



NGVA
— Europe
for sustainable mobility

NGVA Europe Roadmap 2018 Priorities & Activities

January 2018

- 1. Mobility Package**
- 2. Air Quality**
- 3. Activities from Working Groups**
- 4. Technical Activities**
- 5. EU projects and collaborations**
- 6. Communications**
- 7. Events**
- 8. Next meetings and office organisation**

1. Mobility Package

Future targets still based on **TAILPIPE emissions**

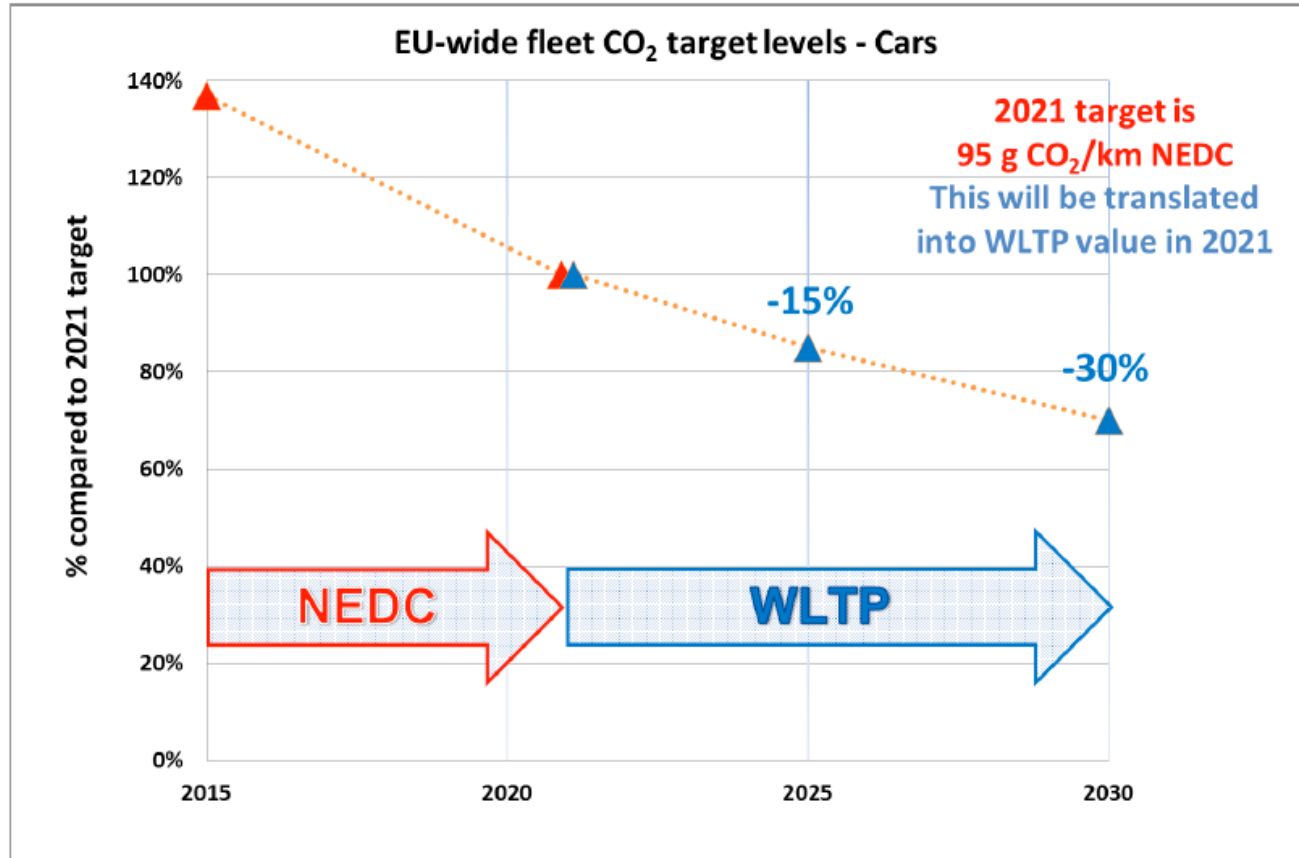
- target for 2025 = -15% (vs 2021)
- target for 2030 = -30% (vs 2021)

based on the new emissions test procedure WLTP

Crediting system: a manufacturer exceeding a certain benchmark level of ZEV/LEV (15% @ 2025 / 30% @ 2030) would be rewarded by getting a less strict CO₂ target (up to 5% bonus)

→ definition of LEV based on **TAILPIPE emissions** (up to 50 g CO₂/km)

New EU fleet-wide 2025 and 2030 targets - cars



Article 12: The Commission should have the power to request real world data to be collected and reported by Member States and manufacturers. At the moment the proposal is not applied to gaseous fuels.

