

Shaping the post-2012 climate regime: Implications for Central and Eastern Europe and Turkey

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Abbreviations

AAU	assigned amount unit
AR4	IPCC's Fourth Assessment Report, 2007
AWG-KP	Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol
AWG-LCA	Ad Hoc Working Group on Long-Term Cooperative Action under the Convention
BAP	Bali Action Plan
CCS	carbon capture and storage
CDM	Clean Development Mechanism
CER	Certified emission reduction
CG	Central Group
COP	Conference of the Parties
CDM EB	Clean Development Mechanism Executive Board
EIT	Economies in transition
EC	European Commission
EU	European Union
EU ETS	European Union Emission Trading Scheme
ERU	Emission reduction unit
GEF	Global Environmental Facility
GHG	Greenhouse gas
IET	International emission trading
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
KP	Kyoto Protocol
MOP	Meeting of the Parties
MRV	Measurement, reporting and verification
NAMAs	Nationally appropriate mitigation actions
NC	National communications
NCCAP	National Climate Change Action Plan
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PDD	Project design document
QUELROs	Quantified emission limitation and reduction objectives
REC	Regional Environmental Center for Central and Eastern Europe
SPO	State planning organisation
TGNA	Turkish Grant National Assembly
TPES	Total primary energy supply
TurkStat	Turkish Statistical Institute
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary carbon market
VCP	Voluntary carbon project
VER	Voluntary emission reduction

1. Introduction

1.1. Background

According to the United Nations Framework Convention on Climate Change (UNFCCC), the ultimate objective of climate policy is defined as the “stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (Article 2). The Kyoto Protocol, adopted in 1997, is the first legally binding document aimed at reducing greenhouse gas (GHG) emissions and was an initial step towards achieving the GHG stabilisation objective. However, the Kyoto Protocol lacks global consensus: the USA, the biggest emitter, refused to join and did not agree to a legal reduction commitment. It was clear from the beginning that, even if the major emitters had joined, reduction targets would not have resulted in keeping the global warming rate within the target of 2 degrees centigrade.

There have been intensive international discussions and negotiations on how to shape the climate regime after the first commitment period. In the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC), the targets to be achieved are described very clearly. In order to keep global warming below 2 degrees centigrade, global GHG emissions must peak before 2020. No further increase can be allowed on a global level. A global GHG reduction of 50 percent of the 2000 level is to be achieved by 2050. Industrialised countries must reduce their emissions by up to 80 percent of the 2000 level by 2050. At the same time, adaptation to the consequences of climate change should be a priority (speech by Yvo de Boer at the Delhi Sustainable Development Summit, New Delhi, February 5-7, 2009

http://unfccc.int/files/press/news_room/statements/application/pdf/090203_speech_dehli.pdf

While it is clear that the GHG emissions targets of developed countries need to be further tightened in the post-2012 climate change regime, no solution can be expected without the involvement of developing countries. It is therefore crucial to identify the most likely approach to stimulate developing countries to take appropriate action in the post-2012 climate regime.

The post-2012 climate regime is likely to be very different from that of the first commitment period. The Bali Roadmap was adopted during the 13th Conference of the Parties (COP13) in Bali in 2007, providing a general framework for negotiations to achieve a final deal at COP15 in Copenhagen in 2009. It was agreed in Bali that the four main pillars of the new regime should be mitigation, adaptation, technology transfer and financing. It is envisaged that the new framework will have a more balanced focus among these four building blocks.

The annex to this paper summarises the main types of approach to setting the next commitment targets.

The main issues to be tackled in order to achieve global consensus on the future climate regime are reduction targets, the scope of countries' legal commitments, the nature of those commitments, and the basis of burden sharing. Timing is also an extremely important factor. It is clear that more stringent reporting is needed; the scope of the compliance regime must be extended; more policies and measures need to be developed and implemented; and greater human and financial resources are required for activities related to climate change. There is also a need for constant capacity building and the strengthening of climate protection activities.

1.2. The international scene

International negotiations follow two different tracks towards shaping the post-2012 climate regime. The UNFCCC Dialogue on Long-Term Cooperative Action was initiated in 2005 (at

COP11/MOP1 in Montreal) in order to encourage discussion and the exchange of ideas about further reduction commitments by developed countries. The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) was established at the same time. As a follow-up to the UNFCCC Dialogue, a new process was initiated in Bali during COP13 with the setting up of a second ad hoc working group, this time for long-term cooperative action under the convention (AWG-LCA). The mandate of the AWG-LCA is to find ways and means for all parties to collaborate and successfully implement the UNFCCC now and beyond 2012. The mandate for both working groups is valid until the end of 2009.

The Bali Roadmap combines the two tracks and defines the milestones towards the final international deal to be achieved at the 2009 COP15 in Copenhagen. The Bali Roadmap includes the following main elements:

The Bali Action Plan

The Bali Action Plan (BAP), adopted by the parties at COP13, is intended to ensure a global approach linking together the developed and developing world. The aim is to involve the major emitters and to ensure a balance between the imperatives of economic growth and those of poverty eradication by shaping a shared vision for long-term cooperative action, including a long-term global target for emission reduction. According to the BAP, the most urgent requirements are:

- to define in a measurable, reportable and verifiable way, nationally appropriate emission limitation commitments for developed countries and mitigation actions for developing countries;
- to determine essential actions for adaptation to the inevitable impacts of climate change;
- to mobilise the necessary finances and technology to support these actions in a measurable, reportable and verifiable way;
- to enhance national/international mitigation and adaptation actions;
- to enhance technological development; and
- to enhance the provision of financial resources and investments to support mitigation, adaptation and technological cooperation.

In Bali, the developing countries indicated their willingness to step up their mitigation activities, while at the same time they expressed concerns regarding poverty reduction and economic growth.

According to the Bali Roadmap, developing countries need measurable, reportable and verifiable financial and technological support in order to implement mitigation actions over and above what they are already doing.

At COP14 in Poznan there was no visible progress, although the AWG-LCA held its fourth session there (FCCC/AWGLCA/2008/L.11,

<http://unfccc.int/resource/docs/2008/awglca4/eng/l11.pdf>).

The working group's Assembly Document on Enhanced Action on Adaptation includes ideas and proposals presented by parties and accredited organisations on the main elements of the BAP. Further sessions are scheduled for 2009 to fulfil its mandate.

The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and Review of the Kyoto Protocol (Article 9 of the Kyoto Protocol)

The aim of the working group is to complete negotiations on new emission reduction targets for industrialised countries, mitigation potential and ranges of emission reduction objectives, and possible means to achieve these objectives. The second review of the Kyoto Protocol is intended to further enhance its implementation and covers privileges and immunities, flexible mechanisms and response measures. The AWG-KP is considering possible improvements to emission trading and the project-based mechanisms under the Kyoto Protocol, with the aim of enhancing their effectiveness

and their contribution to sustainable development, and of achieving the ultimate goal of the convention.

Practically no progress was achieved during COP14 in Poznan. An in-session workshop was organised, at which mitigation potential and ranges of emission reduction objectives by Annex I parties were discussed. No agreement was reached on the scope and content of the second review and there were no conclusions on mitigation potential and ranges. The AWG-KP noted the elaboration of possible improvements to emission trading and flexible mechanisms.

The project-based flexible mechanism among Annex I countries — joint implementation (JI) — was mentioned more often than in earlier COPs. Several reforms were proposed for revitalising it and a JI action group was established.

The AWG-KP agreed that further commitments for Annex I parties under the second commitment period should principally take the form of quantified emission limitation and reduction objectives (QELRO)

(FCCC/KP/AWG/2008/8 <http://unfccc.int/resource/docs/2008/awg6/eng/08.pdf>)

1.3. The Central and Eastern European region and Turkey

Central and Eastern Europe (CEE) and Turkey comprise a very diverse region from both an economic and an environmental point of view, including environmental policy and the existing legal framework. There are also differences in terms of status with respect to the UNFCCC: the region contains both Annex I and non-Annex I countries; and Annex I CEE countries include both EU member states and non-member states.

The majority of Annex I CEE countries are members of the EU, with the exception of Croatia, which has a reduction target. The situation among the new member states in terms of tackling climate change is very different from that of the old member states. On the one hand, their GHG emissions are still very much below the Kyoto target (with the exception of Slovenia), largely due to the economic recession that followed the change of political system. On the other hand, they still lack the necessary financial means and political will to achieve further GHG reductions, since environmental protection is still not a priority. Approximation to EU legislation is required, and huge efforts are still needed in order to achieve compliance. Most EU laws need to be transposed into the national legislation: approval has been given for delayed transposition in only a few cases. At present, the new EU member states face severe economic problems: the global financial crisis has been superimposed on existing national economic difficulties.

Circumstances in the South East European region differ from those in the new EU member states. Five countries in SEE (Albania, Bosnia and Herzegovina, Montenegro, the former Yugoslav Republic of Macedonia and Serbia) belong among the non-Annex I parties and one (Croatia) is an Annex I party. The non-Annex I SEE countries also have certain commitments under the UNFCCC, including the submission of a national communication to the UNFCCC Secretariat containing data and GHG inventory preparation. In these countries, climate change is still regarded as a low governmental priority (although the situation is improving). Public awareness is increasing, although there remains a lack of knowledge about climate change. At present, all countries in the SEE region are parties to the UNFCCC and to the Kyoto Protocol and are eligible to undertake CDM projects. Two of the SEE countries are already EU candidate countries, while the rest plan to join the EU in the future. The countries of SEE are in a difficult situation — they are less developed than the developed countries (even compared with the new EU member states) but are not considered as developing countries, and, as a consequence, are not eligible to receive support from certain financing mechanisms (e.g. the Adaptation Fund). Nevertheless, they do need support, bearing in mind the fact that, according to the IPCC AR4 report, the SEE region is extremely vulnerable to the effects of climate change and, consequently, adaptation is crucial for these countries.

Turkey is in the unique position of being listed among the Annex I countries to the UNFCCC while not being included in Annex B to the Kyoto Protocol, thus there is no GHG emission reduction obligation. Bearing in mind the size of the country and of its population, and its current high level of economic progress, Turkey has a significant role to play in the climate negotiation process. Turkey has recently made progress, having ratified the Kyoto Protocol in February 2009. Negotiations on accession are also taking place between Turkey and the EU.

Taking into account the issues described above, background papers have been written for three groups of countries, focusing on specific problems and implications for the future climate regime.

2. Implications of the post-2012 climate regime

2.1 New EU member states in the post-2012 climate regime

The aim of this section is to discuss the potential implications of the post-2012 climate change regime for new member states (NMSs) of the European Union¹, as well as current negotiations and the way this group of countries is positioned with respect to international climate negotiations, via the representation of the European Union. During the research it became evident that the interests and position of the NMSs contain more similarities than differences, despite the diversity of national circumstances.

Section 2.1.1 briefly describes the state of play regarding international climate negotiations and EU internal policy of relevance to NMSs. Section 2.1.2 evaluates the possible implications of various international policy scenarios and identifies common issues for NMSs in the post-2012 world, including measures likely to be taken and changes likely to be implemented. In Section 2.1.3, the paper includes brief country-specific summaries of national circumstances, and the final section draws a number of conclusions.

Background conditions

Climate-related actions by NMSs are influenced on three main levels: international, EU and country specific.

International action on climate change is of particular importance for NMSs, as these countries typically implement only mandatory mitigation measures that derive from internationally agreed targets and their EU-level or country-level implementation. This is mainly due to the low level of political awareness on climate change and the political culture of the countries of the region.

On the international level, the post-2012 negotiations are still in the early stages, despite the fact that, in December 2007, the Bali roadmap gave directions and a timeframe for the elaboration of the post-2012 international climate framework. The year 2008 was one of missed opportunities and ended in a typical holding session-type COP where very little moved forward. During the session, the introduction of new ideas was a task that shifted from the EU to developing countries. The EU itself focused more on the peak of negotiations on the “climate-energy” package in Brussels than on advance in Poznan. This loss of a year gives rise to scepticism as to whether the end of the roadmap will bring the desired new international framework for negotiations in December 2009.²

Agreeing on a global, post-2012 climate policy regime is an enormous challenge. The defining questions to be answered are:

¹ The paper focuses on the following new member states: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia

² Santarius at al. *Pit Stop Poznan. An Analysis of Negotiations on the Bali Action Plan at the Stopover to Copenhagen*. Wuppertal Institute, 2009.

- What is the appropriate scale of ambition?
- What are the most efficient mechanisms for achieving the agreed objective?
- Which country-by-country commitments and actions would represent a fair and equitable outcome?

In the current negotiation process, none of these questions have been answered, nor is it possible to anticipate answers.

Lack of progress at the international negotiations goes hand in hand with increased demand for results — scientists offer darker and darker pictures of rising emissions and the increasingly likely and hard to avoid impacts of climate change. Today, the results of the IPCC's Fourth Assessment Report, 2007 (AR4) — published at the time the Bali roadmap was agreed — are already outdated. The roadmap mentions emission reduction in the range of 25 to 40 percent below the 1990 level by developed countries, presupposing that developing countries are acting as well. For 2050 targets, the modelling of various regime types shows similar ranges of emission reductions for the group of developed countries — 70 to 90 percent reduction in GHG emissions compared to 1990 (550 ppmv CO_{2e} scenario).

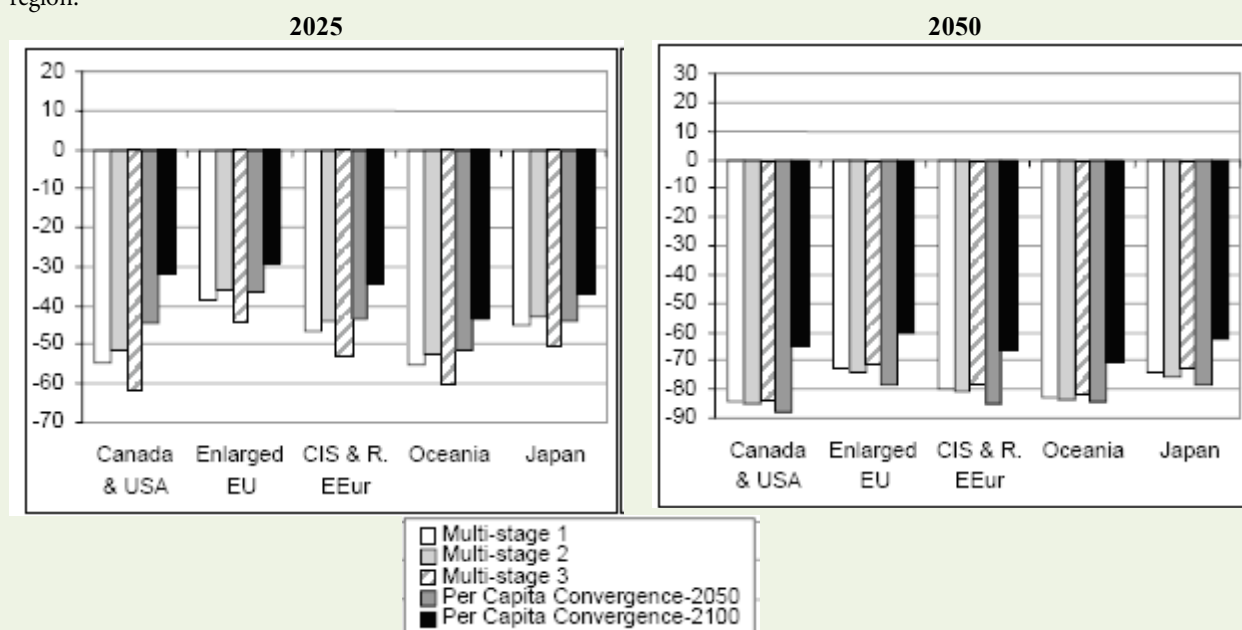
Various regime models were investigated with respect to their implications for different regions. A general lesson of modelling is that regions with high per capita emissions and high income (the OECD regions as of 1990) can anticipate average effort rates. Regions with medium to high per capita emissions, but medium to low income (the Community of Independent States, Latin America and the Middle East) show quite high effort rates. Regions with low per capita emissions and low income (Africa and South Asia) often show net gains from emissions trading.³

³ “Greenhouse gas reduction pathways in the UNFCCC process up to 2025.” CNRS/LEPII-EPE (France) – RIVM/MNP (Netherlands) – ICCS-NTUA (Greece) – CES-KUL (Belgium), October 2003

Modelling: Multi-stage and per capita convergence

Research aimed at a comparison of various regime options for major regions in a future climate regime was carried out using modelling. It included, and most dominantly featured, the multi-stage approach and the per capita convergence approach. The modelling assessed the acceptability of international emission targets and time horizons for different regions. In the multi-stage models, different varieties are possible depending on the trigger point and time when a country graduates from one level to another.

For 2025, with a 550 ppmv CO₂e target, emission reduction needs result in reductions from the baseline of between 40 percent for Europe and Japan and 50 percent for North America and Oceania in the multi-stage 1, multi-stage 2 and per capita convergence–2050 cases. Multi-stage 3 corresponds to reductions that are about 10 percentage points greater in each region.



For 2050, the three multi-stage and the per capita convergence–2050 scenarios show a substantial gap between the emission reduction needs and the baseline, as they correspond to reductions of more than 70 percent in Europe and Japan and of more than 80 percent in North America, the Community of Independent States and Oceania.

For NMSs, modelling may convey an implicit message. Since these countries have relatively high per capita emissions but only moderately high income, they will have to make greater effort rates than old member states — unless EU internal burden sharing cushions the impact of the situation.

The economic and financial crisis has put the international climate negotiation process under a dark cloud and threatens the availability of financial resources for mitigation and adaptation measures. Despite calls to respond to the difficulties with climate-aware, green development programmes for NMSs, and for the EU as a whole, in the current conditions crisis management priorities are overruling all long-term policy-based development.

For the NMSs, the lack of an international framework does not imply the entire absence of pressure, since the EU is making efforts to accommodate in advance the upcoming international climate policy framework, partly with the aim of motivating international climate negotiations.

