



DOMINOES – DELIVERABLE

D6.4 Dissemination Activity Report

Year 1

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Contributing Beneficiaries: ISEP, CNET, USE, UoL
Reviewer(s): ISEP, CNET, LUT

¹ **Nature:** R = Report, P = Prototype, D = Demonstrator, O = Other
Dissemination level PU = Public
PP = Restricted to other programme participants (including the Commission Services)
RE = Restricted to a group specified by the consortium (including the Commission Services)
CO = Confidential, only for members of the consortium (including the Commission Services)
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Version	Date	Description
1.0	24.10.2018	Initial version
1.1	03.11.2018	Updated with contributions
2.0	17.12.2018	Initial deliverable for review
3.0	21.12.2018	Final adjustments

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Executive Summary

This deliverable as part of task 6.1, includes the report for the first-year activities concerning the dissemination planned by the consortium members, as described in D6.3 – Dissemination Plan.

The report has inputs by the Work Package 6 partners. It contains: stakeholders and target groups, fulfilment indicators and progress indicators, detailed KPI lists with general promotion of the project, social media, traditional media promotion and communication of regular news and announcements, publication in scientific journals, special book chapters and participation to workshops and international conferences, organization of scientific events, conferences, workshops, thesis, and dissemination material.

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List of Acronyms

KPI	Key Performance Indicators
DER	Distributed Energy Resource
DR	Demand Response
DSO	Distribution System Operator
TSO	Transmission System Operator

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1 Introduction

This report is based on the dissemination plan (D6.3) guidelines with main goal is to promote a widespread dissemination of scientific and industrial results all along project life. The present activity report is concerning to the first year of the project (Y1). It considers the first 12 months, namely the period from 2017-10-01 to 2018-09-30. Based on the performance results for this period, it will be possible to understand and act towards the points outlined in D6.3.

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2 Stakeholders and target groups

According to D6.3, DOMINOES has identified relevant stakeholders who are required to be on board in order to ensure the success of the project:

- Society at large/ consumer organization/ private consumers
- Energy producers/ domestic producers/ Distributed Energy Resources (DERs)
- Energy aggregators
- Retailers
- Distribution System Operators (DSOs)/ Transmission System Operators (TSOs)
- Local authorities/ policy makers/ energy regulators
- Academia/ researchers/ students.

Table 1 reports on the contacts made with stakeholders.

Table 1 Contact with Stakeholders and target groups

Partner's Name	Name and type of the contact	Date	Location	Description (benefit of the meeting)
ISEP	Students	Several	ISEP, Porto	DOMONIES topics have been largely discussed with students during classes of Electricity Markets course.
CNET	EDP Comercial (retailer)	Several	Lisbon	Presentation of the project to EDP group's retailer and collect their feedback about Use Cases
Empower	Research, DSO, TSO, aggregator	22.8, 21.9.2018	Espoo, Finland	DOMINOES topics were discussed in the meetings of national research project "Smart Otaniemi" which is related to local markets

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3 Public Deliverables

Public deliverables are open-access documents, and they could be accessed for everyone at DOMINOES website. Documents available in this URL: <http://dominoesproject.eu/documents/deliverables/>.

The state of the deliverable is presented in the last column (Status), as published (“√”), not published (“x”), or not available (“N/A”).

Del.	Deliverable name	WP	Lead participant	Type	Level	Due	Status
D1.1	Local market reference architecture and business requirements	WP1	Empower	R	PU	M06	√
D1.2	ICT platform and connected energy network reference architecture design	WP1	VPS	R	PU	M09	√
D1.3	Use cases and application scenarios requirements	WP1	USE	R	PU	M09	√
D1.4	Implementation plan for the validation environment	WP1	CNET	R	PU	M18	N/A
D2.1	Enabling technology for transparent local p2p energy markets	WP2	USE	R	PU	M12	√
D2.2	Scalable local energy market architecture (first release)	WP2	Empower	R, OTHER	PU	M15	N/A
D2.3	Scalable local energy market architecture (second release)	WP2	Empower	R, OTHER	PU	M24	N/A
D2.4	Information exchange processes and solutions between local and centralized energy markets	WP2	LUT	R	PU	M24	N/A
D2.5	Tools for local energy market and end-user interaction	WP2	VPS	R, OTHER	PU	M24	N/A
D2.6	Design and implementation of a data security framework	WP2	UoL	R	PU	M22	N/A
D3.1	DR enabling services	WP3	ISEP	R, OTHER	PU	M28	N/A
D3.2	Report on DR modes of use from the DSO and energy provider perspective	WP3	CNET	R	PU	M30	N/A
D3.3	Report on DR at TSO and local levels	WP3	ISEP	R	PU	M30	N/A
D3.4	Services for customers based on smart metering	WP3	VPS	R, OTHER	PU	M34	N/A
D3.5	Report on aggregation based DR	WP3	Empower	R	PU	M36	N/A
D3.6	Anomaly detection and implementation	WP3	UoL	R	PU	M36	N/A
D4.1	Overview of the validation framework	WP4	Empower	R	PU	M24	N/A
D4.2	Secure data handling platform validation activities report	WP4	UoL	R	PU	M24	N/A
D4.3	Simulation results of the local market components and models	WP4	LUT	R	PU	M30	N/A