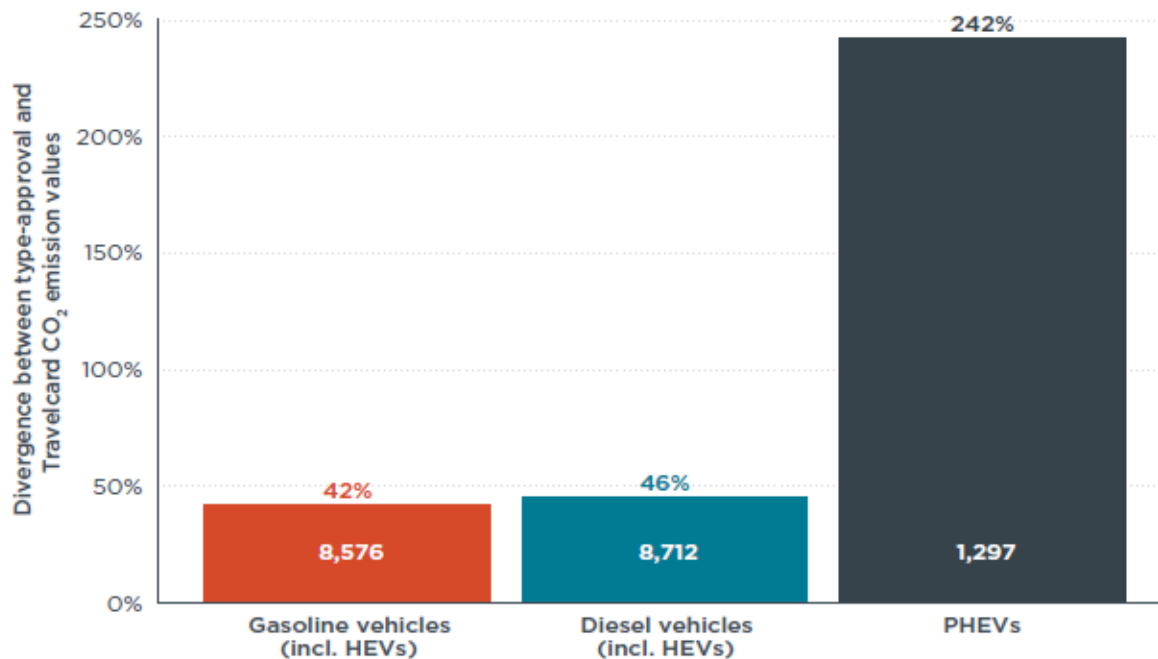


Figure 14. Divergence between type-approval and Travelcard Nederland BV CO₂ emission values by power train type in build year 2016. Number of vehicles per category presented at the base of each bar.

Scope of Article 12: Monitoring the gap in terms of fuel economy data between real driving conditions and WLTP; to assess the utilisation factor of the pure electric drive from the PHEVs.

WHITE PAPER

NOVEMBER 2017

FROM LABORATORY TO ROAD

A 2017 UPDATE OF OFFICIAL AND "REAL-WORLD" FUEL CONSUMPTION AND CO₂ VALUES FOR PASSENGER CARS IN EUROPE

Uwe Tietge, Peter Mock, John German, Anup Bandivadekar (ICCT)
Norbert Ligterink (TNO)




- Target: GHG and pollutant emissions should be on the path zero-emission mobility by 2050
- **Situation 2017:** 16 MS < 1% and 10 MS < 0.5% market share of BEV (new cars)
- Additional scope: to provide a definition of clean vehicles that sets a combined CO2 and air pollutants emissions threshold for light-duty and heavy-duty vehicles running on alternative fuels

Ex-post evaluation of existing legislation: key reasons for the limited impact of the directive:

- Limited range of contracts covered
- The Directive does not contain a definition of what a clean vehicle is; does not include clear purchase provisions
- Lack of alignment of public procurement policies in Member States

Criteria for the definition of clean vehicle (light-duty):

Vehicle categories	2025		2030	
	g CO ₂ /km	RDE air pollutant emissions C.F.	g CO ₂ /km	RDE air pollutant emissions C.F.
M1 vehicles	25	0.8	0	n.a.
M2 vehicles	25	0.8	0	n.a.
N1 vehicles	40	0.8	0	n.a.

Criteria for the definition of clean vehicle (heavy-duty):

Vehicle Categories	Alternative fuels
M3, N2, N3 vehicles	Electricity*, hydrogen, natural gas including biomethane, in gaseous form (compressed natural gas (CNG)) and liquefied form (liquefied natural gas (LNG))

- HDVs with zero-emissions at tailpipe or HDVs using natural gas provided they are fully operated on biomethane, which should be demonstrated by a contract to procure bio-methane or other means of accessing biomethane, shall be counted as 1 vehicle contributing to the mandate. All other shall be counted as 0.5 vehicles contributing.

Choice as preferred policy option for the revision: Option 6

*“Providing a definition of **clean vehicles (light duty)** based on **emission thresholds** and setting up **minimum procurement requirements for light-duty vehicles** and combining it with a definition based on **alternative fuels** and setting up **minimum procurement requirements for heavy-duty vehicles.**”*

- introduces a minimum procurement target based on alternative fuels and introduces the empowerment to change to an emission-based threshold approach by delegated act once CO₂-emission performance standards for heavy duty vehicles have been adopted at European level
- minimum target for alternative fuels vehicles in the area of heavy-duty transport



- Strong focus on e-mobility for cities.
- CNG: majority of NPFs lack targets for CNG-vehicles – hence infrastructure is not seen as a priority
 - BE, CZ, HU, IT prioritise CNG roll-out
 - AT, DE, LU, NL – consider infrastructure sufficient
- LNG, LNG accepted for HDV and maritime
 - FI, HU, IT – ambitious targets for LNG (maritime and inland ports)
 - IT – LNG in all 14 maritime TEN-T Core Network ports

Infrastructure type	Actual	Projected	
Recharging EV	118,000	200,000 (2020)	Not ambitious, needs of 440,000
CNG	3,363	5,962 – 5,997 (2025)	
LNG	95	256 - 431 (2025)	
Hydrogen	82	820 - 842 (2025)	

