1st Workshop on developing Croatian Low-Emission Development Strategy

Ministry of Environmental and Nature Protection (MZOIP), UNDP

Thursday 14th June 2012, Zagreb, HGK, Nova cesta 3-7

Review of relevant documents for background information

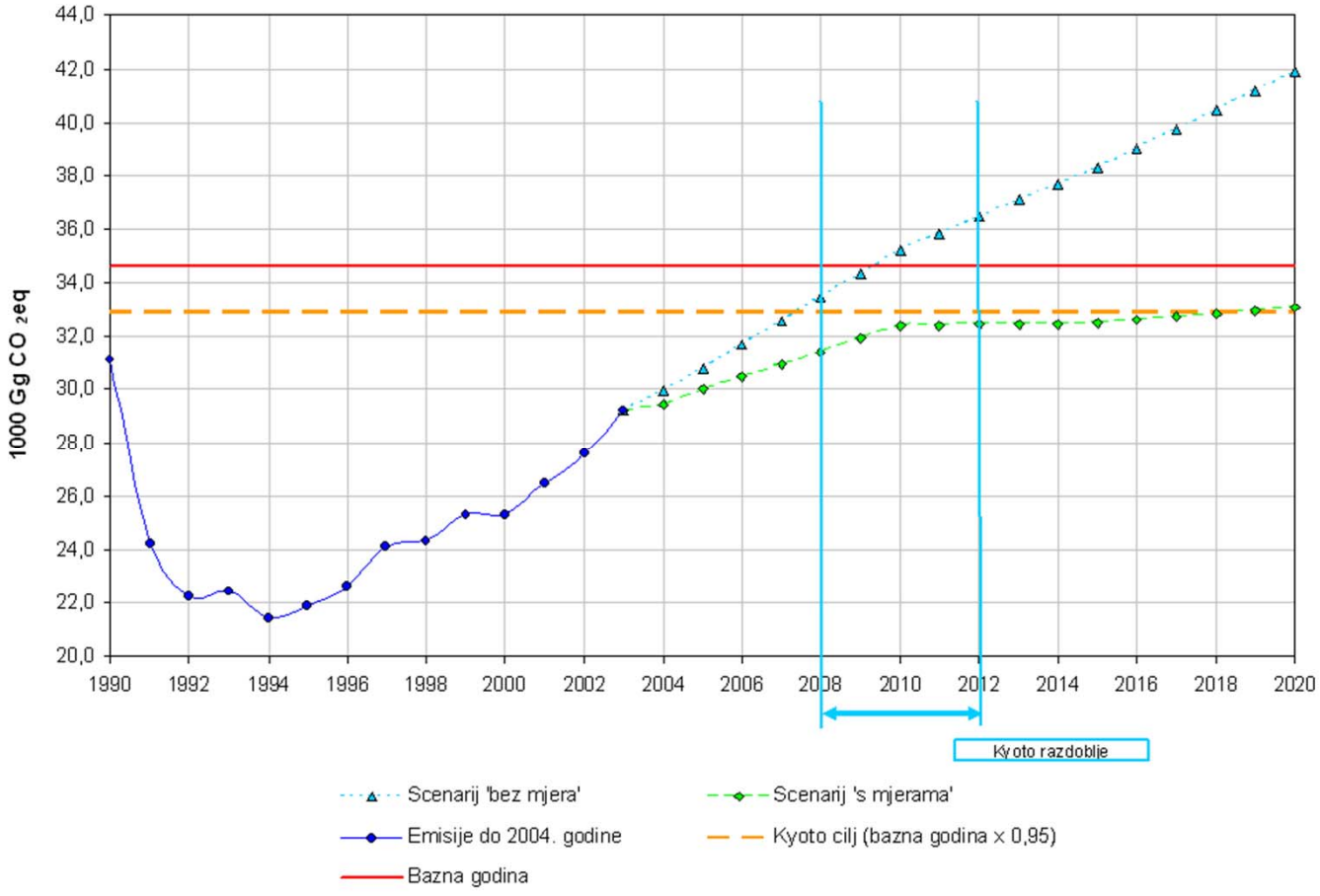
Vladimir Jelavić dr.sc. EKONERG

EKONERG

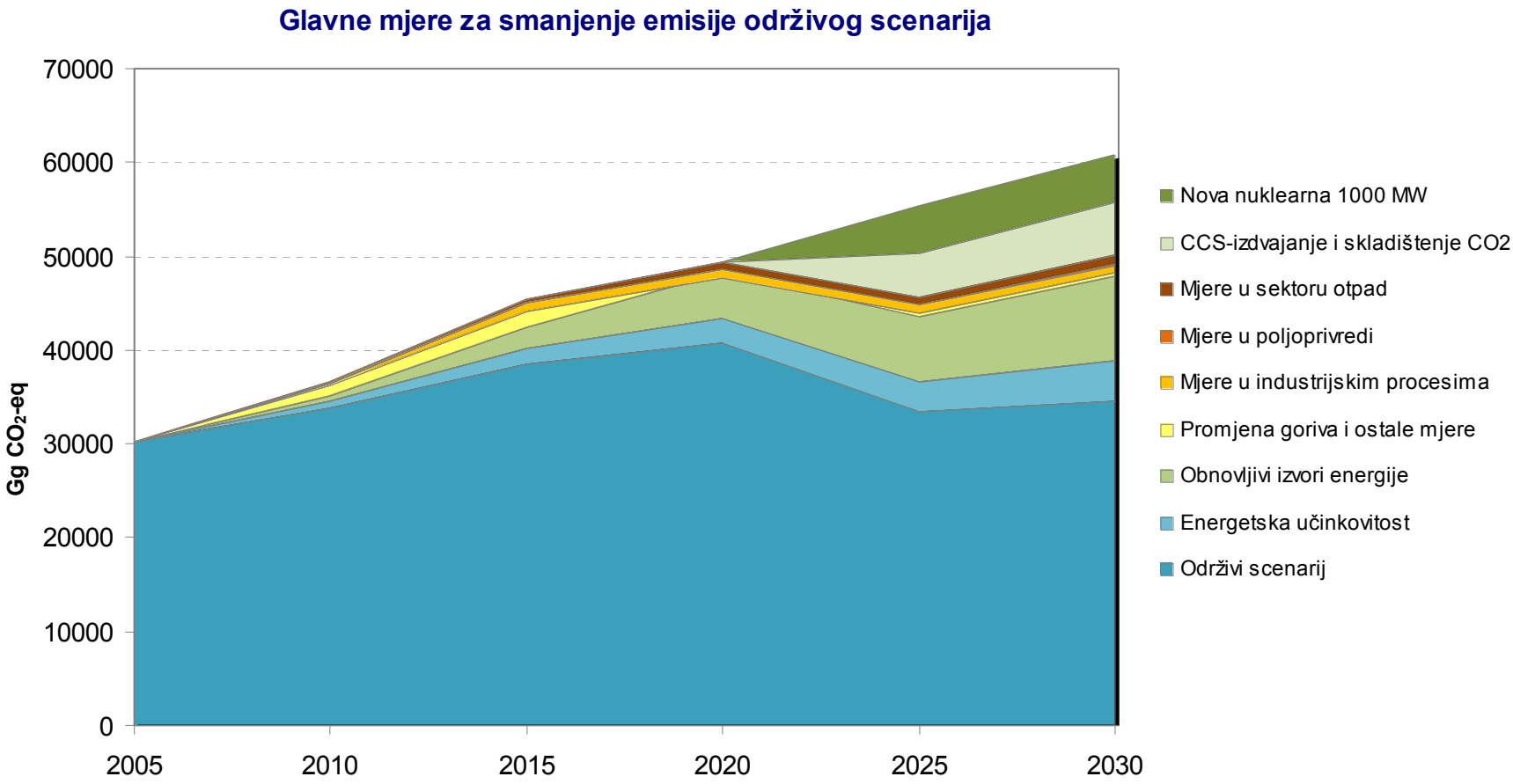
Energy and climate documents

- **The Plan for protection and improvement of air quality in Croatia for for the period of 2008. to 2011. (NN 61/08)**
