

What we learned from Iberian blackout

or how to manage the grid with 90 GW of intermittent generation

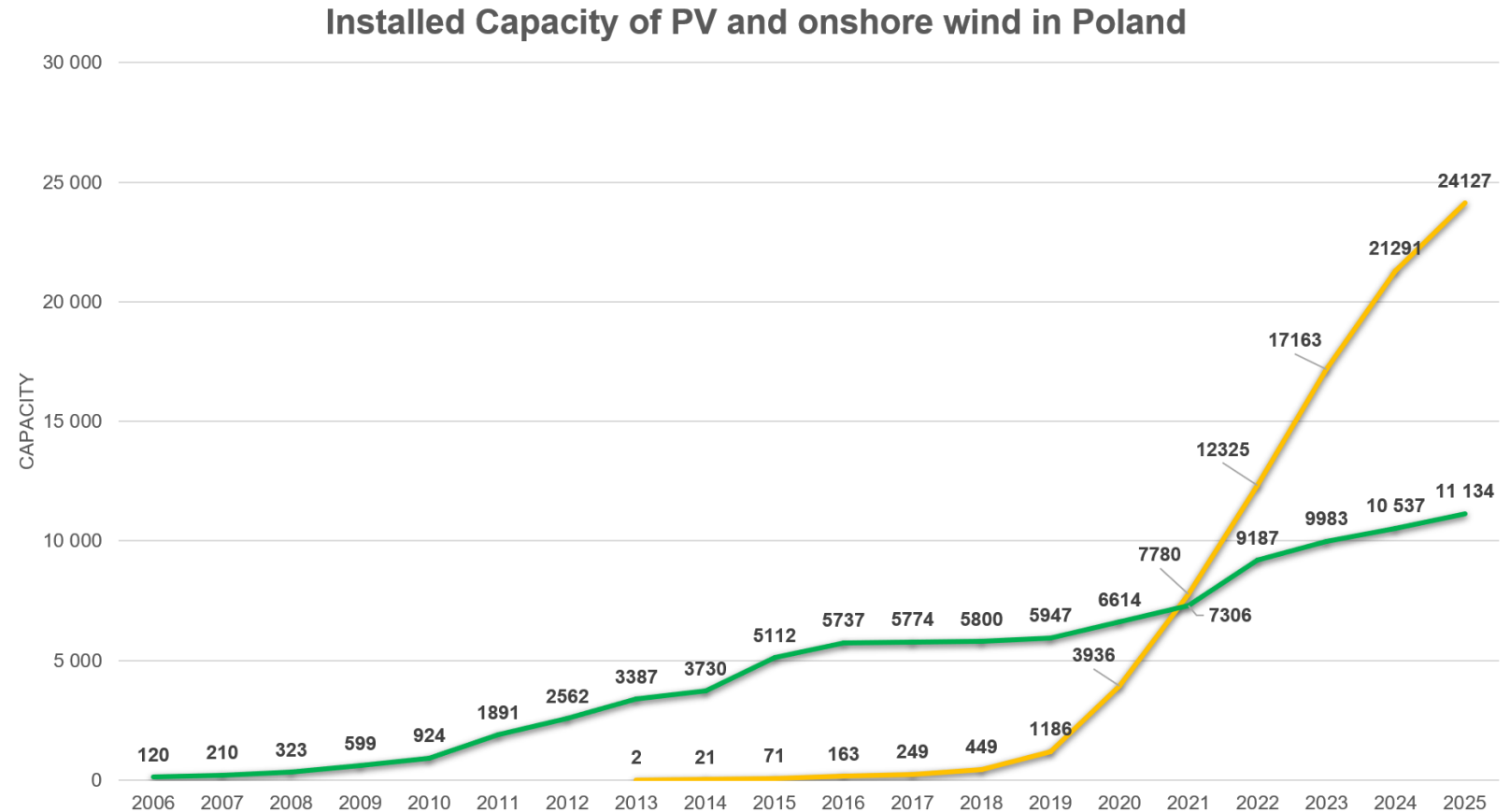
Grzegorz Onichimowski
Energy Storage Summit

Warsaw, 23.09.2025 r.

