

Demand Response as a System Resource in Poland

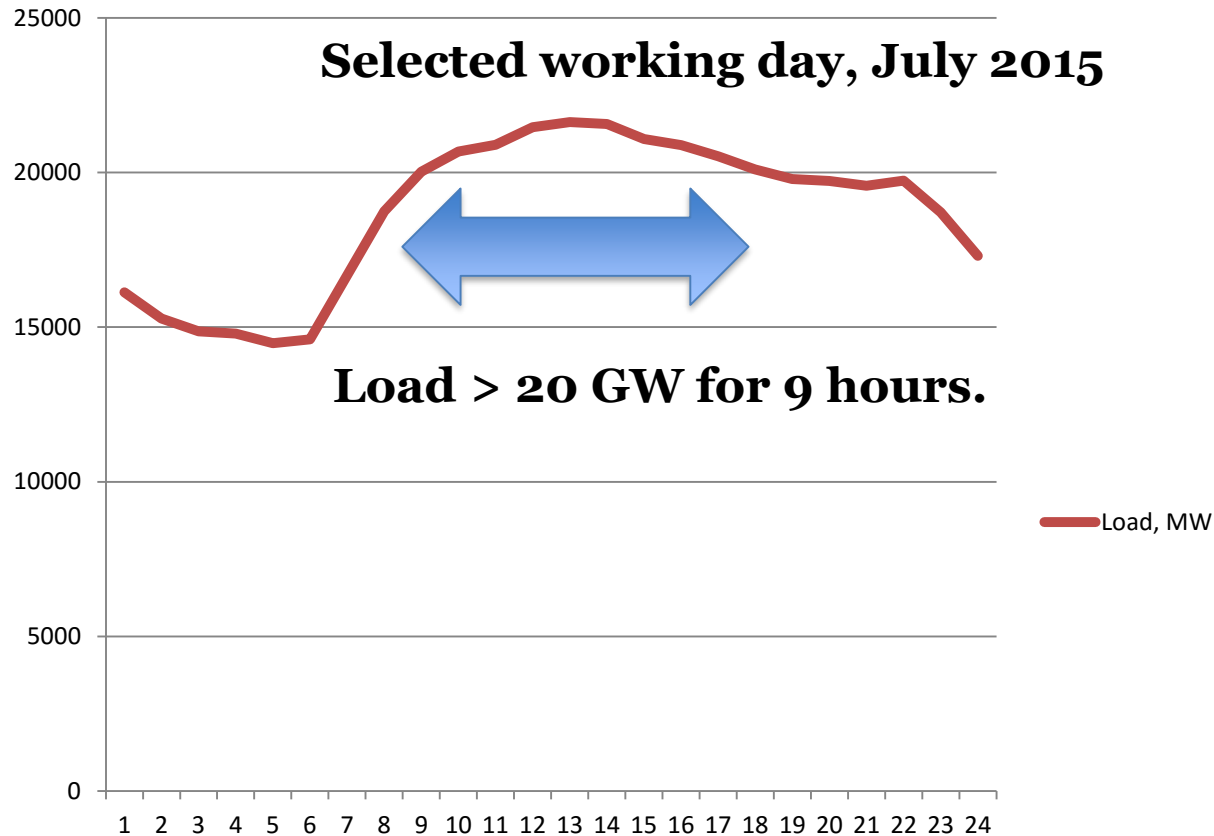
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Why Demand Response in PL?

- Reliability
 - Reducing load during times of system stress to avoid forced curtailments.
 - Diversifying the portfolio of resources that provide system services to lower overall system risk.
- Cost-effectiveness
 - Lowering costs of system services.
 - Deterring network investments.

Challenge – Hot Days in Summer



DR in PL – Current Status

- The energy law mentions DR in the context of development plans of DSOs (art. 16.7.4).
- Consumers have access to:
 - Balancing Market (no offers)
 - Emergency DR program (rarely called by TSO).
 - Day-Ahead (one trader works with aggregator).
- No access to the Operating Reserve, the Strategic Reserve, and ancillary services.

Emergency DR Programme - Description

- 200 MW already contracted (Peak 25GW).
- Another 90-150 MW to be allocated soon.
- A last-resort measure, special reserve, not in day-to-day use. Activated very seldom.
- Targeted to large consumers and aggregators.
- No availability payment, utilization payment is at the level of 250-300 Euro/MWh.
- Penalties apply in case of underperformance.

Emergency DR Programme - Critique

- Too narrow stream of revenue to facilitate DR capacity & technology growth.
- Burdened with administrative costs.
- Unfair distribution of risks and responsibilities between aggregators and TSO (data, baseline, verification, accuracy of reduction).
- Not on equal footing with supply – strategic reserve receives a retainer ($> 20 \text{ zł/MW/h}$).

DR Technical Potential in PL

Table 1. Share of theoretical potential for DR at system peak load

	Total DR (GW)	Peak (GW)	Total DR / Peak
France	11,6	102	11%
Poland	3,6	25	14%
UK	8,0	56	14%

Source: Own calculations based on Gils (2014).

Expert Assessment of DR Potential in Poland

Table 3. DR potential in Poland – indicative assessment

	DR Potential (MW)
Manufacturing	1700-1800
Commercial buildings	200-300
Households	2000
Total	4000

Source: Personal communication with Mr. R. Majewski, Enspirion (2016).

DR Aggregators in Poland

Table 4. Aggregators in Poland

Aggregator	Segment	Phase of business development
Enspirion	Manufac.	Contracted 500 MW
Virtual Power Plants	Buildings	Technology in place, scales up the business,
Energy Data Lab	Households	Participates in pilots, develops a technology
Enernoc	Various	Market research & policy dialogue

Source: Own research, personal communication with Mr. Majewski, Mr. Misiejuk, Mr. Nowaczewski, Mr. Rzepnicki (2016).

What Might be the Costs in Poland?

- If Poland follows international best practice (France, UK, Switzerland, US), DR costs may be low:
 - Availability: $< 20 \text{ zł/MW/h}$ (5 Euro/MW/h).
 - Utilisation: spot price.
- It implies that DR would be highly competitive in comparison current Operating Reserve (38 zł/MW/h or a spot price)

False Narrative – Problem in PL

- “DR is useful only as an emergency resource.”
- “System benefits from accurate reductions.”
- “Retainer conditions development of DR.”
- “Once in place, DR develops smoothly.”
- “DR implies additional costs to end-users.”

Draft Recommendations

- Make a strategic choice regarding DR.
- Be consistent in decision-making in long run.
- Equal footing & volumes instead of a retainer.
- Open ancillary & system services to DR.
- Restructure DR emergency programme.
- Diversify a portfolio of energy resources.
- Consider DR to mitigate summer stresses.
- Use DR to optimise grid investments.



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