Optimal System-Mix Of flexibility Solutions for European electricity

Fact Sheet

Project Information

OSMOSE
Grant agreement ID: 773406

Funded under
SOCIETAL CHALLENGES - Secure, clean and efficient energy

Total cost
€ 27 252 680,56

EU contribution
€ 21 207 868,71

Coordinated by
RTE RESEAU DE TRANSPORT D'ELECTRICITE
France

Start date
1 January 2018

End date
30 April 2022

Objective

Six TSOs, eleven research partners, together with sixteen industry (manufacturers, solution providers) and market (producers, ESCo) players address, through a holistic approach, the identification and development of flexibilities required to enable the Energy Transition to high share of renewables. This approach captures synergies across needs and sources of flexibilities, such as multiple services from one source, or hybridizing sources, thus resulting in a cost-efficient power system. OSMOSE proposes four TSO-led demonstrations (RTE, REE, TERNA and ELES) aiming at increasing the techno-economic potential of a wide range of flexibility solutions and covering several applications, i.e.: synchronisation of large power systems by multiservice hybrid storage; multiple services provided by the coordinated control of different storage and FACTS devices; multiple services provided by grid devices,
large demand-response and RES generation coordinated in a smart management system; cross-border sharing of flexibility sources through a near real-time cross-border energy market.

The demonstrations are coordinated with and supported by simulation-based studies which aim (i) to forecast the economically optimal mix of flexibility solutions in long-term energy scenarios (2030 and 2050) and (ii) to build recommendations for improvements of the existing market mechanisms and regulatory frameworks, thus enabling the reliable and sustainable development of flexibility assets by market players in coordination with regulated players.

Interoperability and improved TSO/DSO interactions are addressed so as to ease the scaling up and replication of the flexibility solutions. A database is built for the sharing of real-life techno-economic performances of electrochemical storage devices. Activities are planned to prepare a strategy for the exploitation and dissemination of the project’s results, with specific messages for each category of stakeholders of the electricity system.

**Fields of science**

natural sciences › chemical sciences › electrochemistry › electric batteries

engineering and technology › electrical engineering, electronic engineering, information engineering › electronic engineering › control systems

engineering and technology › electrical engineering, electronic engineering, information engineering › electrical engineering › power engineering › electric power distribution

natural sciences › computer and information sciences › databases

natural sciences › physical sciences › classical mechanics › fluid mechanics › fluid dynamics

**Programme(s)**

H2020-EU.3.3. - SOCIETAL CHALLENGES - Secure, clean and efficient energy

H2020-EU.3.3.4. - A single, smart European electricity grid

**Topic(s)**

LCE-04-2017 - Demonstration of system integration with smart transmission grid and storage technologies with increasing share of renewables

**Call for proposal**

H2020-LCE-2016-2017
See other projects for this call

Sub call
H2020-LCE-2017-SGS

Funding Scheme
IA - Innovation action

Coordinator

RTÉ RESEAU DE TRANSPORT D’ELECTRICITE
Net EU contribution
€ 3 723 588,75

Address
Immeuble Window - 7c Place Du Dome
92073 Paris La Defense Cedex
France

Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 1 595 823,75

Participants (52)

RED ELECTRICA DE ESPANA S.A.U.
Spain
Net EU contribution
€ 256 452,88
Address
Paseo Del Conde De Los Gaitanes 177
28109 Alcobendas - Madrid

Region
Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 109 908,37

THIRD-PARTY

RED ELECTRICA Y DE TELECOMUNICACIONES INNOVACION Y TECNOLOGIA SA

Spain

Net EU contribution
€ 110 173,88

Address
Paseo Del Conde De Los Gaitanes 177
28109 Alcobendas

Region
Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 47 217,37

TERNA - RETE ELETTRICA NAZIONALE SPA
**Italy**

**Net EU contribution**

€ 387 953,13

**Address**

Viale Egidio Galbani 70
00156 Roma

**Region**

Centro (IT) > Lazio > Roma

**Activity type**

Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Links**

Contact the organisation [🔗]  
Website [🔗]  
Participation in EU R&I programmes [🔗]  
HORIZON collaboration network [🔗]

**Other funding**

€ 166 265,62

---

**TERNA RETE ITALIA SPA**

**Net EU contribution**

€ 357 754,25

**Address**

Viale Egidio Galbani 70
00156 Roma

**Region**

Centro (IT) > Lazio > Roma

**Activity type**

Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Links**

Contact the organisation [🔗]  
Participation in EU R&I programmes [🔗]  
HORIZON collaboration network [🔗]

