Prosumers for the Energy Union

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The importance of NECPs for the development of prosumer initiatives in the EU

11 June 2019

Webinar organised by the PROSEU project in cooperation with the Community Power Coalition

COMMUNITY POWER

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PROSEU – Prosumers for the Energy Union

Mainstreaming the active participation of citizens in the energy transition

FCiências.ID Associação para a Investigação e Desenvolvimento de Ciências

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drift for transition

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FSB University of Zagreb Faculty of Mechanical Engineering and Naval Architecture

Leuphana University of Lüneburg

CE Delft Committed to the Environment

U.PORTO FEUP Faculdade de Engenharia Universidade do Porto

eco-union

11 partners, 9 countries, 3/2018-2/2021, www.proseu.eu

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Agenda

Time	Item	Presenter
14:00	Welcome and introduction (*Brief introduction of the PROSEU project, objectives of the webinar)*	Kristian Petrick, eco-union
14:05	Introduction to NECPs for prosumers and energy communities (*Legislative framework, self-consumers and energy communities in the NECP template, NECPs timeline, involvement of the public)*	Marta Toporek, ClientEarth
14:20	Provisions related to energy communities in all NECPs *(Analysis of the draft NECPs of all the EU member states, findings and recommendations.)*	Josh Roberts, REScoop ; Claire Gauthier, European University Viadrina
14:35	Prosumers and energy communities in draft NECPs of nine PROSEU countries (Belgium, Croatia, France, Germany, Italy, the Netherlands, Portugal, Spain, UK) (*Comparison of the nine draft NECPs, recommendations for policy makers and prosumer advocates)*	Kristian Petrick, eco-union
14:50	What now? - The NECP policy processes *(Ongoing and future NECP policy processes (EU and national level); Influencing opportunities)*	Esther Bollendorff, Friends of the Earth Europe/Community Power Coalition
15:05	Example of other analysis of draft NECPs	Veerle Dossche, CAN Europe
15:10	Q&A	
15:25	Closing remarks	Marta Toporek, Kristian Petrick
15:30	End of webinar	

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Assessment of 9 NECPs and recommendations

Kristian Petrick
eco-union (Barcelona)

Webinar 11 June 2019

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Agenda

- NECP analysis
  - Results
  - Examples of targets
- Recommendations
  - For targets
  - For measures

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NECP review - methodology

- Self-consumption
  - How often does the term "self-consumption", "self-consumer(s)" or "self-generation" occur?
  - Is there are special section on self-consumption?
  - Is self-consumption mentioned under objectives and targets?
  - Are there concrete policies and/or measures on self-consumption mentioned?
  - Are there concrete targets on self-consumption mentioned? How are they defined?
- Energy communities
  - How often does the term "energy community" occur?
  - Is there are special section on energy communities?
  - Are there concrete measures on energy communities?
  - Are there concrete targets on energy communities?
  - Are there provisions that somewhat imply that self-consumption or energy communities should be "deployed carefully" or that would restrict them?
- Overall assessment: What is good? What is weak? High level evaluation

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Overall none of the 9 countries is covering prosumerism well

BE	DE	ES	FR	HR	IT	NL	PT	UK
Very little on self-consumption and energy communities; no objectives and no measures	Self-consumption acknowledged but no new or additional measures to what is there, no targets. Current "Landlord-to-Tenant Electricity Act" is described in more detail ; but no other mentioning on energy communities.	Self-consumption are quite prominently discussed in the NECP, energy communities also in that context but not in detail. Reference to new laws for sharing energy	Special section available on self-consumption; but energy communities not discussed in detail	No self-consumption and communities in the RES objectives; measures - little and vague	Self-consumption measures described, targets missing though. Energy communities only in conjunction with self-consumption. Reference to results of pending study.	Relatively weak as little included there	Self-consumption and energy communities mentioned very little and high level only	UK overall does not put targets nor concrete measures, rather backwards looking. Scottish and Welsh governments have set concrete targets.

