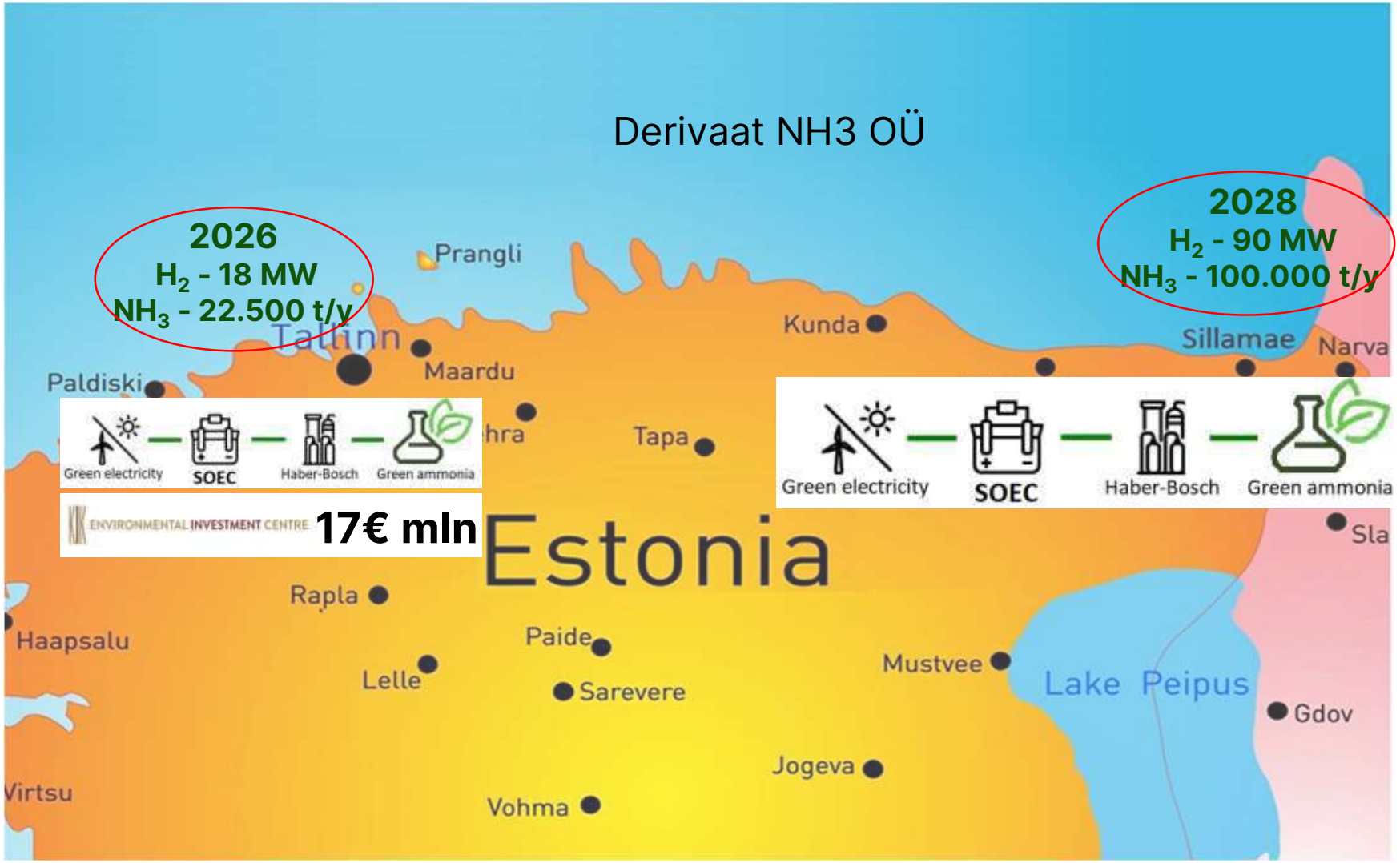
Derivaat $NH_3$

# Green Ammonia plant in Paldiski

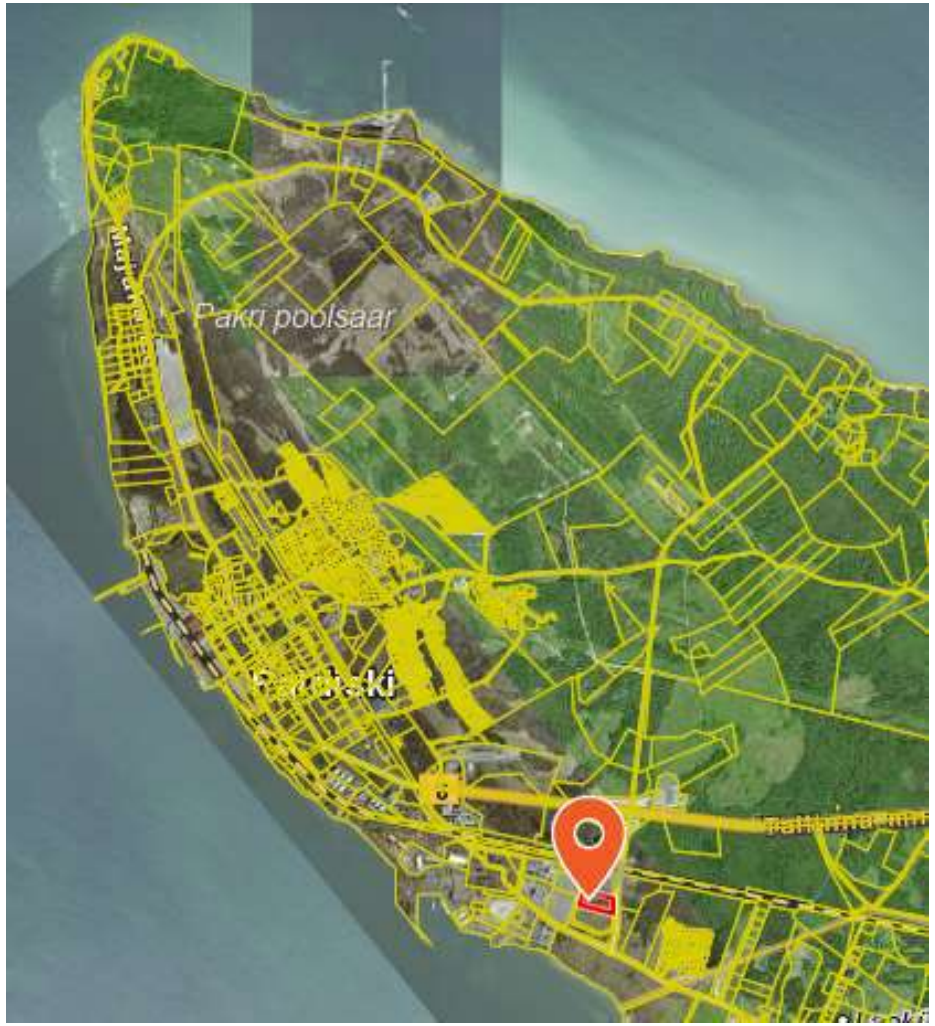
Erik Laidvee / 12.11.2024 / Pärnu

# Green ammonia projects



# Location of the green