# „Think Battery” – Becoming more dynamic in energy consumption

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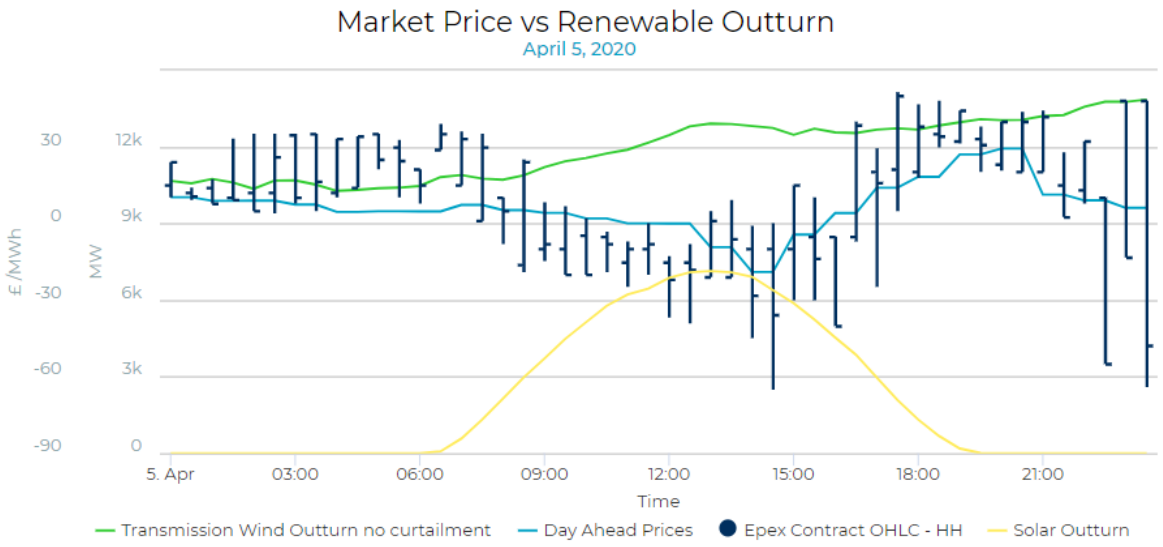
A humble request from a macro energy expert:

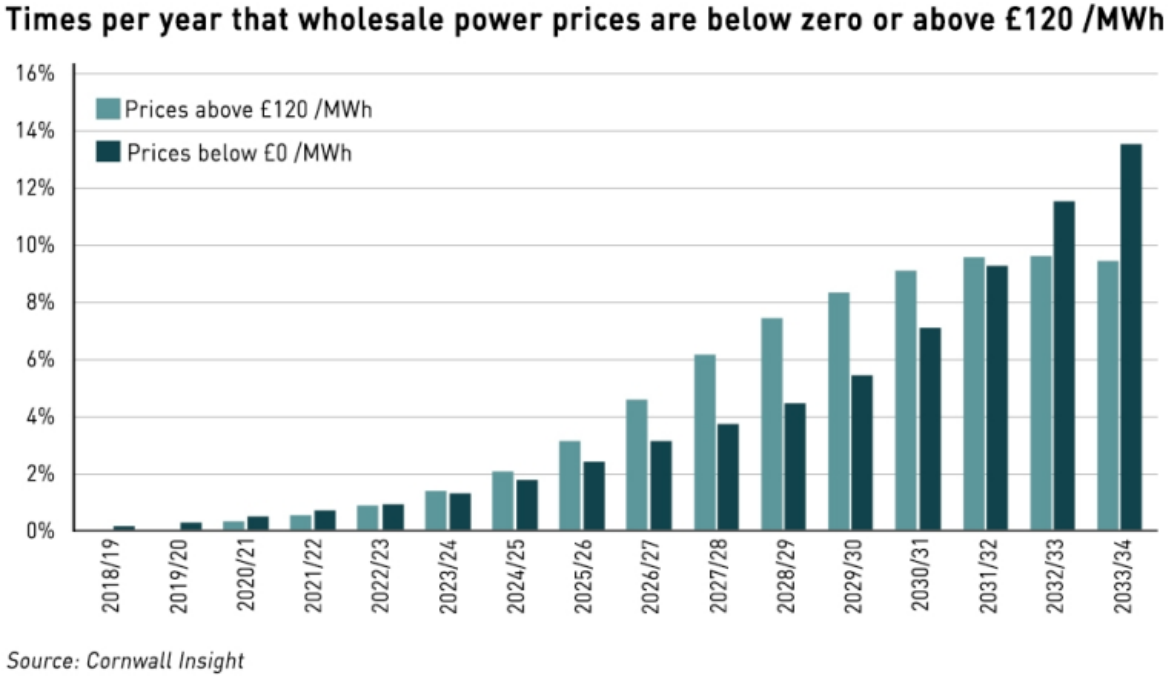
Start space heating/cooling in a „range mode” (i.e. between 20-25 Celsius):

