



# IVECO Natural Power Technology

The Natural Way to Sustainable Road Transport since 1996

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October, 20 2017

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# Sustainable transport

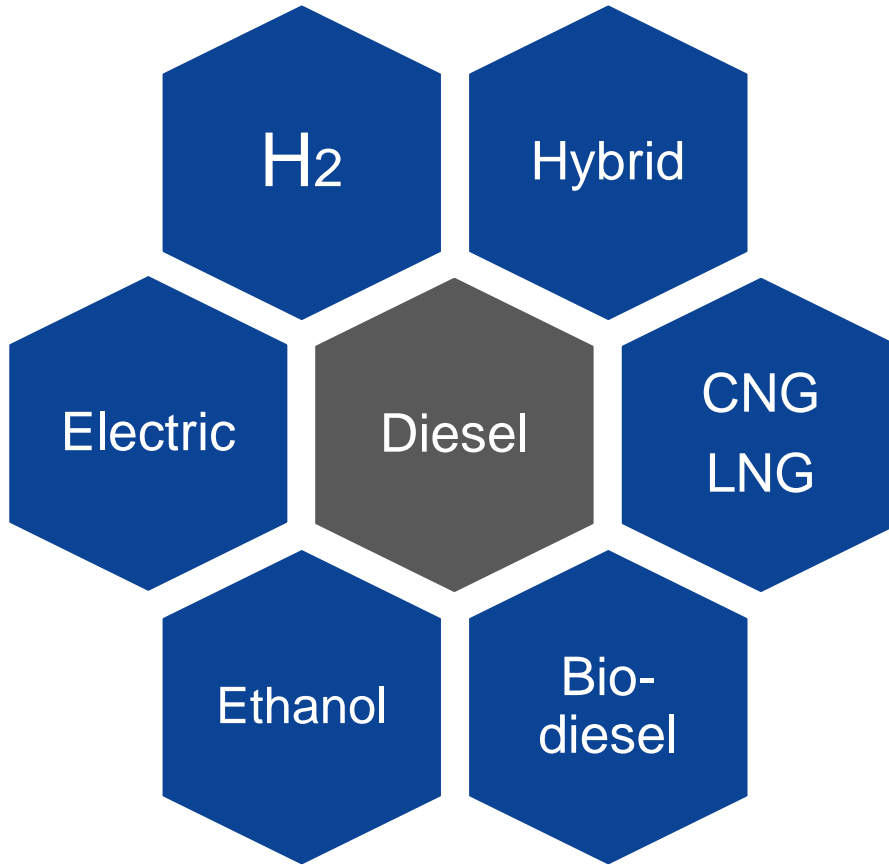
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Ways and means



# Main replacement candidates to diesel for goods transport

Keys factors to enable the energy transition in road transport



## 1. Be as good as diesel !

- **Total Cost of Ownership**
- Reliability & Safety
- Pay load & Versatility
- Comfort & performances

## 2. Secure lower externalities

- **Reduced CO<sub>2</sub> emission**
- Reduced air pollutants
- Reduced noise
- Reduced oil dependency

## 3. Benefit from an efficient fuel distribution

- Safety regulations & Taxes
- **Profitable distribution network**

# Trucks' fuel history

A long story with a possible happy ending !

