Threats and prospect for developing the use of Natural gas as a fuel

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The EU framework to increase NGVs

FUTURE DEVELOPMENT OF THE MARKET AS REGARDS ALTERNATIVE FUELS IN THE TRANSPORT SECTOR

The 2030 policy framework should be based on full implementation of the 20/20/20 targets and on the application of the following key elements of the process:

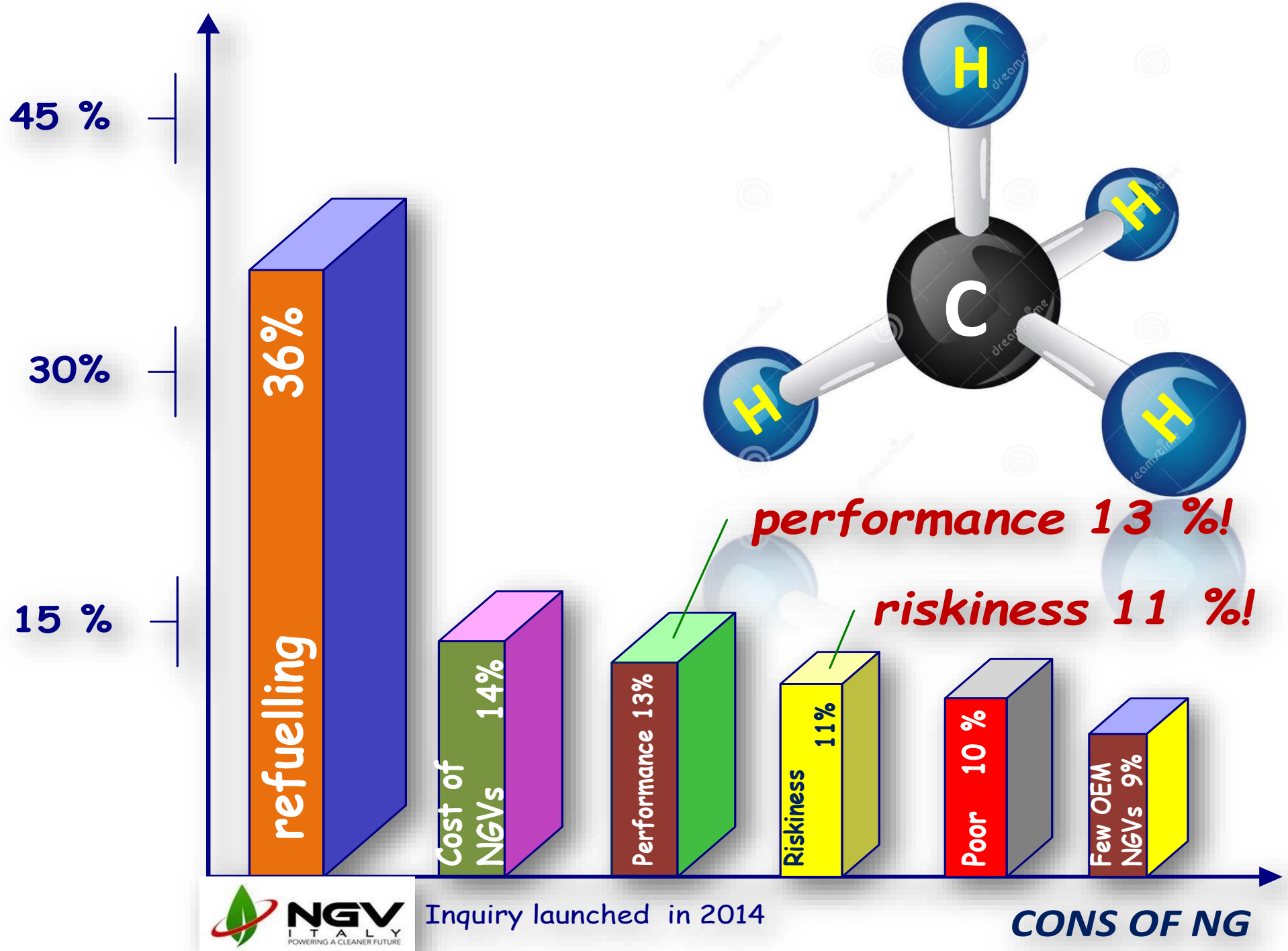
- greenhouse gas emissions target,
- renewable energy target at EU level,
- energy efficiency,
- reform of the Emissions Trading System,
- ensuring competition in integrated markets,
- promoting security of energy supply.

