



ETIP SNET

**European Technology and Innovation Platform
Smart Networks for Energy Transition**

Parallel Session 4

**Consumer involvement, citizen
engagement and energy communities**



Consumer involvement, citizen engagement and energy communities

WELCOME AND INTRODUCTION	<ul style="list-style-type: none">- Ludwig Karg – <i>B.A.U.M. Consult</i>- Esther Hardi – <i>Energiecooperatie 2030</i>
99 SECOND PITCHES	<ul style="list-style-type: none">- Thierry Coosemans – VUB (<u>Renaissance project</u>);- Ole Langniss – OLI Systems GmbH (<u>C/sells project</u>)- Thijs Bouman – University of Groningen (<u>TOP-UP project</u>)- Thomas Walter – Easy Smart Grid GmbH (<u>SoLAR project</u>)- Stefan Wilker – Technische Universität Wien (<u>SONDER project</u>)
PANEL DISCUSSION	<ul style="list-style-type: none">- Ana Maria Sanchez Infante (DG ENER, European Commission)- Jan Roschek – GreenCom Networks (ETIP SNET WG4 member)- Thierry Coosemans – VUB (<u>Renaissance project</u>);- Ole Langniss – OLI Systems GmbH (<u>C/sells project</u>)- Thijs Bouman – University of Groningen (<u>TOP-UP project</u>)- Thomas Walter – Easy Smart Grid GmbH (<u>SoLAR project</u>)- Stefan Wilker – Technische Universität Wien (<u>SONDER project</u>)



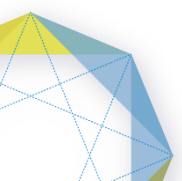
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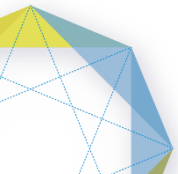
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***→ Parallel session 4:
Consumer
involvement, citizen
engagement and
energy communities***



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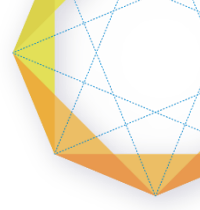
- *Which sector are you from?*
- *In which country is your company/organisation located?*
- *Which of the following research areas do you represent the most?*



99-second pitch

99 SECOND PITCHES

- **Thierry Coosemans** - VUB ([Renaissance project](#));
- **Ole Langniss** - OLI Systems GmbH ([C/sells project](#))
- **Thijs Bouman** - University of Groningen ([TOP-UP project](#))
- **Thomas Walter** - Easy Smart Grid GmbH ([SoLAR project](#))
- **Stefan Wilker** - Technische Universität Wien ([SONDER project](#))



RENAISSANCE PROJECT

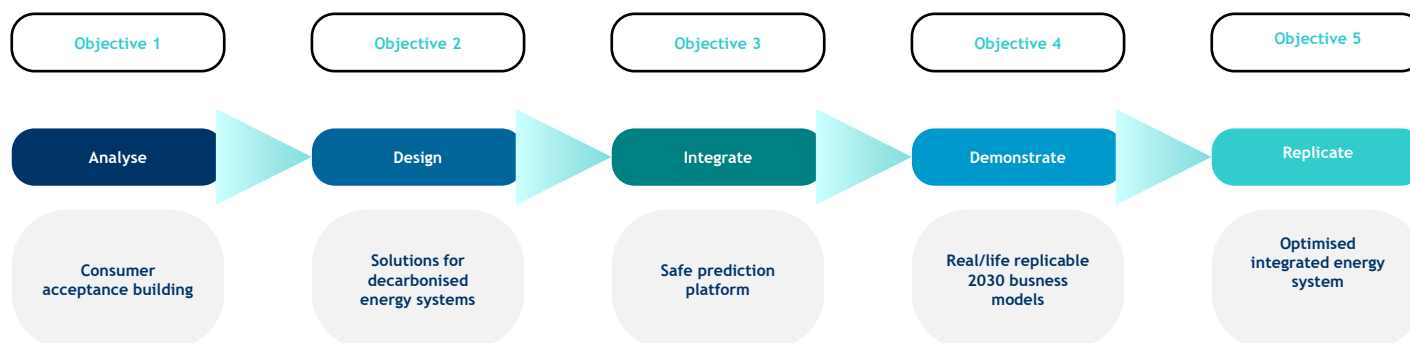
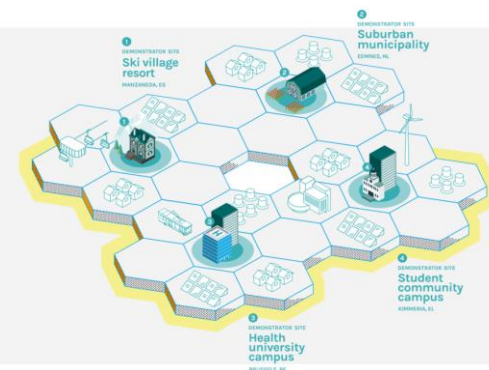
Thierry Coosemans - VUB