The EU approved a climate-energy package in December 2008, which applies two scenarios for a set of measures to assist in the fight against climate change as well as to promote other aims — for example energy security. This package contains measures for and limitations on member states — firstly in a scenario in which there is no comprehensive international agreement on climate change; and secondly in a scenario in which such an agreement exists. Of the two scenarios, the factual basis of negotiations among member states has been the “without international agreement” scenario. However, there is a political agreement, endorsed by the Spring 2007 European Council, that in the

case of the “with international agreement scenario” the EU will commit to a 30 percent GHG emission reduction compared to the 1990 level by 2020. If the conditions for the “with international agreement” scenario are fulfilled, it will trigger a change in the EU internal effort-sharing legislation.⁴ There are already some elements of this scenario approved:

- Agreed commitment targets for member states should be adjusted to be consistent with the higher international target.
- The proposed changes should allow for member states to use certified emission reductions (CERs), emission reduction units (ERUs) or other approved credits from projects in third countries that have ratified the international agreement, in addition to the credits that are already allowed under the 20 percent scenario.
- The scenario allows for the transfer of unused carbon credits between member states.
- The scenario opens up the possibility to use other, non-specified future measures for emission reductions, mechanisms and credit types created under the international agreement.
- The Commission will make a proposal on the inclusion of land use, land-use change and forestry (LULUCF) activities in the EU emission reduction commitments.
- The scenario will allow for operators to use additional credits from third countries (CERs, ERUs etc.) and additional types of project credits in the EU emission trading system.

The existing measures for the “without” scenario are planned to result in a 20 percent cut in GHG emissions compared to 1990 (with 21 percent emission reductions in the EU emission trading scheme [ETS] sector and 10 percent GHG reductions in the non-ETS sector compared to 2005), a 20 percent increase in energy efficiency, and a minimum share of 10 percent biofuels in petrol and diesel by 2020. One important element of the package is that member states’ binding annual non-ETS GHG emission levels should not deviate by more than 5 percent between the years within the period. The scenario also takes into account new efficiency standards for boilers and water heaters, for example, together with adequate labelling systems to inform consumers, which could help deliver major emissions reductions in buildings. The full implementation of the EC Landfill Directive (in 2016) will deliver further important emission reductions, since reducing the landfilling of biodegradable waste will bring about a major reduction in emissions of methane, a powerful GHG.

The structure of the climate-energy package means that there can be no overall legally binding national target for GHG emissions for all the GHG emissions of a given member state — the EU ETS sectors, which are responsible for some 40 percent of EU GHG emissions, will be under a centralised EU-level cap-and-trade system, where member states have a limited influence on the emissions of these sectors.

While no further concrete details are provided in the text of the directive regarding the “with” scenario, the thinking of the European Commission is known regarding the tightening of the EU climate regime in the case of the “with” scenario. In the increased emission reduction scenario, it is envisioned that one-third of the efforts would be fulfilled by the purchase of carbon credits from third countries both within and outside the ETS.⁵ The Commission was at one stage thinking to keep the proportions of the ETS and non-ETS sectors and the targets in the non-ETS sector the same in the case of the “with” scenario as those agreed in the case of the “without” scenario.

The European Commission published the communication “Towards a comprehensive climate change agreement” in Copenhagen in January 2009. This document, supported by the Conclusions of the Environmental Council in March 2008, indicates the EU’s views on the coming international negotiations and the EU’s vision of the main cornerstones of the future international regime. The

⁴ Article 8, European Parliament legislative resolution of 17 December 2008 on the proposal for a decision of the European Parliament and of the Council on the effort of member states to reduce their greenhouse gas emissions to meet the Community’s greenhouse gas emission reduction commitments up to 2020.

⁵ Impact Assessment: Package of implementation measures for the EU’s objectives on climate change and renewable energy for 2020. Commission of the European Communities Brussels, 2008

basic elements of this framework are common among negotiators, although other elements are distinctive and divisive.

It is assumed here that the basic building blocks are the issues and approaches that the EU intends to follow.

Financing: Significantly greater financial resources will be needed to support activities in developing countries. The UNFCCC secretariat has estimated that for adaptation purposes alone, EUR 23 to 54 billion per year are needed for developing countries. For mitigation purposes, too, significantly more mitigation activities are needed in developing countries. As sources of finance, the communication mentions both the international carbon markets and public sources mainly from developed countries.

The question of financing sources is important. Financing within the EU can come from both the Community and the member states. Along with these traditional sources, two options for “innovative” funding have been identified by the Commission and discussed among member states:

A predetermined annual financial commitment by developed countries on the basis of an agreed formula that combines elements of the polluter pays and ability to pay principles.⁶

A certain percentage of the allowed emissions would be set aside from each developed country, and these emission rights would be auctioned.

Emission reduction target: The communication envisages the wide participation of Annex I countries, all OECD countries plus EU member states and candidate countries in the group of countries that commit to the 30 percent target. The document also indicates that developing countries should limit their emission growth to between 15 and 30 percent below the “business as usual” scenario. Such a global construction of commitments is necessary for the EU’s 30 percent commitment, which is sufficient to meet the 2 degrees centigrade target that has been politically declared as an acceptable mean temperature increase.

Global carbon market: It is in the interests of the EU to broaden its carbon market (the EU ETS), to have it encompass OECD countries by 2015, and to further widen it by 2020. It is not entirely clear how the Commission envisions the operationalisation of such an expansion, but this is a tool to influence carbon prices and provide more stability for the carbon market.

Implications

For NMSs, the potential direct implications of the form and content of the future international regime seem indirect and distant in the light of the EU’s commitment to a 30 percent reduction in the event of a comprehensive international climate regime. However, burden sharing within the EU has not been elaborated and the details of the future regime are of paramount importance for the NMSs as well.

The details of the regime raise some profound questions for NMSs. In the following section, 10 different but interconnected aspects of these implications are highlighted.

Emission reduction needs in the “with” scenario

For the NMSs, elaboration of the rules for the new burden sharing is crucial in the event that the “with” scenario is triggered. With respect to this burden sharing, the lessons of the 2008 burden-sharing process should be borne in mind. It is essential that the NMSs should be no worse off in the new EU bubble than they would be if they were to assume their sovereign obligations under the new climate regime, based on the likely commitments. In the light of the 2008 burden sharing there is a high probability that the EU bubble will bring higher cuts for these countries, as their negotiating power is limited, they are unable to maintain effective coalitions and are easily lured into positions of isolation.

⁶ Developing countries may also contribute according to this formula, although eventually they would be net recipients.

As in the 2008 burden-sharing negotiations, the issue of base year also arises here. However, unlike the 2008 negotiations, the old member states have a different interest regarding base year. In the 2008 negotiations, the NMSs were interested in 1990 as the base year in internal EU burden sharing, since the NMSs have significantly reduced their emissions since 1990 (by 28 percent, which is 6.5 percentage points from the 8 percent reduction that the Community can account for in this period). On this issue, all the old member states and the Commission have made a complete turnaround: their interests are now similar to those of the NMSs when negotiating with third countries. The EU common target is also easier for old member states to realise if the early emission reduction efforts made by the NMSs is taken into account. If this is not the case, and the base year is after 2000, they would need to achieve higher emission reductions on their own.

Carbon price has a big impact on the post-2012 regime for a given country since it defines how much extra cost the country should bear and how this will affect society via the economy. The modalities of carbon costs are divided into two parts for EU member states, since the ETS and non-ETS sectors are quasi separate under the new regime.

For ETS, allocation is carried out centrally and local impacts are the result of scarcity plus the availability and cost of external carbon credits (along with other factors). These impacts are felt in the society of a given country and also have overspill effects in sectors outside the EU ETS.

With respect to the ETS sector, NMSs can do very little directly. Indirectly, the main form of influence can be the reduction of the energy demand of the non-ETS sector from the ETS sector. A transition period for the continued free allocation of allowances is possible for NMSs if they can provide an energy sector modernisation plan towards a low carbon society. Early transition from carbon intensive technologies (if possible) to lower carbon intensity is imperative — despite the fact that government and lobby groups still have difficulty facing the inevitable long-term transition to a low-carbon society.

In the non-ETS sectors of the economy, national governments still have more to say about mitigation policy, although total freedom is only an illusion: EU regulations have an impact on more or less the whole spectrum of emissions, from buildings to waste. There is still space for policy development in the non-ETS sector, and this is where allocated emission rights are not likely to be so tight in the period up to 2020. In the “without” scenario, the non-ETS sectors of NMSs are endowed with emission growth possibilities that cannot be utilised domestically, mostly because of the policies mentioned above. However, this unutilised part may be sold to other member states with more stringent targets, and this possibility of trade among member states can serve as a genuine incentive to realise all the cost-efficient mitigation potential.

Scenario for 30 percent reduction

The European Commission’s proposal for the “without” scenario can be used to gain a sense of a potential allocation for the “with” scenario. The Commission’s background study contains a 30 percent reduction scenario — using the 20 percent target as a point of departure. This scenario is the basis of the evaluation below.

In the non-ETS sector, NMSs can make use of several flexible elements to minimise costs. The emission reductions contained in the “without” scenario can be achieved by member states with domestic measures if the carbon price reaches EUR 39/tonne, according to the Commission’s study. The study provides country-by-country model-based estimates for emission reduction potential in both the ETS and non-ETS sectors. The table below takes this EUR 39/tonne as a price estimate for the “with” scenario and the cost-efficient emission reduction potential to show the following:

- The proportion of the ETS sector in the total emissions.
- Projected cost-efficient domestic emission reductions in ETS compared to 2005 at EUR 39/tonne (Community reduction level: 21 percent).
- ETS emissions for the “with” scenario (compared to 2005) — 36 percent emission reduction is envisioned by the Commission compared to 21 percent in the case of the

“without scenario”. It is assumed that the missing 15 percentage points at EUR 39/tonne will be covered by project credits in each of the member states.

- The non-ETS targets, according to the Commission (as given in the original proposal on January 28, 2008).
- Non-ETS cost-efficient level of reduction at EUR 39/tonne.
- Indicative “national targets” (ETS with CER and non-ETS target).
- Likely change in member state emissions (ETS with CER and non-ETS cost-efficient reduction).
- Emission projections by 2020 with existing measures and with additional measures from the Fourth National Communications, compared to 2005.

			BU	CZ	EE	HU	LV	LT	PL	RO	SK	SI	NMSs	EU-27	
ETS/total emissions in 2005			58%	57%	60%	32%	27%	29%	51%	46%	53%	43%	49%	41%	
reduction	ETS	domestic	-35%	-	-	-	-9%	-	-	-2%	-1%	-	-21%	-21%	
		with CER etc.	-50%	-	-	-	24%	-	-	17%	-	-	-36%	-36%	
	non-ETS	target	11%	1%	3%	2%	9%	7%	6%	10%	5%	-3%	5,5%	15,8%	
		cost efficient (domestic)	-19%	-7%	-3%	-6%	24%	-2%	-2%	-1%	-1%	7%	-4,5%	15,8%	
	total	"target"	-24%	-	-	-	0%	-9%	-	-	-2%	-6%	-	-15%	-24%
		cost efficient (domestic)	-28%	24%	24%	14%	15%	11%	10%	-2%	-1%	11%	-13%	-14%	
4th NC	total	with e.m.	50%	-	-	16%	56%	36%	30%	52%	43%	0%	27%		
		with a.m.	34%	-	-	8%	29%	9%	20%	45%	36%	-6%	18%		

It can be seen from the table that for NMSs, emission reduction potential in ETS is similar to the whole of the EU compared to 2005. At the same time, the economies of NMSs are projected to grow faster, thus a significant difference is visible, which points to the less-developed characteristics of NMSs (e.g. the significantly greater energy intensity of their industries and the carbon intensity of their energy production). In the non-ETS sector, emission reductions over the targets are possible, and they can be motivated by sale to old member states.

In the non-ETS sector, an element of solidarity can be seen (i.e. NMSs receive a smaller burden of emission reduction), which somehow balances the burden of the reduction in the ETS, which is heavier in the NMSs. (However, this element of solidarity is only apparent if 2005 is used as base year: it is less visible when 1990 is used as the base year). The discrepancies between the projections by the Commission and the Fourth National Communications point, on the one hand, to the significantly higher carbon price implied by the package; and, on the other hand, to a methodological problem — either in the national projections or in the modelling of the Commission. A third factor here is that the Commission's approach generally ignores the early abatements when setting targets.

Managing the long-term transition

In the case of the “without” scenario, NMSs have surplus emission rights to sell in the non-ETS sector. However, if further emission reduction is needed above the 30 percent scenario, and if the global carbon price emerges higher than EUR 40/tonne, the picture might be different. If the carbon price is high enough, the domestic emission reduction needs, along with the impacts of carbon scarcity in the ETS sector, can push NMSs to the far more demanding phase of GHG emission reductions.

The scenarios for emission reduction towards a low-carbon society always include two distinct phases. In the first phase, emission reductions can be achieved at relatively low cost and can go hand in hand with traditional modernisation, tinkering around the edges of technology to reduce emissions and supporting easy action by buying carbon credits. When the cheap abatement

opportunities are exhausted and demand is still growing for greater emission cuts, further choices emerge — countries should then make structural changes in major areas of life impacting the whole of society. Changes in energy supply and transport modalities, and the reduction of building-related emissions to a fragment of current levels require time, social determination and resources, which pose a challenge for state budgets over decades. Such measures can be taken if they are spread over time, simply because of the magnitude of the changes and because of the financing needs.

In the case of the “with” scenario, it means a qualitative change — NMSs are likely to face the new reality of having to enact meaningful emission reduction measures on their own. Buying carbon credits from developing countries can be an alternative option to some extent, but the rational choice is the cheaper one. Nevertheless, the cheaper choice might also need financing — and the lack of available finance might push countries towards actions that are carried out more easily but that prove more costly in the long run. Also, social decisions and compromises on options such as the use of nuclear energy or carbon capture and storage should be decided on in all countries.

Modalities of long-impact technologies

The current climate debate has raised questions about two technologies that, according to their proponents, can provide a response to the imperative of GHG emission reduction: nuclear power generation and carbon capture and storage (CCS). Both technologies involve long-term risks, since radioactive waste as well as stored carbon dioxide should be kept isolated and monitored for centuries or millennia — something that our societies cannot guarantee.

The two technologies differ in most aspects, although in both cases their future role is controversial while both are claimed to be part of the solution to the challenge of climate change in the future.

Nuclear technology is a working technology, thus has no feasibility issues, while CCS is still to be developed as a fully operational technology, after which cost-benefit viability can be decided. Along with feasibility issues, CCS also raises questions regarding capacity and expense. While this technology would help to delay the phase-out of coal-fired power plants, it might prove too expensive and energy consuming for the transition to low-carbon societies. Proponents of the technology usually quote the example of seabed storage and its costs. However, carbon storage in NMSs might have a much higher cost level and thus limited capacity. It might well be the case that the technology, which is strongly promoted by the European Commission and some countries that are advanced in CCS research, is a tool with far less to deliver than anticipated. The NMSs should assess their CCS potential and its costs and should make efforts to avoid disproportionate obligations regarding CCS compared to some other EU member states with cheaper CCS options.

Nuclear technology has an individual history and strong associations that vary from country to country in the region. With the slow pace of emission reductions and limited efforts in energy efficiency it might be an unavoidable tool for NMSs in the coming decades. Both the public and decision makers tend to shy away from emission reduction solutions that require self-restraint and limitations in lifestyles. While habits and value systems remain the same, nuclear energy will be seen as an option for escaping from the imperative of strict GHG emission reductions.

Use of carbon credits from developing countries

If NMSs look to the carbon market opportunities in developing countries within the post-2012 framework, they will be at a disadvantage. Old member states and other developed countries have already established mechanisms for purchasing Clean Development Mechanism (CDM) and Joint Implementation (JI) credits; established procedures; contacts in the most promising countries for CDM projects; as well as the operational knowledge necessary to run such purchasing programmes. It is likely that newcomers in this market would either buy more expensively on the secondary market or would turn towards more risky investments in areas where the traditional purchasing countries have not fully occupied the market. This disadvantage regarding emission reduction in developing countries is aggravated in NMSs by the general attitude towards official development assistance. With the exception of the Czech Republic and Poland, such activities are rather limited

in NMSs and the economic crisis is putting a further brake on the development of the wider framework in which carbon credit purchasing programmes fit.

Assigned amount unit (AAU) surplus/banking

During the first Kyoto commitment period, parties will bank roughly 7.4 million AAUs for the future regime. According to a report by the European Environment Agency⁷, there will be 1.8 billion AAU surplus in the NMSs, and a 0.7 billion demand for AAUs in the EU-15, even if the project-based flexible mechanisms of the Kyoto Protocol are used. If we suppose that the member states only trade among themselves with AAUs, some 1.1 billion AAUs will remain, which can be reduced by purchases by Japan. For the NMSs, the question of whether the new climate framework and the connected EU burden sharing will provide for the unlimited carry-over of these AAUs is vital. This is already an issue for NMSs: banking limitations would drive down the value and price of these AAUs, since every NMS (except Slovenia) would try to cash them in, triggering a slump in AAU prices.

Carry-forward policy

The third phase of the EU ETS and the national targets for non-ETS emissions foresees a linear reduction between 2013 and 2020 in the case of the “without” scenario. In the EU Effort Sharing Decision, member states have annual binding emission limits in accordance with the reduction path and they must report their emissions to the European Commission each year. This will ensure a gradual move towards agreed 2020 targets in sectors where changes take time, such as buildings, infrastructure and transportation.

To increase the cost-effectiveness of the reduction path, several flexibility measures are provided, allowing member states to:

- bank and borrow emission budgets (maximum 5 percent) between years;
- transfer “overachieved” emission reductions between member states; and
- invest in projects in other member states.

Such flexible options do not increase the total amount of greenhouse gas emissions in the EU: they merely change the location of reductions and allow small changes in timing.

It can be anticipated that the same mechanisms will also prevail in the “with” scenario. In the case of non-ETS emissions, NMSs will see less tightness than others, although they might need to establish general frameworks for carbon budget management. Country-level carbon budgets might be necessary despite the 5 percent permitted variation (a buffer for fluctuations in emissions due to changes in energy consumption connected to weather patterns). However, to keep to the linear path, conscious efforts are needed on the part of government policies in order to achieve a balance between the emission reductions of domestic sectors and the possibility for carbon-market activities and the sale and purchase of carbon credits.

Energy poverty

It would be challenging to predict the economic situation for NMSs by 2020, but an increase in energy prices can be anticipated. The increases will be due partly to the carbon element of those prices, and partly to non-climate-related elements (especially in the case of natural gas and oil). The sum of these trends might have a greater impact on the poorer segments of society in NMSs than on other parts of society, not only because of the rise in prices but because the poorer stratum of society lacks the necessary capital to invest in energy efficiency on an appropriate scale. It is up to the governments of NMSs whether they implement wide-scale support schemes, especially in the building sector, to improve the thermal efficiency of houses and to support the changing of low-efficiency household appliances.

