

Carbon neutrality: which role for natural gas ?

EU GASON project - Final event

A.GERINI – Secretary General Aldenhoven, 26th March 2019



Legislative framework



CO₂ emissions standards

Renewable Energy Directive Pollutant emissions R.D.E.

Clean Vehicle
Directive

Alternative
Fuels
Infrastructure
Directive

EnergyTaxationDirective

MEMBER STATE LEVEL







Renewable gas and CO₂ regulation



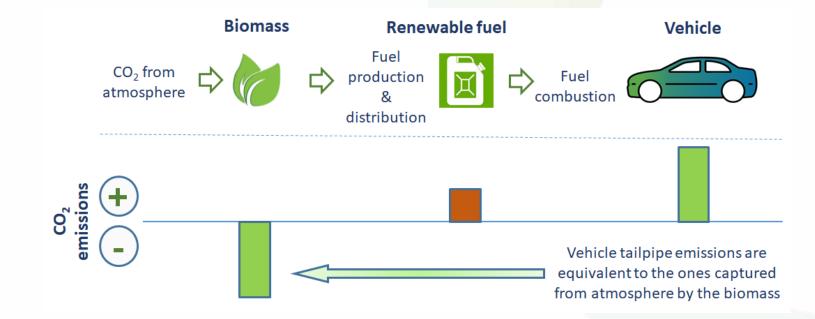
CO₂ emissions standards still tailpipe

Manufacturing + raw materials

Fuel provision

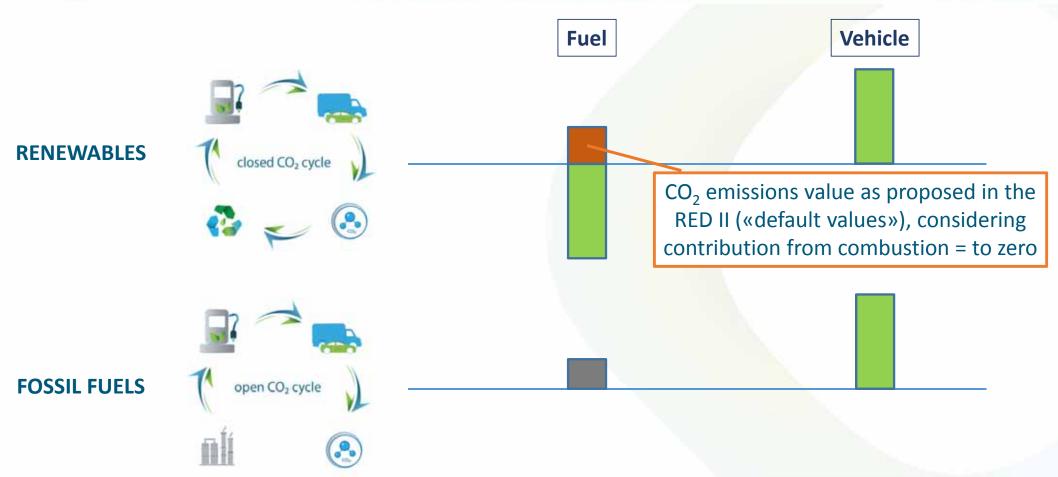
Tailpipe emissions

End of Life





RED II already relates to Well to Wheel





Next steps from the regulation

PC & LCV

Article 7 Monitoring and reporting of average emissions

8a. Development of a common methodology for LCA assessment < 2023

Article 14 Review and report

1. Considering potential contribution from synthetic and advanced alternative fuels

HDV

Article 13 Review and report

1c ...developing a specific methodology to include the potential contribution to emission reductions of the use of synthetic and advanced alternative liquid and gaseous renewable fuels...< end 2022

4. Development of a common methodology for LCA assessment < 2023





Life Cycle Assessment









Pilot study on determining the environmental impacts of conventional and alternatively fuelled vehicles through Life Cycle Assessment

Fuel & Electricity

Production

Assessment of (WTT)

environmental impact of producing

the energy vector(s) from primary

energy source to point of

distribution (e.g. refuelling station)

Use/Operation

Environmental impact of driving

(TTW emissions)

Impact from maintenance and

Vehicle Life Cycle

Well-to-Wheel (WTW) Analysis -Life Cycle Assessment of the fuel or electricity used to power the vehicle

Vehicle cycle "Embedded" emissions result from from vehicle production, fluid, filter and component replacement during life; and end-oflife activities. A "cradle-to-gate" LCA study may only consider vehicle or component production



Vehicle Production

Assessment of 'Cradle-to-Gate' environmental impact of producing the vehicle including extract of raw materials, processing, component manufacture, logistics, vehicle assembly and painting