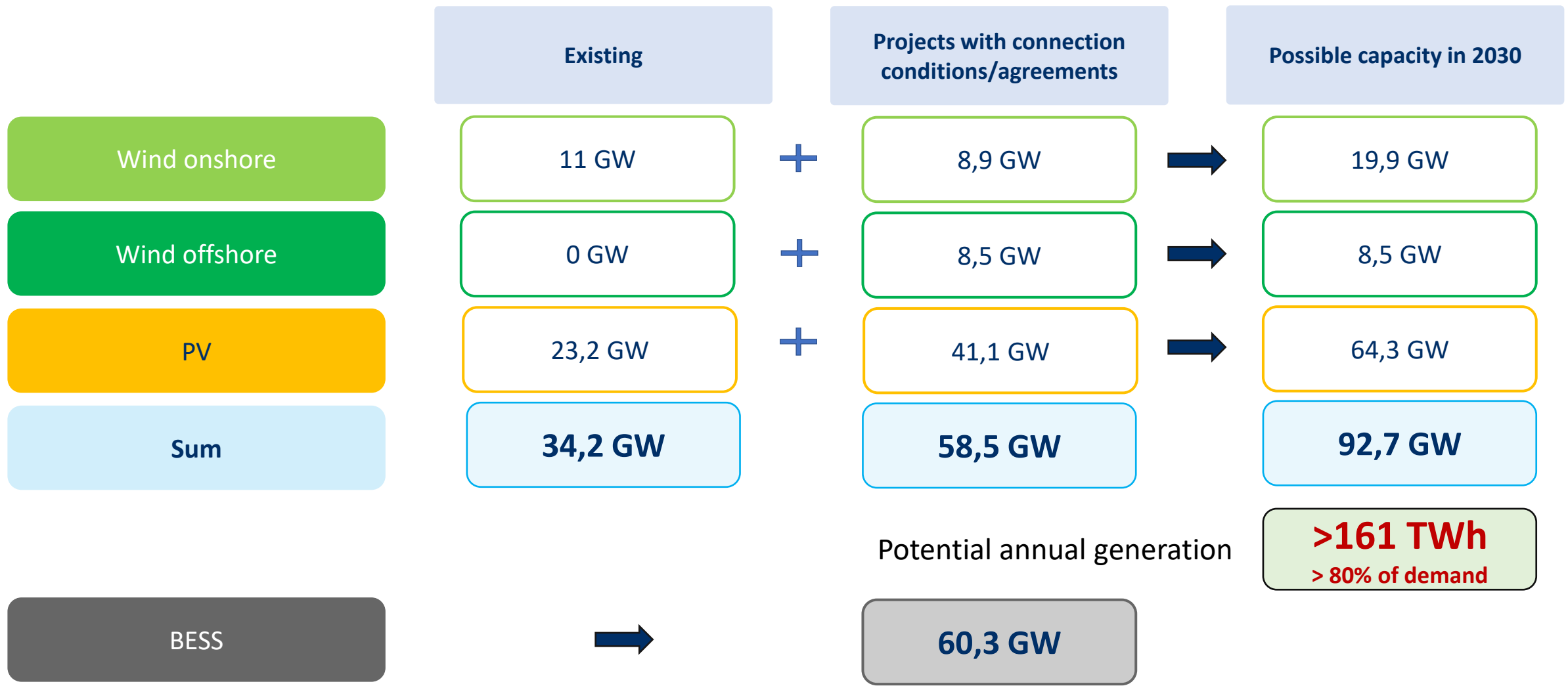


Capacity of renewable sources is rapidly growing

- More than 20 GW of PV in a couple of years.
- Growing number of hours with negative prices
- TSO has to intervene and curtail renewable generation. At first it happened only on weekends, but now we have to reduce PV generation on weekdays.