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D4.4	Distribution grid and microgrid validation activities report	WP4	EDPD	R	PU	M42	N/A
D4.5	Synthesis of the local market concept	WP4	LUT	R	PU	M42	N/A
D5.1	Formulation of alternative local market place enabled business models	WP5	ISEP	R	PU	M12	✓
D5.2	Integration scenario on wholesale, retail and ancillary energy markets	WP5	LUT	R	PU	M30	N/A
D5.3	Cost benefit analysis of the business models	WP5	CNET	R	PU	M36	N/A
D5.4	Roadmap to integrated energy market operation and management	WP5	Empower	R	PU	M40	N/A
D6.1	Project website online	WP6	ISEP	DEC	PU	M03	✓
D6.2	DOMINOES international Workshop	WP6	EDPD	DEC	PU	M42	N/A
D6.4	Dissemination Activity Report a) Year 1/ b) Year 2/ c) Year 3	WP6	ISEP	R	PU	M15/ M28/ M42	N/A
D6.6	Standardization proposals a) Year 1/ b) Year 2/ c) Year 3	WP6	LUT	R	PU	M15/ M28/ M42	N/A
D7.1	Project guidelines	WP7	Empower	R	PU	M02	✓
D7.2	Periodic report M01-M12	WP7	Empower	R	PU	M13	✓
D7.3	Periodic report M13-M24	WP7	Empower	R	PU	M25	N/A
D7.4	Periodic report M25-M36	WP7	Empower	R	PU	M37	N/A
D7.5	Final report M01-M42	WP7	Empower	R	PU	M43	N/A

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4 Key Performance Indicators (KPI)

The following two tables are related to KPI. The penultimate column (1st year accomplish) shows the actual accomplishment in the first year of the project. The last column (expected) is based on the 1st year target and 1st year accomplish, presenting the status of each indicator. Three status are possible: accomplished (“√”); not accomplished (“x”); or not available (“N/A”).

- Fulfilment indicators

KPI	Stakeholders addressed	1st year target	1st year accomplish	Status
Dissemination plan	All	1	1	√
Dissemination activity report	All	1	1	√
Project website	All	1	1	√
Project logo	All	1	1	√
Project Wordpress blog	All	1	1	√
Facebook project page	All	1	1	√
LinkedIn project page	All	1	1	√
Twitter project page	All	1	1	√
Reddit project page	All	1	1	√
Dedicated project YouTube channel	All	1	1	√

- Progress indicators

KPI	Stakeholders addressed	1st year target	1st year accomplish	Status
No. of unique visitors to the public web portal*	All	250	763* ²	√
No. articles in DOMINOES Blog	All	5	5	√
No. visits to DOMINOES Facebook page	Society at large/ consumer organization/ private consumers Academia/ researchers/ students	150	39	x
No. posts published in DOMINOES LinkedIn page	Academia/ researchers/ students Energy producers/ domestic producers/ DERS/Energy aggregators / Retailers	75	0	x
No. of tweets related to DOMINOES	Academia/ researchers/ students	75	9	x

