

Suomen Kaasuyhdistyksen syysseminaari 2017

Lisää kaasua liikenteeseen – uudet tankkausasemat ja kaasun liikennekäytön näkymät

02/11/2017 Jussi Vainikka, Business Development Manager, Biogas

Gasum

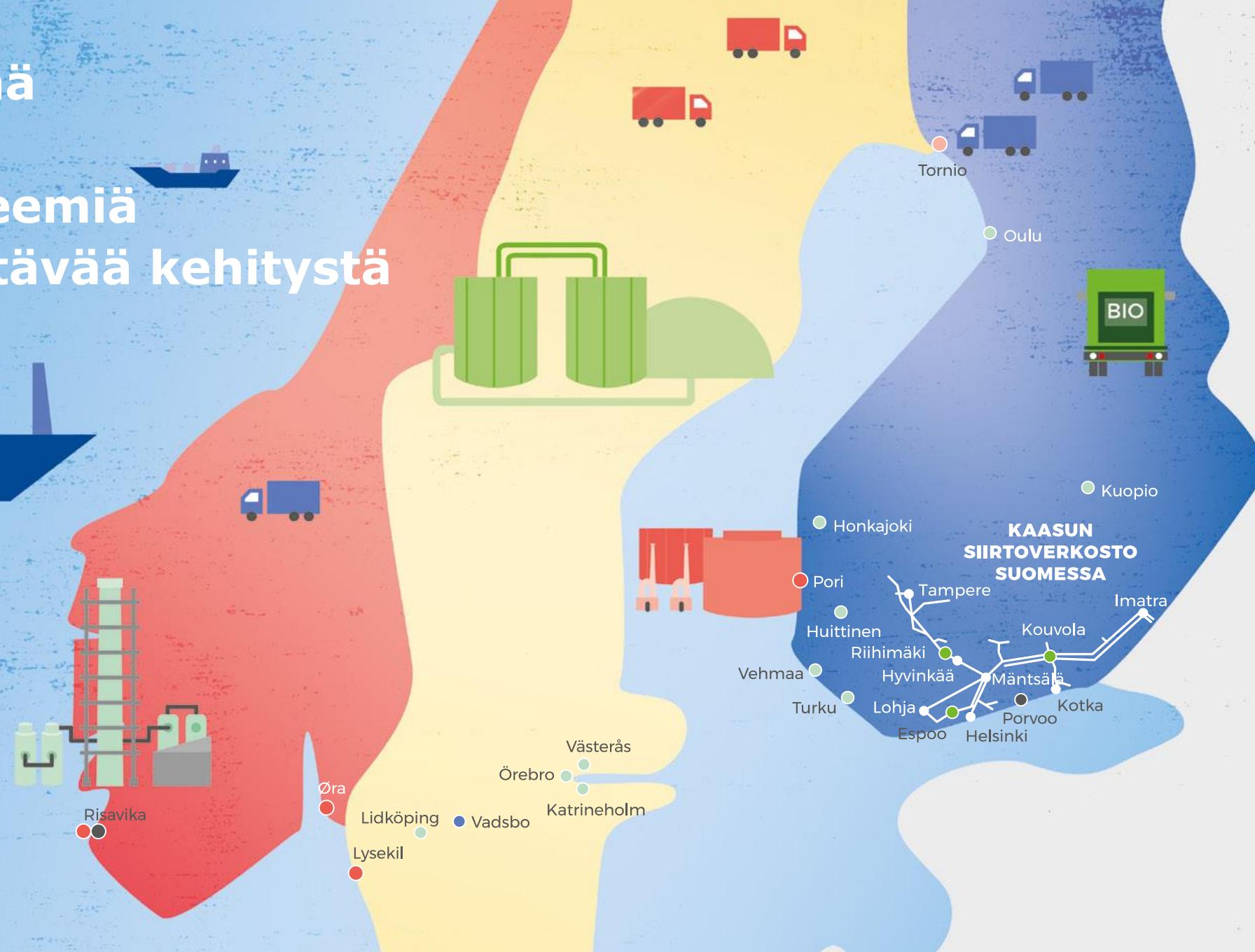
Gasum kehittää pohjoismaista kaasuekosysteemiä ja edistää kestävää kehitystä



