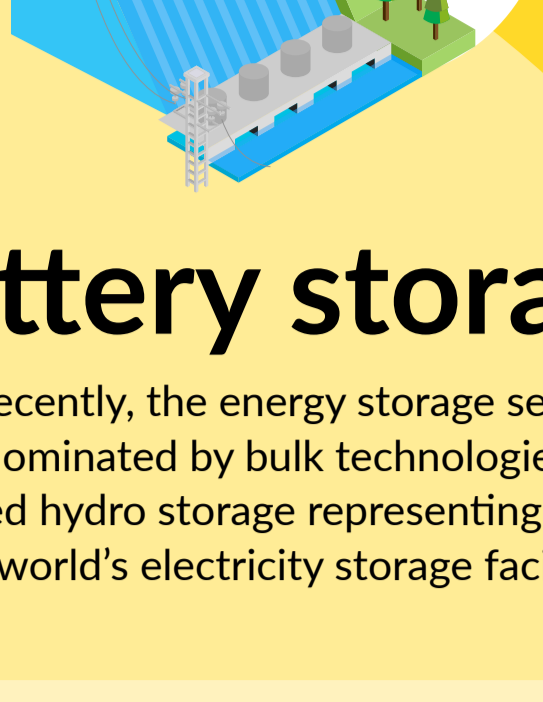
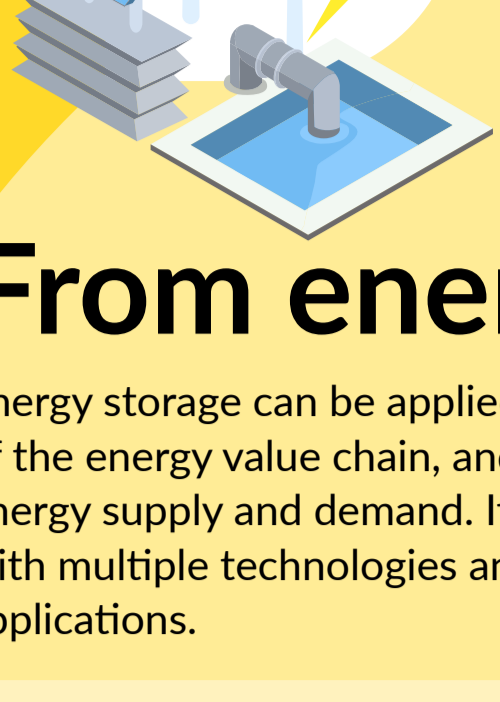


Battery Storage IN ELECTRICITY

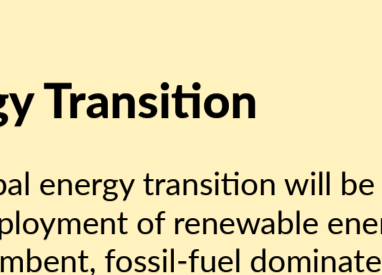


From energy to battery storage

Energy storage can be applied to all steps of the energy value chain, and can decouple energy supply and demand. It is a field with multiple technologies and diverse applications.

Until recently, the energy storage sector had been dominated by bulk technologies, with pumped hydro storage representing over 99% of the world's electricity storage facilities.

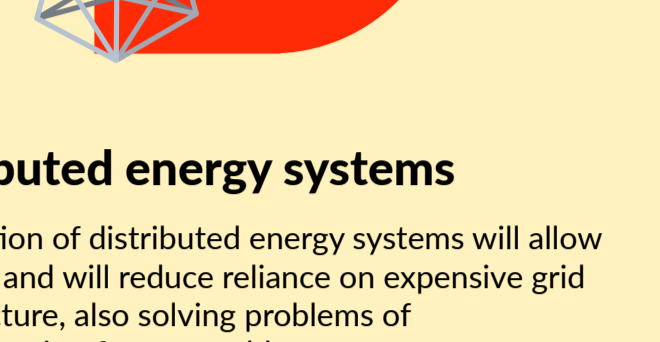
So, why is battery storage important?