² Website data presented from Google Analytics

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	Energy producers/ domestic producers/ DERS/Energy aggregators / Retailers			
No. of posts and replies to DOMINOES Reddit topics	All	75	0	×
No. visits to DOMINOES dedicated YouTube channel	All	150	0	×
No. traditional media (journals, radio, TV) communications and announcements	All	1		
No. press releases and press conferences	All	1		
No. submitted scientific journals	Academia/ researchers/ students Energy producers/ domestic producers/ DERS	1		
No. published scientific journals	All Academia/ researchers/ students Energy producers/ domestic producers/ DERS	0	1	✓
No. submitted industrial journals	Energy producers/ domestic producers/ DERS / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators	1		
No. published industrial journals	Energy producers/ domestic producers/ DERS/ Energy aggregators / Retailers / DSO/ TSO /Local authorities/ Policy Makers/ Energy Regulators	0		
No. conference papers written	Energy producers/ domestic producers/ DERS / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	3	3	✓
No. international conference papers published	Energy producers/ domestic producers/ DERS / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	1	2	✓
No. book contributions written	All Academia/ researchers/ students Energy producers/ domestic producers/ DERS	0	0	✓
No. participations in international conferences and workshops to promote DOMINOES	Energy producers/ domestic producers/ DERS /Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	1	1	✓
No. participations in industrial exhibitions, conferences & workshops to promote DOMINOES	Energy producers/ domestic producers/ DERS / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators	1	1	✓
No. technical schools organized	Academia/ researchers/ students Energy producers/ domestic producers/ DERS	-		

DOMINOES DISSEMINATION ACTIVITY REPORT YEAR 1

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No. participants in the technical school	Academia/ researchers/ students Energy producers/ domestic producers/ DERs	-		
No. training courses organized	Academia/ researchers/ students Energy producers/ domestic producers/ DERs	-		
No. participants in the training course	Academia/ researchers/ students Energy producers/ domestic producers/ DERs	-		
No. special sessions organized in relevant international conferences	Energy producers/ domestic producers/ DERs / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	-	1	
No. participants in the organized special sessions	Energy producers/ domestic producers/ DERs / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	-		
No. workshops organized at international level	Energy producers/ domestic producers/ DERs / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	1	1	✓
No. participants in the international workshop	Energy producers/ domestic producers/ DERs / Energy aggregators / Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators Academia/ researchers/ students	40		
No. representations in working groups	Retailers / DSO/ TSO / Local authorities/ Policy Makers/ Energy Regulators / Academia/ researchers/ students	1		

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5 Detailed KPI lists

The content of the following tables is sorted from the oldest to recent.

Blog Articles

Nº	Partner	Title	Event Date	Location
1	Empower	Photo of Kick-off	October 10, 2017	Espoo, Finland
2	EDP	General Assembly	June 27, 2018	Lisbon, Portugal
3	EDP, CNET	Transactive Energy Workshop	June 28, 2018	Lisbon, Portugal
4	EDP	Photo of General Assembly	June 27, 2018	Lisbon, Portugal
5	EDP, CNET	Photos of Transactive Energy Workshop	June 28, 2018	Lisbon, Portugal

Tweets (related to DOMINOES)

Nº	Partner	Title or description	Author	Date
1	USE	Introduction to the project	Rubén González	March 19, 2018
2	USE	Ambitions of the project	Rubén González	May 16, 2018
3	USE	RT to INESC TEC about SENSIBLE	Rubén González	May 17, 2018
4	USE	Participation in Transactive Energy Conference	Rubén González	June 8, 2018
5	USE	RT to Alexandre Neto about June GA	Rubén González	June 27, 2018
6	USE	RT Ricardo Jorge Santos: Transactive Energy Workshop	Rubén González	June 28, 2018
7	USE	RT Alexandre Neto: Transactive Energy Workshop	Rubén González	June 28, 2018
8	USE	RT Fernando Lezama: Transactive Energy Workshop	Rubén González	June 28, 2018
9	USE	RT Workshop at @IEEE_IS2018 sharing experience	Rubén González	September 27, 2018

Published scientific journals

Nº	Partner	Paper	Link/DOI
1	UoL	Y. Wang, R. Metere, H. Zhou, G. Cui, and T. Li, "Incentive-driven attacker for corrupting two-party protocols," <i>Soft Comput.</i> , pp. 1–8, 2018.	DOI: 10.1007/s00500-018-3342-3 https://link.springer.com/article/10.1007/s00500-018-3342-3

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Conference papers written

Nº	Partner	Paper	Conference
1	EDP, CNET	Submission of a Paper: Gisela Mendes, José Rui Ferreira, Susete Albuquerque, Célia Trocato, Olli Kilkki, Sirpa Repo, Alexandre Neto, “Pushing the transition towards transactive grids through local energy markets”	CIREC, 3-6 June 2019, Madrid, Spain
2	LUT	Submission of a paper: Salla Annala, Samuli Honkapuro, Ville Tikka, Gonçalo Mendes	CIREC, 3-6 June 2019, Madrid, Spain
3	Empower	Presentation at IEEE PES GM 2018: Jan Segerstam, Data-hubs as enablers for local energy markets	IEEE PES GM 2018 August 5-9, 2018