- Toiminnassa oleva LNG-terminali
 - Rakenteilla oleva LNG-terminali*
 - LNG-tuotantolaitos
 - Gasum, biokaasu
 - Gasum, biojäte ja biokaasu
 - Biokaasutuotantolaitos**

* Yhteishanke ManGa LNG Oy, Outokumpu, SSAB, EPV Energia ja Skangas

** Yhteishanke



POLICY FRAMEWORK FOR RENEWABLE FUELS (ROAD TRANSPORT) FINLAND

- The transport sector accounts for approx. 40 % of effort sharing sector emissions and thus plays a key role in achieving the emission reduction target.
- Some 90% of emissions from domestic transport are produced by road transport. Approximately 58 % of road traffic emissions are produced by cars, 37 % by vans and trucks.
- The average age of Finnish cars has increased since 2008. In 2015, it was approximately 11.7 years.

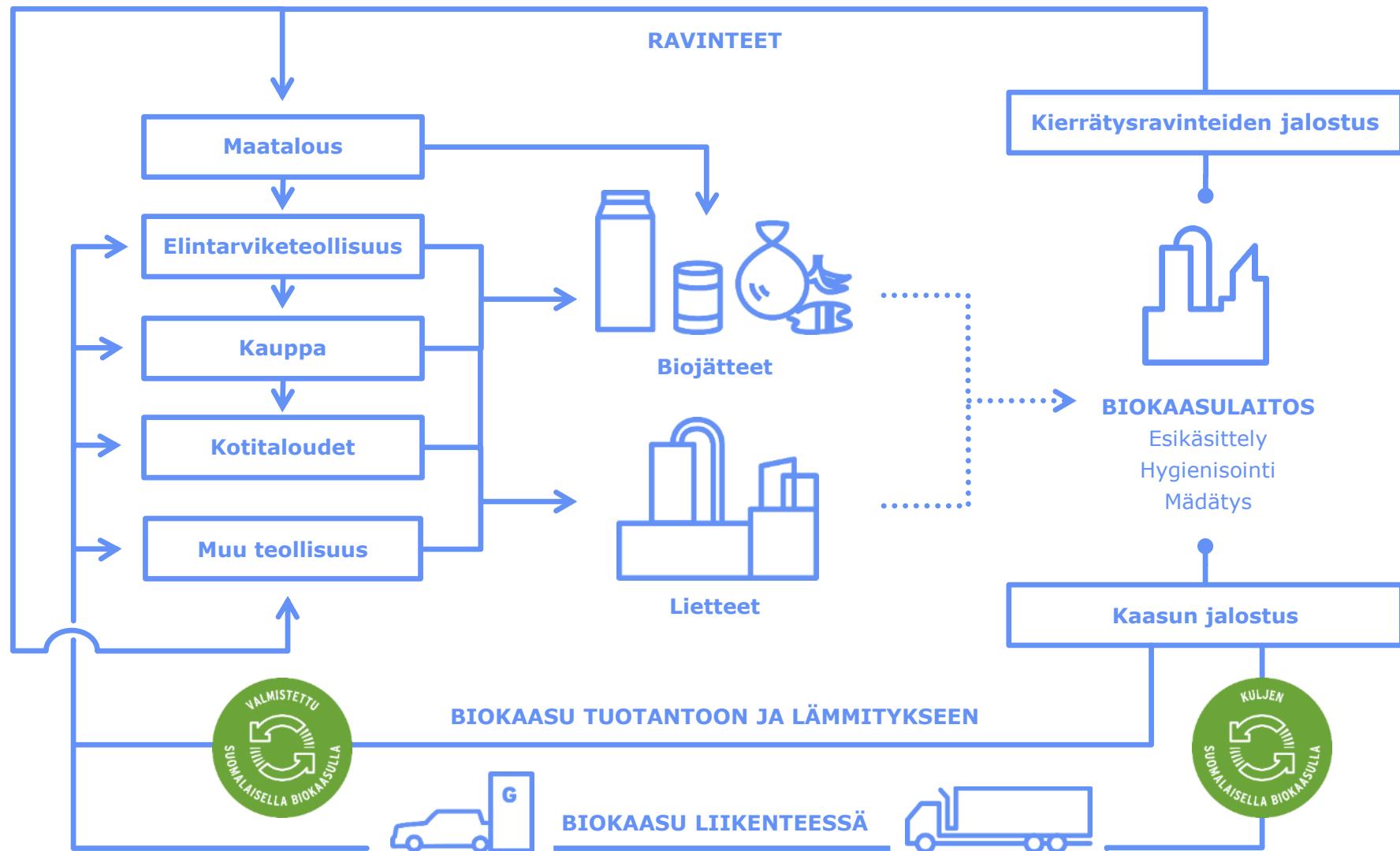
Target setting (recent, relevant):