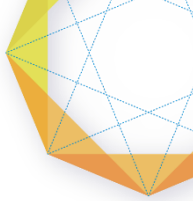
RENAISSANCE Renewable Integration & Sustainability in Energy Communities

Renaissance will deliver a community-driven scalable and replicable approach, to implement new business models and technologies supporting clean production and shared distribution of energy in local communities



In order to validate RENAISSANCE outcomes, their application will be demonstrated in real-life pilots in Belgium, Greece, Spain and The Netherlands.





RENAISSANCE Renewable Integration & Sustainability in Energy Communities

RENAISSANCE uses the MAMCA methodology:

- A participatory method to include and respect objectives of the local stakeholders to design, evaluate and optimize energy scenarios
- Energy Scenarios = different forms of Energy Communities/Business Models
- To engage and educate stakeholders to be part in this project/transition and ultimately increase acceptance and uptake of new solutions

RENAISSANCE survey on renewable energies and community-based solutions:

- People are ready to leave BAU towards innovative solutions, despite their low awareness of its complexity
- Informing and engaging since the design phases small groups of people, in order to later scale-up to the larger community, can be a strategic choice
- Expand the research about the decision-making processes and the related expectations of involvement by the citizens

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To which degree did the presented project emphasize involvement of consumers, customers or citizens?

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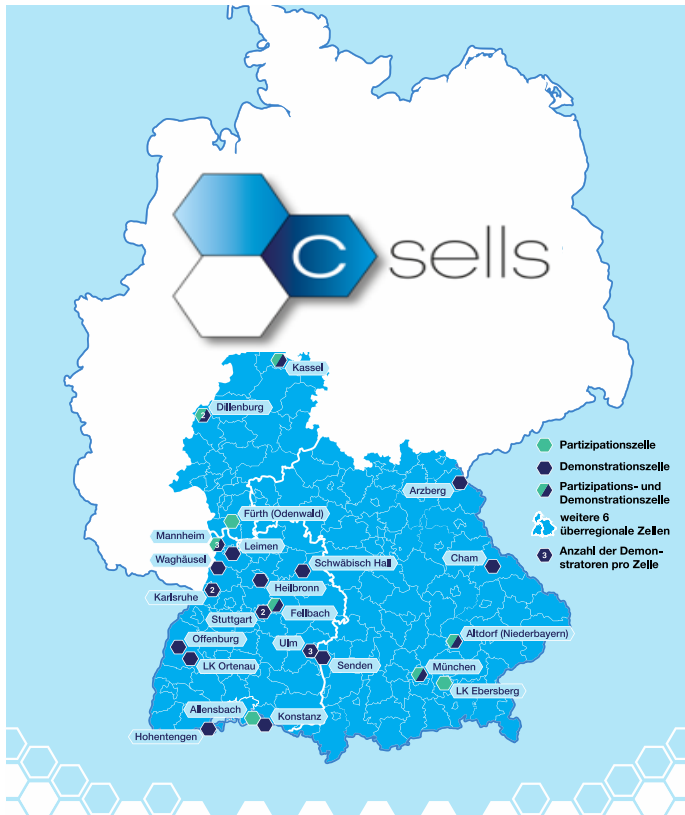
C/sells project

