



Observations made by expert review teams in the in-depth reviews of fourth national communications of Parties included in Annex I in relation to greenhouse gas emission projections until 2020

Note by the secretariat

I. Introduction

A. Mandate

1. At its seventh meeting, the facilitative branch agreed to keep the matter on how it can carry out its responsibilities to provide advice and facilitation “with the aim of promoting compliance and providing for early warning of potential non-compliance” under section IV, paragraph 6(a), of the procedures and mechanisms relating to compliance under the Kyoto Protocol on the agenda of its eighth meeting.¹

2. In this regard, the branch also agreed to consider, at its eighth meeting, observations made by expert review teams (ERTs) in the in-depth reviews (IDRs) of fourth national communications (NC4s) of Parties included in Annex I in relation to greenhouse gas emission projections until 2020.²

B. Scope

3. To facilitate discussions by the branch the secretariat has prepared this paper, which compiles the observations made by the ERTs in the IDR of the NC4s.

4. It should be noted that the NC4s were due on 1 January 2006, as such the information on which the ERTs made their findings may be out of date. The fifth national communications (NC5s), due on 1 January 2010³ will provide an updated and more accurate picture of emissions projections and trends. In this context, the facilitative branch has requested a background paper which provides the branch with a compilation and assessment of information on trends in relation to the commitments under Article 3, paragraph 1 of the Kyoto Protocol found in the reports of the IDR of national communications of these Parties.⁴ This background report will be prepared on completion of all of the IDRs for the NC5s.

C. Possible action by the facilitative branch

5. The branch may wish to consider the observations made by the ERT in the IDRs of NC4s of Parties included in Annex I and have a preliminary exchange of views, bearing in mind that the NC4s were submitted over four years ago and that the branch has requested a background paper regarding the NC5s, referred to in paragraph 4, that will provide a more accurate picture of emission trends.

¹ CC/FB/7/2009/2, Report of the seventh meeting of the facilitative branch, paragraph 7.

² CC/FB/7/2009/2, Report of the seventh meeting of the facilitative branch, paragraph 9.

³ Decision 10/CP.13.

⁴ CC/FB/6/2008/2, paragraph 7.



II. National communications from Parties included in Annex I to the UNFCCC

A. Background

6. Article 4, paragraph 1, and Article 12 of the United Nations Framework Convention on Climate Change (UNFCCC) provides that Parties are required to communicate to the Conference of the Parties (COP) on the national inventory of anthropogenic emissions by sources and removals of all greenhouse gas emissions (GHG) emissions not controlled by the Montreal Protocol and the steps they are taking to implement the Convention. In accordance with decisions 11/CP.4, 4/CP.5 and 4/CP.8, Parties included in Annex I should follow the revised reporting guidelines for the preparation of national communications⁵. In this regard, Parties included in Annex I should provide a projections section that gives an indication of future trends in GHG emissions and removals, given current national circumstances and implemented and adopted policies and measures, and an indication of the path of emissions and removals without such policies and measures.⁶

7. These reporting requirements are supplemented by Article 7 of the Kyoto Protocol and related decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP). Each Party included in Annex I is to incorporate in its NC submitted under Article 12 of the UNFCCC the supplementary information necessary to demonstrate compliance with its commitments under the Protocol, as set out in the guidelines for the preparation of the information under Article 7 of the Kyoto Protocol.⁷ Article 7, paragraph 3, of the Kyoto Protocol provides that each Party included in Annex I shall submit the information required under Article 7, paragraph 2, as part of the first national communication due under the Convention after the Kyoto Protocol has entered into force for it and after adoption of guidelines for the preparation of information under Article 7.⁸ Therefore, the fourth national communication was the first national communication under the Kyoto Protocol.

8. Each national communication of a Party included in Annex I is subject to an IDR that is conducted by an international team of experts and that should provide a comprehensive, technical assessment of a Party's implementation of its commitments to reduce GHGs.⁹

B. Fourth national communications

9. NC4s were due on 1 January 2006.¹⁰ IDRs of the available NC4s took place from 2006 to 2009. All the reports of the IDRs of NC4, except for Luxembourg and Ukraine, are available on the UNFCCC website.¹¹ Luxembourg submitted its fourth NC in conjunction with the submission of its

⁵ FCCC/CP/1999/7: Guidelines for the preparation of National Communications by Parties included in Annex I to the Convention. Part II: UNFCCC Reporting Guidelines on National Communications.

⁶ Section IV of the UNFCCC Reporting Guidelines on National Communications as contained in document FCCC/CP/1999/7.

⁷ Decision 15/CMP.1, Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol, paragraph 28.

⁸ Decision 22/CMP.1, Guidelines for review under Article 8 of the Kyoto Protocol.

⁹ Reviews conducted in accordance with the following decisions: 2/CP.1, 9/CP.2, 6/CP.3 and 33/CP.7, 26/CMP.1 and 7/CP.11.