- HGH emission reduction scenarios for post-Kyoto period till 2009., with view on 2030 and 2050. (EKONERG, 2009)
- **Croatian energy sector development strategy, (NN 130/09)**
- Fifth National Communication of Croatia under the UNFCCC, (MZOPUG, 2010)
- Plan for implementation of article 3.3 and 3.4 of Kyoto protocol (EKONERG,and Croatian Forest Company, 2010)
- Draft National Renewable Action Plan, Republic of Croatia, Prepared in accordance with the requirements of Directive 2009/28/EC Article 4 (1,2) (Ministry of Economy, Labour and Entepreneurship, 2010)
- Croatian GHG Emission Projection Report, (AZO, 2011)
- National Inventory Report for 2010, (AZO, 2012)

The Plan for protection and improvement of air quality in Croatia for for the period of 2008. to 2011. (NN 61/08)

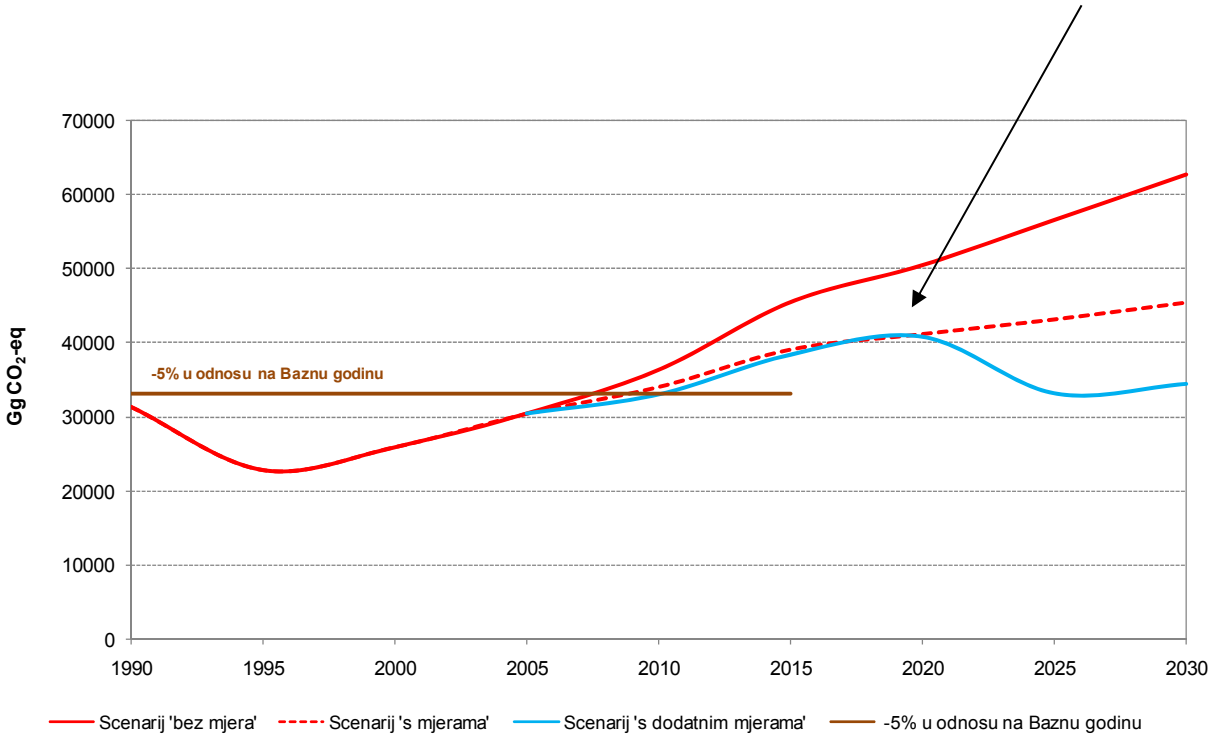


HGH emission reduction scenarios for post-Kyoto period till 2009., with view on 2030 and 2050. (EKONERG, 2009)