- National Energy and Climate Strategy for 2030 (approved on 24th of November 2016)
 - Target: By 2030, reducing traffic emissions by some 50 % compared to the situation in 2005
 - Target: The physical share of biofuel energy content in all fuels sold for road transport will be increased to 30% by 2030
 - Target: Minimum of 250,000 electric vehicles in total and a minimum of 50,000 gas-fuelled vehicles in 2030
 - + several other targets and proposed measures (e.g. MaaS)

EU regulation

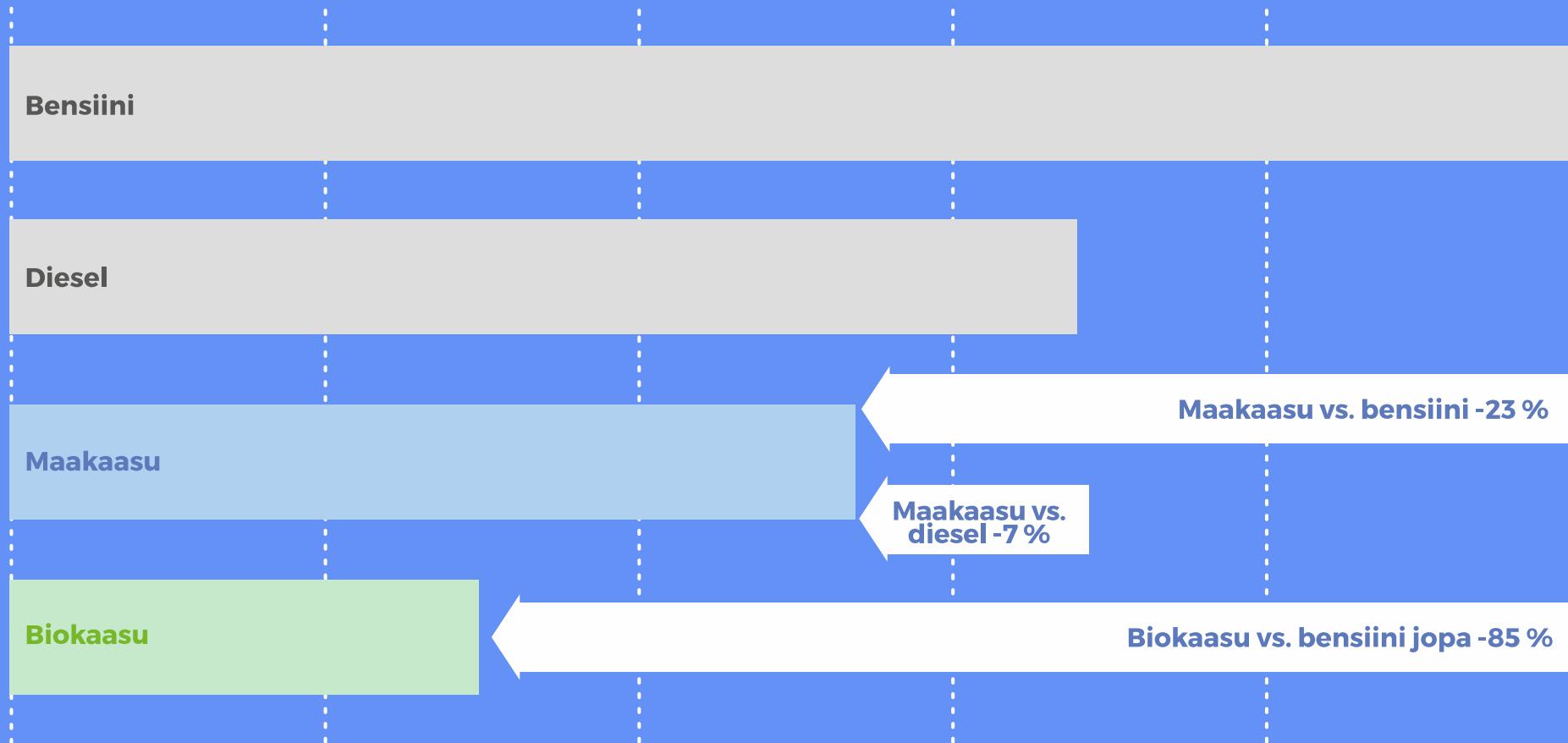
- DAFI
 - The distribution station network for new fuels (including gas and hydrogen) and the network of recharging points needed for electric vehicles will mainly be built on market terms in Finland.
 - Requirements for refuelling stations, Fuel specification: FprEN16723-2,...
- REDII-draft and other forthcoming regulation
 - Challenges – possibilities
 - E.g. definitions and criteria, feedstocks and maximum contribution of food/feed crops and minimum share of advanced biofuels/gas, calculation methods, Guarantees of Origin,...

