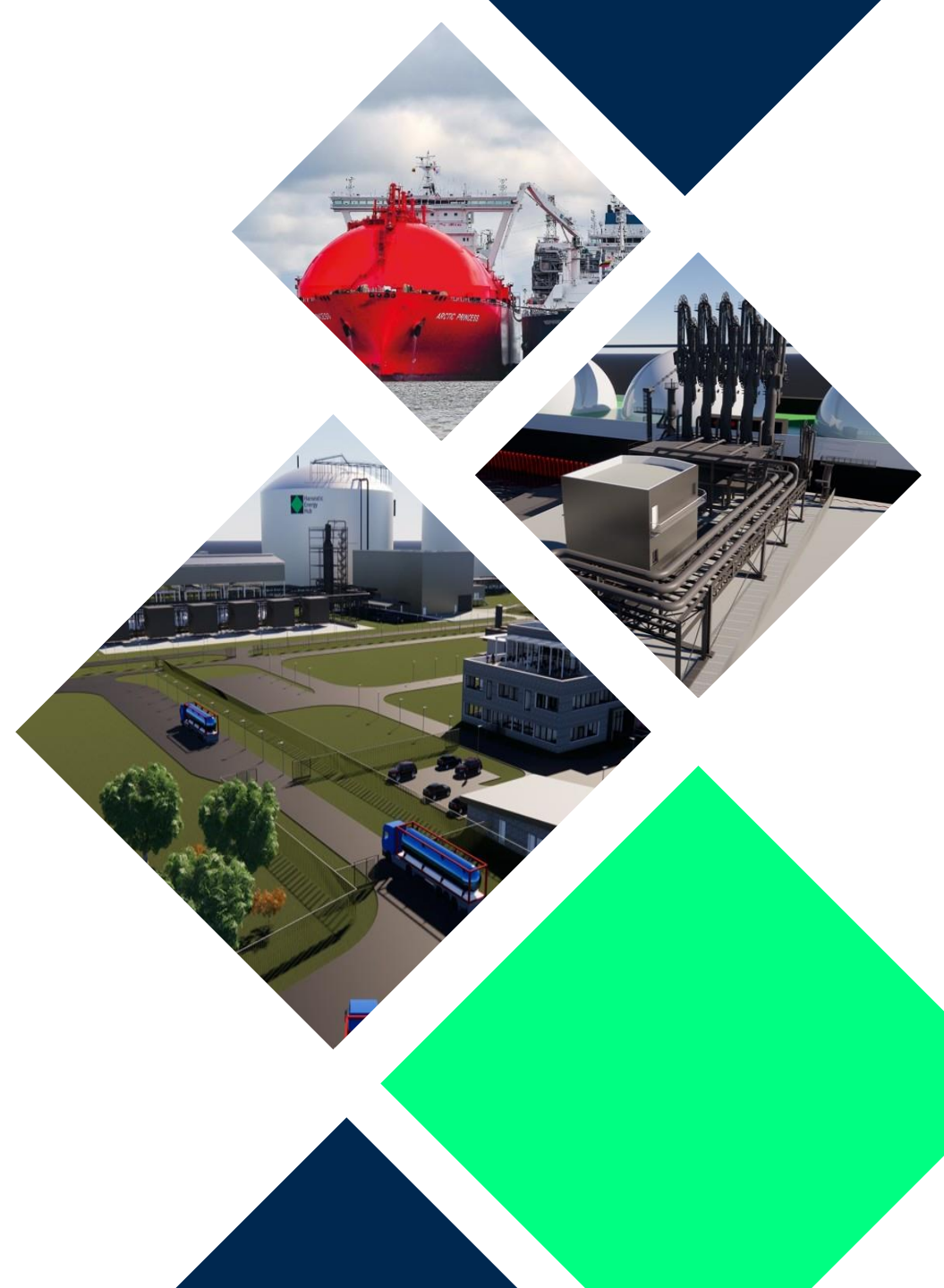


Hanseatic  
Energy  
Hub

# Hanseatic Energy Hub

A future-flexible modular system for the green energy transition

May 2023



# Welcome to Stade!



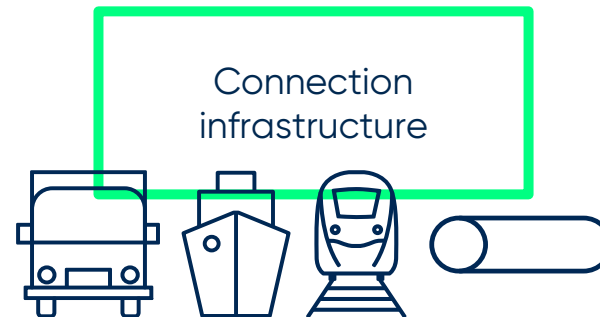
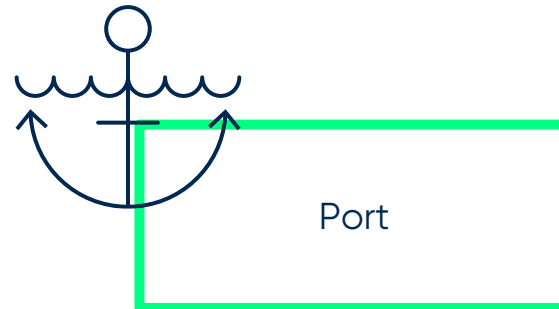
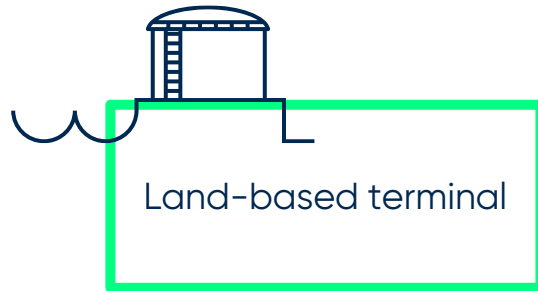
Hanseatic Energy is an import terminal that secures Germany's supply of LNG and green gases while preparing for the market ramp-up of hydrogen.





# We're future-flexible!

The terminal, port, industrial park and connecting infrastructure are designed so that the conversion to hydrogen can be carried out in a modular fashion analogue to building block systems.



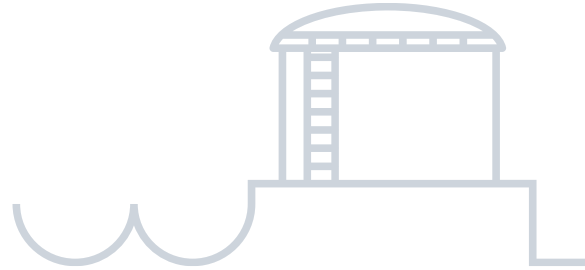
# Technical and commercial flexibility



## MODULE: LAND-BASED TERMINAL

### Zero-emission terminal

- Commissioning 2027
- First expansion stage for LNG, Bio-LNG and SNG
- Up to 13.3 bcm/a capacity for LNG and a peak capacity of 21.7 GW



### Ammonia-ready

- Material selected for tanks and pipelines considers later uses by ammonia
- Foundations statically inspected
- Commercial long-term contracts with option for ammonia
- Possible to ramp up ammonia in parallel thanks to smaller tanks



