

# The new oil?

## The geopolitics and international governance of hydrogen



Indra Overland

This lecture is partly based on our new article:

Thijs Van de Graaf, Indra Overland, Daniel Scholten and Kirsten Westphal (2020) **“The new oil? The geopolitics and international governance of hydrogen”**, *Energy Research and Social Science*,

<https://www.sciencedirect.com/science/article/pii/S2214629620302425>

# The old dream of a green hydrogen economy

- Energy transition => chicken and egg problem => boot-strapping needed
- Perfect synchronicity among separate actors required
- Parallel interlinked risks => whole endeavor utopian





**“Mind-  
bogglingly  
stupid”**

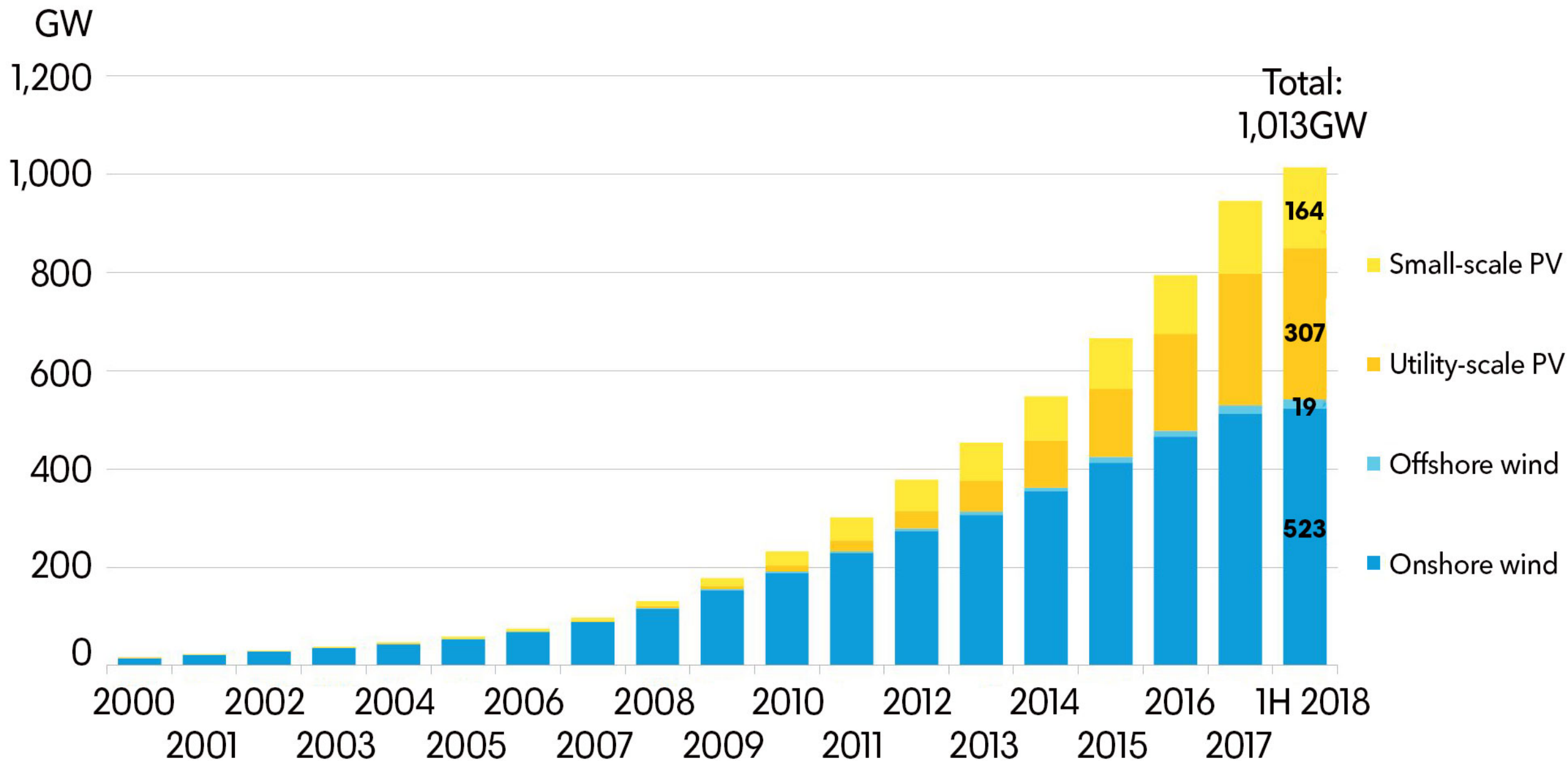


# Tesla world battery day announcements 22 Sept. 2020

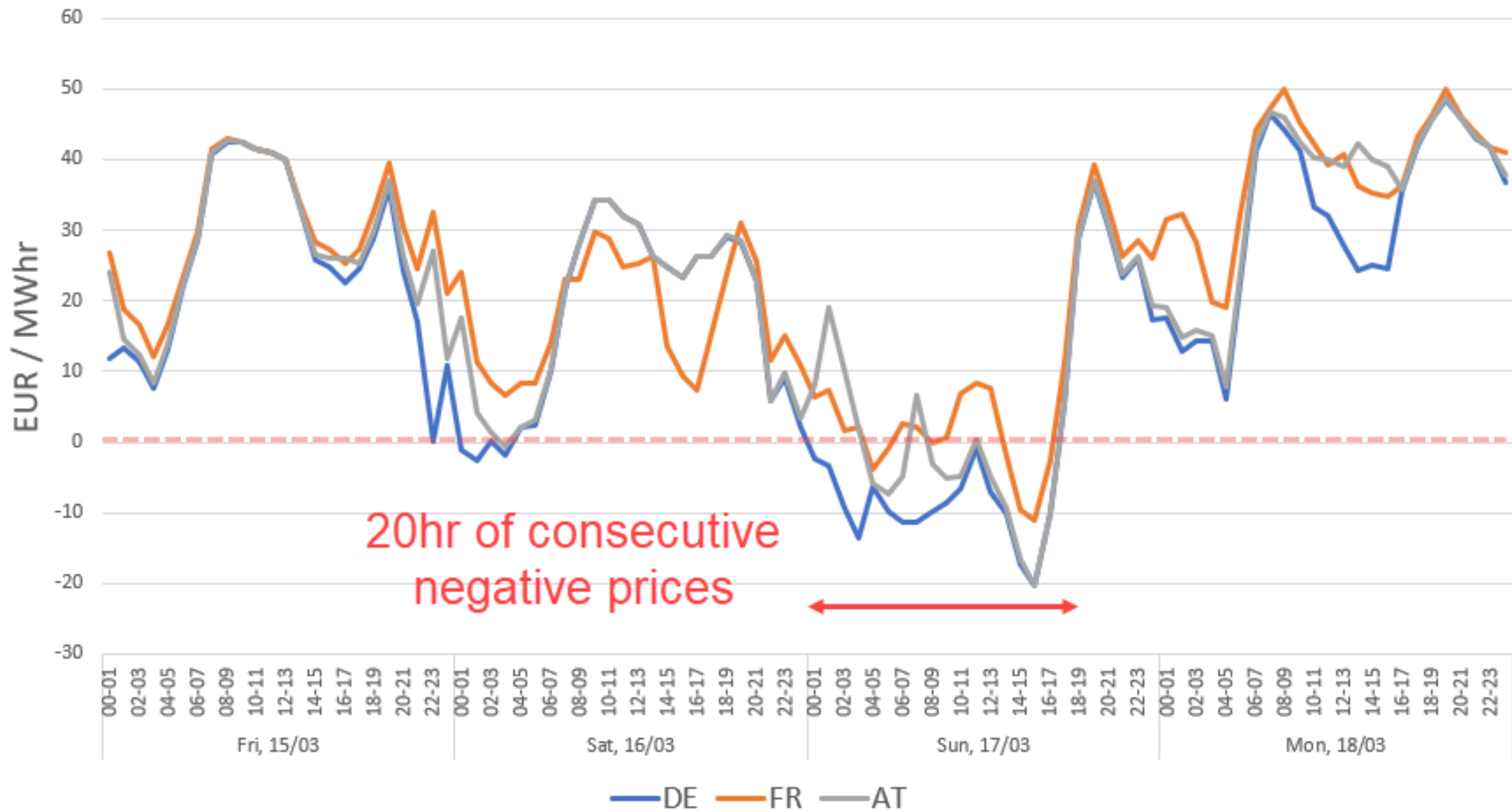


- Reduce battery cost by 56% per kWh
- Increase range by 54% without raising weight
- Reduce use of energy for battery production by 90%
- No more cobalt
- Rolled out to customers within 2-4 years
- Early manufacturing already started