TÄYDELLINEN KIERTO: BIOHAJOAVAT JÄTTEET UUSIUTUVAKSI ENERGIAKSI



KAASU VÄHENTÄÄ MAANTIELIIKENTEEN KASVIHUONEKAASUPÄÄSTÖJÄ

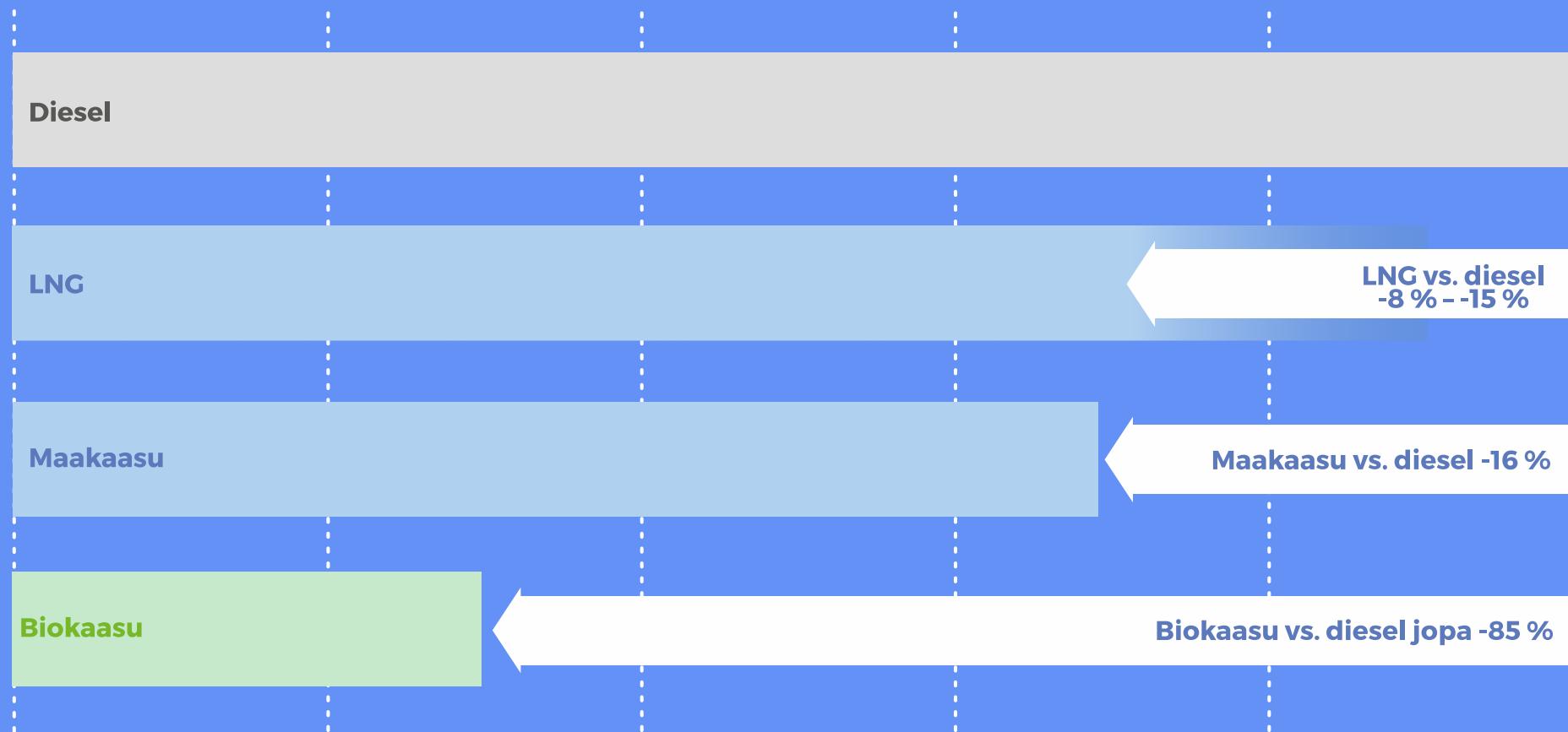
Well-to-wheel passenger vehicles-GHG intensity (relative emissions)



