

Why do electro-fuels support the energy transition as a global commodity?

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Frontier is an economic consultancy working across sectors...

Regulation

Strategy

Competition

Dispute
services

Policy



Energy



Financial
services



Healthcare



Retail



Media



Telecoms



Water



Transport

- Frontier has over **200 consulting staff across** its offices Berlin, Brussels, Cologne, Dublin, Paris, London and Madrid
- **Energy** is our largest sector specialisation, also expertise in many other infrastructure sectors
- Regular work on a wide range of topics in the **power, gas and fuel market**
- One recent focus: Quantitative **analysis of energy systems** with regard to energy transition, sector coupling, decarbonization
- Broad **customer portfolio** of companies, associations, authorities and government organizations
- **Global, European and German** energy expertise
 - Projects in all major EU countries
 - More than a third of our energy projects relate to the German market

... but energy is one of our core expertise!

Key thesis



Synthetic fuels from renewable energies will play an important role in the future energy mix

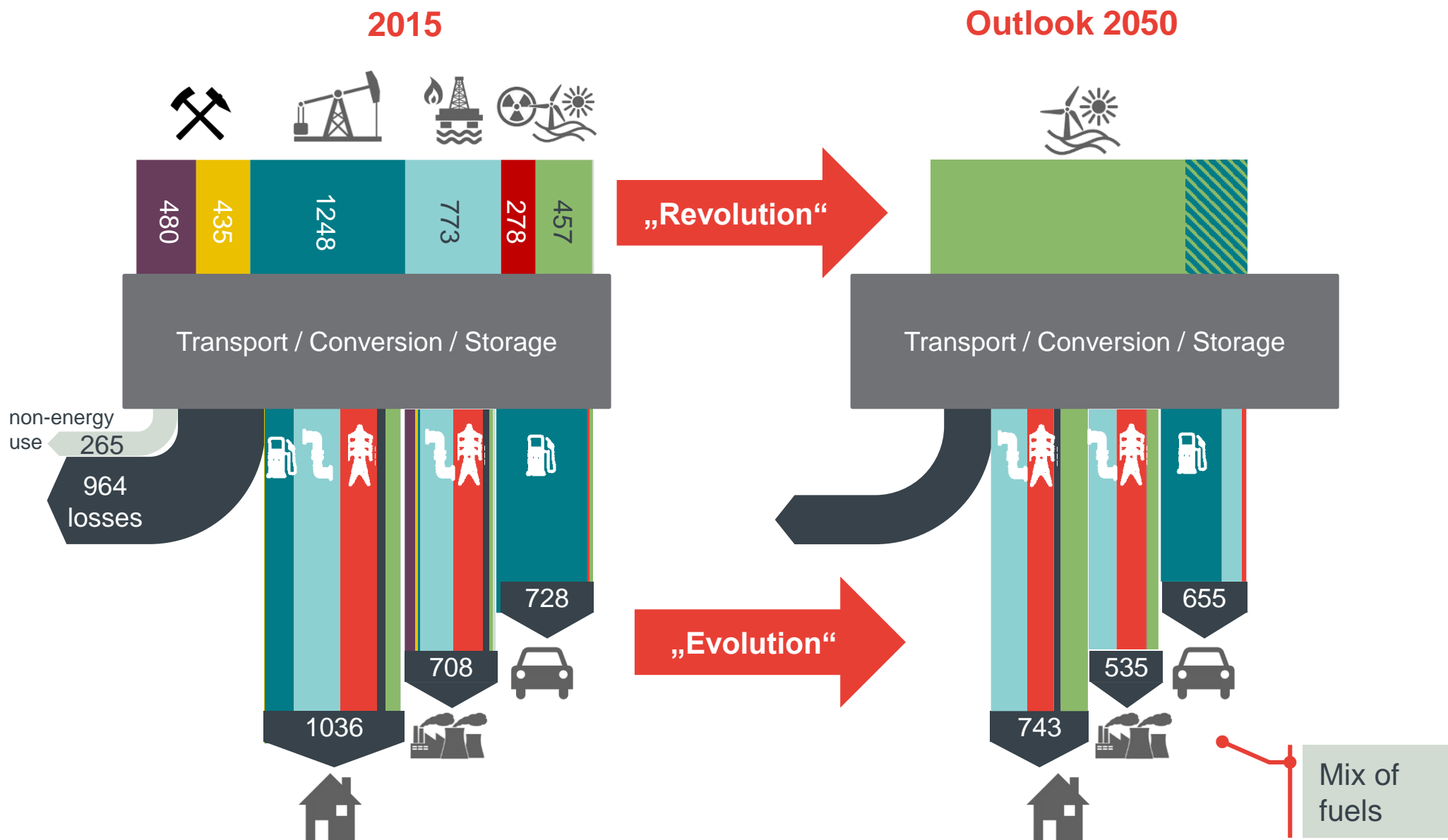


Synthetic fuels from renewable energies will allow for a global market



The way towards synthetic fuels needs to be paved by an appropriate framework

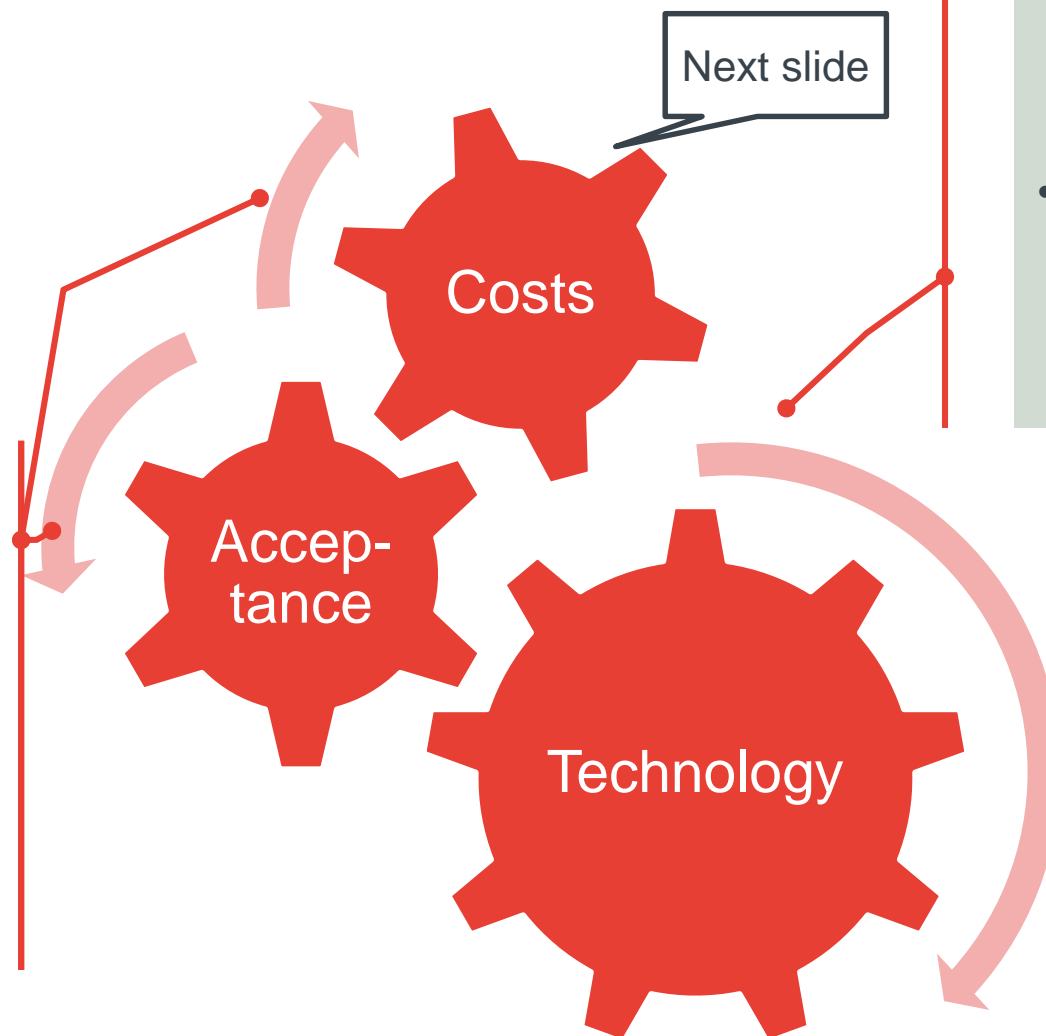
Until 2050, fossil fuels will have to be replaced by carbon neutral energies in all sectors – this means „defossilisation“, not „decarbonisation“