ammonia project in Paldiski



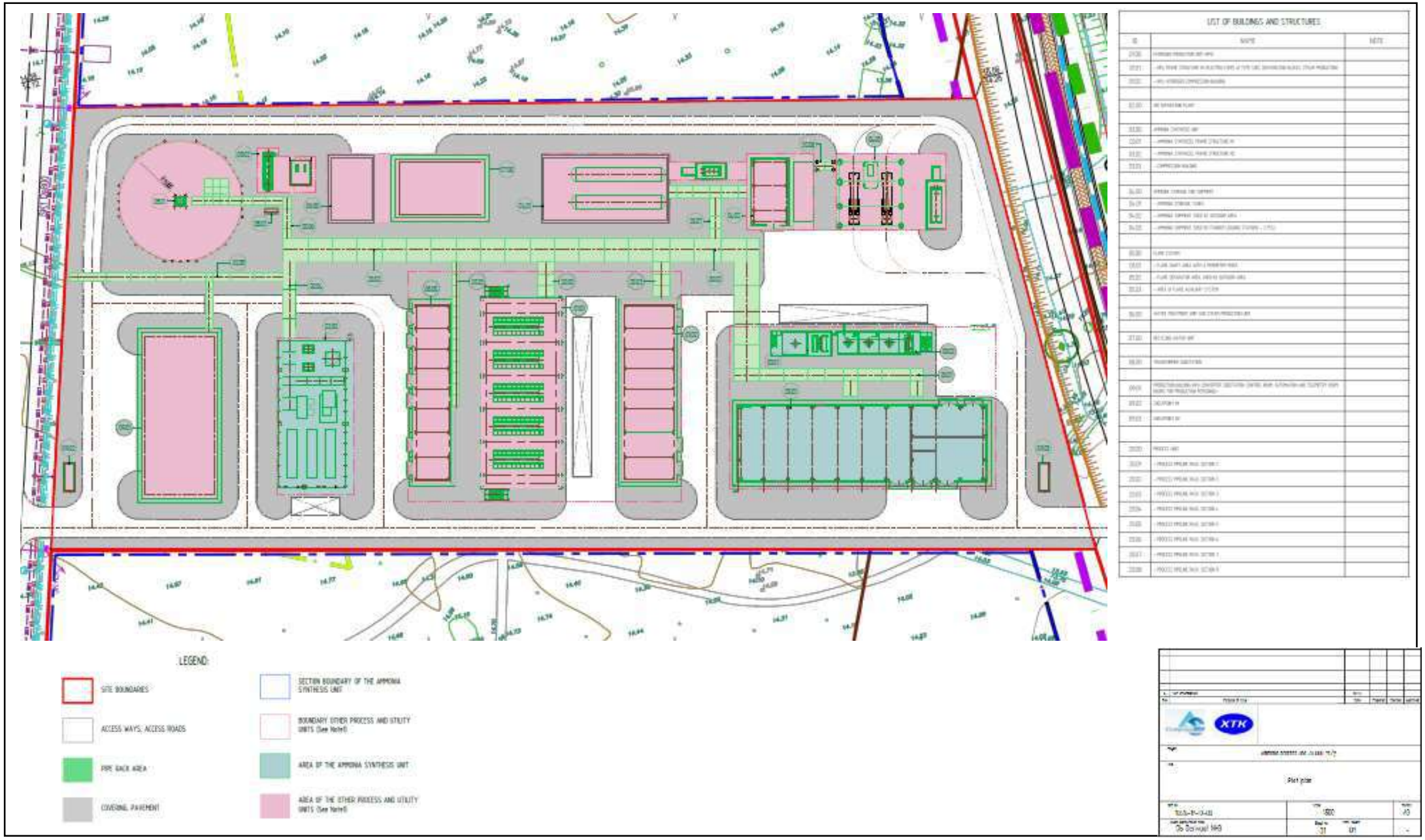


# Green electricity availability in Paldiski

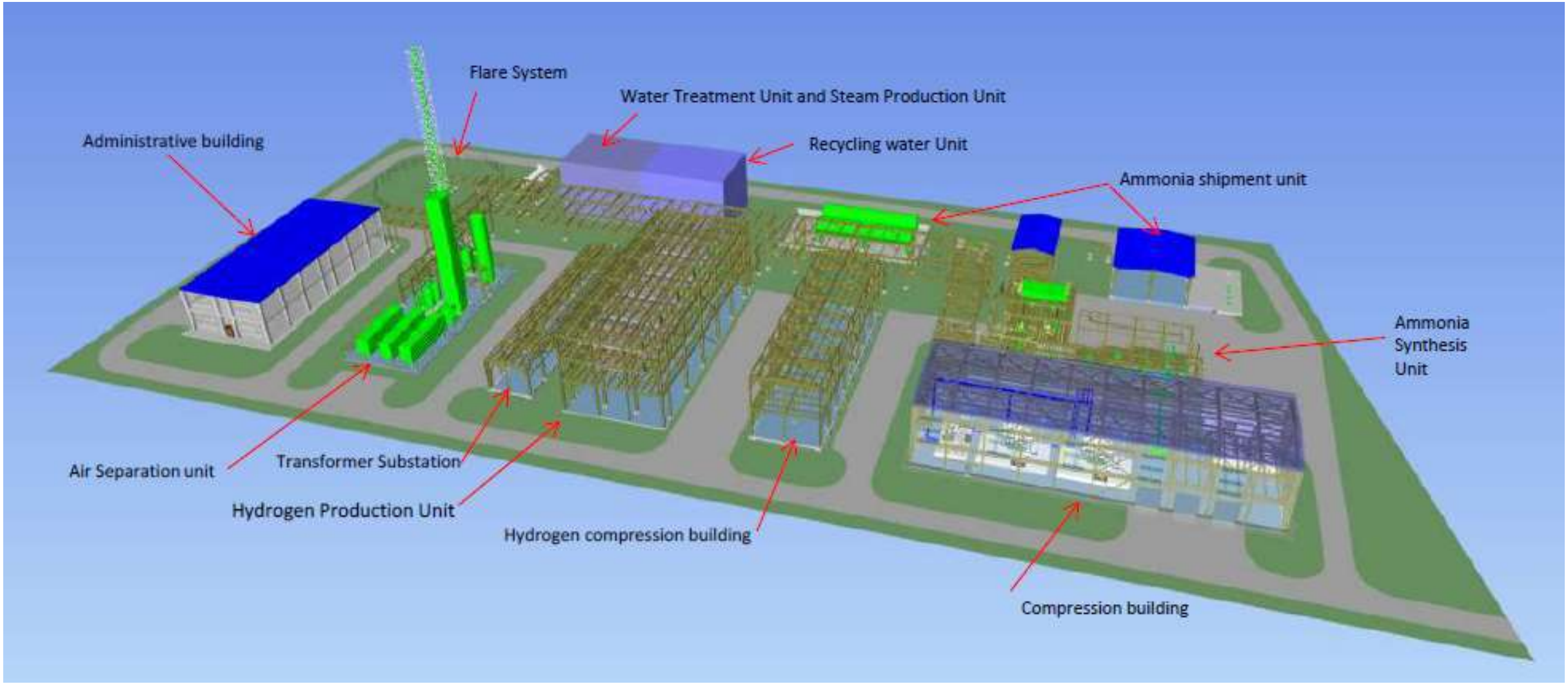
Wind park (63.4 MW) and solar park (development up to 40 MW)