1770



Wood

1850



Coal

1899



Petrol

1930



Gas Oil

1996

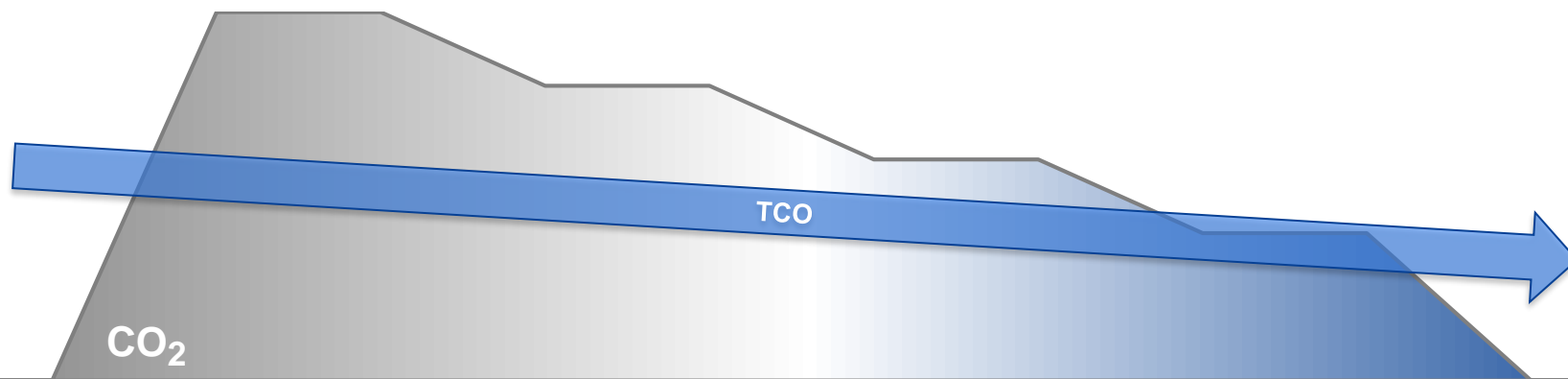


Natural Gas

2016 & beyond



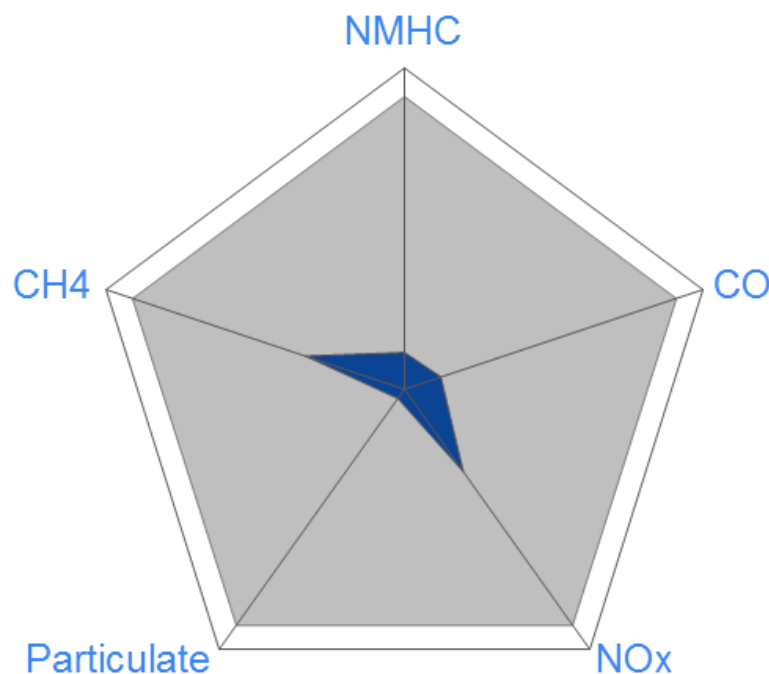
Biomethane



# IVECO Natural Power – Sustainability facts

A global answer

## Air Quality



■ Euro VI limits

■ Stralis NP

### HOMOLOGATED EMISSIONS VERSUS EURO VI LIMITS

**70 % less  
NOx**

**99 % less  
PM**

**90 % Less  
NMHC**

**88 % less  
Methane**

## Global Warming

**10 to 95% CO2 emissions cut, that is yearly :**

**Up to 20 tons** of CO2 saving per truck

**Up to 120 tons** of CO2 saving per truck with Biomethane

## Noise

**3 dB noise reduction**

**Piek Quiet Truck** Certification (-71dB)

**Night time delivery** possible

## Cost

**TCO champion**

**Up to 45% saving** on fuel cost

**Up to 7% saving** on Total Cost of Ownership

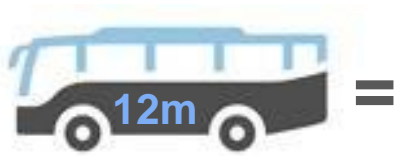
# IVECO Natural Power Vehicles + Biomethane

The best vector to limit CO<sub>2</sub> emissions in road transport

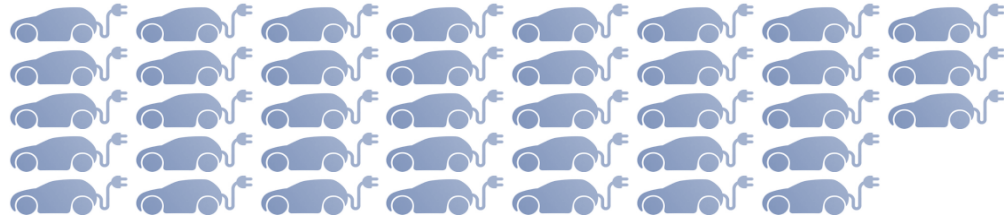
## One biomethane

Brings an equivalent CO<sub>2</sub> saving of :