1 Uusiutuvan energian direktiivin, RED (2009/28/EU):n, mukaisen Energiaviraston hyväksymän kestävyysjärjestelmän laskenta
2 thinkstep. 2017. Greenhouse gas intensity for natural gas. Thinkstep is a leading global consultant and software company in the field of lifecycle analysis (LCA).

KAASU VÄHENTÄÄ MAANTIELIIKENTEEN KASVIHUONEKAASUPÄÄSTÖJÄ

Well-to-wheel HDV vehicles-GHG intensity (relative emissions)



1 Uusiutuvan energian direktiivin, RED (2009/28/EU):n, mukaisen Energiaviraston hyväksymän kestävyysjärjestelmän laskenta
2 thinkstep. 2017. Greenhouse gas intensity for natural gas. Thinkstep is a leading global consultant and software company in the field of lifecycle analysis (LCA).

DEVELOPMENT OF LNG/L-CNG NETWORK IN FINLAND, 2014-FI-TA-0119-S

Project description:

A pilot action which seeks to identify and study the optimal solution for an LNG/LCNG network and supply chain in Finland. The action consists of study AND deployment and testing of four LNG/LCNG refuelling stations.

Preliminary pilot sites are: Helsinki/Vuosaari (LNG), Vantaa/Viinikkala (LNG/LCNG), Turku (LNG/LCNG) and Jyväskylä (LNG/LCNG).

The lessons learned from the studies shall be the basis for building a comprehensive network, in particular for heavy duty vehicles in Finland, as the optimal technical and commercial solutions are expected to be clarified during the Action.

The project complies with EU targets (e.g. Directive 2014/94/EU) and development of TEN-T road Core Corridors/Networks.

The project complies with Gasum's vision, mission and with all strategic areas of focus AND is in the core of the Biogas business unit's business plan.

Total budget of the project is appr. 5,3M€, EU support 50% (appr. 2,65M€). Project completion date is 12/2017 (updated schedule).



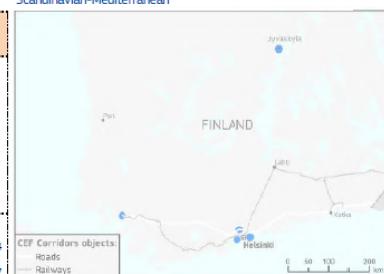
Development of LNG/L-CNG network in Finland
2014-FI-TA-0119-S
Scandinavian-Mediterranean

Annual Call 2014

Member State(s) involved:	Finland
(Coordinating) Applicant:	Gasum Oy
Implementation schedule:	Start date: January 2015 End date: February 2017
Requested funding:	Total eligible costs: €5 297 114 Requested funding: €2 648 557 Requested EU support: 50.00%
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Evaluation Remarks

The proposal is relevant to the Call as it supports development of TEN-T road Core Corridors, by piloting infrastructure for alternative fuels. The proposed Action is fully mature as the technical solutions are ready for deployment and locations of the stations identified. The impact of the proposal is very good, in particular due to considerable emissions reduction and experience gained from piloting LNG/LCNG stations. The quality of the proposal is good, with clear performance indicators and risks well analysed.