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Terms like “self-consumption” or energy communities” are used between 50 times and not at all

BE	DE	ES	FR	HR	IT	NL	PT	UK
How often does the term "self-consumption", "self-consumer(s)" or "self-generation" occur?								
2 (both in titles)	9 times, basically all in the same paragraph (p. 57 in translated version)	50 times ("autoconsumo"). Mentioned also in context to fight energy poverty and energy communities.	51 times ("autoconsommation")	0 (term used: 'own production' (2))	42 (incl.titles) - self-consumtion:32, self-consumer:2, self-generation: 8	6 = 2 (self-consumption, incl. 1 in title) + 4 (self-generation, incl. 1 in title); In addition: microgeneration (once), small consumers (	2 (Self-consumer - once in a footnote; self-generation - once but as a question, not an answer).	once (self-generation)
How often does the term "energy community“(or similar) occur?								
3 (incl. 2 in titles)	2 times but only in headers, no mentioning of any measures. "Cooperative" and "association" are used in one section	11 times (comunidades energéticas) and 5 times (autoconsumo compartido)	"Collectivité": 45 times, not all related to energy communities though. Autoconsommation collective: 2 times	3	19 times	3 (in addition, also used a term 'enegy cooperatives')	2 (in addition, smart communities (under the SET Plan mentioned twice too)	2 times

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Only France, Scotland and Wales have targets

BE	DE	ES	FR	HR	IT	NL	PT	UK
Are there concrete targets on self-consumption mentioned? How are they described / defined?								
No	No	No	65,000 to 100,000 PV self-consumption sites by 2023. Maintain objective of 3050 MW annually installed on small and medium sized roofs (< 100 kWp)	no	no	No	No	No, only:"In 2018 the Welsh Government published a call for evidence to inform the approach to delivering the 1GW local energy target"
Are there concrete targets on energy communities?								
No	no	No	No	No	No but there might be one in the future based on a study financed by the Commission's Structural Reform Support Service (SRSS)	No. The final NECP is to be looked at though as it is announced that it will include things not included in the draft (e.g. 50% local ownership of all new onshore wind and solar projects)	No	Scotland only: o achieve 1GW of community and locally owned RE by 2020, and 2GW by 2030. Wales: 1GW by 2030 and an expectation that new renewable energy projects from 2020 have an element of local ownership.

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Ambition levels of targets need to be critically evaluated

France:

- 65-100,000 PV self-consumption sites by 2023
  - Currently some 30,000 -> 35-75,000 new ones -> 10-20,000 sites/year.
- 3,050 MW annually installed on small and medium sized roofs (< 100 kWp)
  - At 50 kW average -> 61,000 sites/year -> not consistent with the other target!
  - Not clear until when this annual target will count

Scotland:

- 1 GW of community and locally owned renewables by 2020, and 2 GW of community and locally owned renewables by 2030
  - 100 MW/year -> not very ambitious

Greece:

- 1 GW of energy community energy in 2020 plus another 500 MW by 2030
  - makes just 8% of 17.7 GW of RE planned in 2030
  - 50 MW/year -> not very ambitious (equals just 15 wind turbines, or 50 large rooftops)

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Agenda

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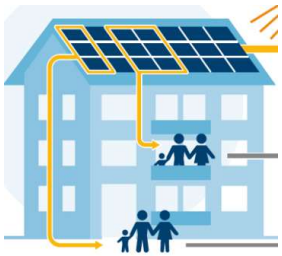
There should be at least two capacity targets

Rooftop PV target



Energy Community RE target

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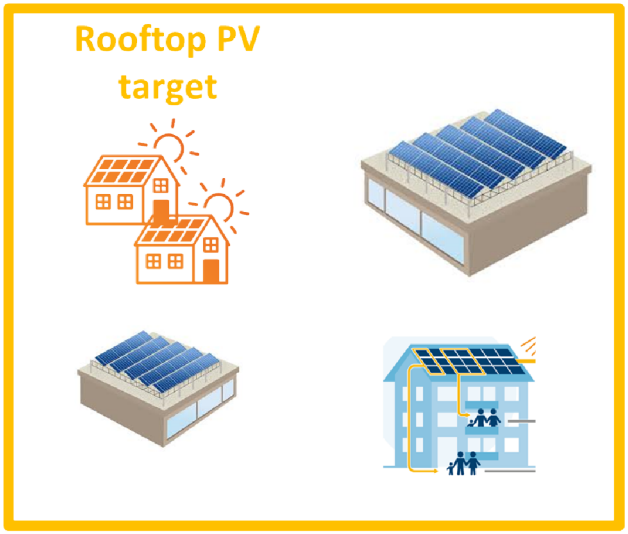
Rooftop PV capacity target: Closest to the citizens

- Basically all rooftop PV projects will be also used for self-consumption
- Shows (more or less by default) involvement of citizens as active energy users
- Making maximum use of built environment is key for a sustainable energy system



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Rooftop PV capacity target: Rooftop potential to be used as benchmark for ambitious targets