Bus



=

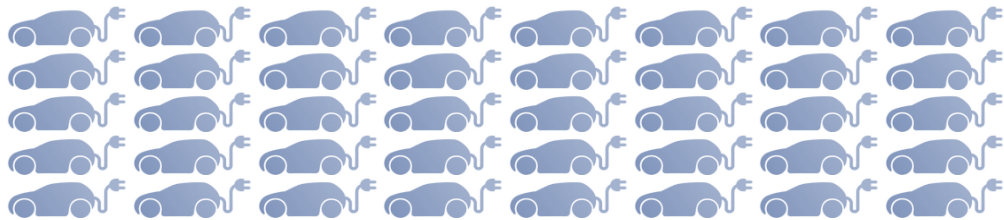


**38 EV**

Urban  
Truck



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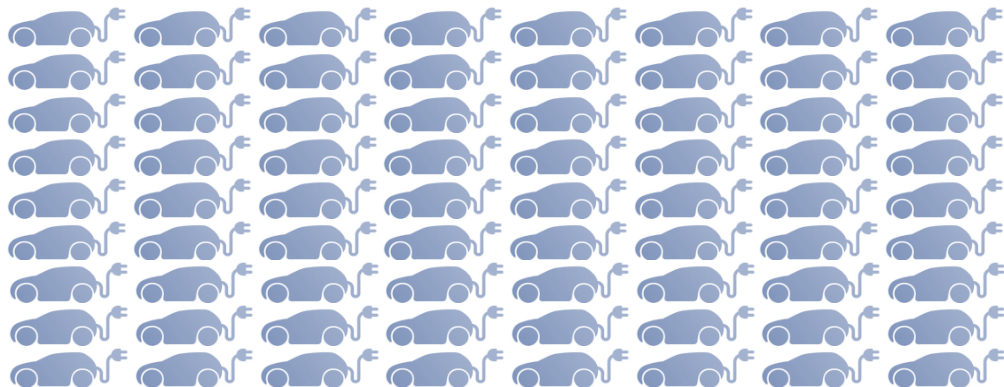


**40 EV**

Long haul Truck



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**72 EV**

...powered with 100% carbon-free electricity !

# Product development

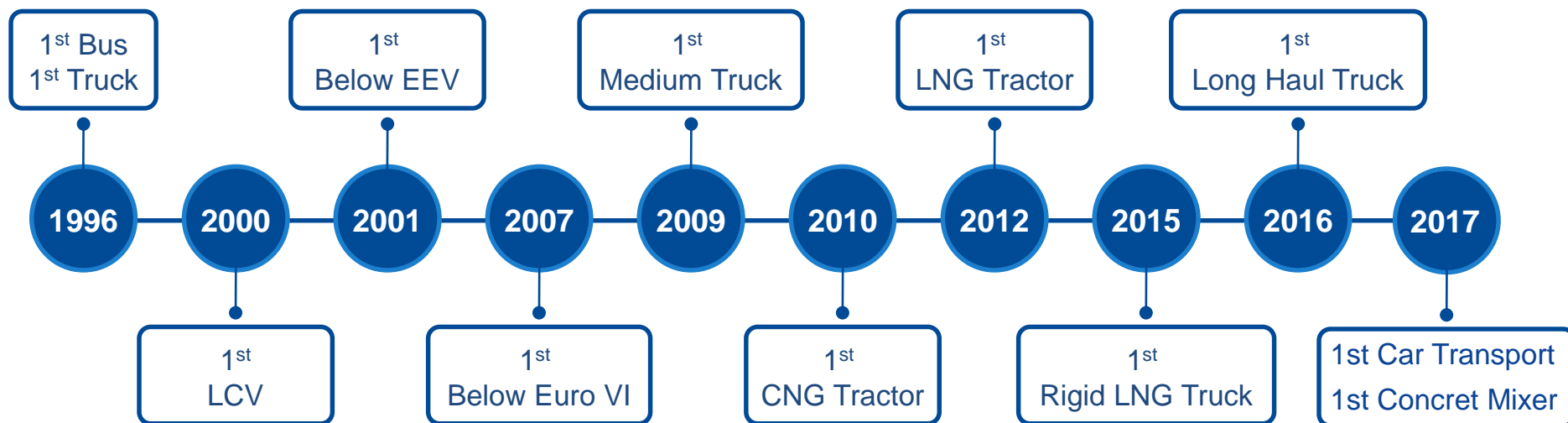
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21 years' pioneering natural gas transport