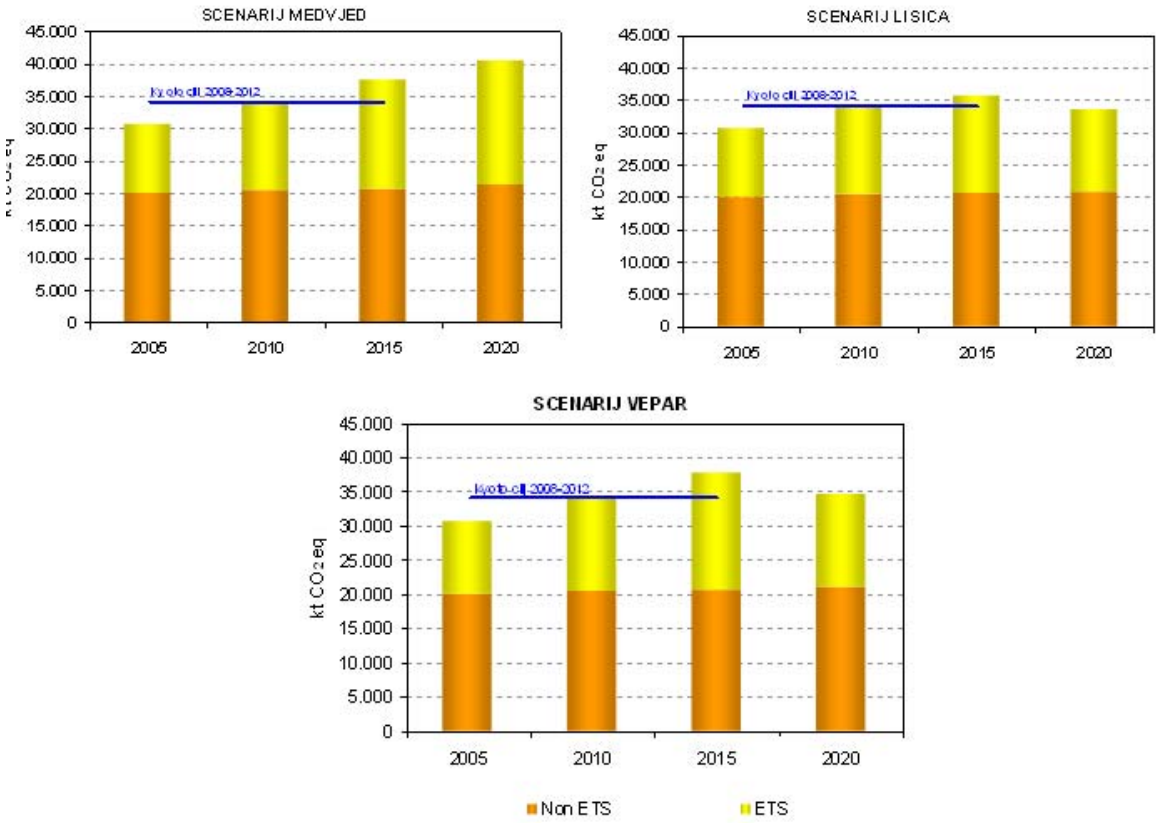


HGH emission reduction scenarios for post-Kyoto period till 2009., with view on 2030 and 2050. (EKONERG, 2009)