youtube.com/watch?v=l2FXHJN7XPM

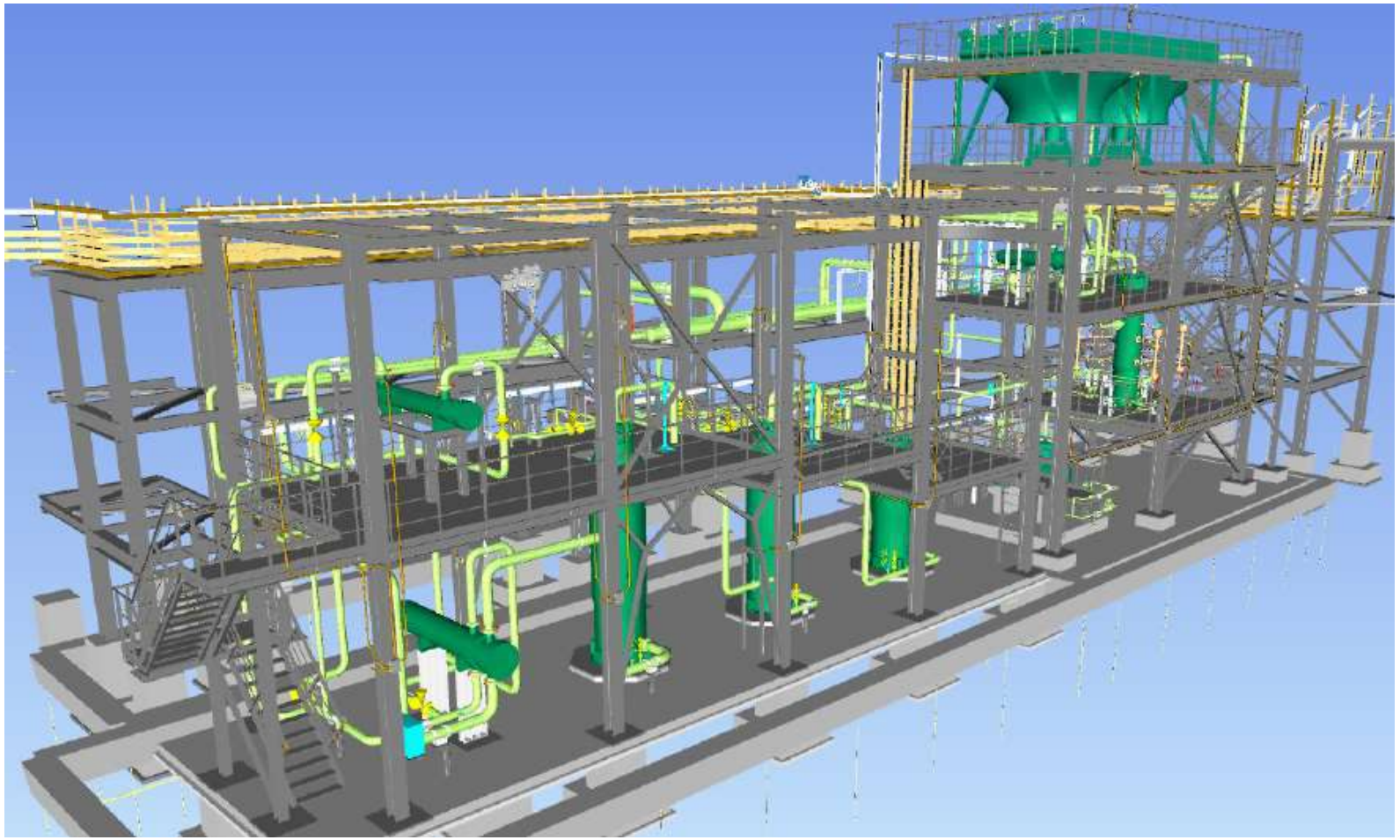
# Layout


LIST OF BUILDINGS AND STRUCTURES
LEGEND:
SITE BOUNDARIES
ACCESS WAYS, ACCESS ROADS
FIRE RACK AREA
COVERING PAVEMENT
SECTION BOUNDARY OF THE AMMONIA SYNTHESIS UNIT
BOUNDARY OTHER PROCESS AND UTILITY UNITS (See Note 6)
AREA OF THE AMMONIA SYNTHESIS UNIT
AREA OF THE OTHER PROCESS AND UTILITY UNITS (See Note 6)
XTK
Plot plan