⁷ *Greenhouse gas emission trends and projections in Europe 2008. Tracking progress toward Kyoto targets.* Report by the European Environment Agency, 5/2008, Copenhagen.

Financing climate activities in developing countries

The issue of financing climate activities in the developing world is an important issue for NMSs. According to a January 2009 report by the European Commission, the share of the EU is roughly one-third of this financial contribution. If the total is EUR 30 billion per annum by 2020, then the EU should contribute around EUR 10 billion from its taxpayers' pockets. The proportion of this burden that falls to NMSs is a hugely important question for them. The principle of division can be either responsibility for the emissions or ability to pay, but it is likely to be a combination of the two due to the influence of political factors. The table below illustrates two basic burden-sharing possibilities based on current share of emissions and the share of the given country in the GDP of the EU-27.

	BU	CZ	EE	HU	LT	LV	PL	RO	SK	SI	NMSs
GDP based	19.8	90.6	10.0	80.2	11.8	18.9	220.9	72.1	34.8	26.0	585.0
Emission based	135.3	281.4	40.5	155.0	21.0	43.6	771.1	297.0	92.5	39.2	1,876.7

Table: Financing EUR 10 billion — the share of NMSs (in millions of euros)

A significant difference can be observed between the financing shares if we compare the ability to pay algorithm to the polluter pays principle based on 2005 GHG emissions. The reason for the significant difference is that the carbon intensity of production is roughly three times higher in the NMSs than the EU average.

Innovative financing ideas suggested by the Commission and proposed on the international level in 2008 include making AAUs or their equivalents in the new climate regime subject to a mechanism that diverts a part of them to financing climate activities in developing countries. According to one of the most discussed ideas, a certain percentage of AAUs would be diverted at issuance to a UN-managed fund; after being auctioned, the revenues would go towards mitigation and adaptation in developing countries. In another version of these financing ideas, a certain amount of already issued AAUs would be transferred to the UN-managed fund, which allows for a different proportion of “payment” than in the case of AAUs diverted at issuance. The idea behind financing from AAUs is that allowing such a loss is far less painful for a ministry of finance than authorising payments from the state budget. This argumentation is also true for NMSs. However, of the two types of mechanism, the second is far more attractive for NMSs, since the likely lower carbon efficiency would mean more AAUs, and thus a greater percentage of AAUs diverted, than an algorithm taking into account ability to pay.

The question remains open as to how the issuance of AAUs is handled in the EU system, where a part of the emitting sectors are under the EU ETS, with no direct policy influence by member states. Who will control the AAUs originally assigned to member states in the case of AAUs that stand behind the unified EU ETSs? The most likely solution is for the European Commission to control these AAUs as a “central bank” of the EU ETS.

Energy security

The recent gas supply crisis affecting EU countries and NMSs highlighted the issue of energy security. This is a particular challenge for the region: while the more extensive use of natural gas would reduce GHG emissions in comparison to the use of coal in the energy sector, expanding its use increases the vulnerability of a given country due to its increased dependence on export supplies, mostly from Russia and Central Asia. Other factors contributing to insecurity in this area are poor energy efficiency and waste, along with poor coordination and cooperation within the EU in its relations with energy suppliers outside the EU.

In the Second Strategic Energy Review, the European Commission addresses this issue and makes several recommendations:

- more energy efficient buildings and products — electrical appliances, cars, heaters, machines;
- a wider range of energy sources (“diversity”) — including more renewables, low-carbon fuels and indigenous oil, gas and coal, and a choice of suppliers and supply routes, thereby reducing dependence on any single source;
- a bigger energy pool for more reliable supplies (“flexibility”) — through investments in energy infrastructure, cross-border interconnections and new energy supply networks;
- better support mechanisms between EU countries (“solidarity”) — so that they can help each other deal with shortages;
- better diplomatic relations with non-EU energy suppliers — for peaceful energy trading and secure investments.

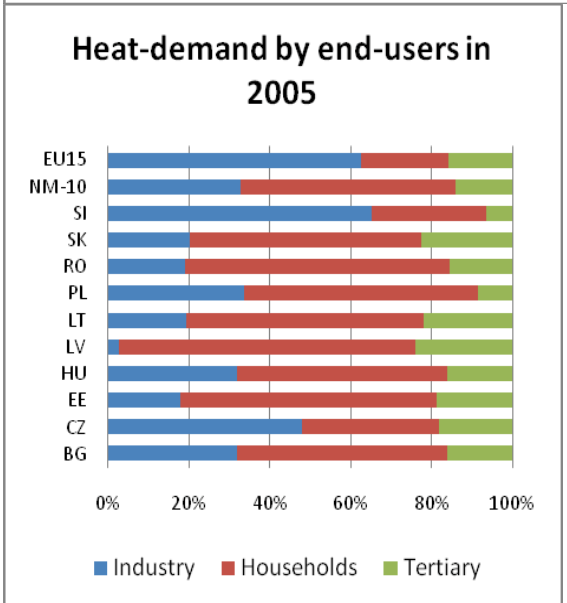
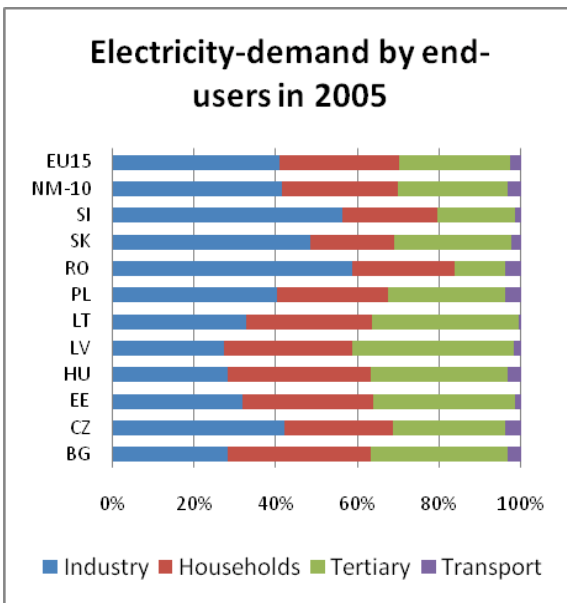
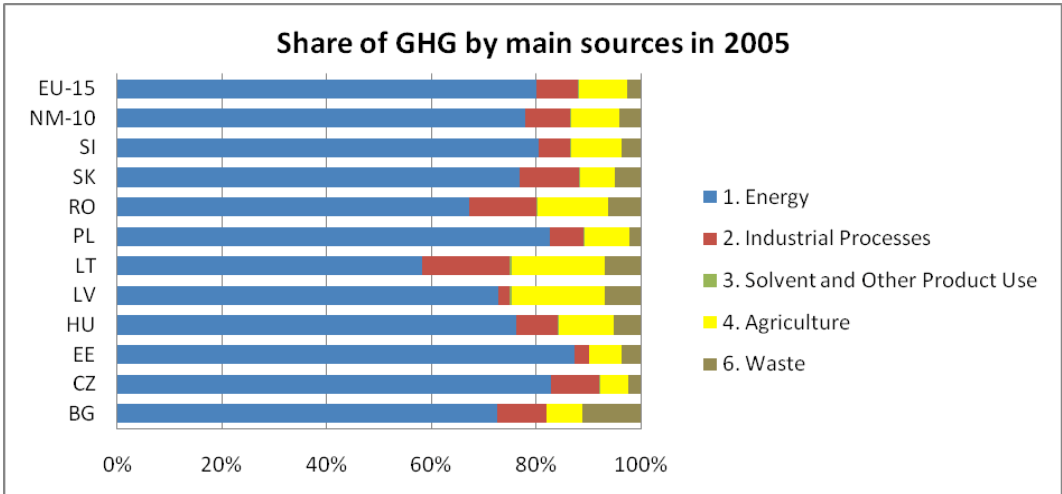
The issue of energy security is intensified in NMSs, since energy infrastructure is in a transition period and longer-term energy infrastructure decisions are being considered, while, on the other hand, climate policy implications for the coming decades are not factored into these decisions to a sufficient extent.

The tension between low-carbon pathways and the use of domestic energy sources is a dilemma for several countries of the region. A solution can only be found by means of complex and comprehensive planning exercises for climate-energy policies.

Country-specific situations

The country-specific situation of an NMS has implications not just for current conditions in the country but also for the country’s approach towards achieving a low-carbon society. The current situation and the structure of dominant sectors such as energy and transport define economic and political interests in maintaining the status quo. The prospect of change brings with it the threat of loss of dominance — and while those in dominant positions can also be pioneers of change, this is rarely the case.

Regarding emission profiles, differences among NMSs are more important than differences between NMSs and other EU member states. One exception to this is that the power sector has a far higher energy consumption in the NMSs than in the old member states. The dominance of the energy sector can also be observed among GHG sources, with the biggest difference in Lithuania.

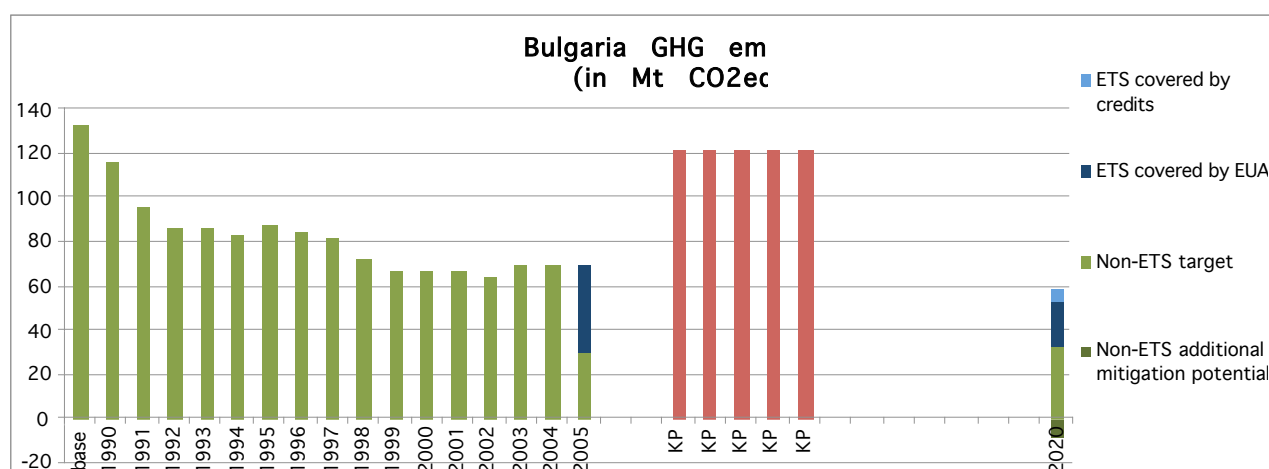


In the case of electricity and heat demand, countries show a high variety of demand levels among industry, households and the tertiary sector.

Bulgaria

On the EU level, the highest carbon and energy intensity can be found in the Bulgarian economy — which also means a very large emission reduction potential compared to the business-as-usual (BAU) scenario.

In Bulgaria, more than half the energy produced originated from nuclear generation and renewable sources in 2005. However, the efficiency of the thermal power stations is low even compared to NMSs.



The share of the ETS sector in emissions is nearly 60 percent — which is remarkably high within the EU. In the energy-intensive industries, Bulgaria is the country using most energy for the given added value. Energy intensity is highest in sectors such as pulp and paper, and the chemical and steel industries. Accordingly, even in the case of the BAU scenario, emissions from these sectors will decrease by a quarter by 2020. The EU ETS further increases this reduction and, even in the case of the “without” scenario, emissions can decrease by 35 percent by 2020 compared to 2005.

Bulgaria closed two units of the Kozloduy nuclear power plant in 2002; the closure of two other units was a condition for its accession to the EU; and the two remaining units require modernisation. Since the closure of units 3 and 4, Bulgaria has not been able to export electricity, although previously it had been an important supplier in the region. This has a negative impact on the security of supply for South East Europe. The construction of the Belene nuclear power plant began in 2008 and it is due to be completed by 2014 or 2015, replacing the first two closed units of Kozloduy. Until the construction is completed, the existing thermal power plants are expanding their capacity — which means an increase in GHG emissions, unless the extension for Kozloduy units 3 and 4 is granted.

In the non-ETS sector, according to the BAU scenario emissions would decrease by 5 percent, while the cost-efficient emission reduction level is 19 percent. The “with” scenario would bring a decrease of 11 percent, thus the required reduction can be achieved with the BAU scenario, however the cost-efficient emission reduction is worth using if capital is provided for the necessary changes. In the non-ETS sector there is significant emission reduction potential, while the “with” scenario is likely to allow Bulgaria an opportunity to grow in terms of emissions. With suitable domestic policies the country could generate significant revenues from emission trading. This could partly balance the challenges for the ETS sector.

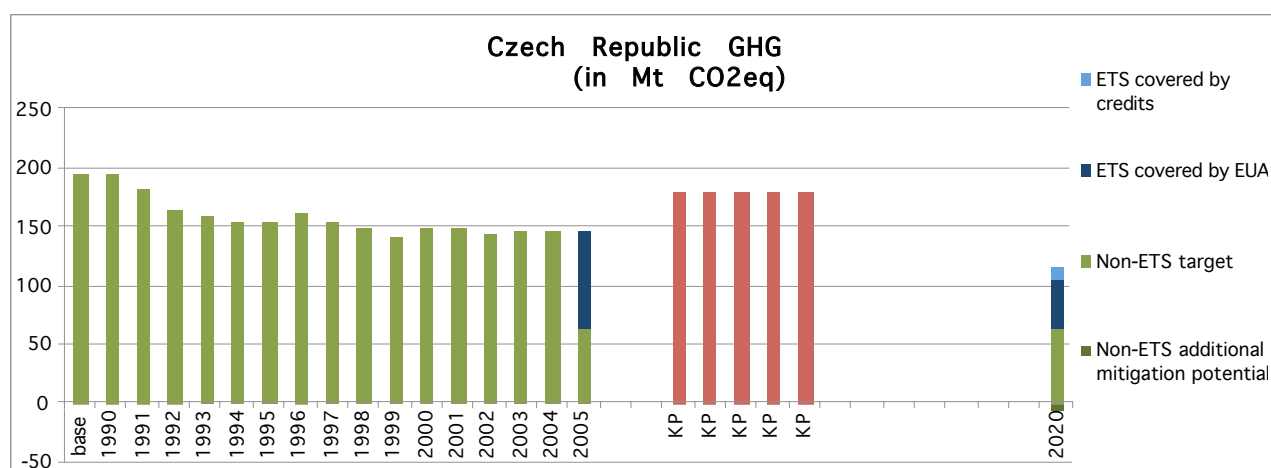
Czech Republic

In the Czech Republic the share of the ETS sector is close to the level of the ETS sector in Bulgaria, which is the highest in the EU. This means the possibility of large reductions according to the impact assessment of the European Commission. At the same time, the Czech economy is more developed, more efficient and has less growth potential.

In the case of the Czech Republic, the planned policies and measures and domestic projections are more or less in line with the projections by the European Commission. Within this perspective, it is important to note that the nuclear power plant in Dukovany is to be refurbished and its lifetime extended until 2025. In Temelin, two nuclear power plant units began operation in 2004. Without the existing nuclear capacities the country's GHG emissions would be 17 percent higher.

According to the forecasts of the 2004 energy policy, the dominance of coal is to be maintained in electricity generation for the coming decades. It is planned to increase the share of renewable energy to 16.9 percent by 2030.

Energy efficiency is central to the energy policy, although the necessary resources for achieving the declared goals are not available.



In the ETS sector, the “without” scenario, in the case of cost-efficiency, would lead to 35 percent reductions by 2020 compared to 2005. The BAU scenario would result in 30 percent reductions. There is a significant amount of heavy industry and it has high energy intensity even compared to NMSs. This gives a large emission reduction potential, which can be realised without specific targeted policies and measures.

The Czech energy mix shows a high carbon intensity — 65 percent in 2005. The Czech Republic envisions the lifetime extension of its current nuclear power generation capacity.

In the non-ETS sector, even according to the “with” scenario, emissions can grow by 1 percent compared to 2005. By comparison, the BAU scenario projects a 6 percent increase, while the cost-efficient case shows 7 percent reductions. Thus additional policies and measures are needed, although from an economic point of view even a higher percentage of emission reduction brings a return over the demanded 1 percent growth.

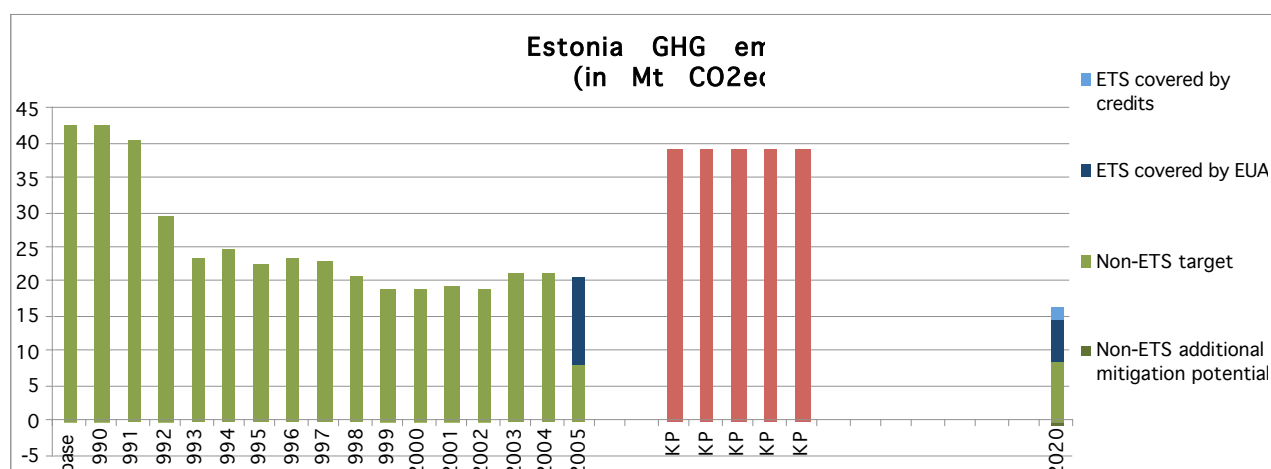
Estonia

In Estonia, the ETS sector is dominant in terms of GHG emissions; with respect to energy intensity it conforms to the average among NMSs, although oil-based energy production results in a high carbon content of the energy.

