

Workshop on Modernisation of Danube Vessel Fleets

# L-CNG infrastructure in Slovakia

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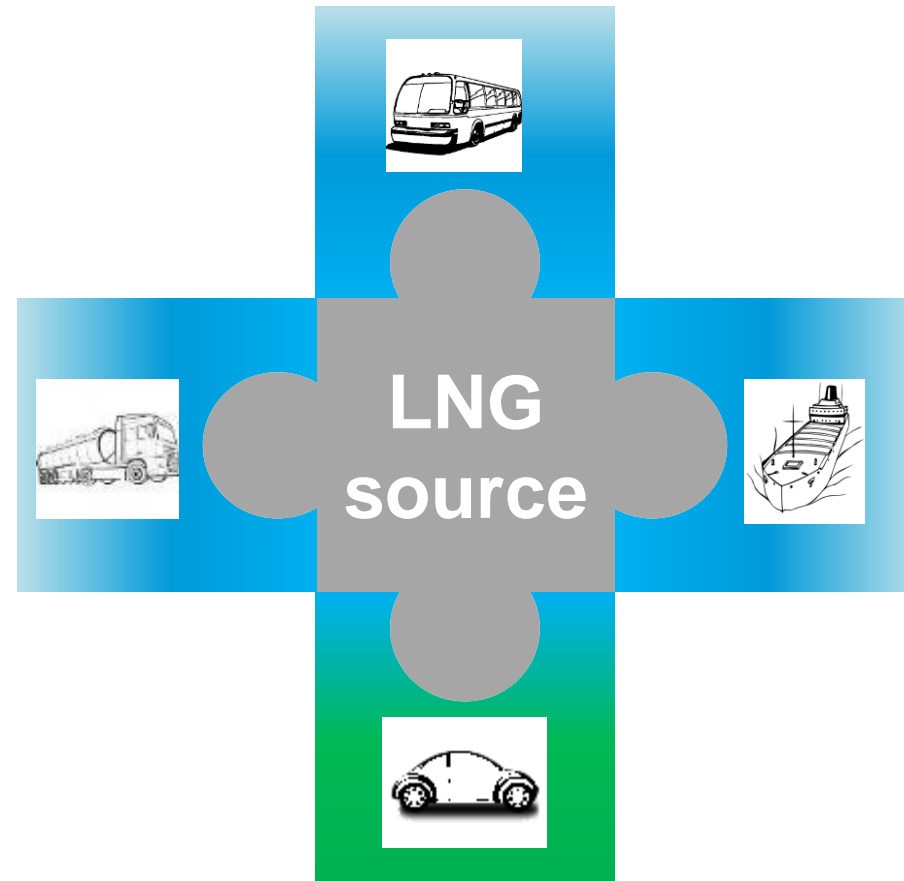
**fueLCNG**



Spolufinancované Európskou úniou  
Nástroj na prepájanie Európy

**DANUBE LNG**  
EUROPEAN \* ECONOMIC \* INTEREST \* GROUPING

- ✓ Introducing natural gas as alternative fuel to various segments of transport
  - ✓ Creation of new type of alternative fuel LNG in landlocked Slovakia
  - ✓ Implementation of new innovative L-CNG infrastructure on the core TEN-T corridors in Slovakia
- = Decrease emissions from transport



### **SPP = Slovenský plynárenský priemysel**

(Slovak Gas Industry)

- 160 years of gas industry tradition
- One of the biggest gas companies in CEE
- Shareholder - Ministry of Economy of the Slovak Republic (100%)

### **Naturl Gas**

- major supplier of natural gas for households and corporate customers with 57% market share
- 1.3 mil. customers in natural gas
- 30.26 TWh sold natural gas.

### **Electricity**

- Fourth most important electricity supplier in Slovakia
- 170,000 delivery points.
- 829 GWh sold power.

### **Alternative fuels**

- 9 CNG filling stations with sale of around 4 mil. kg of CNG.

### **Danube LNG, EEIG**

Leading company in the field of LNG value chain research and development in the Slovak republic.

### **Other projects of Danube LNG,EEIG:**

**LNG Masterplan for Rhine-Main-Danube (TEN-T)**  
[www.lngmasterplan.eu](http://www.lngmasterplan.eu) 2013-2015

- Member of consortium of 33 companies from 12 member states

**LNGAFT – Liquefied natural gas as alternative fuel for transport (CEF) – pilot deployment of 15 LNG bus fleet in Zvolen, Slovakia 2016-current**

- Coordinator of the action, responsible for project management, feasibility study of LNG technology, comprehensive study on emission reduction during real-life-trial of LNG buses and LNG refuelling station.



