АССОЦИАЦИЯ
НЕКОММЕРЧЕСКОЕ ПАРТНЕРСТВО
СООБЩЕСТВО
ПОТРЕБИТЕЛЕЙ ЭНЕРГИИ

РУСЭНЕРГОСБЫТ

DEMAND RESPONSE IS A MAJOR STEP IN THE ENERGY TRANSITION

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ENERGY TRANSITION IS NOT A BUZZWORD, BUT AN OBJECTIVE REALITY

- Depletion and increase in the cost of extracting of natural resources makes us think about how power industry will work in the future.
- Technology development gives us a set of solutions:
  I. Renewable energy sources,
  II. Closed nuclear fuel cycle,
  III. Fusion energy,
  IV. On-orbit power generation plants :)!!!

ENERGY TRANSITION IS NOT A BUZZWORD, BUT AN OBJECTIVE REALITY

It remains to choose where to go and what path to follow?

We are not Neanderthals to destroy the existing Power system with a club, but business proprietors who use what they have on hand to the maximum.

I mean traditional thermal generation…

What technologies will allow us to optimize efficiency and minimize the environmental impact of traditional thermal generation:

- Combined cycle (reducing fuel consumption for energy production).
- Cogeneration (saving fuel by producing both electric and thermal energy).
- High voltage transmission (reducing losses).
- Energy storage systems (optimizing power plants' operation modes, increasing the efficiency of their operation).
- **Demand response** (optimizing the composition of generating equipment in the energy system, as well as the power plants' load schedules).

DEMAND RESPONSE

- DR allows to optimize the generating capacity pool (to reduce the number of required power plants to balance demand and supply).

For example, in the PJM (USA), the aggregated consumption capacity equals to 150 GW, the aggregated generation capacity that ensures this consumption equals to 180 GW, the DR volume is 10 GW.

In the Unified power system of Russia, the aggregated consumption capacity is also 150 GW, the aggregated generation capacity that ensures this consumption is already 240 GW, and the DR volume is only 1 GW.

The application of DR in the energy system reduces the number of required power plants, primarily peak-loaded ones!

- DR helps to optimize the load of generation capacities.

I. It is possible to get by with fewer number of power plants in reserve.

II. It is possible to get by with fewer number of powered on power plants.

III. Power plants operate in optimum regime, fuel consumption is reduced and, as a result, volume released is reduced as well.

DEMAND RESPONSE

- From theory to practice – DR in Russia.

  I. In Russia, the volume of DR has already reached 1 GW.

  II. DR has shown economic feasibility: the decrease in electricity prices in value terms for all consumers is more than their costs for DR.

- What needs to be done to make the effect even stronger?

  I. Make DR a part of competitive capacity selection.

  II. Make long-term DR selections more attractive to participants.

  III. Expand DR from GDP boundaries to price zone boundaries.

THANK YOU FOR YOUR TIME!