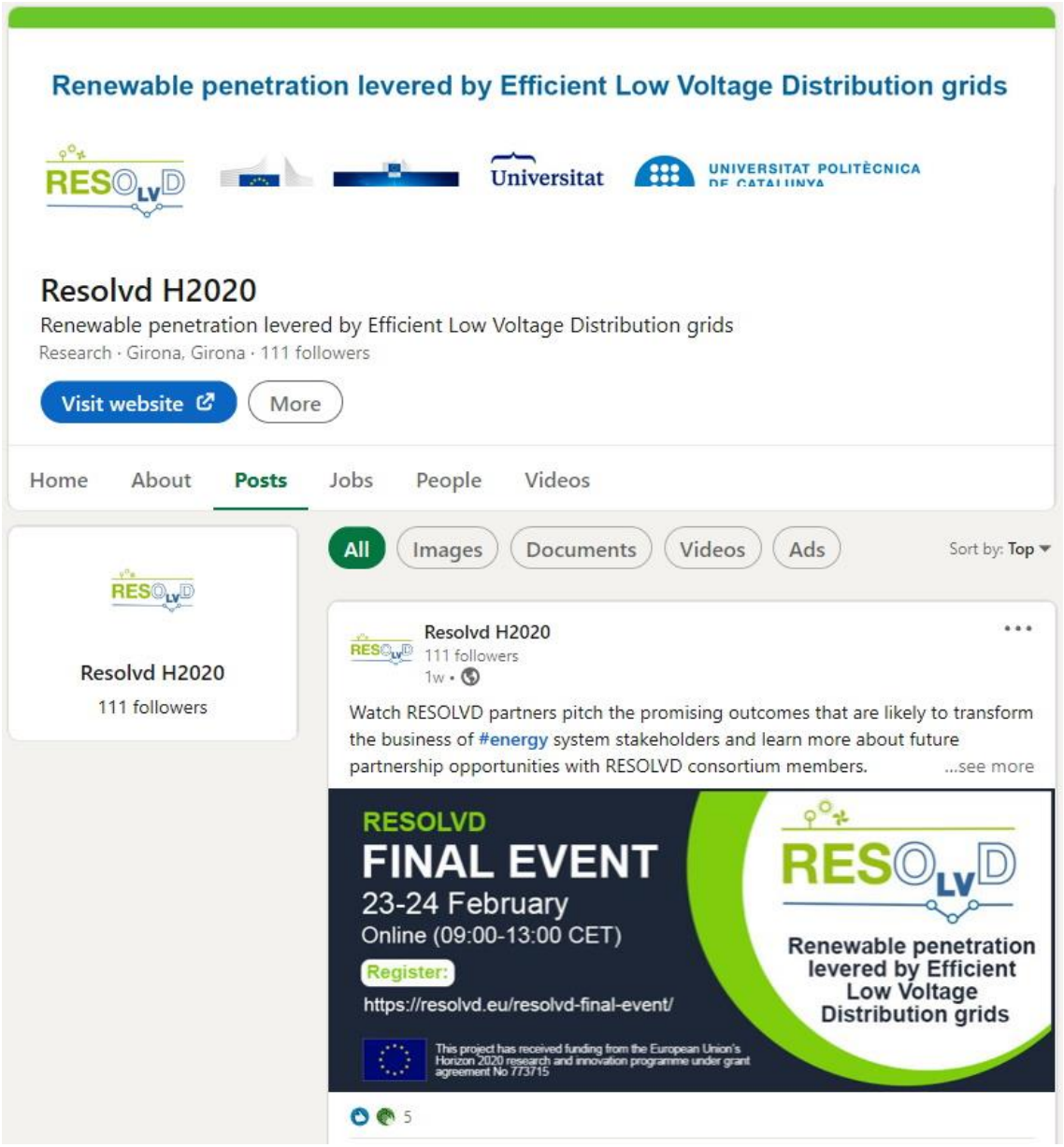


Figure 9: LinkedIn page

2.1.4.3. YouTube

A YouTube channel was set-up and at M12, and in total 18 videos were published via this channel which in summary, achieved 1152 views by March 5th 2021. Additionally, UdG has created 25 short videos, which were published via Twitter.

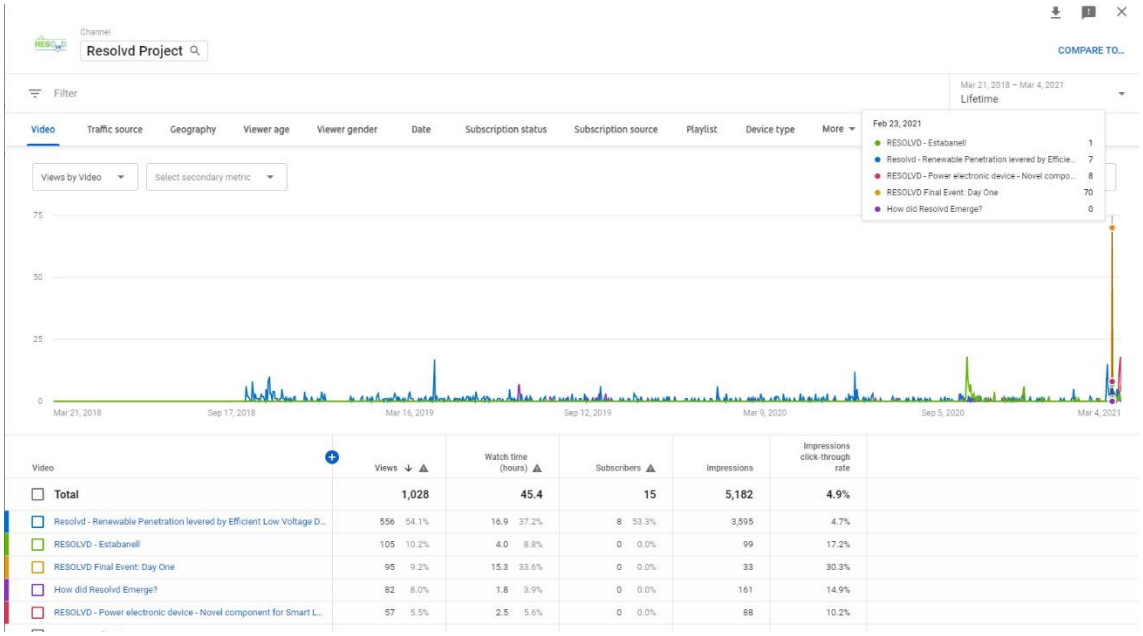
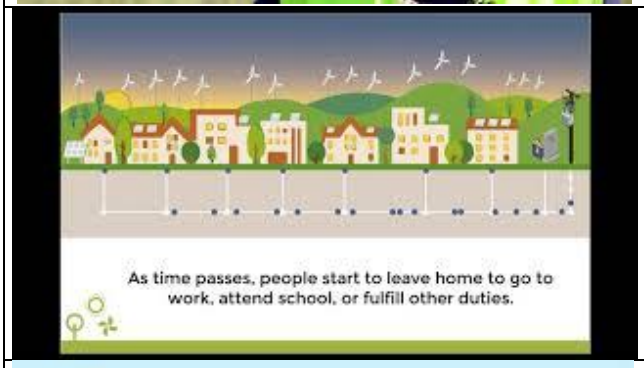


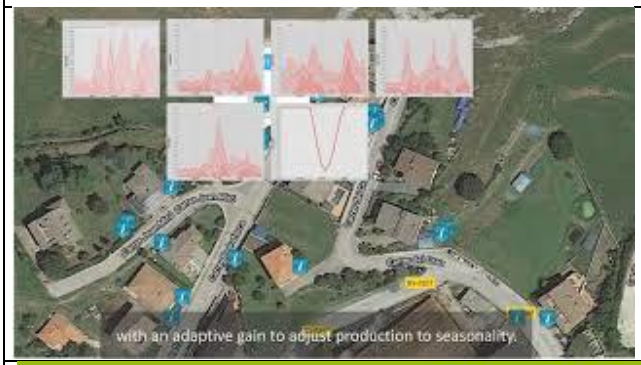
Figure 10: YouTube analytics of RESOLVD

The following Table 3 list all the 18 videos, which were published via the YouTube channel.