Key drivers for paving the way for synthetic fuels from RES towards a global market

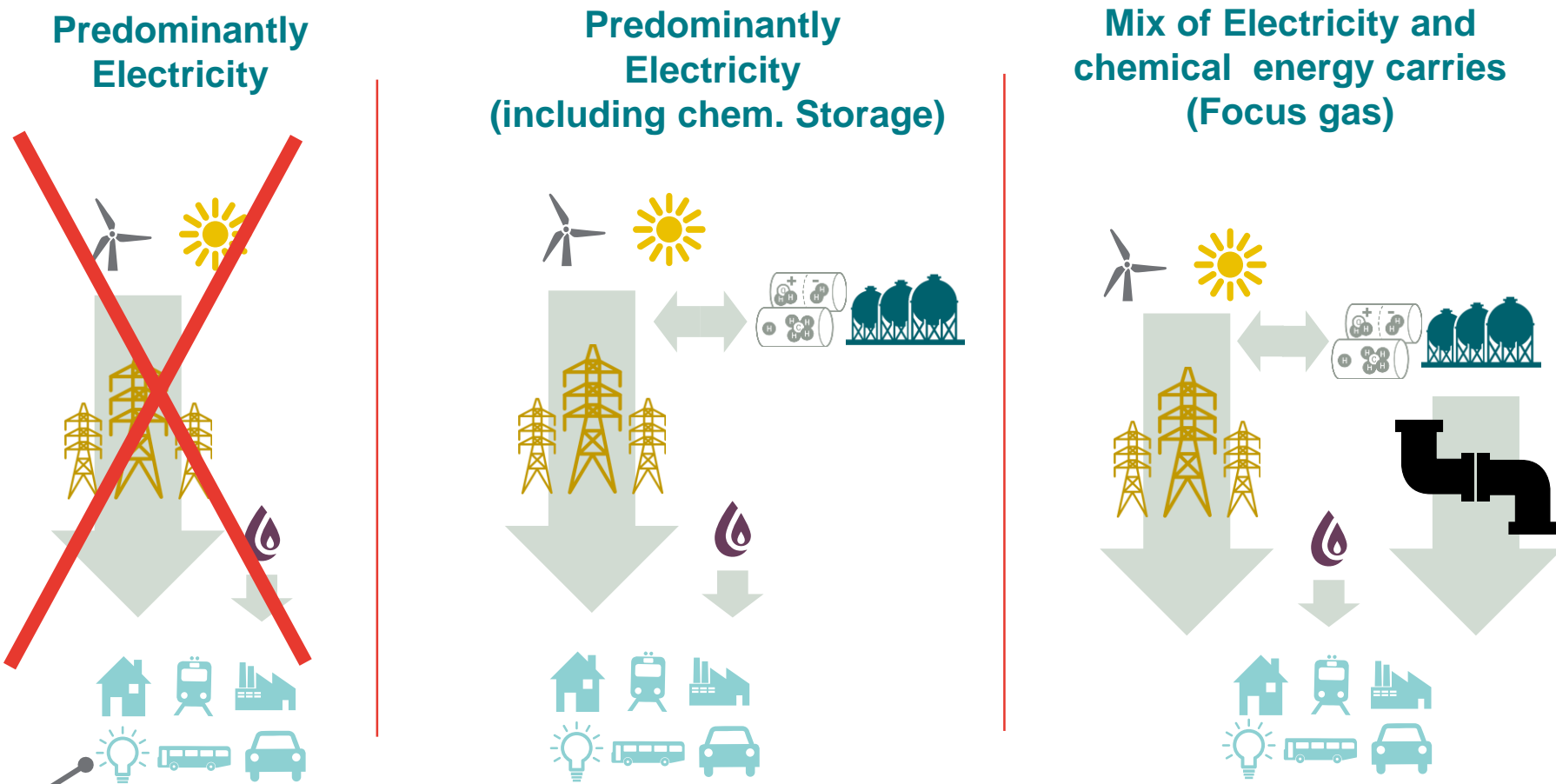
Electro-Fuels allow for...