Energy Transition

The global energy transition will be driven by the wide deployment of renewable energy sources into the incumbent, fossil-fuel dominated electricity system. Renewables provide intermittent electricity supply, often destabilising the grid.

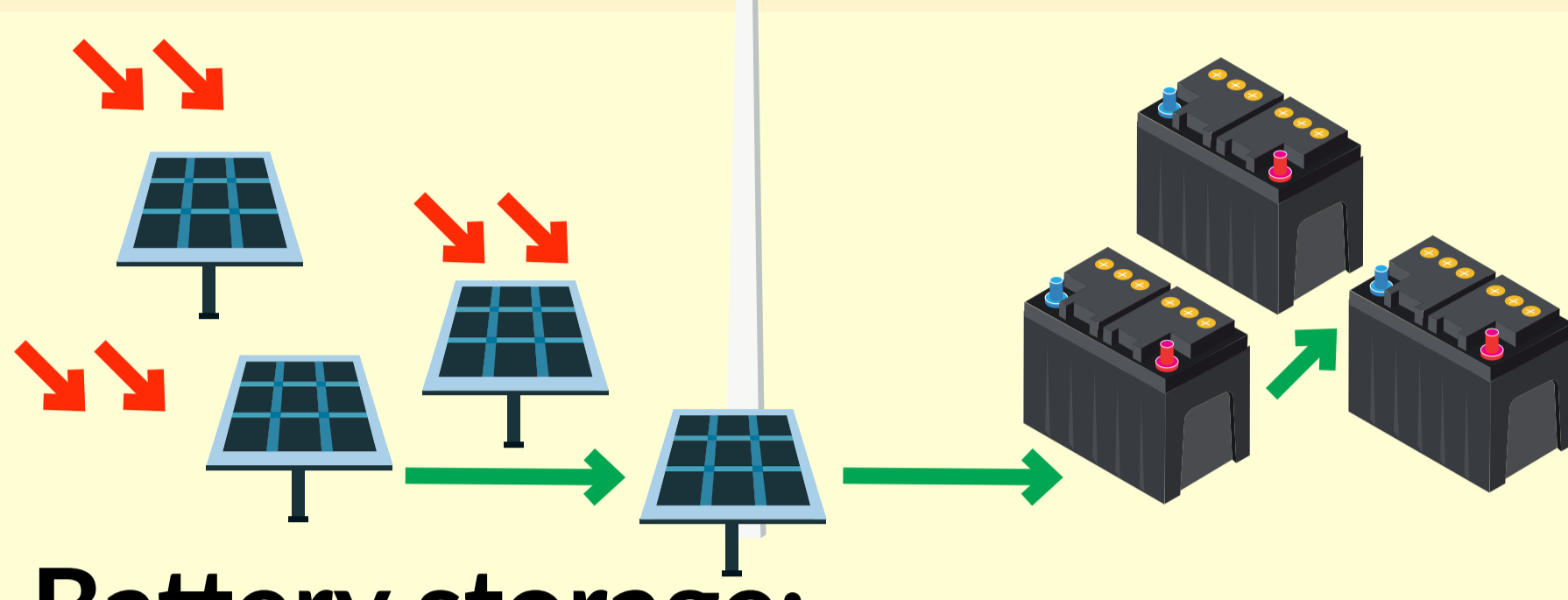
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Distributed energy systems

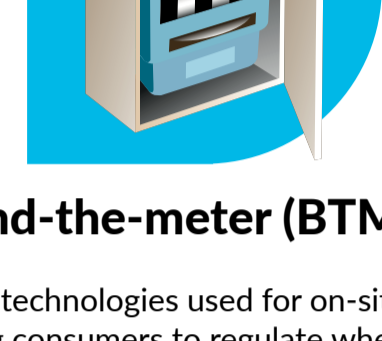
The creation of distributed energy systems will allow flexibility and will reduce reliance on expensive grid infrastructure, also solving problems of grid-integration for renewables.

