

Climate Change Mitigation Actions and National Circumstances of Belarus



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Climate change related policy

1



United Nations Climate Change Conference, Cancun, 2010

Climate change mitigation

basic framework for 2008-2012

■ Legal framework:

- UNFCCC (since 2000) and Kyoto Protocol (since 2005)
- Kyoto Action Plan for 2005-2012
- National Climate Change Mitigation Programme for 2008-2012
- Climate Protection Law (expected enactment in 2011)
- Governmental resolutions on:
 - UNFCCC and KP Focal Point
 - GHG inventory system
 - National GHG Inventory System and GHG Cadastre
 - National MRV
 - National ET Registry
 - JI/VER project cycle national procedures and institutions for project approval
 - working groups and departmental regulations in key sectors

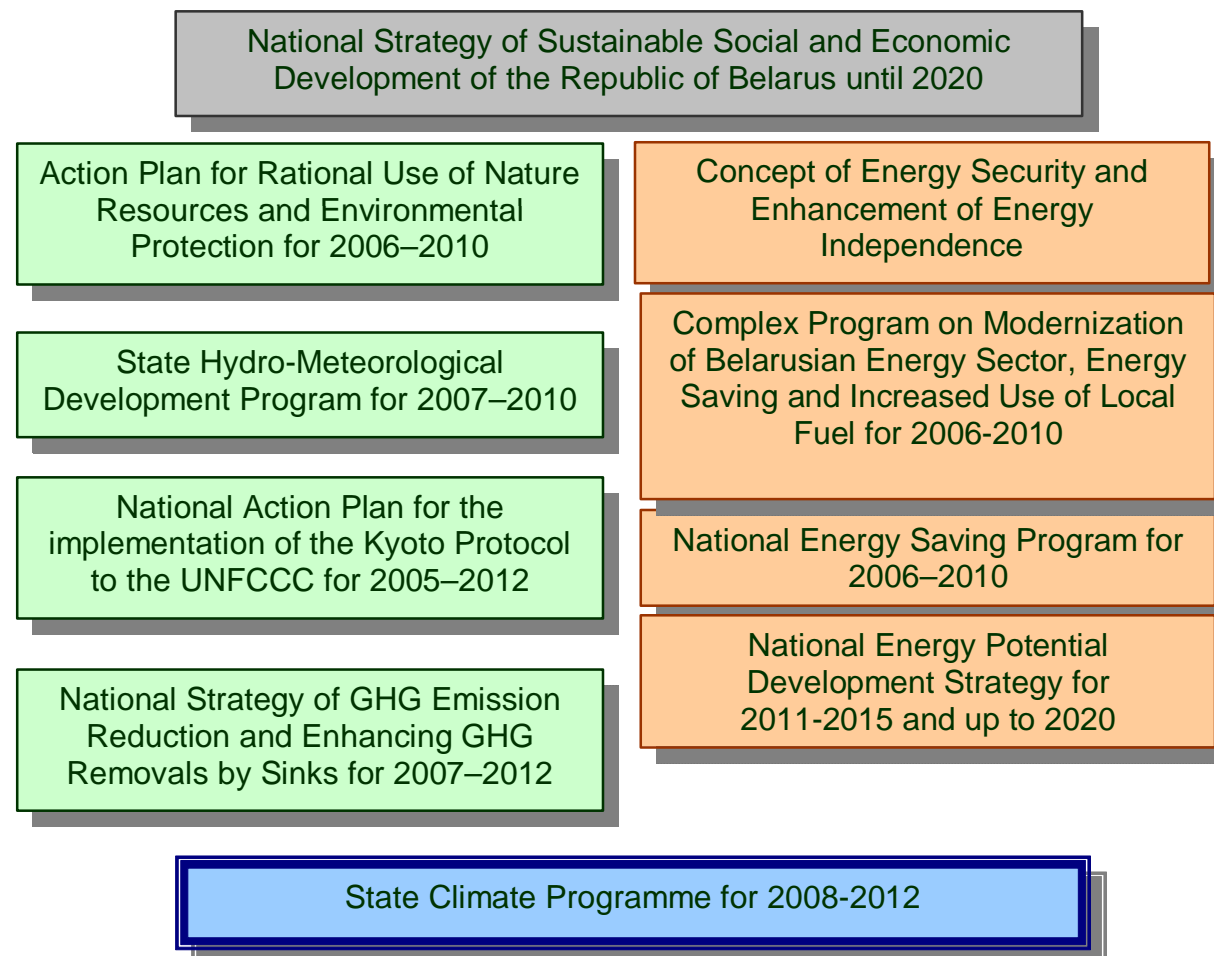
■ National Strategies:

- Strategy of Reducing Emissions and Enhancing Removals by Sinks of Greenhouse Gases in the Republic of Belarus for 2007-2012
- Strategy of the Republic of Belarus' Participation in the Flexible Kyoto Mechanisms for 2008-2012



Climate change mitigation

major National programs



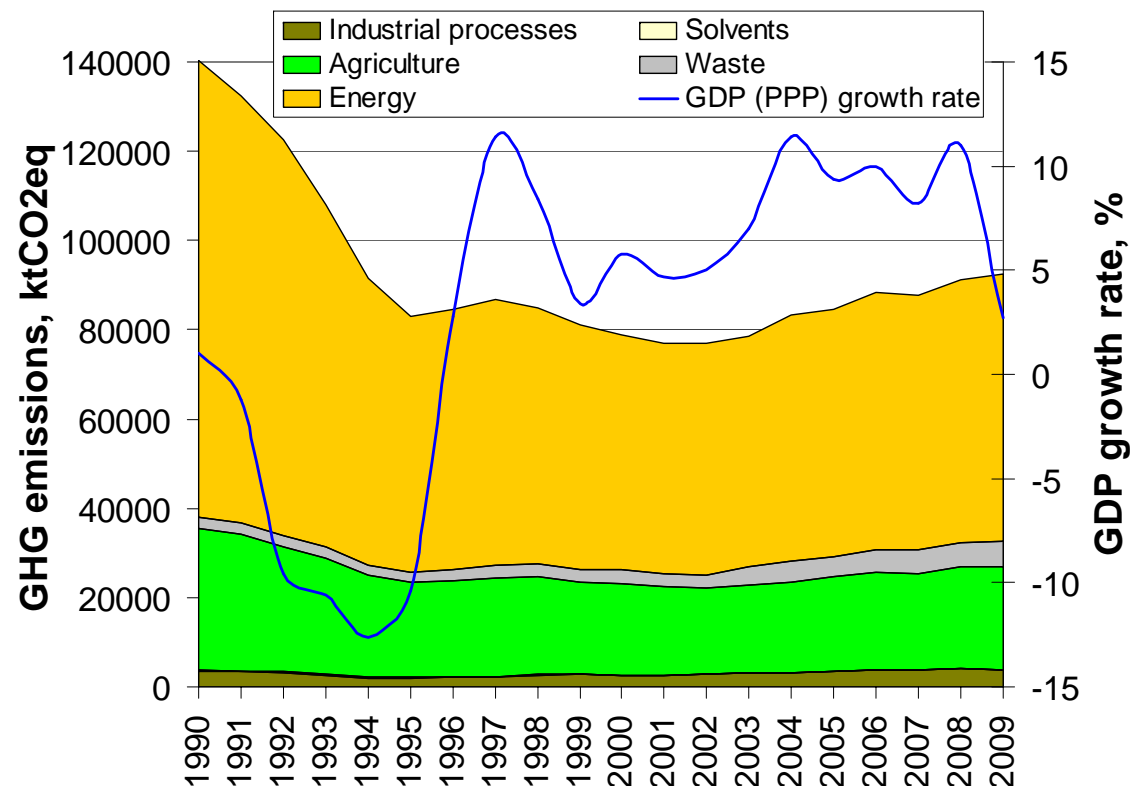
Climate change mitigation

GDP and respective GHG emissions

- 1990-2009: net GHG emissions reduction of **960 MtCO₂eq**
 - 1990-1995 – economic recession
 - 1995-2006 – change in energy mix and GDP structure
 - 1997-present – energy efficiency and renewable energy use policies

- Recent trend is an evident increase of GHG emissions by approx. **3 MtCO₂eq** per year

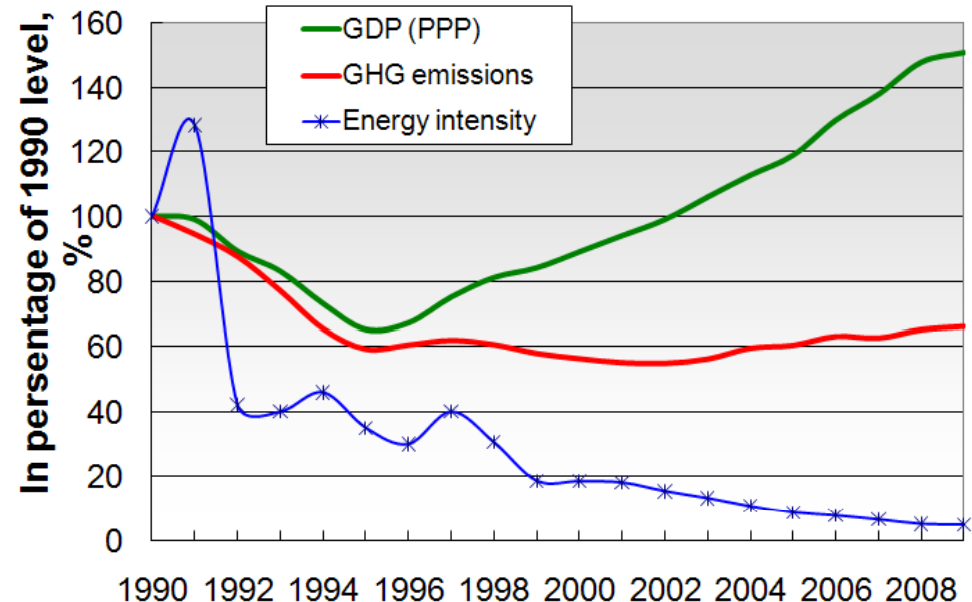
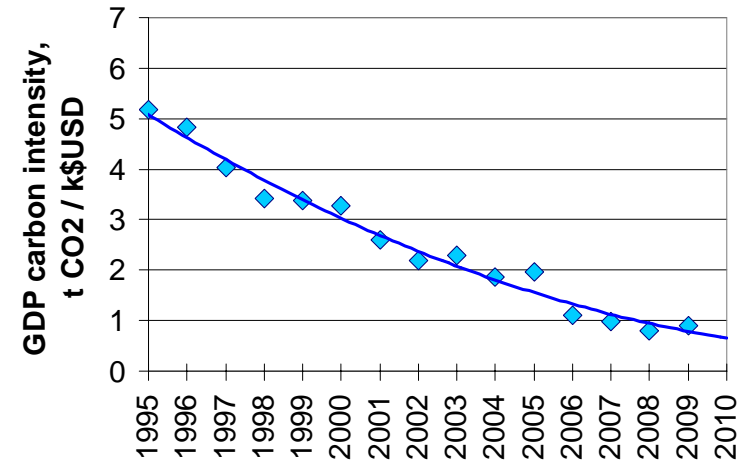
- economic growth and delayed technological reforms
- increased fuel consumption
- reduced share of gas *vis a vis* peat and mazut



