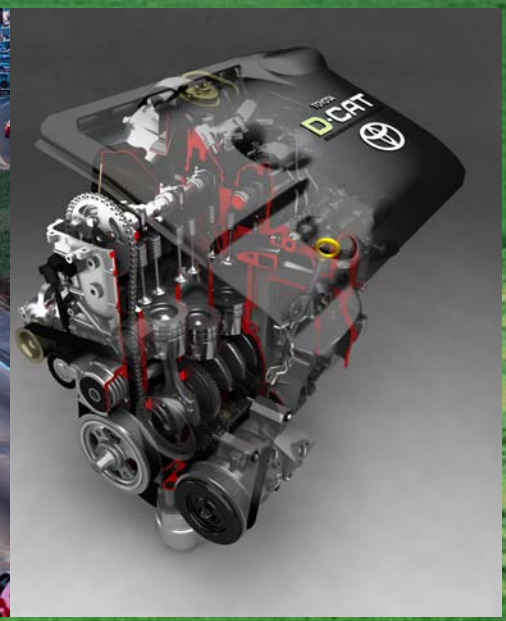

BIOFUELS IN POLAND –
– STATUS QUO AND PERSPECTIVES

Long-term National Program for Biofuels Promotion in Poland

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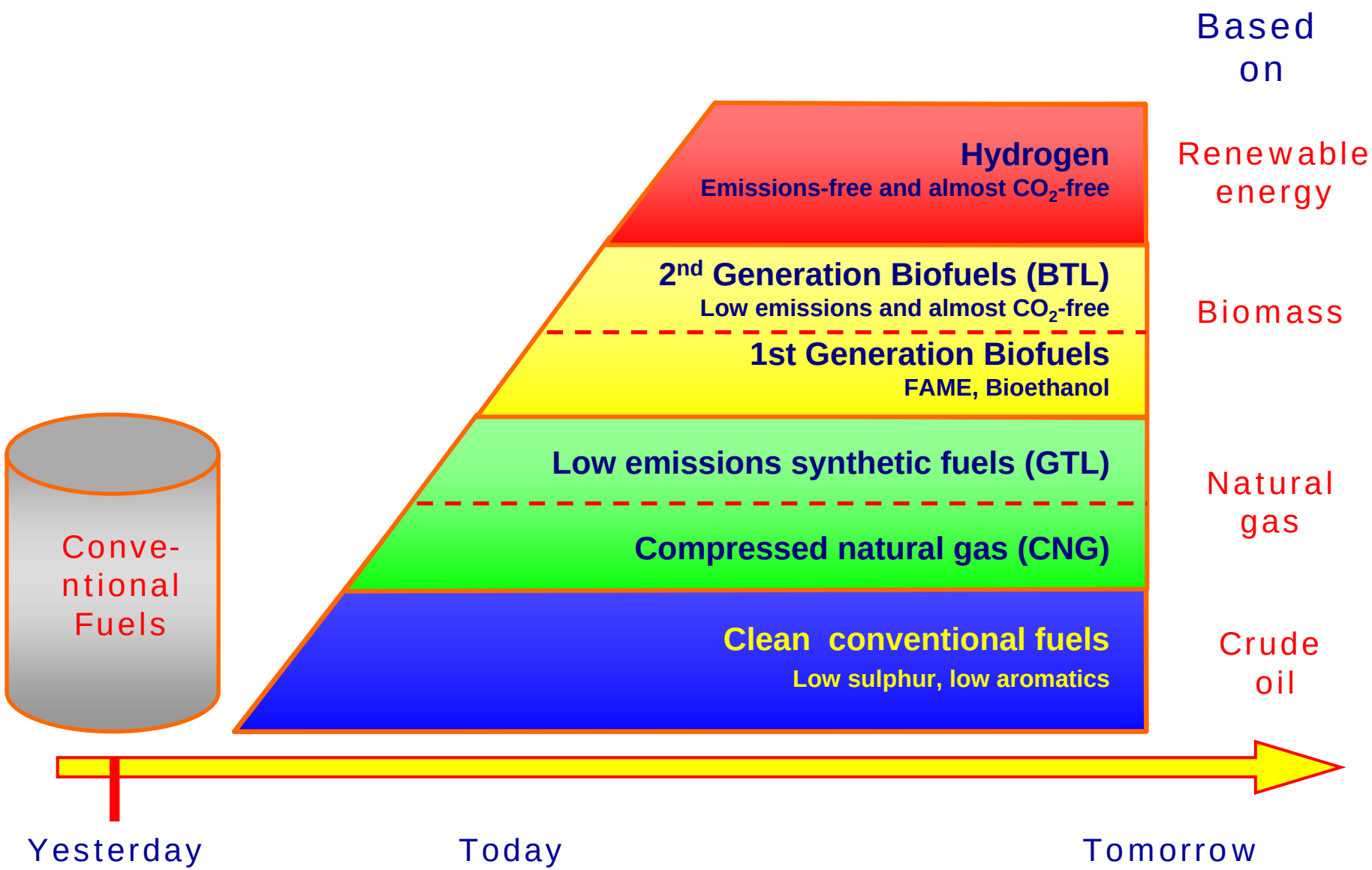
Main data on Poland:

Location: Central Europe, European Union member since 2004

Population: 39.000.000, Area: 313 000 km^2

Number of vehicles (all types) driven by ICE: 20.000.000

Annual fuel consumption in transport: 10.000.000 tons



The roadmap of the world-wide engine fuels development

The types of biofuels produced in Poland

BIOFUEL TYPE	SPECIFIC NAME	BIOMASS FEEDSTOCK	PRODUCTION PROCESS
Bioethanol	Conventional bioethanol	Grains, sugar beet	Hydrolisis & fermentation
Vegetable oil	Pure plant oil	Oil crops (e.g. rapeseed)	Cold pressing/ extraction
Biodiesel	Rapeseed methyl/ethyl esters (RME/REE)	Oil crops (e.g. rapeseed)	Cold pressing/ extraction & transestrification
Biogas	Upgraded biogas	(Wet) biomass	Digestion
Bio-ETBE	--	Bioethanol	Chemical synthesis

Fuels and biofuels commercially available in Poland:

- **Gasoline containing up to 5% of bioethanol and/or up to 15% of bio-ETBE (up to 2.7 % of oxygen)**

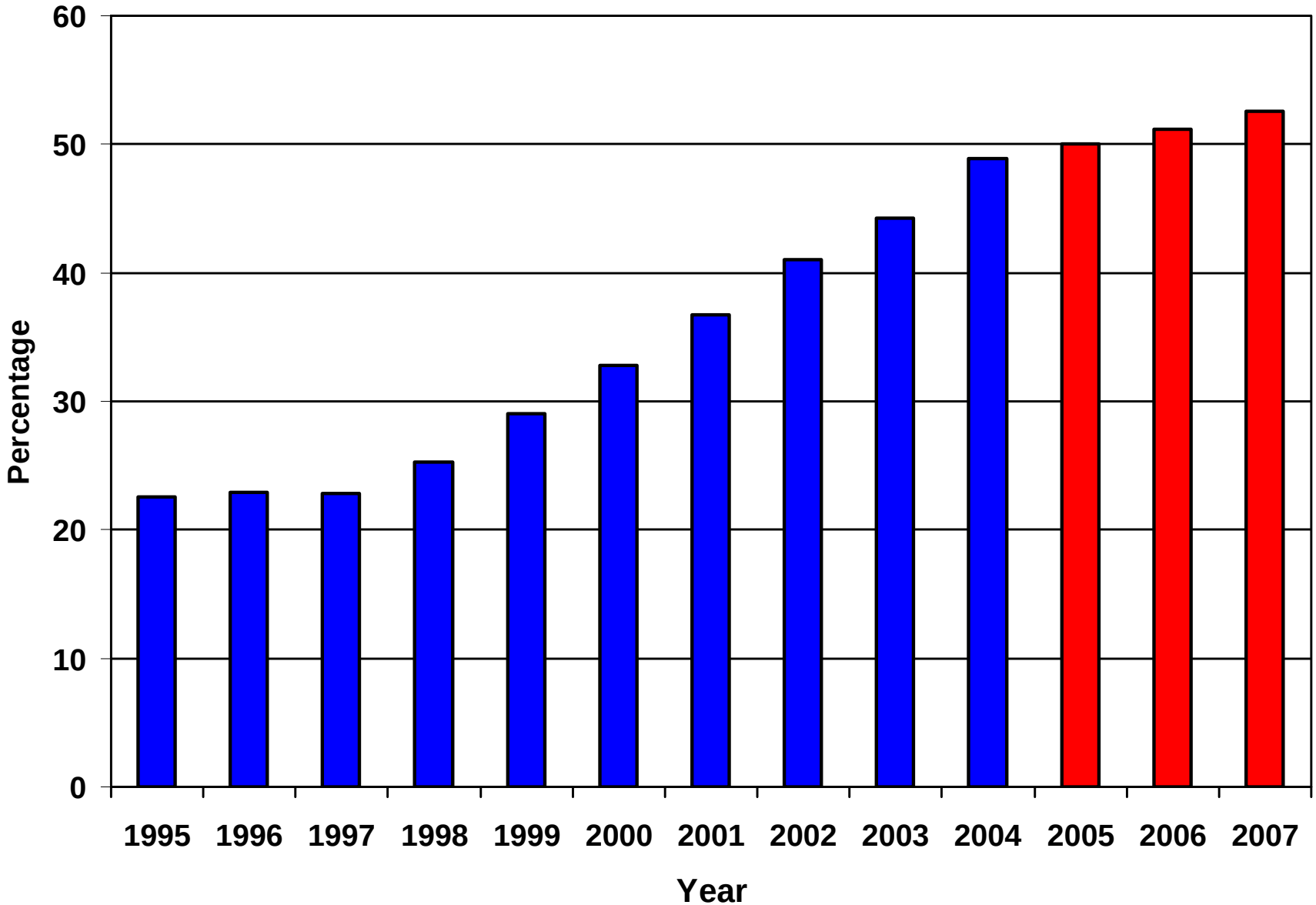
- **Diesel fuel containing up to 5% of RME**

- **B20 i.e. 80% Diesel fuel + 20% RME – moderate availibility, fuel pumps are specially marked**

- **100% RME – low availability = about 50 filling stations (300 at the end of 2008), fuel pumps are specially marked**

Energy demand for transport (Mt) by fuel type in the European Union

	1990	2000	2010	2020	2030
Gasoline	132.1	129.8	142.1	145.4	141.6
Kerosene	29.2	45.1	53.0	63.3	72.0
Diesel Fuel	103.0	147.7	182.1	207.6	223.6
Total	264.3	322.6	377.2	416.3	437.2



Diesel penetration in the European Union (% of new car registrations)