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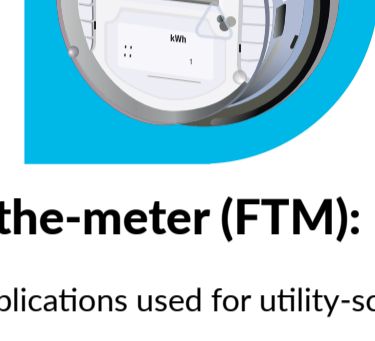
Battery storage: the key to future electricity systems

Battery storage applications are divided into two main categories:



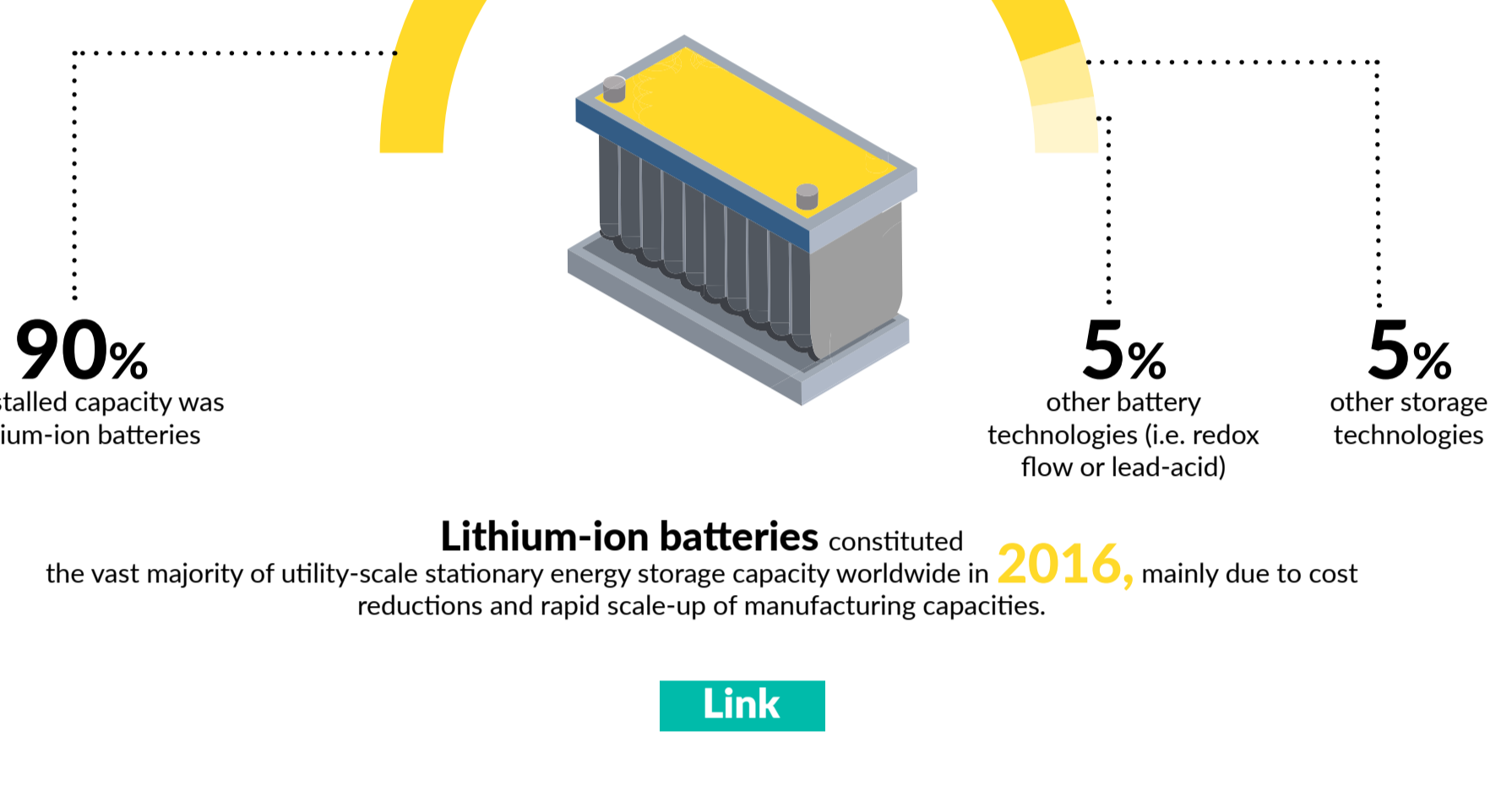
Behind-the-meter (BTM):

Storage technologies used for on-site consumption enabling consumers to regulate when they use their generated electricity and when they export to the grid.