Climate change mitigation

trends in energy efficiency and energy saving

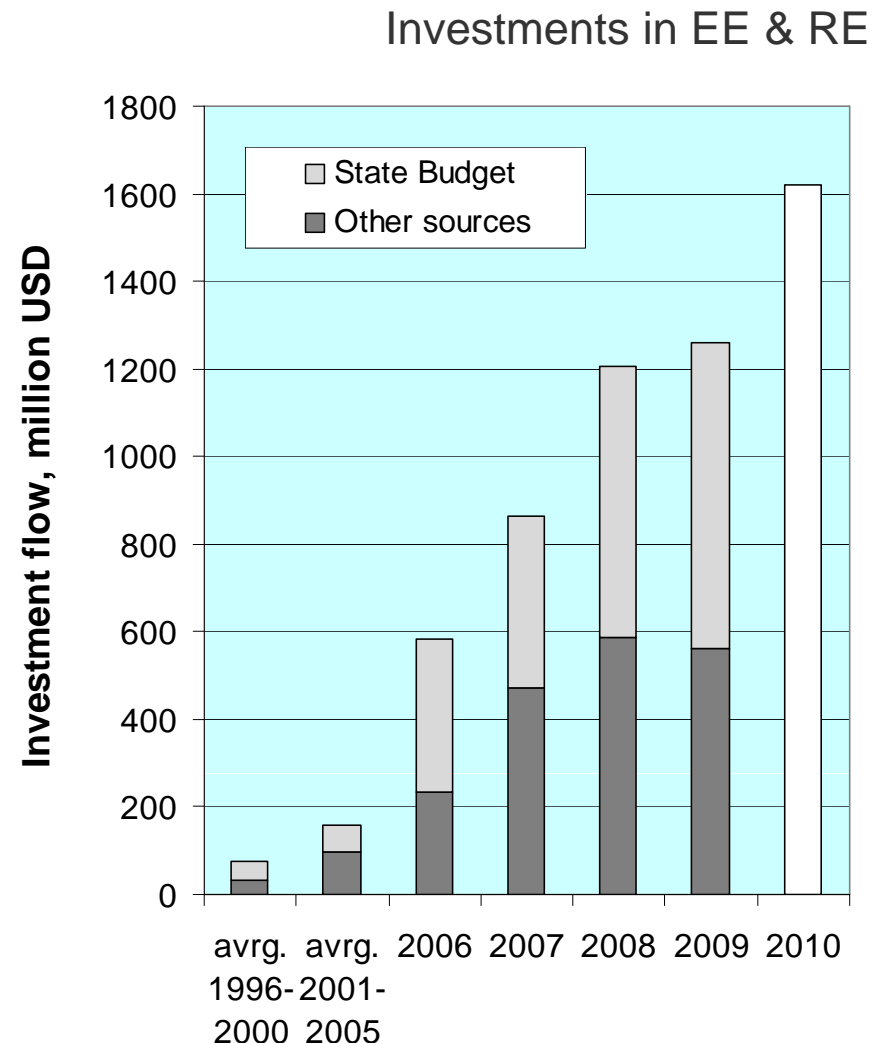
- Since 1996:
 - annual GDP energy intensity drop was never less than **4%** and currently shows sustainable growing
 - energy saving was from **1.5 to 2.5** million tons of coal-equivalent per year, i.e. about **5-6%** of primary energy consumption
 - almost **5-fold** carbon intensity reduction and **doubled** RES



Climate change mitigation

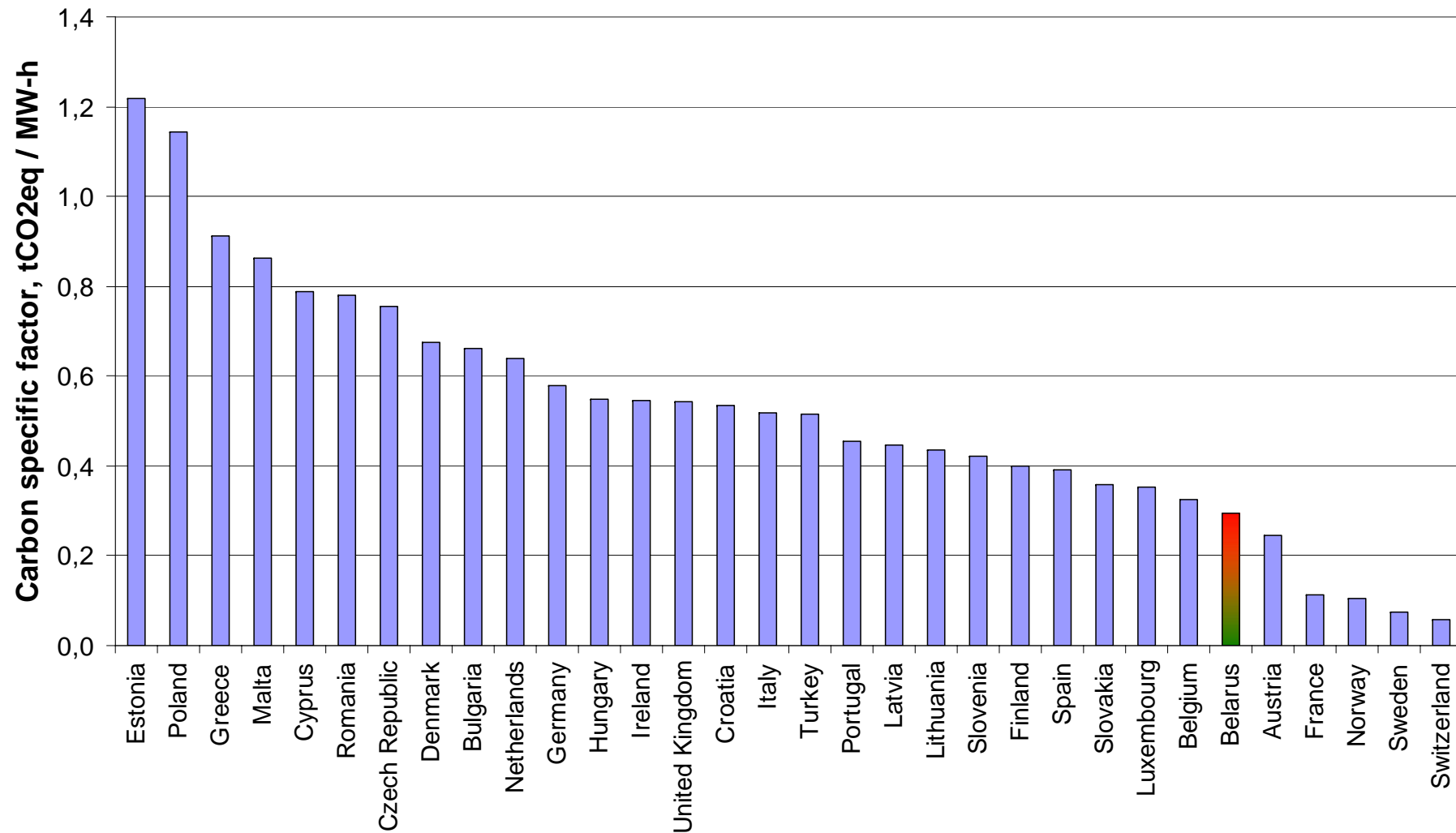
GHG reduction after 1996 is not “business-as-usual”

- Since 1996 (the end of recession) through 2006 almost **4 billion dollars** were spent for energy saving and energy efficiency improvement (**1.6%** of GDP)
- In 2006-2010 more than 5.3 billion dollars were invested in energy saving measures (**3.4%** of GDP)
- Along with sufficient support to forest management, communal waste treatment, renewable energy the total investment in GHG emissions abatement in 2006-2010 achieved about **5%** of GDP
- State budget investment share has never been less than **30%**