International conference papers published

Nº	Partner	Paper	Link/DOI
1	LUT, Empower	Gonçalo Mendes, Jere Nylund, Salla Annala, Samuli Honkapuro, Olli Kilkki, Jan Segerstam, “Local energy markets: opportunities, benefits and barriers”, CIREC Workshop 2018, Ljubljana, Slovenia, 7-8 June 2018	http://www.cired.net/publications/workshop2018/pdfs/Submission%200272%20-%20Paper%20(ID-21042).pdf
2	LUT, VPS	Salla Annala, Luisa Matos, Lurian Klein, Gonçalo Mendes, Samuli Honkapuro, “Comparison of opportunities and challenges in Demand Response pilots in Finland and Portugal”, EEM 2018 – 15th International Conference on the European Energy Market, Łódź, Poland, 27-29 June 2018	https://ieeexplore.ieee.org/document/8469894

Participations in international conferences and workshops

Nº	Partner	Title	Location	Event Date
1	ISEP, Empower	IEEE Power and Energy Society Summit 2018	Portland, Oregon, USA	August 5-9, 2018
2	LUT	14th International Microgrid Symposium	Bucharest, Romania	September 2-6, 2018
3	EDP, CNET	9th International conference on intelligent systems 2018	Funchal, Madeira Island	September 26-28, 2018

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Participations in industrial exhibitions, conferences & workshops

Nº	Partner	Title	Location	Event Date
1	VPS	“How can firms gain flexibility from smaller loads across the grid: Load aggregation in Europe“ at the 11th Edition European Electricity Flexibility and Ancillary Forum	Dublin, Ireland	September 24-26, 2018

Special sessions organized in relevant international conferences

Nº	Partner	Title	Nº of participants	Location	Event Date
1		Datahubs as Enablers for Local Energy Markets		Portland, Oregon, USA	August 8, 2018

Workshops organized at international level

Nº	Partner	Title	Nº of participants	Location	Event Date
1	EDP, CNET	Transactive Energy Workshop	95	Lisbon, Portugal	June 28, 2018

Theses

Nº	Partner	Thesis	Type	Link/DOI
1	LUT	Jere Nylund, „Local energy markets: Opportunities and challenges“, LUT, 2018.	Master’s thesis	http://urn.fi/URN:NBN:fi-fe2018080233304

Promotional material

Nº	Partner	Title / Description	Type	Date
1	EDP, CNET	Roll up (800*2000mm)	Exhibition	28-06-2018
2	Empower	Powerpoint “Datahubs as enablers for local energy markets”	Presentation	15-08-2018
3	LUT	Poster (Bucharest)	Printed material	02-09-2018
4	ISEP	Roll up (800x2000mm)	Exhibition	15-10-2018
5	ISEP	Flyer (99x210mm)	Printed material	25-10-2018
6	ISEP	Trifold (297x210mm)	Printed material	12-11-2018

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6 Conclusions

The main goal of this deliverable is to present dissemination and activities used to promote the DOMINOES project during year number one (Y1).

The D6.3, dissemination plan considers some performance indicators that should be reached. For the period of activities of Y1 (2017-10-01 to 2018-09-30), some indicators were not reached the predictions, mainly social media platforms. Analyzing the content in this document is noticeable that some of that had slow start, but most recent indicators are growing.

The objectives for Y2 (2018-10-01 to 2019-09-30) is to produce and introduce more content in communication tools established, such as, the website (and blog), social media platforms, and other activities in order to reach a larger audience and provide them continuously information making the project even more visible.