Front-of-the-meter (FTM):

Large scale applications used for utility-scale projects.

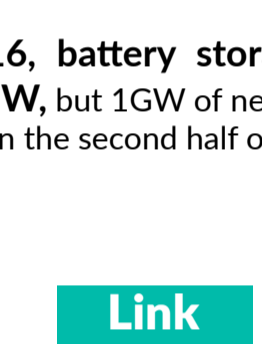


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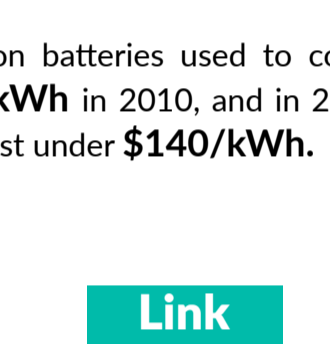
IEA remarked that a key-defining trend on 2016 was the concerted action of integrated energy companies, manufacturers and equipment providers to expand their storage activities, leading to a more concentrated market.

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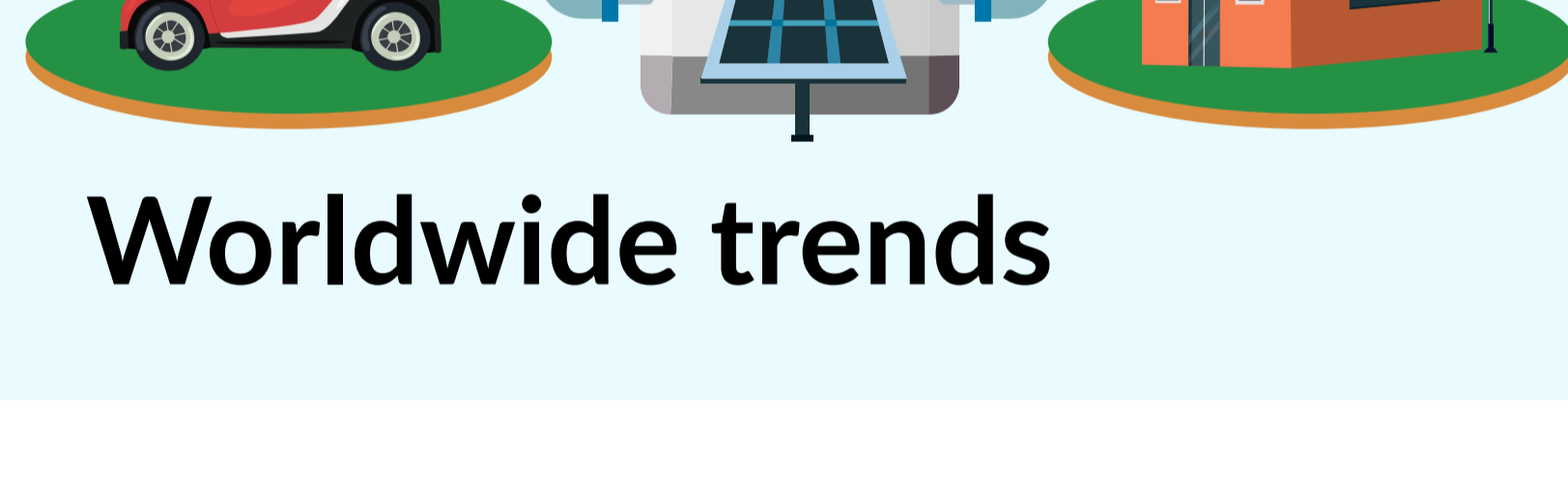
During 2016, battery storage capacity was 500MW, but 1GW of new capacity was announced in the second half of the year.

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Lithium-ion batteries used to cost \$1,085-4,100 /kWh in 2010, and in 2016 they are said to cost under \$140/kWh.