Ole Langniss - OLI Systems GmbH

C/sells – the Solar Arch in Southern Germany



Gefördert durch:
Bundesministerium
für Wirtschaft
und Energie
aufgrund eines Beschlusses
des Deutschen Bundestages



Facts

- 58 partners, 84 Mio €, 35 demonstrator cells, 1 million households involved and 30 Mio people affected
- Nuclear (30%) phase out (2022), industrial centres vs. rural, sunny regions

Objectives

- Energy Infrastructure organised in cellular form
 - Autonomous regional cells that interact at supra-regional level
 - Cloud-based infrastructure information system (IIS)
 - Regional(ized) markets for ancillary services

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Flexibility incentivized Smart Charging with customer interaction



EV user scans QR Code
at charging station



EV user indicates leaving
time and required power



After charging – benefits
indicated

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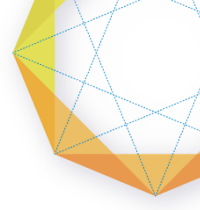


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TOP-UP project

Thijs Bouman - University of Groningen

Scientific partners:

- University of Groningen, Psychology,
- University of Groningen, Engineering,
- Danish Technical University, Mathematics,

Public and Private partners:

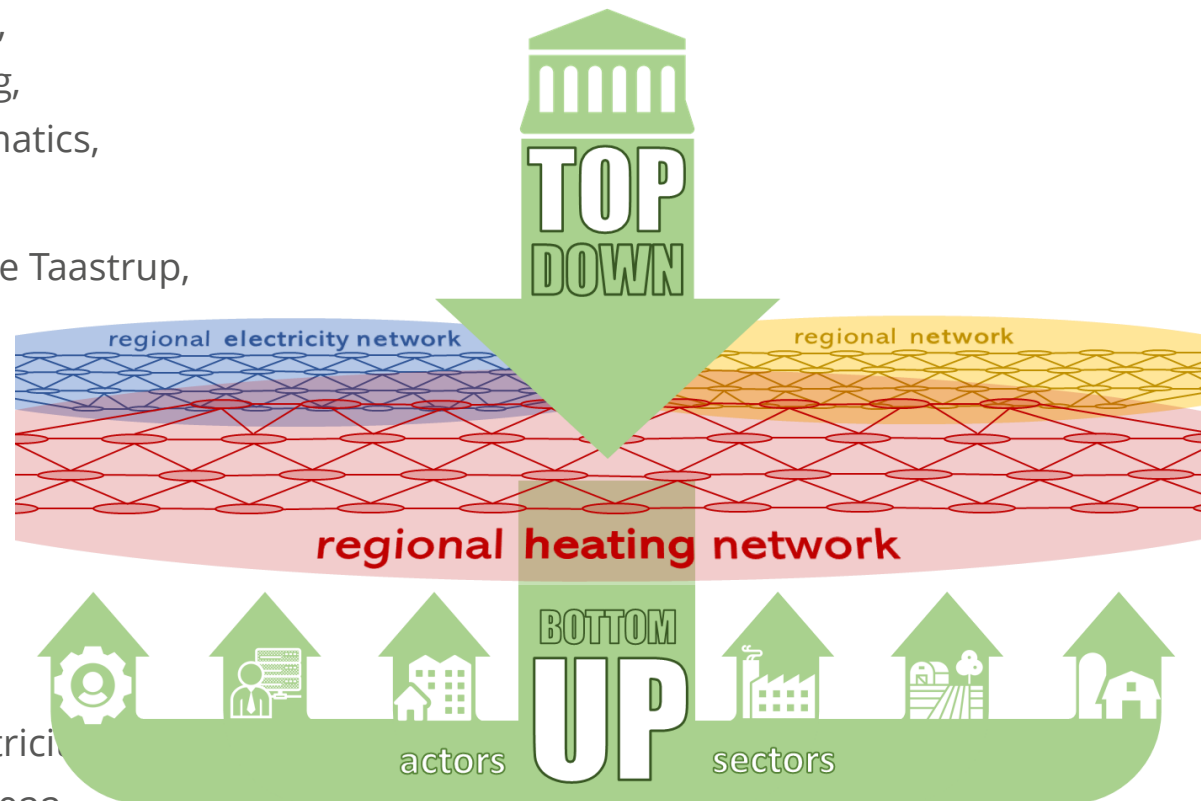
- Municipalities of Groningen and Høje Taastrup,
- Høje Taastrup District Heating,
- Power Chainger,
- Center Denmark
- Buurkracht