Link	Title	Views
	RESOLVD - Renewable Penetration levered by Efficient Low Voltage Distribution grids	572
	RESOLVD Final Event: Day One	135

	RESOLVD - Estabanell	109
	RESOLVD - Power electronic device - Novel component for Smart LV grid	93
	How did RESOLVD Emerge?	88
	RESOLVD Pilot Site Set-Up	48
	RESOLVD e-Demo Day | Welcome & Introduction	20

	RESOLVD e-Demo day | Pitch with demo-1: Power electronic device - Novel component for Smart LV grid	16
	The Power Electronic Device - CITCEA	14
	RESOLVD e-Demo day | Pitch with demo - 2: Real-time observability of the distribution grid	11
	RESOLVD e-Demo Day | Pitch - 6: The future of smart electrical demand management seen today	9
	RESOLVD e-Demo Day | Pitch with demo - 5: RESOLVD as complete solution for LV smart grid management	8

	RESOLVD e-Demo Day | Pitch with demo - 3: RESOLVD Forecasting tool	8
	Pilot Site RESOLVD	5
	RESOLVD e-Demo Day | End of Workshop	5
	Forecasting and scheduling - UdG	4
	RESOLVD e-Demo Day | Pitch - 4: Cybersecurity for smart energy environment	3

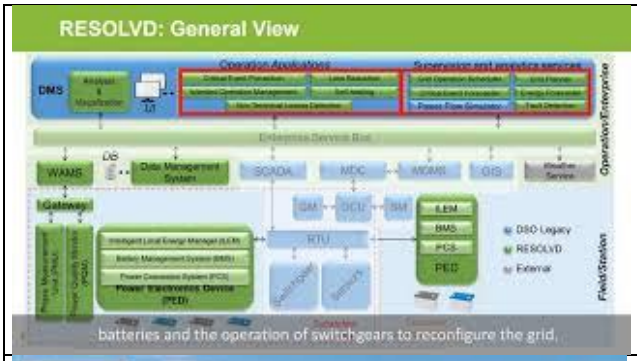
	General View RESOLVD Project	2
	Introduction RESOLVD Project	2

Table 3: List of videos

The first promotional video https://www.youtube.com/watch?v=bqhgwEdUAvw&t=4s, describing in a lightweight way the aims of the project RESOLVD, was publicly released in October 2018 and reached 572 views till March 23rd 2021.

Figure 11: RESOLVD promotional video

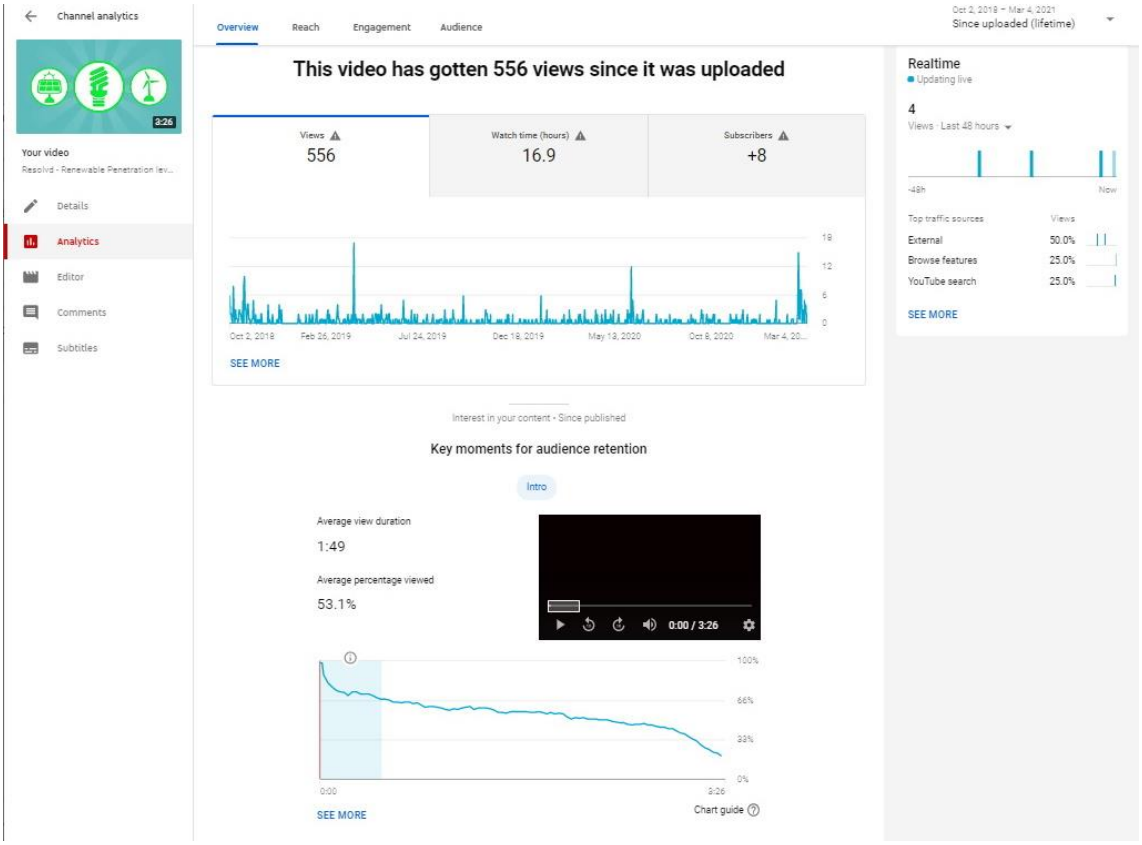


Figure 12: Analytics of RESOLVD promotional video

In month 22, a second video https://www.youtube.com/watch?v=r2sX80ENl0c was released, explaining the RESOLVD origins.

Figure 13: RESOLVD 2nd video

The 2nd RESOLVD video was viewed about 88 times till March 23rd 2021.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773715