Conservative values, preliminary data	EU	Germany	France	Greece	Spain
PV rooftop potential [GWh]. Source: JRC 2017	680.276	104.313	125.580	17.090	65.244
Full load hours (assumed)	1.000	900	1.100	1.200	1.200
PV rooftop potential [GW]	**680**	**116**	**114**	**14**	**54**
kW/capita (calculated)	1,3	1,4	1,7	1,3	1,2
Minimum 50% target for 2030 [GW]	**340**	**58**	**57**	**7**	**27**

50% of potential should be the minimum target by 2030.
Alternatively: 1 kW rooftop PV / capita

Take current situation into consideration:

- Germany: 42 GW PV installed, 1.5 Mio. households
- France: 7,6 GW PV, 30,000 households.

Source for PV rooftop potential: EU JRC 2017 (http://www.europeanenergyinnovation.eu/Articles/Autumn-2018/Rooftop-PV-and-self-consumption-of-electricity-in-Europe), the potential may be as high as 1200 TWh for the EU

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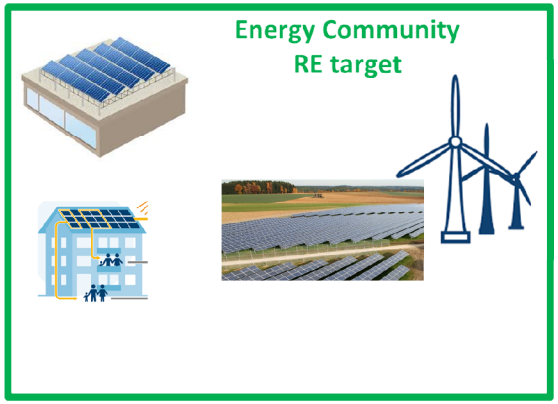
Targets for energy communities

- Energy communities can cover all RE technologies including large installations
- Capacity target can be share of total national RE target
  - E.g. 50% of projects and/or capacity require citizen participation
- Non-capacity targets also required (because energy communities can do more than RES-E)
  - Number of energy communities
  - Number of members in energy communities
    - Currently 1,500 European energy cooperatives with 1 Mio citizens -> 0.2% of EU population
- We ask for your input on a reasonable targets



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Recommendations on measures

- Maximize renewable capacity in the built environment
  - Make full use of the roofs
- No restrictions on excess generation, especially in cities!
  - Ideally incentives to pay a decent amount for excess generation (beyond wholesale price)
  - Or very easy process to share excess energy with others
- Concrete measures on how to promote prosumers
  - Clearly describe planned laws and regulation, incentives, tax exemptions, process facilitation, etc.
  - Measures for energy-poor and marginalized households, tenants
  - Distinct measures for different types of energy communities: within the same building, within local area, investment communities, etc.
  - Clear definitions and monitoring

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Conclusions

- “Not applicable” is not acceptable
- NECPs must have clear capacity targets [in MW] for rooftop PV and energy communities
- We will work on providing concrete targets and best-practice measures

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Thanks for your attention!
Any questions?

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Potential indicators to be included in NECPs

- Number of prosumers by prosumer type
  1. Households (in the wording of the governance regulation: “self-consumers and self-generators”),
  2. Energy communities (like cooperatives; maybe include other citizen participations)
  3. Cities and municipalities (public entities)
  4. Companies (commercial entities like SMEs and industry)
  5. Farmers
- Capacity (kW) installed by prosumer type
- Energy fed into the grid (kWh) by prosumer type (ideally electricity and heat)
- Energy self-consumed (kWh) by prosumer type (ideally electricity and heat)
- Battery storage capacity (kWh) installed by prosumer type, incl. EV
- (Thermal storage capacity (kWh) installed by prosumer type)
- Investment (EUR) by prosumer type (if available)
- Ideally agree on the same thresholds when reporting system sizes (e.g. <1 kw, < 10 kW, < 100 kW, <1 MW, >1 MW); should be independent from prosumer type
  - E.g. France has a threshold at 9 kW, Spain at 10 kW
- Other, non-prosumer-type owners should be defined as well, e.g. utilities, project developers, investors.

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Recommendations to MS– more general

- Calculate technical potentials (especially regarding roof-top PV)
- Conduct studies on uptake scenarios for prosumers and energy communities until 2030 and beyond
- Monitor prosumer type uptakes with each installation for statistics
  - (see back-up)
- Work on clear definitions for energy communities to know what to track
- Heat from prosumers may not be considered in these NECPs yet but maybe in the future ones
- It is probably too early to harmonize prosumer schemes across Europe but MS should start looking into what others have put up as solutions
  - E.g. Spain discusses variable retribution of energy produced, France seems to have this already in place.
- ….