Estonian energy production is based mostly on oil shale, although current capacities need to be replaced. In those scenarios that count on the dominance of oil shale in the future, only conversion efficiency and environmental performance can be increased. In addition, the more extensive use of combined heat and power is envisioned. These measures will be insufficient in a post-2012 climate

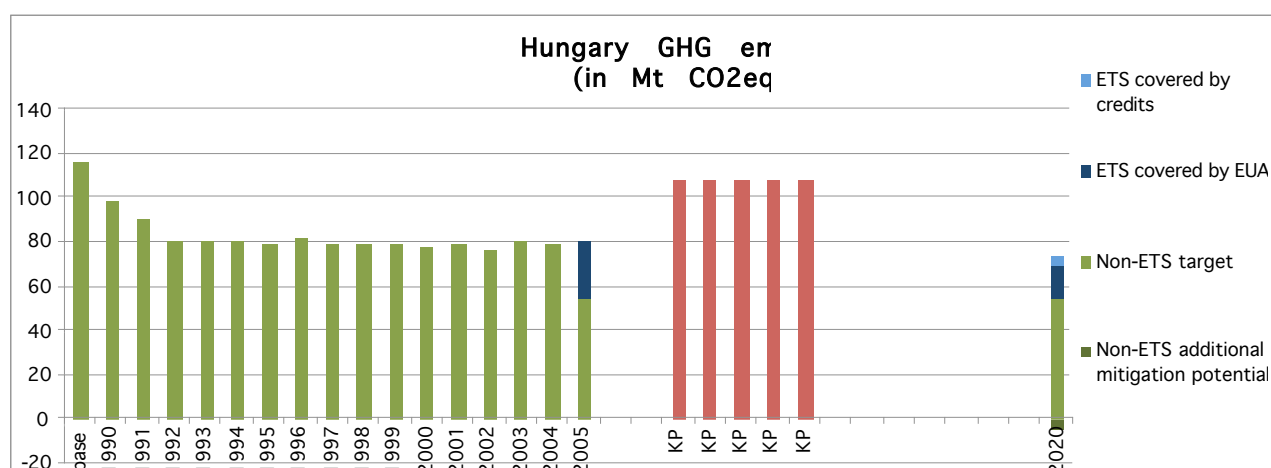
regime, thus the increased use of natural gas is likely and the use of nuclear power is being discussed —with the prospect of new units at the Ignalina nuclear power plant in Lithuania.

In the non-ETS sector, due to the greater growth potential, the difference between the emission reduction target and the potential is smaller than average.



Hungary

Hungary is distinguished from other NMSs by two specific characteristics — that is, the relatively small share of the ETS sector within total emissions; and the relatively low carbon content of the energy mix, due to the role of natural gas and nuclear generation. This results in one of the lowest per capita GHG emissions in the EU and, at the same time, in relatively low emission reduction potential. Within the energy mix, the Paks nuclear power plant has a share of 39 percent, natural gas 35 percent, coal 20 percent, and renewables 5 percent. The lifetime of the Paks nuclear power plant has been extended by 20 years, thus its closure can be anticipated after 2030.

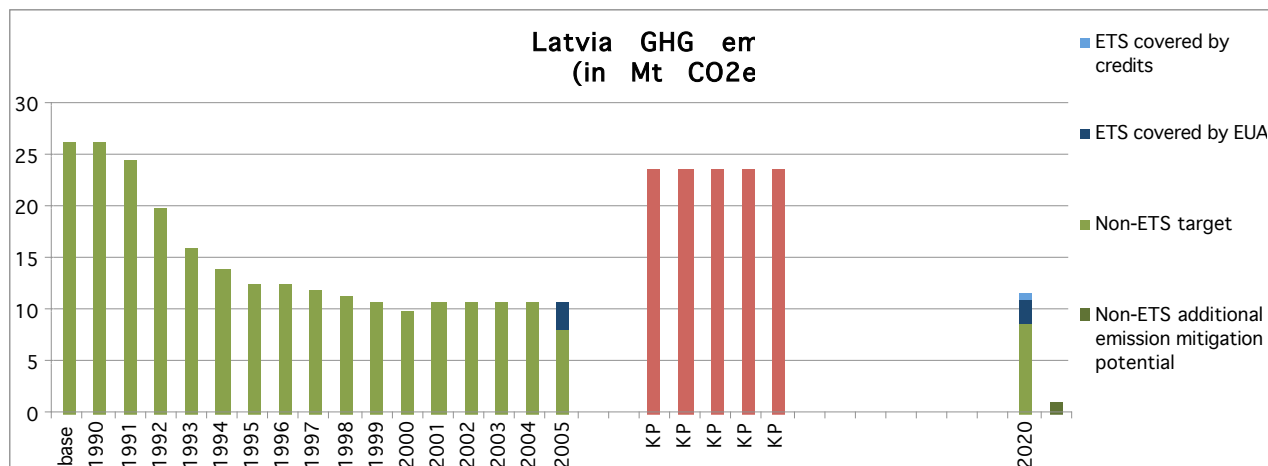


In the non-ETS sector, 2 percent growth is allowed in the case of the “with” scenario, while the cost-effective scenario shows a reduction of 6 percent.

Latvia

The smallest proportion of ETS emissions can be seen in Latvia, where the energy industry is an unusually small part of the ETS sector. Most Latvian energy production is based on renewable sources, thus reduction potential is mostly on the demand side, with the exception of improving the low efficiency of thermal power plants. Latvia has the lowest per capita emissions in the EU. Along

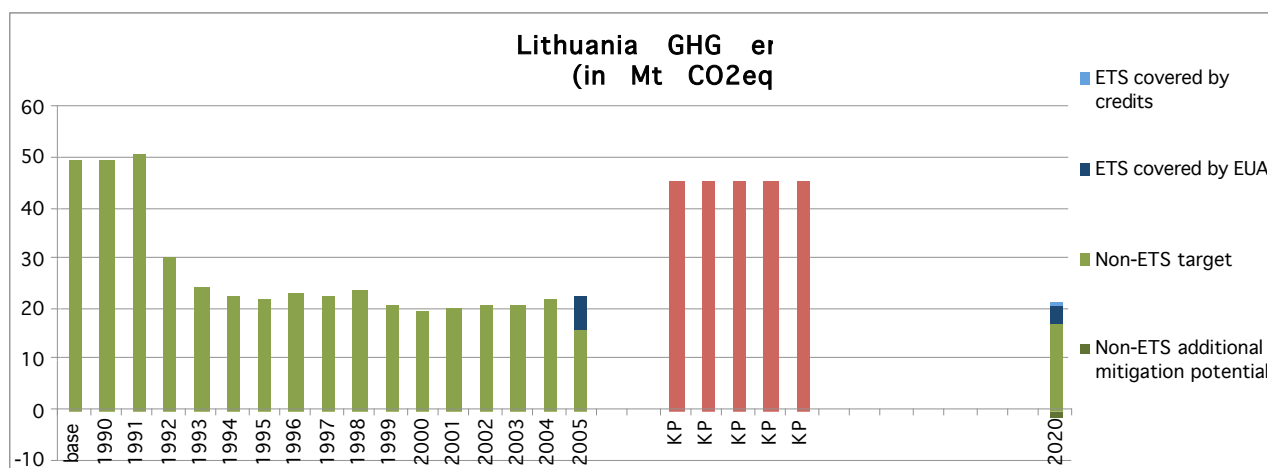
with low carbon intensity, energy efficiency is close to the average of the EU-15. Based on this, emissions are likely to increase along with economic growth. It may well be the case that, for the non-ETS target of 9 percent GHG emission growth, domestic measures will prove insufficient.



Latvia is an exception among the NMSs — it will have the economic rationale to buy carbon credits due to limited reduction potential in the case of the “with” scenario.

Lithuania

In Lithuania, 72 percent of electricity is generated by the Ignalina nuclear power plant and a significant part of production is exported to other countries of the region (Estonia, Latvia, Russia). Accession to the EU triggered the closure of the VVER1000 units. There is an agreement with the other two Baltic States and Poland for the construction of a new nuclear power plant. However, it can be ready by 2015 at the earliest. Until then, the energy mix is changing significantly towards natural gas and the country might need to import energy. The EU’s climate-energy package recognises this difficult situation.



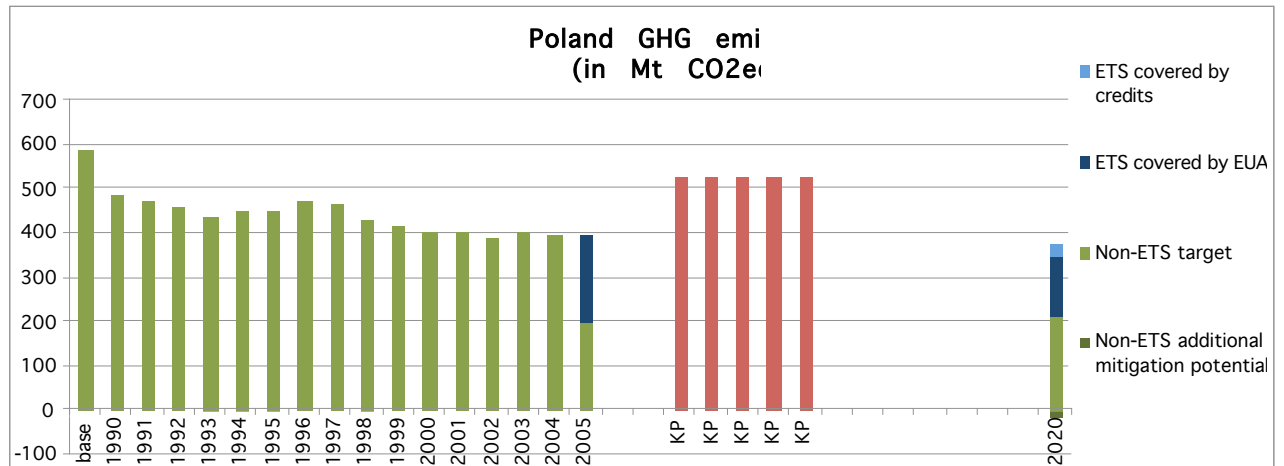
The “with” scenario allows Lithuania a 7 percent GHG emission growth — economic rationality would justify a higher emission reduction because it is still cost-efficient.

Poland

The country’s significant coal reserves and social factors have resulted in the dominance of coal in the energy mix. In addition, the low energy efficiency typical of the region is prevalent in Poland as well, together with a dynamic increase in transport affecting GHG emissions. Due to these factors, emission reductions require a significant divergence from the “business-as-usual” path. The diversification of the energy mix seems unavoidable.

As the average age of thermal power plants is around 30 years, their closure or refurbishment is necessary. The 2005 energy strategy mentions the option of constructing a nuclear power plant, beginning in 2021. Since then, in the public discourse politicians have mentioned nuclear power generation capacity with a larger and larger scale and earlier introduction dates. Accordingly, Poland is participating in efforts to construct new nuclear power plant units in Ignalina, Lithuania.

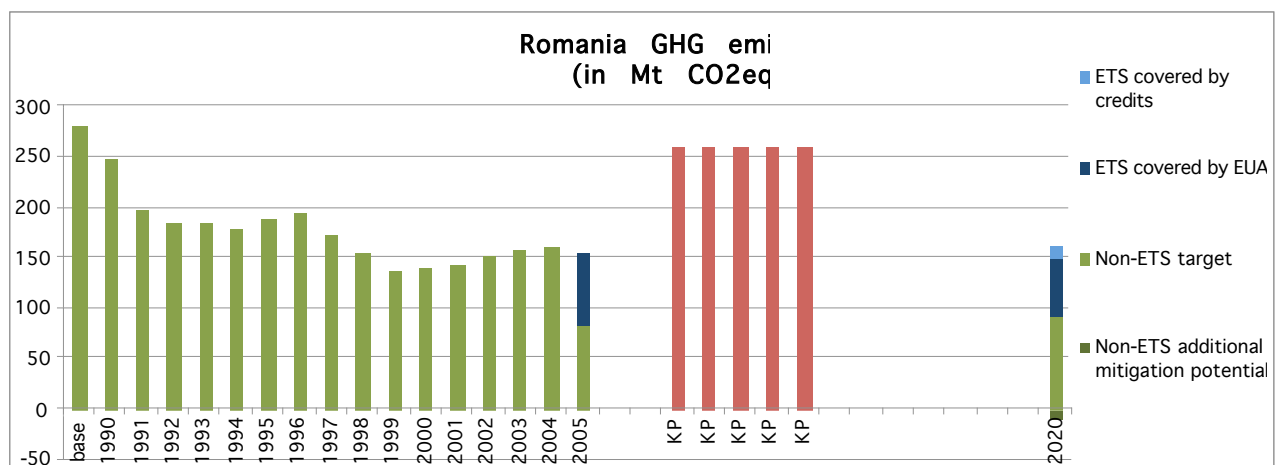
The EU ETS leads to higher price increases in Poland than in other countries of the EU due to the particular structure of the energy mix, and there is significant energy efficiency potential in industrial sectors.



In the non-ETS sector the BAU scenario projects an 11 percent emissions increase, while the “with” scenario requires its limitation to 6 percent.

Romania

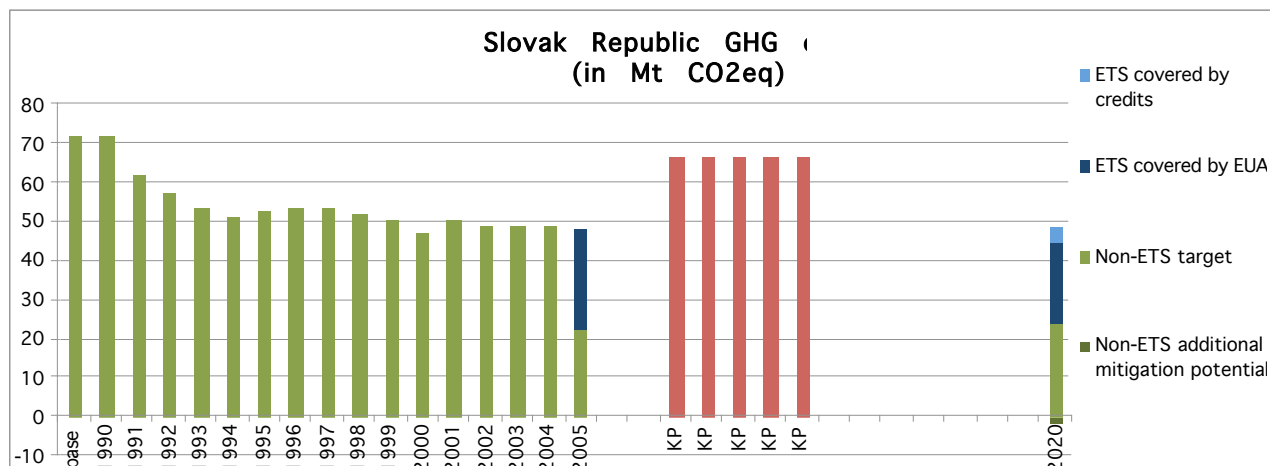
Romania has a large-scale nuclear development programme. At the Cernavoda nuclear power plant, two units began operating in 1996 and 2007. One of these units yields an annual 4 million tonnes of GHG emission reduction. Further nuclear power plant development is planned, along with cogeneration capacities based on natural gas as well as an increase in the already significant hydropower capacity. Energy efficiency has a significant potential on both the supply and demand sides. In the ETS sector, the stagnation of emissions is likely whereas in other NMSs reduction is typical.



Slovakia

In 2005, more than half the electricity generated originated from two nuclear power plants (Bohunice and Mochovce). Hydropower plants produced 20 percent and the rest came from thermal power plants. In the Bohunice nuclear power plant, two of the four units had to be closed

according to the EU accession treaty. In Mochovce, two units are in operation and another two are to be completed by 2013, with Italian cooperation. Slovakia is in need of electricity imports until 2013, and this need is aggregated by the closure of thermal power plants while energy demand has increased.



In the emission scenarios, the growth of the Slovak economy balances out the likely increase in efficiency. The models count on the increased share of fossil fuels, for the reasons mentioned above. At the same time, the average efficiency of thermal power plants was low in 2005, which provides significant opportunities for improvement. In the ETS sector, the stagnation of emissions is likely while reduction is typical in other NMSs.

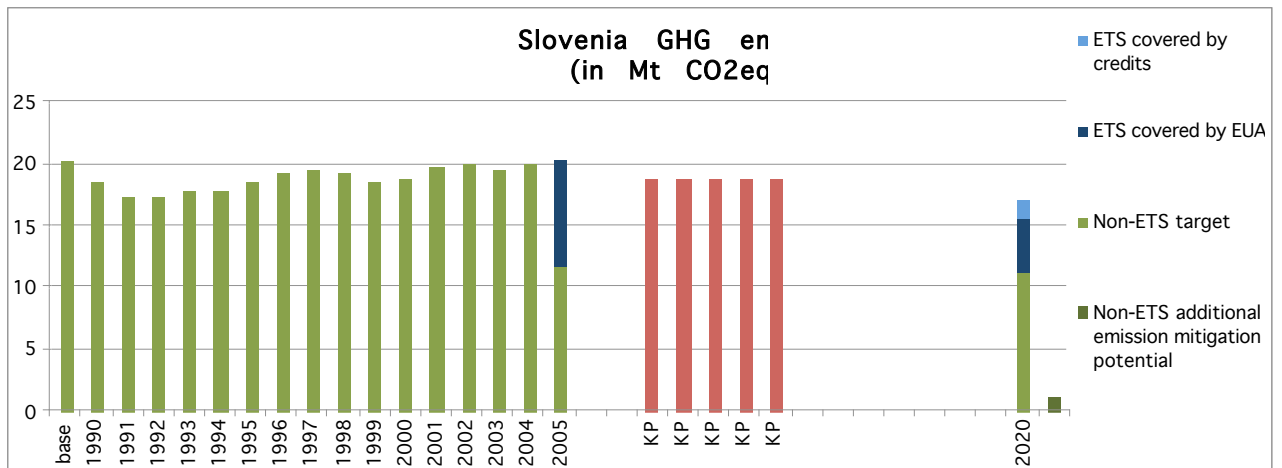
In the case of the “with” scenario, a 36 percent emission reduction would be necessary in the ETS sector. In the non-ETS sector, Slovakia would have a 5 percent emission increase, while cost-efficient emission reduction is possible.