**Other funding**

€ 153 323,25
REN - REDE ELECTRICA NACIONAL SA
Portugal
Net EU contribution
€ 283 500,00
Address
Avenida Estados Unidos Da America 55/12
1749 061 Lisboa
Region
Continente > Área Metropolitana de Lisboa > Área Metropolitana de Lisboa
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 121 500,00

ELES DOO SISTEMSKI OPERATER PRENOSNEGA ELEKTROENERGETSKEGA OMREZJA
Slovenia
Net EU contribution
€ 479 101,88
Address
Hajdrihova Ulica 2
1000 Ljubljana
Region
Slovenija > Zahodna Slovenija > Osrednjeslovenska
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 205 329,37
ELIA SYSTEM OPERATOR

Belgium

Net EU contribution

€ 356 212,50

Address

Boulevard De L’empereur 20
1000 Bruxelles

Region

Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest > Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation

Participation in EU R&I programmes

HORIZON collaboration network

Other funding

€ 152 662,50

---

THIRD-PARTY

ELIA ENGINEERING SA

Belgium

Net EU contribution

€ 109 375,00

Address

Boulevard De L’Empereur 20
1000 Bruxelles

Region

Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest > Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
EDISON SPA
Italy
Net EU contribution
€ 204 640,63
Address
Foro Buonaparte 31
20121 Milano
Region
Nord-Ovest > Lombardia > Milano
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network
Other funding
€ 87 703,12

HOLDING SLOVENSKE ELEKTRARNE DOO
Slovenia
Net EU contribution
€ 821 975,00
Address
Koprska Ulica 92
1000 Ljubljana
Region
Slovenija > Zahodna Slovenija > Osrednjeslovenska
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
HSE INVEST DRUZBA ZA INZENIRING INIZGRADNJO ENERGETSKIH OBJEKTOV DOO

Slovenia

Net EU contribution
€ 256 375,00

Address
Obrezna Ulica 170
2000 Maribor

Region
Slovenija > Vzhodna Slovenija > Podravska

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

SAFT

France

Net EU contribution
€ 1 496 333,52

Address
26 Quai Charles Pasqua
92300 Levallois Perret
GREEN POWER TECHNOLOGIES SL
Spain
Net EU contribution
€ 589 104,25
Address
Avenida Camas Pg Pibo 28
41110 Bollullos De La Mitacion Sevilla
SME
Yes
Region
Andalucía > Sevilla
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network
Other funding
€ 252 473,25

ABB SPA
Italy
Net EU contribution
€ 387 994,25
Address
Vi Vi Pi i 6
10 of 31
IBM ITALIA SPA
Italy
Net EU contribution
€ 432,468,75
Address
Circonvallazione Idroscalo Snc
20090 Segrate
Region
Nord-Ovest > Lombardia > Milano
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 185,343,75

EFACEC ENERGIA - MAQUINAS E EQUIPAMENTOS ELECTRICOS SA
Portugal
Net EU contribution
€ 263,790,63
ENEL GREEN POWER SPA

Italy

Net EU contribution
€ 248 281.25

Address
Viale Regina Margherita 125
00198 Roma

Region
Centro (IT) > Lazio > Roma

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 106 406,25

THIRD-PARTY
ENEL PRODUZIONE SPA

Italy

Net EU contribution
€ 172 659,38

Address
Viale Regina Margherita 125
00198 Roma

Region
Centro (IT) > Lazio > Roma

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 73 996,87

THIRD-PARTY
ENEL X ITALIA SRL

Italy

Net EU contribution
€ 91 831,25

Address
Via Flaminia 970
00189 Roma

Region
Centro (IT) > Lazio > Roma

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 39 356,25

COMPENDIA SRL

Italy
**Italy**

**Net EU contribution**
€ 170 909,38

**Address**
Via Tommaso Grossi 31
22066 Mariano Comense Co

**SME**
Yes

**Region**
Nord-Ovest > Lombardia > Como

**Activity type**
Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Links**
- Contact the organisation
- Participation in EU R&I programmes
- HORIZON collaboration network

