



Croatian National Allocation Plan and challenges to Croatian Industry

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NAP – Croatia's overall objectives

Global Climate Change:

- *To fulfil Croatia's role as Party to the UNFCCC under the Kyoto Protocol*

Accession to EU:

- *To prepare Croatia for accession to EU and allow the Croatian industry and power sector to join the European Emissions Trading system (EU-ETS)*

NAP – Croatia's overall objectives

As a Party to the Kyoto Protocol and accession country to the European Union, Croatia will establish a national monitoring scheme compatible with trading of greenhouse gas emission allowances from the year 2010 onwards.

The scheme shall be compliant with the EU's Emissions Trading Scheme (EU-ETS) and the UNFCCC International Trading system (ITL).

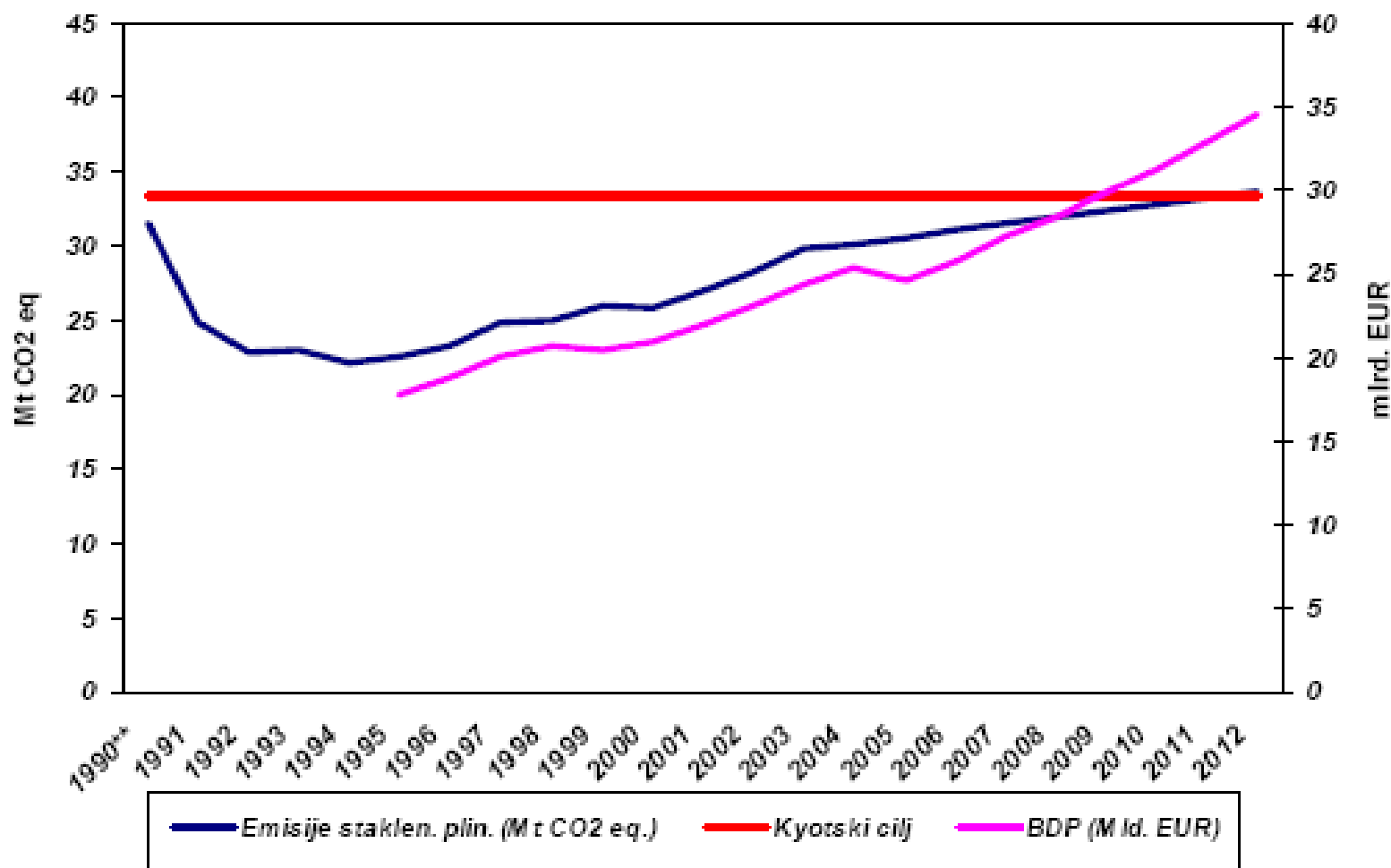
NAP – Croatia's emissions

During period 2008 to 2012 and beyond, Croatia was expecting to see strong growth of:

1. Production capacity (cement, construction materials etc.)
2. Domestic energy production
3. Transport sector

This will result into increase of emissions if no measures will be taken.