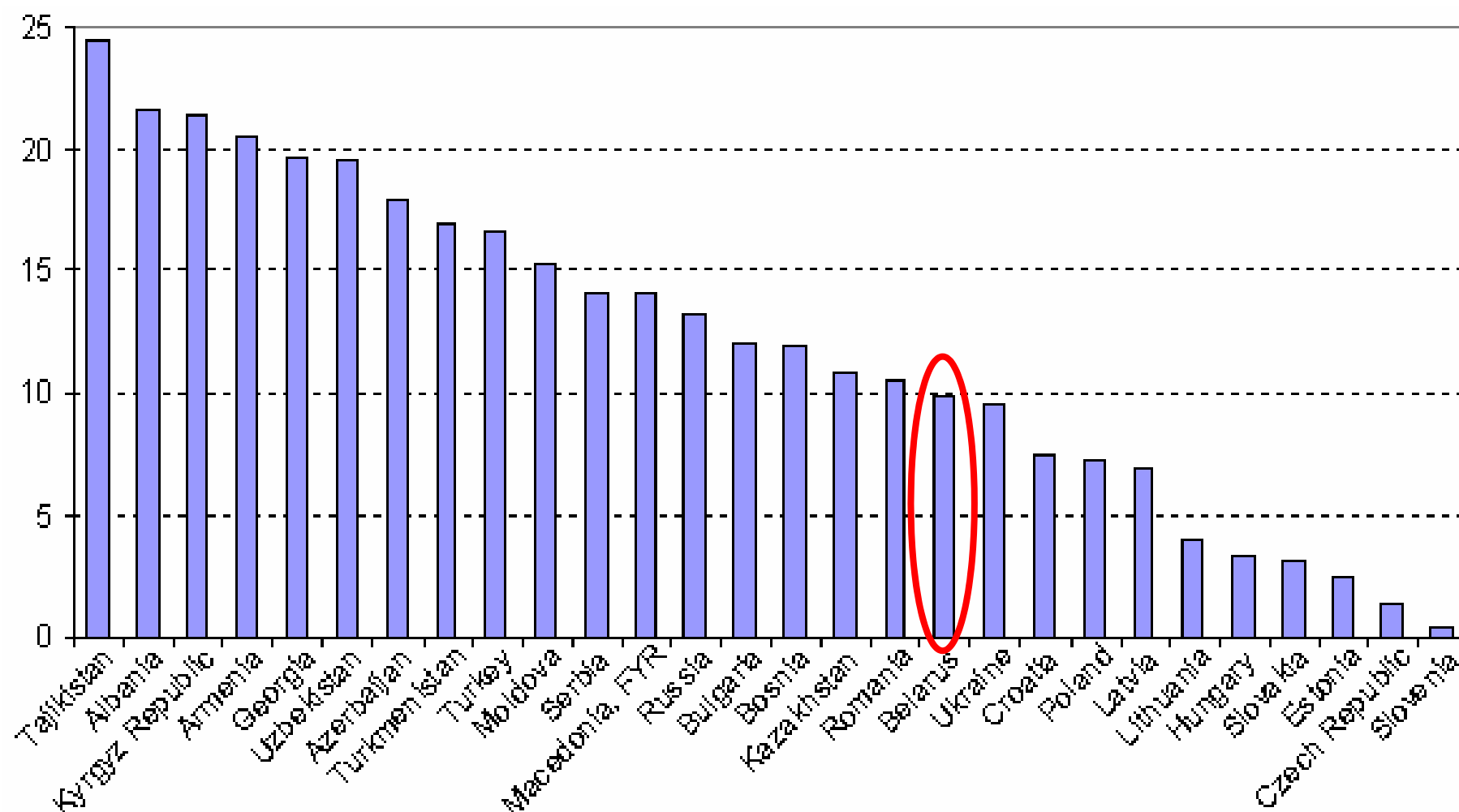
Climate change mitigation

GHG emission factor for “Energy Sector” in Annex I



Climate change adaptation

total vulnerability index



Climate change adaptation

shift of agro-climatic zones

1945-1965



60-150 km shift

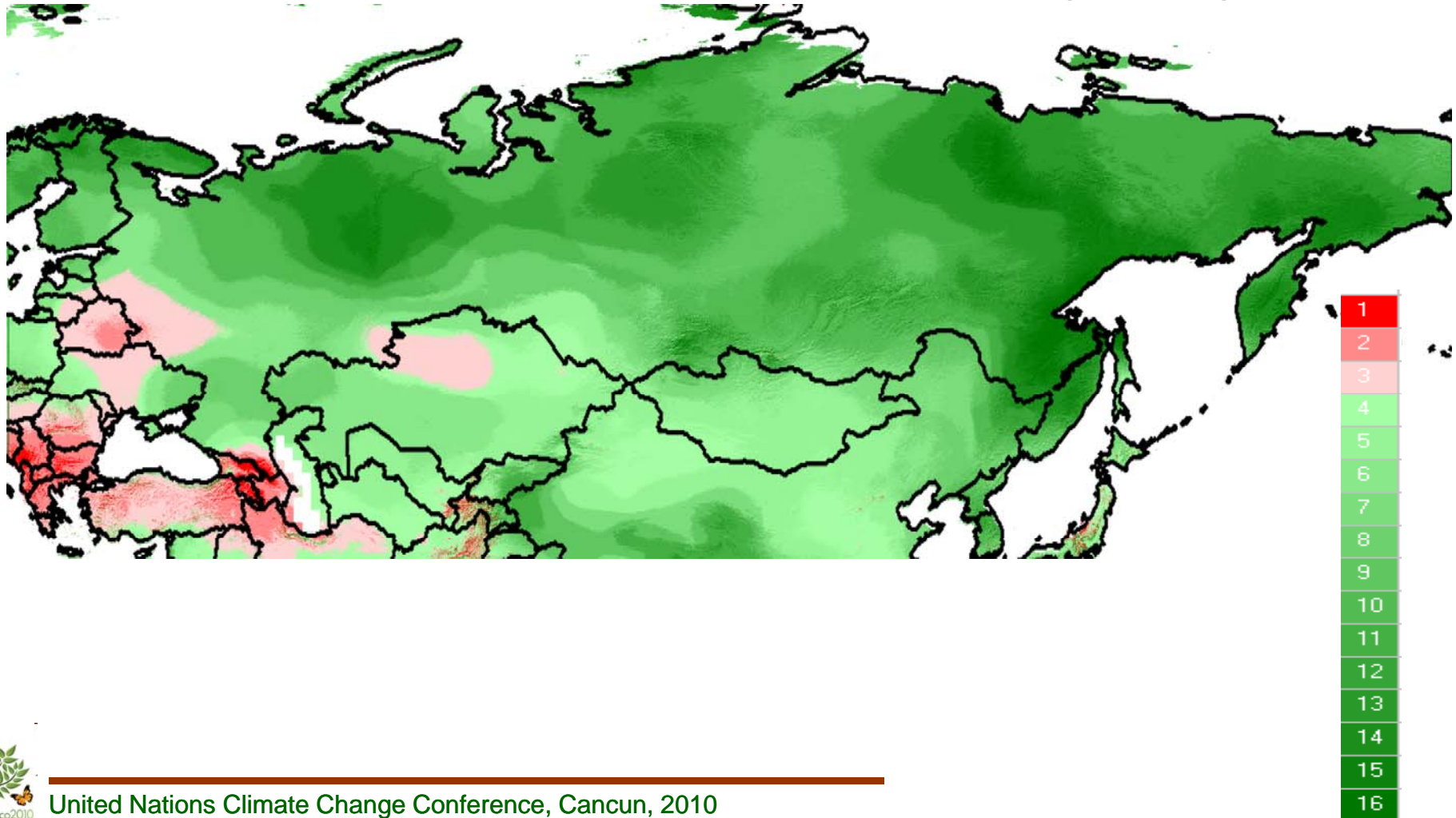
1985-2005



Climate change adaptation

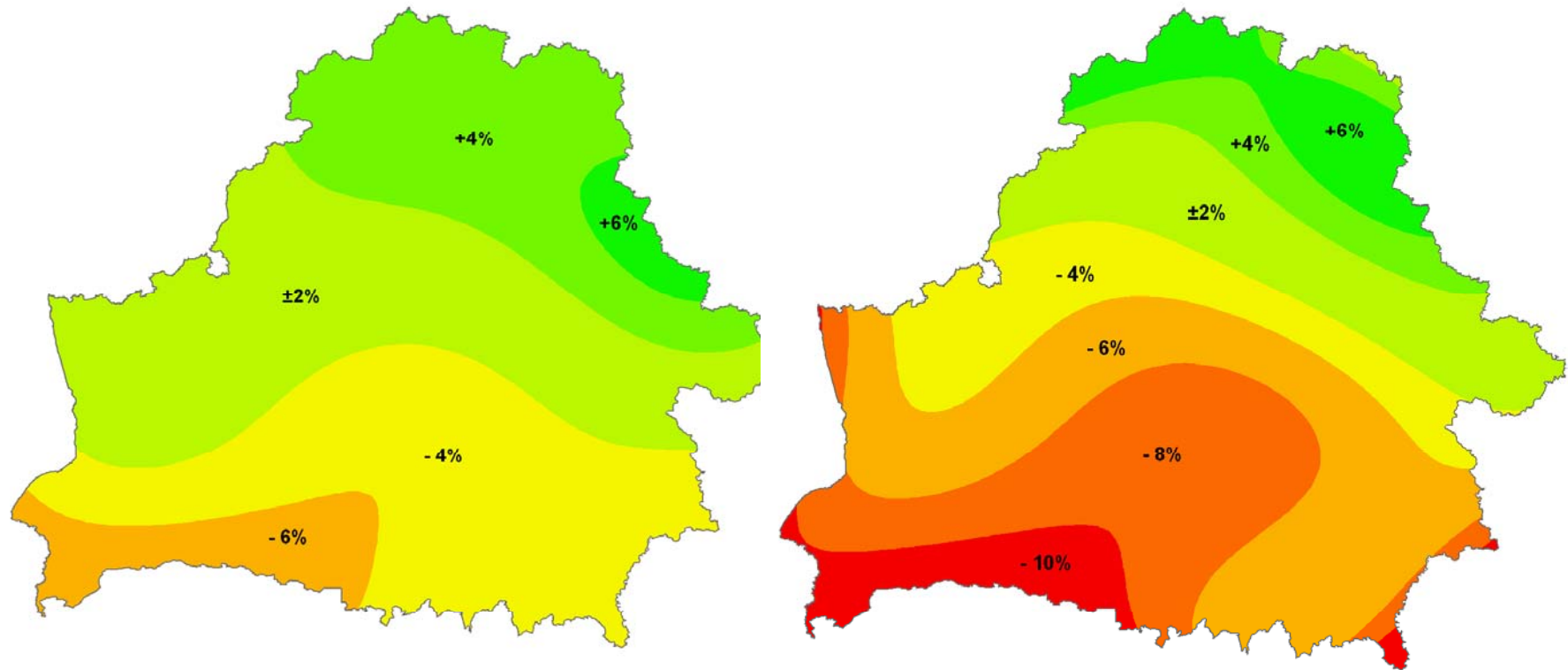
bioproductivity

Increment of net bioproduct per m²



Climate change adaptation

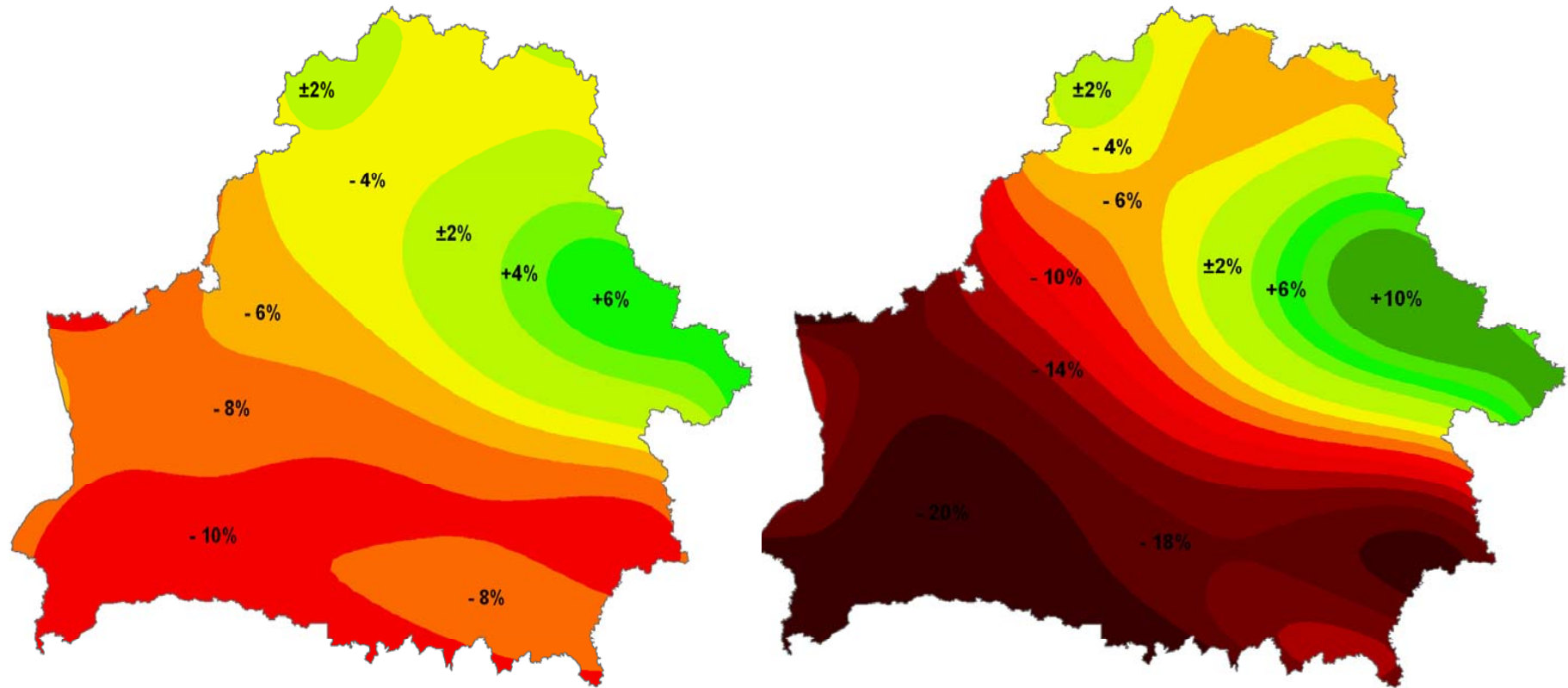
pine forest loss



years 2025 and 2050

Climate change adaptation

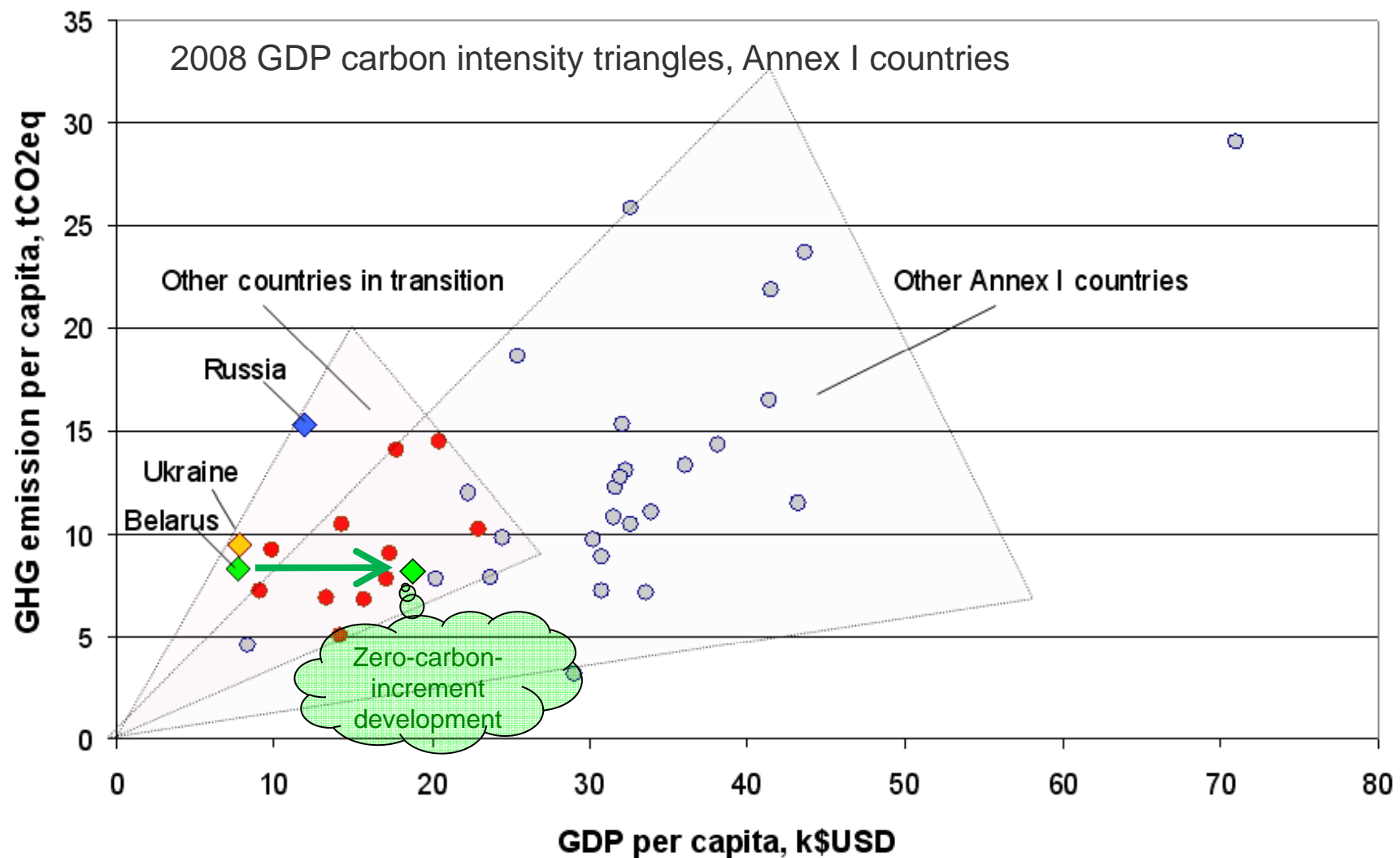