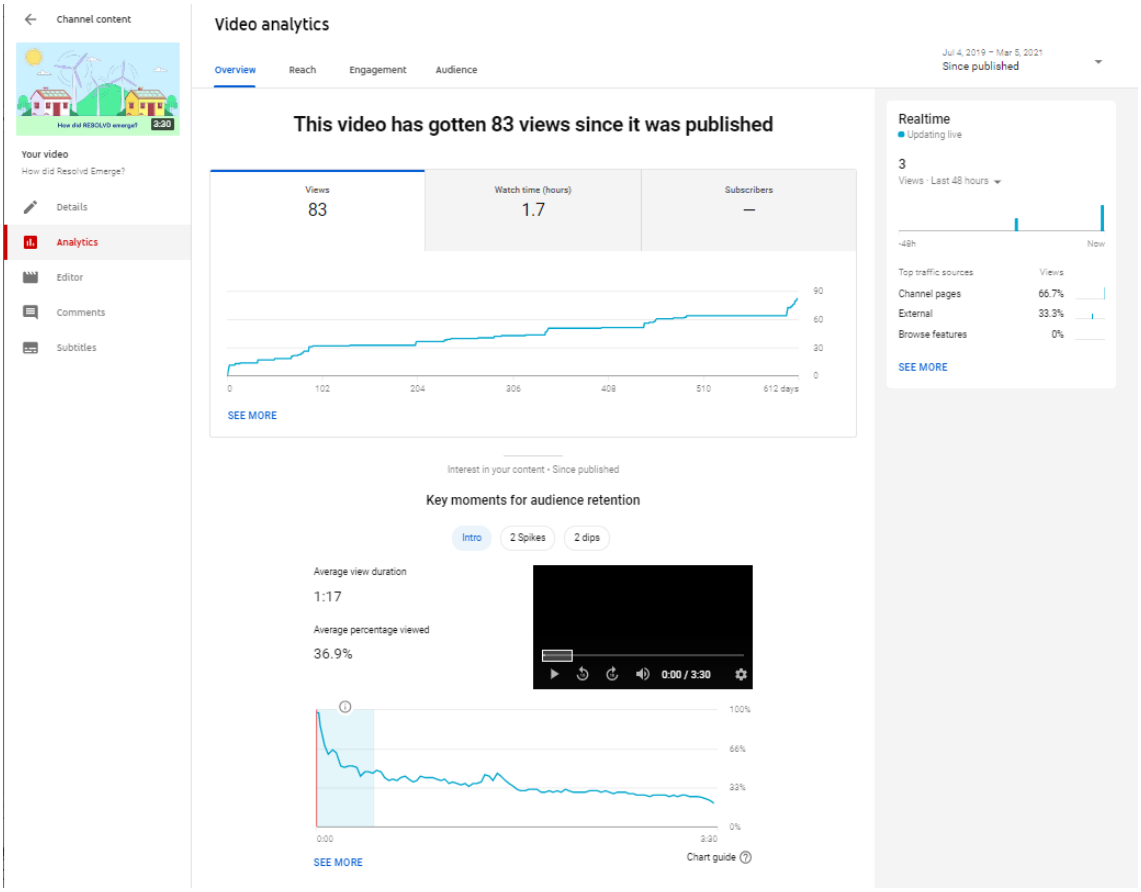


Figure 14: Analytics of RESOLVD 2nd video

For the e-Demo Day, UPC produced a video https://www.youtube.com/watch?v=kc6iiYUPk98&t=71s describing their Power Electronic Device (PED) – a new and innovative asset connected to the secondary substation at the low voltage grid. This video reached 57 views.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773715

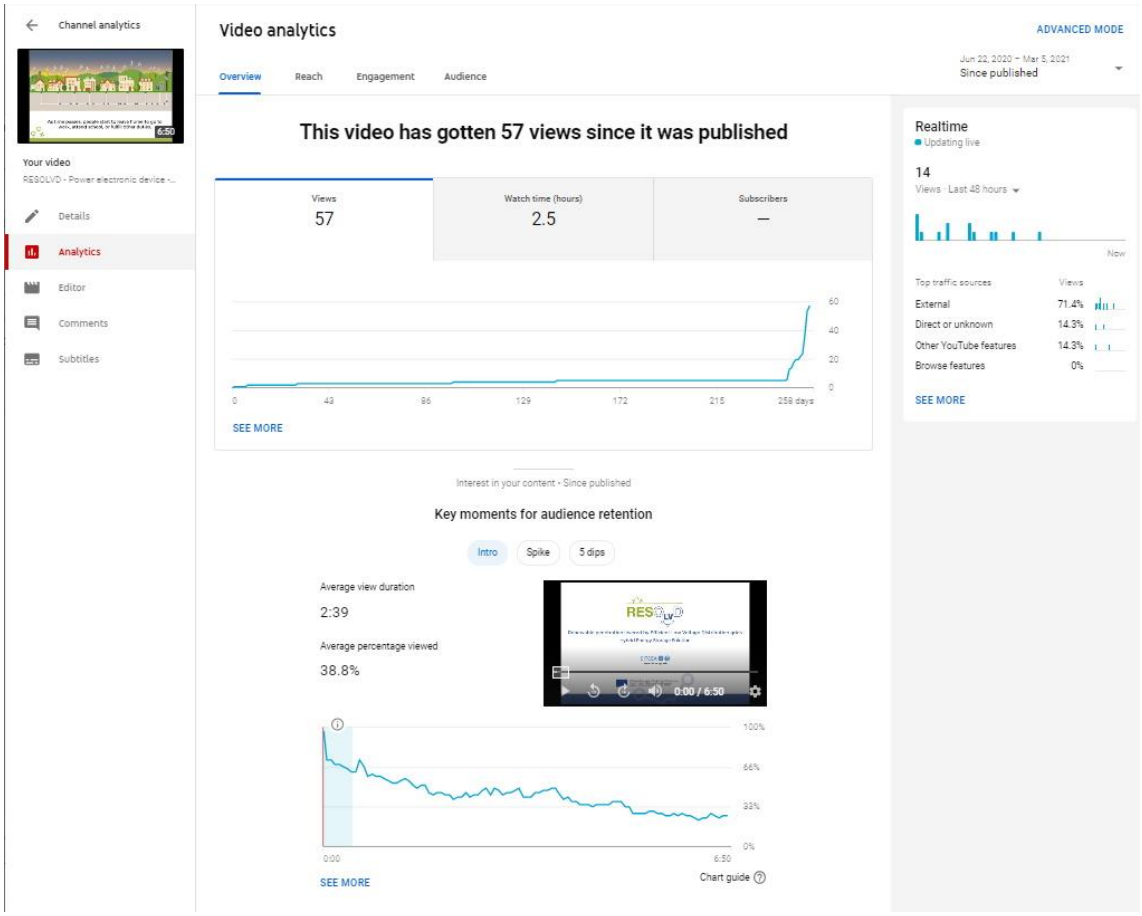


Figure 15 Analytics of the video about the PED

During the pilot setup, a video https://www.youtube.com/watch?v=F60rgUKvkQA&t=52s from Estabanell was produced and published, which in total has got 109 views.

