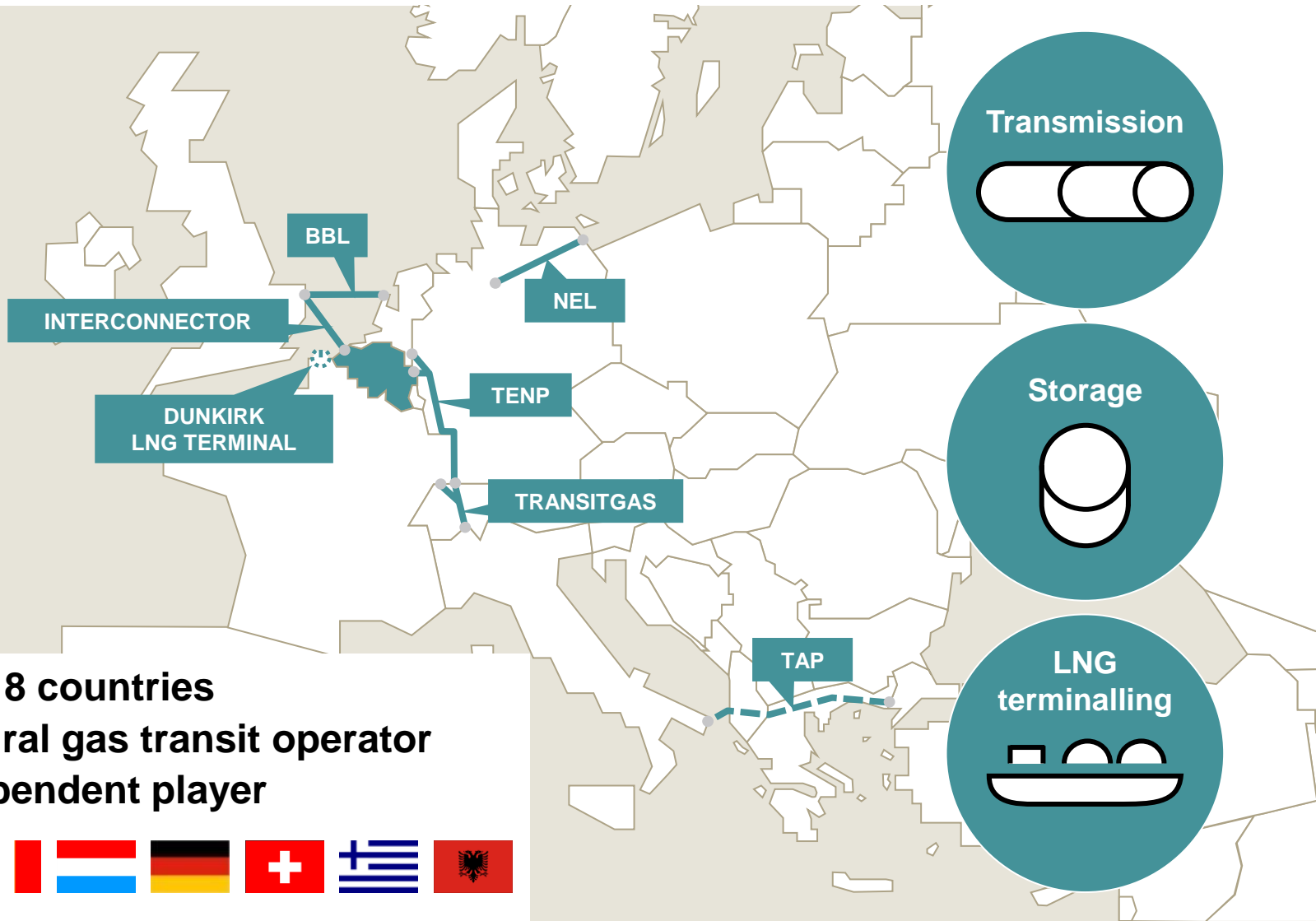


DIVERSIFYING THE
ZEEBRUGGE LNG
TERMINAL
INTO A HUB FOR
SMALL-SCALE LNG

Hany AOUAD

FLUXYS: NATURAL GAS INFRASTRUCTURE COMPANY FOR EUROPE

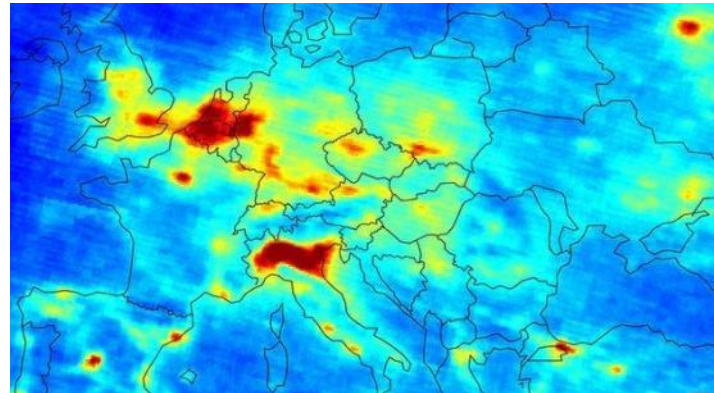


- Present in 8 countries
- Major natural gas transit operator
- Fully independent player