**Other funding**
€ 73 246,87

---

**COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES**

**France**

**Net EU contribution**
€ 857 027,50

**Address**
Rue Leblanc 25
75015 Paris 15

**Region**
Ile-de-France > Ile-de-France > Paris

**Activity type**
Research Organisations

**Links**
- Contact the organisation
- Website
- Participation in EU R&I programmes
- HORIZON collaboration network

**Other funding**
€ 0,00
ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

Switzerland
Net EU contribution
€ 621 000,00
Address
Batiment Ce 3316 Station 1
1015 Lausanne
Region
Schweiz/Suisse/Svizzera > Région lémanique > Vaud
Activity type
Higher or Secondary Education Establishments
Links
Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network  
Other funding
€ 0,00

UNIVERSITE PARIS DAUPHINE

France
Net EU contribution
€ 428 860,00
Address
Place Du Marechal De Lattre De Tass Igny
75775 Paris Cedex 16
Region
Ile-de-France > Ile-de-France > Paris
Activity type
Higher or Secondary Education Establishments
Links
Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network  
Other funding
UNIVERSITAET DUISBURG-ESSEN

Germany

Net EU contribution

€ 950 006,25

Address

Universitätsstrasse 2
45141 Essen

Region

Nordrhein-Westfalen > Düsseldorf > Essen, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation  Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00

TECHNISCHE UNIVERSITAT BERLIN

Germany

Net EU contribution

€ 860 218,75

Address

Strasse Des 17 Juni 135
10623 Berlin

Region

Berlin > Berlin > Berlin

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation  Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00
RICERCA SUL SISTEMA ENERGETICO - RSE SPA

Address
Via Raffaele Rubattino 54
20134 Milano

Region
Nord-Ovest > Lombardia > Milano

Activity type
Research Organisations

Other funding
€ 0,00

CONSORZIO INTERUNIVERSITARIO NAZIONALE PER ENERGIA E SISTEMI ELETTRICI

Address
Via Marconi 10
03043 Cassino

Region
Centro (IT) > Lazio > Frosinone

Activity type
Research Organisations
UNIVERSITA DEGLI STUDI DI NAPOLI FEDERICO II

Italy

Net EU contribution
€ 35 000,00

Address
Corso Umberto I, 40
80138 Napoli

Region
Sud > Campania > Napoli

Activity type
Higher or Secondary Education Establishments

POLITECNICO DI BARI

Italy

Net EU contribution
€ 35 000,00

Address
Via Amendola 126 B
70126 Bari

Region
Sud > Puglia > Bari

Activity type
Higher or Secondary Education Establishments
UNIVERSITA DEGLI STUDI DI CAGLIARI

Italy

Net EU contribution

€ 131,250,00

Address

Via Universita 40
09124 Cagliari

Region

Isole > Sardegna > Cagliari

Activity type

Higher or Secondary Education Establishments

UNIVERSITA DEGLI STUDI DI PADOVA

Italy

Net EU contribution

€ 35,000,00

Address

Via 8 Febbraio 2
35122 Padova

Region

Nord-Est > Veneto > Padova

Activity type

Higher or Secondary Education Establishments
Higher or Secondary Education Establishments

UNIVERSITA DI PISA

Italy

Net EU contribution
€ 131 250,00

Address
Lungarno Pacinotti 43/44
56126 Pisa

Region
Centro (IT) > Toscana > Pisa

Activity type
Higher or Secondary Education Establishments

POLITECNICO DI TORINO

Italy

Net EU contribution
€ 43 750,00

Address
Corso Duca Degli Abruzzi 24
10129 Torino

Region
Nord-Ovest > Piemonte > Torino

Activity type
Higher or Secondary Education Establishments

LinkedIn
Contact the organisation Website
Participation in EU R&I programmes HORIZON collaboration network

Other funding

€ 0,00

THIRD-PARTY
UNIVERSITA DEGLI STUDI DEL SANNIO

Net EU contribution
€ 163 781,25

Address
Piazza Guerrazzi 1
82100 Benevento

Region
Sud > Campania > Benevento

Activity type
Higher or Secondary Education Establishments

LinkedIn
Contact the organisation Website
Participation in EU R&I programmes HORIZON collaboration network