# 21 years' pioneering natural gas transport

A strong European leadership



## COMMERCIAL VEHICLES

### LIGHT

3,5 to 7,2t

10 200 UNITS\*

### MEDIUM

11 to 16t

5 000 UNITS\*

### HEAVY

18 to 44t



## BUS

10, 12 & 18m  
Std and BRT

6 500 UNITS\*



## ENGINES

3, 6, 8 & 9 L  
140 to 400 hp

37 500 UNITS\*\*



Sales at April 2017

\*\*BE at end 2017

**IVECO**

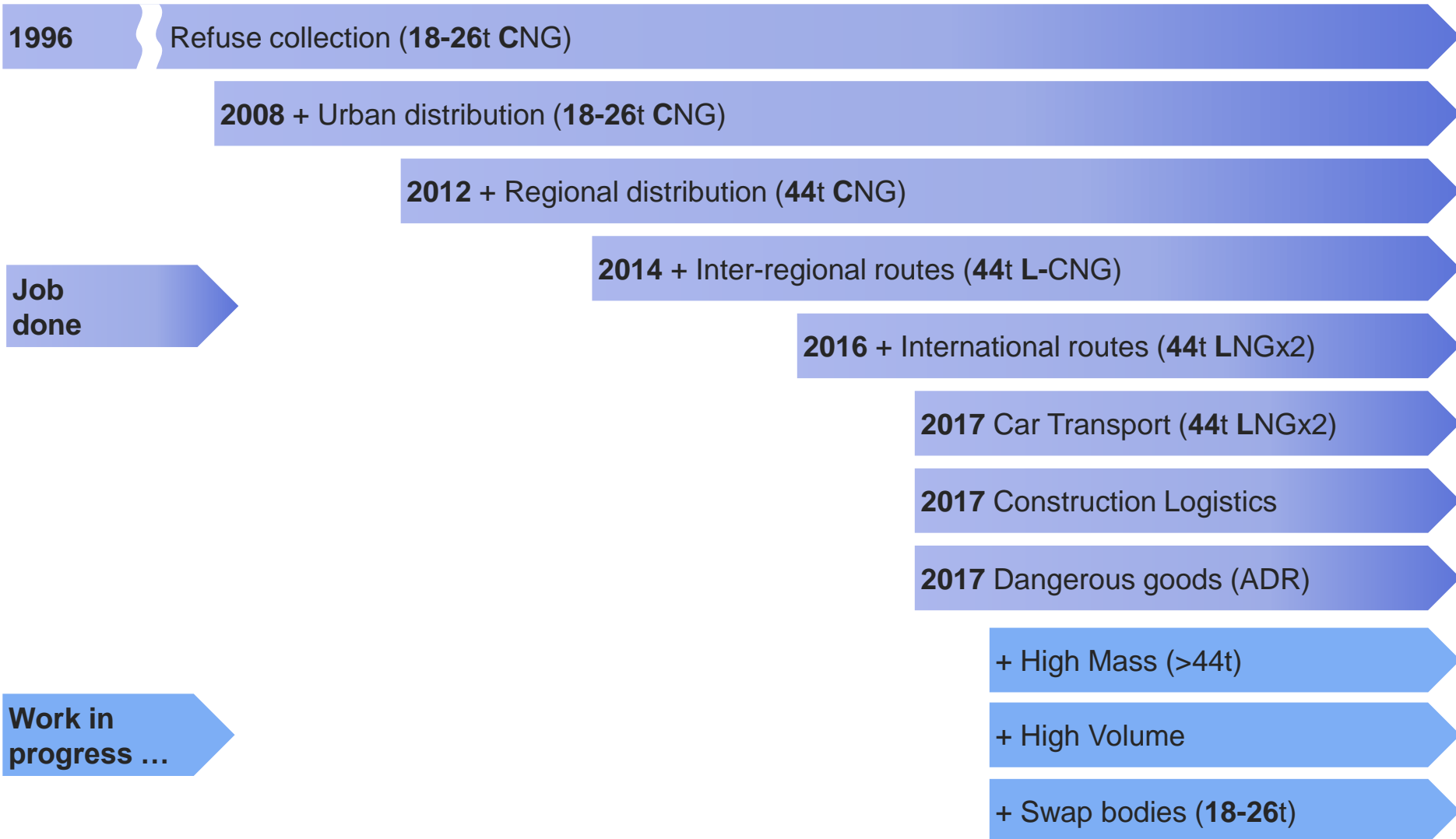
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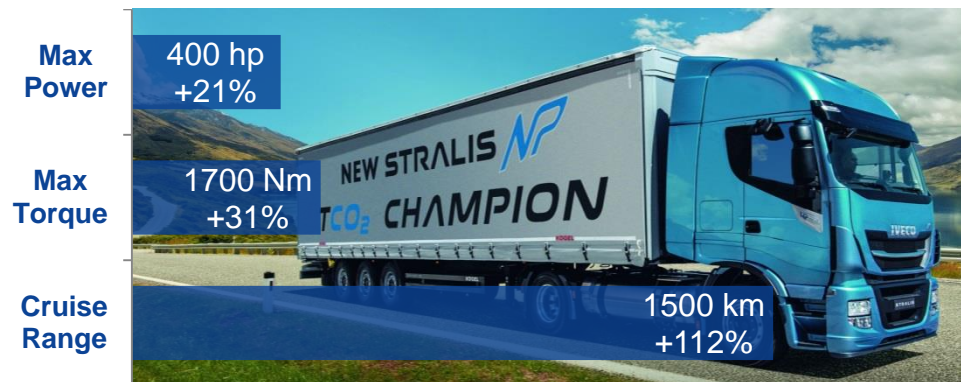
# IVECO Natural Power HD Trucks History