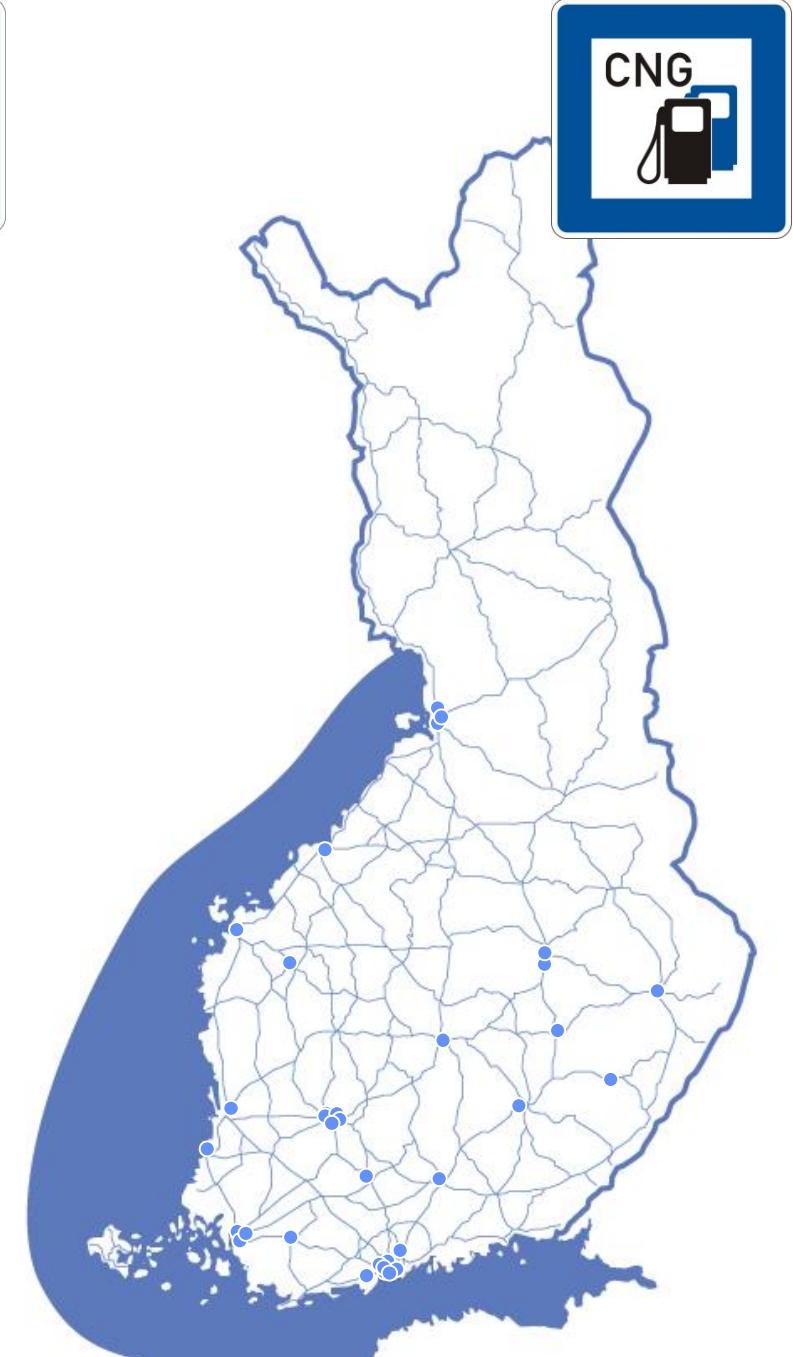


Co-financed by the European Union
Trans-European Transport Network (TEN-T)