¹⁰ Decision 4/CP.8, National communications from Parties included in Annex I to the Convention.

¹¹ Reports on in-depth reviews of national communications of Annex I Parties, as contained on UNFCCC web-page: http://unfccc.int/national_reports/annex_i_natcom/idr_reports/items/4056.php



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fifth NC on 14 February 2010; while Ukraine provided its third and fourth NC in conjunction with its NC5 on 8 February 2010.

10. As noted above, most NC4s were submitted over four years ago, hence the information on which the ERTs made their findings may not reflect the current situation. In addition, due to the lack of guidance from the CMP on supplementarity, as well as the lack of experience in quantifying supplementarity, the conclusions by the ERT should be considered preliminary. Furthermore, the NC4s only provide a preliminary basis for the base year emissions levels. In view of this, some of the conclusions drawn below may not necessarily reflect the information in the NC5, or their IDRs. NC5s will provide an updated and more accurate picture of emissions projections and trends on which to consider the early warning function set out in section IV, paragraph 6, of the annex to decision 27/CMP.1.

C. Fifth national communications

11. Parties included in Annex I are requested to submit their NC5 to the secretariat by 1 January 2010.¹² Following submission, these NCs will be subject to an IDR in 2010 and 2011. It is envisaged that this work will be completed in early 2012.

12. It is expected that the NC5 will show that some Parties included in Annex I have improved their projections, either in terms of completeness or with respect to the consideration of ‘with additional measures’ scenarios.¹³ This might also be the case, as policies and measures implemented in the lead-up to the submission of the NC4 needed some time to be fully implemented and their effect to become visible in the emission trend of Parties.

13. In addition, it is expected that the NC5 may provide more comprehensive and reliable data with respect to GHG emissions projections, data from the base year and supplementarity. In this regard, ERTs in the IDRs of NC4s recommended that some Parties include data from the base year 1990 when presenting emissions projections for the different scenarios in a tabular format (e.g. Czech Republic) or to provide actual data for the base year as required by the UNFCCC reporting guidelines (e.g. Romania). With respect to supplementarity, the ERT in the IDRs of the NC4s have encouraged some Parties to provide more information on the supplementarity regarding the use of the flexible mechanisms (e.g. France, New Zealand; see Table 3).

III. GHG emission projections with respect to meeting commitments for reducing GHG emissions under the Kyoto Protocol

14. Table 1 provides an overview of information as contained in reports of the IDRs with respect to the ability of Parties included in Annex I to meet their commitments for reducing GHG emissions under the Kyoto Protocol. If information on the use of flexible mechanisms

¹² Decision 10/CP.13, Compilation and synthesis of fourth national communications.

¹³ FCCC/CP/1999/7: Part II: UNFCCC Reporting Guidelines on National Communications. Section VI, paragraph 29. These Guidelines provide a definition of the different projections that Parties included in Annex I should provide: a ‘with measures’ projection shall encompass currently implemented and adopted policies and measures. A ‘with additional measures’ projection also encompasses planned policies and measures. If provided, a ‘without measures’ projection excludes all policies and measures implemented, adopted or planned after the year chosen as the starting point for this projection.



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was provided by a Party, the share between domestic action and use of the flexibility mechanisms is indicated in Table 1.

15. Base year levels of total national emissions, that are the basis for quantified emission limitation or reduction commitments (percentage of base year or period level), were defined by Parties and reported in the Initial Reports, which were due before 1 January 2007.¹⁴ The final values of the base year emissions for the purposes of establishing the assigned amount, as well as determining compliance at the end of the additional period for fulfilling commitments as set out in section XIII of annex to decision 27/CMP.1 were determined by the initial review. At the end of the commitment period, the determination of each Party included in Annex I compliance with its emission commitment will be made by comparing its total Annex A emissions to its available assigned amount.¹⁵ The source of base year data is included in the initial review reports (IRR) for Annex I Parties included in Annex B to the Kyoto Protocol.¹⁶

16. However, as IRRs became available only after the completion of the NC4 for most Parties included in Annex I, different base year data was indicated by some Parties. Nevertheless, as observed by the ERTs, differences in base year emissions as reflected in the NC4 and the initial reports are expected to affect trends and compliance with respect to Australia only.

¹⁴ Decision 13/CMP.1, Modalities for the accounting of assigned amounts under Article 3, paragraph 4, of the Kyoto Protocol, paragraph 1.

¹⁵ Decision 13/CMP.1, paragraphs, 11, 12 and 14.

