Explicit Demand Response for small end-users and independent aggregators

Status, context, enablers and barriers

A JRC report by Saviuc, I., Zabala, C., Puskás-Tompos, A., Rollert, K. and Bertoldi, P.

Background

Demand-side flexibility (DSF) and Demand Response (DR)

Can be cheaper than investments in the transmission or distribution networks

Including it in the system increases the reliability and resilience of the grid.

Background

The EU Directive 2019/944

- formalizes the role of Demand Response in the electric system
- gives the opportunity for a new entity, the **Independent Aggregator**, to pool together the resources of multiple end-users and participate with them in the markets
- Was due to be transposed in the EU Member States by the end of 2020.

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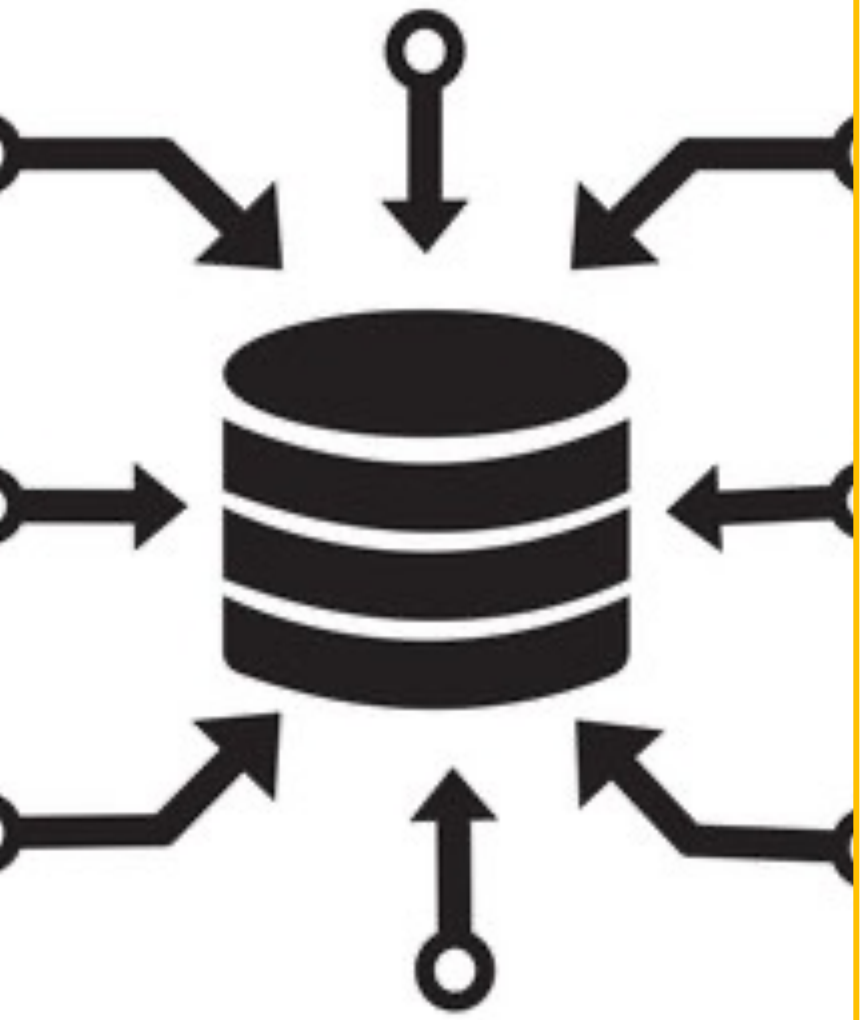

Background

Independent Aggregators compete with the utilities for winning over customers to aggregate

Energy, capacity, and ancillary services from Demand Response compete with generation.

