

**CLIMATE CHANGE IN SOUTH-EASTERN EUROPEAN COUNTRIES IV:
ADAPTATION STRATEGIES FOR ECONOMY AND SOCIETY
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Climate Change Policy in Croatia

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Implementation of the UNFCCC and the Kyoto Protocol in Croatia

- Croatia is an Annex I Party of the *UNFCCC* (country with EIT), from 1996
- Croatia **ratified** the Kyoto Protocol on **April 27, 2007** (173rd country), and become a full Party on **August 28, 2007**
- Annex B Party with commitment for 5% reduction of GHG emissions in the period 2008-2012 (domestic measures/Kyoto Mechanisms)

Eligibility requirements for Annex I Party (Decision 3/CMP.1):

- Party of the Kyoto Protocol;
- Calculated assigned amount (AAU); (Initial Report, 27 August 2008)
- National system for the estimation of GHG emissions and removals;
- National GHG Registry;
- Submitted the most recent GHG Inventory; (NIR 2009 for 1990-2007)
- Submission of the supplementary information on assigned amount.



Obligations

- Reporting within specific timeframes
 - on sources and national level
 - to UNFCCC Secretariat (Inventory, Projections, National Communication)
 - to European Commission (Inventory, reporting on implementation of the directives, decisions)
- Decreasing of the GHG emissions
 - in order to reach that goal Croatia will have to implement measures in all sectors
- Assessment of the vulnerability, impact and adaptation measures
 - 9 sectors involved



ETS in Croatia

- ETS Implementation period 2010 - 2012 - Activities on establishment of ETS in Croatia are already commenced, and it will be operational from 1 January 2010 in two phases:
 1. Monitoring and reporting of emission from 2010,
 2. Connecting to EU ETS, allocation of the allowances (according to NAP) and trading from the assessing to EU.
- ETS in Croatia - 81 installations, submitted application of installations, validation of monitoring plans on GHG emissions, permits
- Establishment of National GHG emission Registry in compliance to **UNFCCC** and EU requirements.
- Registry Administrator is Croatian Environment Agency



ETS-inclusion of aviation

- from 1 January 2010 flights from Croatia to EU will be covered by Germany
- 4 operators - submission of data
- amending of trading regulation
- collecting of data for flights from third countries to Croatia