# Global wind and solar installations, cumulative



# EEX hourly Day-ahead prices 2019



(Re-)enter hydrogen





The race is on

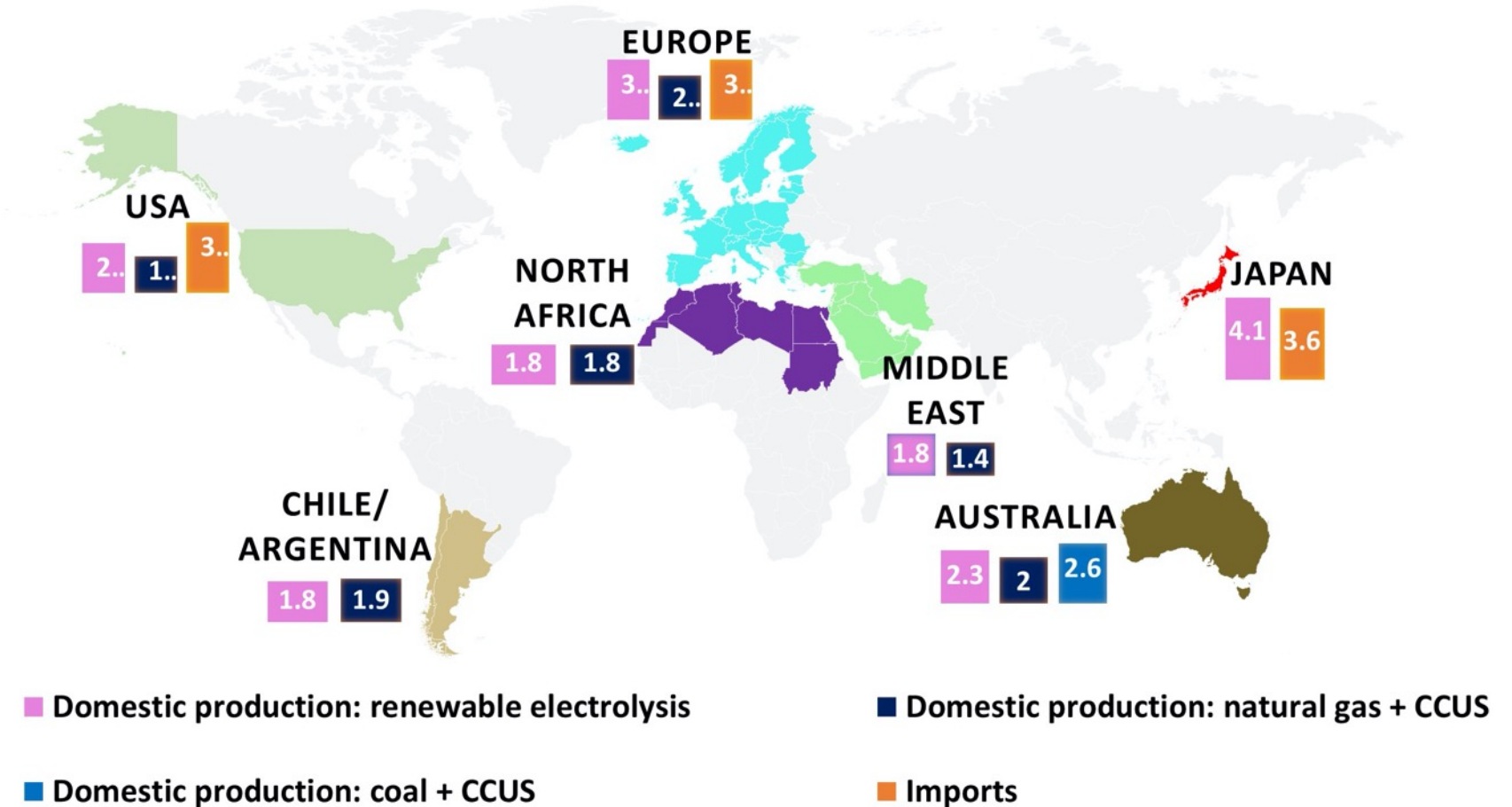


Optional, organic, incremental, opportunistic expansion to other sectors



# If hydrogen wins

- A new international trade
- Shipping, producers, consumers, political risk etc.
- The new oil?



# Recently issued hydrogen strategies

- Australia
- EU
- France
- Germany
- Japan
- Korea
- Norway
- ...

# Hydrogen ignored by literature on geopolitics of energy transition

- 204 publications reviewed
- 0 on hydrogen

Roman Vakulchuk, Indra Overland, Daniel Scholten (2020) “**Renewable Energy and Geopolitics: A Review**”, *Renewable and Sustainable Energy Reviews*,

<https://www.sciencedirect.com/science/article/pii/S1364032119307555>

# International governance needed to manage risks

- Carbon lock-in
- Market fragmentation
- Geo-economic rivalry

# Caveat

- In renewable energy production, incl. green hydrogen, an advantage is comparative, not absolute
- Green hydrogen producers will always potentially be competing against their own customers
- If their low-cost advantage is outweighed by geopolitical risks, customers may supply their own needs

Indra Overland (2020) **“The Geopolitics of Renewable Energy: Debunking Four Emerging Myths”**,

*Energy Research and Social Science*

<https://www.sciencedirect.com/science/article/pii/S2214629618308636>



Thank you for listening!