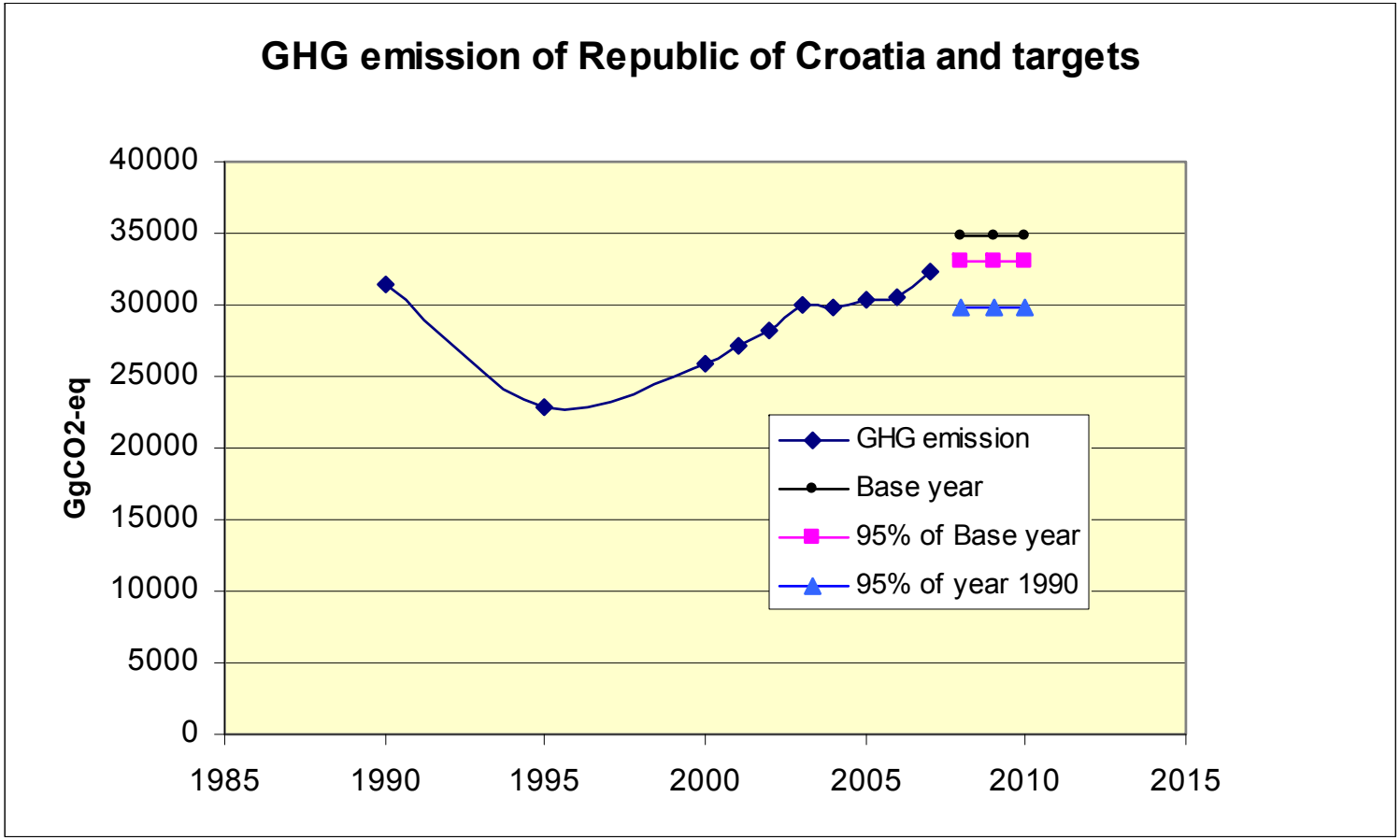
-22% u odnosu na BAU, u 2020. godini



‘Green book’ - Croatian energy sector development strategy, (NN 130/09)