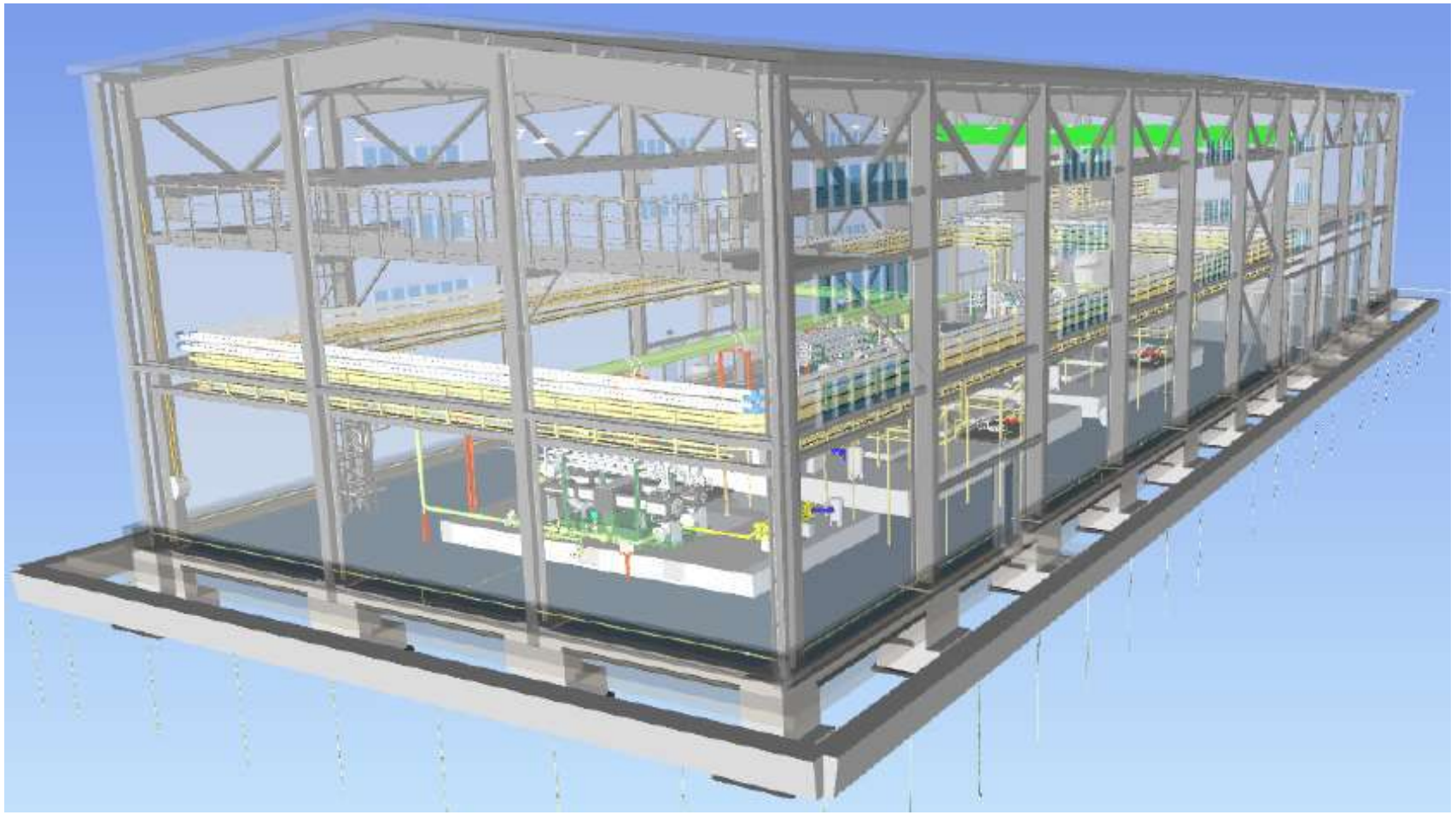
# 3D scheme


Flare System
Water Treatment Unit and Steam Production Unit
Administrative building
Recycling water Unit
Ammonia shipment unit
Ammonia Synthesis Unit
Air Separation unit
Transformer Substation
Hydrogen Production Unit
Hydrogen compression building
Compression building