The European Commission launched in February 2015 the Energy Union Strategy that is a project to coordinate the transformation of European energy supply.

Threats/Opportunities for NG as a fuel for TRANSPORT

Articles of Directive 2014/94/EU	Obligations required by the Directive	Deadline	Proposed methodology and solutions
Article 6 (clause 4)	Ensure that an appropriate number of refuelling points for LNG accessible to the public are put in place at least along the existing TEN-T Core Network, in order to ensure that LNG heavy-duty motor vehicles can circulate throughout the Union.	31 December 2025	see Chapter 7
Article 6 (clause 6)	Ensure that an appropriate LNG distribution system is available in their territory, including loading facilities for LNG tank vehicles, in order to supply the refuelling points referred to in paragraphs 1, 2 and 4.		see Chapter 8
Article 6 (clause 7)	Ensure that an appropriate number of CNG refuelling points accessible to the public are put in place, in order to guarantee that CNG motor vehicles can circulate in urban/suburban agglomerations and other densely populated areas, and, where appropriate, within networks determined by the Member States.	31 December 2020	see Chapter 7
Article 6 (clause 8)	Ensure that an appropriate number of CNG refuelling points accessible to the public are put in place at least along the existing TEN-T Core Network, to guarantee that CNG motor vehicles can circulate throughout the Union.	31 December 2025	see Chapter 7

THE CUSTOMER POINT OF VIEW


45 %
30%
15 %
refuelling 36%
Cost of NGVs 14%
Performance 13%
Riskiness 11%
Poor 10 %
Few OEM NGVs 9%
performance 13 %!
riskiness 11 %!
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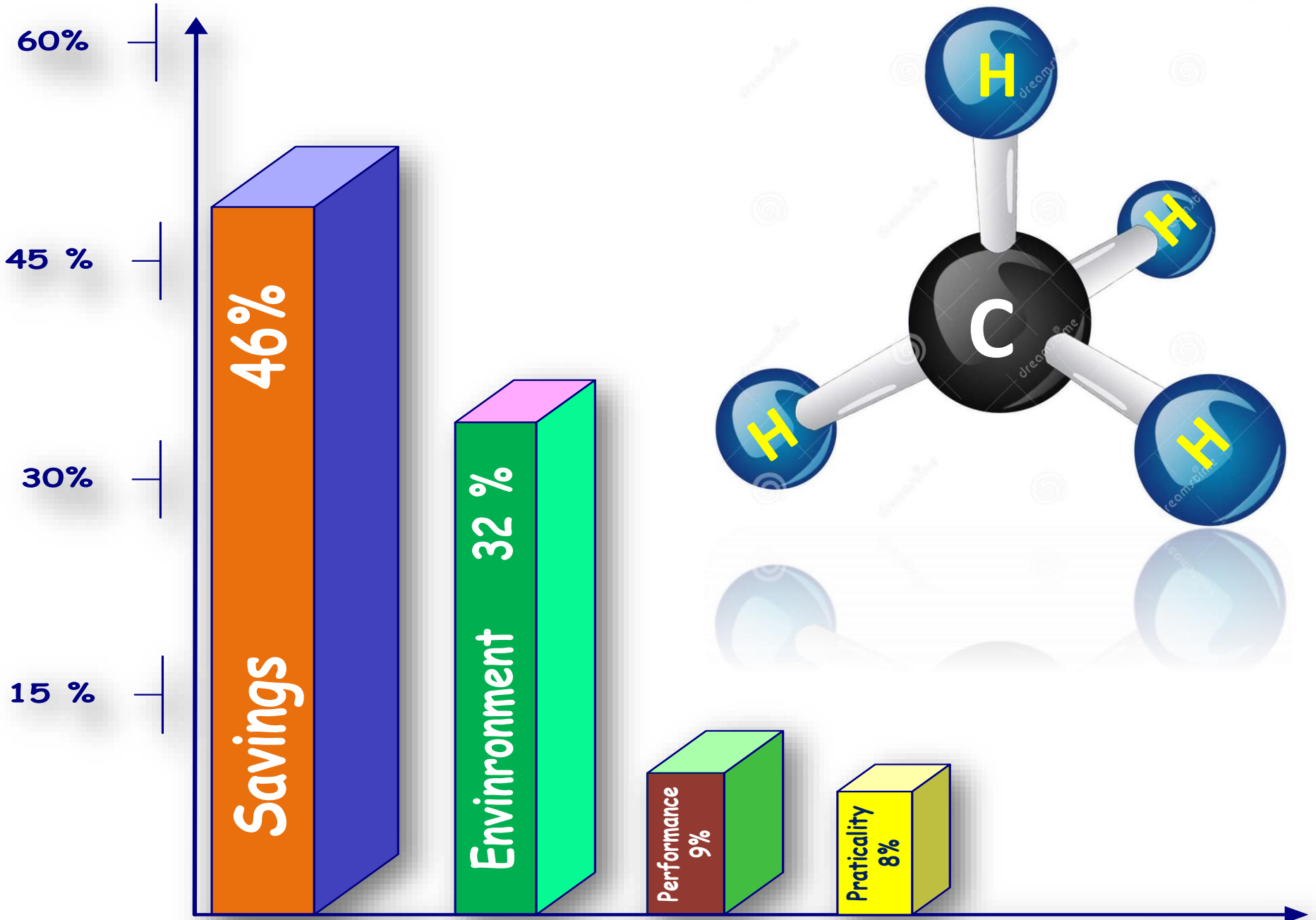
NGV ITALY
POWERING A CLEANER FUTURE
Inquiry launched in 2014
CONS OF NG