Study Boundary:

Analysis of the whole vehicle life lifecycle will include embedded emissions from vehicle production, maintenance and servicing, and endof-life activities, and WTW (WTT+TTW) emissions from production and use of the fuel / energy in operating the vehicle, and non-fuel emissions



End-of-Life

Adds assessment of environmental impact of "end of life" scenario (i.e. to-Grave). Can include: re-using or re-purposing components, recycling materials, energy recovery, and disposal to landfill

Renewable gas

Traceability of the renewable gas used from the road transport system

Guarantees of Origin

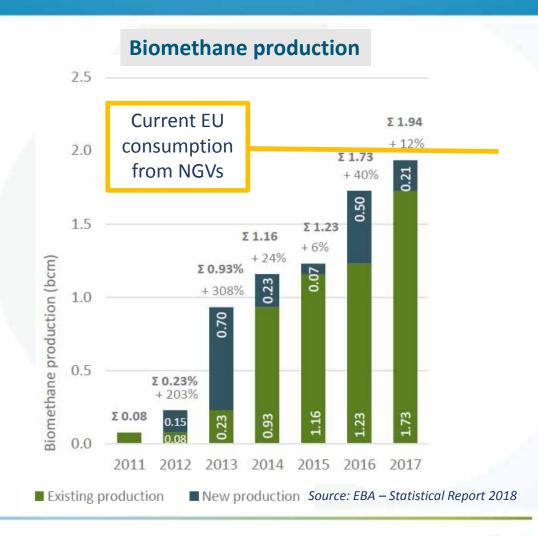
Extension of the current **SHARE** platform also to renewable fuels used in transport

http://appsso.eurostat.ec.europa.eu/nui/show.do?data set=nrg_ind_ren&lang=en



Biomethane production in Europe



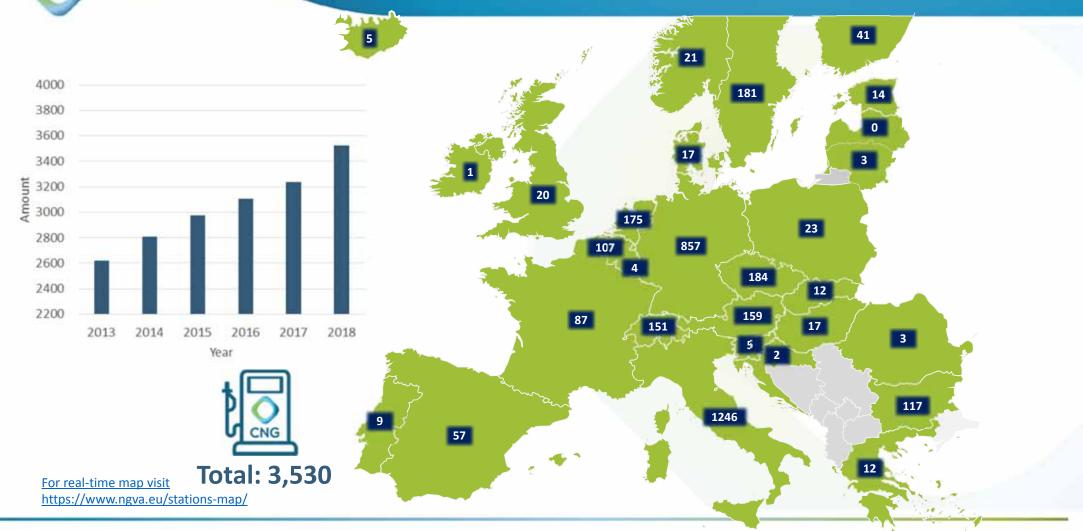




Gas refuelling infrastructure



CNG stations EU + EFTA – Status 02-2019





How much biomethane in transport?





Fuel price comparison

Current Situation







Additional Fuel Price Information EC Decision VEHICLE EFFICIENCY €/100 KM









- 35% vs Diesel



(Prices: EU average 2018)