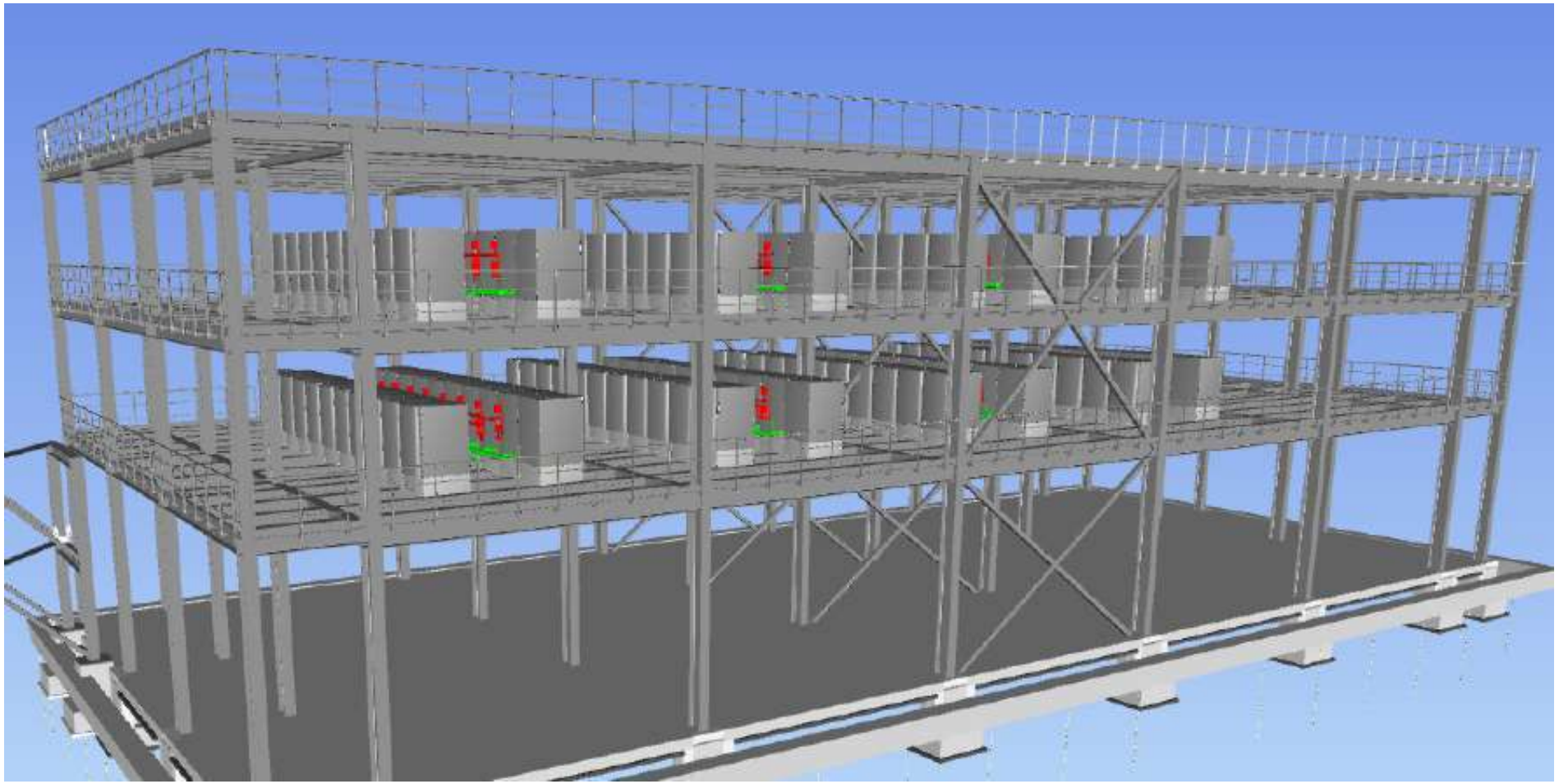
# Ammonia Synthesis Unit



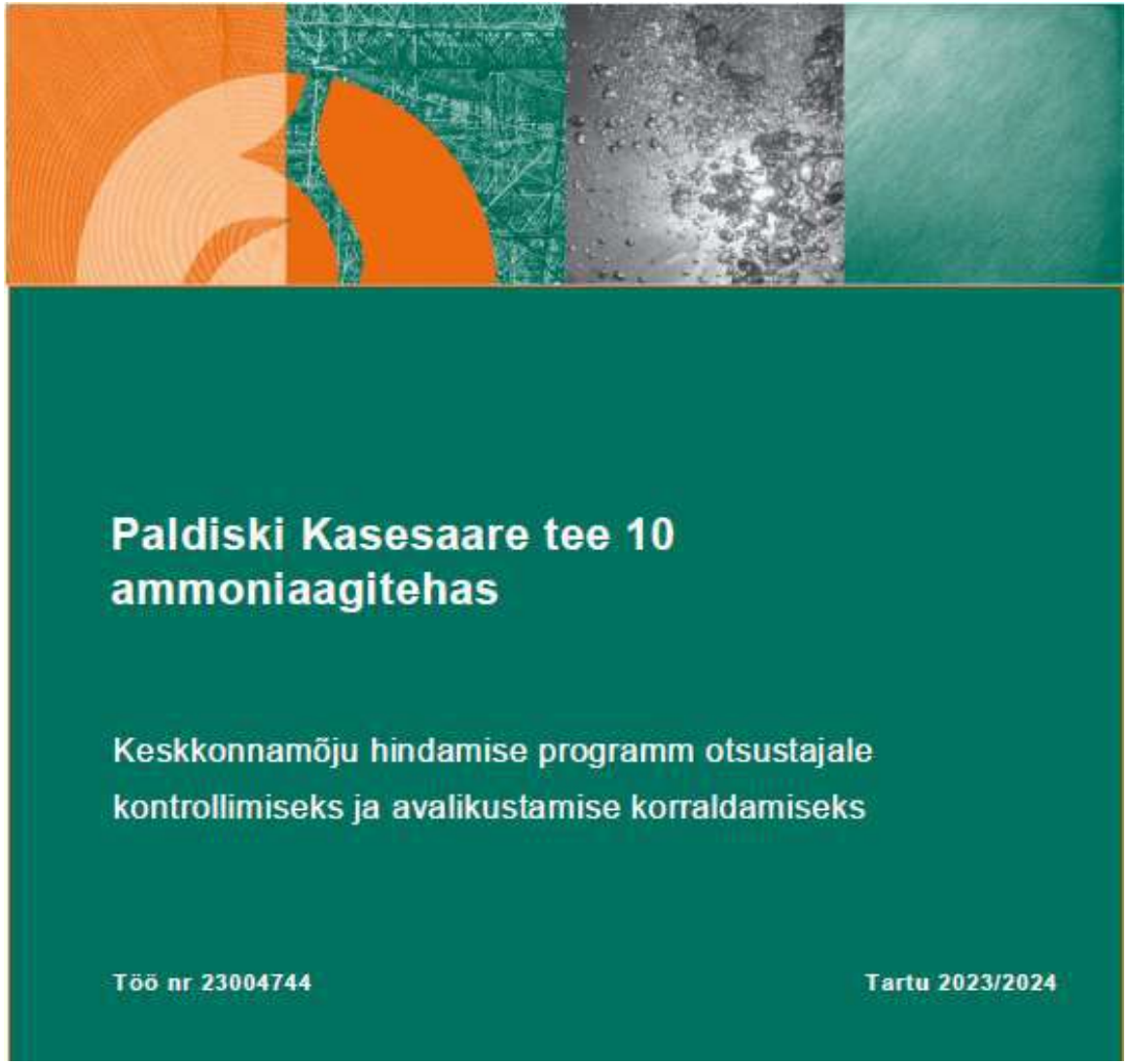
# Compression Building

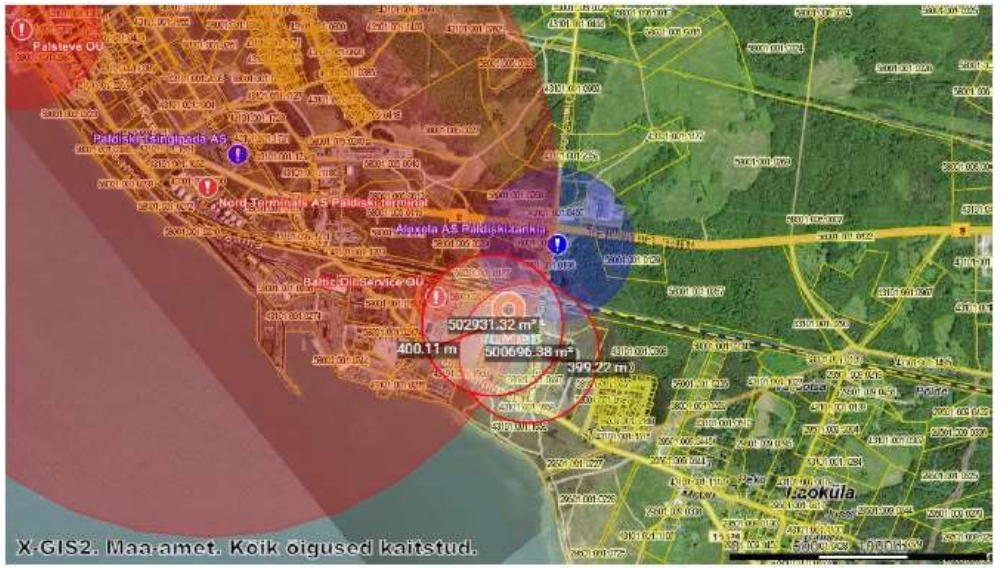


# Hydrogen Production Unit



# Environmental Impact Assessment (EIA)




**Joonis 6.1** Kavandatava tegevuse eeldatav mõjupiirkond ja teiste piirkonna ettevõtete mõjupiirkond kemikaaliriskide näitel (Aluskaart: Maa-ameti GIS portaali ohtlike ettevõtete kaardirakendus 2024).


**Joonis 2.2** Ammoniaagitehase elektrikaabli trassi eeldatav asukoht (väljavõte eskiisprojektist).

# Innovation


LLC «CHEMICAL TECHNOLOGY COMPANY»

PJSC «CHEMPROJECT»