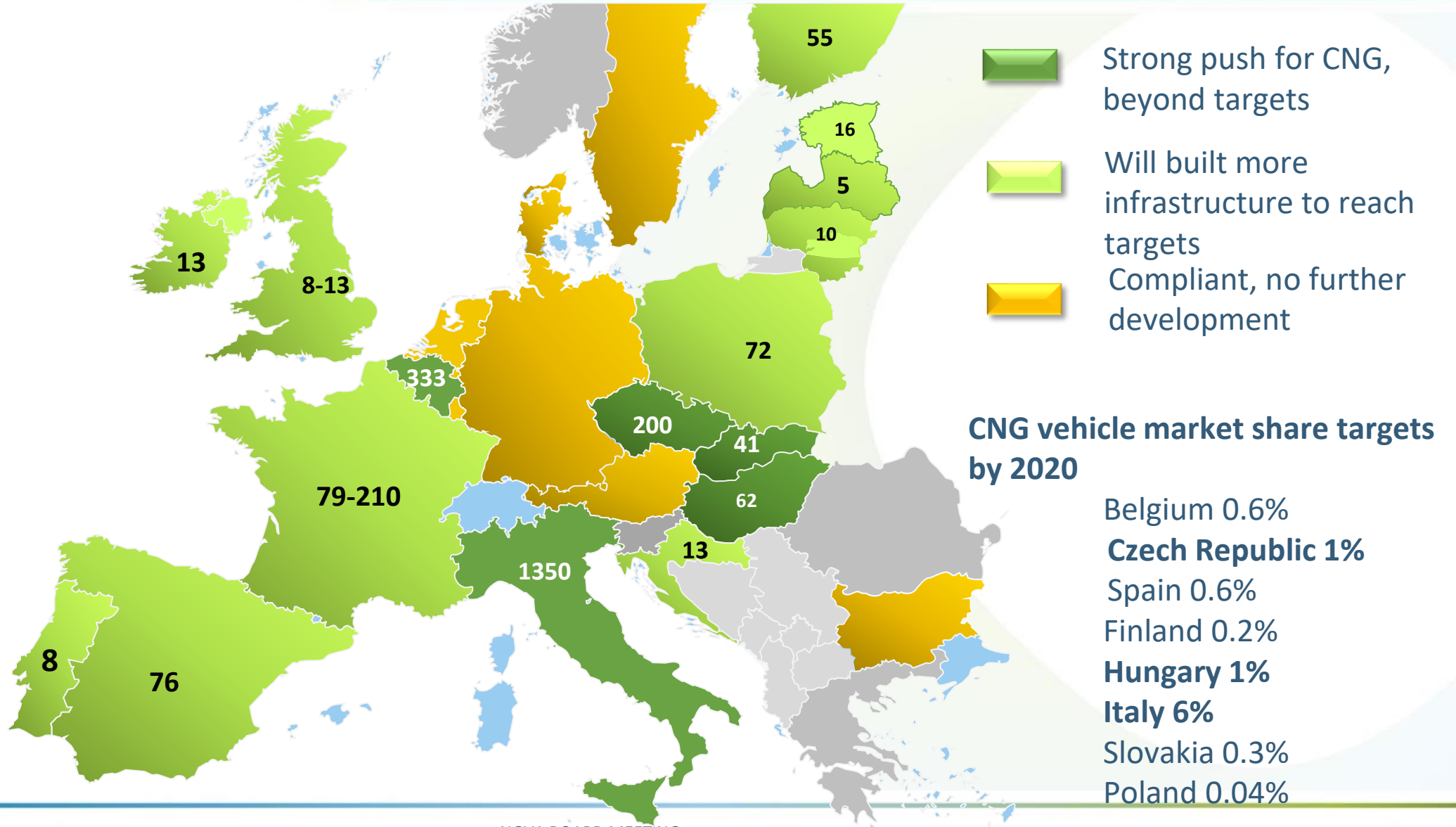
Estimation investment needed:

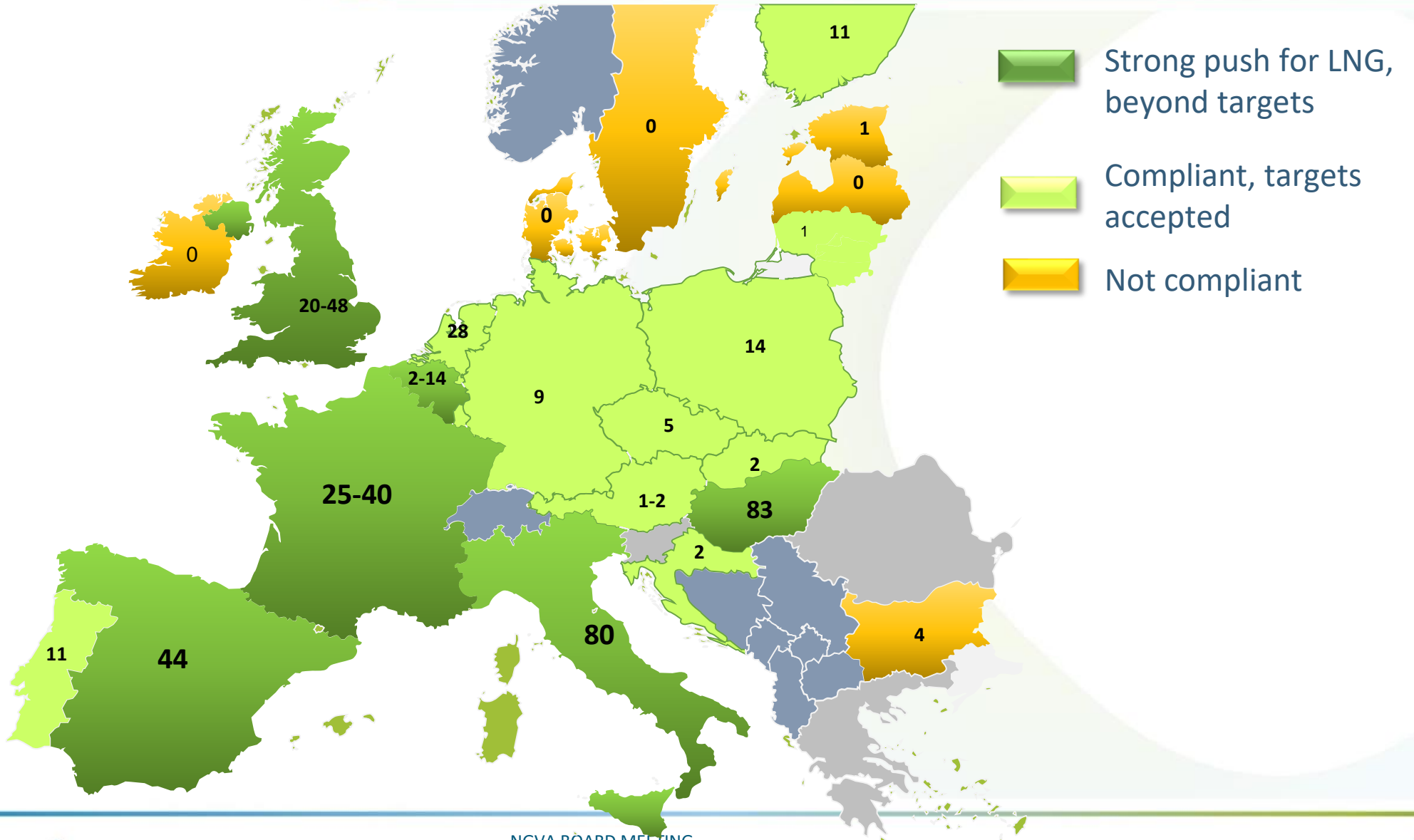
CNG €357 million by 2020 and €600 million by 2025