- ...the usage of existing infrastructure
- ...low cost energy applications
- ...energy uses with today's convenience
- ...a future global market for energy



- ...THG abatement in sectors with limited alternatives (aviation, shipping..)
-in a RES-E world, the seasonal storage of huge amounts of energy

Study results: Usage of PtG / PtX lowers total system cost compared to full electrification! (example Germany)



BUT:
Traffic sector not yet fully optimized!

unrealistic

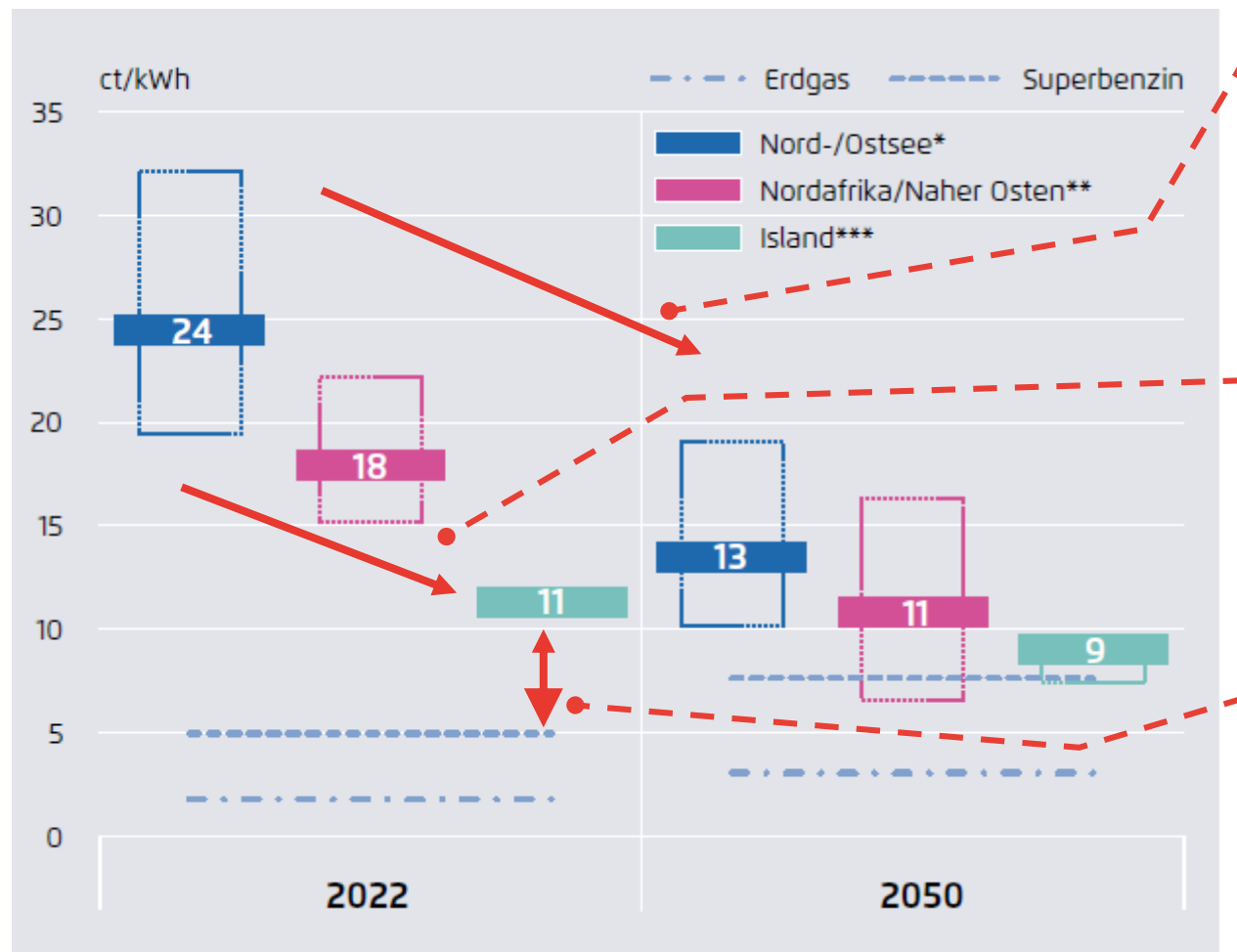
expensive

Savings (2050):
-12bn€/a
(-270bn€ invest)

- E.g. avoided investments in
- Grid (transport & distribution)
 - End appliances

A global market for electro-fuels makes sense - due to the availability of sites for RES-E and cost optimisation