## L-CNG infrastructure in Slovakia PROJECT



# fueLCNG

- ✓ 1 liquefaction plant - 24 ton/day
- ✓ 3 LNG stations / heavy duty
- ✓ 14 L2CNG stations at the highways
- ✓ 3 distribution semitrailers
- ✓ Truck-to-ship filling

### LNG

Natural gas, liquefied at atmospheric conditions at the temperature of -162 °C.  
Compression 1:600 (liquid : gaseous)  
Volume - 2,4 l at 1kg of fuel

### CNG

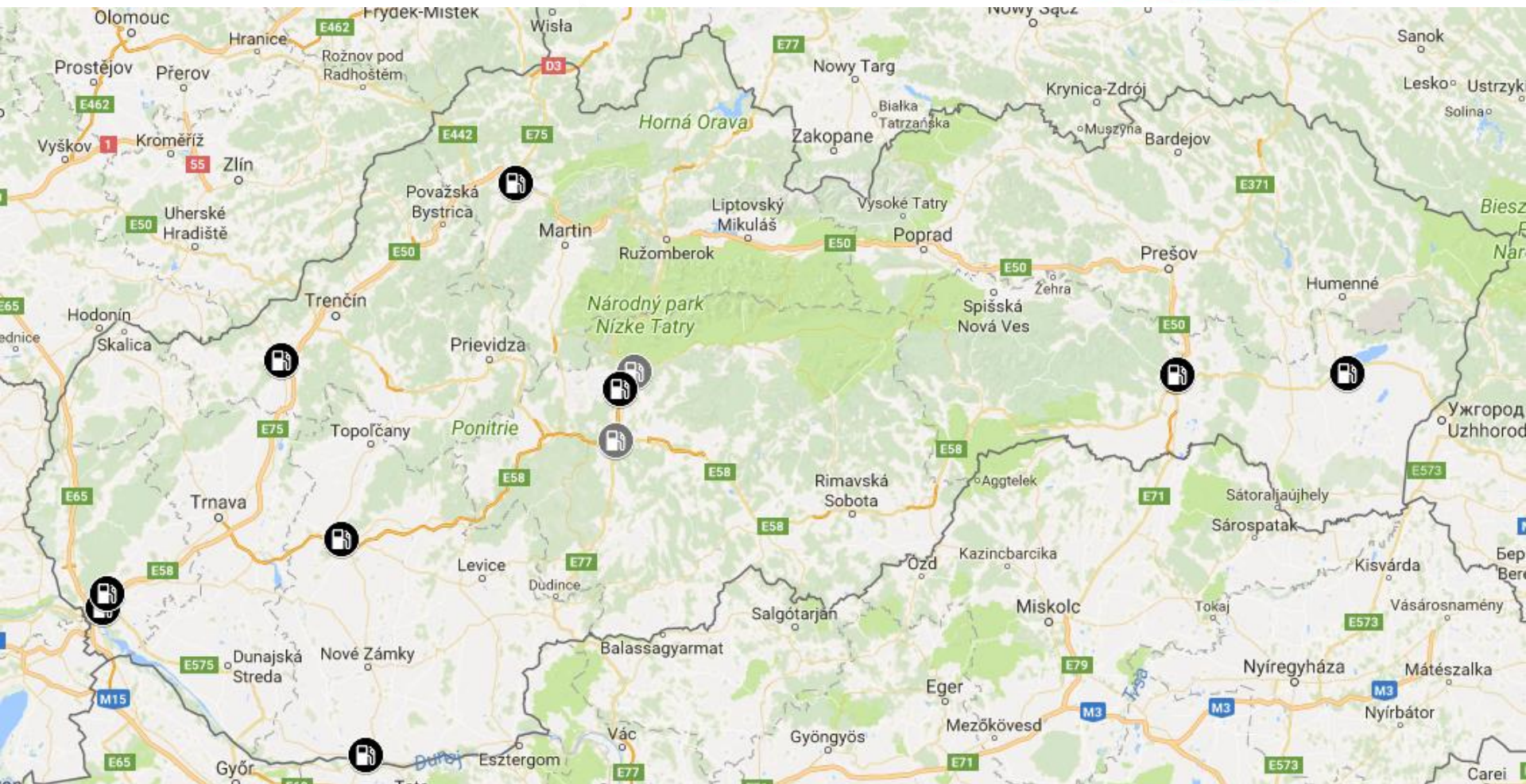
Natural gas compressed to 20 -22 MPa and in this form filled into the pressure vessel in the vehicle.  
Compression 1:200 (gaseous : gaseous)  
Volume 6,47 l at 1kg of fuel