Even more renewables are coming

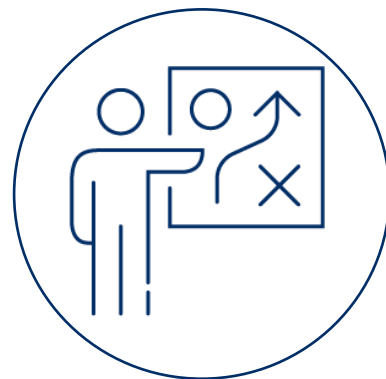


| We need flexibility to ensure security of the grid

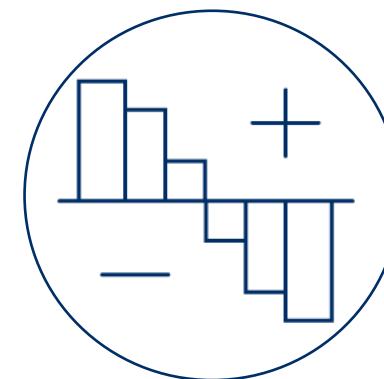
Iberian blackout showed what we need to keep the lights on. PSE and Ministry of Energy is introducing Anti-Blackout Package, which addresses most urgent matters:



More **flexibility** from different sources (generation, consumption, storage)



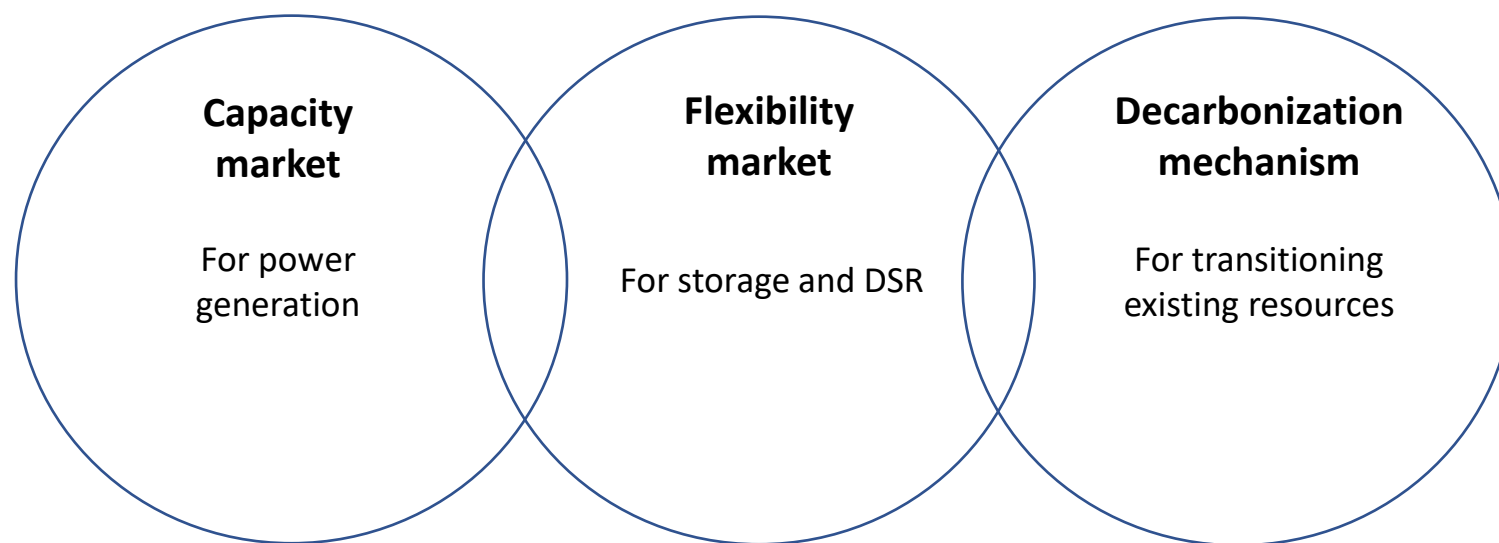
Better **visibility and operationability of the sources** in the grid and using grid forming capabilities of new resources