2017 onwards : from general cargo to specialized missions

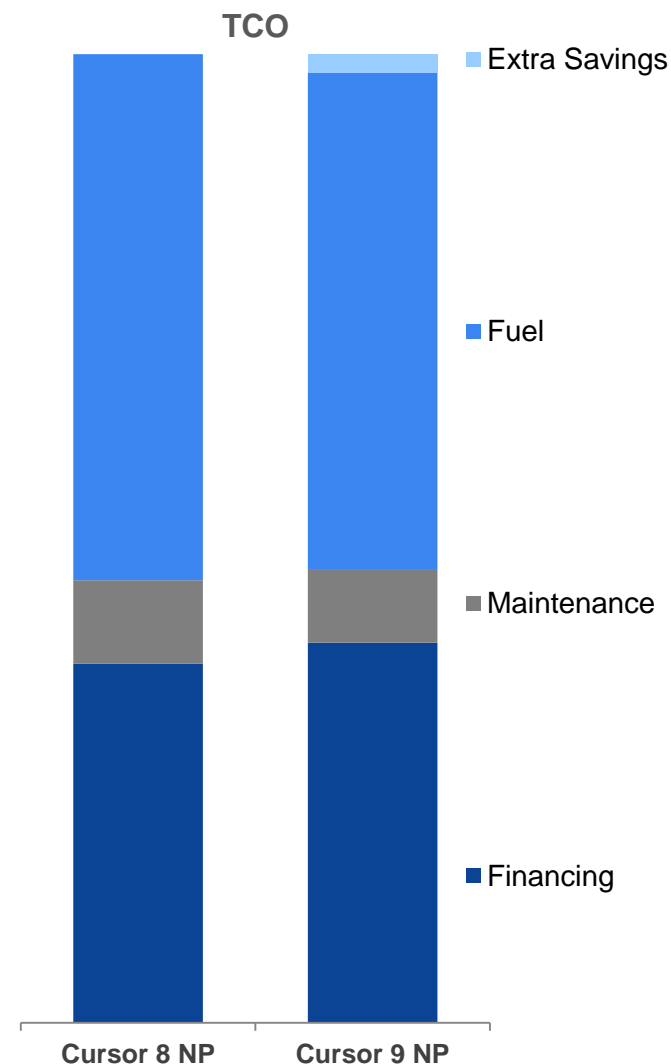


# Committed to lowest TCO through constant innovation

New Stralis NP : outstanding performances and a lower TCO !



	C8 NP	C9 NP
Yearly millage	130 000 km	
Leasing duration	5 years	
Fuel consumption x100 km	28 kg	26,4 kg
NG cost (vat excluded)	0,77 € / kg	
Maintenance & Repair	Included	Incl. + Up-time
<b>Monthly TCO</b> (leasing + fuel)	<b>4 300 €</b>	<b>4 220 €</b>
<b>TCO saving @ 5 years</b>	base	<b>4 800 €</b>



# Markets development

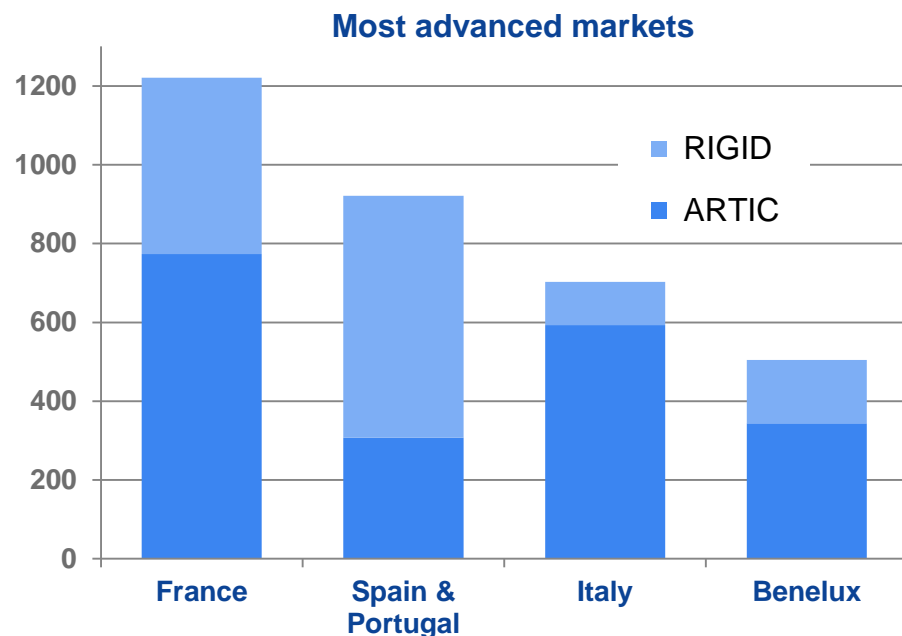
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From a niche to a mass market