Size: 3 postdocs, 5 senior researchers

Energy carriers: mostly heat and electricity

Start date: Dec 2019, **End date:** Dec 2022

Budget: € 1,215,701





TOP-down energy projects as catalysts for bottom-UP local energy initiatives



- Measure, consider and appeal to the right motives
E.g., environmental, social, comfort and financial
- Consider (mis)perceptions people have about others, including:
 - Citizens/consumers
 - Project initiators
 - Energy companies
 - Governments
- People like to be “in control”, but not “the efforts”
- Top-down projects should facilitate – not frustrate - bottom-up action
- Consumer involvement needs to be studied from social, technical and physical perspective
 - What is needed?
 - What is wanted?
 - What is possible?
 - What is most efficacious?



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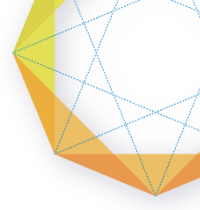


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SoLAR project

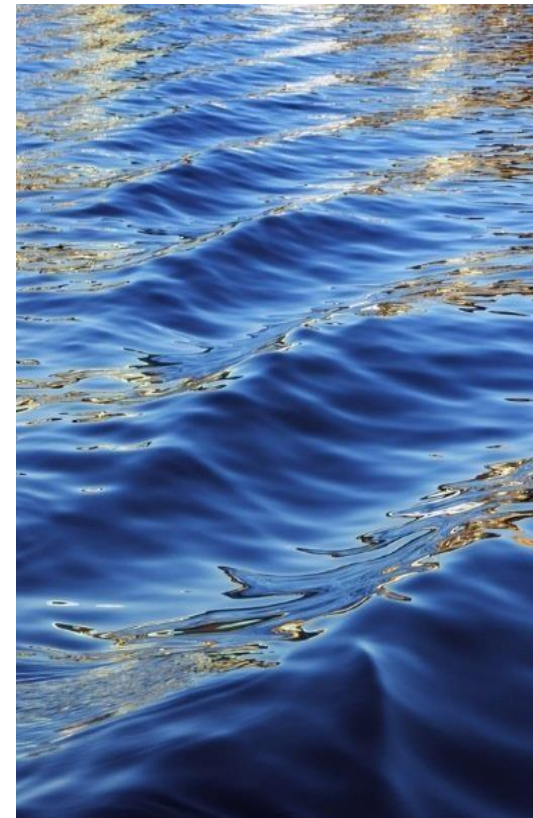
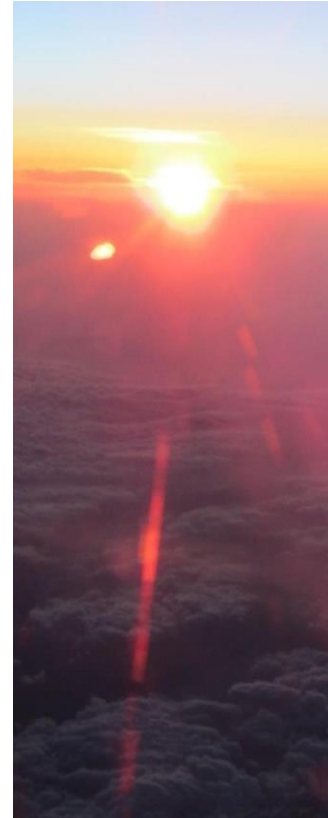
**Thomas Walter - Easy Smart
Grid GmbH**



Local Energy Markets: Efficient and simple management of LECs

Introduction @ ETIP SNET Workshop

Easy Smart Grid GmbH, Apr. 21, 2021
Dr.-Ing. Thomas Walter



Just another green residential development? Real time LEM coordinates ~100 flexibilities!