# Securing energy supplies in the short term

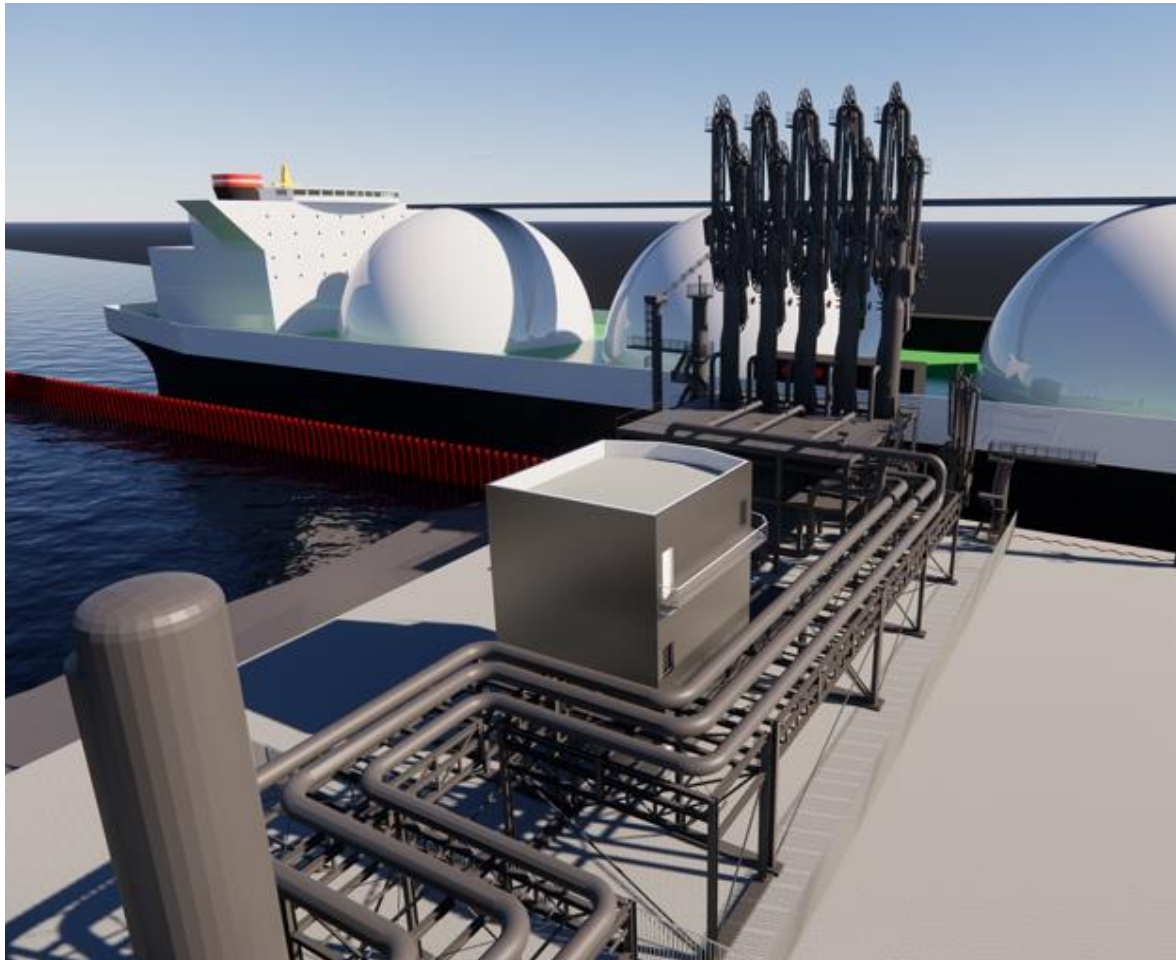
TEMPORARY MODULE: FSRU



- "Transgas Force" from Dynagas, 7,5 bcm/a
- From end of 2023 until the land-based terminal is commissioned
- Utilizes the already existing infrastructure
- Connection via a very short connecting pipeline
- Nautically simulated and fully suitable
- Not H2-compatible

# Modern energy port for liquefied gases

## MODULE: PORT



- Completion 2023
- Large jetty allows tankers up to Q-Max size
- Small jetty for bunker ships
- Parallel use for LNG & ammonia possible