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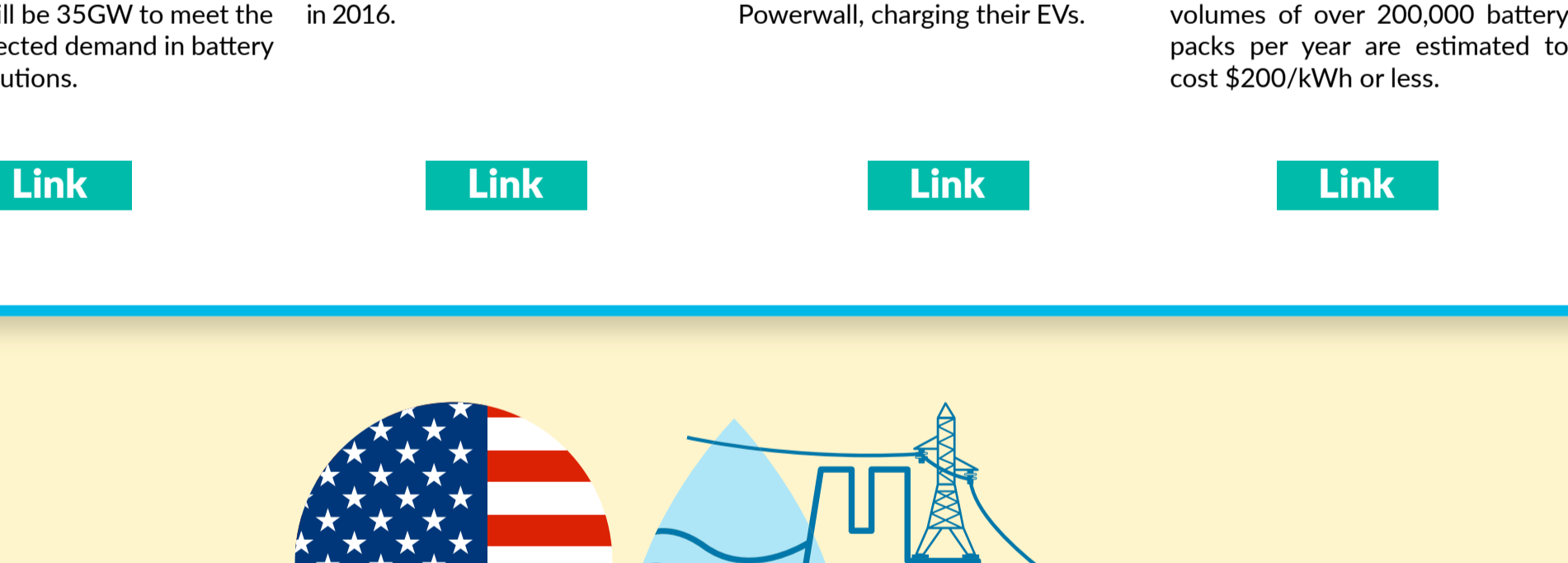
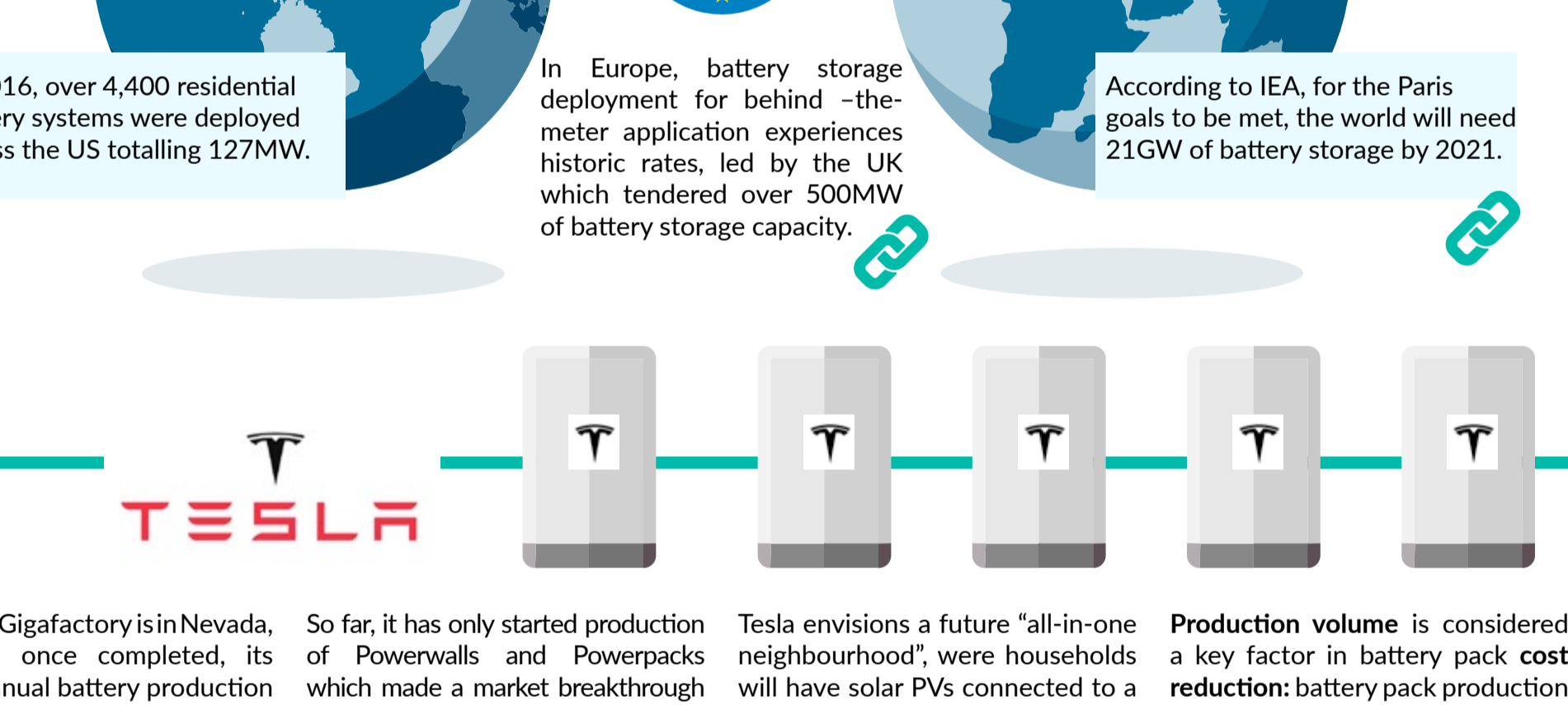
Worldwide trends



