LNG for road transportation in Italy

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Why LNG in the road transportation

The E.C. Directive (2014/94/EU) identifies electricity, hydrogen, biofuels, natural gas, and LPG as the alternative fuels with a potential for long-term oil substitution and defines targets for the deployment of their infrastructure

Detailed provision for LNG:

1. **LNG at least on TEN-T core network by 2025 (400 km indicative distances)**
2. **LNG in sufficient TEN-T seaports by 2025**
3. **Common technical standars by 2016**

Member states must develop National Policy Frameworks until 18 Nov. 2016

LNG for road transportation is an opportunity

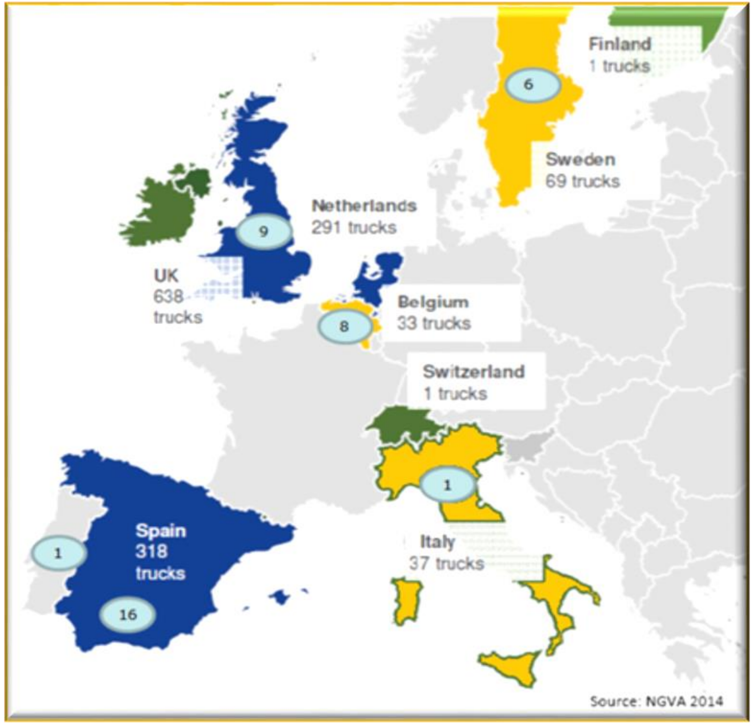
PROS

- LNG is the only real alternative to oil derived fuels applicable to heavy trucks
- LNG Trucks obtain a considerable reduction in NO_x (-35%), particulate (-95%) and CO_2 (-10%). Noise is also sensibly reduced in comparison with the diesel engines
- LNG is affordable, and all its related technologies are mature and well known
- The TCO of LNG trucks is lower than the TCO of diesel trucks and the additional investment is paying back in few years

CONS

- Higher costs to buy a LNG truck and no market for used LNG trucks
- OEMs producing LNG trucks are only few and their production capacity is limited
- The availability of infrastructure to refuel the LNG HDVs is critical to ensure the proper development of the market
- Lack of EU-27 harmonized legislation for both the build-up of the LNG refueling infrastructures and the approval of LNG vehicles and systems

The European LNG infrastructure



- Spain leader in Europe with 16 LNG stations
- UK and Benelux have also a high number of LNG Stations (9 and 8)
- Sweden has 6 stations; Portugal has 1 station and is planning to built 2 more
- Planned LNG stations in France (3)
- Eni opened on April 29^{th,} 2014 the first Italian station that fuels both L-CNG and LNG

Partnerships between stakeholders should be evaluated in Italy

Policy makers	Medium-long term policy on fuel taxation; definition of standard/ procedures; support to the development of infrastructure
OEMs	Enlargement of the offer of new trucks and engine retrofits; reduction of the economical gap between diesel and LNG engines
Oil Companies	Investments in infrastructure needed for the market development
Tech. providers	Development of affordable technology for the refueling stations
Log. Companies	Implementation of a reliable LNG supply chain required for the realization of a network of refueling stations
Fleet-Owners	Ensuring a minimum volume for new stations can reduce dramatically the risk of investments and facilitate the choice of locations

eni

Eni action plan

SHORT TERM PLAN

- **Eni will build 2 LNG/L-CNG by second quarter of 2016 according to the Blue Corridors agreement (1st Piacenza and 2nd Pontedera)**

MEDIUM TERM PLAN

- **Eni aims to build up to 12 LNG/L-CNG stations along the main Italian trucks routes in the next 4 years**
- **The freight transport in Italy typically concerns local routes concentrated where there are the industrial and commercial activities**

Piacenza LNG LCNG refueling station

LNG REFUELING

- LNG price currently equal to CNG (€ 0.97 / kg)
- Just over one minute to refuel
- About 110 kg medium refueling

APRIL 2015 DATA

- 631 refuelings
- About 70 tons of LNG sold
- 35 vehicles daily fueled plus others occasionally fueled