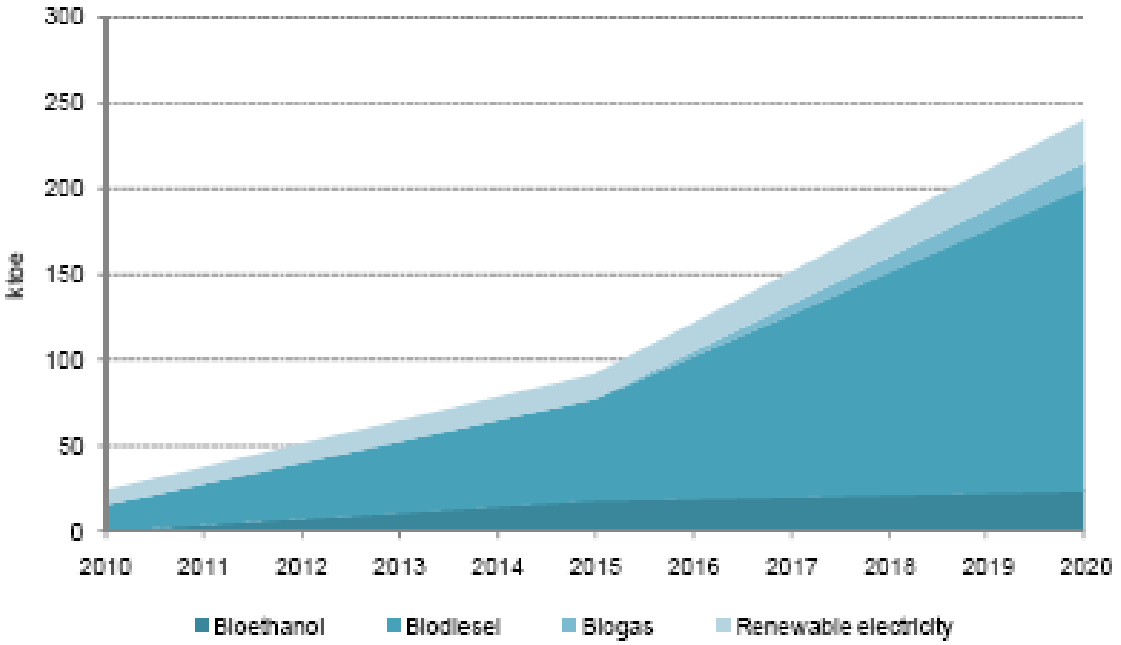
Fifth National Communication of Croatia under the UNFCCC, (MZOPUG, 2010)



Peto nacionalno izvješće RH prema UNFCCC-u, MZOPUG 2009

EKONERG

- **Example – transport sector**



The main measures till 2020

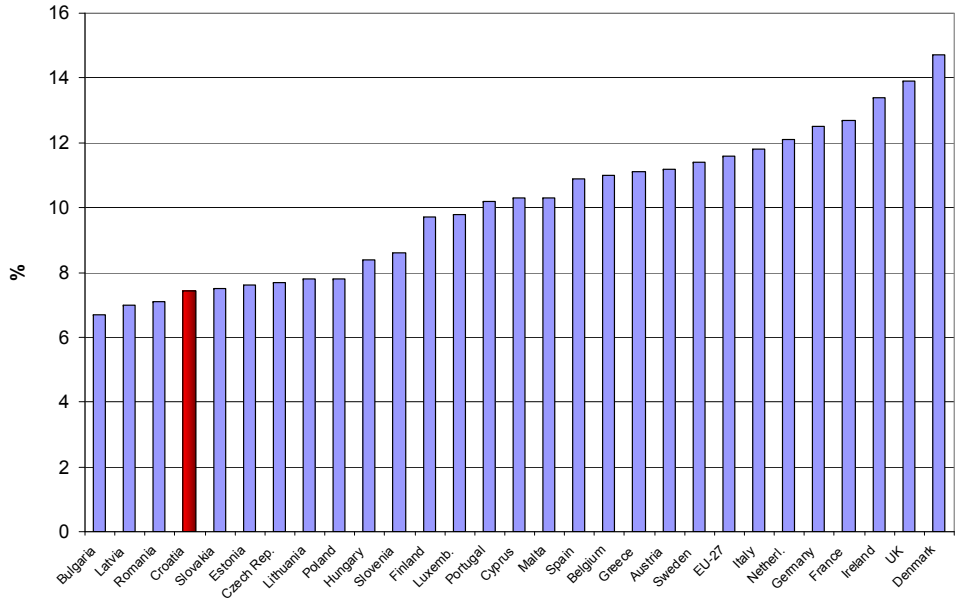
- **Energy efficiency**
  - **According EU directive 206/32/EC, 10% energy consumption reduction in 2020 comparing to average consumption in 2001-2005**