NAP – Croatia's emissions



NAP – Croatia's emissions

Base year 1990	34.845	Mt CO ₂ eq/a
Kyoto target 2008-2012 (-5%)	33.102	„
Total Emissions 2008-2012 without measures	36.676	„
Total Emissions 2008-2012 with measures	33.990	„
Total Emissions 2008-2012 with measures with LULUCF sink	33.018	„
ETS sector, base year (2007)	13.001	„
ETS sector incl. new 2008-2012 without measures	14.319	„
ETS sector incl. new 2008-2012 with measures	13.310	„

NAP – Croatia's emissions

	Total Mt CO ₂ eq/a (2007)	growth/a	Total Mt CO ₂ eq/a (2010-12)	Reduction Mt CO ₂ eq/a (2010-12)	Allocation Mt CO ₂ eq/a (2010-12)
Energy	6.623	0%	6.623	0.497	6.126
Petrochem.	2.440	1.60%	2.596	0.195	2.401
C&L	3.021	1.90%	3.254	0.243	3.010
Other	0.917	1.90%	0.988	0.074	0.914
Total	13.001	---	13.461	1.009	12.451

Emission growth 60% of the growth of sectoral product

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ETS sector incl. new 2008-2012 with measures	13.310	„
ETS sector, 2008-2012 (BAU)	13.461	„
ETS sector, 2008-2012 (BAU-7.5%)	12.451	„
ETS sector, 2008-2012 (reserve for new entrants)	0.858	„

Identification

Energy, CO2

- Combustion installations with a rated thermal input exceeding 20 MW (except hazardous or municipal waste installations)

Annex I of Directive 2003/87/EC Sector	Installation Name	NAP Sector (Petro)chemical	C&L	Energy	Other
☐ Energy producer	ĐĐ – energetika			1	
	Energoremont - Toplana				1
	HEP - ELTO			1	
	HEP - KTE Jertovec			1	
	HEP - Plomin-1			1	
	HEP - Plomin-2			1	
	HEP - Rijeka			1	
	HEP - Sisak			1	
	HEP – Toplinarstvo Osijek			1	
	Tehno stan			1	
	Toplana - Karlovac			1	
	HEP - TE-TO Osijek			1	
	HEP - TE-TO Zagreb			1	
	☐ Fertilisers	Petrokemija Kutina	1		
☐ Food processing	Karlovačka pivovara				1
	Kraš				1
	PIK Vinkovci				1
	PIK Vrbovec				1
	Podravka - Danica				1
	Podravka - Energetika				1
	Sojara				1
☐ Gas production&refinery	INA - Etan	1			
	INA - Molve	1			
☐ Petrochemical industry	Dina Petrokemija	1			
☐ Pharmaceutical industry	Pliva				1
☐ Plaster	Knauf - Knin				1
☐ Smithery	TZV Gredelj – Vukomerec				1
☐ Textile	Varteks				1
☐ Sugar industry	Šećerana - Osijek				1
	Sladorana				1
	Viro				1
Eindtotaal		4		12	15

Identification

Energy, CO2 Refineries

Annex I of Directive 2003/87/EC		NAP Sector <input type="button" value="v"/>			
Sector <input type="button" value="v"/>	Installation Name <input type="button" value="v"/>	(Petro)chemical	C&L	Energy	Other
<input type="checkbox"/> Gas production&refinery	INA - Mlaka			1	
	INA - Rijeka	1			
	INA - Sisak	1			
<input type="checkbox"/> Organic Petrochemistry	DIOKI	1			
Eindtotaal		3		1	

Coke plants

Identification

Production and processing of ferrous metals, CO₂

- Metal ore (including sulphide ore) roasting or sintering installations
- Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour

Annex I of Directive 2003/87/EC		NAP Sector 			
Sector	Installation Name	(Petro)chemical	C&L	Energy	Other
☐ Smithery	CMC Sisak				1
	Željezara - Split				1
Eindtotaal					2