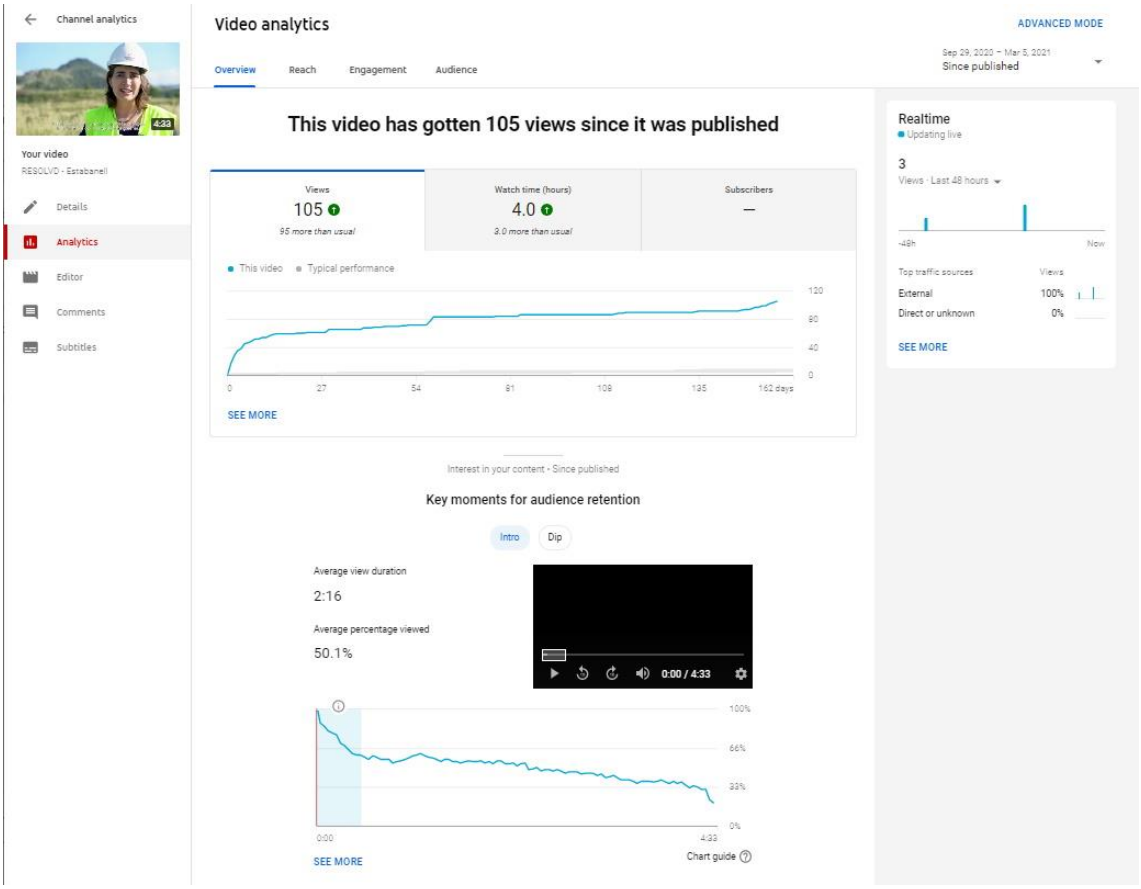


Figure 16 Analytics of the pilot video

The latest video about the Final event reached 95 people.

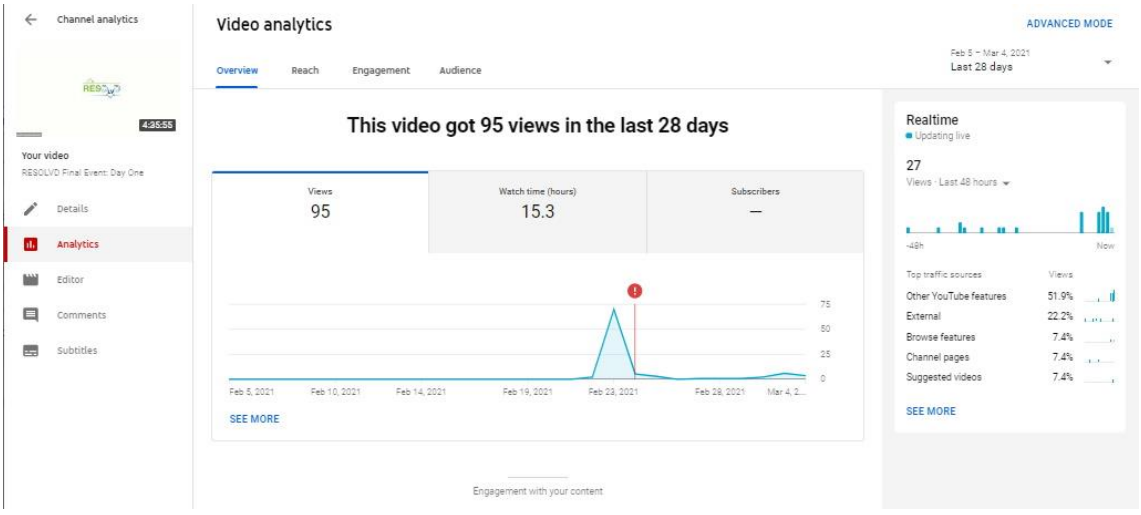


Figure 17 Analytics of the Final Event

2.2. Offline

This section describes the offline promotion material that has been produced and which has been utilized by the partners at different events.

2.2.1.Project Posters

A project rollup poster was produced and distributed to the partners for usage at different events.

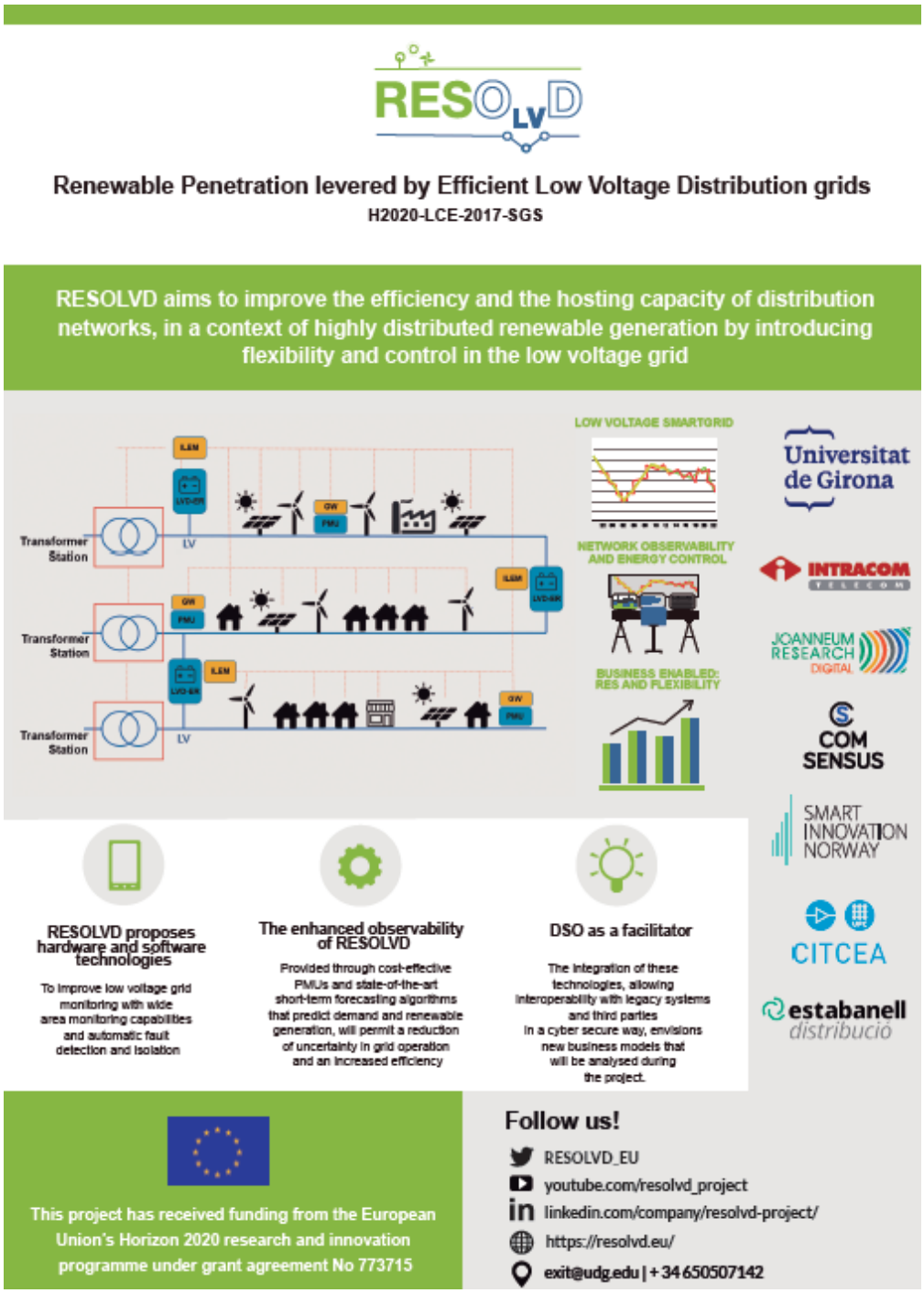


Figure 18: RESOLVD project rollup poster

2.2.2.Project Folder

Figure 19 shows the project folder which was developed. It covers all the necessary information of the RESOLVD Project and can be individually on and on demand printed out and used by the partners for promotion at conferences or fairs.