Slovenia

The energy mix in Slovenia has a good diversity: around 40 percent of energy production originates from the Krsko nuclear power plant; a quarter from hydropower generation; and the rest from thermal power stations.

The 1996 energy strategy counted on the replacement of the nuclear power plant: however, the strategy was revised bearing in mind energy security and climate issues. The planned closure date is 2023, but lifetime extension is under consideration.

Domestic energy efficiency goals are tighter than the EU goals: an annual 2 percent improvement in the coming 10 to 15 years, with an increase in the share of renewables and the refurbishment of thermal power plants.



As in Latvia, the target in the non-ETS sector in Slovenia will be higher than the emission reduction potential. A climate policy was approved in 2006 in order to fulfil the Kyoto obligations, using carbon tax as a tool for emission reduction. The use of the Kyoto Protocol's flexible mechanisms in the first commitment period can be a useful experience for the future activities required in the field.

Conclusions

Since the negotiations of the future climate regime still have to resolve profound questions, the implications of that regime for the NMSs are hard to interpret. However, the emerging EU framework for post-2012 emission reductions within the EU, with its two possible scenarios, provides a background for preparations and allows NMSs to identify crucial points that they will have to face in this context.

The most important issues will be connected to furthering EU burden-sharing exercises in relation to financing; and to genuinely understanding the need for serious policy development to enable the transition to a low-carbon society within the next four decades. The financing of various aspects of climate change is a sensitive issue for NMSs, especially when it comes to new roles in development assistance in the climate field and the potential purchase of carbon credits. These issues require not only changes of stance on the part of decision makers, but also changes in most societies. The division of burdens is a perennial question in EU climate policy: What is the fair share of NMSs? The definition of “fair” will be different for old and new members of the group, and this will result in difficult negotiations at the Council in Brussels in the coming years.

The post-2012 world of emission reduction is very likely to bring real carbon constraints to Slovenia and Latvia in the non-ETS sectors of emission reduction. In the ETS sectors, all NMSs will face constraints. The phenomenon of carbon constraint will be new at government policy level for all NMSs except Slovenia. Translating the new pressure of carbon constraint into genuine, targeted climate policies will be a significant challenge. Such policies will need to do more than relieve the constraints of the given moment and will result in the development and implementation of “transition blueprints” that last for decades. However, the pressure exerted on decision makers will be limited, since NMSs can “manage” emission reduction efforts until 2020 with limited political determination and sacrifices. However, if they implement the transition blueprints without looking further ahead, after 2020 these countries may face severe difficulties as a result of missed opportunities. Energy policies may be the first hostages of such a situation, since energy infrastructure will change in the coming years and decades and lifetimes will reach until the end of the available transition period.

Well-planned transition policies include active carbon budget management as well as social debates on long-impact technologies. Although energy poverty is barely discussed, it is something that should also be countered in the transition process, since carbon constraint can lead to higher levels of energy poverty for NMSs.

Having explored all the challenges facing NMSs, the most important conclusion is probably the need for capacity and understanding in the state administrations and among the public of NMSs that these issues will arise and cannot be ignored or postponed while struggling with economic difficulties. Climate change cannot be put on hold: it must be addressed in an integrated manner alongside other, smaller-scale crises.

2.2. Perspective of SEE countries post-2012

Introduction

Shaping the post-Kyoto climate change regime in the countries of South Eastern Europe (SEE) is a challenging and complex task, affected by political, economic and natural factors.

South East Europe is particularly vulnerable to the effects of climate change. Rising global temperatures are already affecting the region’s natural resources and national economies. Human health and biodiversity, the energy and agricultural sectors, forestry and fisheries, river basins and coastal zones are already suffering as a result of higher temperatures and decreasing precipitation.

The first part of this paper describes the main evidence of the effects of climate change in SEE countries.

The countries of SEE have recently joined international efforts to mitigate climate change and to adapt to its effects. Between 1998 and 2007, they ratified the United Nations Framework Convention on Climate Change (UNFCCC); and between 2004 and 2008, Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro and Serbia have each ratified the Kyoto Protocol.⁸

All the above-mentioned countries are on the path to EU accession. Stabilisation and association agreements (SAAs) for Croatia and the former Yugoslav Republic of Macedonia entered into force in 2004 and 2005 respectively. Stabilisation and association agreements for Albania, Montenegro and Serbia have been signed and are on the way towards ratification. These countries will take part in the implementation of the ambitious EU goals under the post-2012 regime.

It is clear that these countries are seriously prepared to assume their fair share in the fight against excessive greenhouse gas emissions. Not only have they ratified the UNFCCC and the Kyoto Protocol, they have also adopted and started to implement a number of legislative documents supporting the development of emission reduction technologies in the fields of renewable energy, energy efficiency etc.

However, an important question remains. How can these countries take full advantage of the opportunities available under the international climate change process in the areas of technology transfer, capacity-building assistance and flexible economic mechanisms under the Kyoto Protocol? How can they optimise their climate negotiation strategies, especially now that negotiations on the post-Kyoto regime are in full swing following the launch of the Bali Roadmap?

Accession to the European Union, which is likely to take place in the post-Kyoto period, also raises a number of questions regarding the status of SEE countries under the UNFCCC; existing capacities and lack of capacity for meeting monitoring and reporting requirements; modalities for joining the EU Emission Trading Scheme (ETS); and participation in the flexible mechanisms.

During previous rounds of negotiation, the countries of SEE have been severely under-represented with respect to almost all topics. A shortage of human and financial resources has prevented these countries, some of which are still suffering post-war economic conditions, from sending more than two or three people to the negotiations. This is clearly not enough to allow countries to follow the permanently increasing number of formal and informal contact groups under the rounds of negotiation and to represent the interests of the region. The question therefore arises as to whether SEE countries should combine their efforts and form their own negotiating group; or join already existing groups with similar interests. Regional cooperation in South East Europe is a continuing process at all levels. For example, on the expert level the Belgrade Initiative on Climate Change received the full support of the UNECE Sixth Ministerial Conference "Environment for Europe" in October 2007.

Another area of great importance is that of systematic observations, impact assessment, vulnerability assessment and the development of adaptation measures and strategies. Following the publication of the IPCC's Fourth Assessment Report, the operationalisation of the Adaptation Fund at COP 14 and the publication of the European Commission's Green Paper on Adaptation in 2007, it became apparent that a careful balance must be found between mitigation and adaptation measures in the SEE region. According to the South East European Climate Change Framework Action Plan for

⁸ Slovenia and Croatia are not considered in the scope of this section of the paper. Although they both belong geographically to South East Europe, from a geopolitical point of view Slovenia has been a member of the European Union since 2004. Slovenia and Croatia are included in Annex I to the UNFCCC and in Annex B to the Kyoto Protocol, having quantifiable targets of 6 percent and 8 percent respectively as compared to the base year.

Adaptation, endorsed in October 2008 by the SEE countries, capacity-building needs in this area are significant and will increase in the near future.

Current state of play

Evidence of observed effects of climate change in SEE countries

Evidence of the impacts of the global warming that is threatening the Earth can be observed in SEE countries in line with global trends. Indicators such as temperature trends, precipitation trends, frequency of extreme weather events and the rate of rise in sea level (where relevant) are equal to the global average, or even higher.

Temperature According to the IPCC's Fourth Assessment Report, the average surface temperature in Europe has increased over the last century by 0.90 degrees (0.086 degrees per decade). Over the last 50 years, the trend has accelerated. On the continent of Europe the situation is even more dramatic: a 1.4-degree rise has been observed over the same time period. South Eastern Europe is one of the European regions in which the annual mean temperature has been rising at the highest rate.

Data from local weather observation stations situated at different altitudes sometimes deviate from global trends. For example, the autumn mean temperature has decreased in Serbia, and in Albania the general temperature trend was decreasing until the mid-1980s. It can sometimes be difficult to reconstruct complete series of temperature measurements as a result of unfavourable social and geopolitical circumstances. However, the following general trends have been observed in all SEE countries:

- Data for the twentieth century show an overall increasing trend.
- The annual mean temperature in the period 1991 to 2005 was higher than between 1961 and 1990.
- Seasonal mean temperatures have risen, with a more significant increase in the summer than in the winter.
- The number of summer days (over 25 degrees) and of days during heat waves (over 35 degrees) has increased.
- Cold seasons have become milder. Minimum observed temperatures have risen, and the number of days of frost (below -5 degrees) has fallen.

Precipitation The latest IPCC report identifies SEE as among the "drying" regions. Although trends across observation stations in SEE countries show contradictory tendencies, the general trend is clear. Results from local meteorological stations vary according to the type of geographical landscape (from coastal zones to mountainous areas), geographical location (north or south) and season. The following tendencies are common to all SEE countries:

- The total volume of annual rainfall has been decreasing over the last century (except in Montenegro, where no significant decrease has been observed).
- The annual mean temperature has fallen by between 5 and 7 percent, which is not statistically significant.
- Seasonal mean temperatures have fallen for winter, summer and spring. However, the seasonal mean in autumn has risen, especially in coastal zones.
- The precipitation pattern has changed drastically across the seasons.
- The annual mean river discharge is decreasing in all catchment basins, although patterns have changed with peaks in the autumn (resulting in flash floods).

Sea level On a global scale, the annual sea level rise has increased from 1.8 mm in the period 1961 to 2003, to 3.1 mm in the period 1993 to 2003. Since several SEE countries have coastal zones, this is a threatening trend for the region.

Climate-related natural disasters It is commonly accepted that a single extreme weather event cannot be attributed to the process of global warming. However, the increased frequency of extreme

weather events is related to climate change. The frequency of floods, droughts, forest fires, heat waves and landslides has increased significantly over the last 15 years in SEE countries.

It is clear from the above that the SEE region is not immune to the effects of global warming. In order to undertake the necessary mitigation and adaptation activities to limit the rise in global temperature to 2 degrees, the countries of the region must be part of the international climate change process as well as pursuing their own direct interests.

Position of SEE countries vis-a-vis the United Nations Framework Convention on Climate Change and the Kyoto Protocol

All countries under consideration (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro and Serbia) have ratified both the UNFCCC and the Kyoto Protocol.

They are not included in any of the annexes to the UNFCCC, but belong to a group of so-called non-Annex I countries. This means that the countries are not responsible for the accumulated global carbon pollution.

As these countries are not included in Annex B to the Kyoto Protocol, it implies that they have not adopted any target for the limitation or stabilisation of emissions of greenhouse gases in the period 2008 to 2012, compared to base-year levels.

Albania The UNFCCC entered into force on January 1, 2005, and the Kyoto Protocol on June 30, 2005. Activities towards the implementation of commitments under the UNFCCC include:

- The First National Communication in 2002, reporting on the GHG inventory for 1994; GHG emission scenarios by 2020 for all sectors; climate change scenarios, impacts and adaptation measures; public awareness, training and education.
- The Second National Communication is currently being prepared (and was due in March 2008), reporting on the GHG inventory for 2000 and indicators for 1990 to 2005; GHG emission scenarios until 2030 (all sectors); vulnerability and adaptation for the Drin River waterfall; public awareness, training and education.

Albania also completed a Technology Needs Assessment in 2004 concerning mitigation and adaptation in the coastal zone.

The Climate Change Unit/Program (CCU/P), hosted by the Ministry of Environment, Forests and Water Administration, is jointly funded by UNDP, the Government, and a number of other donors. The CCU/P is the focal point for the UNFCCC as well as the designated national authority for CDM. It is also responsible for:

- the implementation of the UNFCCC and Kyoto Protocol;
- designing the national policy for climate change;
- the management and implementation of the portfolio of climate change projects.

Bosnia and Herzegovina The UNFCCC entered into force on December 6, 2000, and the Kyoto Protocol on July 15, 2007. Activities towards the implementation of the country's commitments under the UNFCCC include the preparation of the Initial National Communication and the National Inventory Report due at the end of 2009.

The Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska (the UNFCCC focal point) and the State Climate Change Steering Committee and Sub-committee (the GEF operational focal point of the Federation of Bosnia and Herzegovina) are responsible for implementing the stipulations of the UNFCCC and the Kyoto Protocol in their respective entities. Activities are coordinated by the Inter-Entity Coordination Body for the Environment.

Climate change issues are integrated into a number of strategic documents of Bosnia and Herzegovina:

- The development strategy for the realisation of natural sustainable development and poverty reduction based on the Millennium Development Goals.

- The National Environmental Action Plan, adopted in 2008.

The former Yugoslav Republic of Macedonia The UNFCCC entered into force on April 28, 1998, and the Kyoto Protocol on February 16, 2005 (it was ratified in November 2004, before its entry into force). Activities towards the implementation of the country's commitments under the UNFCCC include:

- The preparation and submission of the First National Communication in 2003.
- The submission of the Second National Communication in 2008.

The country has also adopted or is preparing to adopt the following important documents:

- Law on Environment (2006), in which provisions for CDM, the preparation of GHG inventories and a plan for policies and measures to reduce emissions have been introduced.
- The Technology Needs Assessment (TNA), completed in cooperation with UNDP in 2004. The TNA concentrated on the promotion of energy efficiency measures and renewable energy sources.
- National Strategy for the first commitment period 2008 to 2012 under the Kyoto Protocol (February 2007).
- National Strategy for Sustainable Development (under preparation): energy and climate change are identified as key factors affecting sustainable development.
- Second National Environmental Action Plan (NEAP) identifying problems and solutions with respect to climate change.
- National Strategy on Environmental Investments (under preparation), carbon financing being recognised as a potential tool for attracting investments.
- National Strategy for Environmental Approximation.
- Strategy on Energy Efficiency.

The Ministry of Environment and Physical Planning (MoEPP) acts as coordinator in environmental policy making, whereas actual implementation depends on a wide range of entities from the public and private sectors, at national and local level. To address climate change effectively, a Climate Change Project Unit was established within MoEPP. In addition, a National Climate Change Committee comprising 13 representatives of different stakeholder groups has been set up as an advisory body for policy making related to climate change.

Montenegro The UNFCCC entered into force on January 21, 2007, and the Kyoto Protocol on September 2, 2007. Activities towards the implementation of the commitments under the UNFCCC include the preparation of the Initial National Communication as well as the national inventories for 1990, 1998 and 2003.

Montenegro has also adopted the following important documents:

- National Strategy for Sustainable Development and Action Plan in 2007, integrating climate change issues into sectoral policies.
- National Capacity Self-Assessment Report and Action Plan for the implementation of global environmental conventions (NCSA) in 2007.
- National Plan for the Integration of Montenegro in the EU, aligning national legislation with EU legislation in the area of climate change/energy.
- Small Hydro-Power Plants Development Strategy, 2006.
- Energy Community Treaty (ratified in October 2006).
- Assessment of Renewables Potential – wind, solar energy and biomass (adopted in April 2007).

- Energy Development Strategy until 2025, adopting targets compatible with those of the EU in the Climate and Energy Package.

In terms of institutional structure, the implementation of the UNFCCC and the Kyoto Protocol and the designated national authority for CDM is the Ministry of Tourism and Environmental Protection.

Serbia The UNFCCC entered into force on June 10, 2001, and the Kyoto Protocol on January 17, 2008. Activities towards the implementation of the commitments under the UNFCCC include:

- Preparation of the Initial National Communication.
- Framework Strategy and Action Plan on responses related to GHG emissions.
- National Strategy for Sustainable Development.
- Forestry Development Strategy.
- Energy Sector Development Strategy by 2015.
- Programme for the implementation of the Energy Sector Development Strategy by 2015 in the period 2007 to 2012.

The Ministry of Environment and Spatial Planning is the UNFCCC focal point. Within the ministry, the Climate Change Unit operates within the Department for International Cooperation. A number of other institutions have related competencies: the Ministry for Mining and Energy; the Ministry of Economy and Regional Development; the Ministry of Agriculture, Forestry and Water Management; the Republic Hydrometeorological Service of Serbia; the Agency for Environmental Protection; and the Ministry of Infrastructure.

The ambiguity of these countries' positions under the UNFCCC has always been exacerbated by the fact that some of them do not consider themselves as developing countries, but merely as non-Annex I countries. At COP 6, Part II (Bonn, July 2001), Armenia, Uzbekistan and Turkmenistan, on behalf of a group of countries of Central Asia and the Caucasus, Albania and Moldova (the CACAM group), submitted a letter to the executive secretary, dated July 27, 2001. The letter expressed concern regarding the definition of the term "developing countries", as used in the UNFCCC, the Kyoto Protocol and COP decisions to determine recipients of financial, technological and capacity-building support. The CACAM group requested a clear definition of "developing countries" or a reference to relevant legal texts containing such a definition.

The term "developing countries" is not defined in the UNFCCC and does not encompass all the parties not included in Annex I to the UNFCCC (non-Annex I parties), since some of these do not consider themselves to be developing countries. Countries of the CACAM group, for example, consider themselves as "countries with economies in transition". A number of non-Annex I parties other than the CACAM group are also affected by this issue. The letter suggested that the term "developing countries" should be substituted by "developing countries and other parties not included in Annex I".

Unfortunately, this issue remains unresolved as the COP has postponed a decision several times. As a result, it is not always clear whether SEE countries are eligible for financial, technological, scientific or other aid provided by Annex II countries through the mechanisms of the UNFCCC and the Kyoto Protocol.

Participation in the Carbon Markets

Once the Kyoto Protocol entered into force in the SEE countries, the countries became eligible to participate in one of the three emissions trading (flexible) mechanisms of the Kyoto Protocol — that is, the Clean Development Mechanism (CDM). As non-Annex I parties they are eligible to host CDM projects.

The countries' status with respect to Annex I to the UNFCCC can change with EU accession, after which they cease to be eligible. This issue will be discussed in below.

Participation in the voluntary carbon market (VCM) seems to be only a theoretical possibility for these countries in the 2008 to 2012 period.

Albania Through the amendment of the Law on Environmental Protection (No. 9890, dated March 20, 2008), the minister of environment was given the mandate to issue rules and procedures for hosting CDM projects. The same ministry is the designated national authority for CDM projects. The amendment of the Law on Forests and Forest Service (No. 9385, dated May 4, 2005) provides a definition of “forest” for the purposes of Kyoto Protocol/CDM projects. So far, no CDM project has been implemented to the stage of CDM Executive Board (EB) consideration. However, two memoranda of understanding have already been signed — with Italy and Denmark.

Bosnia and Herzegovina supports the concept of CDM. Preparation for CDM is currently in the initial stages.