1. Overheat (in Winter)/overcool (in Summer) when decarbonised energy is abundant;

2. Underheat (in Winter)/undercool (in Summer) when decarbonised energy is scarce.

# The „new normal” – negative pricing and/or major renewable curtailment, high price volatility

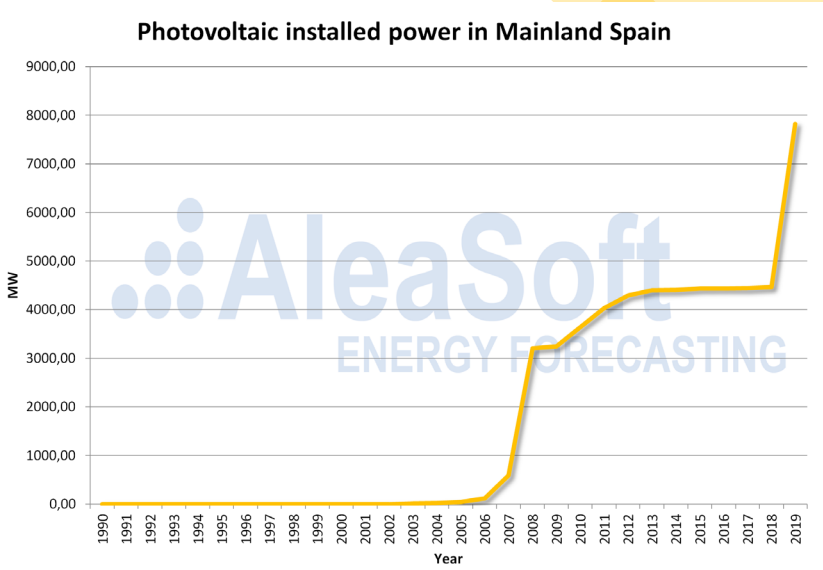


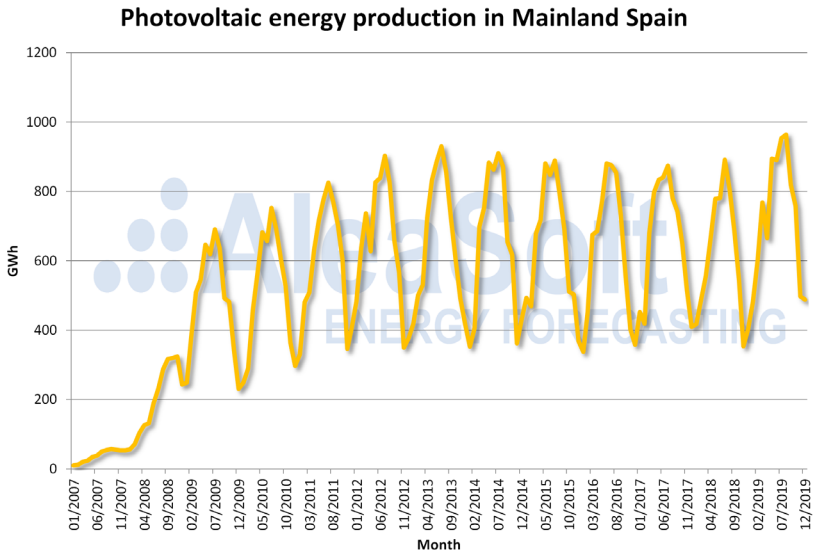




*Source: Cornwall Insight*

We have too much decarbonized energy in particular time periods

- A logical and unavoidable implication of intermittency.
- The problem remains with us for decades.
- Consuming „overbuilt” energy shall/could enhance decarbonization.
- The cheapest energy is not only the saved energy anymore. We have to *consume the „overbuilt” decarbonized energy en masse, in order to save a fraction carbonized energy later*.