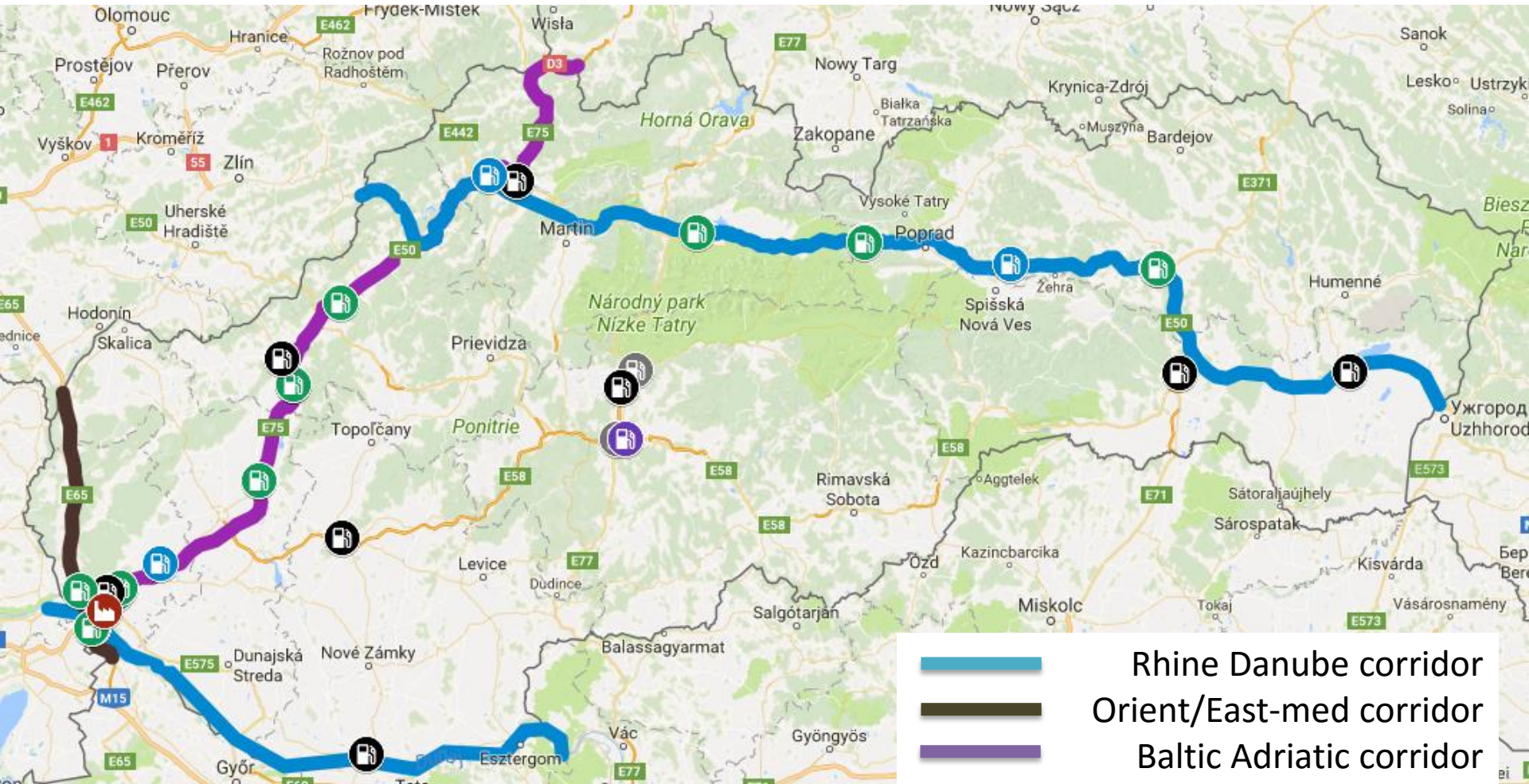
**Total budget**




**=> 21 mil. €**

**CEF contribution**

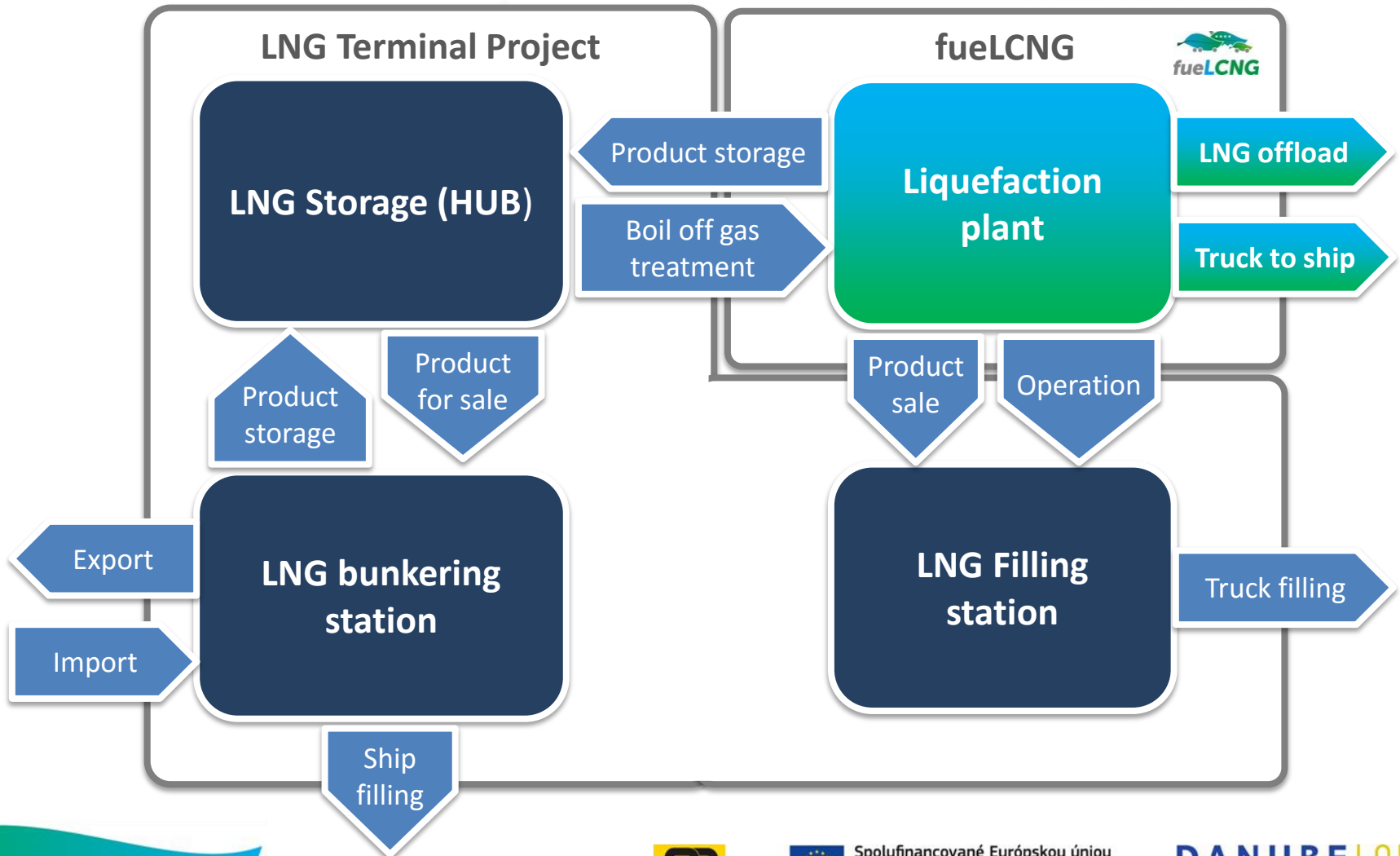
**=> 15,7 mil. €**





 Rhine Danube corridor  
 Orient/East-med corridor  
 Baltic Adriatic corridor







- |   |                   |
|---|-------------------|
| ✓ Signature of grant agreement                  | 26.10.2017        |
| ✓ Feasibility and location study                | 31.3.2018         |
| → Tender preparation                            | 01/2018 - 04/2018 |
| ➤ Tender process (Public procurement procedure) | 05/2018 - 10/2018 |
| ➤ Production, delivery and installation         | 10/2018 - 12/2019 |
| ➤ <b>Pilot operation launch</b>                 | <b>01/2020</b>    |
| ➤ Final study                                   | 12/2020           |





Thank you for your attention!