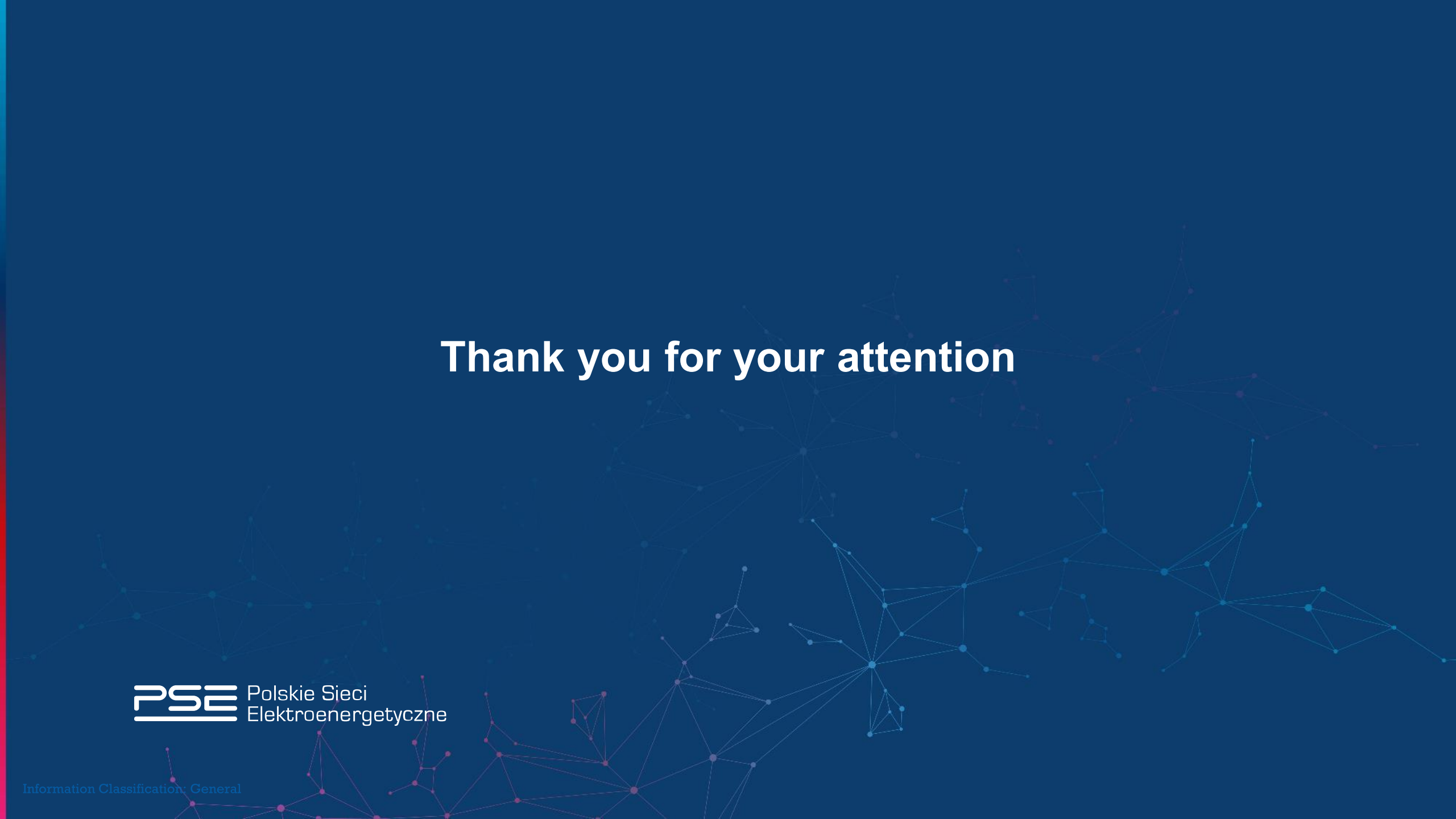


Market incentives as a basic tool for keeping the system balanced at minimal cost and without constant TSOs' intervention

| Capacity and flexibility markets are a must haves!

Capacity market is coming to an end. We need new solution consisting of three complementary mechanisms:



An abstract graphic of a network or web structure, composed of numerous small dots (nodes) connected by thin lines (edges). The nodes and lines are in various shades of blue and white, creating a complex, interconnected pattern that fills the background of the slide.

Thank you for your attention