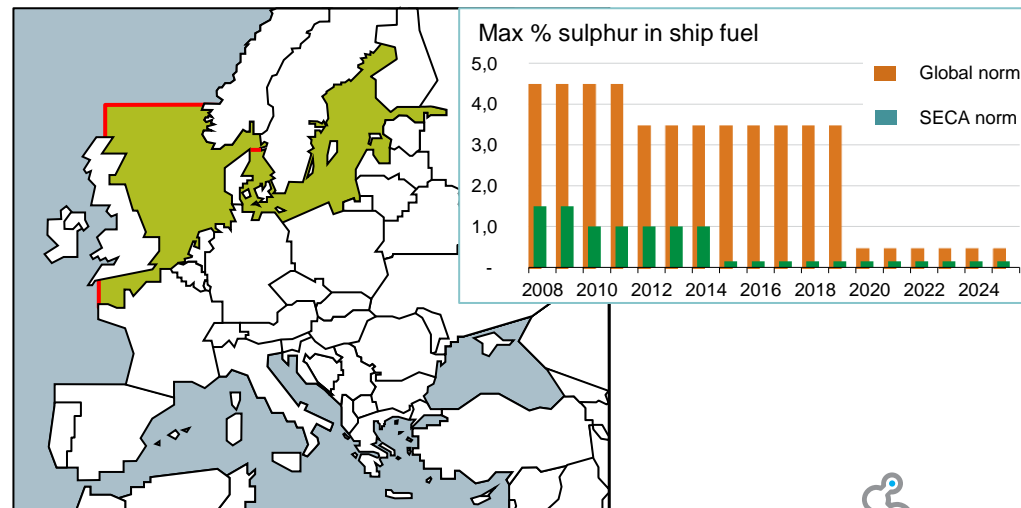
THE CASE FOR NATURAL GAS IN MARITIME AND ROAD TRANSPORT

- Natural gas ticks all the boxes in terms of emission reduction & environment
 - Immediate reduction of carbon footprint:
 - ✓ CO₂ (-15% to -100%)
 - Immediate reduction of health footprint
 - ✓ SO_x (-99%), NO_x (-70%), PM (-99%)
 - 50% less noise (trucks)