LNG for road €257 million by 2025

LNG for maritime and €945 million by 2025 in seaports

and €1 billion inland ports by 2030





		Estonian Presidency	Bulgarian Presidency		Austrian Presidency	
		2017-Q4	2018-Q1	2018-Q2	2018-Q3	2018-Q4
2 nd Mobility Package	CO2 Standards (PC & LDVs)	European Commission Proposal EC; Assigning Committees	Parliament Meetings with MEPs for Committee Responsible			Debates and Votes in Committees for Opinion
	DAFI		Member States Implementation			
			Follow-up with Member States and local engagement through the National Corner			
	CVD	European Commission Proposal EC; Assigning Committees	Parliament Meetings with MEPs for Committee Responsible			Debates and Votes in Committees for Opinion
Clean Energy Package	RED II	EU Parliament and Council				No Action
	ETD	Evaluation and fitness check roadmap				To follow the evaluation and any meetings/ workshops in relation
3 rd M Package	CO2 Standards (HDVs)	Parliament Follow monitoring and reporting debate: SR: D. Zoffoli (ENVI); Opinion - TRAN		European Commission Proposal EC on standards	Parliament Meetings with MEPs	
		1 Sept – Entry in force – WLTP and 2 nd RDE package for all new type-approvals				

*DAFI – Directive for Alternative Fuels Infrastructure; CVD – Clean Vehicles Directive; RED II – Renewable Energy Directive; ETD – Energy Taxation Directive

Stakeholder Engagement

European Commission

EU Parliament or Council

MS Implementation

Second Mobility Package – main focus on PC and LDV

Feedback to proposal on EC portal

Common actions on WtW approach (Clepa, Fuels Europe, ART Forum, ACEA ?,...)

Face to face meetings with MEPs

Face to face with countries representatives

Focus on CO₂ WTT benefit from renewable gas but also on necessary alignment between Clean Vehicle definition and DAFI criteria

Third Mobility Package – main focus on HD sector

Contribution to proposal on EC portal

Active participation to stakeholders meeting (16/01/2018) with DG MOVE

Common actions/positions on WtW approach (Clepa, Fuels Europe, ACEA)

2. Air Quality

Why gas in transport for clean cities?

Less pollutants

↓ PM
↓ NOx

Noise reduction

50%
less noise

NGVs are perfect to access Low Emission Zones

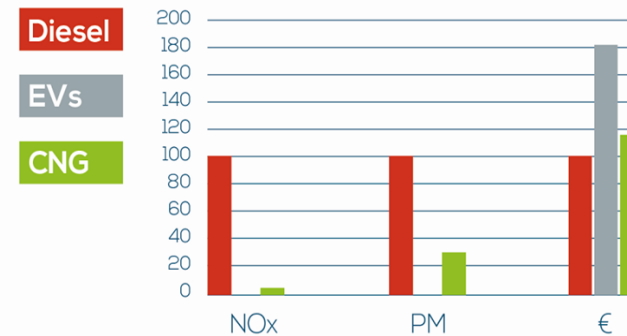
NGVs are clean vehicles

-95% Particles
-64% NOx

-97% Particles
-74% NOx

Lower PM = Better air quality = Better health

How can cities improve their air quality in a cost-efficient way?



NGVs = Close-to-zero emissions + Affordability

Fleet buses renewal at same cost



With same €, CNG offers -32% more savings on pollutants

Issues to be monitored and supported with fresh data:

1 - Ultrafine particle emissions from CNG engines: some publications are indicating the potential risk of non filtered nanoparticles from CNG engines in the range < 23 nanom

Particle Number and Ash Emissions from a Heavy Duty Natural Gas and Diesel w/DPF Engine

Imad A. Khalek, Huzeifa Badshah, Vinay Premnath & Daniel Preece
Southwest Research Institute (SwRI)
ikhalek@swri.org

Rasto Brezny
Manufacturers of Emission Controls Association (MECA)



21st ETH Conference on Combustion Generated Nanoparticles, Zurich, Switzerland, June 19-23, 2017



POWERTRAIN ENGINEERING
swri.org



Empa Report Nr. 5211.00968

Measurement and characterisation of sub-30nm particle matter in the exhaust of Euro 6 gasoline, CNG, and Diesel light duty vehicles (Sub30nm-PM Project)

200 nm 5 nm

ACTIONS:

- 1 - Members to collect/send to NGVA available publication/data to update air quality dossier
- 2 – To follow publications from H2020 ongoing projects
- 3 - Potential subject for thesis

3. Activities from Working Groups

On going activity: joint publication NGVA – EBA on potential of renewable gas as transport fuel

- Fuel production process description
- Production potential capacity @ 2030
- GHG specific saving effect
- Application fields: road, off-road and maritime
- Fuel production cost estimations
- Best practices – plants
- Recommendations

Target addressed: policy makers first

Target size of the document: 20-25 pages

Timing for publication < end January 2018

Last meeting held **19th October**

Next update: **Q1 2018**

Committee objectives:

- Collect information from the EU countries related with incentives
- Analysis of the implementation on different directives with a main focus on the national implementation of the DAFI by the different Member States.
- Overview of the European National and Municipal Low Emissions Zones, to evaluate how NGVs will be affected or can contribute to these regulations.

Next steps:

- Update information with the evaluation of the EC Report on the DAFI implementation and county profiles, published within the second transport package.
- Information will be available on the “new” member area, allowing country representatives to submit new information

Fugitive methane emissions in the atmosphere still represent a critical issues w.r.t. advocacy actions on natural gas (e.g. recent publication from Friends of the Earth)

Working group objectives:

- Collect information from the stakeholders on state of the art technology, issues and solutions
- Prepare document on zero venting target for the industry

First teleconference held on **18 October**

Next steps:

- Assigning of working group leader
- Opening data bank for collection of data



Topic	Road	Maritime	Need advocacy
Methane emissions mitigation <ul style="list-style-type: none"> ❑ zero venting target at station ❑ refuelling nozzle profile ❑ gas sensors ❑ methodologies for CH₄ emissions measurement 	X	X	X
Leakage detection methodologies / technologies	X	X	X
LNG composition <ul style="list-style-type: none"> • Real-time methane number analysis • Composition change during storage and shipment 	X	?	
Engine technologies (dedicated / dual fuel)	X	X	
Exhaust gas aftertreatment technologies	X	X	
LNG tanks technologies <ul style="list-style-type: none"> ❑ Conformable shapes ❑ Insulation 	X	?	