The former Yugoslav Republic of Macedonia So far, one project on hydroelectricity has been rejected by the CDM EB. However, two projects are in the pipeline — one on fuel switch and one on biomass.

Montenegro has taken significant steps in the development of CDM:

- Establishment of a designated national authority for CDM in February 2008 — the CDM Committee and Technical Operational Body (CTOB) under the Ministry for Tourism and Environmental Protection (MTEP).
- Preparation of sustainable development criteria and indicators for CDM project approvals.
- Elaboration of internal procedures, criteria and timeframe for the evaluation and approval of CDM projects within the CTOB.
- Creation of a designated national authority website.
- Preparation of a portfolio of potential CDM projects with a focus on energy, waste and water sectors.
- Signature of a memorandum of understanding with the Italian Government on cooperation on environmental projects.

However, the MTEP considers that the following projects should be elaborated for the further development of the CDM framework in the country:

- Capacity building of members of the designated national authority on technical CDM issues.
- Identification of potential CDM projects.
- Preparation of the CDM review procedure.
- Investigation of market opportunities for CDM projects.
- International conference to promote CDM opportunities in Montenegro or Italy.
- Proposal for the creation of a Carbon Finance Fund in Montenegro.

Serbia is currently preparing its institutional, legal and regulatory framework for CDM in close cooperation with the Government of Norway.

Every country in the SEE region is keenly interested in the establishment of the framework for the CDM, which is a good channel for foreign direct investments. The reduction potential in the region is high enough to attract donors. However, whether or not this potential will be realised depends heavily on the modalities for flexible mechanisms in the next commitment period; the date of EU accession; and the length of the transitional periods granted for implementing the stipulations of the EU directives. There is an additional question regarding the compatibility of implementing the EU Emission Trading System (EU ETS) (Decision 2003/87/EC) in the country with being a host country for CDM projects.

All countries that have ratified the Kyoto Protocol and that are eligible to implement CDM or JI projects could also undertake voluntary projects. The voluntary carbon market (VCM) is a carbon offset mechanism outside the Kyoto Protocol. This mechanism enables companies in unregulated sectors to offset their emissions and to benefit from selling emissions. However, since SEE countries are likely to be eligible for either JI or CDM projects, their interest in the VCM is not likely to be high. Prices for carbon offset units on the compliance markets are higher than those on the VCM.

Perspectives in the post-2012 regime

EU accession and the participation of SEE countries in the international climate change negotiations under the UNFCCC and the Kyoto Protocol

The SEE countries are either EU candidate countries (the former Yugoslav Republic of Macedonia) or potential candidate countries (Albania, Bosnia and Herzegovina, Montenegro and Serbia). Accessing countries share the EU vision on a number of global issues, including combating climate change. On a practical level, accession necessitates the transposition of EU legislation, the so-called *acquis communautaire*, into the national legislation, and the enforcement of this legislation. The adoption and enforcement of environmental legislation is an important part of this process.

Recently, these two processes have developed without much synchronisation of efforts. Accession, which is likely to happen in the post-2012 commitment period, will raise a number of questions with respect to the UNFCCC process. Answers to such questions will need to be given by the COP, COP/MOP, the EC and the countries themselves.

Ambiguity of status

As mentioned above, the countries under discussion are non-Annex I countries under the UNFCCC. At the same time, the European Community (representing the EU), as a party to both the UNFCCC and the Kyoto Protocol, is included in both Annex I and Annex II, meaning that this party both recognises its historical responsibility for accumulated carbon pollution and accepts a duty to provide assistance to non-Annex I parties. So should SEE countries that are parties to the UNFCCC switch annexes upon accession? Can the European Community retain its status as an Annex I and Annex II party under the UNFCCC even if some parties/member states are non-Annex I countries? Following the accession of Cyprus and Malta (non-Annex I parties) the status quo has so far been maintained. Will this still be the case when the number of non-Annex I countries becomes significantly bigger?

Quantified GHG emission reduction target

At present, the obligations of the SEE countries in the post-2012 period are rather moderate, if not unclear.

The Bali Action Plan, adopted in 2007, again uses the developed/developing countries dichotomy rather than Annex I and non-Annex I countries. Paragraph 1 b (i) and (ii) reads:

1 (b) Enhanced national/international action on mitigation of climate change, including, inter alia, consideration of:

(i) Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances;

(ii) Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity building, in a measurable, reportable and verifiable manner.

Logically, the commitments of SEE countries should be the same as those of developing countries, since their economic conditions are similar. To implement the UNFCCC in a full, effective and

sustainable manner they should carry out “nationally appropriate mitigation actions” (NAMAs) in a manner that is “measurable, reportable and verifiable” (MRV)⁹.

At the same time, it is doubtful whether the EU would consent to so mild an approach from its candidate and potential candidate countries. The EU has ambitious CO_{2eq} emission reduction targets, adopted by the European Council in 2007; and goals listed in its Energy and Climate Package adopted in December 2008. Moreover, on January 28, 2009, the EC published the Communication to the European Parliament and the European Council of the Ministers “Towards a Comprehensive Climate Change Agreement in Copenhagen”, in which the ambitious goals were confirmed.

However, it is hard to expect from SEE countries, some of which still suffer from post-war conditions, the same commitments and activities that are feasible for developed countries.

The communication also contains directions and recommendations on the role of developing countries in terms of mitigation and adaptation actions, financing, and the role of carbon emissions trading, differentiating between emerging economies and Least Developed Countries. The approach can be similar, especially towards potential candidate countries. The European Commission is ready to engage with economically advanced developing countries so that they take appropriate actions that will collectively deliver a deviation of 15 to 30 percent below business as usual in 2020. These developing countries should commit to adopting low-carbon development strategies by the end of 2011. Such strategies should cover all the key emission sectors and provide an estimate of additional net investment costs for mitigation and the viable financing and mitigation policy options to leverage such investments. The activities would be supported by a new Facilitative Mechanism for Mitigation Support.

Should this approach be adopted, significant capacity building will be needed.

Reporting obligations on GHG accounting and other topics

When the SEE countries accede to the EU, reporting obligations will significantly increase.

As shown by the accession experience of the 10 economies in transition, even though the quantified emission reduction target of the European Community will be met by the EU-15, all GHG reporting activities became obligatory for the new member states immediately upon accession.

EU member states’ reporting activities comprise both reporting under the UNFCCC and the Kyoto Protocol as Annex I parties, and reporting under the requirements of the European Commission.

A comparison of the reporting activities of Annex I and non-Annex I countries shows that reporting under Annex I is more intense.

At present, SEE countries, as non-Annex I parties, are obliged to submit national communications within three years of the entry into force of the convention (Article 4.1 and Article 12 of the UNFCCC). In the Initial National Communication, information should be provided on: national circumstances; GHG inventories for either 1994 or 1990; (planned) activities, policies and measures to implement the UNFCCC; vulnerability and adaptation; capacity building; and technical and financial needs. Of the SEE countries, only Albania and the former Yugoslav Republic of Macedonia have submitted their Initial National Communication, and the former Yugoslav Republic of Macedonia is currently the only country to have submitted the Second National Communication, in which it is required to estimate the GHG inventories for the year 2000.

At the same time, between 2010 and 2013, Annex I parties will have to submit annually:

- GHG inventories (National Inventory Report and Common Reporting Format) of emission by sources and withdrawals by sinks (Decisions 19/CP.8 and 14/CP.11) prior to April 15. In addition, EU member states should submit the same information earlier — by

⁹ At present there is no clear, internationally agreed definition of NAMA and MRV.

January 15 (Article 2, European Parliament and Council Decision No. 280/2004/EC concerning a mechanism for monitoring Community GHG emissions and for implementing the Kyoto Protocol). Through the process of internal reviews, the European Community as a party also prepares GHG inventories.

- Accounting for annually selected land use, land-use change and forestry (LULUCF) activities.
- Standard electronic format to report on Kyoto Protocol units.
- Changes in national systems and registries.

Pursuant to Article 3(2) of Decision 280/2004/EC, EU member states must report on projections of GHG emissions based on different scenarios — without measures leading to emission reductions; with measures; and with additional measures. Also, the status of the flexible mechanisms under the Kyoto Protocol must be reported, as well as the main projected economic indicators. Monitoring mechanism reporting allows the EU to assess the situation in terms of its compliance with emission reduction targets and to identify the sources of and areas for further reductions. These reports should be submitted every second year by member states by March 15.

A number of reporting activities arise as a result of the implementation of Directive 2003/87/EC on the EU ETS. Each year, by March 31, installations covered by the scheme must submit data on emissions in accordance with the Guidelines for Monitoring and Reporting (MRG), 2007.

Significant capacity building is required for compliance with these reporting requirements.

Position of SEE countries on the post-2012 carbon markets

As mentioned above, whether or not CDM potential is realised depends heavily on the modalities for flexible mechanisms in the next commitment period; the date of EU accession; and the length of the transitional periods granted for implementing the stipulations of the EU directives.

There is also a question concerning the compatibility of the EU ETS with being a host country for CDM projects. As pointed out by experts from SEE countries at the workshop “Support for shaping the post-2012 climate regime” (held on March 4-5, 2009, at the REC, Szentendre, Hungary), CDM reduction potential is concentrated in the energy sector and energy efficiency sectors. These sectors are heavily regulated by directives under the framework of Common and Coordinated Policies and Measures (CCPM). The stipulations of the directives should enter the baselines of projects, ensuring legal additionality. As a result, the amount of legally accepted carbon offset units (CERs) that can be acquired through a project becomes far smaller.

The most promising potential CDM sites may be covered by the EU ETS. If the SEE countries retain their non-Annex I status after accession, it is still not clear how the CDM infrastructure will co-exist with the EU ETS.

Current situation in international negotiations

As mentioned above, SEE countries have certain difficulties participating fully in international climate change negotiations. The reasons for this include:

- The limited financial and human resources of these countries, as a result of which, a limited number of negotiators are able to attend rounds of negotiations.
- The increasing number of agenda items under all the bodies (COP, COP/MOP, SBI, SBSTA, AWG-LCA, AWG-KP) as well as the increasing number of meetings. Those few people serving as negotiators for their SEE country are not physically able to follow all of them. In addition, they have to continue fulfilling their duties in their home ministries.
- The need for capacity building on negotiation skills. While representatives of SEE countries are able negotiators, they sometimes lack knowledge of the technicalities of the negotiation processes.

Lack of regional cooperation is another possible reason. Experience shows that parties with similar circumstances are able to form negotiating groups with greater negotiating weight and decision power than separate countries (e.g. G77 + China, the former Central Group 11, the European Community). There is no such negotiating group of SEE countries, even though their national circumstances are similar. On the other hand, decision makers in these countries may have their own reasons for not forming a single negotiating group and/or not joining already existing groups.

However, it is still worth considering the potentially positive aspects of international cooperation for SEE countries. One positive result from the recent negotiations in Poznan was the re-establishment of the informal negotiating group Central Group 11¹⁰ (CG 11), which previously comprised former accession countries that had already become members of the EU, plus Croatia. Following the Poznan conference, Turkey joined Croatia in the CG. SEE countries may also join the CG on the basis of common ground such as their pre-accession status. This will make their participation in the intense and complex international climate change negotiations more efficient by making them more vocal and better organised, and will help them to defend their positions with regard to the post-2012 agreement. Being united in a group will have the added benefit of making contacts and coordination with the EU delegation easier and more effective.

Preliminary ideas of the parties and observers on the above issues have been compiled in the assembly document FCCC/AWGLCA/2008/16.

Adaptation needs in the post-Kyoto regime

Adaptation to the effects of climate change will become one of the elements of the post-2012 regime in SEE. According to the various scenarios presented in the IPCC Fourth Assessment Report, the simulated annual mean surface temperature in the SEE region will increase by 2.2 degrees under the “low” scenario, and by 5.1 degrees under the “high” scenario by 2099; and precipitation, especially in the summer months, will decrease by 24 to 40 percent. The number of winter days is likely to decrease, and snow depth is expected to decrease over the whole of Europe. Annual runoff from rivers may decrease by between 6 and 36 percent by the year 2070. The frequency of climate-related natural disasters such as droughts, heat waves, floods in coastal zones, forest fires and hailstorms is likely to increase significantly. These changes obviously have a huge effect on both natural and socioeconomic life. In the South East European Climate Change Framework Action Plan for Adaptation the following sectors are listed as vulnerable: water management; agriculture and food security; forestry; fisheries; tourism, especially coastal and mountain tourism; coastal infrastructure; and human health. Losses in biodiversity can already be observed, and with further warming more and more indigenous species will either become extinct or move to higher altitudes.

The Framework Action Plan for Adaptation, adopted at the SEE ministerial conference in November 2008, clearly states that the countries of the SEE region lack sufficient institutional, human and financial capacities to meet these challenges and to carry out adequate adaptation actions.

Experts identified the following priority areas for capacity building in the field of adaptation and impact assessment:

- Improving access to and the collection, management, exchange and use of observation data and other relevant information on the current and historical climate and its impacts in SEE.
- Modernising national hydrometeorological services in SEE countries.
- Developing and applying climate models, and improving access to and the use of data on projected climate change in the SEE region.

¹⁰ CG 11 was established on the principle of inclusion in Annex B and accession to the EU (Bulgaria, Croatia, Estonia, the Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). The group had two observers: Malta and Cyprus (non-Annex B).

- Developing and applying methodologies for impact and vulnerability assessment and integrating them into socioeconomic scenarios.
- Developing, calibrating and applying impact models for agriculture, water resources and biodiversity.
- Training experts on modern adaptation technologies and techniques.
- Preparing coherent and comprehensive action plans, strategies and programmes on the local, regional, national and transnational levels.
- Preparing legislation and methodological guidelines on the integration of adaptation issues in long-term planning.
- Raising awareness among all stakeholders of climate change and the need for adaptation.

General conclusions

The architecture of the post-2012 agreement will be generally designed at the negotiation round in December 2009 in Copenhagen. The way in which the commitments of the SEE countries under the new climate agreement synchronise with the accession process will be identified at the bilateral negotiations between the EU and the candidate countries.

Whatever the design of the future agreement, some of the capacity-building needs are already clear. The list below is indicative: as the climate change negotiations proceed, more and more needs will be identified.

Areas of need already identified include:

- Assessment of the possibilities for sustainable and carbon-low growth based on the forecasts for economic development; assessment of the GHG reduction potential of economies is also relevant. However, countries are facing economic recession caused by a number of factors, and the level of their GHG emissions will strongly depend on how they are going to satisfy their energy and electricity needs in the future. The more advanced the installed technologies, the less carbon pollution will be caused by growth. Information of this kind can also significantly strengthen the position of SEE countries in future negotiations.
- Strengthening the negotiation teams. Since some SEE countries were established later than the signing of the UNFCCC and even the Kyoto Protocol, their negotiators had no opportunity for “learning by doing” in the early stages of the climate negotiation process. Training for negotiators can be of great importance, regardless of whether SEE negotiators decide to form a negotiation group or negotiate on behalf of their own countries. Another clear area of lack is human capacity — since delegations from SEE countries are small, their negotiators are unable to follow all the negotiation contact groups on a number of important questions and therefore have difficulty representing their countries’ interests.
- Strengthening capacities for reporting exercises. In the post-2012 context, even non-Annex I countries will clearly be obliged to do more reporting both on GHG emissions at national level and on implemented policies and measures. Accession to the EU and joining the EU ETC will require reporting at enterprise level.
- Acquiring updated equipment for measuring, collecting, processing, analysing and archiving data.

2.3. Perspective of Turkey post-2012

Current state of play

Turkey's position under the United Nation Framework Convention on Climate Change and its Kyoto Protocol

When the United Nations Convention on Climate Change (UNFCCC) was adopted in 1992, Turkey, as a member of the OECD, was included among the countries of the UNFCCC's Annex II. At COP 7 in Marrakech, 2001, Turkey was deleted from Annex II (Decision 26/CP.7). Turkey remained an Annex I party to the UNFCCC, in a position that is different from that of other Annex I countries, and it is not listed in Annex B to the Kyoto Protocol. Turkey acceded as the 189th party to the UNFCCC on May 24, 2004, and has the following main commitments:

- Submission of regular reports — National Communications and GHG inventories
- Implementation of policies and measures in climate change mitigation, adaptation, systematic research, education, training and public awareness.

Turkey has undertaken several activities in relation to its commitments under the UNFCCC, including the submission to the UNFCCC Secretariat of the first National Inventory of Greenhouse Gas Emissions (2006); the Initial National Communication to the UNFCCC (2007); the initialisation of the preparation of the Second National Communication (2008) (activities financed by UNDP); the institutionalisation of activities related to climate change; public awareness projects; and, most significantly, the recent preparation of a National Climate Change Action Plan, covering mitigation and adaptation, as called for in the ninth National Development Plan (2007–13).

On January 5, 2009, the Parliament of Turkey finalised the national procedures for the ratification of the Kyoto Protocol. It will enter into force in Turkey on the 90th day following the date of the deposit of the ratification instrument (Art. 25.3 of the Kyoto Protocol). As Turkey is not included in Annex B of the Kyoto Protocol, it implies that Turkey has not adopted any target for the limitation or stabilisation of emissions of greenhouse gases in the period 2008 to 2012, compared to 1990 levels.

Once the Kyoto Protocol enters into force for Turkey, it still cannot participate in any of the three emissions trading (flexible) mechanisms of the Kyoto Protocol, as only non-Annex I parties can host Clean Development Mechanism (CDM) projects and only Annex B parties can implement Joint Implementation (JI) and International Emission Trading (IET). Participation in the voluntary carbon market (VCM) seems to be the only realistic possibility for Turkey in the period 2008 to 2012, unless the country changes its status towards the UNFCCC Annex I or Annex B to the Kyoto Protocol.

The Voluntary Carbon Market

All countries that have ratified the Kyoto Protocol and are eligible to implement CDM or JI projects may also undertake voluntary projects. Voluntary carbon projects (VCPs) are implemented outside the Kyoto Protocol and provide additional emissions reductions. This mechanism enables those companies in unregulated sectors to offset their emissions and to benefit from selling emission reductions. Countries such as Turkey, Kazakhstan and Belarus, that have either not yet ratified the Kyoto Protocol or that, even after ratification, will not be eligible to participate in any of the Kyoto Protocol's flexible mechanisms (due to the fact that they are Annex I, but not Annex B parties) may also benefit from VCPs.