The main measures till 2020

Renewable sources

- **20% of gross net consumption in 2020, calculated target (Energy Strategy)**

Increase comparing the year 2005



The main measures till 2020

Renewable energy:

Sectorial goals:

- 35% in electricity production
- 10% in transport
- 21% in heating and cooling

Contribution to 20% target:

- RES in electricity	9,2 %
- RES in transport	2,2 %
- RES in heating and cooling	8,6%

The measures in other sectors

- In process industry
- In waste management
- In agriculture
- In land use change and forestry (LULUCF)

Where we can reduce emissions?

Table ES.3-1: Emissions/removals of GHG by sectors for the period 1990-2010 (Gg CO_2-eq)

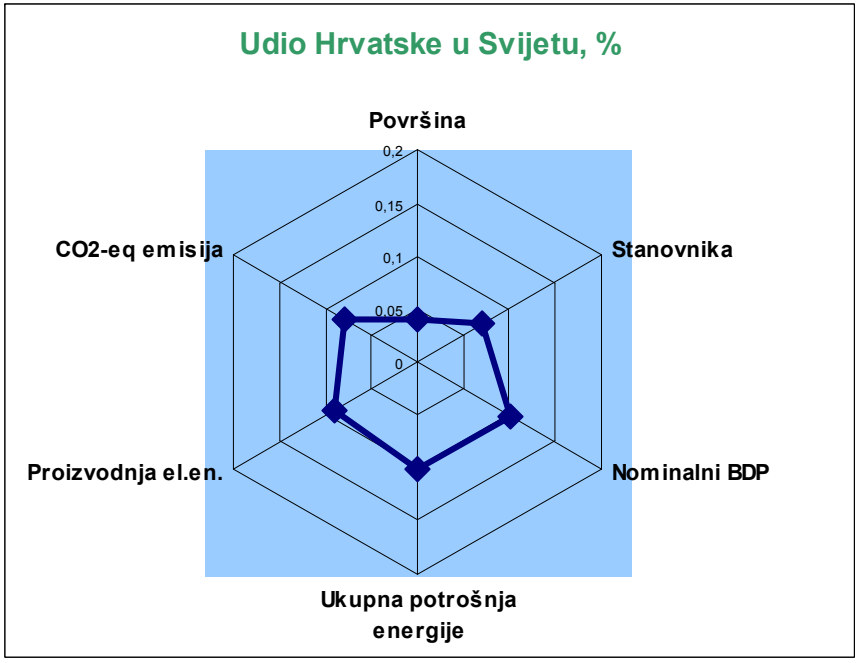
Source	Emissions and removals of GHG (Gg CO_2-eq)								
	1990	1995	2000	2005	2006	2007	2008	2009	2010
Energy	22,538	17,102	19,332	22,537	22,716	24,045	22,826	21,574	20,880
Industrial Processes	3,801	2,011	2,852	3,279	3,428	3,611	3,577	2,970	3,231
Solvent and Other Product Use	117	109	109	197	224	246	236	151	151
Agriculture	4,381	3,055	3,130	3,478	3,498	3,597	3,478	3,366	3,265
Waste	612	744	656	748	863	892	932	998	1,071
Total emission (excluding net CO_2 from LULUCF)	**31,449**	**23,021**	**26,080**	**30,239**	**30,728**	**32,392**	**31,050**	**29,058**	**28,598**
Removals (LULUCF)	-5,603	-6,675	-1,881	-7,666	-7,754	-7,732	-8,349	-8,140	-8,295
Total emission (including LULUCF)	**25,845**	**16,346**	**24,199**	**22,572**	**22,974**	**24,660**	**22,701**	**20,919**	**20,303**

