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Socio-economic aspects of participation of small end users in demand response programs. The case of Poland

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Objectives

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The idea for the investigation of the case study is to estimate the willingness and conditions for **small electricity users'** participation in **prosumer** and **DSR programs**.

The conditions of participation in such programs from the small user's point of view are not well-recognized up to this moment.

Participation of small customers has becoming possible only recently because of **profound changes** in energy **law**, **regulations**, **technologies** and change of **citizen's attitude** to energy.

Objectives and background

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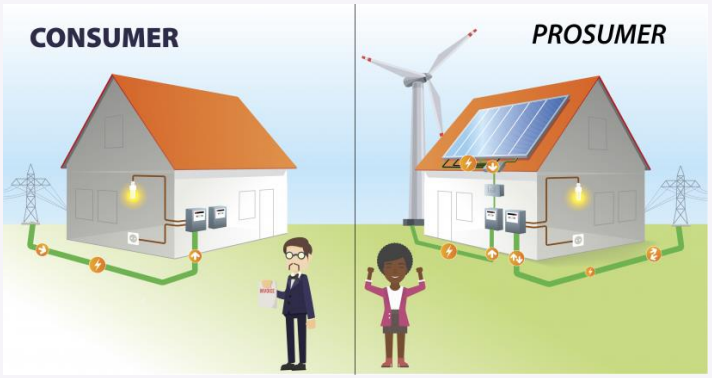
In the new energy market vision, the **role of the end-users** is to change significantly. The large end-users, e.g., the industry, can also relatively easily find and adapt to their new position in the novel market concept.

Therefore, the EU increasingly aims to enlarge the role of **small end-users** and actively champions the concept of "prosumers" within its legislation. **Prosumers**, particularly those generating renewable energy locally, are expected to play a pivotal role in achieving energy sustainability goals. Prosumers are at the forefront of transitioning towards a decentralized and **decarbonized energy system**.



Scope

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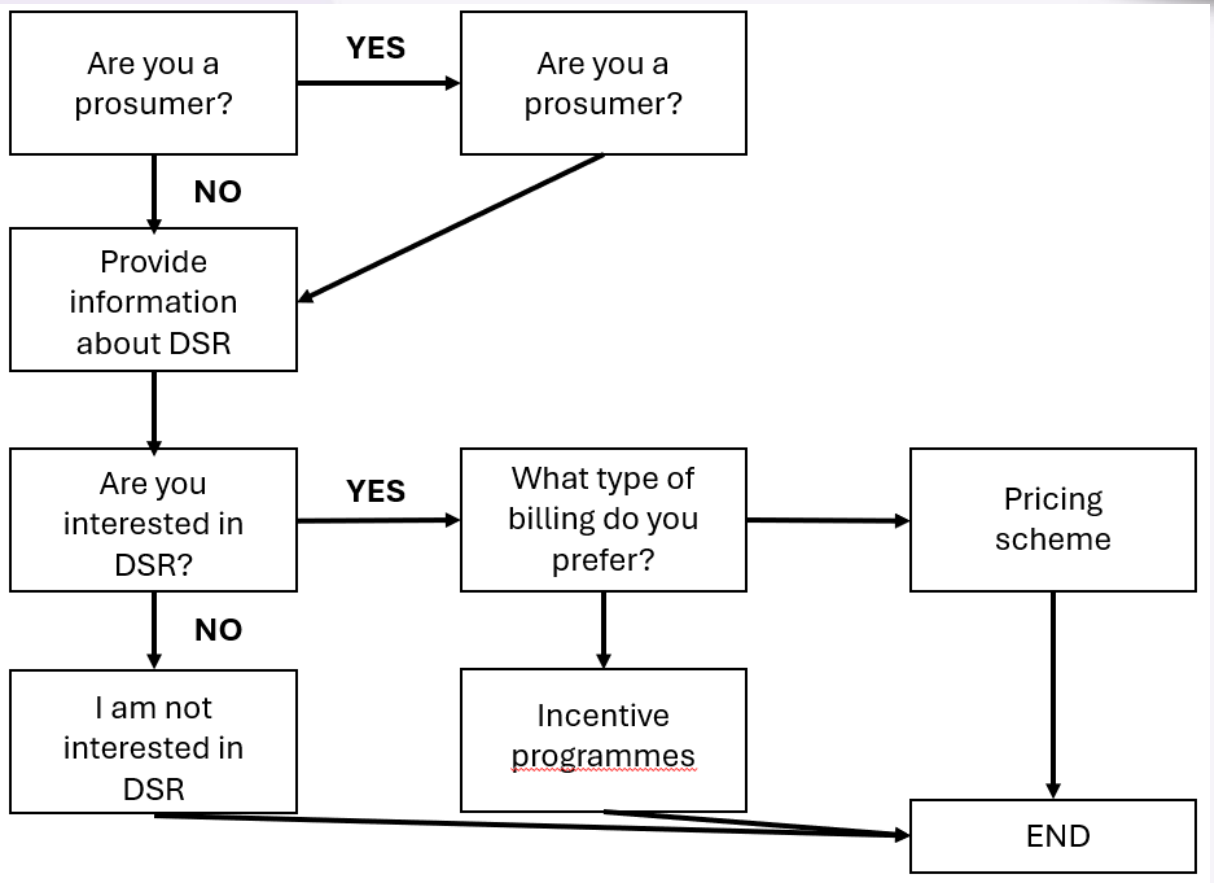
In the first stage, a **survey** was conducted among **400 entities** classified as small electricity consumers. This will provide detailed information on their knowledge of and opinions about the market.

In the next, second step, a **statistical evaluation** and **analysis** of the collected questionnaires will be carried out.

Finally, taking into account the analyses carried out, a **list of recommendations** will be proposed, which can be used by small end users to increase their activity in the field of DSR programs, as well as to implement activities that fit the EE1st principle.

Design framework



Areas of possible actions

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Area	Possible actions
Optimize energy consumption	Implementing a system to monitor and analyze the building's energy consumption, which will help identify areas where savings can be made. For example, installing smart meters and energy management systems.
Active participation in DSR programs	It applies to entities that are not currently interested in DSR. Participation in this type of program allows for a temporary reduction in energy consumption as a result of feedback from the grid operator. The willingness to reduce energy consumption can be rewarded.
Modernization of existing infrastructure	Whether or not DSR solutions are implemented, it is always beneficial to invest in modern, energy-efficient technologies and equipment. This also applies to investments in renewable energy sources.
Soft activities (education and awareness)	The full benefits of the implemented technological solutions are achieved with a sufficient level of awareness and education of the building users in the field of conscious and economical use of energy.

Considered options

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Type of option	Possible actions
POLITICAL	Transformation towards low-carbon approach
	Implement the EE1st principle
Type of option	**Possible actions**
ECONOMIC	Financial incentives: • Tariff structures • Feed-in tariffs
	Energy market participation: • Energy sales • Ancillary services
	Performance-based incentives : • Performance and bonus payments
	Other incentives : • Taxes (VAT exemption/refunded/reduction) • Subsidies

Considered options

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Type of option	Possible actions
TECHNOLOGICAL	Development of smart grid
	Development of DER (including RES; domestic-scale)
	Energy storage solutions
	Smart metering
	Real-time data processing
Type of option	**Possible actions**
,	Economic incentives
	Liberalization of energy markets
	Energy independence (for example at the local or municipal level)
	Education and increased awareness
	Decisions made based on database
	Environmental impact
	Collaborative initiatives

Thank you for your attention

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