Customer – OÜ Derivaat NH3

**Ammonia production**

**22 500 TPY**

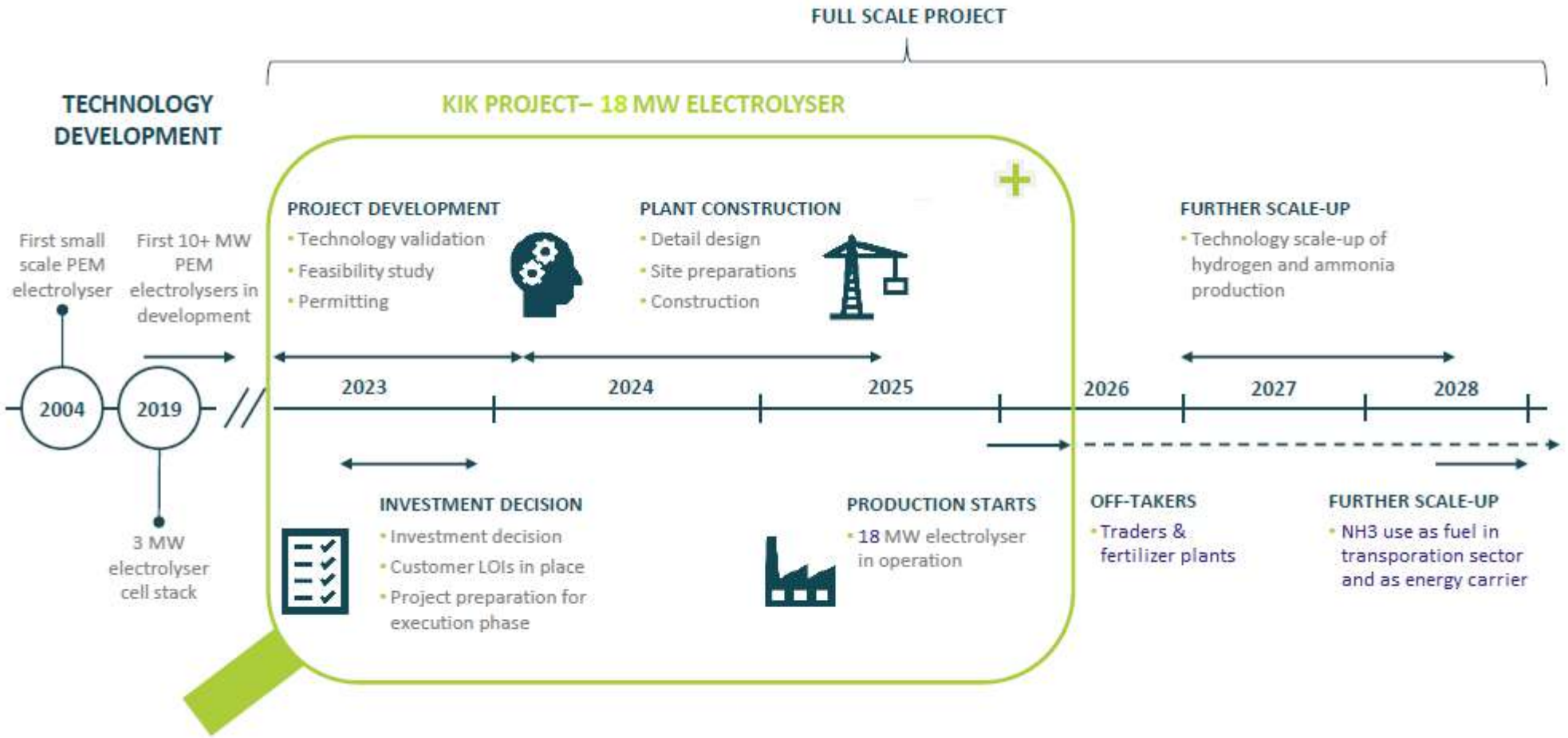
**BASIC TECHNICAL SOLUTIONS**

**10616-1P-BTS-01**



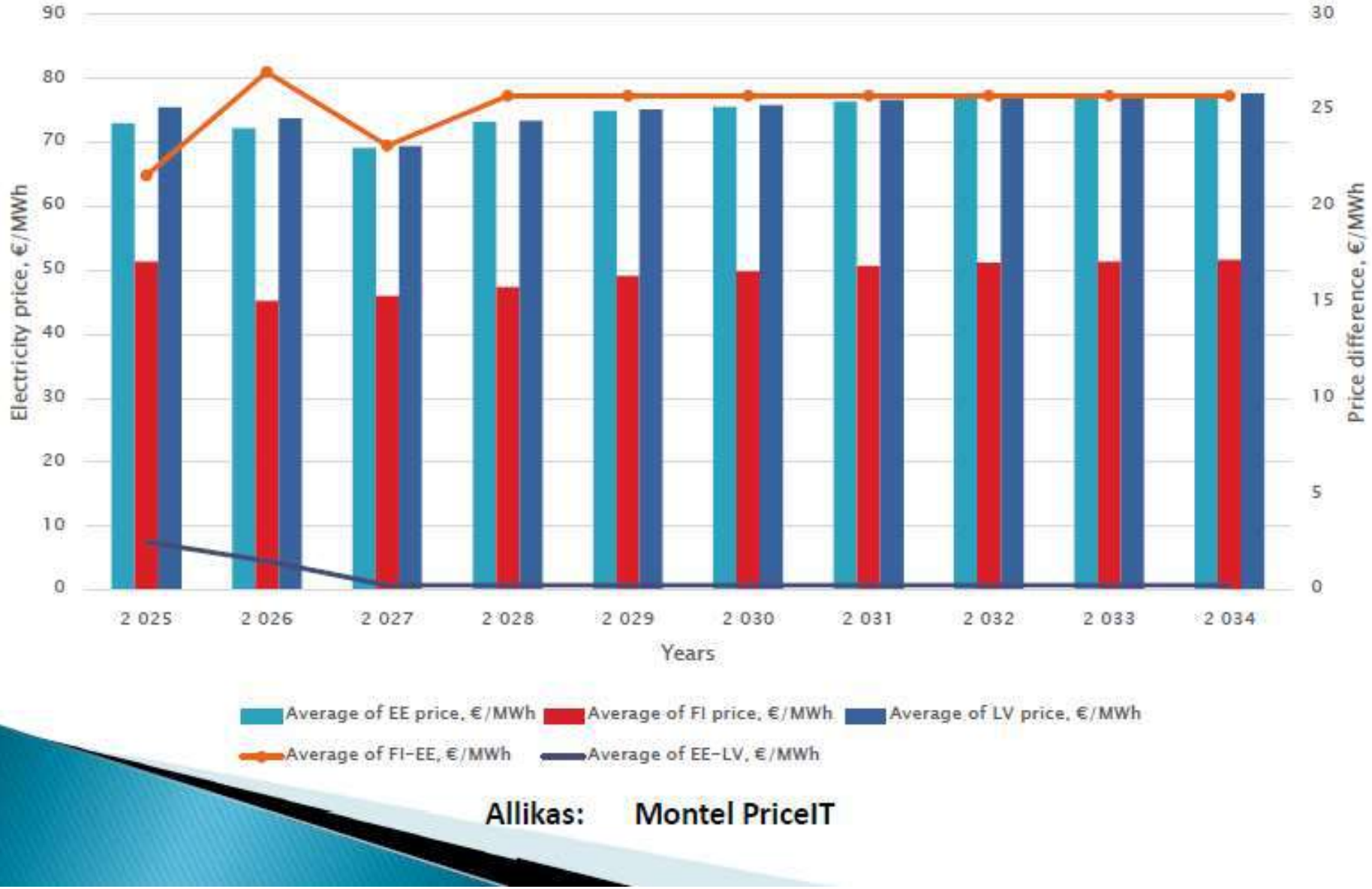
**2024**

# Project Timeline




CIVITTA

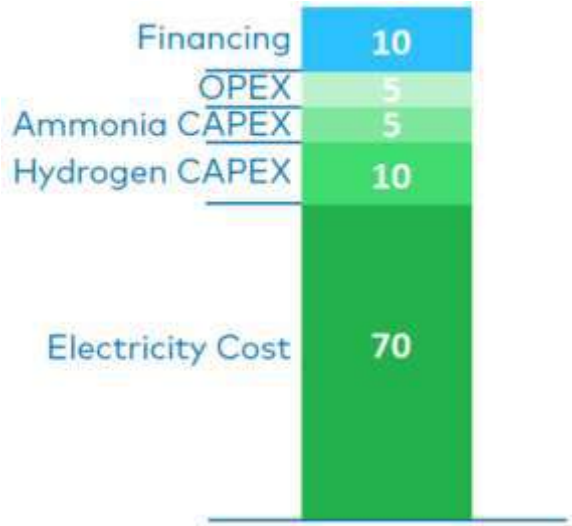
| Project name | Support recipient | Cost | Grant amount | Field | County | Financing source |
|---|---|---|---|---|---|---|
| Rohevesiniku väärtusahela roheammoniaagi tootmiseks Paldiskis | OÜ Derivaat NH3 | 37 700 000 € | 16 965 000 € | Transport | Üleriiklikud/maakondade vahelised projektid | Taaste- ja vastupidavusrahastu (RRF) |