Project page: solarlago.de/solar-allensbach/

Project supported by:



Contract Partners:



Associated Partners:

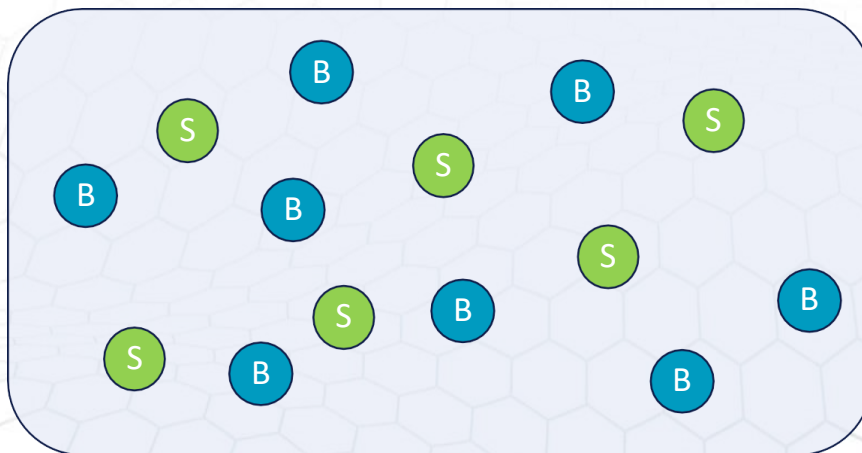


Supporting Partners:



Innovative: Market balance price established in Real Time and with a Single Measurement

Sellers and Buyers shift operation depending on dynamic price P



Export energy:

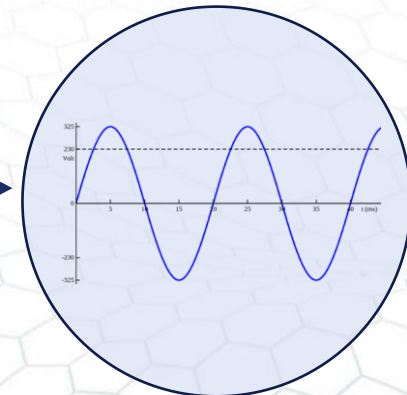
P_n too high



Import energy:

P_n too low

Frequency change
caused by imbalance:
f up if P_n too high,
f down if P_n too low



Balance Indicator (BI) derived from power (coupled LEC) or frequency (isolated LEC)

Note: Price derivation and reaction protected by patents for Easy Smart Grid GmbH

A vertical strip on the left side of the slide showing a sunset or sunrise over a layer of clouds, with the sun low on the horizon and its light reflecting on the clouds.

Thank you for your attention!

Dr.-Ing. Thomas Walter
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+49 171 229 4629



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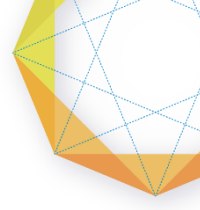


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SONDER project

**Stefan Wilker - Technische
Universität Wien**





Smart
Energy
Systems
ERA-Net

 **SONDER**

SONDER

**Service Optimization of
Novel Distributed Energy Regions**

SONDER - Project Information

- Project Leader: TU Wien  
- International Project Consortium: Austria, Sweden, Switzerland
- Call: ERA-Net SES Joint Call 2018 RegSys
- Timeframe: 01.09.2019 – 31.08.2022
- Budget: 2.273.424,75 €



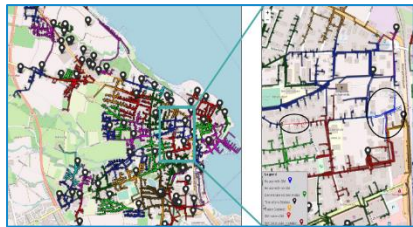


Diagram illustrating a circular economy model with three main components:

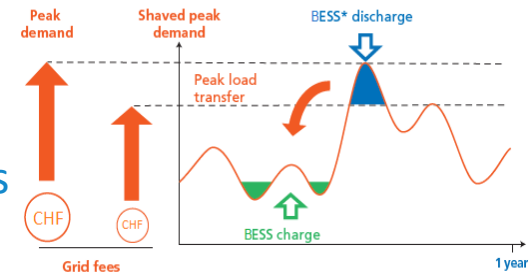
- Datacenter** (Top): Represented by a blue circle containing a database icon, associated with the flag of Sweden.
- City and DSO** (Bottom Left): Represented by a blue circle containing a city building icon, associated with the flag of Switzerland.
- REC with commercial and industrial members** (Bottom Right): Represented by a blue circle containing a factory icon, associated with the flag of Austria.

Arrows indicate a clockwise flow between the components, suggesting a continuous cycle of energy or resource exchange.

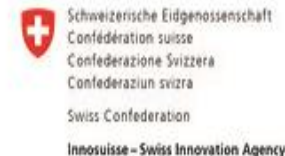
The diagram illustrates the Community Management Framework. At the center is a box labeled "Community Management". Surrounding it are several external entities: DER Aggregator, Energy Supplier, Res. Energy Broker, DSO Grid Control, Regional Regulations, Meteorologic Service, Regional Calendar, Member Behaviour, and Cooperation Policy. At the bottom, there is a "customer EMS" box, which is connected to a dashed oval labeled "asset configuration & utilisation" and a box labeled "private energy appliances".

Interactions are indicated by arrows with numbers:

- External entities (DER Aggregator, Energy Supplier, Res. Energy Broker, DSO Grid Control, Regional Regulations, Meteorologic Service, Regional Calendar) have arrows with the number "1" pointing towards "Community Management".
- "Community Management" has an arrow with the number "3" pointing to "Member Behaviour".
- "Member Behaviour" has an arrow with the number "4" pointing to "customer EMS".
- "customer EMS" has an arrow with the number "6" pointing to "Community Management".
- "Community Management" has an arrow with the number "8" pointing to "Cooperation Policy".
- "Cooperation Policy" has an arrow with the number "9" pointing to "customer EMS".



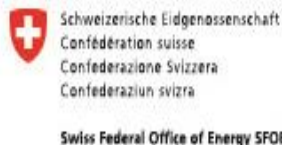
21/04/2021



ADEME



Agence de l'Environnement et de la Maîtrise de l'Energie



Smart Energy Systems ERA-Net

Funding Partners



This initiative has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements no. 646039 and no. 775970.

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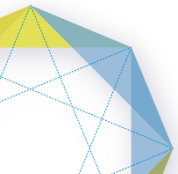


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Panel discussuion

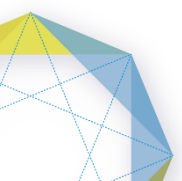
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Questions for the panellists

Question

- 1) What drives consumers to behave like good citizens? (energy efficiency, flexibility in consumption etc.)
- 2) What motivates consumers to become prosumers? (incentives to trigger self-supply, storage, etc.)
- 3) How can collective actions, energy islands and/or energy communities motivate to actively participate in the energy system and/or market?
- 4) How does / did project combine technical, economic and social research?



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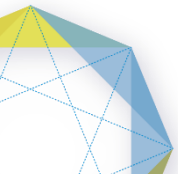


Except money – what drives people to actively promote energy transition?

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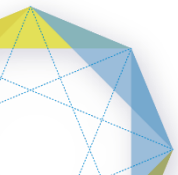
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Which concepts will be most valuable to motivate society for the support of energy transition (tick up to 3)?

- *microgrids*
- *virtual power plants*
- *energy positive districts*
- *renewable energy communities*
- *citizen energy communities*
- *other collective actions*



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*Express in one or two words
the main gap in your
country RDI agenda related
to consumer involvement,
citizen engagement and
energy communities?*

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