

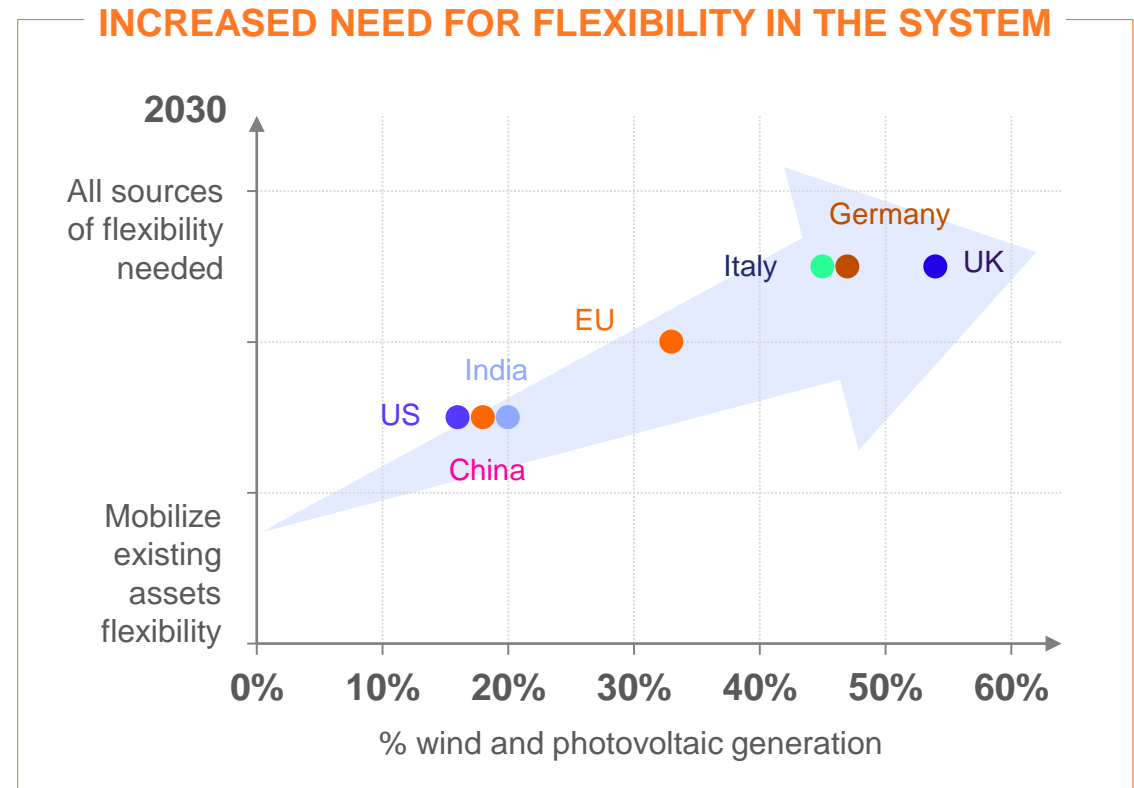
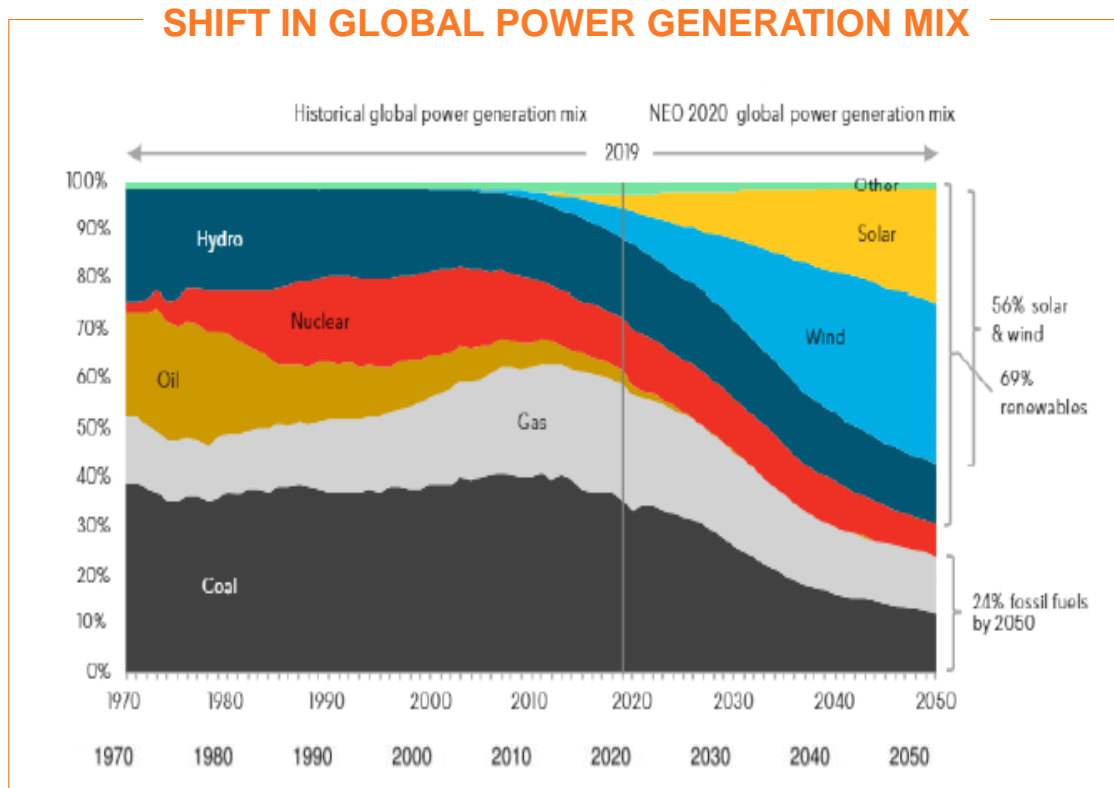