Fuels consumption in Poland in recent years

Year	Fuel consumption, thousand tons				Biofuels share based on energy content
	Gasoline	Diesel fuel	Bio-ethanol	RME	
2000	4841	2343	40.6	0	0.35%
2001	4484	2562	52.4	0	0.46%
2002	4109	2940	65.3	0	0.57%
2003	3941	3606	60.1	0	0.49%
2004	4011	4303	38.3	0	0.29%
2005	3915	5075	42.8	17.1	0.47%
2006	4048	6042	84.3	44.9	0.92%

European Directive 2003/30/EC

2005
2%

A full transposition of the European Directive 2003/30/EC into the Polish legislation system was ensured by the *Acts* of 25 August 2006 *on biocomponents and liquid biofuels* and *on the fuel quality monitoring and controlling system.* The acts have introduced into the Polish legal system several changes aimed at creating profitable and stable conditions for the development of the biofuels market, with three changes extremely significant included, namely:

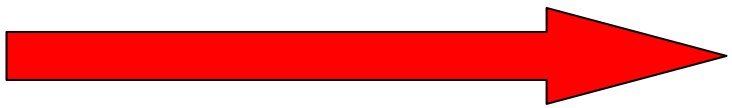
✓ **Creating possibilities of producing liquid biofuels by farmers for their own use. The farmers can produce for their own use all types of biofuels and in case of neat plant oil and FAME no excise/tax warranty is required. According to the regulations of the act *on the fuel quality monitoring and controlling system*, biofuels produced by farmers for their own use should fulfill only the minimum environmental quality requirements. The annual limit value of the allowed for-own-use production is 100 liters per 1 hectare of the farmer's arable lands.**