- Nautical simulation successfully completed

# Enabling the energy transition and industrial transformation



## MODULE: INDUSTRIAL PARK



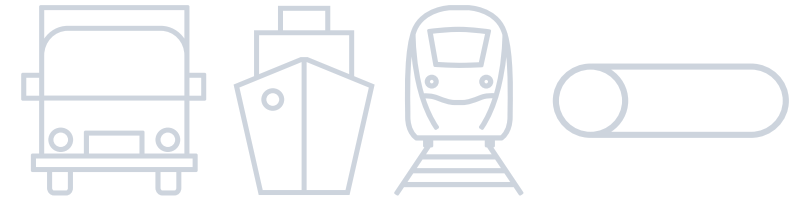
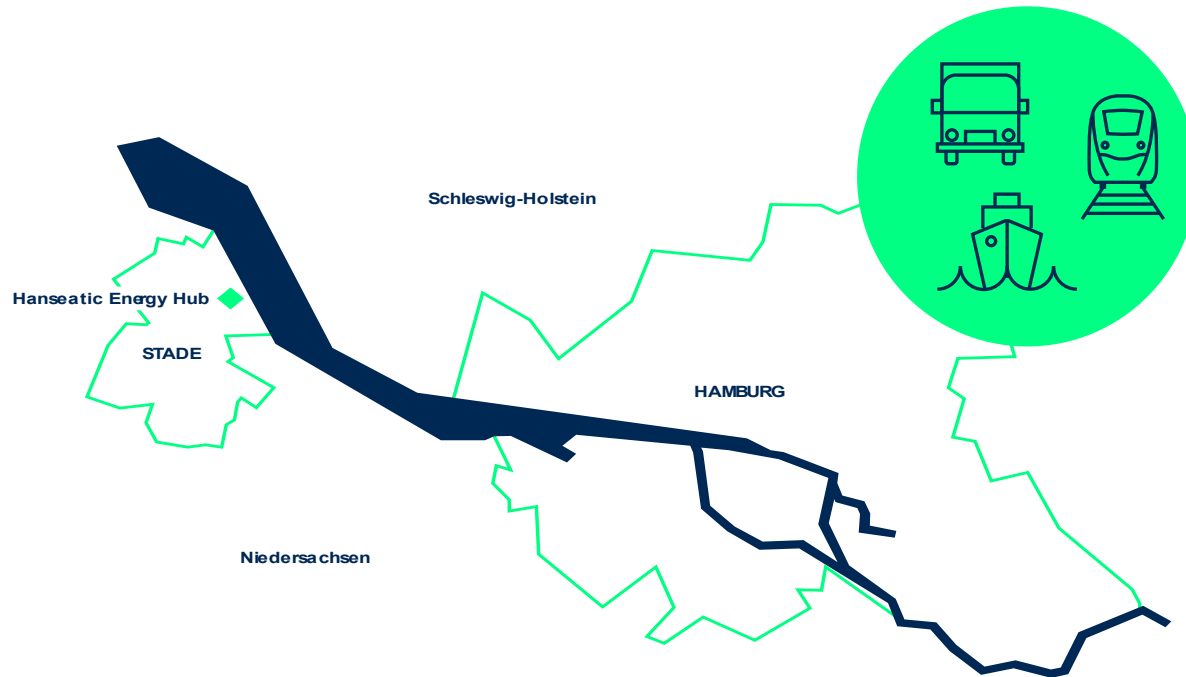
- Existing industrial and port location with considerable demand for energy and raw materials
- Dow a leader in Germany in the production and use of electrolysis hydrogen
- Over 50 years of on-site expertise in handling liquefied gases
- Potential sites for ammonia crackers
- Green offshore power: 380kV grid connection