spruce forest loss



years 2025 and 2050

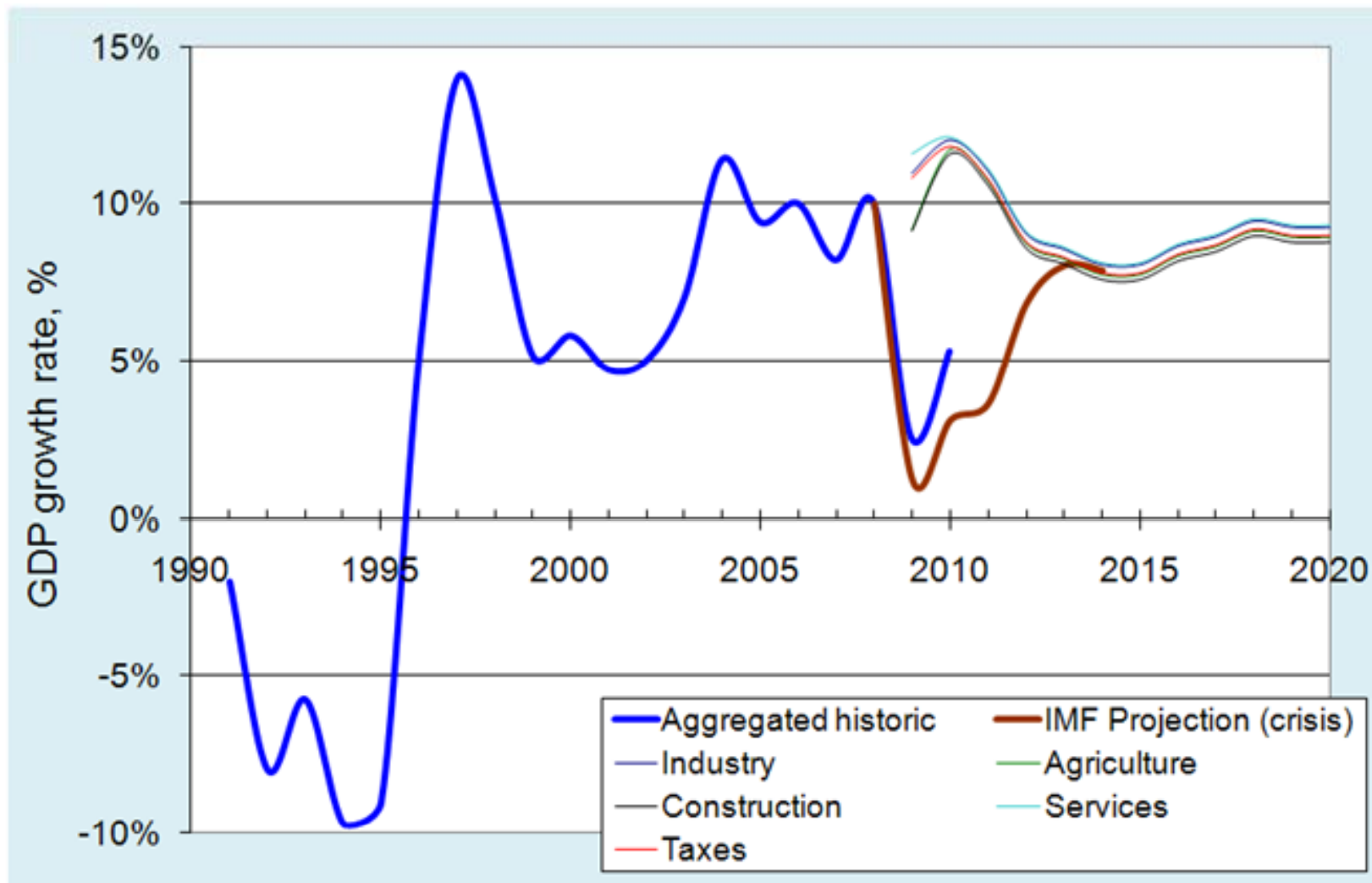
National circumstances and projections

how to move from here to there?



National circumstances and projections

GDP (PPP) growth rate



National circumstances and projections

projections in energy sector until 2020

■ Scenario “BAU”

- upgrade energy mix (gas turbine cycle and cogeneration scheme of about 20% of installed capacities)
- renewable energy share of 15%
- GDP energy intensity reduction by 60%

■ Scenario “BAU (Coal)”

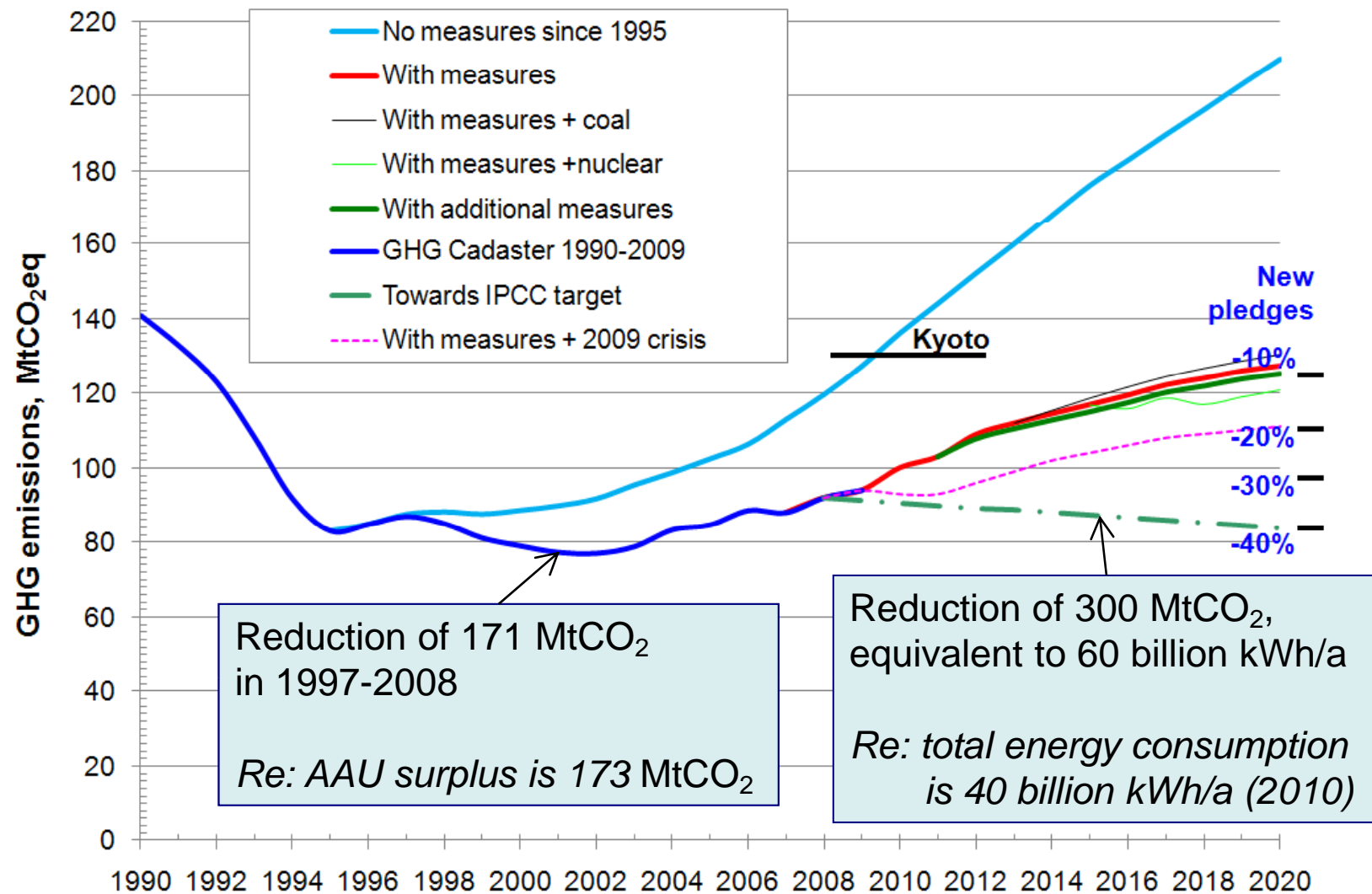
- the same as “BAU”
- coal-fired CHP of 0.7 GW replacing gas-fired CHPs