Protocol for the cooperation of LNG International Organisations



New member

NGVA invited to join the Protocol together with SEA LNG

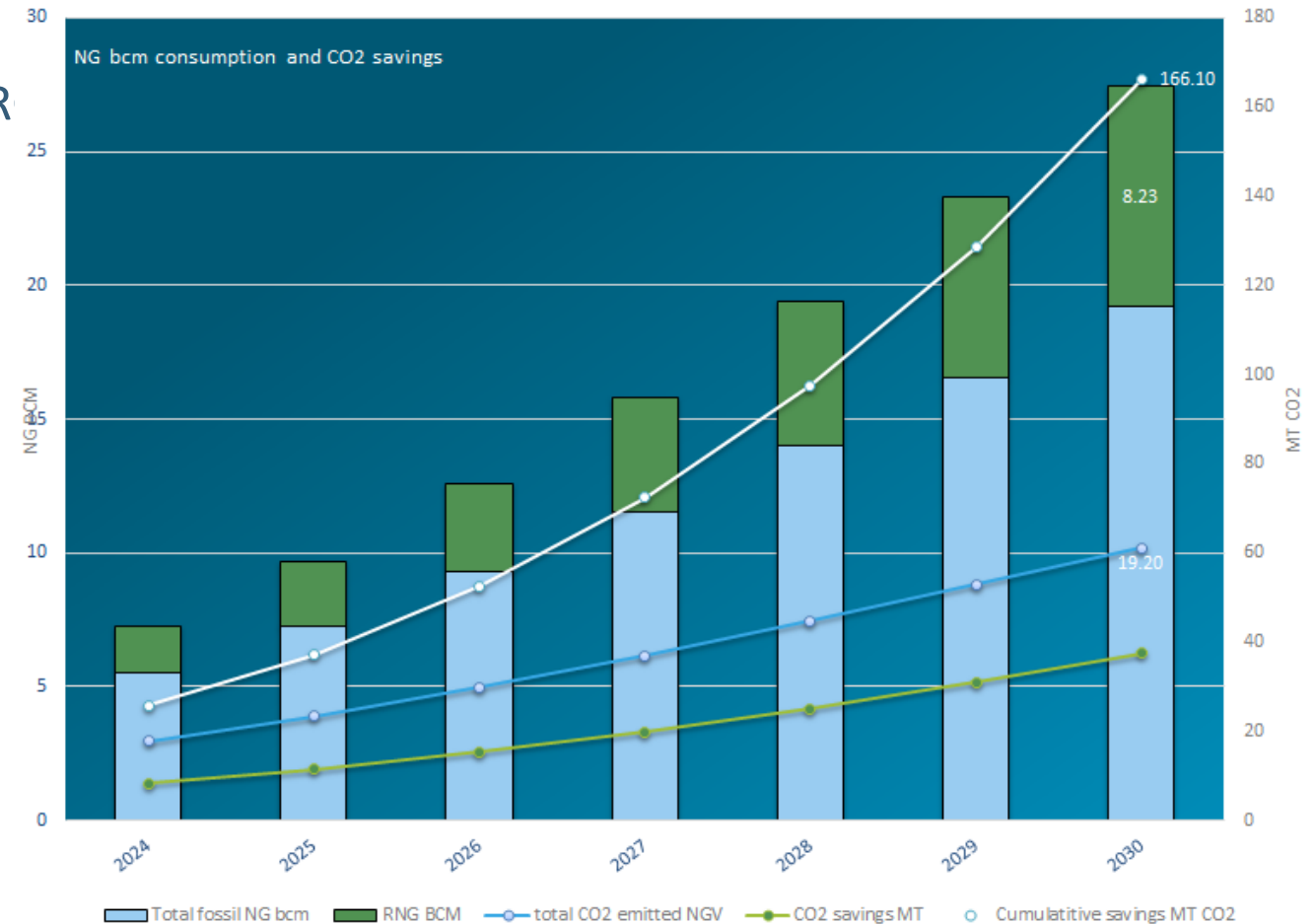
Meeting scheduled in Brussels on 14/02/2018



4. Technical activities

Ongoing revision of the NGVA roadmap 2030

- New calculation based upon Thinkstep study, JR data for CO₂ saving calculation
- Renewable gas share up till 30% in 2030 according to EBA
- new market penetration including potential of natural gas hybrid powertrain



Contract sign off for the data supply on CNG/LNG infrastructure development

Provider of CNG & LNG stations data:

- 36 countries
- Private station, public station
- Planned station, in construction station and station under maintenance
- Type of connectors
- Renewable gas content
- payment methods
- opening hours
- distance from highway
- Real-time update (minute interval)

LNG specific

- Filling procedure
- Training procedures
- Saturation pressures

→ Direct feed of databank to the European commission and [TEN-T map](#)



gibgas

- **CEN TC 408 ‘Natural gas and biomethane for use in transport’**

NGVA has joined the supervisory board for H2020 project on the research topics that were still open:

- impact of siloxanes on heavy duty engines
- impact of sulphur on catalytic converters performance of engines
- impact of oxygen on underground storages
- impact of components on health.