# From a niche to a mass market

Stralis NP CNG and LNG sales in Europe



- > 350 Transporters and municipality services
- > 4500 Units sold
- 24 Countries
- > 320 Millions km performed each per year

Refueling **4500** Stralis NP with **biomethane** would save more than **400 000 tons of CO<sub>2</sub> each year !**

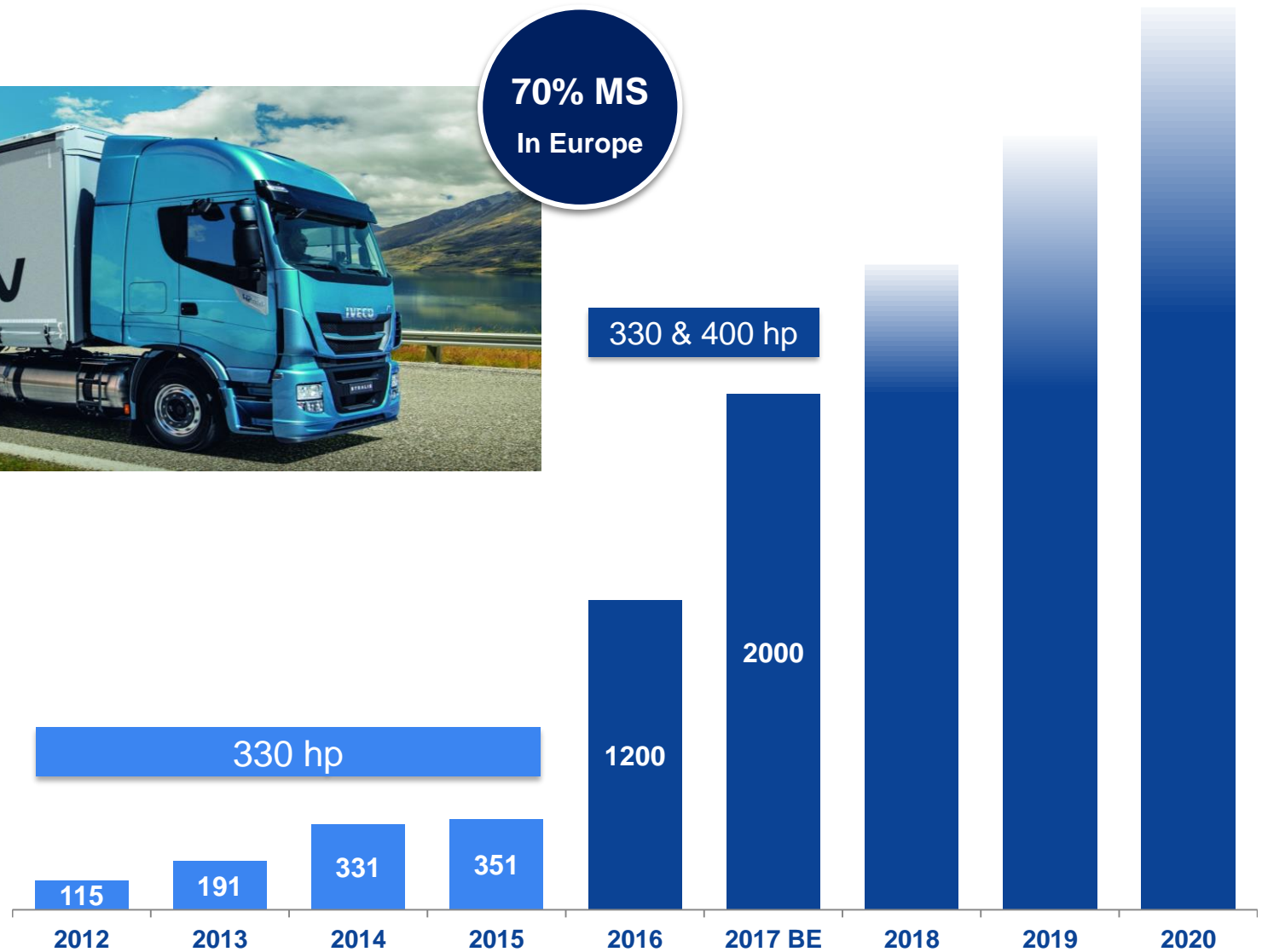


# From a niche to a mass market

Stralis NP sales trend



70% MS  
In Europe



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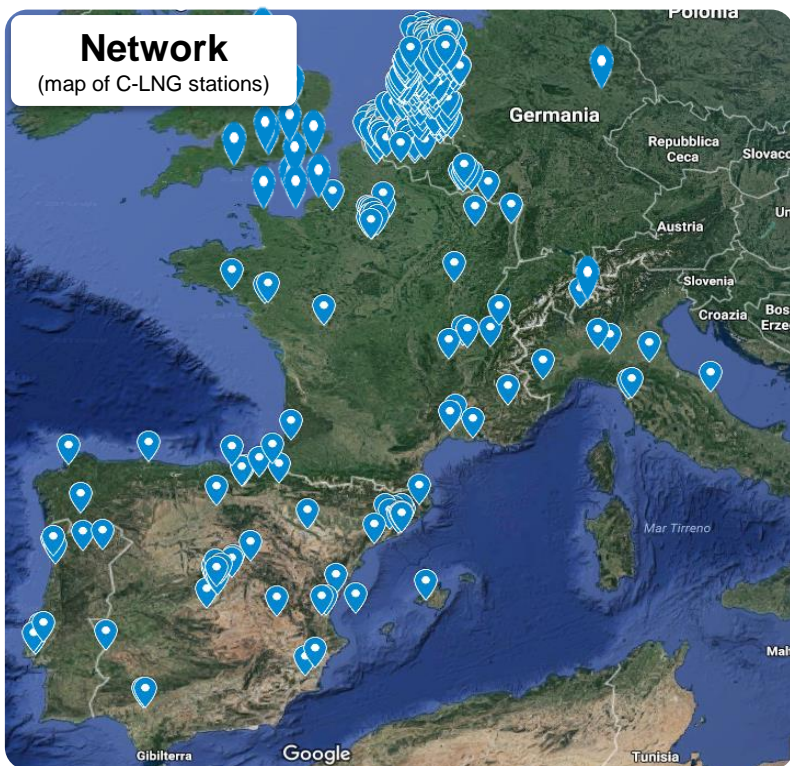


# Natural Gas Scenario

Conditions to move from a niche market to a mass market

## Network

(map of C-LNG stations)



## HIGHLIGHTS

- More than 150 stations – one opening per week
- Good coverage in mature countries
- Fast growth in South Europe
- Germany started in 2016

## NG cost outlook



- 20% to 45% saving on fuel cost (may vary by country)
- Diversified supply: Norway, UK, North Africa, Russia, Qatar, NLS