Cost of Synthetic Fuels / Methan



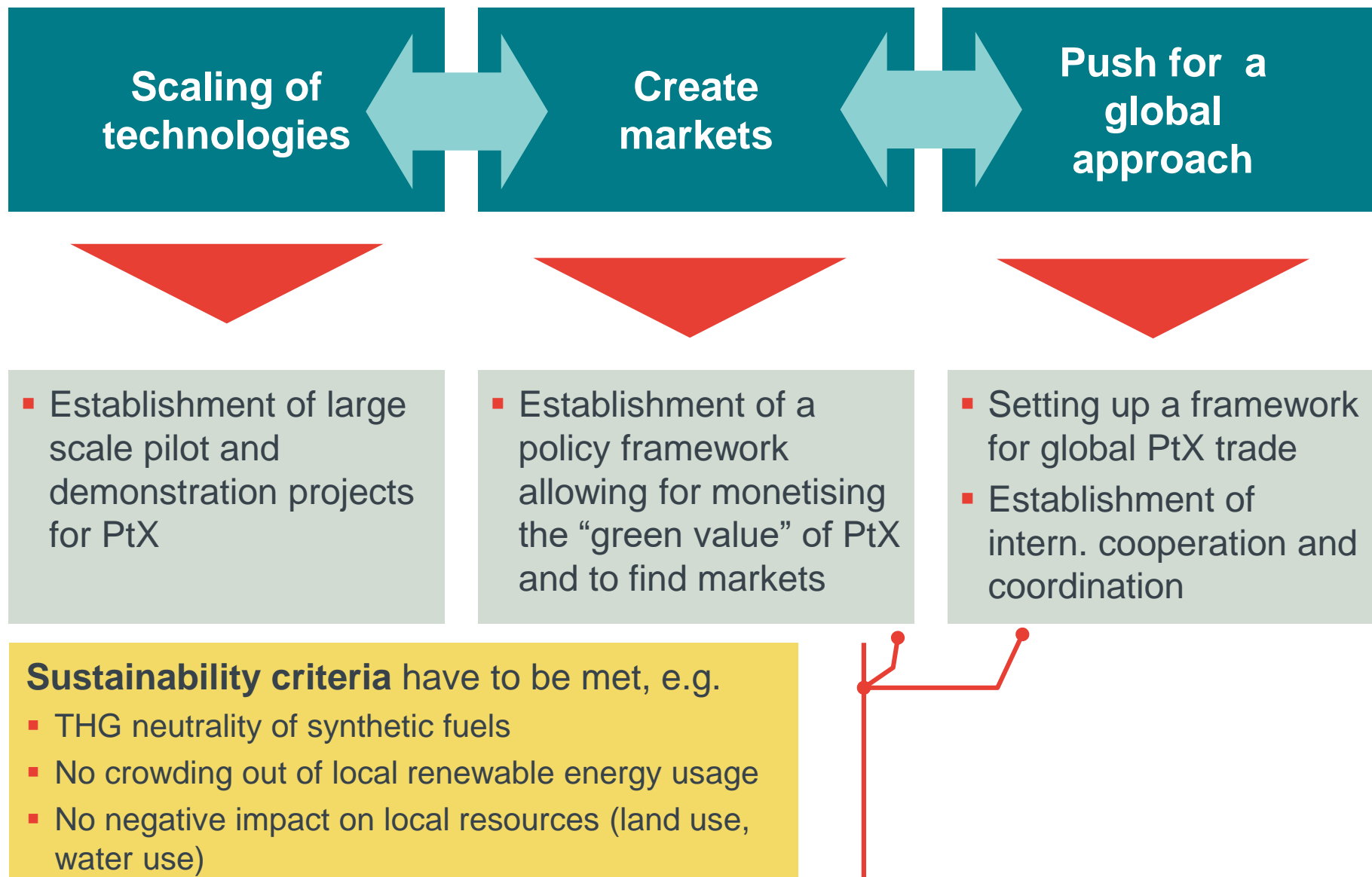
Thesis 1: Costs for Synthetic fuels will decrease in future – given that there is sufficient scaling

Thesis 2: There is huge potential to optimise costs for the supply of PtX around the globe

Thesis 3: The scaling up of global PtX markets will require an adequate market framework and incentive scheme

Src: Frontier Economics in: Agora Verkehrswende und Agora Energiewende (2018)

However, the way towards synthetic fuels needs to be paved by an appropriate framework




Any questions?



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