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References

Webpage: <http://dominoesproject.eu/>

Public Deliverables: <http://dominoesproject.eu/documents/deliverables/>

Publications: <http://dominoesproject.eu/documents/publications/>

Blog: <http://dominoesproject.eu/blog/>

LinkedIn: <https://www.linkedin.com/groups/13598734/>

Facebook: <https://www.facebook.com/ProjectDOMINOES/>

Twitter: <https://twitter.com/ProjectDOMINOES>

Youtube: <https://www.youtube.com/channel/UCVdT0reZr97RLx4DCSapbSg>

Reddit: <https://www.reddit.com/user/ProjectDOMINOES>

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APPENDIX I

Roll up

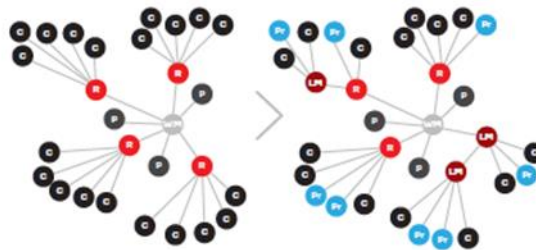
rd-new.com



SMART DISTRIBUTION GRID: A MARKET DRIVEN APPROACH FOR THE NEXT GENERATION OF ADVANCED OPERATION MODELS AND SERVICES

- Design a transparent local market concept
- Test ICT components that will enable local market concepts
- Develop balancing and demand response services for local markets
- Develop solutions for secure data handling
- Propose business models for local energy markets
- Three validation sites: two in Portugal and one in Finland.

TRADITIONAL CENTRALIZED APPROACH TO ENERGY MARKETS FUTURE DISTRIBUTED AND DYNAMIC APPROACH TO ENERGY MARKETS



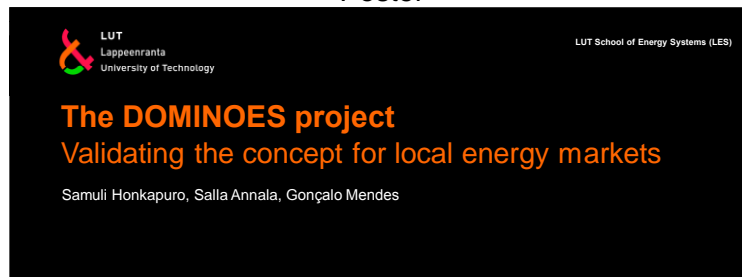
W/M = Wholesale market
LM = Local market R = Retailer P = Producer Pr = Prosumer
C = Consumer

consortium



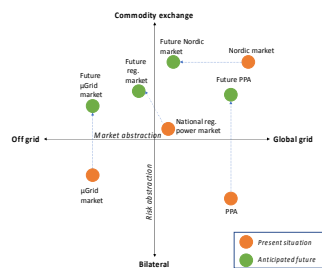
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Poster



LOCAL ENERGY MARKET TRENDS

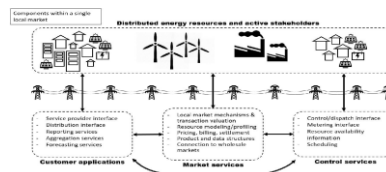
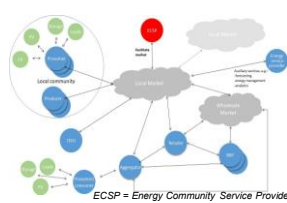
- We need to get from "current" (i.e. inexistent) microgrid market to a future microgrid market, where trade compatibility and system access guarantee liquidity.



DOMINOES PROJECT

- DOMINOES is a European Commission-funded research and innovation project (10/2017 – 3/2021) aiming at the development of a transparent architecture and related business models for local energy markets.
- The DOMINOES concept includes three main innovation areas (see fig. below) that together will establish the local market infrastructure:
 - Market services
 - Control services
 - Customer applications
- The concept will contribute to address specific challenges in the current EU energy ecosystem, by:
 - Enabling local sharing and optimization of renewable resources in MV and LV grids;
 - Creating relevant and liquid flexibility for innovative distribution management;
 - Empowering prosumers and demand response services provision.
- Solutions will be validated in real-life validation sites in Finland (LUT microgrid pilot environments) and Portugal (CNET and VPS demonstration sites).

LOCAL MARKET ARCHITECTURE



Project partners: Empower (Finland), ISEP (Portugal), University of Seville (Spain), University of Leicester (UK), EDP Centre for New Energy Technologies – CNET (Portugal), EDP Distribuição (Portugal), LUT (Finland), and VPS – Virtual Power Solutions (Portugal).

Logos of project partners: EMPOWER, ISEP, University of Seville, UNIVERSITY OF LEICESTER, edp distribuição, LUT Lappeenranta University of Technology, and VPS Virtual Power Solutions.

CONTACTS: Samuli HONKAPURO (samuli.honkapuro@lut.fi), Salla ANNALA (salla.annala@lut.fi), Gonçalo MENDES (gonçalo.mendes@lut.fi), dominoesproject.eu

Powerpoint presentation

Datahubs as enablers for local energy markets

Jan Segerstam

Development Director, Empower, Finland



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Roll up

dominoes
market driven distribution grid

Smart Distribution Grid
a Market Driven Approach for the Next Generation
of Advanced Operation Models and Services

Developing a transparent and scalable local energy market

New demand response, aggregation, grid management and peer-to-peer trading services

Energy markets will become distributed

Role of consumers & prosumers will increase

Markets have to transform from generation following to load following

Local sharing of energy becomes possible

EMPOWER, gecad, UNIVERSITY OF LEICESTER, edp distribuição, LUT University, NEW, VIPS, UFR

www.dominoesproject.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme agreement No 771066.