■ Scenario “With additional measures”

- renewable energy share of full scale (approx. 25%)
- energy saving in cement and construction industries and buildings (100%)

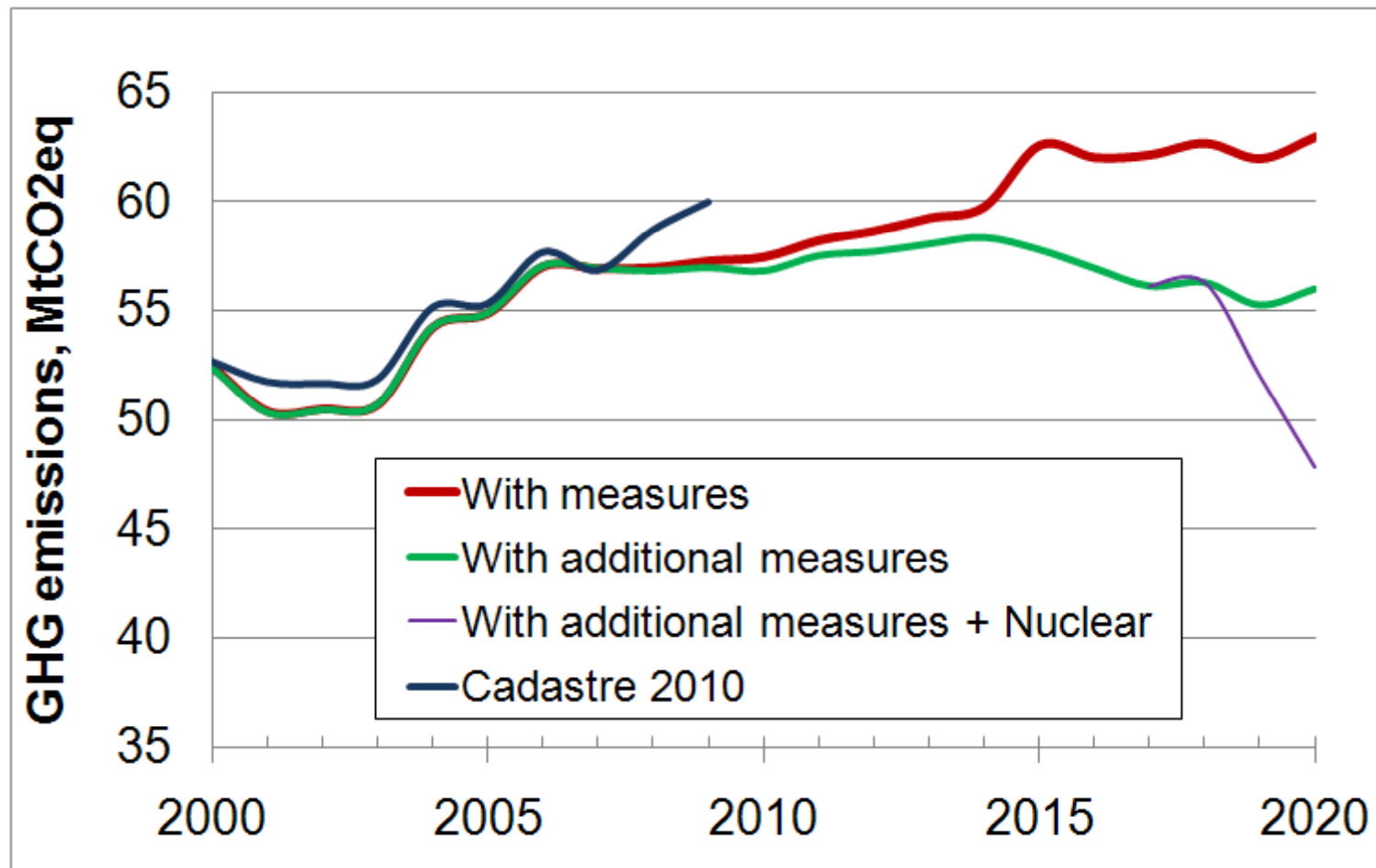
National circumstances and projections

total aggregated GHG emissions



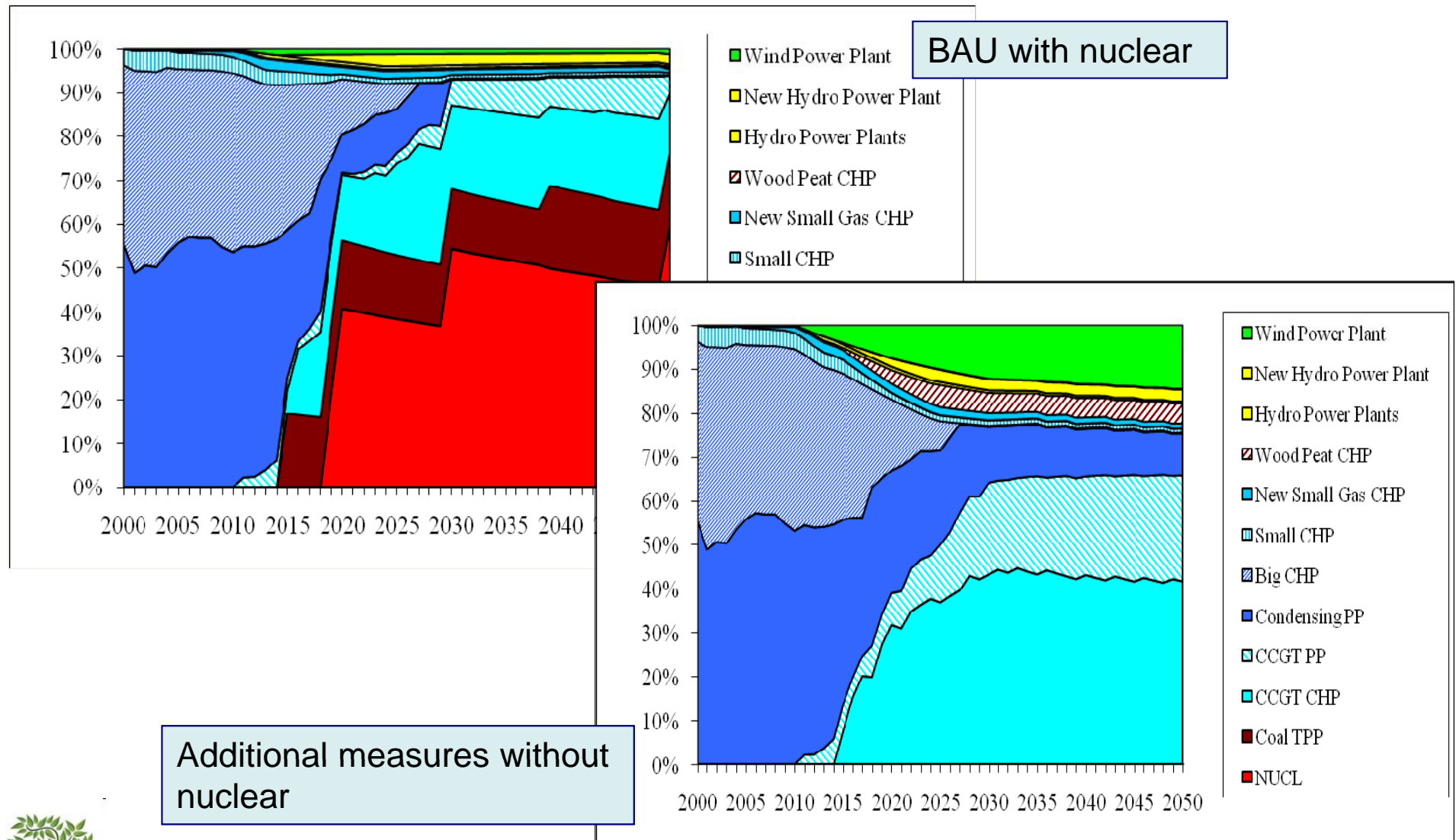
National circumstances and projections

aggregated GHG emissions in “Energy Sector”



GHG emission reduction measures

two direction of energy sector in 2012-2050



Mitigation and adaptation actions

2



United Nations Climate Change Conference, Cancun, 2010

GHG emission reduction measures

energy efficiency facts and policy

- Power generation and utilities basic assets are **24%** of GDP
- The total installed electrical power in the country – **8.2 GW**
 - accumulated depreciation of main assets – **52.1%**
 - losses in energy mix – almost **twice** as much as in EU
- District heating consume approx. **70%** of country total fuel consumption
 - pipelines with out-of-repair rate **50-60%**
 - losses in heat supply – **order of magnitude higher** than in EU
- Simple cost-effective measures have already applied
 - current cost of energy efficiency measures exceeds **USD 500** per 1 t.c.e. saved
- Improvement of EE relevant institutional and legal framework
- Increase of efficiency of fuel and energy (supply and demand sides)
- Main indicators:
 - decrease energy intensity until 2015 by **50%** of the level of 2005
 - decrease energy intensity until 2020 by **60%** of the level of 2005

GHG emission reduction measures

energy efficiency measures

■ Supply side:

- transmission of heat loads from boiler houses to CHPs
- increase of the use of secondary energy resources (waste heat, high pressure)
- putting into operation of power generation equipment with combine cycle and co-generation
- introduction of frequency converters for variable speed drives
- thermal control of heat load
- decentralization of peak heat supply
- heat pump technology
- decrease energy and heat loss in the grid and pipelines