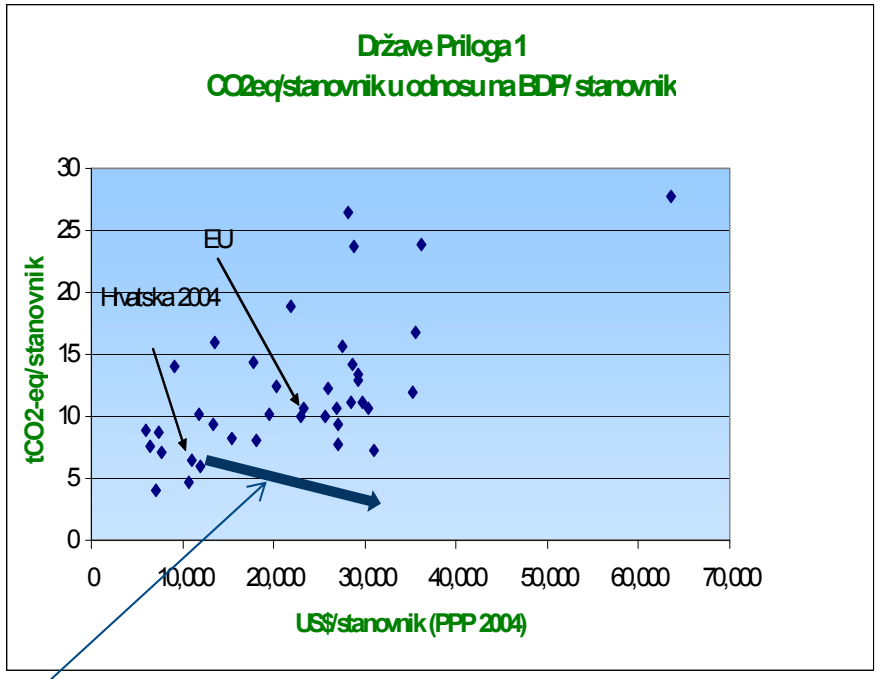
Where in energy sectors?

Table ES.3-4: CO_2 emission by sub-sectors from 1990-2010 (Gg CO_2)

Source	1990	1995	2000	2005	2006	2007	2008	2009	2010
Energy Industries	7,127	5,262	5,877	6,779	6,628	7,737	6,705	6,373	5,884
Manufacturing Industries & Constr.	5,843	3,541	3,617	4,081	4,181	4,205	4,198	3,379	3,315
Transport	3,986	3,376	4,421	5,509	5,869	6,297	6,186	6,185	5,959
Comm./Inst., Resid., Agr /For./Fish.	3,606	2,826	3,389	3,867	3,630	3,301	3,415	3,428	3,480
Fugitive emissions	416	739	633	691	700	663	576	516	487
Total CO_2 emission	20,977	15,744	17,938	20,927	21,009	22,203	21,080	19,881	19,124

Through indicators





Low carbon pathway for Croatia

Zaključno

Prilike:

- **Smanjenje ovisnosti o uvozu**
- **Smanjenje troškova u sektorima gdje se primjenjuje energetska efikasnost**
- **Povećanje sigurnosti energetske opskrbe**
- **Razvoj novih gospodarskih aktivnosti i otvaranje radnih mjesta**
- **Smanjenje onečišćenja zraka**

Izazovi:

- **Kako ubrzati primjenu OIE**
- **Socio-gospodarski aspekt povećanja cijena zbog troškova ugljika**
- **Opasnosti gubitka konkurentnosti i povećanje ovisnosti o stranim tehnologijama**
- **‘curenje ugljika’**
- **Odluka o primijeni CCS**
- **Nuklearna energija**

Thank you