- LNG production and transport capacity is increasing -> favorable price outlook

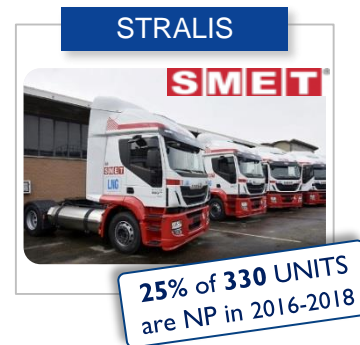
## NG advantages



- Up to -15% of fuel consumption reduction (kg vs l)
- Favorable political decisions (Blue Corridors, CEF Call, DAFI directive)
- Relevant incentives in EU (e.g Italy, France, Spain, Germany, Netherlands)

# Stralis NP 400 tractor – 1600 orders in 16 months !

Example of Wining partnerships



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# Sustainability-Leaders run Stralis Natural Power !

Main sectors and actors of the clean road-mobility in Europe



## Supermarkets

Carrefour / Lidl / Auchan / Rewe / Casino / Intermarché  
Asda / System U / Colruyt / Consum / Monoprix / Leclerc  
Sainsbury's / Mercadona / Delhaize / Albert Heijn /  
Conad / Coop / ...

## Food & Beverage

Nestlé Waters / Coca Cola / Swewpes / Hennessy / Barilla  
Orangina / Mc Donalds / Calidad Pascual / Unilever /  
Acqua S.Benedetto / Mahou San Miguel / Ferrero /  
Acqua S.Anna / ...