RESOLVD

1. SUMMARY

RESOLVD is H2020 research and innovation action coordinated by Universitat de Girona and participated by other six partners: Joanneum Research (Research center, Austria), Smart Innovation Norway (Research center, Norway), Universitat Politècnica de Catalunya (Univ, Spain), Comsensus (SME, Slovenia), Intracom Telecom (Industry, Greece) and Estabanell Energia (SME/DSO, Spain) that aims to contribute to setting the next generation of competitive technologies and services for smart grids. The objective is to improve the efficiency and the hosting capacity of distribution networks, in a context of highly distributed renewable generation by introducing flexibility and control in the low voltage grid.

An innovative advanced power electronics device, with integrated storage management capabilities, will provide both switching and energy balancing capacities to operate the grid optimally. The enhanced observability of RESOLVD, provided through cost-effective PMUs and state-of-the-art short-term forecasting algorithms that predict demand and renewable generation, will permit a reduction of uncertainty in grid operation and an increased efficiency. RESOLVD proposes hardware and software technologies to improve low voltage grid monitoring with wide area monitoring capabilities and automatic fault detection and isolation together with the acting capability supported by optimization algorithms for self-healing and grid reconfiguration. This will allow efficient grid operation and a maximised renewable hosting capacity.

RESOLVD started the 1 October and the kick off meeting took place at the premises of University of Girona the 16-17 October where the foundations of the RESOLVD were established at both technical and managerial level.

2. PROJECT SCOPE

Scope, objectives and concept: The overall objective of RESOLVD is to improve efficiency and the hosting capacity of distribution networks in a context of highly distributed renewable generation by introducing energy flexibility and control by acting on the grid through innovative advanced power electronics devices, with certain storage management capabilities, in low voltage distribution grids. Scientific objectives include (mapped in Figure 1):

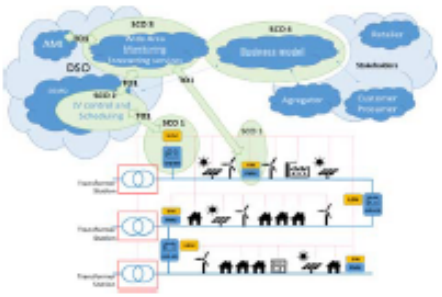


Figure 1 Mapping of scientific and technical objectives (light green) within the LV grid management.

- Design, develop and test a new PMUs and power electronic device to operate the LV grid and provide flexibility through the integration of storage devices (SCO1).
- Resilient and efficient operation of the LV grid, including optimal configuration based on demand and generation forecasting and providing self-healing capabilities (SCO2).
- Enhanced observability of LV grid with wide area monitoring capabilites and early detection of sudden variations in both demand and generation (SCO3).
- Propose and analyse potential and bariers of new business models (SCO4)

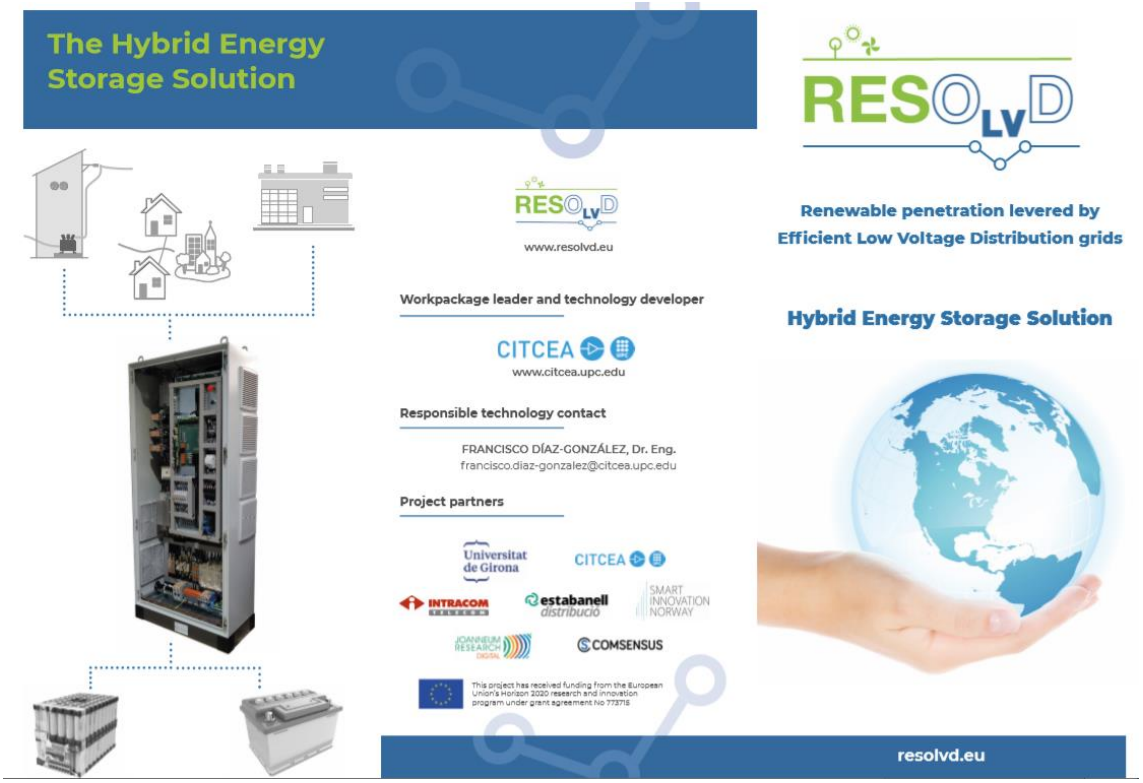
The proposal requires integration of software services and new grid infrastructure (PMUs, energy router, etc.) in a data analytics infrastructure, at the same time that assures interoperability with DSO legacy systems (i.e. AMI access, DEM, etc.) and adopts cybersecurity constraints adjusted to stakeholders' participation according to specific business models. Figure 2 presents a conceptual view of the integrated solution.

Methodology: RESOLVD has been conceived under the three layers research model (technology, marketplace, adoption) and it adopts the European conceptual Smart Grid Architecure Model (SGAM)

Figure 19: Project folder

2.2.3.Flyers

Three flyers were produced to outline the hybrid storage solution, sensor infrastructure, and network observability.



2.2.4. Marketing sheets

For all the technologies, which were developed in RESOLVD, marketing sheets were created with the aim to give an overview of the Key Exploitable Result. Table 4 lists these KERs which are also available via the website https://resolvd.eu/key-exploitable-results/. They've also been included as an annex in D6.5.

Power Electronics Device - CITCEA Power electronic solution that integrates multiple battery types and manages their dynamic energy and power flows.	
Phasor Measurement Unit (PMU) & Edge Computing - Comsensus A wide area monitoring solution that provides increased observability of the LV grid & has edge computing capabilities	
Smart Gateway - Comsensus Gateway to measure power quality in the buildings or charging areas and communicates to 3rd party	

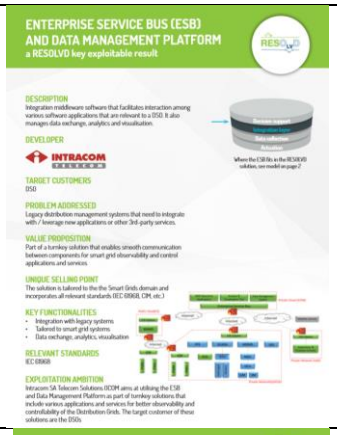
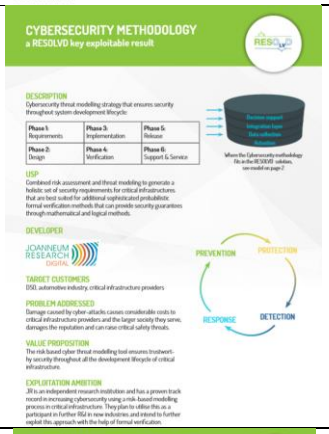
Enterprise Service Bus (ESB) and Data Management Platform - INTRACOM Integration middleware software that facilitates interaction among various software applications that are relevant to a DSO. It also manages data exchange, analytics and visualisation	
Cybersecurity Methodology - JR Cybersecurity threat modelling strategy that ensures security throughout system development lifecycle	
RESOLVD LV Decision Support Toolkit (LVD-DST) - UdG A suite of web services that provides enhanced energy monitoring and scheduling capabilities	