- **CEN SFGas GQS**

- 4 simple Wobbe index scenarios proposed
- impact assessment < 03-2018
- Workshop < 04-2018
- Status report < 10-2018

Wobbe index proposals					
Scenario	1	2	3	4	5
Wmin MJ/m3	46.44	47.4	47.4	49	49.24
Wmax	54	52.7	51.4	53	51.15
flux MJ/m3	7.56	5.3	4	4	1.91

- **CEN TC 326 Natural Gas Vehicles:**
- Plenary meeting 17-11-2017
- Definition of interoperability to be defined with EC
- if Ballot on 14-12-2017 is positive EC recommends to add standards to delegate act in May 2018
 - **WG1 CNG Filling Stations:** Technical report is to be revised
 - **WG3 CNG Vehicle Use and Operation:** EN 13423:2000 “Compressed natural gas vehicle operations” to be revised without definition of “competent workshop personnel” is being moved to ISO
 - **WG4 LNG Fuelling Stations:** Technical report to be created
 - **WG5 LNG Vehicle Use and Operation:** Convener retired, new candidate proposed is Filippo De Cecco from Assogasliquidi
 - **WG6 NGV Refuelling Appliances:** VRA standard is available as draft

5. EU projects and collaborations



The project will finish April 2018

Project expected overall income €370,000 (70% received)

Pending task for the project:

- Evaluate the performance LNG fleet (more than 140 vehicles)
- Opening Sines station (Portugal)

Pending task NGVA Europe:

- WP 7- Evaluation of the 4 corridors
- WP 8- Dissemination of results
 - Final event *NGV Corridors: Towards Sustainable Mobility* ✓
 - Project newsletter ✓

Others:

- Monitoring LNG stations network in EU



„Innovative high efficiency Liquid BioMethane production from biological waste and coupling of energy sectors (InnoLBM)“





Topic: LCE-19-2016-2017 Demonstration of the most promising advanced biofuel pathways

Coordinator: Dr.-Ing. Frank Graf (graf@dvgw-ebi.de)
Felix Ortloff (ortloff@dvgw-ebi.de)
DVGW Research Center at Engler-Bunte-Institute

NGVA invited to join the consortium to support analysis on market barriers/LNG infrastructure development and regulatory aspects

Potential budget for NGVA 140 keuro (over 3 years)

**Proposal rejected (despite 13,5/15 evaluation)
(communication 18/12/2017)**

Call title	Type of action and size	Available budget	Deadline for submission
LC-MG-1.1-2018: InCo flagship on reduction of transport impact on air quality	RIA 2 → 5 M€	30 M€	FS 30/01/2018 SS 19/09/2018
 LC-MG-1.8- 2019: Retrofit Solutions and Next Generation Propulsion for Waterborne Propulsion	RIA 3 → 5 M€ IA 4 → 6 M€	8 M€	FS 16/01/2019 SS 12/09/2019
LC-MG 1.9–2018: LC-MG-1-9-2019: Upgrading transport infrastructure in order to monitor noise and emissions	RIA 4 → 7 M€	7 M€	FS 16/01/2019 SS 12/09/2019
 MG-2.6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels	RIA 5 → 10 M€	30 M€	FS 16/01/2019 SS 12/09/2019
 MG-3.2-2018: The Autonomous Ship	IA 10 → 20 M€	20 M€	FS 30/01/2018 SS 19/09/2018
 MG-BG-02-2019: Ship emission control scenarios, marine environmental impact and mitigation	RIA Up 8 M€	8 M€	24/04/2019
LC-GV-04-2019: Low- emissions propulsion for long-distance trucks and coaches	IA 20 → 25 M€	25 M€	24/04/2019

As a result of the Second Mobility package, the EC announced an extra **€800 million** for CEF projects







New programme: NER 300 (New Entrance Reserve) €450 million for projects related with renewable energy and transport

New date for CEF Blending call: 12th April 2018

- CEF Blending call budget increased from €1 billion to €1.35 billion. Higher indicative budget for the priority "Innovation and New technologies" (from €140 to €490 million).
- Focus: cleaner transport facility” to support the accelerated deployment of cleaner transport vehicles & associated charging and refuelling infrastructure,
- Increase the production of renewable gas (biomethane)
- Size of projects lowered: New threshold is €5 million instead of €10 million

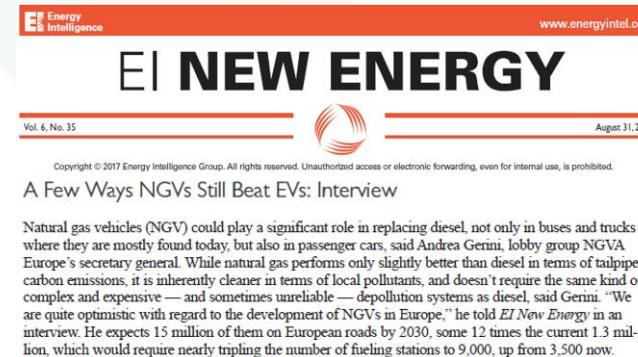
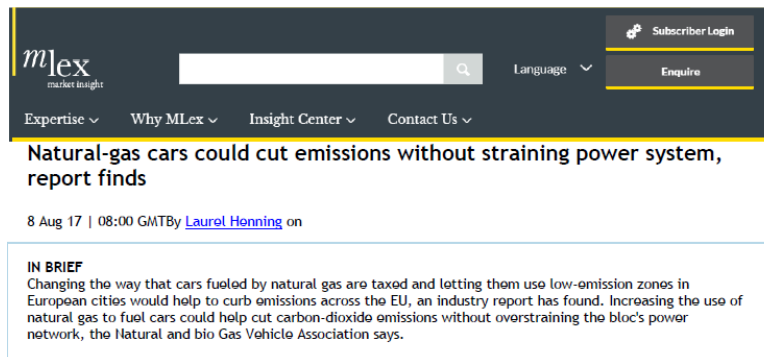
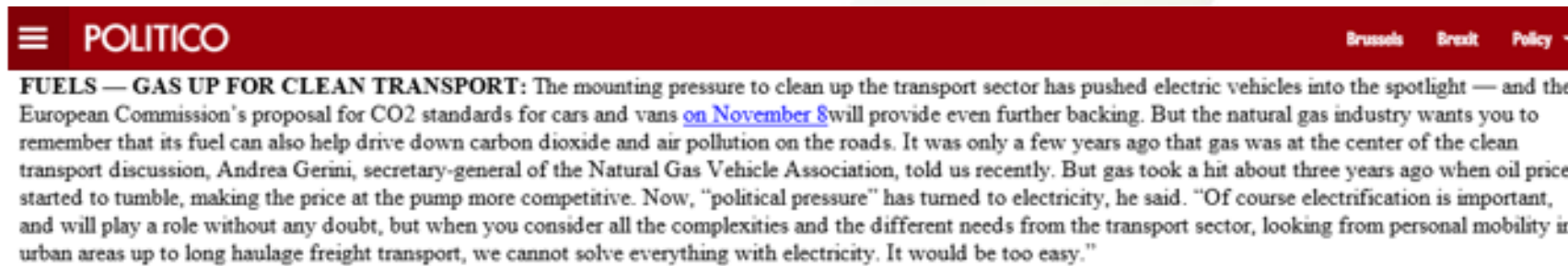
Under discussion (DG MOVE, DG RTD, DG ENER) a proposal to create a EU NGV Platform as tool dedicated to:

- **Coordinate and integrate at EU level projects related to**
 - *renewable gas production process*
 - *fuel distribution (infrastructure)*
 - *product technologies development*
- **Match R&D activities and sustaining demonstration projects providing a common floor to H2020&FP9 and CEF projects as well as LIFE and INTERREG initiatives.**
- **Facilitate synergies and cross-fertilization among projects and new initiatives**
- **Identify technological and legislative barriers**
- **Continuously monitor project results and support dissemination**
- **Optimize the EU financial support**
- **Being a EU reference platform also w.r.t. national initiatives**

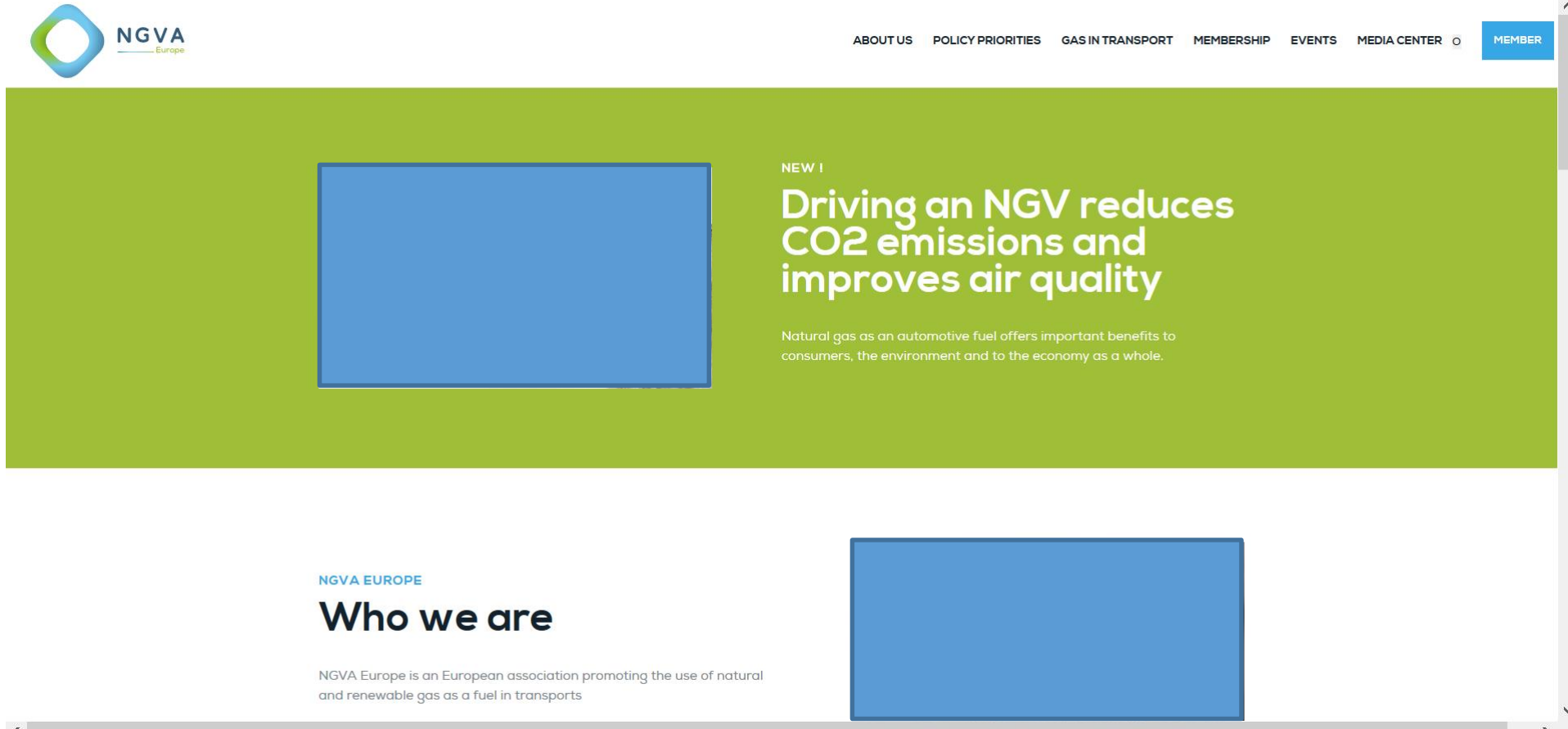
	<p>NGVA collaborated on the WTW study and provided data for the CONCAWE database</p>
	<p>A platform joining car manufacturers, suppliers, research institutes and the Commission - influences the contents of the calls for the EGVI – European Green Vehicle Initiative</p> <ul style="list-style-type: none"> • E&E (Energy and Environment) Working Group • ERTRAC CO2 Study
	<p>A forum, established under the project: “Support for alternative and renewable liquid and gaseous fuels forum (policy and market issues)”. ART Fuels Forum 2nd Plenary Meeting - key topics:</p> <ul style="list-style-type: none"> • Aspects of the Advanced Biofuel Definition in RED II • Policy Framework and Support Schemes • Emissions and Sustainability Criteria
	<p>CEER Study - The future role of gas, NGVA contributed with report on the NGV industry, including technical information and political messages</p>
	<p>NGVA collaborated on a report that Engie commented on and asked for support to confirm data. As such the report is now including gas in transport.</p>
	<p>Collaboration on providing numbers for the DAFI through EAFO.</p>

6. Communications

- Achieved coverage on GHG emissions study, well-to-wheel approach, renewable gas in leading Brussels-based and international outlets.
- Became a point of contact for journalists to comment on EU energy and transport initiatives.
- Worked with media to plant a question on well-to-wheel emissions calculation basis during the Mobility Package presentation for VP Sefcovic and Commissioner Canete.
- GHG emissions study: around 900 downloads.