✓**Implementation into the Polish legislation system a "selected fleet" term, defined as a group of at least 10 vehicles, tractors or other off-road vehicles/machines or a group of locomotives or ships equipped with the engines adapted to biofuels, which are owned or used by a private person running a business, a legal person or an entity with no legal personality. After obtaining a legal permit, it is possible to use fuels with any concentration of biocomponents for vehicles and machines from "selected fleets".**

✓ **Introducing from the year 2008 an obligation of ensuring a specific percentage share of biofuels in the transport fuel market. That obligation was imposed on the companies running a business in the field of producing, importing or purcharsing from the UE market the liquid fuels or liquid biofuels, which sell or use them on their own needs. The companies being under this obligation are considered as the entities realizing the National Indicative Target (NIT).**

The National Indicative Target (NIT) **means a minimum share of biofuels and other renewable fuels in the annual consumption of total transport fuels, calculated on the basis of energy content.**

European Directive 2003/30/EC



2010
5.75%

2020
10%

The recomended minimal percentage share of biofuels in the fuel market in Poland (National Indicative Target)

YEAR	2007	2008	2009	2010	2011	2012	2013	2014
SHARE	2.30	3.45	4.60	5.75	6.20	6.65	7.10	7.55

In order to achieve targets with regard to the share of biofuels, the Polish Government has adopted *the Long-term National Program for Promotion of Biofuels and other Renewable Fuels in Poland*.

According to the assumptions of the program, the support and promotion process for biofuels in Poland is to be performed in the following range:

1. **Support for production of biofuels within the framework of the taxation system and fuel surcharge:**
    - **solutions in the field of excise,**
    - **solutions in the field of income tax on legal persons,**
    - **solutions in the field of fuel surcharge.**

2. **Support for production of energetic plants being raw materials for production of biofuels.**

3. **Financial support for investments in the field of producing biofuels from the EU funds and domestic public resources:**

- **support for investments in biofuels production within the framework of the *"Infrastructure and Environment" Operational Program*,**
- **support for investments in biofuels production within the framework of the *Rural Development Program for 2007-2013*,**
- **support for investments in biofuels production within the framework of the *"Innovative Economy" Operational Program*.**

4. Actions aiming at increasing the demand for biofuels:

- **zones for the environmentally friendly public transport,**
- **exemptions for parking charges,**
- **exemptions for environmental charges,**
- **in case of public orders – preferences for vehicles and machines equipped with the engines adapted to biofuels.**

5. Scientific-research activities in the range of biofuels.

6. Informational and educational activities in the range of biofuels.

Comparison of production costs for conventional fuels and biofuels per volume unit (1000 liters)

	Fuels for GASOLINE ENGINES	Fuels for DIESEL ENGINES
Biofuels	**Bioethanol:** 1122 $ / 1000 liters	**RME:** 1222 $ / 1000 liters
Conventional (petroleum) fuels	**Gasoline:** 640 $ / 1000 liters	**Diesel fuel:** 712 $ / 1000 liters
Difference between costs of biofuels and conventional fuels	**482 $ /1000 liters**	**510 $ / 1000 liters**