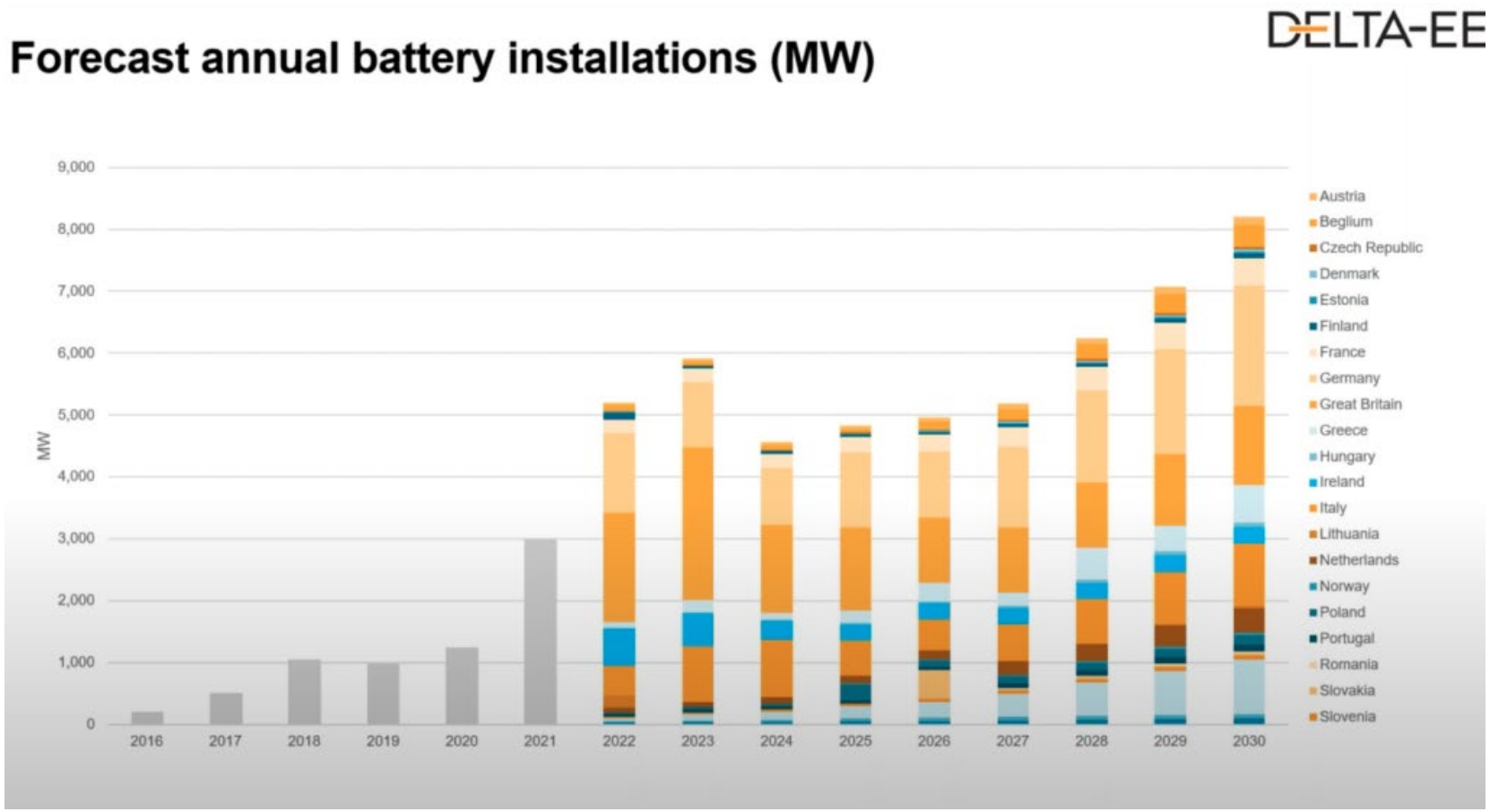


Do not expect a swift solution from batteries

- Storage flexibility shall only sufficiently increase by e-mobility from the mid-2030s.

- May respond to intra-day challenges, intra-week and intra-month perspectives will remain challenging in the decades to come.