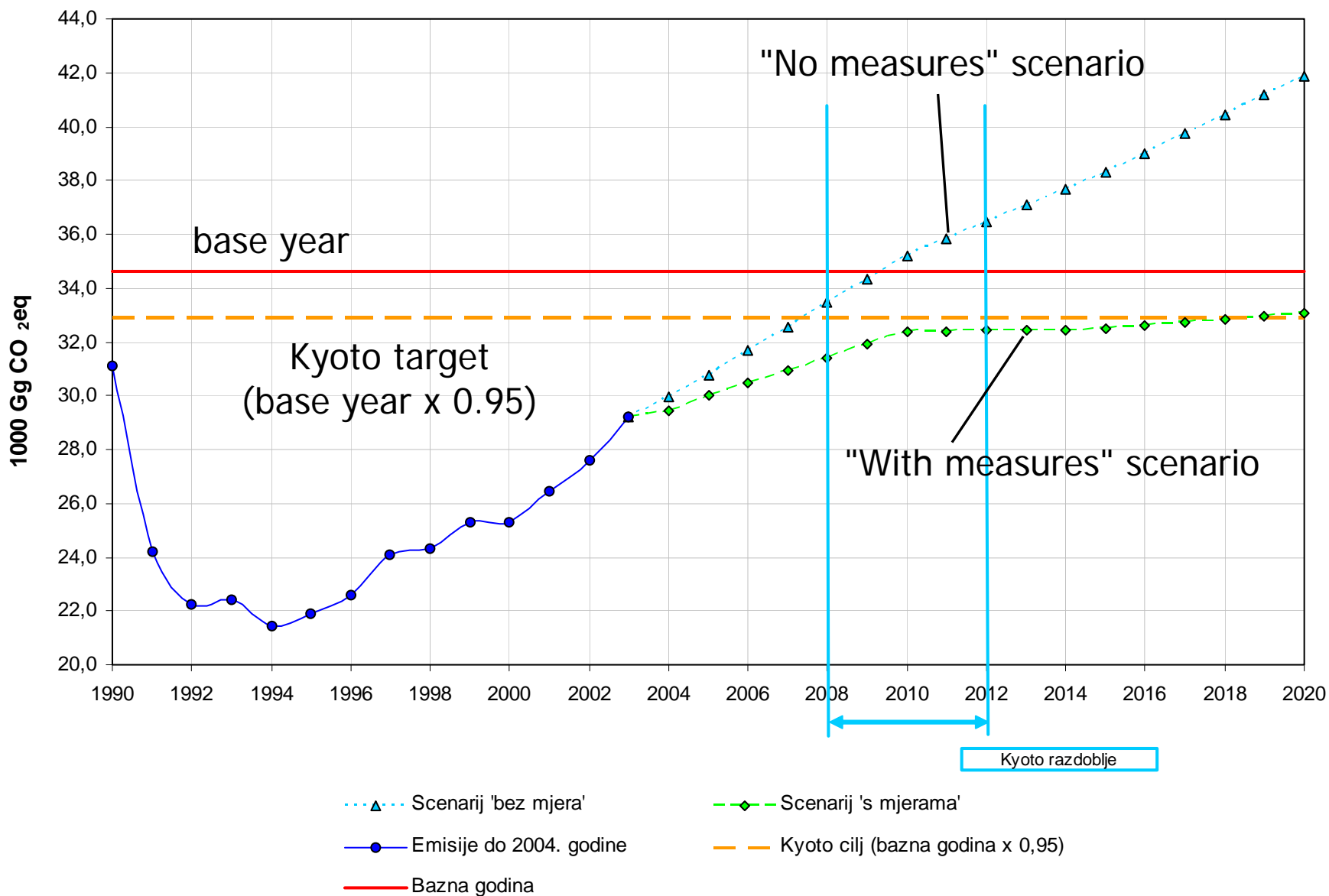
Current GHG Emission in Croatia

Source	Emissions and removals of GHG (Gg CO ₂ eq)									
	Base year	1990	1995	2000	2001	2002	2003	2004	2005	2006
Energy		22882	16400	18907	19953	21074	22580	22048	22411	22548
Industrial Processes		4609	2785	3400	3271	3148	3346	3659	3833	4004
Solvent and Other Product Use		80	80	69	75	99	108	135	155	182
Agriculture		4558	3191	3285	3485	3400	3348	3549	3560	3507
Waste		399	475	567	599	633	663	697	601	591
Total emission (excl. net CO ₂ from LULUCF)	36027	32527	22930	26228	27383	28353	30045	30088	30561	30834
Removals (LULUCF)		-4185	-9154	-5281	-8214	-8206	-6276	-7900	-7726	-7490
Total emission (incl. LULUCF)		28342	13776	20947	19169	20148	23768	22189	22835	23344





Scenario for 2012 with projections till 2020



Post-Kyoto period 2013-2020

- Negotiations to be finished in December 2009 in Copenhagen
 - Great challenge for countries
 - Central Group (Croatia, Turkey), it is open for all other candidate and accession countries to join
- For serious decreasing of GHG emissions changes in lifestyle and behaviour patterns are needed
- Implementation of the measures that are not currently commercially available
- Development of the new technologies



Examples of expected technology

Energy efficiency

- Heat pump
- Electric device



Nuclear power with safety

- LWR for next generation
- Fast Breeder Reactor Cycle



New energy

- Fuel cells
- Photovoltaic power
- Biomass



Diverse energy source in transport

- Electric/Fuel Cell Car
- Biofuel



Efficient and clean use of fossil fuels

- Clean coal technology (IGCC/IGFC)
- CCS
- GTL, DME



Impact and adaptation

- less attention so far for impact and adaptation to climate change issues than mitigation
- next step is preparation of the impact, vulnerability and adaptation to climate change strategy in accordance with the Nairobi work programme
- Sectors involved: hydrology and water resources, agriculture, forestry, biological diversity and natural land ecosystems, coast and coastal area, marine ecosystem and fish richness and human health
- first step is preparation of the climate scenarios on local level by the Croatian Meteorological and Hydrological Service (December 2009)



Climate Change and good governance

- Climate change issues are closely connected to all segments of one society
- To be properly addressed all those segments and respective stakeholders must be actively involved
 - citizens, businesses and social partners,
 - education and research strengthened
 - cooperation between governmental and public institutions on national and local level increased
 - cooperation on regional level increased
- climate change problem does not recognize borders



Potential of Mitigation in 2010

Energy production sector

Indicative targets:

- 400 MW wind power plants
- 40 MW biomass power plants
- 80 MW new cogeneration - industry
- 12% energy efficiency increase in oil refining

Industry sector

Main indicative targets:

- 1% annual increase of energy efficiency
- 40 MW biomass cogeneration
- 400 GWh cogeneration
- 20% of fossil fuels in cement industry replaced by biodegradable waste
- N₂O reduction in nitric acid industry
- Reduction of clinker amount in cement production

Transport

Some indicative targets:

- Biofuels share of 5.75% of total energy consumption
- 20% vehicles with fuel consumption < 5 l/100 km
- biofuels in public transport
- bicycle tracks and supporting infrastructure in local communities



Potential of Mitigation in 2010

Households and Services sector

Some indicative targets:

- New buildings with heat losses < 100 kWh/(m²/year)
- Measures for heat losses reduction apply annually on 30,000 apartments
- At least two fluorescent light-bulbs in every household
- 90% of new domestic appliances of the highest EE class (A++, A+, A)
- 5,000 m² solar system annually for hot water and heating
- Replacement of fuel oil with woody biomass in 5,000 households annually
- Annual increase of EE by 1% in service sector
- Installed 20 MW capacity of solar and geothermal sources in service sector



Legislation



- Environmental Protection Act (OG 110/07)
- Air Protection Act (OG 178/04) and Amendments to the Air Protection Act (OG 60/08)
- National Strategy for Implementation of UNFCCC and the Kyoto Protocol in the Republic of Croatia, with Action Plan (June, 2007)
- Regulation on GHG Emission Allowances and Emissions trading (OG 142/08)
- National Allocation Plan (OG 76/09)



Conclusion

Climate change policy:

- must be coordinated with the climate and environmental policy at the national level,
- must protect and enhance the environment,
- must reduce emissions of greenhouse gases,
- must provide economic and industrial development, tourism, increase the standard of citizens, etc.





Thank you for your attention !