LNG stations EU + EFTA – Status 02-2019

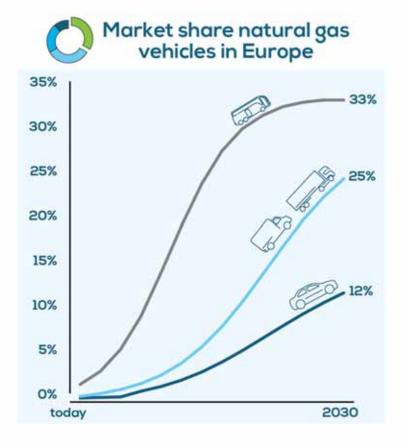


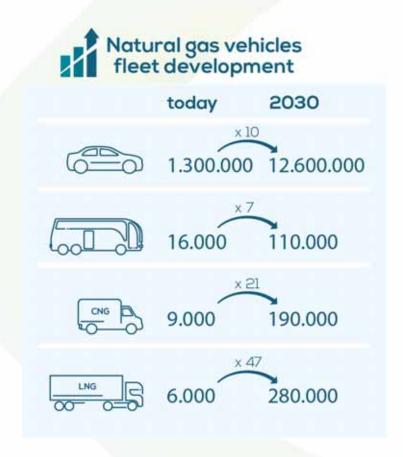


Vision to 2030





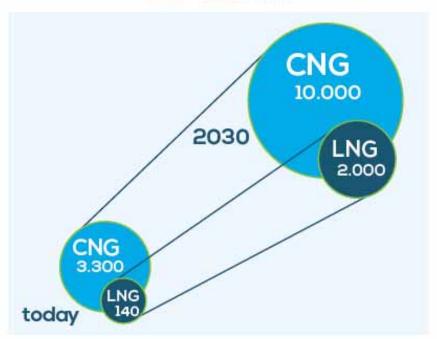




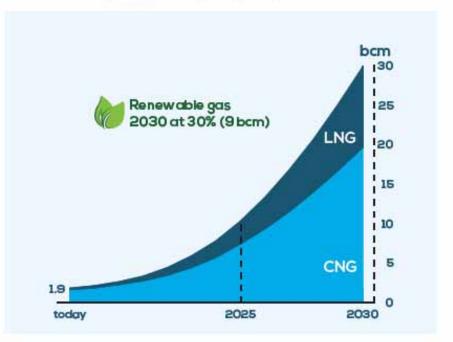


Fuel demand and infrastructure





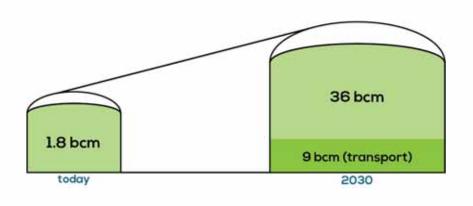


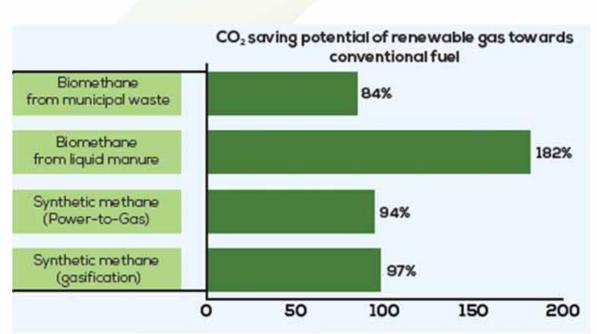




Renewable gas production

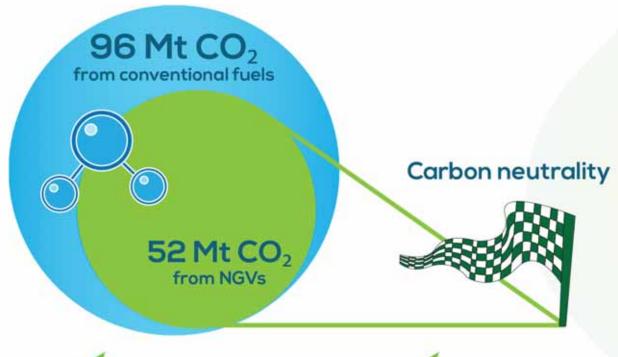
Evolution in production







Contribution to GHG emissions reduction



Natural gas can support a fleet of 13 million vehicles in 2030.

The conversion from conventional fuels through natural gas containing up to 30% v/v renewable gas will be able to approximately halve the CO_2 emissions on a Well to Wheel basis.

Thanks to methane capturing from liquid manure conversion, carbon neutrality can be reached with 80% v/v concentration of renewable gas.



Moving towards a system approach

Renewable CO₂ emissions Energy standards Directive Alternative Clean Vehicle **Fuels Directive** Infrastructure **Directive**

Linking legislative measure is fundamental to create a system approach where introduction of renewable fuels is the result of a real market demand.

Renewable gas can immediately contribute to fight climate change, supporting the EU Industries and accelerating towards a circular economy model.



+32 2 894 48 39 info@ngva.eu www.ngva.eu @NGVAeurope