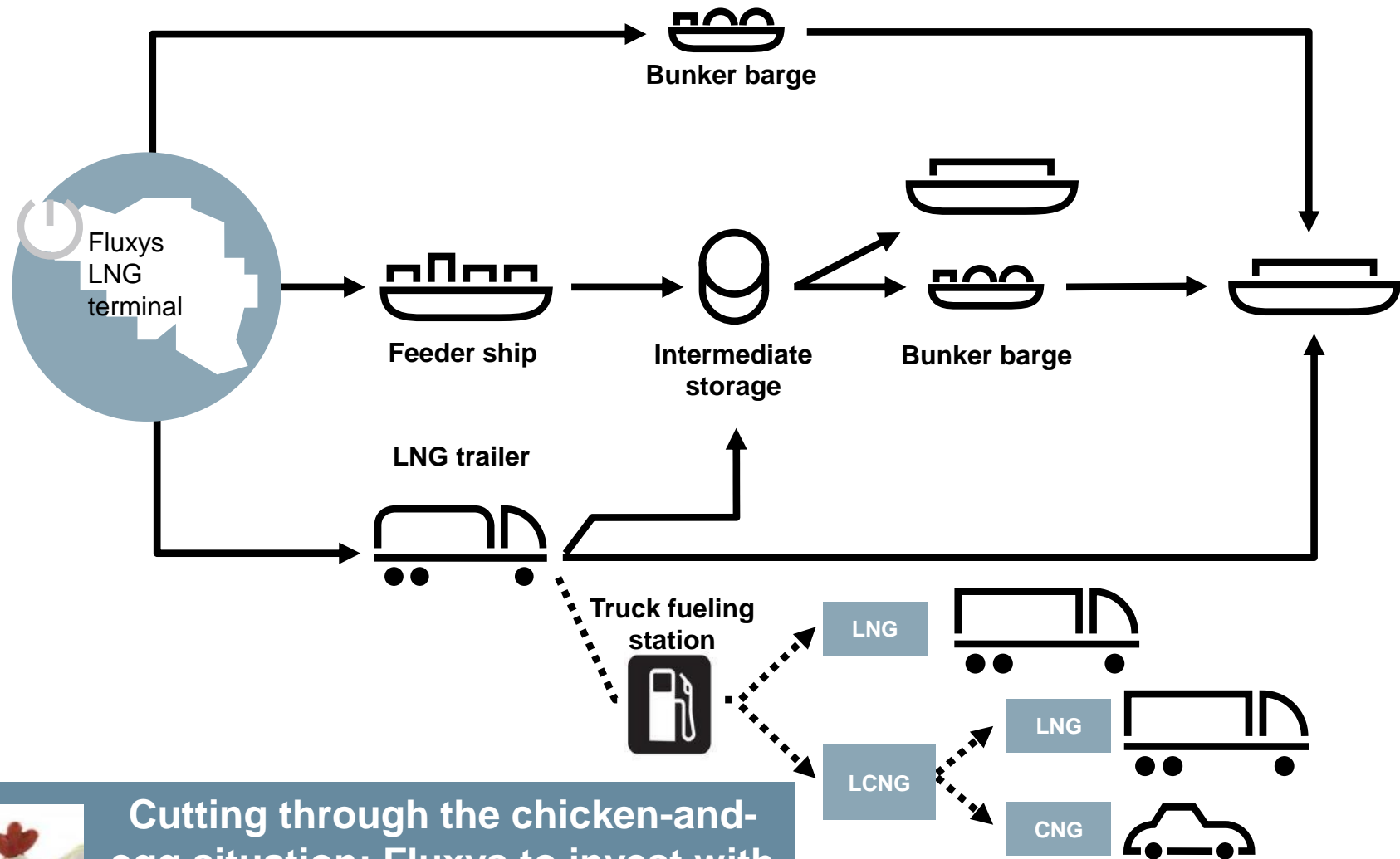


Source: ESA – Nitrogen oxide levels over Europe

- New sulphur emission standards in SECA = important driver for shipping industry to switch to LNG (2015)
- EU-directive supports alternative fuel infrastructure deployment
- Favorable gas prices



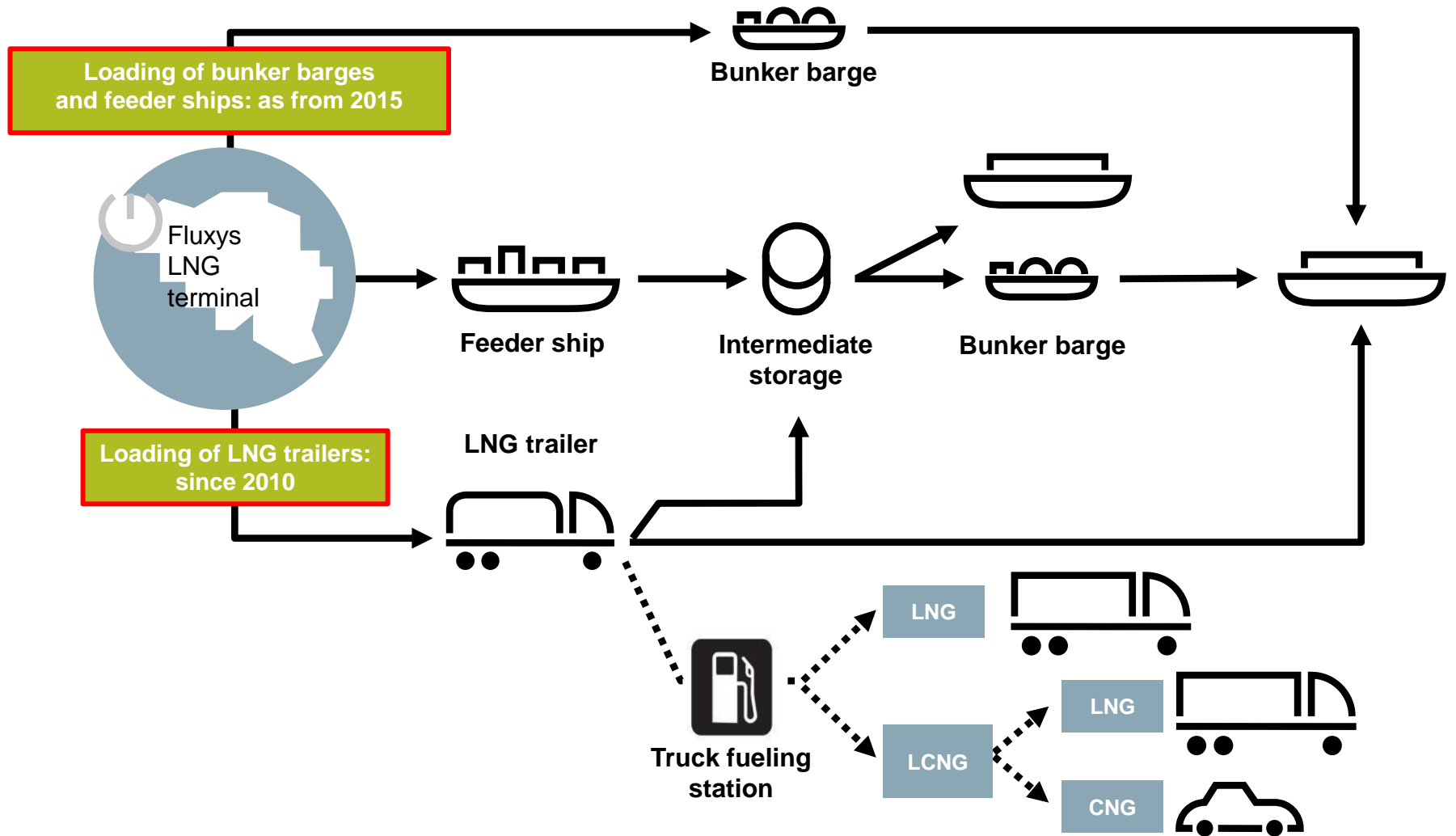
CHALLENGE IN UNLOCKING POTENTIAL OF NATURAL GAS FOR TRANSPORT: DEVELOP DOWNSTREAM REFUELING INFRASTRUCTURE