Table 4 Marketing sheets of the RESOLVD technologies

2.2.5.News Articles

Several articles were published via traditional press media and listed in the table below.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773715

Title	Date	Media/Link
La UdG coordina una recreca europea per utilitzar energia renovable a la xarxa elèctrica	22.10.2017	Diari de Girona
Recerca per facilitar la instal·lació de generació renovable a la xarxa elèctrica de baixa tensió	22.10.2017	UdG Press release
IEEE Smart Grids	15.10.2020	Granollers
La UdG participa en un pla per aprofitar l'excés d'energia de les plaques solars	18.02.2021	
Desenvolupen una tecnologia per aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.naciodigital.cat/osona/noticia/65376
Una tecnologia innovadora permetrà aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.udg.edu/ca/udg/detall-noticies/eventid/15119
La UdG coordina un proyecto para aprovechar el exceso de energía de las placas solares	18.02.2021	https://www.europapress.es/catalunya/noticia-udg-coordina-proyecto-aprovechar-exceso-energia-placas-solares-20210218115520.html

La UdG coordina un proyecto para aprovechar el exceso de energía de las placas solares	18.02.2021	https://www.noticiasde.es/catalunya/la-udg-coordina-un-proyecto-para-aprovechar-el-exceso-de-energia-de-las-placas-solares/
Desarrollan una tecnología para aprovechar el exceso de energía generado por las placas solares	18.02.2021	https://www.diarimes.com/es/noticias/actualidad/cataluna/2021/02/18/desenvolupen_una_tecnologia_per_aprofitar_exces_energia_generat_per_les_plaques_solars_98388_3029.html
Una nueva tecnología permite aprovechar el exceso de energía solar	18.02.2021	https://www.eldiario.es/economia/nueva-tecnologia-permite-aprovechar-exceso-energia-solar_1_7230810.html
Una nueva tecnología permite aprovechar el exceso de energía solar	18.02.2021	https://es.noticias.yahoo.com/tecnolog%C3%ADa-permite-aprovechar-exceso-energ%C3%ADa-113255243.html?guce_referrer=aHR0cHM6Ly9hY2Nlc28zNjAuYWNjZXNvLmNvbS8&guce_referrer_sig=AQAAAIQbRYXMPKjaPpbPrCH2yGMo5MLiV0bdMkDJDBQUxurVHROHVlJ7ITIS9kwyfzvVmNQl7S47pZm
La Universitat de Girona presenta un proyecto para aprovechar el exceso de energía de las placas solares	18.02.2021	https://www.ecoticias.com/energias-renovables/207893/Universitat-Girona-presenta-proyecto-aprovechar-exceso-energia-placas-solares
La UdG coordina un proyecto para aprovechar el exceso de energía de las placas solares	18.02.2021	http://www.gentedigital.es/girona/noticia/3072486/la-udg-coordina-un-proyecto-para-aprovechar-el-exceso-de-energia-de-las-placas-solares/
Una nueva tecnología permite aprovechar el exceso de energía solar	18.02.2021	https://www.cope.es/actualidad/economia/noticias/una-nueva-tecnologia-permite-aprovechar-exceso-energia-solar-20210218_1147329
La UdG coordina un proyecto para aprovechar el exceso de energía de las placas solares	18.02.2021	https://www.20minutos.es/noticia/4589125/0/la-udg-coordina-un-proyecto-para-aprovechar-el-exceso-de-energia-de-las-placas-solares/
Creen un dispositiu electrònic per aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.larepublica.cat/minut-a-minut/creen-un-dispositiu-electronic-per-aprofitar-lexces-denergia-generat-per-les-plaques-solars/
Desenvolupen una tecnologia innovadora per aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.upc.edu/ca/sala-de-premsa/noticies/desenvolupen-una-tecnologia-innovadora-per-aprofitar-exces-energia-generat-per-les-plaques-solars
Creen un dispositiu electrònic per aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.ccma.cat/324/creen-un-dispositiu-electronic-per-aprofitar-lexces-denergia-generat-per-les-plaques-solars/noticia/3078121/
Desenvolupen una tecnologia per aprofitar l'excés d'energia de les plaques solars	18.02.2021	https://www.diaridegirona.cat/girona/2021/02/18/desenvolupen-tecnologia-aprofitar-lexces-denergia/1089917.html?utm_source=rss
Desenvolupen una tecnologia per aprofitar l'excés d'energia generat per les plaques solars	18.02.2021	https://www.diarimes.com/noticies/actualitat/catalunya/2021/02/18/desenvolupen_una_tecnologia_per_aprofitar_exces_energia_generat_per_les_plaques_solars_98388_3029.html
Un projecte de recerca coordinat per la Universitat de Girona permet crear un nou dispositiu electrònic que aprofitarà	19.02.2021	https://www.girona.cat/gironafm/cat/noticies2.php?id=15728

l'energia sobrant dels panells fotovoltaics que alimenten les llars		
Una nueva tecnología permite aprovechar el exceso de energía solar	23.02.2021	https://www.elplural.com/leequid/ciencia/tecnologia-permite-aprovechar-exceso-energia-solar_260318102
Nueva tecnología para aprovechar el exceso de energía generada por las placas solares	23.02.2021	https://noticiasdelaciencia.com/art/41122/nueva-tecnologia-para-aprovechar-el-exceso-de-energia-generada-por-las-placas-solares
Un nuevo dispositivo electrónico permite aprovechar el exceso de energía de las placas solares	24.02.2021	https://energiasrenovadas.com/un-nuevo-dispositivo-electronico-permite-aprovechar-el-exceso-de-energia-de-las-placas-solares/
Creen a Girona un dispositiu per aprofitar l'excés d'energia generat per les plaques solars	24.02.2021	https://www.gerio.cat/noticia/1356153/creen-a-girona-un-dispositiu-per-aprofitar-lexces-denergia-generat-per-les-plaques-solars
El proyecto europeo RESOLVD desarrolla una tecnología para aprovechar el exceso de energía de los paneles fotovoltaicos	03.03.2021	https://www.smartgridsinfo.es/2021/03/03/proyecto-europeo-resolvd-desarrolla-tecnologia-aprovechar-exceso-energia-paneles-fotovoltaicos
Dalla Spagna un nuovo dispositivo per gestire l'energia in eccesso dagli impianti fotovoltaici	08.03.21	https://www.expoclima.net/focus/innovazioni/dalla_spagna_un_nuovo_dispositivo_per_gestire_l_energia_in_eccesso_dagli_impianti_fotovoltaici.htm
Tecnologia de la UdG per obtenir plaques solars més eficients	14.03.21	El Punt Avui (Ed. Girona)

Table 5: Press releases

2.3. Gatherings

This section contains the physical, face-to-face and virtual communication efforts, mainly in the form of meetings. Depending on the target audience, the meetings took on different forms.

Due to the COVID19 pandemic also the communication activities of RESOLVD have been affected. On the one hand, it had the consequence that we had to switch to virtual online events. On the other hand, the planned dates could no longer be met because EyPESA as DSO, which belongs to the critical infrastructure, had to adopt the measures given by the Government in order to best protect against the Covid19 pandemic.