Identification

Mineral industry, CO2

- Installations for the production of **cement** clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or **lime** in rotary kilns with a production capacity exceeding 50 tonnes per day or in other furnaces with a production capacity exceeding 50 tonnes per day

Annex I of Directive 2003/87/EC		NAP Sector <input type="checkbox"/>			
Sector	<input type="checkbox"/> Installation Name	<input type="checkbox"/> (Petro)chemical	C&L	Energy	Other
<input type="checkbox"/> Cement	Dalmacijacement - 10. kolovoz		1		
	Dalmacijacement - Sveti Juraj		1		
	Dalmacijacement - Sveti Kajo		1		
	Holcim		1		
	Istra Cement		1		
	Našicecement		1		
<input type="checkbox"/> Lime	Girk Kalun - Drnis		1		
	ITV		1		
	Kamen Sirač - PEC 1-2		1		
	Kamen Sirač - PEC 3		1		
	LTV		1		
Eindtotaal			11		

Identification

Mineral industry, CO2

- Installations for the manufacture of **glass** including glass fibre with a melting capacity exceeding 20 tonnes per day

Annex I of Directive 2003/87/EC		NAP Sector <input type="button" value="v"/>			
Sector <input type="button" value="v"/>	Installation Name <input type="button" value="v"/>	(Petro)chemical	C&L	Energy	Other
<input type="checkbox"/> Glass manufacturer	Lipik Glas				1
<input type="checkbox"/> Insulation producer	Knauf Insulation				1
	Rockwool				1
<input type="checkbox"/> Packaging glass manuf.	Vetropack				1
Eind totaal					4

Identification

Mineral industry, CO2

- Installations for the manufacture of **ceramic products** by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tonnes per day, and/or with a kiln capacity exceeding 4 m³ and with a setting density per kiln exceeding 300 kg/m³

Annex I of Directive 2003/87/EC		NAP Sector	C&L	Energy	Other
Sector	Installation Name	(Petro)chemical			
Bricks & Ceramics	Ciglana - Blatuša				1
	Ciglana - Sladojevci				1
	Ciglana Finag				1
	Ciglana Mraclin				1
	Ciglane Zagreb				1
	Dilj				1
	EKO Međimurje				1
	Gradip				1
	IGM Ciglana - Cerje Tužno				1
	IGM Ciglana - Cerovlje				1
	IGM Ciglana - Petrinja				1
	Keramika - Vojnić				1
	KIO - Orahovica				1
	KIO - Rujevac				1
	Opeco				1
	Opeka - Ilok				1
	Opeka - Osijek				1
	Opeka - Sarvaš				1
	Opeka - Vladislavci				1
	Slavonija IGM - Našice				1
	Tondach - Bedekovčina				1
	Tondach - Đakovo				1
	Wienerberger				1

Identification

Other activities, Carbon dioxide

- Industrial plants for the production of
 - a) pulp from timber or other fibrous materials
 - b) paper and board with a production capacity exceeding 20 tonnes per day

Annex I of Directive 2003/87/EC		NAP Sector <input type="checkbox"/>			
Sector	<input type="checkbox"/> Installation Name	<input type="checkbox"/> (Petro)chemical	C&L	Energy	Other
<input type="checkbox"/> Energy producer	Česma - Energana			1	
<input type="checkbox"/> Paper ind.	Belišće - Energetika				1
	Dunapack				1
	PAN				1
Eindtotaal				1	3

Baseline emissions

How?

- Sector baseline: Average of 2 highest years 2004-2007 for entire sector, **Total_{sector}EM_{base}(2007)**
- Installation baseline: Average of 2 highest years 2004-2007 for individual installation decreased so that the sum of all installation baseline emissions equals sector baseline emission, **EM_{base}(2007)**.

Sector allocation

	Total Mt CO ₂ eq/a (2007)	growth/a	Total Mt CO ₂ eq/a (2010-12)	Reduction Mt CO ₂ eq/a (2010-12)	Allocation Mt CO ₂ eq/a (2010-12)
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Installation allocation

Emission allocation per installation 2010-2012

$$EM_{\text{allocation}} = EM_{\text{base}} (2007) \times \frac{\text{Total}_{\text{Sector}} EM_{\text{allocation}} (2010 - 2012)}{\text{Total}_{\text{Sector}} EM_{\text{base}} (2007)}$$

Emission reduction measures

- **Fuel switch – from coke to natural gas**
- **Renewable fuels**
 - Biomass
 - Biogas
 - Biofuels
 - Waste
- **Energy efficiency**
- **Financial mechanisms**

