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Energy storages in energy regulation

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Energy storages in current energy market regulation

- The present Finnish Electricity Market Act and the Electricity Market Directive do not include specific provisions concerning ownership, development, management and operation of energy storages
- Energy storages are not defined in the current electricity market regulation
- This creates some questions
 - Are the energy storages generation, consumption or something else?
 - Energy storage may inject electricity into the grid
 - Could energy storages be interpreted and treated like power generation facilities?
 - Energy storage takes electricity from the grid while charging
 - Who is the owner of electricity charged to the energy storage (supplier, end-user, storage operator)?

Energy storages and DSOs/TSOs in the current regulation



- Energy Authority has stated that the ownership of energy storages is not a part of DSO/TSO business
 - According to the Electricity Market Act DSOs/TSOs may not own, manage or operate generation facilities
 - TSOs' and legally unbundled DSOs' right to purchase electricity is limited only for certain purposes (for covering network losses)
- However, DSOs/TSOs may buy energy storage services from third parties

Energy storages in the European Commission's Clean Energy Package proposal

- Proposal recognizes energy storage as a flexible resource in the new electricity market design
 - Energy storages provide an opportunity for consumers to actively participate in electricity markets together with demand respond and self-consumption
 - In short-term markets energy storages provide new business opportunities for participants to offer "back-up" energy solutions at times of high demand and scarce renewable generation
- The new market design with effective price signals to allow for adequate remuneration of flexible resources
- Need to have measures to pull all flexible distributed resources into the market via proper incentives and a market framework better adapted to them





Energy storages should be taken into account in the new market design

- Organizing electricity markets in a more flexible manner
 - Including fully integration of all market players – *inter alia* energy storages
- MSs and NRAs should facilitate cross-border access for new suppliers of electricity from different energy sources
 - Also new providers of power generation, storage and demand response
- In order to efficiently operate their networks and avoid costly network expansions, DSOs should be enabled and incentivized to use services from distributed energy resources, such as demand response and energy storage, based on market procedures

Commission's proposal for the recast of the Electricity Market Directive



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- The proposal includes definition for the energy storages
 - 'energy storage' means, in the electricity system, deferring an amount of the electricity that was generated to the moment of use, either as final energy or converted into another energy carrier.
- According to the proposal MSs shall ensure that their national legislation does not unduly hamper investments into energy storages
- Regulatory frameworks shall enable DSOs to procure services from resources such as distributed generation, demand response or storage
 - The procurement of these services shall be based on transparent, non-discriminatory and market based procedures.
 - The procurement of non-frequency ancillary services by a DSO shall ensure effective participation of all market participants including *inter alia* energy storage facilities
- The use of demand response, energy efficiency, energy storage facilities or other resources as an alternative to system expansion shall be demonstrated by the DSOs in their network development plans

Commission's proposal for the recast of the Electricity Market Directive



- The proposal includes also some provisions related to ownership of energy storage facilities
 - As a main rule, DSOs and TSOs shall not be allowed to own, develop, manage or operate energy storage facilities
 - By way of derogation, MSs may allow DSOs/TSOs to own, develop, manage or operate facilities only if the conditions defined in the directive are fulfilled
 - Other parties have not expressed interest to own, develop, manage or operate energy storage facilities
 - Energy storage facilities are necessary for the DSO to fulfil its obligations for the efficient, reliable and secure operation of the distribution system
 - NRA has assessed the necessity of such derogation
 - If the derogation has been granted, potential interest of other parties shall be re-assessed at least every 5 years



Summary

- The present electricity market regulation does not include provisions concerning energy storages
- The European Commission's Clean Energy Package proposal recognizes energy storage as a flexible resource in the new electricity market design
- The national legislation may not unduly hamper investments into energy storages
- Need to adapt measures to pull all flexible resources into the market via proper incentives
- Regulatory frameworks shall enable DSOs to procure services from *inter alia* storages based on transparent, non-discriminatory and market based procedures

Thank you for interest!

Any questions?

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