Turkey already has some experience with voluntary carbon projects. The voluntary carbon markets (VCMs) are not regulated internationally, but are becoming increasingly regulated under pressure from buyers to receive credible VERs. Recently, VCPs have been developed in accordance with

standards that are bringing project implementation closer to CDM requirements. Turkish VCPs have been developed mainly in accordance with the Gold Standard.

Turkey was the first country in the world to host Gold Standard verified emission reduction projects. To date, more than 30 project design documents (PDDs) have been developed for VCPs. The expected greenhouse gas reductions resulting from the implementation of these projects are above 5 million tonnes. The verified emission reductions (VERs) from these projects are traded on the voluntary carbon market. The number and volume of VCPs make Turkey one of the most successful countries in the emerging voluntary market. The projects are mainly in the area of renewable energy — wind-power generation and small hydropower.

Information about VCPs in Turkey is not collected in a systematic way as there is no requirement for this and the government is not supervising the process. It is expected that the government will develop national procedures for the implementation of VCPs in order to support the use of this mechanism, to improve quality control and thus to receive higher prices for VERs. However, it should be noted that the VCM is likely to be affected more severely than the Kyoto Protocol mechanisms by the current global financial and economic crises since it operates on a completely voluntary basis and it is possible that buyers will limit their future voluntary carbon budgets.

Taking into account the current international climate change position of Turkey, it is more likely that the country will participate in the VCM for the first commitment period, rather than any of the Kyoto Protocol mechanisms. The future status of Turkey under the Kyoto Protocol defines its possibility to participate in different emissions trading markets. If Turkey becomes an Annex B party, it will be possible to divert some of the VCPs into JI projects (presumably the price of ERUs will be higher than VERs) and the country could benefit from both JI and VCM projects.

Status of Turkey with respect to EU accession

Turkey has been an associate member of the European Union (formerly of the European Economic Community) since 1963. In 1949 it became a founding member of the Council of Europe; it has been a member of the Organisation for Economic Co-operation and Development (OECD) since 1961; the Organization for Security and Co-operation in Europe (OSCE) since 1973; and an associate member of the Western European Union since 1992. Turkey signed a customs union agreement with the EU in 1995 and was officially recognised as a candidate for full membership in 1999. Negotiations were started in 2005 and are still ongoing.

As a key element of the accession process, negotiations are held with each country to determine their ability to apply EU legislation. An underlying principle of the negotiations is that countries have to fully transpose and implement EU legislation by the time of accession. This means that in order to accede to the EU, Turkey must first successfully complete negotiations with the European Commission on each of the 35 chapters of the EU *acquis*.

The EU provides international leadership in combating climate change and has agreed on ambitious carbon cuts by 2020 and subsequent periods (for more details see the chapter below). The climate change policies and measures that have resulted from EU international policy are covered in EU legislation by numerous strategies, programmes and directives in almost all sectors of the economy.

Turkey is becoming more supportive to EU international climate change policy, although it still remains far from the EU's ambitious targets. At national level, Turkey's efforts on climate change have also been energised and assisted by its EU approximation process. However, in the accession negotiations the chapter on environment in Turkey is still not compatible with EU legislation. The Ministry of Environment and Forestry of Turkey (MoEF) has developed an EU Integrated Environmental Approximation Strategy (2007-2023). It contains information pertaining to the technical and institutional infrastructure, as well as the required environmental improvements, as well as the mandatory arrangements necessary to establish complete compliance with the EU environmental *acquis communautaire* and the effective implementation of EU legislation, which are the two preconditions for Turkey's membership of the EU.

Institutional framework with regard to climate change

The MoEF is the national focal point on climate change and is the leading governmental agency for all issues related to climate change in Turkey. At the same time, the MoEF is the focal point for the European Environment Agency and plans to establish a link to the European Environment Information and Observation Network (EIONET) through a national EIONET system for the fulfilment of reporting requirements.

Within the MoEF, there are departments related to the energy sector responsible for emission control and environmental impact assessment. The General Directorate carries out activities on environmental protection and the control of air pollution and performs environmental impact assessments and planning. Harmonising the existing environmental legislation with the EU *acquis* lies within the responsibilities of the MoEF. The ministry and its associated branches are primarily responsible for forestry activities across the country as well.

The inter-ministerial National Coordination Board on Climate Change, initially established in 2001, was revised by Prime Ministerial Circular No. 25377, published on February 18, 2004¹¹. The board is responsible for overall climate change policy, in particular the preparation of national communications, public participation in climate change policy and its implementation.

The role of the Parliament was expanded in 2007, with the creation of the Research Commission to evaluate the causes of climate change and its implications for Turkey.

Other governmental entities are involved in climate change activities and contribute to research, programme initiatives and communication, which will be further strengthened when Turkey's strategy on climate change is developed and implemented. These include the State Planning Organisation, the Ministry of Foreign Affairs, the Ministry of Energy and Natural Resources, the Ministry of Industry and Trade, the Ministry of Finance, the Ministry of Agriculture and Rural Affairs, and the Ministry of Transport.

The Turkish Statistics Institute (TurkStat) is the designated body responsible for the compilation and updating of the national GHG inventory. The institute has been reorganised in line with the European Commission Statistics Office at every level, including sub-divisions. TurkStat implements GHG emission inventory activities under the coordination of the Air Statistics Team, which operates as part of the Environmental Statistics Group. With respect to the inventory, Turkey needs significant improvements, as noted by the UNFCCC Secretariat after an in-depth review.

In 2004, the Regional Environmental Center (REC) in Turkey was nominated as focal point for Article 6 (Education, training and public awareness) of the UNFCCC. This formula seems to work very successfully and Turkey has many positive examples of work in the area of public awareness.

In the last few years, Turkey has shown a growing capacity and has participated more actively in international negotiations. The Turkish delegation at the last COP in Poznan, 2008, comprised 28 experts, coming from almost every ministry and organisation listed above. The Government developed advance negotiation positions on a variety of important issues for Turkey, coordinated with the EU position. The delegation was well organised, participated actively in numerous contact groups, and coordinated with interested countries. A very positive result was the reestablishment of the informal negotiating group Central Group 11¹² (CG 11), which previously comprised former accession countries that had already become members of the EU, as well as Croatia. Turkey has now joined Croatia in the CG, while all other countries aiming at EU accession (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro and Serbia) will join CG shortly. This will make the participation of those countries in the intense and complex international

¹¹ Official Gazette No. 2004/13

¹² CG 11 was established on the principle of countries' inclusion in Annex B and accession to the EU (apart from Croatia) (Bulgaria, Croatia, Estonia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). The group had two observers: Malta and Cyprus (non-Annex B).

climate change negotiations more efficient by making them more vocal and organised, and will help them to defend their positions in regard to the post-2012 agreement. Another benefit is that being united in a group will make contact and coordination with the EU delegation easier and more effective.

However, on the whole capacity-building activities are supported by international organisations (e.g. the UNDP project supporting Turkey in the international negotiations) and far more capacity building will be needed in the future, as well as better and extended cooperation amongst various stakeholders.

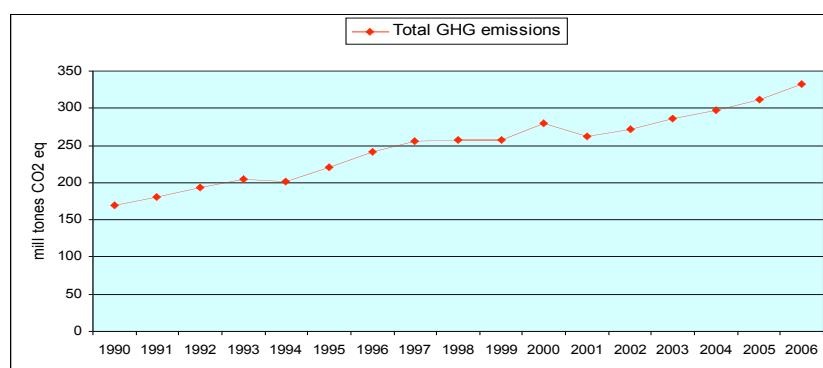
Greenhouse gas (GHG) emissions of Turkey

Turkey's total GHG emissions increased steadily in the period 1990 to 2006 due to the country's steady population growth and intensive industrialisation. The total GHG emissions of Turkey rose by 89 percent between 1990 and 2006, from 170.1 to 332.0 million tonnes. The table below shows total GHG emissions in millions of tonnes of CO₂e for this period.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
GHG	170.1	182.0	193.6	204.0	200.5	220.7	242.1	255.5	256.6
Year	1999	2000	2001	2002	2003	2004	2005	2006	
GHG	256.8	280.0	262.1	270.6	286.3	296.6	312.4	332.0	

Source: TurkStat, 2007

The graph below, based on the figures in the table, gives a clearer picture of the trend of total GHG emissions in Turkey during the last two decades.



The major component of Turkey's GHG emissions is CO₂ — 82.1 percent of the total; followed by methane (15.8 percent), nitrogen oxides (1.1 percent) and fluorinated gases (1.0 percent). With respect to economic sectors, the energy sector share represented 78 percent of total emissions in 2006. This percentage is close to the sector's share of 77.7 percent in 1990, due to a shift from coal to gas in electricity generation and residential heating, the introduction of new energy technologies, and the removal of some old vehicles.

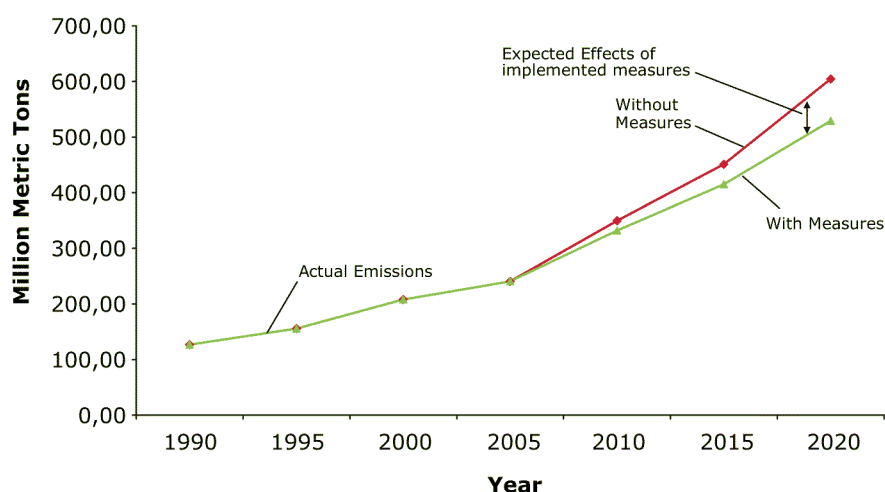
For the same period, the CO₂ emissions per capita for Turkey increased by about 33 percent and per unit TPES (total primary energy supply) by approximately 6 percent. During the same period, the OECD Europe average for these indicators decreased by 4.3 and 10.6 percent respectively. Turkey's CO₂ emissions per capita in 2006 were 3.0 tonnes per capita (at the bottom of the list of world average-income countries), and far below the OECD Europe average, which is 7.6 tonnes per capita. On the other hand, CO₂ emissions per unit of GDP decreased by 3.1 percent in Turkey, while they

decreased by 25 percent in OECD Europe. This shows that relative decoupling was achieved between the growth of CO₂ emissions and GDP in Turkey. However, this achievement of decoupling should be further pursued as the total growth of CO₂ is still expected to be significant.

The projections for GHG emissions in the period 2005 to 2020 reported in Turkey's National Communication to the UNFCCC on a "business-as-usual" basis show an increase in CO₂ emissions of 6.3 percent annually, reaching a total of 604.63 million tonnes per year by 2020, which is more than double the 2005 total and represents a growth of more than 350 percent compared to 1990. This significant growth in emissions is due to the high growth in final electricity demand as well as the continued significant reliance on fossil fuels in this sector, despite the increased usage of natural gas, nuclear energy and renewables.

The "with measures" scenario projects that national CO₂ emissions will fall in 2020 by 75 million tonnes per year, or by 12 percent. With respect to sectors targeted by the planned mitigation measures, this means 16.8 percent in the power sector; 14.6 percent in industry; and 14.4 percent in the residential sector. The envisaged larger percentage reduction in the power sector is due to the proportionately higher decline of fossil fuel usage, particularly of coal. The execution of the foreseen domestic measures could essentially reduce lignite and imported coal-fired generation.

The graph below is taken from the Initial National Communication of Turkey and illustrates the extremely fast growth of GHG emissions up to 2020 under the two scenarios described above, and the relatively small difference between them.



Even if the ambitious "with measures" scenario were realised, Turkey's GHG emissions in 2020 would be high and with rising trends beyond 2020, as industrialisation and population growth continue. This shows that Turkey faces an enormous challenge in reducing GHG emissions now and in the post-2012 period.

Perspectives of Turkey in the post-2012 regime

Current situation in international negotiations relating to Turkey

Following the fourth report released by the Intergovernmental Panel on Climate Change (IPCC) in 2007, the pressure on policy makers in industrialised countries to reduce GHG emissions has increased. That pressure is also felt by policy makers in emerging markets, such as China, India, Brazil and Turkey, as their GHG emissions have increased in parallel to their economic growth. The Turkish Government is undertaking some climate change policies in response to pressure from international organisations, the media and society, which should result in the end in more binding emissions targets in the post-2012 period. Both developed countries and major developing countries

or emerging markets such as China, India, Brazil, Indonesia, Malaysia, South Africa, Mexico and Turkey have less than a year until the next UNFCCC COP in Copenhagen, Denmark (to be held in December 2009) to consider their involvement in the future climate change regime.

One of the main reasons for not reaching an agreement on a post-2012 regime at the Bali (2007) and Poznan (2008) COPs was related to the role of the emerging markets in reducing global GHG emissions after the end of the first Kyoto commitment period in 2012. Developed countries, especially the US, see the need for major developing countries to commit themselves to take action in the post-2012 regime. Reports on projections for economic growth of the seven largest emerging market economies (E7) — China, India, Brazil, Indonesia, Mexico, Russia and Turkey — indicate that global carbon emissions from those countries will double by 2050¹³.

During the last two COPs, delegates from the major developing countries showed no signs of accepting mandatory restrictions. However, underscoring the right to develop their economies in order to achieve better living standards and reduce poverty, and the already documented “historical responsibilities” of developed countries in fighting climate change based on the principle of equity, policy makers in emerging markets do not want to lead global efforts against climate change. Nevertheless, with a clear understanding of the fact that climate change has already impacted the developing world negatively, they are paying more attention to this global problem. They would like to initiate sustainable development practices in their countries and contribute to the worldwide emissions reduction schemes under the principle of “common but differentiated responsibilities”.

Countries with emerging markets are clear that they cannot take steps that will slow down their economic growth, as they see rapid economic growth as the only way to pull a significant portion of their population out of poverty. At the Bali COP, delegates from emerging markets agreed for the first time to seek ways to make “measurable, reportable and verifiable” (MVR) emissions cuts. However, they showed no signs of agreeing to any mandatory restrictions soon, emphasising that their priority remains economic growth to alleviate poverty.

As yet, there is no internationally agreed definition of MRV mitigation actions and commitments for the post-2012 regime, and there remain many outstanding issues to be decided with respect to how to operationalise MRV.

The Bali Action Plan does not define MRV: the only references to it are found in paragraph 1 b (i) and (ii). According to the Bali Action Plan, a comprehensive process will be launched to enable the full, effective and sustained implementation of the UNFCCC through long-term cooperative action, now, up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at its fifteenth session, by addressing, inter alia:

1 (b) Enhanced national/international action on the mitigation of climate change, including, inter alia, consideration of:

(i) Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances;

(ii) Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity building, in a measurable, reportable and verifiable manner.

At the moment it is not clear what type of mitigation actions might be agreed for enhanced GHG mitigation actions by both developed and developing countries for post-2012, thus it is difficult to predict what type of MRV activities are required. Nor is it clear whether the MRV requirements will be similar or markedly different for developed and developing countries.

¹³ PricewaterhouseCoopers, The World in 2050

The question of what MRV requirements will be needed, how they will be measured and for how long, remains open. Nor is it clear how developing countries' MRV activities will be linked to the support provided by developed countries. However, what is clear is that a definition of MRV must be agreed as soon as possible in order to build the architecture of the post-2012 agreement.

Furthermore, under the UNFCCC there is currently no official consideration of developing countries' mitigation policies. Although some developing countries provide information about specific mitigation policies as a whole, this information is irregular and incomplete even in their National Communications, due to their limited capacity.

Actions to be reported as part of nationally appropriate mitigation actions (NAMAs) by developing country parties (paragraph 1 b ii of the Bali Action Plan) have still to be finalised.

In relation to the registration and accounting systems of the nationally appropriate mitigation actions by developing countries, there are different proposals from UNFCCC parties, which include the establishment of a kind of international registry of nationally appropriate mitigation action undertaken by all developing countries. One proposal is that NAMAs implemented in a measurable, reportable and verifiable manner should be recognised and rewarded with carbon credits.

The Bali Action Plan, in paragraph 1 (b) (iv) in relation to enhanced mitigation after 2012, refers to "co-operative sectoral approaches and sector-specific actions".

Similar to MRV, the design of sectoral approaches and sector-specific actions has not yet been defined or agreed. However, there have already been some UNFCCC discussions on sectoral approaches (Accra workshop, 2008) and, broadly, three types are possible:

- national (considered as relevant for some developing countries);
- regional/international sectoral agreements;
- technology cooperation in various sectors.

It does not seem realistic to expect that detailed features of sectoral approaches and sector-specific actions will be agreed in Copenhagen. However, some general provisions in this regard might be adopted.

The preliminary ideas of the parties and observers on the issues above have been compiled in assembly document FCCC/AWGLCA/2008/16.

Besides MVR and NAMAs, there may well be pressure in the near future to extend the number of countries with quantified commitments to include some developing countries with the largest emerging market economies (including Turkey).

In this regard, the position of the new US administration is anticipated with great interest and will have a significant influence. President Barak Obama has made it clear that combating climate change is among his highest priorities. Obama ran a presidential campaign pledging to cut US greenhouse gas emissions by 80 percent by the middle of the century. He made his first move to fulfilling that promise when he ordered the Environmental Protection Agency to reconsider its refusal, under President Bush, to allow California and 13 other states to regulate car exhaust emissions. He also directed the car industry to produce cars that can achieve 35 miles per gallon by 2020. This sign of a very active national policy is expected to be witnessed in the international arena as well.