NGV ITALY
POWERING A CLEANER FUTURE

Inquiry launched n 2014

PROS OF NG

Factors influencing fuel/technology selection

	STAKEHOLDERS (INTERESTED PARTIES)				
ITEMS	CUSTOMER	OEM	SYSTEM MANUFACTURER	WORKSHOP	COMMUNITY POLICY
price differential among fuels	✓	✓	✓		✓
maintenance costs	✓	✓	✓	✓	
residual value of NGVs	✓	✓	✓		
Safety	✓	✓	✓	✓	✓
Availability of a number of NGVs by OEM	✓	✓			
Easy and safe conversion (retrofit) of vehicle	✓		✓	✓	
(easy) drivability – (NGVs must ensure the same driving feeling as the vehicles powered with traditional fuels)	✓	✓	✓	✓	
Fuel station network	✓	✓	✓		✓
environmental benefit for the community,	✓	✓	✓	✓	✓
fiscal incentives to the NGV owners (lower taxation when purchasing an NGV, exemption from fares when entering downtown, privilege to enter city centers if traffic stops due to pollution …)	✓	✓	✓		✓

SUMMARY OF POLICY MEASURES IN EU

EU countries	PURCHASE SUBSIDIES	REGISTRATION TAX BENEFITS	OWNERSHIP TAX BENEFITS	COMPANY TAX BENEFITS	VAT BENEFITS	OTHER FINANCIAL BENEFITS	LOCAL INCENTIVES	INFRASTRUCTURE INCENTIVES
Austria	*	*	*	*	*		*	
Belgium	*	*	*	*				
Croatia		*						
Crypus		*	*					
Czech Republic		*	*					
Denmark	*	*					*	*
Finland		*	*					
France	*	*	*	*			*	
Germany	*		*	*			*	
Greece		*	*			*		
Hungary		*	*	*			*	
Ireland	*	*	*	*			*	*
Italy	*		*				*	*
Latvia		*	*				*	
Lithuania		*					*	
Luxembourg	*		*	*				
Malta	*	*	*	*			*	*
Netherlands		*	*	*				
Portugal	*	*	*	*			*	
Romania	*	*	*					*
Slovenia	*	*	*					
Spain	*	*	*			*	*	*