Next steps ... till end of 2012

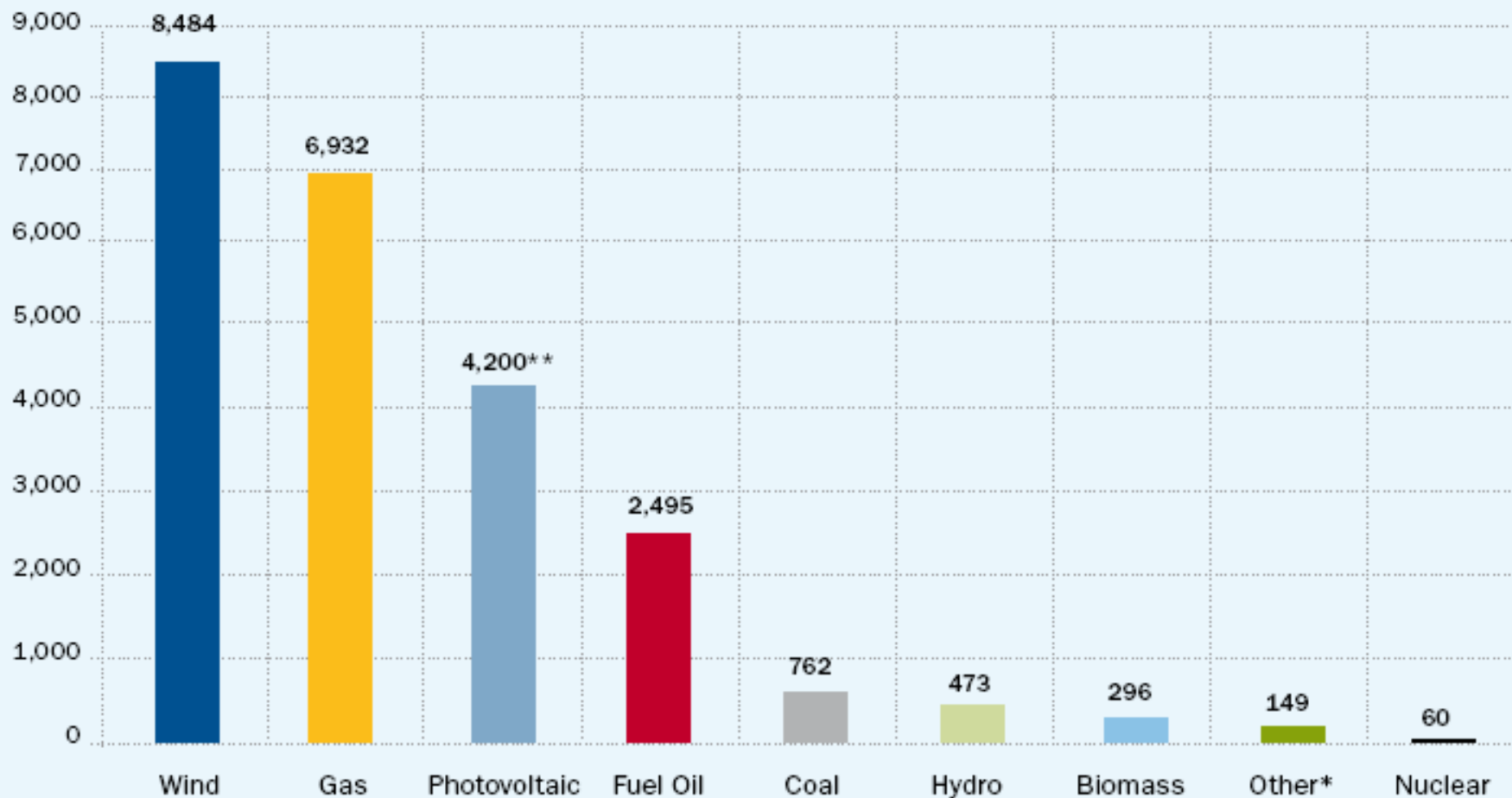
- **Emissions monitoring (from 2010 ...)**
 - **Monitoring plans**
 - **Evaluation**
 - **Reporting**
 - **Verification**
- **Change of definition of installation:**
 - **NAP: strictly activities under directive**
 - **Monitoring: inside fence**
- **After Accession Croatia joins ETS**
 - **Compliance and trading**