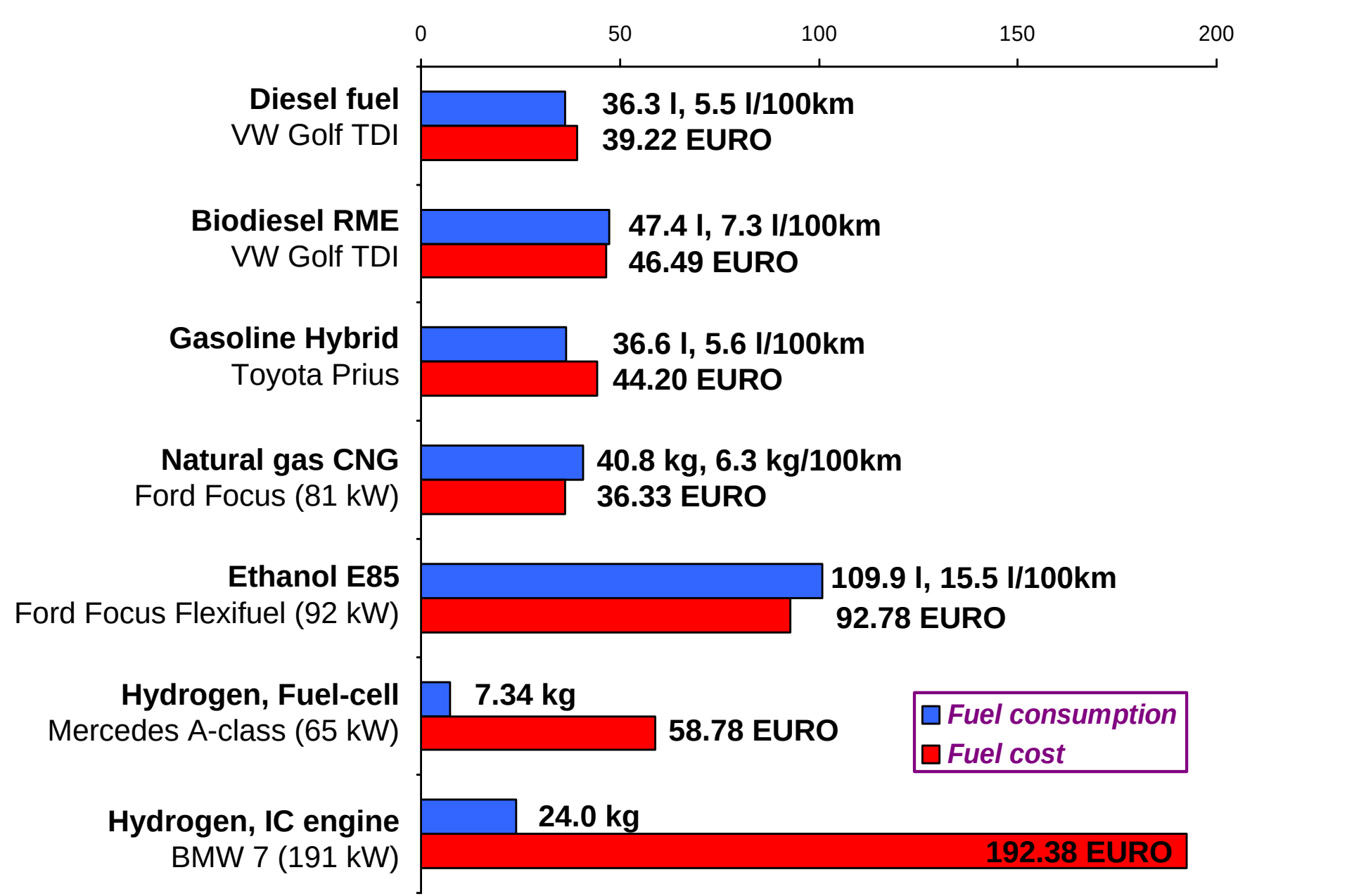
Comparison of production costs for conventional fuels and biofuels per unit of energy (1000 liters of equivalent fuel)

	Fuels for GASOLINE ENGINES	Fuels for DIESEL ENGINES
Biofuels	Bioethanol: 1640 $ / 1000 liters	RME: 1330 $ / 1000 liters
Conventional (petroleum) fuels	Gasoline: 640 $ / 1000 liters	Diesel fuel: 712 $ / 1000 liters
Difference between costs of biofuels and conventional fuels	1000 $ /1000 liters	618 $ / 1000 liters

Energy content of 1 liter of gasoline = Energy content of 1,462 liter of ethanol

Energy content of 1 liter of diesel fuel = Energy content of 1,088 liter of RME

The Route from North to South of Poland (Gdansk To Cracow 650 km) – – our Base for Calculation of Fuel Consumption and Fuel Cost for Alternative Fuels/Propulsion Cars



Fuel consumption and cost for a drive from Gdansk to Cracow (650 km)


Thank You very
much for your
kind attention!