



ENERGY SECURITY PROJECT

A PRO-CONSUMER, PRO-MARKETS APPROACH TO STORAGE DEVELOPMENT IN UKRAINE

Electricity storage is an important growth opportunity for Ukraine’s electricity system. Storage can be used for many beneficial services, including helping to balance renewable energy, providing essential reserve services, and helping to meet peak demand.

From 2010 to 2020, Bloomberg New Energy Finance calculate that the capital cost of storage facilities has fallen 87%, and they anticipate another 56% decline in capital costs by 2030. This has made electricity storage services both more competitive with other flexible generation sources, and has lowered the cost of critical energy services.

In 2019, the European Union approved two important policy documents addressing development of storage services: EU Directive 2019/944, and EU Regulation 2019/943. In summary, these policy documents provide for three main conditions related to storage services.

First, storage services must be allowed to compete freely in all types of electricity markets. There should be no discrimination in favor of, or against storage services, and markets should be technology neutral.

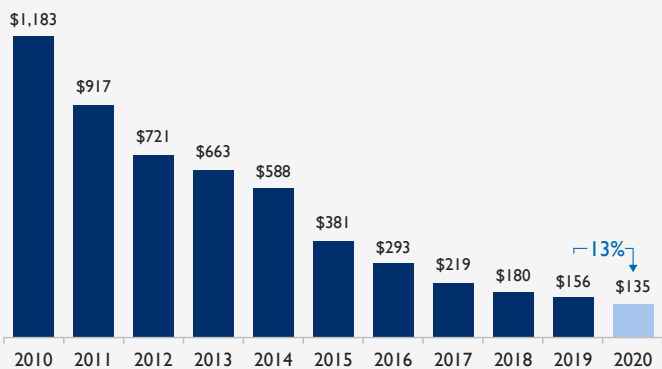
Second, to prevent market distortion and monopoly behavior, transmission and distribution companies are prohibited from owning, operating, developing and managing storage facilities except under very special and limited conditions.

Third, the limited and exceptional conditions under which transmission and distribution companies may own, operate, develop and manage storage facilities include situations where the facilities are:

- fully integrated electricity network components
- the regulatory authority has granted its approval,
- or where all of the following conditions are fulfilled:
 - other parties, following an open, transparent and non-discriminatory tendering procedure that is subject to review and approval by the regulatory authority, have not been awarded a right to own, develop, manage or operate such facilities, or could not deliver those services at a reasonable cost and in a timely manner;

Lithium-ion battery costs fell 87% in the past decade

Lithium-ion battery price survey results (volume-weighted average)
real 2019 \$/kWh



Source: BloombergNEF

- such facilities or non-frequency ancillary services are necessary for the transmission system operators to fulfil their obligations under this Directive for the efficient, reliable and secure operation of the transmission system and they are not used to buy or sell electricity in the electricity markets; and
- the regulatory authority has assessed the need for an exception, has carried out a prior review of the applicability of a tendering procedure, including conditions of the tendering procedure, and has granted its approval.

When these conditions are met, the regulatory authority may draw up guidelines or procurement clauses to help transmission system operators ensure a fair tendering procedure.

These conditions make tremendous economic sense and will benefit both the Ukrainian electricity sector, and Ukrainian consumers. This approach enables storage service providers to compete fully in electricity markets, while ensuring that transmission and distribution companies cannot disrupt markets or use monopoly powers.

This also happens to be the requirement of the EU for its members, and under the terms of Ukraine's Association Agreement with the EU, they provide a model for alignment of policies to build a healthy storage industry.

However, there have been some ideas about using storage capacity auctions to procure storage services in Ukraine. The approach of holding storage capacity auctions to contract storage services will result in high costs, stifled technology innovation, and damage to Ukraine's electricity markets.

Storage capacity auctions, if they result in long-term contracts with storage owners, will lock in the prices and technologies available in the year when auctions are held. Given that prices are expected to drop another 56% by 2030, and given that technologies are constantly evolving, this approach locks in high costs for the duration of the capacity contracts. When new equipment is available that is smarter, faster or longer-lived, again, Ukraine will be locked into older technologies.

Finally, the contracted storage capacity will face limited competition, and therefore limited pressures to offer the lowest and best prices, and to innovate in terms of new services such as aggregation and prosumer involvement.

This is why a storage approach similar to the EU's current policy toward storage makes sense for Ukraine.