Potential locations for CNG- and LNG-stations based on the demand potential

- Network, not single stations
- more than one regional refuelling possibility must be implemented to achieve customer acceptance

Gasum participated in national working group set by the Ministry of Transport and Communications: national action plan for the Implementation of the Directive on the Deployment of Alternative Fuels Infrastructure



PILOT LNG AND LNG/LCNG STATIONS IN OPERATION



PILOT LNG AND LNG/LCNG STATIONS IN OPERATION



KAASUKÄYTÖISET HENKILÖ- JA PAKETTIAUTOT SUOMEN MARKKINOILLA



Mercedes-Benz
Sprinter



Opel
Astra
Zafira
Combo



Volkswagen
Caddy
Caddy Maxi
Eco up!
Golf

Tulossa Polo



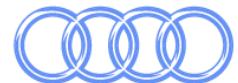
Skoda
Citigo
Octavia

Tulossa Fabia



Seat
Mii
Leon

Tulossa Ibiza ja
Ateca



Audi
A3
A4

Tulossa A5



IVECO
Daily

KAASUKÄYTTÖISET RASKAAN KALUSTON AJONEUVOT SUOMEN MARKKINOILLA



Mercedes-Benz
Econic NGT
KW 222, HV 302

IVECO

IVECO
Stralis LNG & CNG
KW 243, HV 330
Stralis LNG & CNG
KW 294, HV 400
Stralis LNG & CNG
KW 338, HV 460
Eurocargo CNG
KW 154, HV 210



Scania
P/G 280/340 LNG
KW 250, HV 340
P/G 280/340 CNG
KW 205, HV 280/250/340

Uudet 2018
420hv
440hv

VOLVO

Volvo
FE CNG
KW 235, HV 320

FM FH LNG dual Fuel (2018)
420hv
460hv

KAASUKÄYTTÖISET PAKETTIAUTOT, BUSSIT JA TRUKIT

PAKETTIAUTOT

IVECO



IVECO
Daily



VOLKSWAGEN
Caddy, Caddy
Maxi TGI

OPEL
Combo



MERCEDES-BENZ
Sprinter NGT

TRUKIT



LINDIE



TOYOTA



NISSAN

BUSSIT



SOLARIS



MERCEDES-BENZ



MAN

IVECO



SCANIA

HDV MARKET IS MOVING FORWARD – RECENT NEWS AND REFERENCES

VW to Utilise 100 Scania LNG Trucks for Greener Logistics

September 20, 2017 | Germany, Wolfsburg



Scania and Volkswagen, in an arrangement supported by the German Ministry of Transport and Digital Infrastructure, will move VW product using more than 100 Liquefied Natural Gas (LNG) powered Scania trucks.

The logistics vehicles will be deployed in northern Germany in an initiative to make the transport activities of the Volkswagen Group more environmentally compatible.

To speed up the implementation, participants recently met at a *LNG Truck Day* in Wolfsburg. "Lower-emission trucks are a key element in our Green Logistics sustainability initiative," Thomas Zernechel, Head of Volkswagen Group Logistics, said. "With yesterday's LNG Truck Day, we provided impetus for the use of trucks with alternative powertrains. However, we can only succeed with strong partners – a concerted effort will bring us onto the right track."

Source: <http://www.ngvglobal.com/blog/vw-utilise-100-scania-lng-trucks-greener-logistics-0920>



Litra AS skal de nærmeste fem årene kjøpe minimum 100 kjøretøy drevet med biogass.

Satser på biogass

Litra AS, en av de største privateide transportørene i Norge med hovedkontor på Lillehammer, skal de nærmeste fem årene investere i minimum 100 tunge kjøretøy med biogass som drivstoff. Gassen skal leveres av Skagerak Energi AS.

HALVDAN KORSMO 8. sep. 2017 - 00:15

Source: <http://www.mtlogistikk.no/artikler/satser-pa-biogass/405434>
<http://www.litra.no/blog/2017/09/15/litra-kjører-grønt/>

Scania Launches XT Truck Range, Natural Gas Included

September 6, 2017 | Sweden, Södertälje



Scania Truck Range: S 500, R 730, G 410 and P 280

Scania has launched the XT truck range, tailor-made for the construction industry. The XT guise is compatible with all engine & powertrain configurations, including natural gas. The new construction range is the second stage in Scania's introduction of new generation trucks, the fruits of more than ten year's development with an investment exceeding EUR 2 billion (USD 2.39b).