Cutting through the chicken-and-egg situation: Fluxys to invest with partners in downstream LNG chain in Belgium



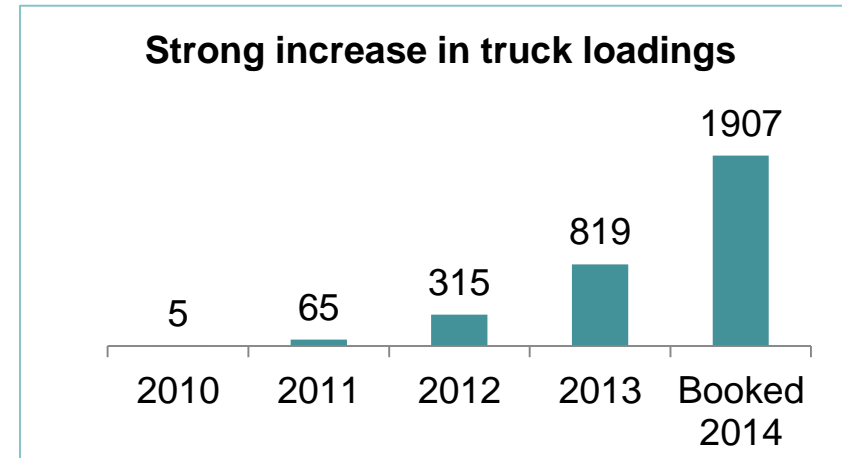
CURRENTLY AVAILABLE IN BELGIUM



LNG TANKER TRUCK LOADING SERVICE SINCE 2010



- Capacity of 4 000 loadings/year
- Destinations: Belgium, The Netherlands, UK, Germany, Poland
 - > Industrial sites without pipe gas supply
 - > LNG fuelling stations for trucks
 - > Truck-to-ship bunkering
- Construction of second truck loading station under consideration