2.3.1. Stakeholders Innovation Group

All consortium members suggested people for forming the Stakeholders Innovation Group. Based on this, the Stakeholder Innovation Group (SIG), with members from different partner countries, was founded. The Stakeholder Innovation Group currently comprises of 37 members from 11 countries. The distribution across the countries is shown in Figure 20.

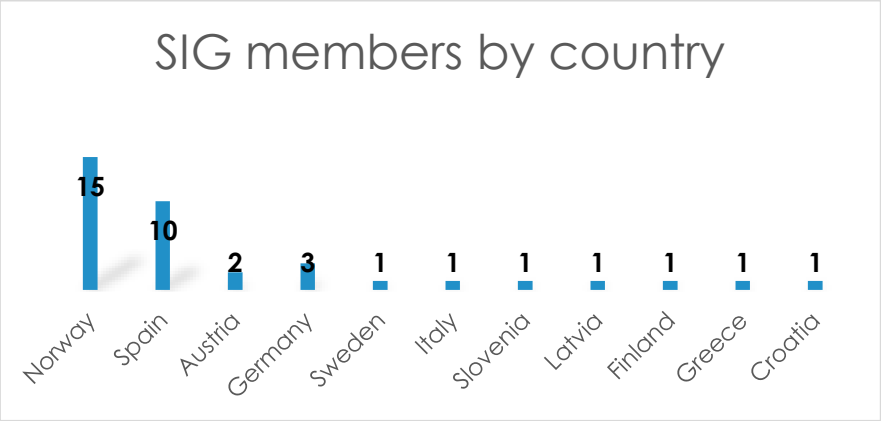


Figure 20: Number of SIG members by country

The business area in which the stakeholders operate is subdivided into the following areas:

- Association in the energy sector
- DSO
- Energy Community
- ESCO
- Innovation Company
- Legal
- Market Operator
- Oil & Gas & Renewables
- Research Institute
- Retailer
- Technology provider
- Technology provider (batteries)
- University
- Utility (Public)
- Utility (Vertical)

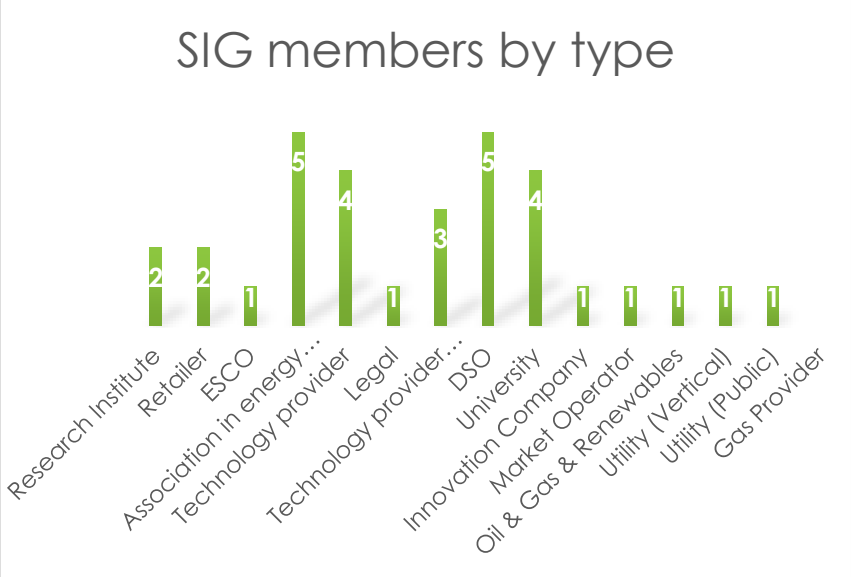


Figure 21: Number of SIG members by stakeholder business area

The official SIG kick-off webinar was held on 25.10.2018. All RESOLVD consortium members contributed to the webinar, and in total 11 SIG members participated in the webinar. Stakeholders represented various market actors and academic fields. This was the first time the consortium introduced RESOLVD solutions to the SIG. Their feedback was positive, and the solutions raised interest among stakeholders.

The second interaction with SIG was a survey aiming to collect more profound input from stakeholders related to the market potential of RESOLVD solutions. The most exciting finding was that the stakeholders are interested in understanding the DSO experience in implementing these technologies. Based on this result, our aim is to increase the number of DSOs in the SIG.

The third interaction with members of the Stakeholders Innovation Group was a workshop at the European Utility week in November 2019. This workshop targets DSOs, aggregators, utilities, and other energy sector industrial/business actors.

On June 10th 2020 the RESOLVD project held an e-demo day where the SIG members got an update about the current developments of the project by demonstrating next generation technologies to improve the efficiency and hosting capacity of distribution networks. The recording of live stream of the event can be accessed via the following link: https://youtu.be/t6Y2gR5x9jo

The fifth interaction was the second survey with the goal to get the SIG opinion on value propositions / capabilities offered by the solutions developed in the project.

On February 24th, at the final RESOLVD event, a workshop on developing real actions out of opportunities took place in the form of a closed event with SIG members and interested stakeholders.

2.3.2. Final Event

RESOLVD organized a two-day public closing event that was held in a digital format. To promote this event numerous advertise activities were carried out such us:

- Creating a landing page in the website
- Joint coordination UdG-UPC-EYPESA for high impact press releases at Catalan press media
- Interaction with PO to promote the event at INEA level
- Specific banners created for promotion of the event
- Specific newsletters
- Internal promotion at every partner institution

On the first day, the project partners presented the pilot site itself, the developed hardware and secured software components, as well as a demo. The presentation of an interesting policy white

paper at this area followed by a panel discussion with expert at that field concluded the first day. The agenda including the link to the live stream of this event can be found in Annex I.

On the second day, targeted stakeholders, which were interested on the outcome of RESOLVD could discuss directly collaboration opportunities with the consortium members. In three interactive break-out sessions matchmaking possibilities were discussed.

In total, there were 79 participants from 17 countries with a strong turnout from both industry and academia.

2.3.3.Fairs and Conferences

To further promote the project to a professional and a general audience, the project partners attended fairs and conferences, where they gave presentations on RESOLVD-related topics (or the project itself), and/or held a fair booth or stand where they informed about RESOLVD and/or utilized the material mentioned in section 2.2.

Type	Name of the conference	Date	Partner
Exhibition	UdG Polytechnic School Industrial Forum 2018, Girona	26/04/2018	UdG
Exhibition	UdG Polytechnic School Industrial Forum 2019, Girona	10/04/2019	UdG
Exhibition	Unint talent científic per afrontar els reptes industrials del territori, Figueres (Girona)	12/03/2019	UdG
Exhibition	UdG Polytehcnic School Industrial Forum 2020	06.06.2018	UdG
Conference	Presentation of RESOLVD at the ENERGYCON 2018 conference	13.06.2018	INTRA COM
Conference	RESOLVD presentation in Future conference RESOLVD project and stakeholder analysis were presented at the Futures Conference.	14.06.2018	SIN
Conference	Presentation of a RESOLVD paper "How advanced power electronics can accelerate the diffusion of energy storage" at the ENERGIZING FUTURES – Sustainable Development and Energy in Transition Conference	13.09.2018	SIN
Conference	Jornada de la Calidad de Onda (Day of Wave Quality)	13.11.2018	EPESA
Conference	Presentation of RESOLVD at the conference "Greening the Grid"	15.11.2018	EPESA
Conference	Invited presentation: Hybrid energy storage systems for renewable integration in rural grids	16.11.2018	UPC
Conference	Presentation of RESOLVD at the Energy Days 2018, Stationary battery storage	16.11.2018	JR
Conference	Hybrid energy storage systems for renewable integration in rural grids	12.12.2018	UPC
Conference	Meeting with the association ENTRA, an organization that works to include the concept of Energy aggregation in the Spanish regulatory system	09.05.2019	EPESA
Conference	Poster presentation at the Mission Innovation Austria Conference	05.06.2019	JR
Conference	Fault Detection with Principal Component Analysis in Power Distribution Networks with Distributed Generation, in III Conference of Doctoral Researchers of the University of Girona	04.03.2020	UdG
Conference	Presentation at India Smart Utility week	05.03.2020	SIN
Conference	Proyecto RESOLVD: Penetración de renovables apalancada por redes de baja tensión eficientes	10.06.2020	UdG
Conference	RESOLVD solution presentation to Indian DSOs	15.09.2020	SIN
Conference	RESOLvD: ICT services and energy storage for increasing renewable hosting capacity in LV distribution grids	22.09.2020	UPC
Conference	World Energy Storage Day: Presentation of strategies for storage technology operation in EU projects providing support for grid operators	22.01.2021	SIN
Conference	E-LAND H2020 project to Community by InnoEnergy	03.03.2021	SIN