# What can be used as a „battery” in municipal energy consumption?

- Energy communities – Nice idea, but too slow, too sophisticated and focus on the wrong part of the network.
- Dynamic pricing/smart charging – Part of the solution, but without accompanied technological solutions and demand management practices, it will fall short of expectations.
- E-mobility/stationary batteries – Comes too late and will provide only a gradual advancement, not sufficient for the 2050 goals.
- Agressive demand management – Using „alternative batteries” – Storage heat in walls, heatwater.

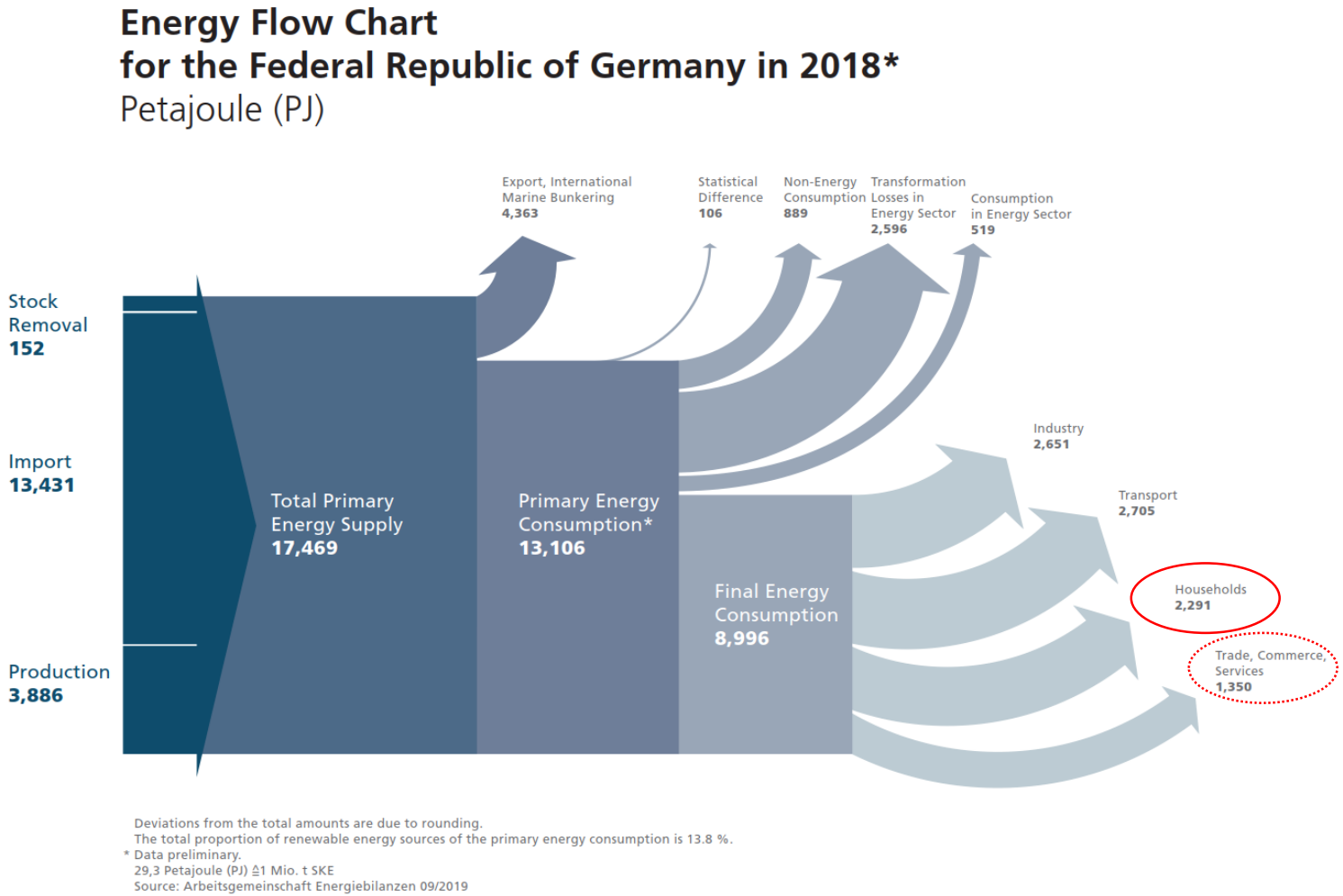
# What do municipalities need to facilitate dynamic consumption?

Contract with dynamic pricing


Some overcapacity, smart meters

Social support and sacrifice

Space heating/cooling is the single biggest (besides transportation) segment of energy consumption



# Thank You for Your attention!