



Big Data for OPen innovation Energy Marketplace

Results

Project Information

BD4OPEM

Grant agreement ID: 872525

[Project website](#)

DOI

[10.3030/872525](https://doi.org/10.3030/872525)

Project closed

EC signature date

5 November 2019

Start date

1 January 2020

End date

30 November 2023

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INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)

Total cost

€ 9 865 590,00

EU contribution

€ 8 024 073,00

Coordinated by

UNIVERSITAT POLITECNICA DE CATALUNYA



Spain

CORDIS provides links to public deliverables and publications of HORIZON projects.

Links to deliverables and publications from FP7 projects, as well as links to some specific result types such as dataset and software, are dynamically retrieved from [OpenAIRE](#) .

Deliverables

[Documents, reports \(9\)](#)



[Pilot 3 - Turkish pilot description and results](#)

OEDAS, in cooperation with WEP, UPC, ODT, ATOS and ICOM will conduct the pilot on its distribution network. OADES will provide the deliverable D7.4 which will present the demonstration site for BD4OPEM in Turkey, the possible services considering the data available and feedback on the different implementations and their results.

[Pilot 4 - Belgium/Denmark pilot description and results](#)

VUB, in cooperation with WEP, UPC, ODT, ATOS, NUV, will implement and apply all services and tools developed previously in other WPs. The Task will result in Deliverable 7.5, which aims to give feedback and data on different testing scenarios and on the implementation of the pilot projects (results, risks, issues, etc) in Belgium and Denmark (VUB Hospital, NUV charging infrastructure).

[Pilot 2 - Slovenian pilot description and results](#)

ELCE, in cooperation with WEP, UPC, ODT, ATOS and JSI will conduct pilot testing in the Elektro Celje distribution area, covering household and small business consumers. The data obtained in the pilot as well as historical data will be employed in the development and validation of analytics services to support the use cases scenarios. The Deliverable 7.3 will provide feedback of the different testing scenarios.

[Dissemination and Communication report](#)

D8.5 Final report summarising the results of the DCP over the entire project, presenting lessons learned and solutions for the sustainability of project results.

[Dissemination and Communication plan](#)

NA

[Quality Management Plan \(QMP\)](#)

NA

[Pilot 1 - Spanish pilot description and results](#)

This document presents the Spanish pilot area, comprising the electrical grid of Granollers, the biggest municipality supplied by the DSO. The different sensors involved in the collection of data (such as RTUs, smart meters and DCUs) will be specified, as well as the types of data required from each device. The process of collection, validation, storage will be described, together with the creation of the interface between the legacy system and the analytics platform developed throughout the project, for the exchange of data. The document will also include the results of the validation tests of the pilot, through the indicators previously defined (in D7.6).

[Life cycle analysis report](#)

D9.3 will present the results from the life-cycle analysis of all solutions developed during the project in terms of environmental impact issues and costs (LCA and LCCA).

[Open innovation Project architecture description](#)

This deliverable will provide a description of the architecture of the entire System, including the definition of the models to be implemented, the involved business processes and services, a detailed structure in terms of subsystem components and their relationships with internal and external systems, as well as its own capabilities and restrictions.

Websites, patent filings, videos etc. (3)

[Project videos final release](#)

D8.4 will present either one collective or four individual videos of the four pilot sites in order to visualize the BD4OPEM solution and how it will work in practice.

[Website and social media strategy](#)

NA

[Project videos first release](#)

D8.3 will present the first project video designed to convey the Open Energy Market platform concept, and the way in which the project will apply the solutions in the four pilot sites.

Open Research Data Pilot (1)

[Data Management Policy \(DMP\)](#)

NA

Publications

Peer reviewed articles (4)

[Artificial intelligence techniques for enabling Big Data services in distribution networks: A review](#)

Author(s): Sara Barja-Martinez, Mònica Aragüés-Peñalba, Ingrid Munné-Collado, Pau Lloret-Gallego, Eduard Bullich-Massagué, Roberto Villafafila-Robles

Published in: Renewable and Sustainable Energy Reviews, Issue 150, 2021, Page(s) 111459, ISSN 1364-0321

Publisher: Elsevier BV

DOI: 10.1016/j.rser.2021.111459

[Behavior segmentation of electricity consumption patterns: A cluster analytical approach](#)

Author(s): Ramanpreet Kaur, Dušan Gabrijelčič

Published in: Knowledge-Based Systems, Issue 09507051, 2022, ISSN 0950-7051

Publisher: Elsevier BV

DOI: 10.1016/j.knosys.2022.109236

[Precise PMU-Based Localization and Classification of Short-Circuit Faults in Power Distribution Systems](#)