		Estonian Presidency	Bulgarian Presidency		Austrian Presidency	
		2017-Q4	2018-Q1	2018-Q2	2018-Q3	2018-Q4
2 nd Mobility Package	CO2 Standards (LDVs)	European Commission Feeding comments in media reporting	Parliament Informational & social media campaign: sharing top-line visual materials (videos, gifs) during outreach meetings with EP representatives. Engaging with MEPs on Twitter and promoting messages online.			
	DAFI		Member States Implementation Seeking speaking opportunities. Producing visual materials to support political outreach.			
	CVD	European Commission Feeding comments in media reporting	Parliament Lunch & Learn: informal educational session for MEPs assistants on NGVA's positions		Informational & social media campaign	
	RED	EU Parliament and Council Continuous engagement with media to position NGVA as opinion leader on the use of renewable gas in transport				
Clean Energy Package	ETD	Stakeholder engagement. Evaluation and fitness check roadmap Ad-hoc media and communication activities				
	CO2 Standards (HDVs)	Parliament Early engagement with stakeholders via social media channels and meetings	European Commission Feeding comments in media reporting	Parliament Informational & social media campaign, building on CO2 Standards (LDV) achievements		
3 rd M Package	Ongoing	New website; Seeking speaking opportunities to communicate on NGVA positions; Members bulletin with analysis of political trends and NGVA news; Report on renewable gas; Report of activities; Ad hoc reports; Media engagement via GasNaturally; Communications on social media; Building relations with media and feeding into reporting				



Work in progress – Launch of the website scheduled Q1 2018

Aim: to create a “brand” that would represent the use of gas in transport in all the varieties (CNG, LNG, road, maritime, fossil, renewable...)

New logo proposals:



currently under finalisation:



7. Events

Gasnaturally

- 3rd July- Gasnaturally dinner-debate at Strasbourg Parliament
Hosted by MEP Adina Valean (EPP), attended by 8 other MEPs

Motorshows

- 14th-24th September, IAA, Frankfurt
- 20th-25th October, Busworld Europe, Kortrijk (BE)

Conferences

- 27th-28th September, ERIG Conference, Brussels
- 3rd-6th October, International Gas Forum, Saint Petersburg
- 24th-25th October, 12th Conference on Gaseous-Fuel Powered Vehicles, Stuttgart

- 21st-22nd September, CEF days, Tallinn

NGVA had a booth at the Connecting Europe Facility Conference in Tallinn, representing more than 30 CNG and LNG infrastructure projects

- 16th Nov- COP 23 side event @Russian Pavilion, Bonn
- 22nd Nov – Small scale LNG in EuroMediterranean – EP event hosted by M. Salini



GasNaturally

- 20th November, Friends of Europe event (slot Marco Alvera)
- 13th December, Politico event, Brussels
- 25th January, MEP assistants afterwork event
- February 2018 (?) GasDays, Brussels and/or Strasbourg parliament



Stakeholders

- 29th November, ACEA Powertrain options for commercial vehicles, Brussels
- 24th-26th January, EBA Conference, Antwerp
- **20th March 2018, Eurogas + NGVA event, Brussels**
- 14-15 June, GIE Annual event

National NGV Associations

- 23rd-24th November, Polish LNG Platform Conference, Warsaw
- 7th December, Belgium, Gasday (Brussels)
- 20th February, Czech Republic (Prague)
- 30th-31st May, Energigas Sweden (Bastad)

8. Next meetings / office

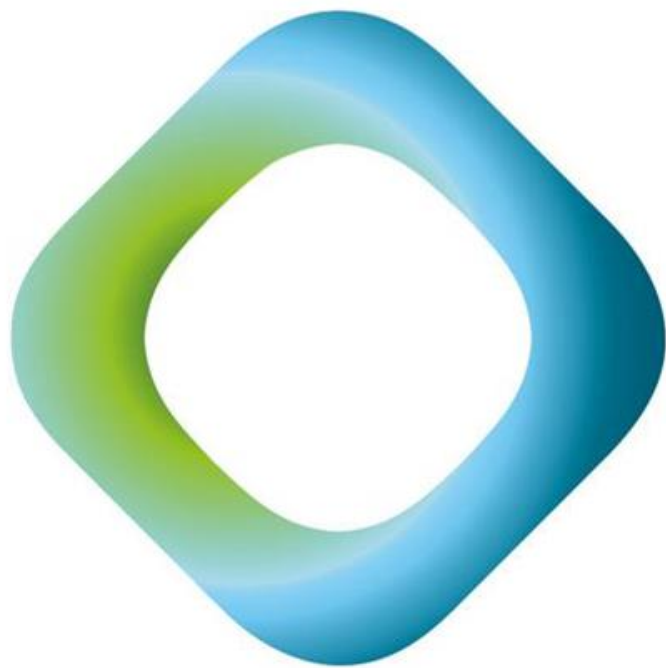
Board Meeting I/2018	8 March 2018	Brussels
Board Meeting II/2018	24-25/05/2018	Paris
General Assembly	24-25/05/2018	Paris
Board Meeting III/2018	Proposal for week 47 20/11/2018	Brussels

Team:

- 1) Ms Pilar Perez resignation, leaving as from end 2017
- 2) Hiring Ms Martina Conton as EU Policy Manager, starting from February 2018
M.Sc. Law, Institutions and Policies of the European Integration
5-year experience in Brussels in advocacy on energy sector (previously at EBA)
- 3) Temporary replacement of Ms Isabella Picerno (maternity leave) – 6 months starting from beginning February 2018) till end 2018

Internships / thesis:

- 1) 6 month internship from Hexagon: Ms Victoria Loeken – starting from Feb 2018
BA Government and International Affairs



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