Recent European Union climate change international policy

On January 28, 2009, the EC published the communication¹⁴ to the European Parliament and the European Council of the Ministers "Towards a Comprehensive Climate Change Agreement in Copenhagen." The document contains directions and recommendations on international climate

¹⁴ http://ec.europa.eu/environment/climat/pdf/future_action/communication.pdf

policy targets, the role of developed and developing countries in terms of mitigation and adaptation actions, financing, and the role of carbon emissions trading.

In the document, the EC reiterates the CO₂e emission reduction targets adopted by the European Council in 2007 and the main topics of the EU Energy and Climate Package adopted in December 2008, which include:

- the objective to limit the average global temperature increase to less than 2 degrees centigrade compared to pre-industrial levels;
- an autonomous 20 percent reduction in EU emissions by 2020 below 1990;
- a 30 percent reduction target in the context of a sufficiently ambitious and comprehensive international agreement that provides for comparable reductions by other developed countries, and appropriate actions by developing countries;
- 80 to 95 percent reduction of emissions by 2050 in developed countries, leading to a global 50 percent emission reduction by 2050.

With respect to the position of the EU towards developing countries, the European Commission is ready to engage with developing countries, especially with those that are economically more advanced, so that they take appropriate actions that will collectively deliver a deviation of 15 to 30 percent below business as usual in 2020.

The EC core proposal, in line with paragraph 1 (b) of the Bali Action Plan, is that “under the Copenhagen Agreement, all developing countries, except Least Developed Countries (...) should commit to adopting low-carbon development strategies by the end of 2011.” These strategies would not necessarily contain quantified commitments, but it is proposed that the development of strategies is “a credible pathway to limit the country’s emissions through nationally appropriate mitigation actions that cover all key emitting sectors”. Such national low-carbon development strategies will have to provide an estimate of additional net investment costs for mitigation and the viable financing and mitigation policy options to leverage such investments and would be supported by a new facilitative mechanism for mitigation support, which “should provide a platform to match proposed action with appropriate bilateral and multilateral support mechanisms, based on a technical assessment. It should also assess whether the overall level of ambition pursued in the plan is in line with the capacity of the country to take action and appropriate for achieving the overall emission reduction compared to baseline of the group of developing countries.”

In order to ensure a sufficient level of ambition, discussions on concrete strategies, proposals for action and support should be linked to and facilitated by an independent technical analysis. Furthermore, the EC suggests that the strategies should explore options to raise the level of ambition for those countries.

The EC communication refers to sectoral approaches as a tool in the analysis and development of mitigation options, while taking into account technical information from the private sector. Special attention is paid to the possibility that some of the developing countries over time can adopt and implement domestic cap-and-trade systems that can spur efficient national action.

In regard to adaptation, the EC suggests that all countries should be required to draft comprehensive national adaptation strategies.

The EC proposes that developing country action should be listed in an international registry under the UNFCCC, showing the mitigation benefits, using transparent and robust measurement, reporting and verification methods. The COP will review the resulting mitigation efforts of the group of developing countries as a whole and may decide to request developing countries to strengthen their mitigation efforts, and developed countries to increase their support.

Plausible post-2012 options for Turkey

It might be assumed that, following the recent ratification of the Kyoto Protocol and as a member of the OECD and a candidate for accession to the EU, Turkey will join the industrialised nations that

have commitments to reduce GHG emissions. However, with the lowest per capita GDP amongst OECD countries and the fastest-growing population, Turkey will need economic growth to raise living standards. Furthermore, Turkey has a per capita emission level for GHG below the OECD and the EU and a little below the world average¹⁵. These factors lead to the projected rapid growth of GHG emissions in Turkey and a considerable challenge to reduce GHG emissions and thus join Annex B countries. Additionally, the Turkish Government has stated several times during international negotiations that Turkey considers itself to be a developing country. This paper does not explore the possibility of Turkey withdrawing from Annex I and becoming a non-Annex I party, as this is a regressive option and is not in line with current and expected international and EU climate change policy.

It is therefore very likely that Turkey will move gradually, in sequential steps, towards more stringent commitments in regard to GHG emissions reductions and commitments under the post-2012 regime. The proposed multi-stage approach by Ecofys (“Implications of proposals for future international climate policy after 2012 on Sweden”, 2008) seems highly applicable to the case of Turkey as it is a more flexible way of including differentiation among countries, taking into account that countries have different levels of economic development and, for this reason, could have different obligation under the future climate regime.

There are different approaches to defining the stages and the criteria for upgrading from one to another. While it is not yet clear how the multi-stage approach will be shaped under the UNFCCC, the following four stages are described in the Ecofys study:

- **Stage 1** — No commitment stage: countries do not have binding emission reduction targets.
- **Stage 2** — De-carbonisation stage: countries will have GHG intensity targets expressed as emissions per GDP. In this intermediary stage, countries are obliged to build environmental objectives into development policies committing themselves in a clear way to sustainable development.
- **Stage 3** — Stabilisation stage, or moderate absolute target: countries commit themselves to a moderate target for absolute emissions.
- **Stage 4** — Reduction stage: countries must have substantial absolute emission reductions (until a low per capita level is reached).

Currently, as a non-Annex B party to the Kyoto Protocol, Turkey is currently at the first stage and does not have quantified emissions reduction targets. The fact that Turkey belongs to the seven largest emerging economies, the various circumstances of the country and the recent achievements at international negotiations described in the chapters above should all be taken into consideration. In addition, the potential for synergies between sustainable development and climate change policies make it advisable for the country to build its position in line with the Bali Action Plan and the EC with respect to nationally appropriate mitigation actions in the context of sustainable development. Thus, Turkey should develop and adopt low-carbon development strategies by the end of 2011. This is in line with the 2008 plans of the Turkish Government to develop a National Climate Change Action Plan (NCCAP). The NCCAP is expected to emphasise the expansion of ongoing no-regrets measures, including further upgrading of power plants; research and development on clean coal technologies; the fulfilment of the 2004 Energy Efficiency Strategy improving insulation and regulations in the building sector; the promotion of less-polluting cars; and the restructuring of the railway systems. The plan also envisages the approval of the Energy Efficiency Law, enacted in May 2007; expanding participation in international co-operative projects; and the further harmonisation of Turkish legislation with the EU *acquis* in areas that will support the implementation of the NCCAP. The plan also includes the EU directive on CO₂ labelling of passenger cars, which has been transposed into Turkish legislation in the form of the Regulation on

¹⁵ The CO₂ per unit of GDP (in tonnes/USD 1,000) for Turkey is 0.39, compared to some other OECD members such as Mexico — 0.40; Korea — 0.47; France — 0.23; Germany — 0.38; Poland — 0.62; Portugal — 0.32, and OECD Europe as a whole — 0.33.

Informing Consumers on Fuel Economy and CO₂ Emissions of New Passenger Cars, which will enter into force at the beginning of 2009.

The forthcoming NCCAP will definitely be an important step towards expanding and integrating climate change measures in all sectors of the economy and bringing Turkey closer to the possibility to shape its position in line with the Bali Action Plan. However, there is a need for a more comprehensive National Climate Change Strategy (2012–2020–2050) in accordance with new international requirements. This should define the key policies and measures in these time periods (or, respectively, the time periods to be agreed under the post-2012 regime), the possible financial resources, costs and benefits in terms of GHG reductions, as well as how their co-ordination and implementation will be realised.

Furthermore, as the above-mentioned EC communication suggests, the strategy could explore options to raise the level of ambition for Turkey. This would be important if the possibility of introducing a national target for GHG emissions over a defined period of years is explored, as a voluntary and non-binding national goal, even if not linked to the specifications of the Kyoto Protocol or the successor to the Kyoto regime after 2012. This could provide a bridge for a further upgrading of Turkey in terms of the commitment stages towards a moderate target for absolute emissions. For Turkey (350 percent emissions growth projected by 2020) it might even include an increase in GHG emission levels, but it should be below the business-as-usual scenario. One of the benefits of accepting such a target is the possibility to take part in the Kyoto Protocol's emissions trading mechanisms (not obligatory). Additionally, during times of economic restructuring such as the current global financial, economic and energy crisis period, more efforts should be made to redirect the economy to more "green growth" patterns. Governments and companies have to change their strategies and shift their focus to the economy, which has to adapt to the worldwide scarcity of resources, and more attention should be paid to technology innovation, renewable energy sources and energy efficiency. Resource scarcity is more marked in emerging markets such as China, Brazil and Turkey, thus when designing climate change strategy this might be a positive way to influence existing economic patterns towards low-carbon growth.

In any case, it is very important for Turkey to continue to examine various economic and regulatory measures that might be enforced to reduce GHG emissions. In this regard, Turkey¹⁶ should consider the environmental and political benefits that could accrue from joining the EU emissions trading scheme (ETS). The EU is committed to help interested developing countries to gain experience in emissions trading and to boost their capacity, and in particular to set up governance structures and strong domestic institutions to monitor and report emissions. Additionally, Turkey should explore other possibilities for acquiring additional financial and technical support for its climate change activities elsewhere within the international community.

The multi-stage approach allows a step-by-step process for the gradual phase-in of countries in mandatory emissions reduction efforts and takes into account national circumstances. At this stage it seems that Turkey is far from committing to binding emission reductions, but in the long term this should be the country's ultimate objective. All envisaged climate change and related studies and policies should therefore be oriented towards achieving this goal.

With the ratification of the Kyoto Protocol on February 5, 2009, Turkey can be expected to become a party to the protocol before the Sessions of the Subsidiary Bodies of the Kyoto Protocol in June, to be held in Bonn, Germany, and the following sessions of the Ad Hoc Working Groups and the COP15/MOP5 in Copenhagen, Denmark. This will provide negotiators with a possibility to be actively involved in the forthcoming negotiations and to state firmly Turkey's position with respect

¹⁶ The 2006 Turkish law amending the earlier Law on Environment encourages the use of economic instruments and incentives such as the collection of emission and pollution charges and mechanisms based on the market, e.g. carbon trading.

to the post-2012 regime and its participation in it. For this reason, the government should develop a negotiation position that is coordinated with national stakeholders and might involve consultations with some other countries of interest to Turkey, and should give a clear mandate to its negotiators to be integrated into the future agreement. This is of great urgency and priority for Turkey as time is very short before the Copenhagen agreement is reached in December 2009.

ANNEX: Summary of approaches to future commitments

1. Contraction and convergence, and common but differentiated convergence

The concept of contraction and convergence (C&C), elaborated by the Global Commons Institute, is based on the assumption that per capita emissions should converge to an equal level. The per capita emission — introduced by developing countries in the Marrakesh Accords, 2001 — seems to be a fair approach to achieving a final global deal. The concept of equal per capita emission rights is based on the principle of sharing the global atmospheric common good equally among all people of the world. The concept is traditionally supported by many developing countries that have emitted far fewer GHGs than developed countries.

However, the concept has not been welcomed by developed countries, in particular the USA. As a result, Annex I parties are not even required to report per capita emissions in their national communications to the UNFCCC Secretariat.

Contraction is determined by the CO₂ concentration level to be achieved in order to keep global warming within the range proposed by the IPCC. Convergence implies that permitted emissions are to be based on allocation per capita, and the allocations can be traded. One important factor is the timing of convergence, which needs to be agreed by all participants. This means that in most of the developing countries emissions per capita can be increased, although these countries need to implement policies in order not to exceed their emission limit.

The general perception is that, under C&C, resources will be transferred through emission trading from the developed countries to developing countries. However, there are big differences between advanced developing countries and less-advanced developing countries. It may be the case that not all developing countries would benefit from this approach, but only those that are far below the average (which will be given bigger emission allowances in order to converge), while those that have per capita emissions above or close to the average will receive lower allowances than their business-as-usual projections.

The C&C approach is simple, clear, transparent and cost-effective. However, only current per capita emissions are taken into consideration, while other national circumstances are neglected. In particular, the historical contribution of the countries is not taken into account. One way of eliminating this conflict is to allow countries with smaller economic capabilities and relatively low GHG emissions not to take part in the system, but instead to have only absolute emission limits should their per capita emissions exceed a certain threshold value. Countries below this threshold do not have to comply with absolute emission limits.

The common but differentiated convergence (CDC) approach was designed to address the shortcomings of C&C (Höhne et al., 2004). The CDC approach is based on the principle of common convergence, assuming that all countries' per capita emissions converge while being "differentiated". This means that developing countries would have the same commitment target as developed countries, but at a later stage, depending on actions by developed countries. More precisely, it means that Annex I countries' per capita emissions have to converge at a low level within several decades. Individual non-Annex I countries also converge at the same level within the same time period, although this period begins when their per capita emissions achieve a threshold determined by a certain percentage of the global average. Until then they may voluntarily take on "positively binding" targets. Non-Annex I less-developed countries that do not exceed this percentage threshold will have no binding reduction requirements. They can either undertake CDM projects or voluntarily assume "positively binding" emission reduction targets. Until this time, emission allowances may be sold.

It is envisaged that convergence will be achieved within 40 years (2010 to 2050) to an equal level for all countries (setting a relatively strict long-term target, e.g. lower than 450 ppmv), while the non-Annex I countries will start convergence later, as described above. Allowances will change if concentration targets are higher (e.g. 550 ppmv CO₂), or if convergence is achieved earlier than 2050.

The CDC approach is bottom up, with emission allowances allocated among regions in line with the global stabilisation target of CO₂ concentration. However, the environmental effectiveness of the bottom-up CDC approach is less certain than in the top-down C&C approach. Setting the equal convergence level of per capita emissions is a very complex and challenging task that is dependent on a variety of important factors.

The approach is almost as simple as the C&C approach but has two advantages. On the one hand, it allows advanced developing countries a certain delay in that they can start to reduce their emissions later than Annex I countries. On the other hand, CDC is free of the political problems inherent in resource sharing and financial transfers, since, unlike C&C, it does not provide excess emission allowances for low-emission countries. This might make it more acceptable than C&C to major developing countries.

2. Multi-stage approach (A compromise proposal)

The multi-stage approach proposed by the National Institute for Public Health and the Environment of the Netherlands (RIVM) groups countries according to their level of socioeconomic development. The various groups have different responsibilities and commitments, while countries belonging to one particular group share similar responsibilities and commitments. This approach assumes that countries move gradually through several stages between Annex I and non-Annex I countries in terms of increasing stringency (in contrast with the first commitment period, where there were only two stages: Annex I and non-Annex I). The sequence of stages could provide a flexible way to take account of differentiation among countries, since it would reflect the fact that countries have different levels of economic development and therefore different obligations under the future climate policy regime.

The crucial question is how to group countries and how to define the criteria according to which a country moves from one stage to the next. It would seem reasonable to define the stage of change based on a certain threshold expressed in, for example, emissions per capita or GDP per capita. Once a country has exceeded this threshold, it is ready to “graduate” to the next stage.

There are different approaches to defining the stages and the criteria for transferring from one stage to the next. One possible way is described below (den Elzen et al., 2003):

Stage 1. No commitment stage

Countries have no binding emission reduction target. At present, as a minimum, all the least developed countries (LDCs) would belong to this stage.

Stage 2. De-carbonisation stage

Countries will have GHG intensity targets expressed as emissions per GDP. In this intermediary stage, countries are obliged to build environmental objectives into development policies, clearly committing themselves to sustainable development. This stage is also called the “enhanced sustainable development” phase. Of course, the implementation of such sustainable development policy must be monitored and there must be a way to verify whether the targets are being met. Related costs can be covered either by the countries themselves or by other countries.

Stage 3. Stabilisation stage or moderate absolute target

Countries within this stage commit themselves to a moderate target for absolute emissions. (In some cases it might even include an increase in GHG emission level, but it should be below the business-as-usual scenario.) The acceptance of such a target means the possibility of taking part in emission trading. Allowances can be sold or bought, but this is not obligatory.

Stage 4. Reduction stage

Countries at this stage must have substantial absolute emission reduction until a low per capita level is reached. As time passes, hopefully more and more countries will enter stage 4. Substantial absolute reduction is required by developed countries in the short term in order to achieve the stabilisation of GHG concentrations, but developing countries should also contribute to the overall reduction target. During this procedure, countries need to commit to developing and implementing new greenhouse gas mitigation technologies. The application of new technologies and the commitment required are defined more clearly than in the UNFCCC and the Kyoto Protocol, although there is still room for flexibility. A step-by-step approach is possible for the gradual phase-in of countries into the mandatory emission reduction effort and national circumstances are taken into account.

The weak point of this concept is that it is a relatively complex system that requires many decisions to be taken. Also, the timeframe for progress from one stage to the next is not defined, thus some long-term stabilisation options may be lost. In order to prevent this, incentives are needed to encourage countries to participate, rather than just thresholds that further complicate the system.

3. Sectoral approach

The first sectoral approach, known as the triptych approach, is based on the concept of sharing emission allowances among sectors. This can be done globally or for a group of countries. It takes into consideration national circumstances and national potential for emission reduction. It was originally developed by the University of Utrecht in the Netherlands and was used to identify the share of emission allowances for the first commitment period under the Kyoto Protocol within the EU. The concept is currently being further elaborated and tested by Japanese experts.

Originally three main sectors were considered: the energy production sector, energy-intensive industries, and the residential and tertiary sectors. When calculating reasonable allowances for these sectors, a well-defined set of rules has to be applied. This is not an easy task and general agreement has to be reached among participants. Targets have to be set in such a way that global carbon concentrations are stabilised, but at the same time room should be left for increased production. In terms of energy production, the target is calculated by setting criteria for GHG intensity. For energy-intensive industries, energy efficiency is used to calculate the targets; and for the residential sector per capita GHG emissions are taken into consideration (Groenenberg et al., 2003).

The main strength of the sectoral approach is that many national circumstances can be taken into account and participating countries have a certain flexibility as to how they wish/are able to achieve the target. If a country has large coal reserves it is allowed to use them in the long term but must improve energy efficiency.

Nevertheless, the approach does have weak points. It is quite complex, requires a lot of data at the sectoral level, and may lack transparency. Another delicate issue is how to reach agreement at a global level regarding projections for production growth rates, in particular for electricity production and heavy industry. In terms of shared emission allowances, there remains a tension between an over-simplistic approach that is unable to accommodate national circumstances and concerns (e.g. converging per capita emissions), and an over-complicated approach.

The sectoral approach implies a substantial reduction by industrialised countries, in particular by countries with high carbon-releasing industries such as the countries of Central and Eastern Europe and the Russian Federation. However, it allows substantial emission increases for most developing countries.

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