Flyer

dominoes
market driven distribution grid

The DOMINOES project is creating the local energy market structures of the future, enabling the use of local resources across different wholesale and retail markets in addition to local resource sharing. DOMINOES aims to enable the discovery and development of new demand response, aggregation, grid management and peer-to-peer trading services. The service enabling capabilities are achieved by designing, developing and validating a transparent and scalable local energy market structure.

DOMINOES will show how DSOs can in unison with functioning multi-level markets dynamically and actively manage grid balance in the emerging future where microgrids, ultra-distributed generation and energy independent communities will be prevalent. The value of local flexibility will rise based on the work done in the DOMINOES project because more venues for flexibility use will be available and resources will no longer have to be put on reserve if not used, unleashing them for use where most needed on a dynamic basis. All stakeholders will benefit and overinvestment in infrastructure can be avoided.

The project will deliver:

- a local energy market architecture with relevant enabling ICT components
- new local market business models for demand response and virtual power plant (VPP) operations
- tools and technology validation for demand response services
- services based on smart metering
- methods to utilize VPPs and microgrids as active balancing assets in distribution and transmission grids
- secure data handling procedures in local markets

These results will be validated at three validation sites in Portugal and Finland: a DSO environment in Évora (Portugal), a VPP site in Portugal and a microgrid site in Lappeenranta (Finland).

EMPOWER, isep, UNIVERSITY OF LEICESTER, edp distribuição, LUT University, NEW, VIPS, UFR

http://dominoesproject.eu info@dominoesproject.eu

Smart Distribution Grid:
a Market Driven Approach for the
Next Generation of Advanced
Operation Models and Services

This project has received funding from the European Union's Horizon 2020 research and innovation programme agreement No 771066.

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Trifold

Use Cases (UCs):

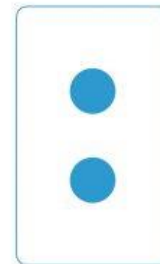
- UC1. Local market flexibility and energy distributed resources for optimal grid management
- UC2. Local energy market data hub manager and technical validator of market transactions
- UC3. Local community market with flexibility and energy asset management for energy community value
- UC4. Local community flexibility and energy asset management for retailer value
- UC5. Local community flexibility and energy asset management for wholesale and energy system market value

Business Models (BMs):

- BM1. Aggregation of small-scale flexible loads as a universal virtual power plant
- BM2. Aggregator flexibility provision to DSO for network management
- BM3. Using transactive energy for network congestion management
- BM4. Sharing the exceeding PV generation in the scope of energy communities
- BM5. Retailer as a user of the local market
- BM6. Energy service provider in enabling / assistive role for local markets and providing ECSP capability for retailers, communities or other service providers

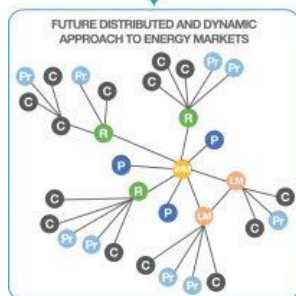
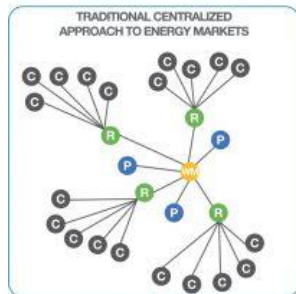


Smart Distribution Grid: a Market Driven Approach for the Next Generation of Advanced Operation Models and Services



Developing a transparent and scalable local energy market solution

New demand response, aggregation, grid management and peer-to-peer trading services



WM = Wholesale market
LM = Local market
R = Retailer
P = Producer
Pr = Prosumer
C = Consumer



Energy markets will become distributed

Role of consumers & prosumers will increase

Markets have to transform from generation following to load following

Local sharing of energy becomes possible

Objectives

- Design and develop a transparent local market concept
- Develop and demonstrate ICT components that will enable the local market concept
- Develop and demonstrate balancing and demand response services utilizing local markets
- Design and validate local market enable business models
- Analyze and develop solutions for secure data handling related to local market enabled transactions

Distributed energy resources and active stakeholders