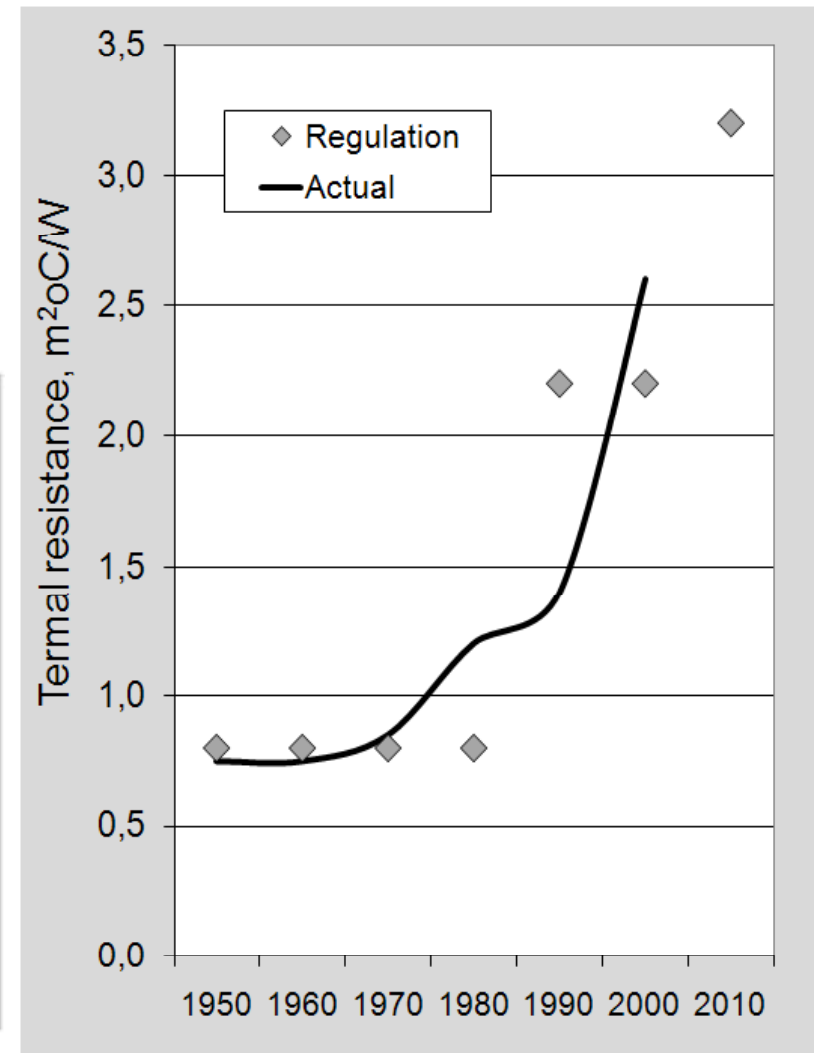
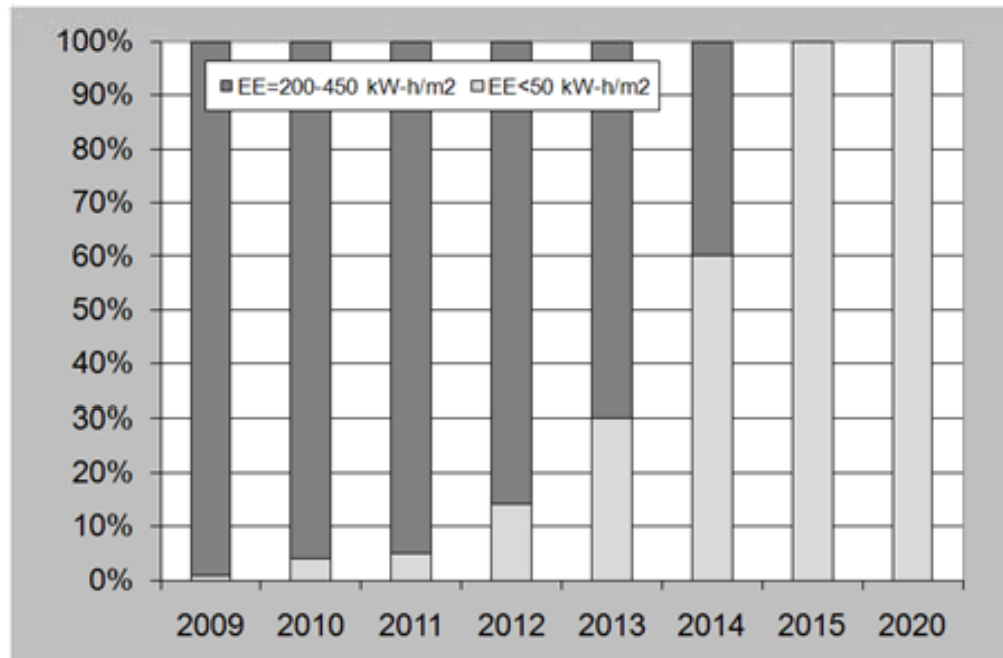
■ Demand side:

- temperature reduction in summer time (90 to 60°C)
- durability 2-3 times higher, heat loss by 2-4% less, cost 1.3-3 times lower
- substations, flow meter, heat recorder in each building
- new construction materials and heat recovery in buildings
- other measures

GHG emission reduction measures

energy efficiency in buildings

- Building standards, operation and maintaining standards
- Condominiums and record keeping
- Mitigation potential of EE in buildings
> **50 MtCO₂eq** in 2008-2020



GHG emission reduction measures

barriers for additional measures

- The 1990-1996 economy recessions with sufficient financial losses
- Foreign investments are limited
 - its share is only **6.5%** of GDP, or about 0.68 k\$USD per capita (i.e. by a factor of **10 less** than for other countries in transition in average)
- Other priorities prevail
 - remediation of the Chernobyl affected regions
 - safeguarding of foodstuff supply and power supply security
 - increased use of local fuels, including peat and coal (diversification of fuel supply)
- Limited speed of BAT transfer due to underdeveloped infrastructure
- Additional financial resources are questionable:
 - Kyoto mechanisms may not be available until 2012

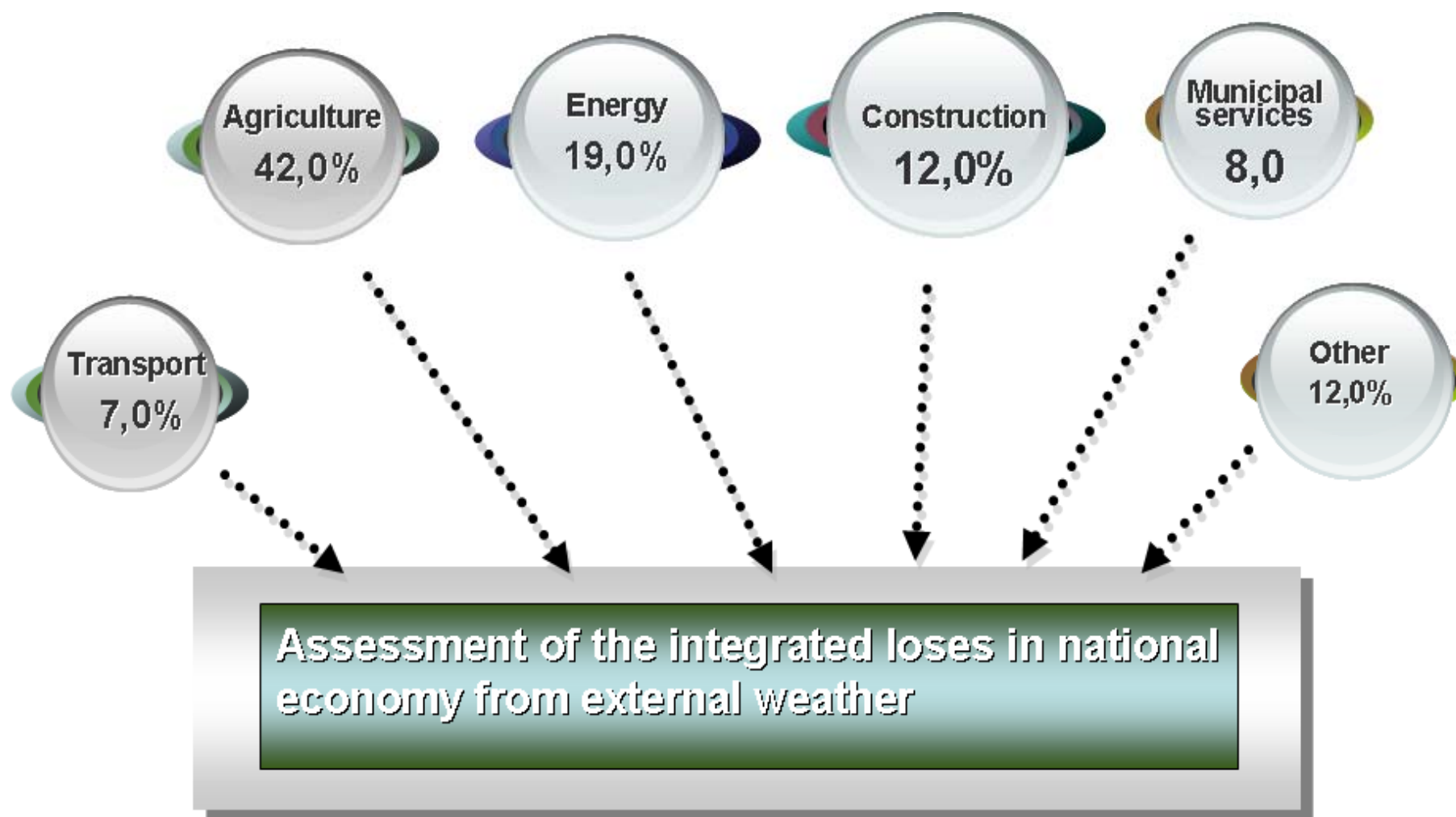
GHG emission reduction measures

climate change policy in 2012-2020

- Background framework:
 - UNFCCC (since 2000)
 - Copenhagen Accord (since Feb 2010) and follow-up legally binding agreements under current UNFCCC negotiation process
- To be elaborated and adopted
 - Low-emission Development Strategy for 2013-2020
 - Action Plan for 2013-2020
- Climate Protection Law
 - concept adopted
 - draft submitted
- Carbon Financing Regulations
 - tax redemption, carbon duties
- Other relevant legal acts
 - Energy Saving Law
 - Renewable Energy Law

Measures on adaptation to climate change

climate change impact on economy



Measures on adaptation to climate change

principal legal and institutional framework

- Institutional and legal framework
 - the Climate Protection Law (expected enactment in 2011)
- Provide sustainable development for the most vulnerable sectors
- Flexible approach
 - insurance policy
 - national adaptation fund
- Research on vulnerability, adaptation need study and design of countermeasures
- Prompt measures must be conducted:
 - land degradation prevention
 - selection and introduction of new agriculture varieties
 - new crop protecting agents and soil protecting technologies

Degraded peatland restoration

3



United Nations Climate Change Conference, Cancun, 2010

Peatlands and human activity

why peatlands ?



- Peatlands are the most space effective ecosystems in terms of carbon storage
- In the boreal zone they contain 7 times more carbon per ha than any other ecosystem
- Carbon is accumulated and stored as long as the peatland stays wet.
- Drainage of peatlands leads to huge emissions
- Peatlands fires double GHG emissions



Peatlands and human activity

why Belarus ?