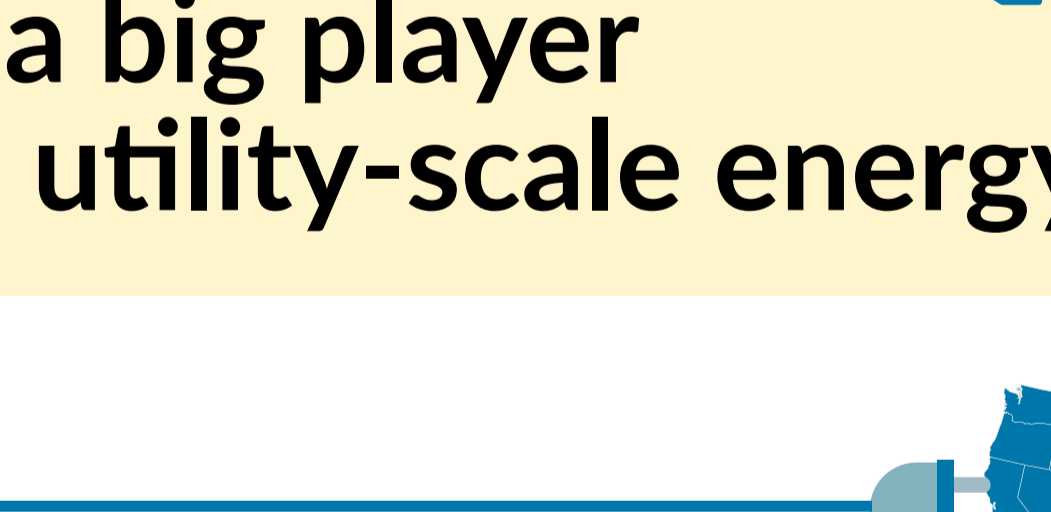
Concentrated development:

Market researchers expect that the top five country markets will account for more than 50% of the global BTM battery storage capacity to be installed in 2017- i.e. United States, China, Germany, Japan, and the United Kingdom.