Next steps ... after 2012

- **New Directive ETS 2013-2020**
 - **No NAPs**
 - **Emissions are auctioned for most of electricity sector and some industry**
 - **Some sectors (under threat of carbon leakage) get some (or all emissions) allocated for some time – benchmark based**

Installed in EU in 2008

Total: 23,851 MW

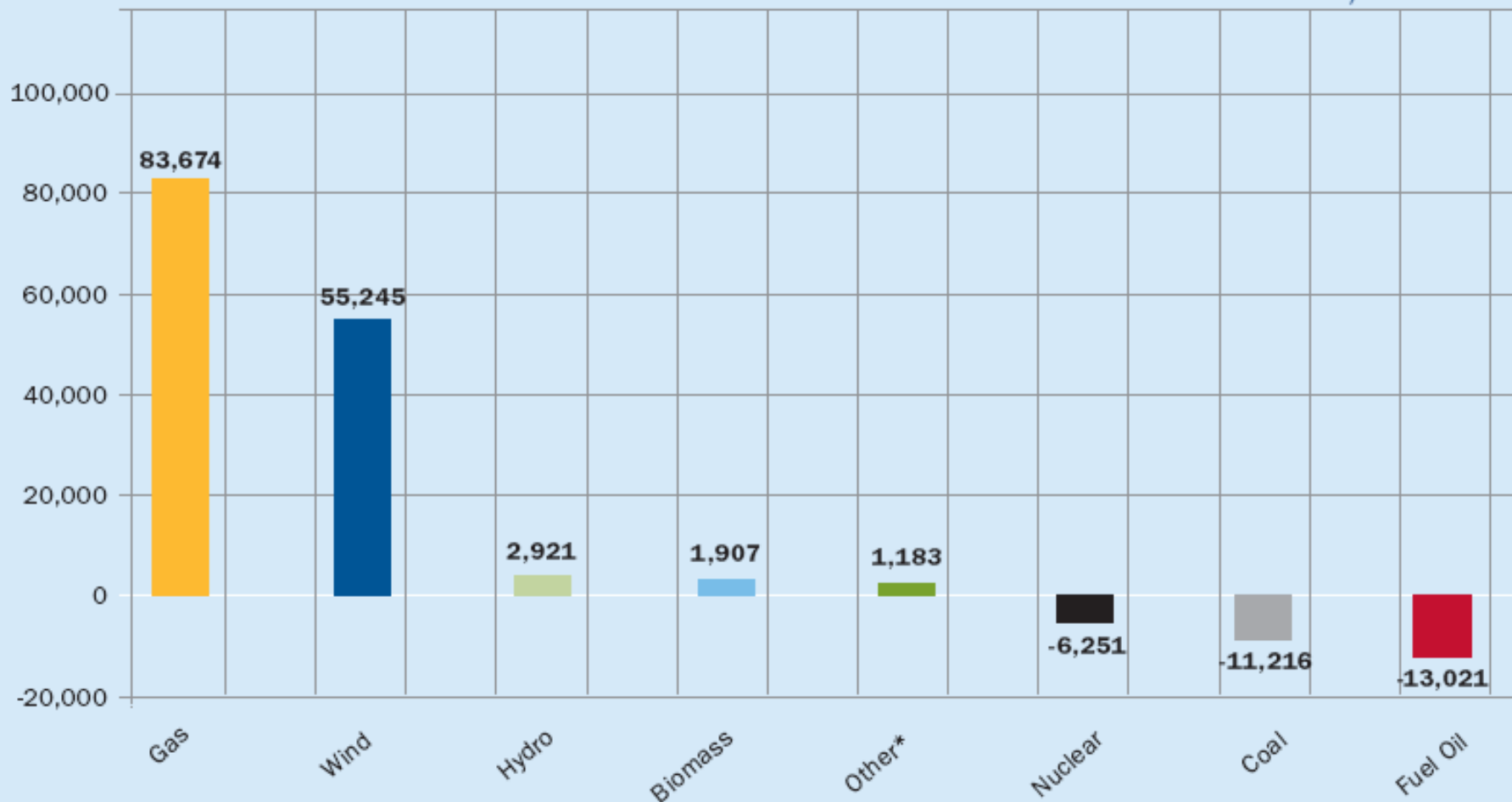


* Geothermal, peat and waste

** This is a preliminary figure for solar photovoltaic installations (source: European Photovoltaic Industry Association (EPIA)).

Net change in EU, 2000-08

Total: 114,442 MW



*Geothermal, peat and waste



THANK YOU FOR YOUR ATTENTION!!!

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