



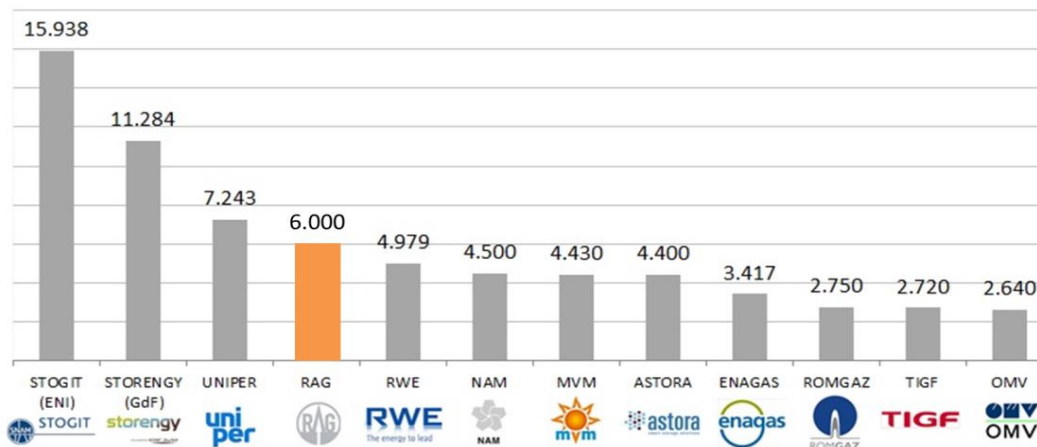
Workshop on Modernisation of Danube Vessels Fleet RAG L-CNG Infrastructure