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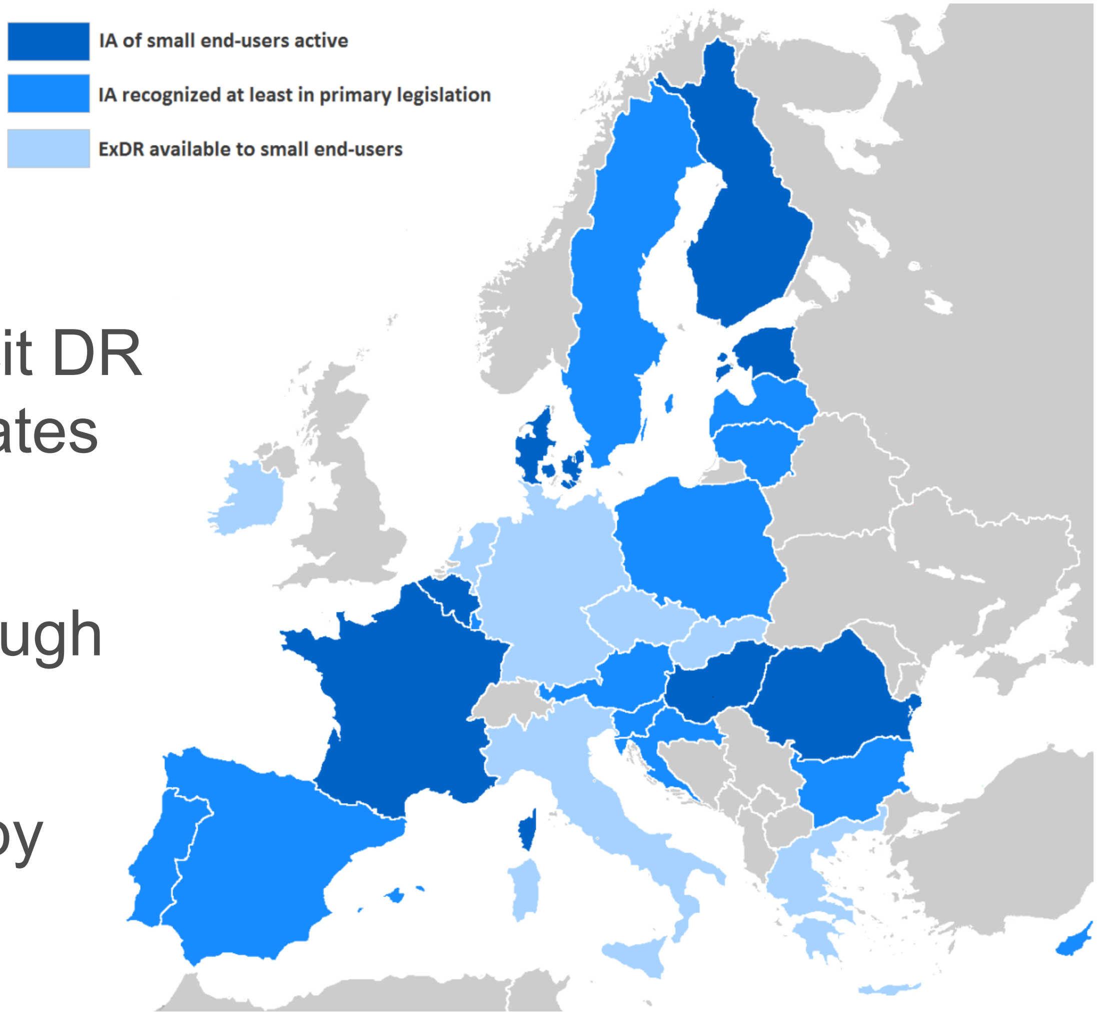
Scope of the JRC report

- Track the progress of explicit Demand Response across 26 EU Member States, compared to 2016;
- The status of Independent Aggregators as of the end of 2021;
- Status of the transposition of Article 17 of the EU Directive 2019/944;
- Focus on small end-users (e.g. households) in view of their prominence in the energy policies of the EU

Findings



- Engagement of small end-users in explicit DR has increased in most of the Member States since 2016
- Explicit DR is available to end-users through their supplier in **22** Member States
- Independent Aggregation is recognized by the (primary) national legislation in **19** Member States
- In **7** of the countries, Independent Aggregators of small end-users also exist and operate.

Barriers and enablers

Barriers to Independent Aggregation

Lack of appropriate legal framework (definition of roles, technical modalities, baseline calculation, etc.)
Permission from DSO/ retailer/ BRP
Geographic constraints due to bidding zones
High technical requirements (e.g., minimum bids)
Data privacy concerns from end-users
Need for a large pool of end-users to create a profitable revenue stream

Barriers and enablers

Enablers to Independent Aggregation

Primary and secondary legislation to outline the existence and operation of IA
Possibility to access the markets without prior permission
The existence of flexibility markets at DSO level
Possibility to engage in value stacking

Summary of findings

- Explicit DR has shown progress in most EU Member States, compared to 2017, but not equally across the MS, and especially not with regard to small end-users
- The possibility to aggregate and access the markets through *independent* aggregators depends on well-enabled participation in explicit DR.

Summary of findings

- Independent Aggregators require further enablers :
  - regulatory framework (secondary legislation),
  - a functional market (fair and transparent compensation mechanisms),
  - technical preconditions (advanced roll-out of smart meters)
  - a convincing business case (strong participation of end-users in DR and/or permission for value stacking)

Conclusions

- Member States are not required to measure their progress, and the communication between stakeholders is insufficient for allowing growth or replication of best practices.
- The quantification of success could contribute towards a comprehensive cost-benefit analysis of DR programs at the level of Member States

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