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The PV rooftop potential in Europe is large

- *Residential* roofs: 238 GW (EC study 2017)
- *Urban* areas: 500 GW in (IEA ETP 2016)
  - Apparently does not include rural areas
- All roofs: 600-1200 GW (EC JRC 2018) https://www.researchgate.net/publication/327652680_Rooftop_PV_and_self_consumption_of_electricity_in_Europe_benefits_for_the_climate_and_local_economies (680 and up to 1,500TWh depending on different assumptions of other competing rooftop uses
  - See graphic on next slide

- For comparison:
  - Current total PV capacity in Europe: about 108 GW
  - Current PV rooftop capacity: about 17 GW
    - Equals 7% of *residential* potential, likely to be below 4% of total rooftop potential
  - Estimated PV rooftop capacity in 2030: 32 GW according to EC study
    - Equals 13% of residential potential

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Rooftop PV potentials (conservative)
Source: JRC 2017

Geo	Country	RPV_TechnicalPotential in GWh/a (conservative value)
AT	Austria	12.854
BE	Belgium	12.449
BG	Bulgaria	17.307
CY	Cyprus	5.270
CZ	Czech Republic	13.725
DE	Germany	104.313
DK	Denmark	5.720
EE	Estonia	1.220
EL	Greece	17.090
ES	Spain	65.244
FI	Finland	4.941
FR	France	125.580
HR	Croatia	7.769
HU	Hungary	18.034
IE	Irish Republic	2.919
IT	Italy	88.651
LT	Lithuania	2.923
LU	Luxembourg	696
LV	Latvia	1.432
MT	Malta	782
NL	Netherlands	17.629
PL	Poland	30.910
PT	Portugal	24.259
RO	Romania	35.877
SE	Sweden	7.255
SI	Slovenia	2.704
SK	Slovakia	9.079
UK	United Kingdom	43.646
	Total EU	**680.276**

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Ensuring environmental sustainability

Issues	Guidelines for prosumer initiatives	Guidelines for policy makers
Ensuring environmental sustainability		
Material efficiency and reducing environmental impacts	• Maximise renewable capacity in the built environment • Design RE installations to maximise energy output • Take environmental impact assessments seriously • Use only batteries that can support the grid	• Provide a framework to make prosumer grid-support attractive • Promote the use of existing public built spaces
Waste reduction and recycling schemes	• Prioritize suppliers offering reuse, repair and recycling schemes • Plan reuse, recycling and decommissioning during design and construction phase	• Implement eco-design and enforce obligatory collection, reuse and recycling schemes • Foster R&D in eco-design and circular economy

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Ensuring social sustainability

Issues	Guidelines for prosumer initiatives	Guidelines for policy makers
Ensuring social sustainability		
Solidarity with the other energy consumers	• Promote staying grid-connected to support the grid infrastructure • Advocate for sustainable and inclusive tariff structures	• Calculate the entire "value of solar" • Ensure that electricity costs and charges are well calculated and justified • Reform financing of the energy system to distribute costs fairly • Develop short and long term scenarios for prosumer uptake
Social Inclusiveness	• Promote inclusive business models that allow participation of poorer households • Integrate Corporate Social Responsibility (CSR) criteria in procurement decisions • Aim for gender parity in initiative's management and membership	• Support business models inclusive of energy-poor and marginalized households • Incentivize investments in RE and EE • Raise social awareness through targeted communication campaigns
Data security and privacy	• Reduce the amount of personal data collected • Implement data security and privacy schemes	• Provide clear data security and privacy regulations • Support data secure hardware and software

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Ensuring economic sustainability

Issues	Guidelines for prosumer initiatives	Guidelines for policy makers
Ensuring economic sustainability		
Efficient use of economic resources	• Partner with professional suppliers and contractors • Prioritize local installers and contractors • Contribute to local taxes and levies	• Streamline processes for prosumer projects • Support on-line markets and solution platforms
Economic viability of the energy system	• Contribute to grid infrastructure costs • Provide grid services	• Regularly review grid operator services and regulation • Refrain from subsidising utilities using fossil or nuclear energy
Access to finance	• Prioritize low-risk projects with reasonable size • Professionalize project development and financing	• Provide stable economic schemes for prosumer projects • Educate, train and empower citizens and prosumers