Vienna, April 18th 2018

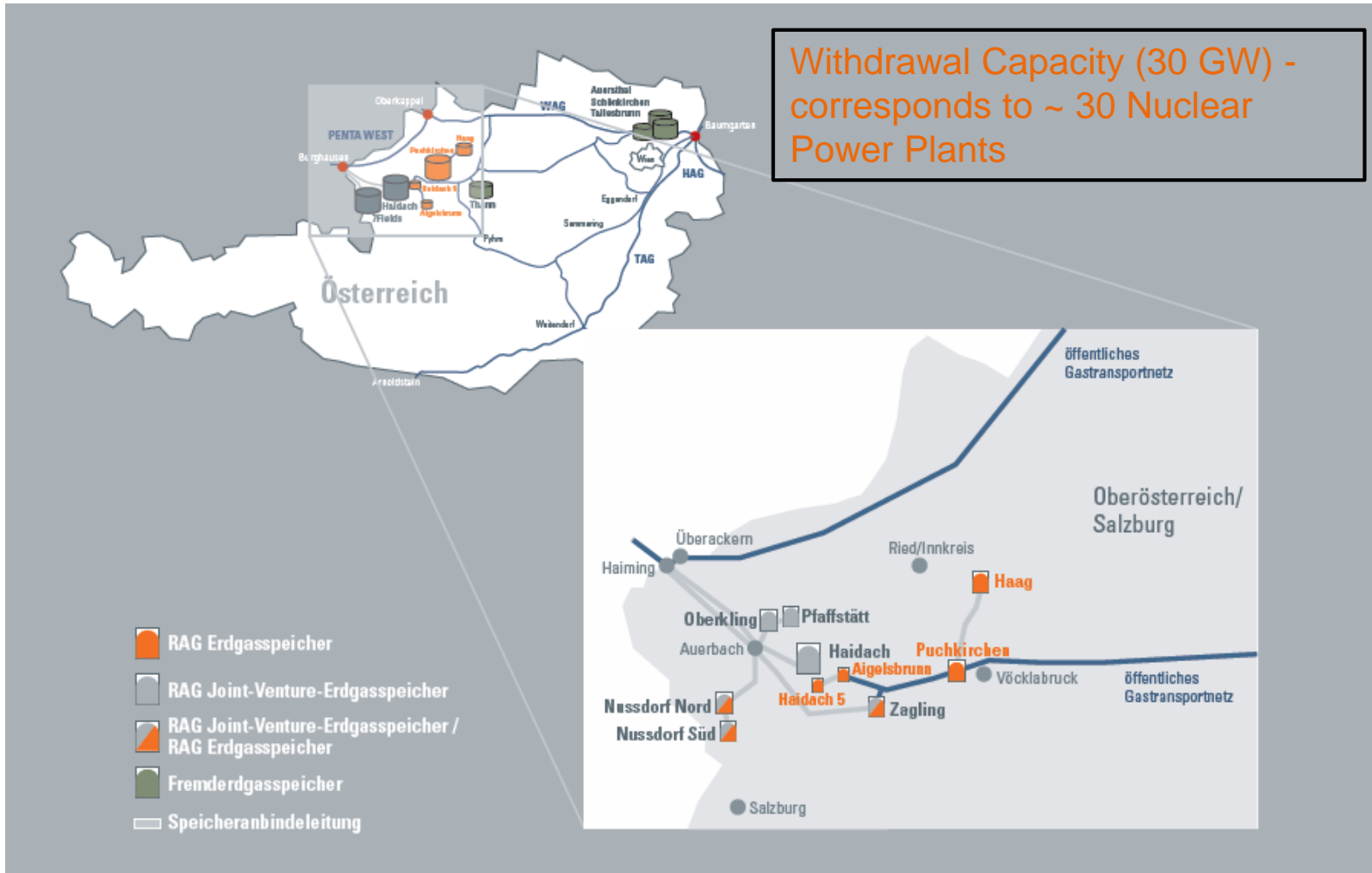


Company profil RAG

- **Revenue 2017** ~ € 390 Mio.
- **Formation 1935** – since 1955 Oil/Gasproduction in Austria
- **Shareholder:** 50,025 % EVN AG; 29,975 % Uniper Exploration & Production GmbH; 10,0 % Energie Steiermark Kunden GmbH; 10,0 % Salzburg AG
- **Storage capacity** total: ~ **6,0 Mrd. m³** (~ 67 TWh) = **Tenfold increase since 2004**; 50% of the reservoirs used as storage
- Investment of **€ 1 Billion** in 10 years in storage development
- RAG is **4th largest** Underground Gas Storage operator in Europe



Location of RAG storage facilities



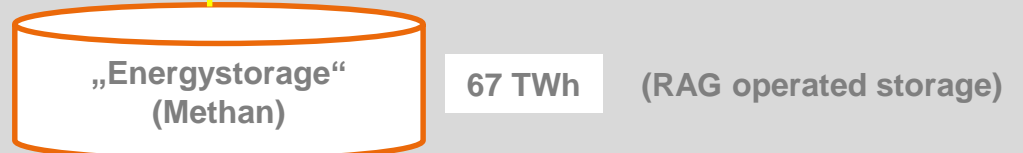


GAS for MOBILITY – from production to customer solution

Production:



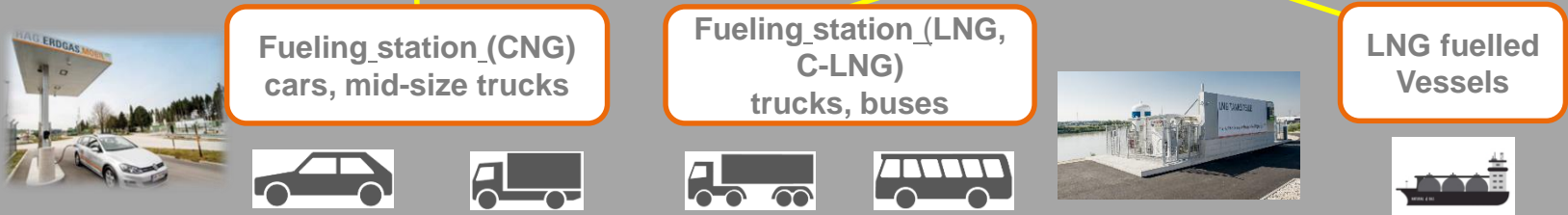
Storage:



Fuel:



Facility:



RAG LNG and CNG Infrastructure

Transport & Distribution

- **Start with CNG CARS 2013**
 - RAG operates ~ 50 CNG fueled cars
 - Total number of CNG fueled cars in Austria ~ 7.000
- **LNG/CNG TRACTOR TRUCK**
 - **First CNG/LNG tractor truck in Austria (IVECO)** in 02/2017
 - On-Road test for freight forwarders since 03/2017
 - + 4 CNG/LNG tractor trucks are in operation (~ 130.000 km)
 - RAG will invest in additional LNG tractor trucks according to future developments / demand
 - Fleet operators to be convinced for converting
- **LNG ROAD TANKER**
 - One road tanker in operation
 - Extension by road tanker and ISO-Containers planned
- **LNG TRANSPORT by RAIL and SHIP**
 - Currently there is no LNG transport by rail or ship operated in Austria, but ongoing developments – especially on the Danube waterway



LNG Production (Micro Scale)

ULTC – Ultra Low Temperature Conditioning

- Technology established 2013-2015 (cooperation)
 - Modular, self-sufficient moveable design
 - cooling by liquid nitrogen (LIN)
- Pilot plant in Puchkirchen (Upper Austria)
 - Installation completed 2015
 - Test runs 02/2016 to 03/2017
 - Rebuilt & Extension of the plant in 2017
 - Commissioning ongoing
 - Production capacity 2 t/d \cong 650 t/a
- Scale-Up design available for 8.000 t/a



Regional Natural Gas Production
200 Mio m³/a (~ 146.000 to t/a LNG)