## Furniture & home improvement

Ikea / Leroy Merlin / Castorama

## Post & parcel deliveries

GLS / DHL / La Poste / TNT

## Automotive

FCA / CNHi

## Oil & Gas

HAM / MOLGAS / Air Liquide / RAG / Prima LNG

## Construction

Point P, Colas, Vicat

**Other sectors : Pharmacy, Luxury, Office Stationery, Sport equipment...**

Sanofi

Vuitton

Lyreco

Nike



# IVECO commitments

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From a niche to a mass market



# Committed to a cleaner logistics

Switching CNH Industrial and FCA logistics flows from diesel to LNG Trucks

- Project started in **June 2015**
- **All CNH industrial flows** contemplated (material, finished vehicle & spare parts)
- **650 diesel Trucks** to be replaced by **LNG models** before end of 2018
- **More than 300 vehicles** already ordered by CNHi & FCA transporters

**Outbound** international flows currently performed with Stralis NP

- Stralis and Trakker trucks transport from Madrid to Gent and Kippenheim
- Daily transport from Suzzara to various EU delivery points
- 3000 km Truck and cab transport loop through Belgium, France, Germany and Austria



# i-FAST AL LNG project roadmap



*"Iveco and i-FAST Automotive Logistics: the first company to use ten new Stralis NP vehicles powered by liquefied natural gas for the transportation of vehicles"*



**Q1-2016**

## FEASIBILITY STUDY

### LNG outlook

- LNG cost trend
- NG stations

### i-FAST network vs LNG stations

- Potential routes (km per year)

### Coupling LNG tractor with equipment

- Homologation compliance
- Loading factor impacts



**Q2-2016**

## TEST EXECUTION

### STRALIS CNG+LNG 330hp range up 800km

- +8.000 km
- Routes of increasing length and difficulty in Italy
- Different loading configurations
- Day-by-day driver feedbacks & telematic analysis on fuel consumption



**Q3-2016**

## PROJECT APPROVAL

### STRALIS LNG 400 hp range up 1500Km

- TCO definition ( LNG vs Diesel)
- Environmental benefits
- PM: -96%; NOx: -32%; CO2: up-to -15%
- Noise:- 3 db(A)

## DELIVERY OF 10 LNG STRALIS



**Q1-2017**

# i-FAST AL LNG project first outcome



*LNG stations network is developing quickly. Actuals aligned with project assumptions and expectations.*



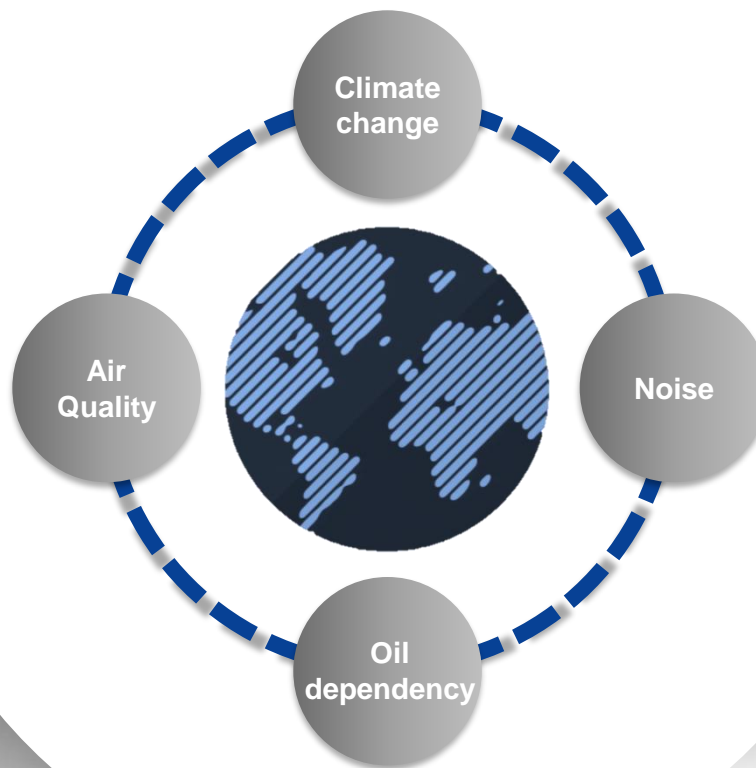
- ☐ Km: **> 600.000** (1.200.000 km on year base)
- ☐ Fuel consumption: **~ 15%**(kg vs l)
- ☐ Range up **~1.500 km**
- ☐ Fuel cost saving: **~ 25%**(versus diesel)
- ☐ CO2 saved: **70 ton** (156 ton on full year base)
- ☐ Average **speed aligned with diesel** version in all route type
- ☐ **Positive feedbacks** from drivers



# IVECO Natural Power Vehicles

The global answer to go out of the oil age now !

- Versatile
- Cost effective



- Fully industrialized
- Safe & reliable





# IVECO

Your partner for sustainable transport