# Multimodal connection of gas and hydrogen



## MODULE: CONNECTION INFRASTRUCTURE



- Short distance to the German gas transport network, with connection to large-scale consumers
- Proximity to Hamburg port means ideal location for bunkering services.
- Also offered: truck- & rail-loading
- The European hydrogen network (H2 backbone) is being built in the immediate vicinity

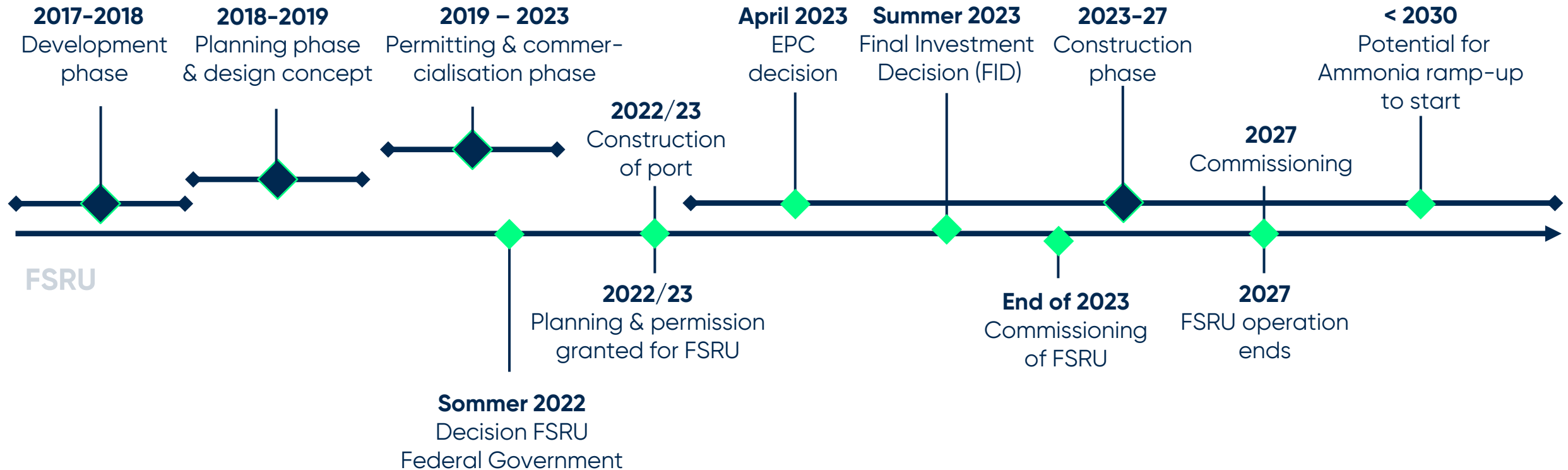


# Clear course for supply security



Timeline

## Land-based Terminal





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# Thank you

for your attention