Following an extensive analysis of the multi-faceted construction industry, Scania has developed a comprehensive range to meet the highly diverse transport assignments within the sector. "This industry is facing increasing demands for sustainable and cost-effective production. Each component in the complex construction logistics process must adapt to higher standards for efficiency and Scania XT is our contribution to this shift," says President and CEO Henrik Henriksson.

Source: <http://www.ngvglobal.com/blog/scania-launches-xt-truck-range-natural-gas-included-0906>

Volvo Introduces Low-Emission LNG-Powered Trucks

October 5, 2017 | Sweden, Gothenburg



Volvo FH LNG

New trucks from Volvo running on LNG offer the same performance as diesel, but with 20-100% lower CO₂ emissions

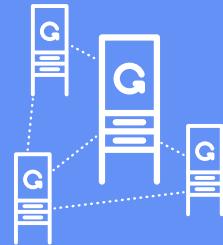
Volvo Trucks is now introducing Euro VI-compliant heavy duty trucks running on liquefied natural gas or biogas. Sales of Volvo FM LNG and Volvo FH LNG will start during spring 2018.

The new trucks have the same performance, drivability and fuel consumption as Volvo's diesel-powered models. Furthermore, the new trucks' CO₂ emissions are 20–100 per cent lower compared with diesel, depending on choice of fuel. The new FH LNG and FM LNG are available with 420 or 460 hp for heavy regional and long-haul operations.

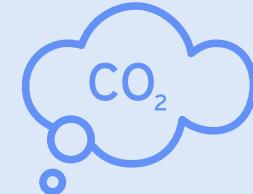
Source: <http://www.ngvglobal.com/blog/volvo-introduces-low-emission-lng-powered-trucks-1005#more-50405>

AJANKOHTAISTA 11-2017

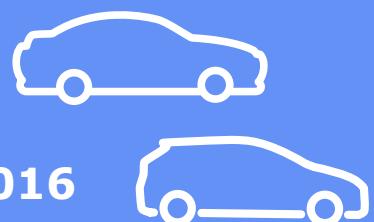
KIERTOTALOUSYHTEISTYÖ
IKEAN KANSSA
– UUSIA ASEMIJA



BIOKAASU 89 €/KK
- KAMPAJAN
YKSITYISASIAKKAILLE



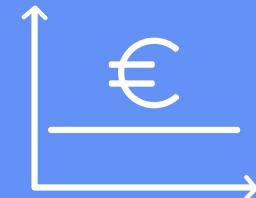
KAIKKIEN AIKOJEN
KAASUAUTOVUOSI
- YLI 100% KASVU VS. 2016



AUDIN G-TRON
- KAMPANJA: 12 KK
ILMAISET BIOKAASUT



KIINTEÄHINNOITELTU
KAASUAUTOTUOTE
TAKSEILLE



VALTION
OHJAUSTOIMET



*"Olemme linjanneet,
että vuoteen 2040
mennessä meillä olisi
100-prosenttisesti
pienhiukkaspäästötön
autokalusto."*

Ville Juvonen
Tuotantojohtaja, Niemi



ESIMERKIKSI;
KULJETUSAJONEUVOT



"Haluamme toimia suunnannäyttäjänä kuljetusalalla ja ottaa käyttöön uutta ympäristöystäväällisempää kalustoa. LNG on luonteva jatkumo pyrkimyksillemme kohti vihreämpää kuljetuksia. Uskon vahasti, että LNG-autojen määrä Speedillä kasvaa tulevaisuudessa."

TUOMO VALLAS, TOIMITUSJOHTAJA | SPEED GROUP OY



***"LNG on
Containershipsin
tulevaisuudelle
valitsema strategia."***

Tomi Piskunen
Land Operations Manager,
Containerships



Ympäristömerkitty kaasuseos
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Thank you.
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