WEAKNESS TO BE OVERCOMED

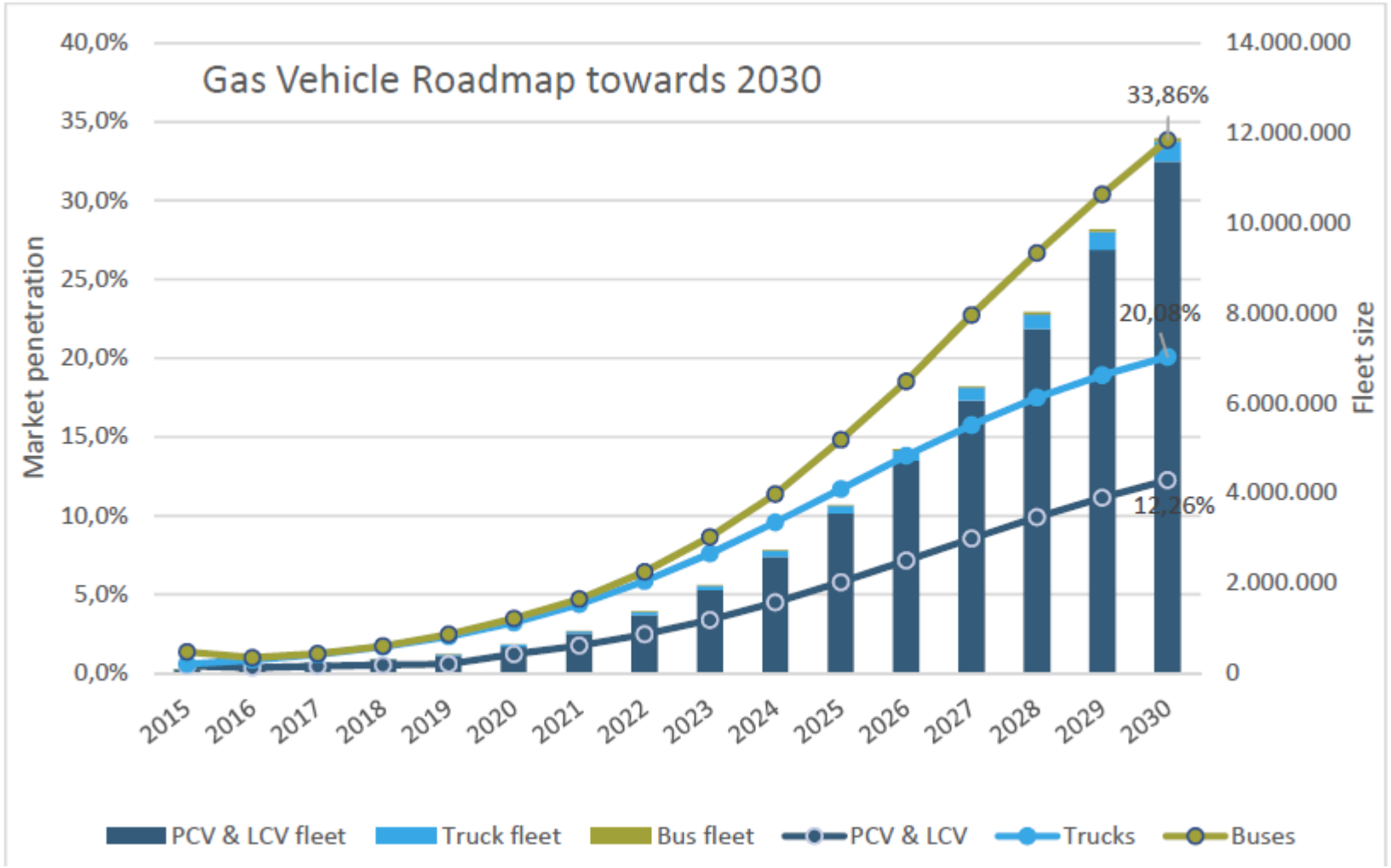
- ➔ Low information to final NGV users
- ➔ Still perception of riskiness
- ➔ Dramatic lack of competence of people involved with ngvs
- ➔ Low information among car dealers and service stations
- ➔ Range of ngvs offered by automotive industry to be increased
- ➔ Legal barriers in some countries/regions
- ➔ Differential cost of NG and other traditional fuels
- ➔ Dramatic lack of competence of people involved with NGVs
- ➔ International standards for infrastructures and vehicles
- ➔ Introduction in relation to customer demand and economic environment