Demand-side flexibility: Vision 2030

Smart Energy Summit 10/03/2020



How can we reach the “net zero” emissions?



The greater penetration of renewables will prompt a wider use of advanced flexibility instruments.

Load shifting has potential for both carbon and energy savings



Study found enough potential demand shifting resource to eliminate most of the renewable curtailment at a lower cost than battery storage.



Shifting demand around to match renewable generation is far more efficient than curtailing renewables.



Can be useful to think of DR as a substitute for batteries rather than just for peaking generation.

Market potential through 2030



1. From 59GW of existing flexibility in 2019, there will be nearly 200 GW of cost effective load flexibility potential in U.S in 2030.

2. US National benefits of load flexibility > \$15 billion per year by 2030



3. Avoided generation capacity is the most significant source of value over the next 10 years

4. 40% of the 2030 potential can be achieved by modernizing existing conventional programs

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Prediction is very difficult, especially if it's about the future.

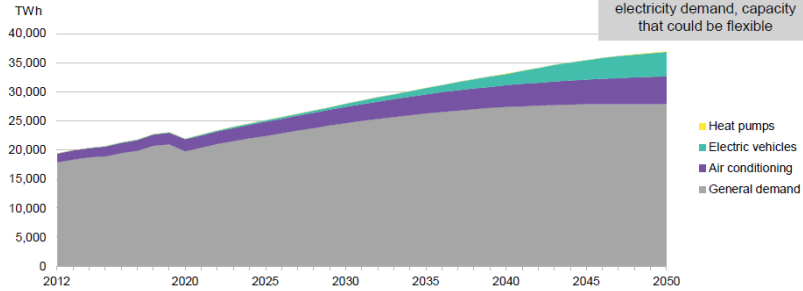
Niels Bohr

Managing the complexity of numerous assets in the future



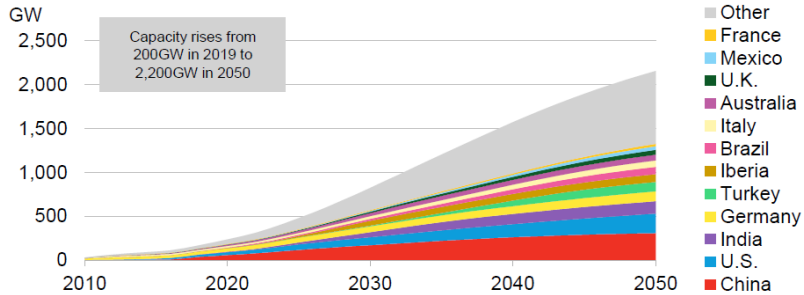
Cost-effective capacity to relieve grid constraints

Global electricity demand by source



- Major new sources of load, such as EVs, could be flexible
- 26M of EVs will be sold annually by 2030

Global cumulative customer-sited solar capacity by region, 2050



- Rooftop solar will increase 11-fold from 2019 to 2050

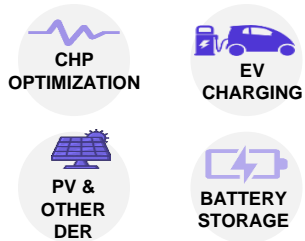
Reduce overall consumer energy costs

Provide critical grid-balancing services

Distributed Energy Resources

VPP software Enel X Flex

Grid services



Offer increased flexibility, facilitating more renewables into the grid

Thank You!



Daniele Andreoli

Head of Global Demand Response Solutions