Author(s): Denis Sodin, Miha Smolnikar, Urban Rudež, Andrej Čampa

Published in: IEEE Transactions on Power Delivery, Issue Issue 5 Oct.-2023, 2023, Page(s) 3262 - 3273, ISSN 0885-8977

Publisher: Institute of Electrical and Electronics Engineers

DOI: 10.1109/tpwrd.2023.3268767

[Forecasting flexibility of charging of electric vehicles: Tree and cluster-based methods](#)

Author(s): Evgenii Genov, Cedric De Cauwer, Gilles Van Kriekinge, Thierry Coosemans, Maarten Messagie

Published in: Applied Energy, Issue Volume 353, Part A, 1 January 2024, 121969, 2024, ISSN 0306-2619

Publisher: Pergamon Press Ltd.

DOI: 10.1016/j.apenergy.2023.121969

Conference proceedings (7)

[Distribution network planning considering EV integration: case study in the northwest of Turkey](#)

Author(s): Antonio Saldaña-Gonzalez, Mónica Aragués-Peñalba, Andreas Sumper, Ibrahim Can-Tasta, Ibrahim GAZIOĞLU

Published in: CIRED 2022 Conference, 2022, ISBN 978-1-83953-705-9

Publisher: IEEE

DOI: 10.1049/icp.2022.0853

[Fault Detection In Photovoltaic Systems Using Machine Learning Algorithms: A Review](#)

Author(s): Ashvi Kumaradurai, Yuvaraja Teekaraman, Thierry Coosemans, Maarten Messagie

Published in: 2020 8th International Conference on Orange Technology (ICOT), 2020, Page(s) 1-5, ISBN 978-1-6654-1852-2

Publisher: IEEE

DOI: 10.1109/icot51877.2020.9468768

[Voltage Congestion Monitoring Through Machine Learning](#)

Author(s): Rémy Cleenwerck, Wouter Parys, Jan Desmet, Thierry Coosemans

Published in: 27th International Conference on Electricity Distribution (CIRED 2023), 2023

Publisher: 27th International Conference on Electricity Distribution (CIRED 2023)

DOI: 10.1049/icp.2023.0576

[Calculation of Aggregated Flexibility of EV Fleet: Case Study of Bornholm, Denmark](#)

Author(s): Rafaela Ribeiro, Massimiliano Garella, Eduard Büllich Massagué, Mónica Aragués-Peñalba

Published in: CIRED 2022 Conference, 2022, ISBN 978-1-83953-705-9

Publisher: IEEE

DOI: 10.1049/icp.2022.0848

[Smart Meter-Based Re-Phasing for Voltage Imbalance Enhancement Through Topology Reconstruction](#)

Author(s): Rémy Cleenwerck, Wouter Parys, Muhammad Andy Putratama, Jan Desmet, Thierry Coosemans

Published in: IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT Europe), 2023, ISBN 979-8-3503-9679-9

Publisher: IEEE

DOI: 10.1109/isgteurope56780.2023.10407679

[BD4OPEM H2020 project. The 4+1 View Model of Software Architecture for enabling AI-based services in distribution grids](#)

Author(s): L. Gallego; J. Valino; P. Lloret-Gallego; M. Aragues-Penalba; A. Gonzalez; L. Richaud; D. Gabrijelčič; A. Eytan; V. Gentile; I. Kokos

Published in: CIRED 2021 - The 26th International Conference and Exhibition on Electricity Distribution, 2021

Publisher: CIRED 2021

DOI: 10.1049/icp.2021.1531

[A Novel Home Energy Management System Environmental-based with LCA Minimization](#)

Author(s): Sara Barja-Martinez, Ingrid Munne-Collado, Pau Lloret-Gallego, Monica Aragues-Penalba, Roberto Villafafila-Robles

Published in: 2020 IEEE International Conference on Environment and

Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe), 2020, Page(s) 1-6, ISBN 978-1-7281-7455-6

Publisher: IEEE

DOI: 10.1109/eeeic/icpseurope49358.2020.9160619

Monographic books (1)

[Self-Adaptive Ageing Models for Optimal Management and Planning of Assets in Microgrids](#) 

Author(s): Coosemans, T., Parys, W., De Cauwer, C., Berecibar, M., Messagie, M.

Published in: Future Energy, Issue Green Energy and Technology, 2023, Page(s) 141–151

Publisher: Springer, Cham

DOI: 10.1007/978-3-031-33906-6_12

Other Research Products

Other Research Products via OpenAire (1)



[Deliverable D8.4 BD4OPEM Project Video](#) 

Author(s): Brandt, Daniel

Published in: Zenodo

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Permalink: <https://cordis.europa.eu/project/id/872525/results>

European Union, 2025