STEPS FOR MARKET DEVELOMPMENT

1) Identify barriers and success factor for the integration of biomethane/natural gas in the fuel supply chain
2) Foster concrete application on the supply and demand side
3) Raise awarness on ng as a fuel among gas supplier, fuel station owners and car dealers
4) Raise awarness and provide information to customers
5) Plan for an extend infrastructure for gas fuellig stations
6) Increase the number of ngvs in the partecipating regions
7) Promote safety & competence of ngvs technicians

NEW PROSPECTS

NATURAL GAS MARKET: EU FORECAST 2030



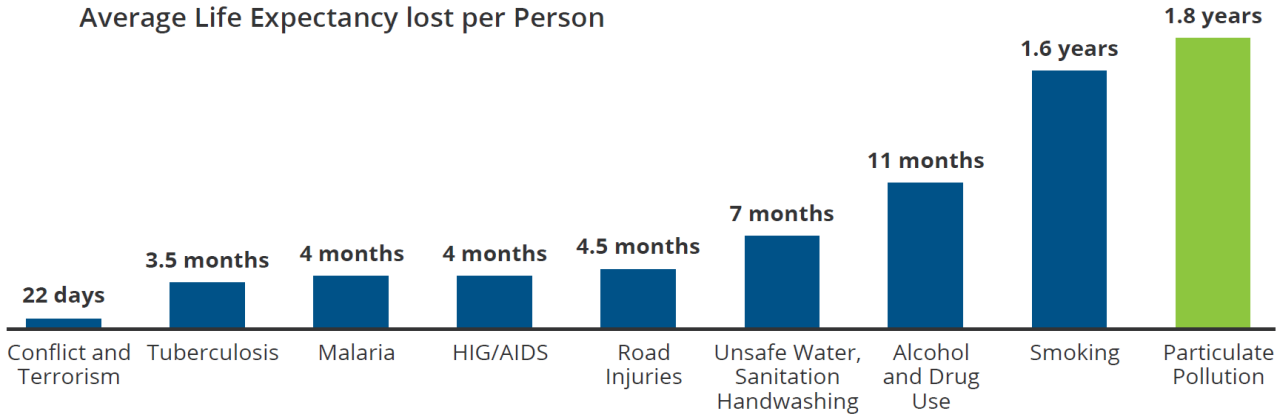
- Total NG fleet in 2030 11.9 million
- Highest market penetration in buses
- Introduction of mild-hybridization

2030	Market share	Total
PCV&LCV	13%	11,357,000
Trucks	20%	457,435
Buses	34%	73,500
Total		11,887,935

G-Mobility: mission “reduce emissions now”

- In 2017, 27% of total EU-28 greenhouse gas emissions came from the transport sector (excluding 22% of international aviation and maritime emissions). In 2018 CO_2 emissions from transport increased 1.8%.

- But the issue is not just CO_2: local pollutants matter for air quality in cities (PM, SO_x, NO_x) and PM are the first source of life expectancy losses



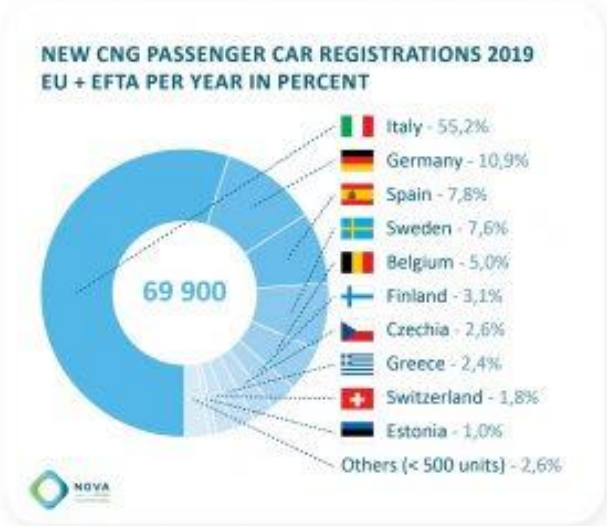
- Natural gas, and especially biomethane-fueled vehicles, are already today enabling the decarbonization of transport. According to JRC bio-methane can lead even to negative carbon emissions.