- Peatlands cover 14.2% of the territory of Belarus (2,9 M ha)
- Belarus is world No.17 as to peatlands area
- Belarus is world No. 8 as to GHG emissions from degraded peatlands
- In 1960-1990 over 50% of peatlands (1,5 M ha) were drained.
- Approx. 70% are drained for agriculture
- Large areas of drained peatlands are now abandoned or ineffectively used
- 2-8 thousand peat fires every year in Belarus

Peatlands and human activity

anthropogenic impact

Peat extraction



Forestry

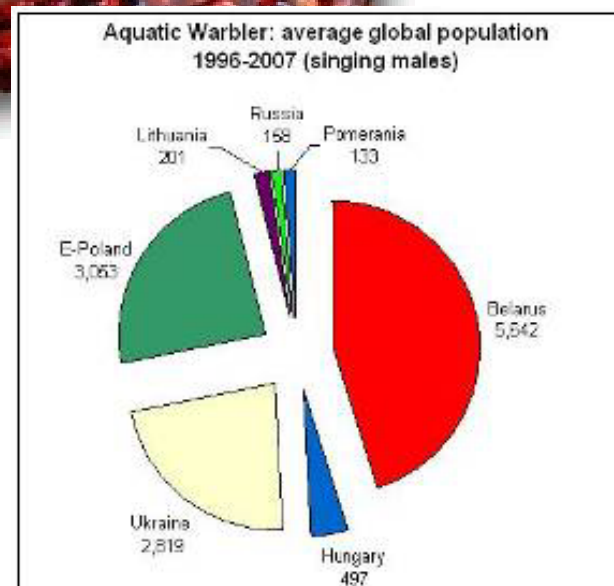
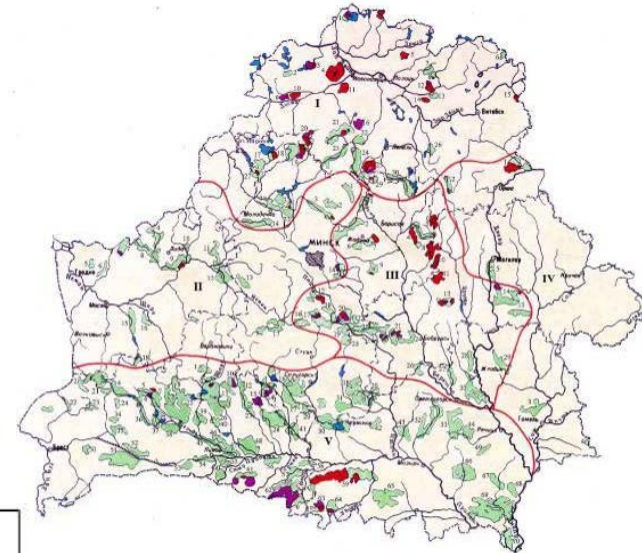


Agriculture



Peatlands and human activity

peatland environmental services



Concept of peatland sustainable management projects for peatland restoration

● UNDP/GEF Project (2006-2010)



Ministry of Forestry of the Republic of Belarus

● GEF SGP Projects (2008-2011)



Ministry of Forestry of the Republic of Belarus
Village councils

● Belarus Climate & Biodiversity projects (2008-2012)



Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit

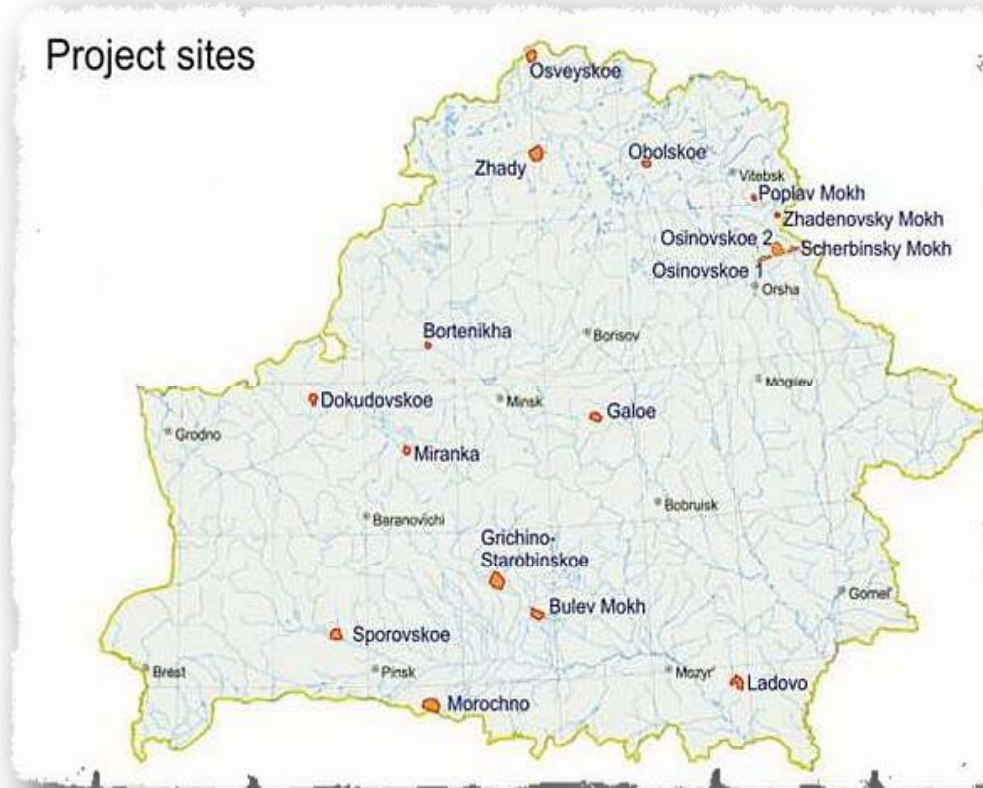


United Nations Climate Change Conference, Cancun, 2010

Concept of peatland sustainable management

pioneer UNDP/GEF projects

Project sites



- Project target:
rewetting 17 sites with total area of 42'000 ha
- Current status:
15 sites restored with the total area of 25'782ha
- Preliminary data (2009):
CO₂ emission reduction by about 220'000 t/a



Concept of peatland sustainable management

GEF SGP Projects



- Currently – 5 project sites (*Elnia, Ostrovskoe, Khorevskoe, Dokudovskoe, Galoe*)
- Natural and degraded peatlands
- Restoration activities on the territory of 6000 ha



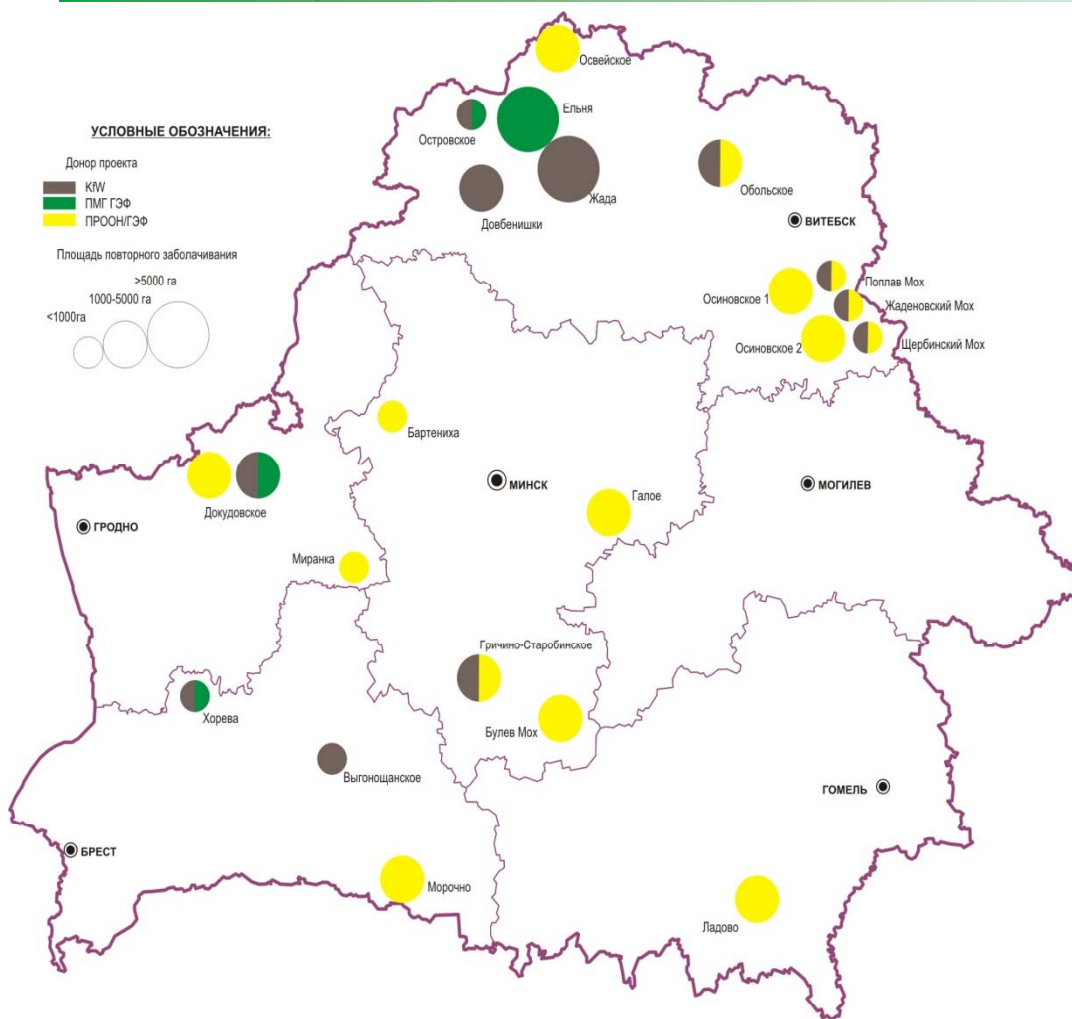
Concept of peatland sustainable management

Involvement of local 'peatland keepers'



Concept of peatland sustainable management

CC project with Economic and Biodiversity Benefits



- IKI BMU Climate mitigation initiative coordinated by KfW
- Re-wetting of 15'000 ha
- GHG emission reduction
- Conservation of biodiversity
- Sustainable Peatland Management

VCS for Peatland Rewetting and Conservation

selling voluntary emission reductions

- Voluntary Carbon Standard (amended for inclusion of Peatland Rewetting and Conservation Activities) passed peer review and public review, under adoption Voluntary Carbon Standard 2007.1
- Guidance for Agriculture, Forestry and Other Land Use Projects amended for inclusion of Peatland Rewetting and Conservation (PRC)
 - Afforestation, Reforestation and Revegetation (ARR)
 - Agricultural Land Management (ALM)
 - Improved Forest Management (IFM)
 - Reduced Emissions from Deforestation and Degradation (REDD)
 - **Peatland Rewetting and Conservation (PRC)**
- Baseline and Monitoring Methodology for the Rewetting of Drained Peatland used For Peat Extraction, Forestry and Agriculture based on GESTs and Water Level
- Tool to Calculate Emission Reductions after Rewetting and Conduct Monitoring
- Validated Project Documents for project sites