Other funding

€ 0,00

THIRD-PARTY
POLITECNICO DI MILANO

Net EU contribution
€ 217 500,00

Address
Piazza Leonardo Da Vinci 32
20133 Milano

Region
Nord-Ovest > Lombardia > Milano

Activity type
Higher or Secondary Education Establishments

ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA

Italy

Net EU contribution
€ 78 750,00

Address
Via Zamboni 33
40126 Bologna

Region
Nord-Est > Emilia-Romagna > Bologna

Activity type
Higher or Secondary Education Establishments

Unversita Degli Studi Della Campania Luigi Vanvitelli

Italy

Net EU contribution
€ 35 000,00

Address
Viale Abramo Lincoln 5
81100 Caserta

Region
Sud > Campania > Caserta
THIRD-PARTY
UNIVERSITA DEGLI STUDI DI GENOVA
Italy
Net EU contribution
€ 52 500,00
Address
Via Balbi 5
16126 Genova
Region
Nord-Ovest > Liguria > Genova
Activity type
Higher or Secondary Education Establishments
Contacts
Website
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 0,00

UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA
Spain
Net EU contribution
€ 276 445,00
Address
C/ Juan De Quesada 30
35001 Las Palmas De Gran Canaria
Region
Canarias > Canarias > Gran Canaria

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation  Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

FUNDACION CENER
Spain
Net EU contribution
€ 904 218,75

Address
Avenida Ciudad De La Innovacion 7
31621 Sarriguren

Region
Noreste > Comunidad Foral de Navarra > Navarra

Activity type
Research Organisations

Links
Contact the organisation  Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

IT4POWER GMBH
Switzerland
Net EU contribution
€ 150 675,00

Address
Chollerstrasse 3
6300 Zug
SME Zug

Yes

Region
Schweiz/Suisse/Svizzera > Zentralschweiz > Zug

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 64 575,00

ELEKTROENERGETSKI KOORDINACIONI CENTAR DOO

Serbia

Net EU contribution
€ 964 748,75

Address
Vojvode Stepe 412
11040 Beograd

Region
Србија - север > Београдски регион > Београдска област

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 413 463,75

CENTRO DE INVESTIGACAO EM ENERGIA REN - STATE GRID SA

Portugal

Net EU contribution

Address

Region

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

ENGINEERING - INGEGNERIA INFORMATICA SPA

Net EU contribution
€ 581 831,25

Address
Piazzale Dell'agricoltura 24
00144 Roma

Region
Centro (IT) > Lazio > Roma

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 249 356,25

EDISON RINNOVARII SPA
EDISON RINNOVABILI SPA

Italy

Net EU contribution

€ 211 421,88

Address

Foro Buonaparte 31
20121 Milano

Region

Nord-Ovest > Lombardia > Milano

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 90 609,37

INGETEAM POWER TECHNOLOGY SA

Spain

Net EU contribution

€ 190 575,00

Address

Parque Tecnologico De Bizkaia Edificio 106
48170 Zamudio

Region

Noreste > Pais Vasco > Bizkaia

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 81 675,00
INGETEAM R&D EUROPE, S.L.
Spain
Net EU contribution
€ 109,375,00
Address
Parque Tecnologico Edificio 106 Zamudio
48170 Bizkaia
Region
Noreste > Pais Vasco > Bizkaia
Activity type
Research Organisations
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 46,875,00

HYDRO DOLOMITI ENERGIA SRL
Italy
Net EU contribution
€ 90,934,38
Address
Viale Trieste 43
38122 Trento
Region
Nord-Est > Provincia Autonoma di Trento > Trento
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 38,971,87
DOLOMITI ENERGIA TRADING SPA

Italy

Net EU contribution
€ 28 875,00

Address
Via Fersina 23
38123 Trento Tn

SME Yes

Region
Nord-Est > Provincia Autonoma di Trento > Trento

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 12 375,00

SCHNEIDER ELECTRIC FRANCE SAS

France

Net EU contribution
€ 104 103,13

Address
Rue Joseph Monier 35
92500 Rueil Malmaison

Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 44 615,62

THIRD-PARTY
SCHNEIDER ELECTRIC ESPANA SA
Spain
Net EU contribution
€ 4 921,88
Address
Bac De Roda 52 Edif A
08019 Barcelona
Region
Este > Cataluña > Barcelona
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network
Other funding
€ 2 109,37

FONDAZIONE BRUNO KESSLER
Italy
Net EU contribution
€ 126 781,25
Address
Via Santa Croce 77
38122 Trento
Region
Nord-Est > Provincia Autonoma di Trento > Trento
Activity type
Research Organisations
Links
Contact the organisation Website Participation in EU R&I programmes
Other funding

€ 0,00

EC signature date: 22 November 2017
Last update: 2 December 2022
Record number: 213922

Permalink: https://cordis.europa.eu/project/id/773406

© European Union, 2022