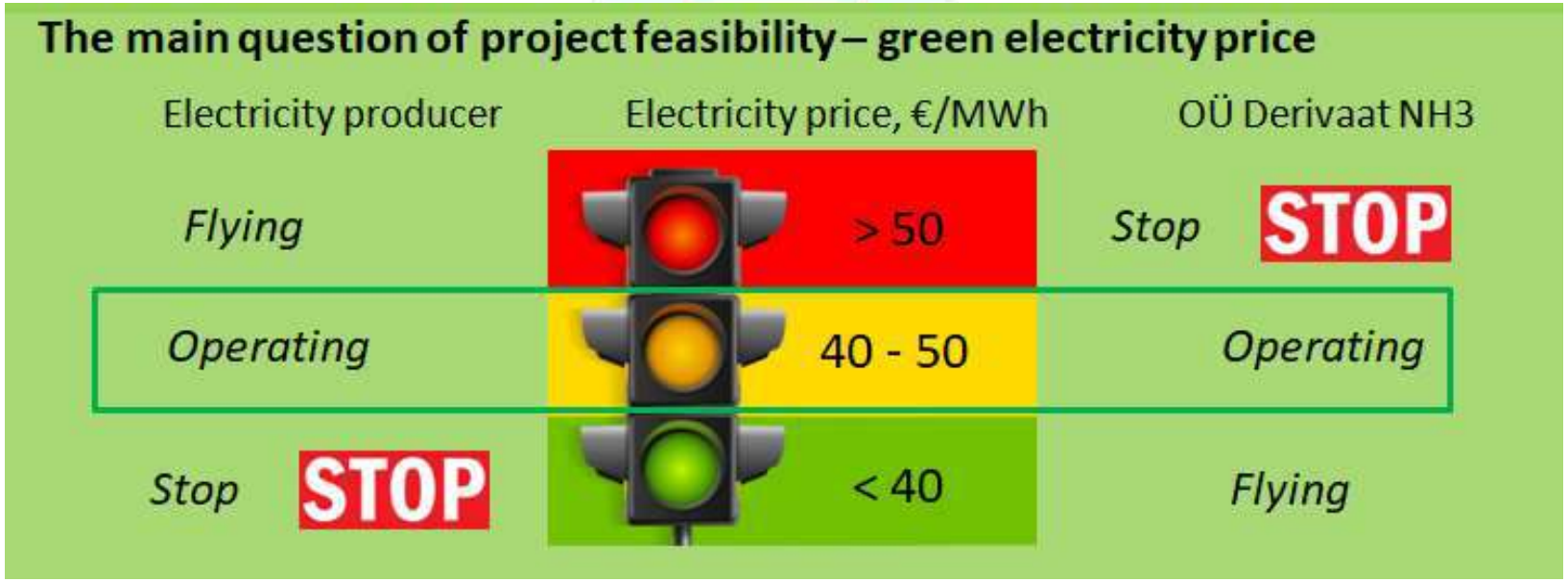



**Allikas: Montel PriceIT**

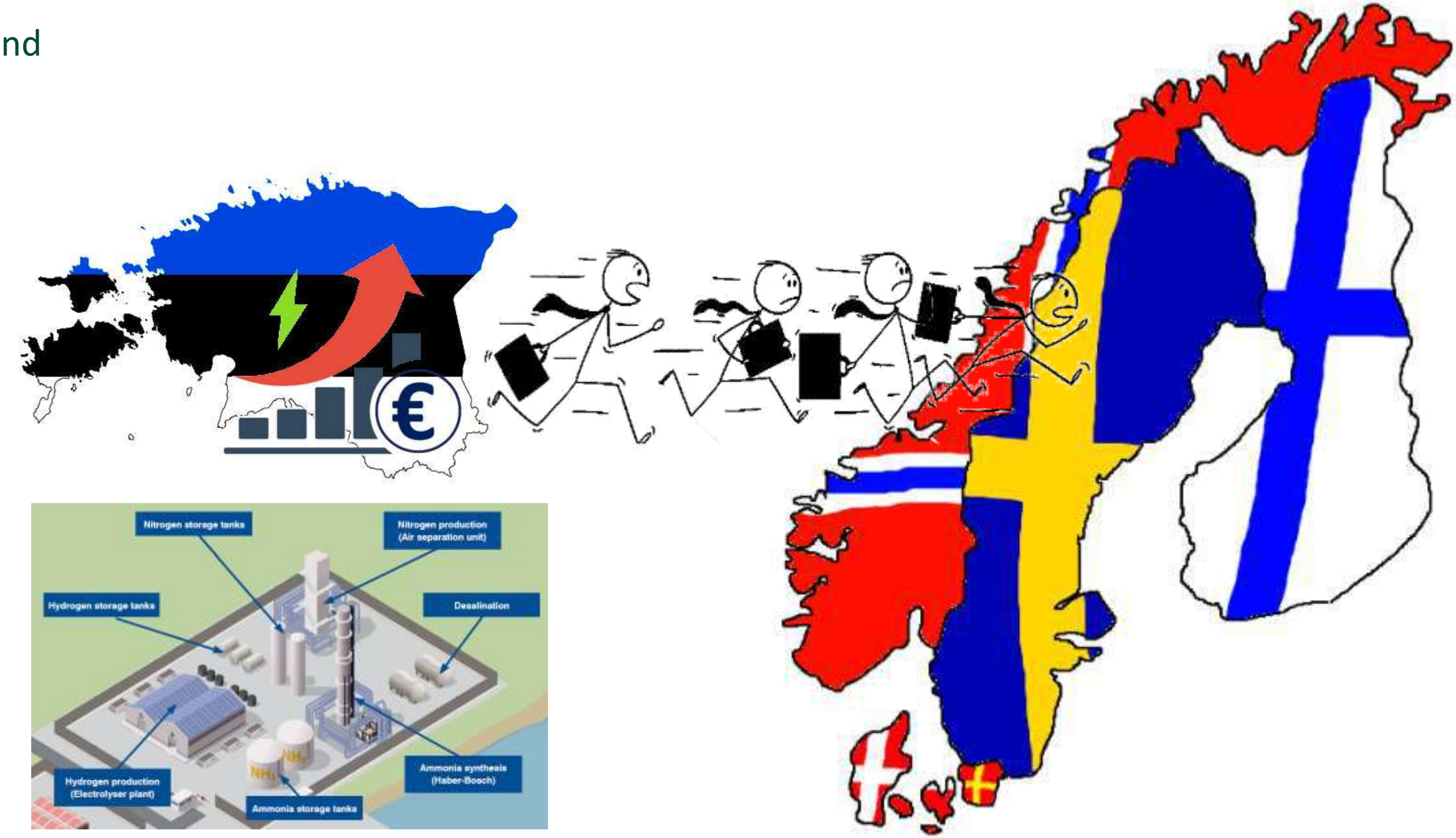
SCENER

# Green ammonia cost split



# Trend




Nitrogen storage tanks
Nitrogen production
(Air separation unit)
Hydrogen storage tanks
Desalination
Hydrogen production
(Electrolyser plant)
Ammonia storage tanks
Ammonia synthesis
(Haber-Bosch)

# What to do to get Estonian electricity price and taxes competitive with our Northern neighbors (1)?

- Construction of Estlink 3 as soon as possible. This is the bottleneck for buying electricity from Finland and Northern price region.

  NB! Obstacle: Widening or removing the bottleneck will increase the electricity prices in Finland.

- Solar and wind farms should be developed only against the market needs!
- There is no need for  Estonian state (i.e. taxpayers) to guarantee the „price floor“ for off-shore and on-shore windfarms. The developers must conclude long term take or pay PPA’s with off-takers - new industrial project developers.

  NB! Off-takers will not conclude PPA’s with the producers in case the electricity price is higher than price what allows them to sell their products at international markets.

  NB! In case the government decides to guarantee the „price floor“ to developers of wind farms the renewable fee will increase from current level up to 2 times by 2035.

  Problem: As the wind and solar electricity is random they cannot conclude baseload PPA’s

# What to do to get Estonian electricity price and taxes competitive with our Northern neighbors (2)?

- Construction of the nuclear power station
- No additional taxes (grid balancing fee, excise fee, etc.) and tax increases on electricity.
- Renewable fee tax reduction or exemption for big electricity consumers-plants starting from 80 GWh per year (> 1% of Estonian electricity consumption).

# Thank you for your attention!

Contacts:

Erik Laidvee
Chairman of the Board
OÜ Derivaat NH3

E-mail: erik.laidvee@derivaatnh3.com
Mobile: + 372 50 44 826