VCS for Peatland Rewetting and Conservation

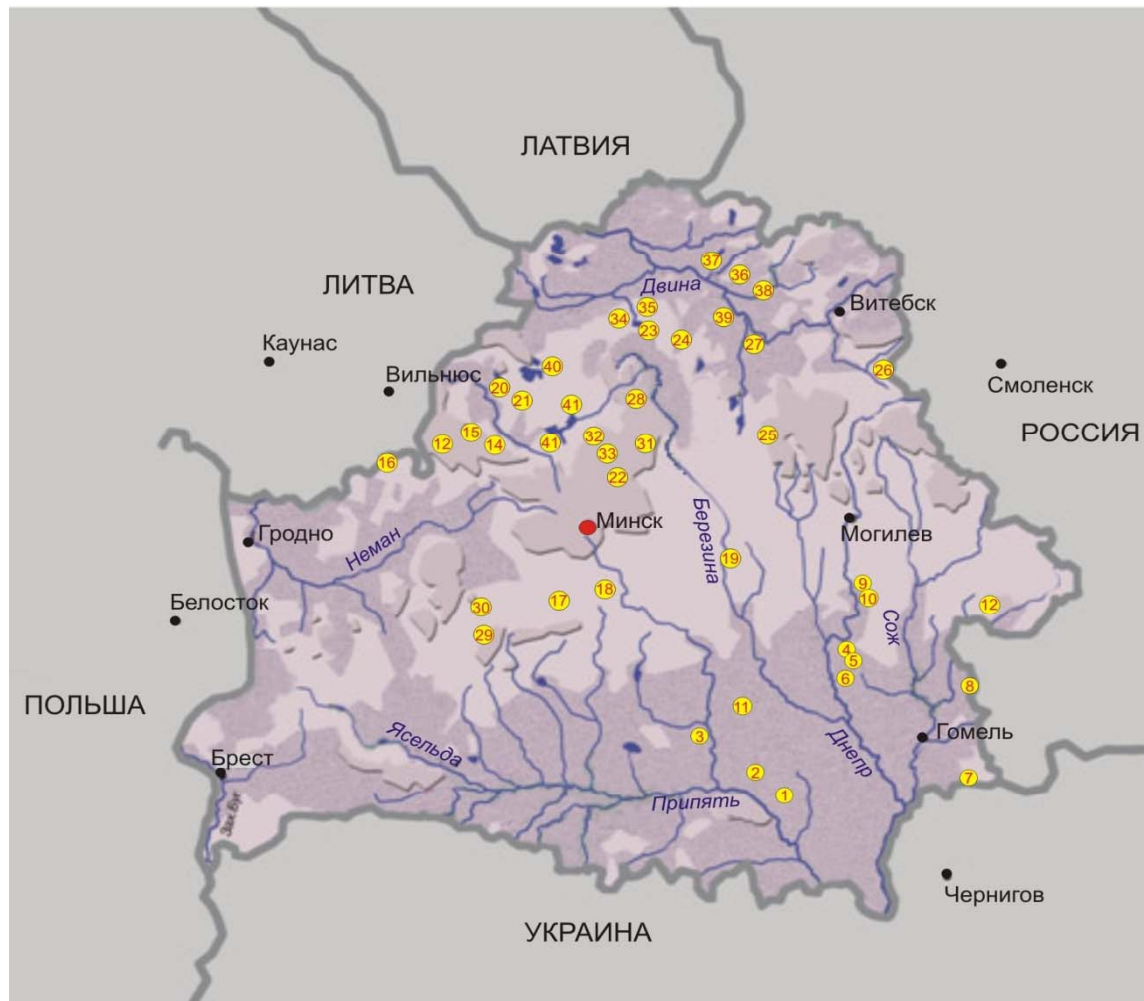
tool to calculate emission reductions



- Gives the possibility to connect vegetation type with balance of GHG ases
- Gives the possibility to use vegetation as a proxi and estimate GHG balance of the sites based on the analysis of geobothanical data
- Based on the analysis of literature data ...
- ... and adapting them to BY conditions through direct measurement on local sites

VCS for Peatland Rewetting and Conservation

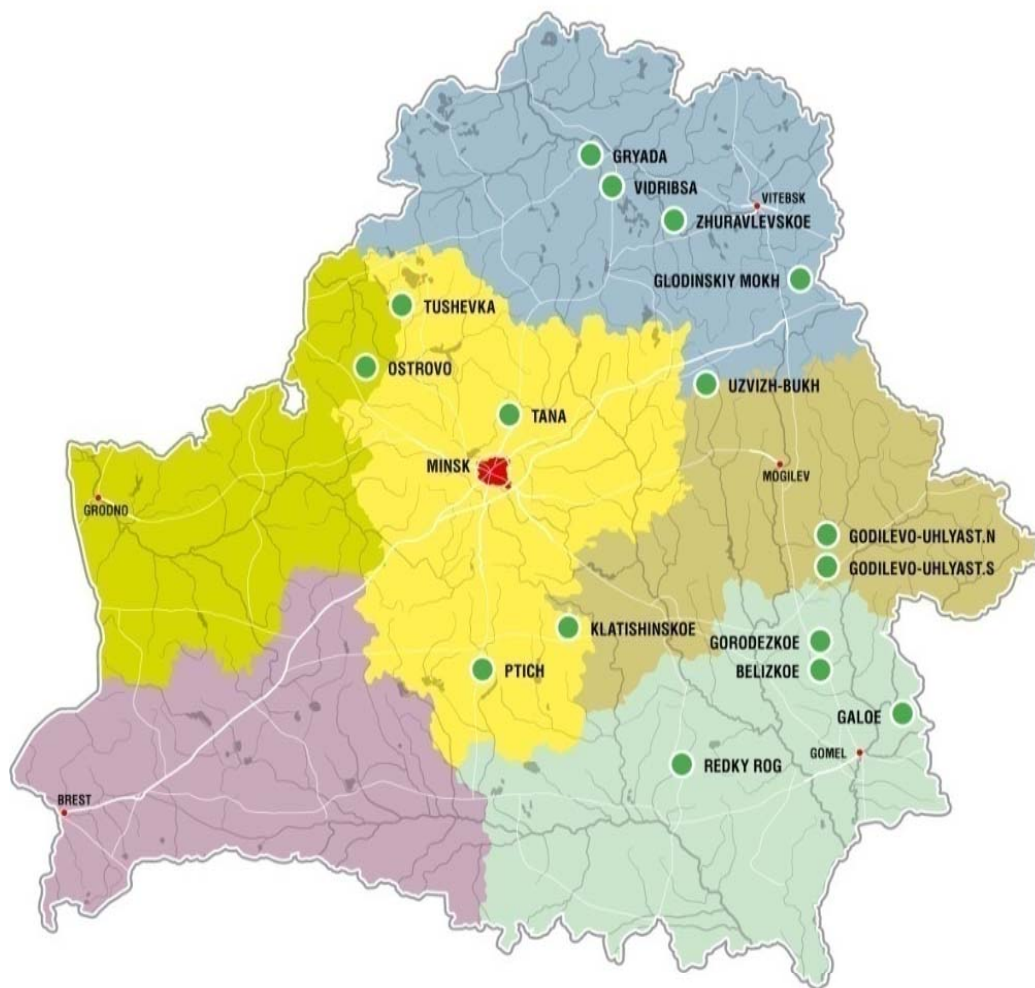
rewetting strategy 2011-2015



- 41 selected sites
- Total area – 40 000 ha
- Estimated emission reductions after rewetting activities (years 1-20) amount to 1 MtCO₂e
- Annual emission reductions - c. 50000 tCO₂e (from 16 000 to 83 000 t CO₂e)

VCS for Peatland Rewetting and Conservation

rewetting of peatlands: climate initiative



- 23 sites, 28 000 ha
- Project implementation period ('ground' activities): 5 years (assuming crediting period of 20 years)
- Total estimated emission reductions within the crediting period: 817 234 tCO₂e
- Annual emission reductions: from 16 000 (Y2) to 43 000 (Y20) tCO₂e
- Total project cost is roughly: 3 800 000 Euro

Republic of Belarus in Cancun

4



COP decision on EIT

EIT countries: general overview

- Achievable scale of reductions by Annex I Parties in aggregate:
25-30% of 1990 level until 2020
- EIT countries have already experienced significant 50% emission reduction within 8-year period, and it was not easy (requires **50-60%** GDP drop)
- All countries must assume responsibility and commitments based on UNFCCC principals
 - due account of different phases of national economy development
 - due account of national priorities and availability of resources
- Sufficient gap exists among EIT and other Annex I Parties



COP decision on EIT

draft COP decision

- EIT countries are not capable to provide for Non-Annex I countries:
 - additional financing; technology transfer; capacity building

- EIT countries need an access to BAT
 - assess to repayable financing with reasonable interest rate
 - best business models
 - harmonization of norms and standards
 - increase transfer rate of BAT through, e.g. carbon financing through flexible mechanisms

- EIT countries need capacity-building
 - remove other barriers (underdeveloped infrastructure)
 - provide experience enhancement and share best practice
 - provide awareness raising

- EIT countries need investments, but need no financial aid

- *Decides that the EIT Parties shall not be bound by legal commitments under the post-2012 climate change arrangements to provide new and additional financial resources, technology transfer and institutional capacity-building in support of developing country Parties in enabling enhanced implementation of mitigation and adaptation actions, although they may wish to consider to do so on a voluntary basis;*

- *Invites Annex I Parties, which are in a position to do so, through multilateral agencies, including through the GEF within its mandate, bilateral agencies and the private sector or through any further arrangements, as appropriate, to make available the capacity building, financial, technical and technology transfer assistance for the EIT Parties in order to assist these Parties in the development and implementation of their national low-emission development strategy and action plans consistent with their priorities and with their emission reduction targets;*

- *Urges multilateral and bilateral agencies to coordinate their activities in support of the implementation of this assistance.*

CMP decision on Kyoto Protocol, Art 21

draft CMP decision

- Provide for a mechanism of easy correction of QELROs and acceptance of relevant amendment through a simple adjustment or “opt-out” procedure especially if:
 - the amendment stipulates for a Party’s more stringent QELRO than it has been inscribed in Annex B, or
 - the Party proposes an amendment to Annex B that stipulates for such Party’s QELRO, which has not been inscribed in Annex B

■ 7bis:

- *... If the Party proposes an amendment to Annex B that stipulates for such Party’s more stringent quantified emission limitation or reduction commitment than it has been inscribed in Annex B or the Party proposes an amendment to Annex B that stipulates for such Party’s quantified emission limitation or reduction commitment, which has not been inscribed in Annex B, the adopted amendment shall enter into force for all Parties to this Protocol six months after the date of the communication by the Depositary to such Parties of the adoption of the amendment to the annex...*

CMP decision on JISC's Report, para 26

draft CMP decision

- Prior to entering into force:
 - review of Initial Report
 - start Track 2 procedure
- *“... The JISC, in response to a query from stakeholders and the DFP of Belarus, agreed to recommend to the CMP that the UNFCCC secretariat accept for publication PDDs of JI projects, and that the JISC consider these projects in accordance with the JI guidelines, before an amendment to include the respective host Party in Annex B to the Kyoto Protocol enters into force, noting that the host Party may issue and transfer ERUs only after the amendment to include it in Annex B enters into force...”*

Why Belarus still needs Annex B

background and rationale

- Our Kyoto target is the most stringent: **-15%** (**-8%** of 1990 emission level **plus -7%** of additional commitment reserve)
- **5** years passed since this amendment was first initiated in 2005
- Only **23** countries (of **144**) sent their acceptance instruments to the Depositary so far (**16%**)
- A failure of whole construction of the Kyoto Protocol especially with regard to its Art. 21
- Potential failure of the post-Kyoto commitments acceptance procedure if it is based on the same principals
- A benchmark for at least 2-year gap between the Kyoto Protocol and the enactment of a New Climate Agreement

Why Belarus still needs Annex B

proposal to facilitate the ratification

- To legitimate our commitments that provides
 - involving our commitments into international MRV and compliance system
 - developing national GHG emission reduction regulations
 - introducing national emission reduction trading
- To raise incentives for local industries in conducting GHG emission reduction measures
- To enhance additional measures
 - ca. 140 GHG emission abatement projects
 - develop adequate infrastructure to accommodate best available technologies
 - capacity building, technology transfer, experience share
 - scaling-up, replication and multiplication of additional measures
- Proposal to CMP decision:
 - *Invites the Parties to the Kyoto Protocol that have not yet accepted the amendment to Annex B to the Kyoto Protocol as per decision 10/CMP.2 to proceed to their acceptance procedure concerning this amendment in conjunction with acceptance procedure concerning any next amendment to the Kyoto Protocol or any next amendment to annexes to the Kyoto Protocol pending such acceptance.*

Conclusion

welcome to Belarus



Belarus continues to follow its climate change policy and needs more active cooperation with other Annex I and non-Annex I Parties.

Belarus can help you to combat the climate change.



THANK YOU !

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United Nations Climate Change Conference, Cancun, 2010