G-Mobility: long term emissions reduction

- G-Mobility in EU benefits from 17% share of biomethane in the gas mix which translates into an additional 20% GHG emissions over what today measured tailpipe.
- The ramp up of biomethane is quickly possible and European manufacturers are already offering a wide portfolio of NGVs.
- EU biomethane production potential up to 1,200 TWh compared to a sector currently consuming approximately 24 TWh.
- 2030 EU NGV fleet allows to reach 55% emission reduction compared to conventional fuels
- Important opportunities from new legislative processes in Europe to support the sector also considering LNG growth

G-Mobility: a solid and growing market with Italy as EU leader

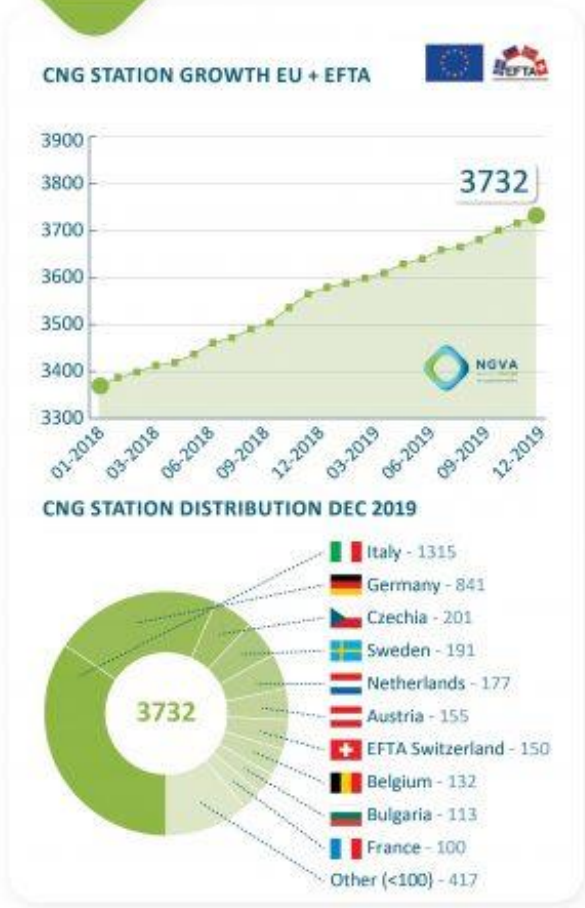
New CNG Passenger Car Registrations



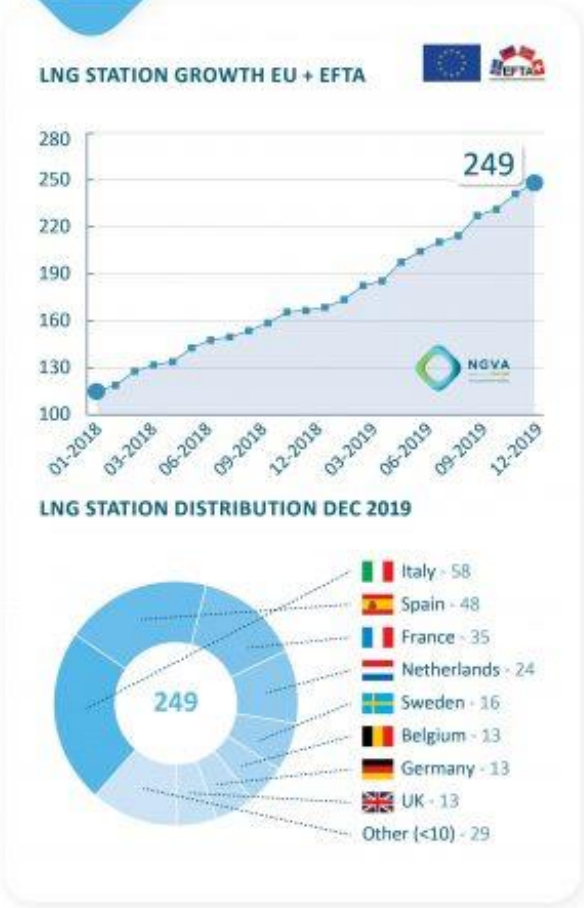
New vehicle registrations in 2019

Refuelling infrastructure development

CNG stations



LNG stations



Thank you for your attention