LNG Filling Station RAG

Ennshafen (Upper Austria)

- Start of operation: Aug 2017
- Public Filling Station (24/7)
- Access by RAG card
- Prevent Boil-Off by N2 cooling






Station Network Development

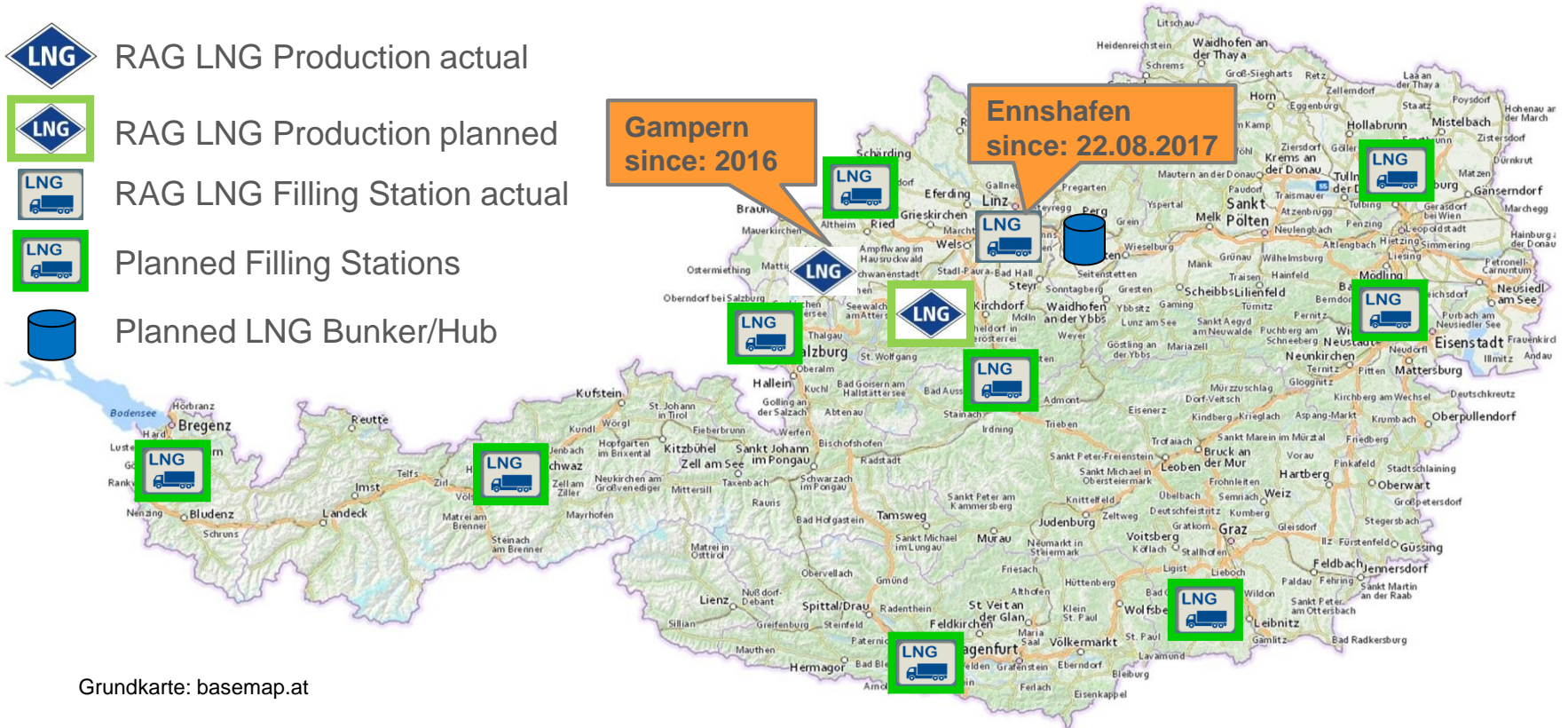
- Additional filling stations planned
- Support by politics is necessary



RAG LNG Production/Fueling Stations Projected Development



-  RAG LNG Production actual
-  RAG LNG Production planned
-  RAG LNG Filling Station actual
-  Planned Filling Stations
-  Planned LNG Bunker/Hub



LNG-Hub Austria – River/Rail/Road

Project „LNG HUB AUSTRIA“

Application for EU-Funding for the installation of a LNG infrastructure in Austria:

■ Plants:

- 9 LNG filling stations
- 2 Small Scale LNG Production plant (+ 1 Micro)
- 1 Bio LNG-Liquefaction plant
- 1 LNG Logistic-und Storage Center

■ Time Frame:

- Implementation until 2023

■ Target area:

- Austria and close range of the neighboring countries, e.g. (South-) Germany, Italy, Slovenia, Slovakia, Hungary



Thanks for your attention!