Bunkering of 1st LNG-fuelled tugboat M/T Borgøy in the port of Zeebrugge

2nd jetty under construction: commissioning 2015

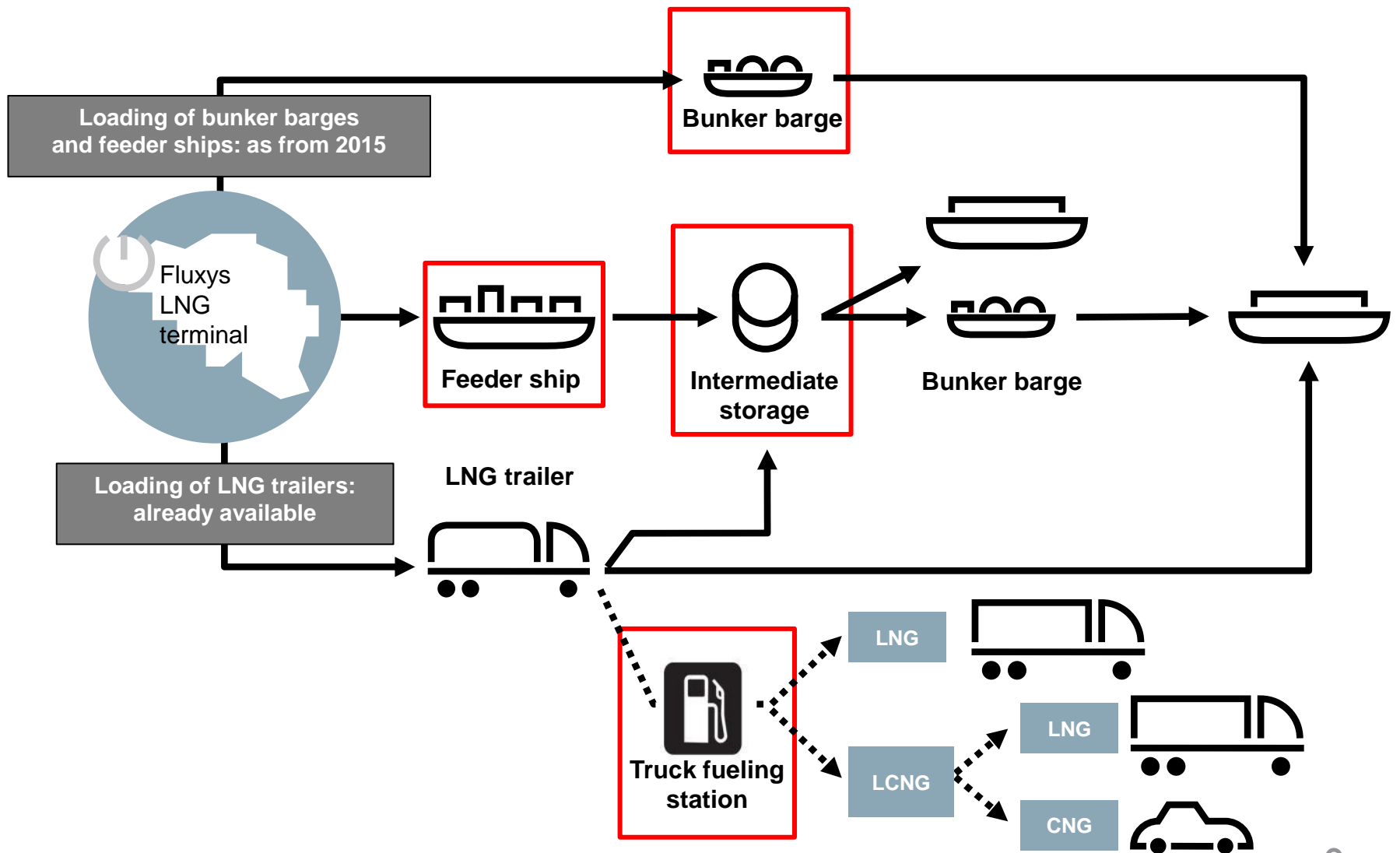
- Reception of LNG carriers with capacity from 2 000 to 217 000 m³ LNG (including LNG bunker carriers)
 - Unloading & loading
 - Ship-to-ship transfer
- Long-term market for bunker vessel loading developing: c. 200 berthing slots already sold under long-term contracts



Co-financed by the European Union

Trans-European Transport Network (TEN-T)

LNG FOR MARITIME & ROAD TRANSPORT: MISSING LINKS



LNG FOR TRUCKS: FLUXYS' 1ST LNG FUELING INSTALLATION IN OPERATION THIS MONTH

1. Agreement signed with trucking company Mattheeuws to build a pilot **LNG fueling station in Belgium** (Veurne)



2. Many contacts with prospects to **promote the benefits of LNG** as an alternative fuel and to convince them to switch from diesel to natural gas



IN A NUTSHELL



- Fluxys promotes natural gas as a fuel for transport by highlighting its economic and environmental benefits
- As an infrastructure group, Fluxys wants to help solving the chicken-and-egg dilemma through partnerships and sound investments in LNG bunkering and L-CNG fueling infrastructures.



- Even in a positive context, you need more than two to tango:
 - Port authorities, LNG infrastructure companies, fuel station operators, ship and truck fleet owners, LNG suppliers, authorities
 - Infrastructure operators: key stakeholders in the market development process

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