Conference	Presentation of the RESOLVD project at the ETSEIB energy days	06.06.2018	UPC
Conference/ Workshop	Novel power electronics and used EV batteries in grid optimization (in the conference: INVADE Black Sea 2018 Workshop)	13/09/2018	UPC
Workshop	Energy Systems for the Norwegian grid	24.08.2018	SIN
Workshop	GridSol Workshop	25.09.2018	ICOM
Workshop/ Webinar	Kick-off Event with Stakeholders Innovation Group	25.10.2018	All
Workshop	OpenLV Meeting and the Future of Local Energy,	07.03.2019	UdG
Workshop	Hybrid energy storage systems for renewable integration in rural grids	01.04.2019	UPC
Workshop	WS grid optimization workshop	12.04.2019	UdG, UPC
Workshop	RESOLVD Workshop at the European Utility Week	13.11.2019	All
Workshop/ Pitch Event	RESOLVD e-Demo Day	10.06.2020	All
Workshop	Presentation in the Smart Charge Workshop hosted by the University in Tromsø and Lapland University of Applied Technology	21.10.2020	SIN
Workshop	Presentation of RESOLVD to local utilities and municipalities at a workshop for the Smart Narvik program	15.01.2021	SIN
Workshop	RESOLVD Workshop	24.02.2021	All
Clustering event	H2020 Smart Grids and Storage projects clustering workshop	02.10.2018	UdG, INTRA COM, EPESA
Clustering event by INEA	H2020 Smart Grids and Storage projects clustering workshop	3.10.2019	UdG, INTRA COM, EPESA
Clustering event	Catalan Energy Clustering representing Industry in Catalunya in the Energy sector	19.05.2020	UdG
Pitch Event	Energy Innovation Days (XRE4S)	10.10.2020	UdG

Table 6: Fairs and conferences visited

2.3.4. Other channels

RESOLVD has been included in some other European smart grid projects catalogs and brochures, such as Smart grid outlook JRC (Joint Research Center in Smart Electricity Systems and Interoperability, https://ses.jrc.ec.europa.eu/), or in INEA's 2019 publication "Supporting Innovative Solutions For Smart Grids And Storage" https://ec.europa.eu/inea/sites/inea/files/cefpub/h2020_sgs_brochure_2019-010.pdf.

3. Conclusions

At the beginning of the project, communication materials ranging from web design over print material to invitations, signs, and badges for stakeholder workshops, presentations, factsheet, posters and market sheets were created. Social media channels like the Web page, Twitter, LinkedIn, and YouTube were set up. During the project duration, online news and press releases were published regularly and, together with an appearance at different events and fairs, the project performed a suitable amount of communication activities and spread the project idea, and generated interest in the expected results.

The following table list amount of communication activities that have been carried out compared to the scheduled according to the communication planning and reflects the good performance of RESOLVD in that field.

KPI#	Activity	Details	Metric/Target (globally)	Status
1	Project web site	A project website was designed and implemented for RESOLVD, including project and partner information and public reports. Via this website, relevant news items are periodically published.	Webpage online 1 news article/month	**Done** **40**
2	Project's Social Media Channels	The project's social media channels (see Section 2.1.4) publish news updates on a regular basis.	1 news post/month	**tweets: 735**
3	Consortium Members' Corporate Online Media	Each project partner reports about its involvement in RESOLVD via its corporate online media channels, concretely website, and/or newsletter.	1 news article/half-year	**website: 24** **newsletter: 4** **retweets**
4	Events with Stakeholders	Annual meeting with the Stakeholders Innovation Group. Bilateral or multilateral meetings to show technological achievements and discuss the business potential of developed technology.	SIG: 2 meeting Bilat: 6 meeting	**4** **8**
8	Community Building	Promotion in the media and social networks community manager.	Twitter: 300 Followers. LinkedIn: 100 followers Youtube: 3 video posts 300 views	**298** **111** **18** **1152**
9	Fairs and Conferences visited	Along with scientific events, the partners attend non-scientific fairs and conferences. Accountable are events where one of the members either present or act as an	3 visited events /half-year.	**19**

		exhibitor. At these events, the partners distribute knowledge about RESOLVD either within their presentations or at their booths.		

Table 7: Amount of communication activities

Annex I: Agenda of the plenary session

Fehler! Verweisquelle konnte nicht gefunden werden. outlines the agenda of the first day and includes the link to the live stream of the event.

Time (CET)	Plenary session – Day 1	
9:00-9:10	Welcome (RESOLVD Innovation Manager: Heidi Tuiskula, Smart Innovation Norway)	
9:10-9:20	Introduction to the RESOLVD (RESOLVD Project Coordinator: Prof. Joaquim Meléndez, Universitat de Girona)	Link
9:20-9:40	Use cases and demonstration from the pilot (Joana Alsina Sánchez, EyPESA)	Link
9:40-09:50	Break: (10 mins)	
	Presentation of the RESOLVD results and achievements (12 + 3min Q&A)	
09:50-10:05	Power Electric Device (Francisco Diaz Gonzalez Universitat Politècnica de Catalunya)	Link
10:05-10:20	PMU & Edge Computing + Smart Gateway (Miha Smolnikar, Comsensus)	Link
10:20-10:35	Low Voltage Distribution Decision Support Toolkit (Prof. Joaquim Meléndez, Universitat de Girona)	Link
10:35-10:50	Cybersecurity (Heribert Vallant, Joanneum Research)	Link
10:50-11:05	Integration middleware & RESOLVD complete solution (Isidoros Kokos, Intracom Telecom)	Link
11:05-11:20	Policy white paper (Prof. Andreas Sumper, Universitat Politècnica de Catalunya)	Link
11:20-11:35	Break (10 mins)	
11:35-12:30	Panel discussion: Accommodating Renewables in the Low Voltage Grid (Moderated by Prof. Andreas Sumper, Universitat Politècnica de Catalunya) Panel: -Alicia Carrasco, CEO of Entra Association -Dimosthenis Ioannidis/ Apostolos Tsolakis, CERTH Greece, coordinator of H2020 Delta project (sister project for RESOLVD) -Efthymiou Venizelos (FOSS - SP3 coordinator) -Kari Mäki (VTT - SP2 coordinator) -Henrik Bindner (DTU, SP1 coordinator) -Per Gjerlow (Schneider Electric Norge) -Ignacio Cuerva (CEO of Grupo Cuerva)	Link
12:30-12:55	A call to arms: How do we build on RESOLVD? (Sanket Puranik & Heidi Tuiskula Smart Innovation Norway)	Link
12:55-13:00	Closing words, next steps (Heidi Tuiskula, Smart Innovation Norway)	

Table 8: Agenda Day1, RESOLVD achievements and opportunities