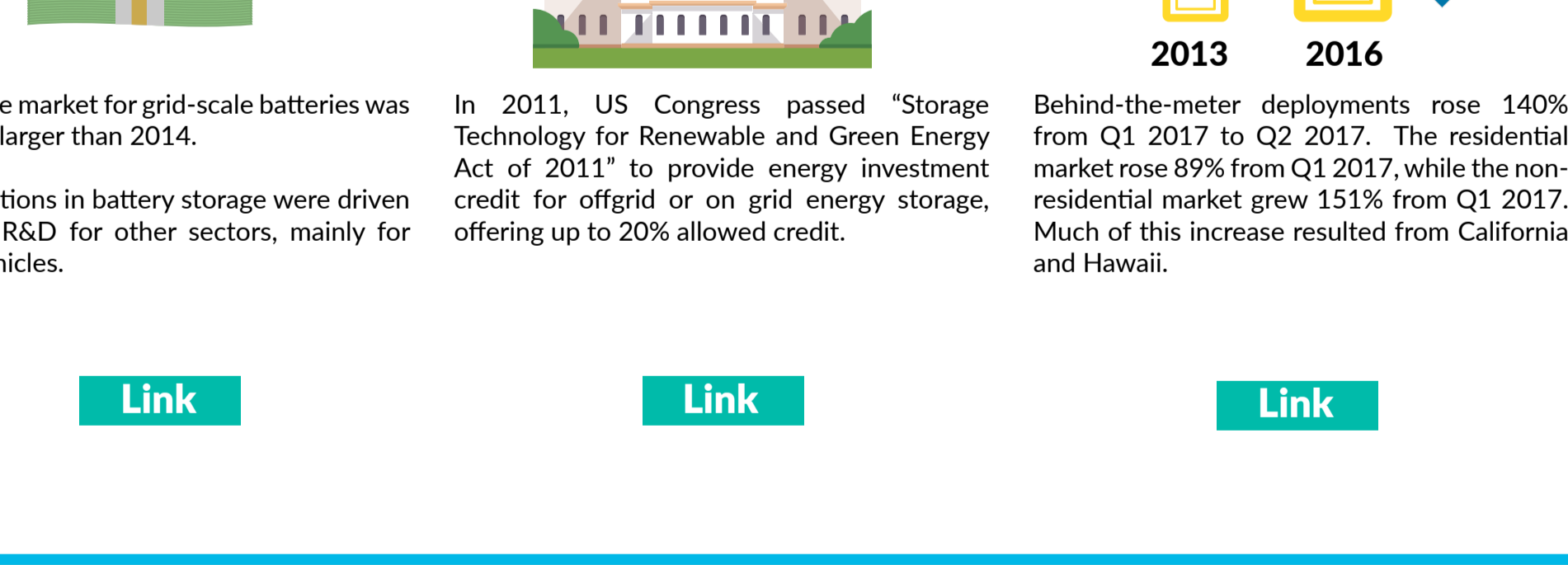
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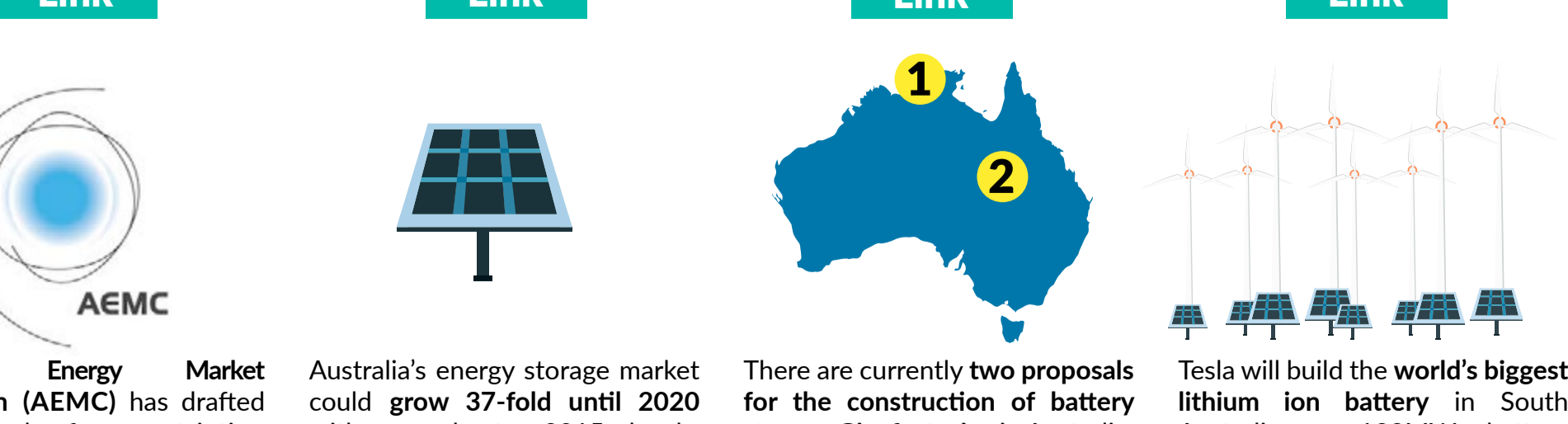
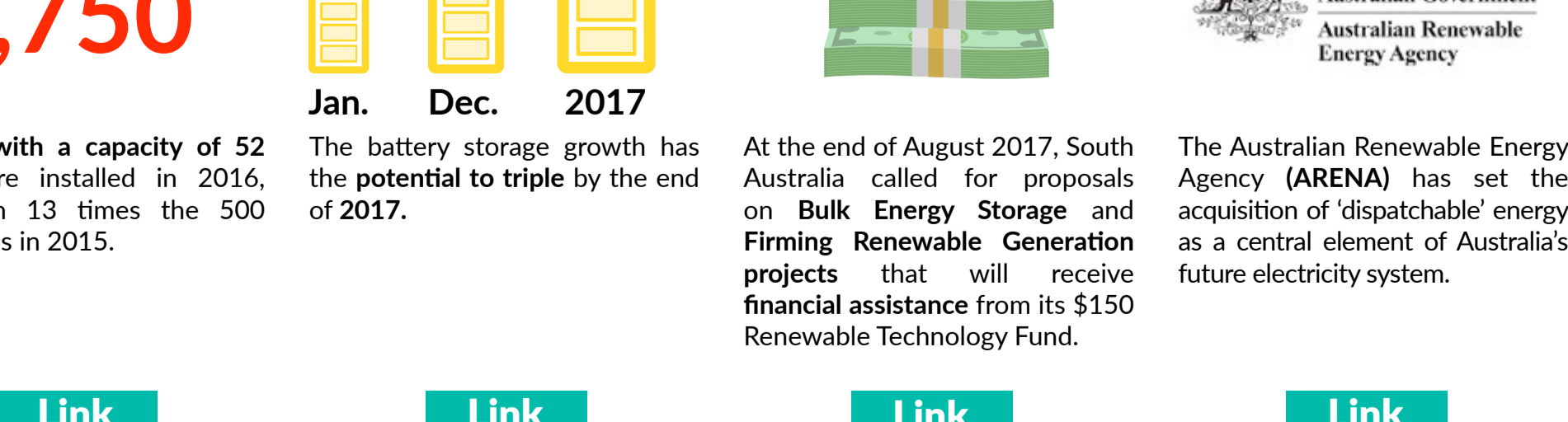
USA-a big player in the utility-scale energy storage



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Australia-focus on distributed energy opportunities



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