

On the Market Prospects of Long-Term Electricity Storages

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Abstract : In recent years especially electricity generation from intermittent sources like wind and solar has increased remarkably. To balance electricity supply over time calls for storages has been launched. Because intermittency also exists over longer periods - months, years, especially the need for long-term electricity storages is discussed. The major conclusions of our analysis are: (i) Despite many calls for a prophylactic construction of new storage capacities with respect to all centralized long-term storage technologies the future perspectives will be much less promising than currently indicated in several papers and discussions; (ii) new long term hydro storages will not become economically attractive in general in the next decades; however, daily storages will remain the cheapest option and the most likely to be competitive; (iii) For PtG-technologies it will also become very hard to compete in the electricity markets despite a high technological learning potential. Yet, for hydrogen and methane there are prospects for use in the transport sector.

Keywords : storages, electricity markets, power-to-gas, hydro pump storages, economics

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020