

PV curtailment in Poland

Owners of solar plants in Poland are facing increasingly frequent forced outages due to an electricity oversupply in the National Power System. Piotr Mrowiec, leader of Rödl & Partner's renewable energy team, looks at the specifics of Polish curtailment, the rules on compensation, penalty provisions, and plans for the future.

In April 2024, the installed capacity of solar in Poland reached 18.4 GW. Prior to 2016, the total PV capacity did not exceed 100 MW – growth over the last eight years has been impressive. However, this success comes at a price. Increasingly, there is an oversupply of electricity during periods of reduced demand and renewable generation peaks. The record for instantaneous total generation of wind and PV in Poland is approximately 16 GW, while instantaneous demand on the National Power System (KSE), can fall below 13 GW at weekends.

The Polish transmission system operator, PSE S.A. has introduced Non-Market Reduction Orders specifying the reduction parameters required to balance the grid, with a particular focus on generation source, capacity, and the period of curtailment. PSE indicates that before curtailing PV it first uses other balancing options such as minimizing the number and gen-

eration of centrally dispatched generating units (CUs), exploiting pumped storage capacity, and selling excess capacity abroad.

Despite restrictions on curtailment, in 2024 PSE had already issued non-market redispatch orders for PV plants 25 times by May 22, resulting in more than 13 GWh of lost generation. This only happened four times in 2023. So far curtailment has only affected generators with installed capacity above 50 kW. Regulation grants priority dispatch to small generators. The problem for professional energy producers is acute.

Compensation for curtailment

In principle, generators subject to curtailment are entitled to compensation under EU law. Compensation should correspond to the value of lost revenue and, in the case of installations subject to the auction system, to the value of any lost revenue from auction support. The responsibility for calculating losses lies with the generator. This should be based on complete irradiance data or, if absent, data from area forecasts for PV generation. Applications for compensation are submitted to PSE electronically.

Despite a relatively simple application system, it will not be possible for many generators to receive compensation. This is because producers that have accepted a connection agreement with a condition of no-guarantee of firm delivery are excluded from the compensation process.

Polish grid operators often enforce clauses in connection agreements that explicitly exclude generators' right to compensation. It is not uncommon for grid operators to add annexes to already concluded connection agreements that introduce clauses excluding compensation. The situation may raise legal questions.

Sanctions

Temporary redispatching is necessary in certain situations and generators failing to comply can affect grid parameters, risking system failure. For this reason, failure to follow generation reduction orders is sanctioned by fines that may be imposed by the President of the Energy Regulatory Office (ERO).



Photo: Lightsource BP

Poland has more than 18 GW of installed solar capacity but the central European nation now faces challenges balancing electricity supply and demand.

The value of the fine may be from PLN 2,000 (\$509) to 15% of the affected generator's revenue generated in the previous fiscal year. The ERO President may also impose a financial penalty on the manager of the energy enterprise, but the penalty may not exceed 300% of their monthly remuneration. Failure to comply with the orders of the electricity system operator constitutes a breach of the licensed activity and, in extreme cases, can lead to the withdrawal of the license.


Avoiding action

It has long been advocated that technologies for managing surplus electricity should be developed through flexible offtake capable of matching the volume of consumption with the volume of generation, as well as energy storage. Technologies such as power-to-heat, which uses electricity to heat water that can be distributed to heating systems. The first investment of this type is the 130 MW standby/peak boiler plant commissioned by PGE Energia Ciepła in 2021, consisting of oil and gas boilers and electrode boilers, powered by electricity.

Rule changes

In June 2024, the rules on the balancing market will change and will heavily penalize generators who supply energy to the system in moments of overproduction, without having a contract to do so. The rules will force self-redispach of energy by these generators and should result in a significant reduction in supply during periods of high generation from renewable sources.

From August 2024, energy suppliers will be obliged to introduce dynamic tariffs to household consumers. If there are large differences in energy prices at particular times, this could alter household demand as consumers choose to use energy when it is cheapest – increasing energy consumption at times of high supply.

In the longer term, there are plans to build several new pumped storage power stations, which are intended to act as a buffer in the event of energy overproduction. It will also be necessary to significantly expand battery energy storage deployment, a process that has been hindered by regulatory barriers and high cost in Poland. 

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13GWh

of Polish PV generation in 2024



About the author

Piotr Mrowiec is leader of Rödl & Partner's renewable energy team in Poland and head of the Gdansk office.

His professional specialization and passion is renewable energy. He has been advising in this field for more than 15 years and has numerous clients from the solar and wind energy industry. Mrowiec is ranked in Legal500, Energy and Natural Resources.

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