¹⁶ Kyoto Protocol base year data as contained on UNFCCC website
http://unfccc.int/ghg_data/kp_data_unfccc/base_year_data/items/4354.php



Table 1 – Information on the fulfilment of the commitments to reduce GHGs, by domestic action or additional use of flexible mechanisms, as contained in reports of the in-depth review of the fourth national communications

Annex I Party	Domestic action	Use of flexible mechanisms
Australia (FCCC/IDR.4/ AUS, table 4)	<ul style="list-style-type: none"> Australia is currently on track to meet its commitment under the Kyoto Protocol even though Australia had not planned to ratify the Kyoto Protocol at the time of preparing the document. (para 22) 	<ul style="list-style-type: none"> NR
Austria (FCCC/IDR.4/ AUT, table 4)	<ul style="list-style-type: none"> The ERT noted that domestic (implemented and adopted) measures will not be enough to enable Austria to meet its commitments for reducing GHG emissions under the Kyoto Protocol. (para 15) 	<ul style="list-style-type: none"> Austria plans to use flexible mechanisms to fill the gap by means of joint implementation JI/CDM credits. (para 15). Austria's purchase target for JI/CDM credits is at least 9 Mt CO₂eq annually. (para 79)
Belgium (FCCC/IDR.4/ BEL, table 4)	<ul style="list-style-type: none"> Under the 'with additional measures' scenario, Belgium expects to achieve greater reductions, and possibly reach the Kyoto target. (para 36) The ERT noted that Belgium has made significant progress towards achieving its GHG emission reduction commitments. (para 58) 	<ul style="list-style-type: none"> By using the flexible mechanisms of the Kyoto Protocol in addition, Belgium expects to exceed its Kyoto target by 1.29 Mt CO₂eq. (para 36)
Bulgaria (FCCC/IDR.4/ BGR, table 4)	<ul style="list-style-type: none"> The results of the GHG emission projections imply that Bulgaria should not experience difficulties in meeting its Kyoto Protocol target for the first commitment period in any of the analysed scenarios; even the emission level under the 'without measures' scenario is well below the Kyoto Protocol target level. (para 33) 	<ul style="list-style-type: none"> The results of the projections imply that in both the 'with measures' and 'with additional measures' scenarios a substantial potential exists for trading the unused part of the GHG emissions quota. This potential amounts to average annual emissions of 34.9 Mt CO₂eq in the 'with measures' scenario, and to 41.8 Mt CO₂eq in the 'with additional measures' scenario. (para 35)
Canada (FCCC/IDR.4/ CAN, table 4)	<ul style="list-style-type: none"> The ERT noted that Canada has not clarified in its NC4 how it plans to meet its Kyoto Protocol target for the first commitment period. (para 71) 	<ul style="list-style-type: none"> ERT felt that Canada could provide more information on the planned use of the Kyoto Protocol mechanisms, in order to reach its Kyoto Protocol target, in its next national communication. (para 51)
Croatia (FCCC/IDR.4/ HRV, table 4)	<ul style="list-style-type: none"> NR 	<ul style="list-style-type: none"> Croatia did not give details of the use of flexible mechanisms. (para 45)
Czech Republic (FCCC/IDR.4/ CZE, table 4)	<ul style="list-style-type: none"> The projected 2010 emissions of the Czech Republic are significantly below its Kyoto target; the party can meet its target under the Kyoto Protocol without implementing any further GHG mitigation measures. (para 36) 	<ul style="list-style-type: none"> The Czech Republic is not planning to participate as an investing country in project-based flexible mechanisms, so information on complementarity regarding the use of flexible mechanisms is not required. (para 55)
Denmark (FCCC/IDR.4/ DNK, table 4)	<ul style="list-style-type: none"> There is still a considerable reduction deficit to be made up before Denmark can meet its Kyoto target commitment; the Danish government intends to make up this deficit by a complex package consisting of domestic measures. (para 37) 	<ul style="list-style-type: none"> The Danish government intends to make up the deficit by the EU ETS in its second phase and the use of the flexibility mechanisms of the Kyoto Protocol (up to 4.5 Mt CO₂). (para 37)
Estonia (FCCC/IDR.4/ EST, table 4)	<ul style="list-style-type: none"> Estonia expects to meet its Kyoto commitments by domestic actions alone. (para 54) 	<ul style="list-style-type: none"> NR



Annex I Party	Domestic action	Use of flexible mechanisms
European Union (FCCC/IDR.4/EC, table 4)	<ul style="list-style-type: none"> Aggregate projections based on existing domestic PaMs show that GHG emissions of the EU-15 will be 3.6% below base-year levels by 2010 (para. 48); additional policies and measures would be needed to meet the reduction targets of some Member States. (para 75) 	<ul style="list-style-type: none"> When including the use of the Kyoto Protocol mechanisms (JI/CDM) by Member State governments (3%) and total removal resulting from LULUCF activities under Article 3, paragraphs 3 and 4, (1.3%), the Party expects to reduce its emissions by 8.0% by 2010, thus reaching its target under the Kyoto Protocol. (para 48)
Finland (FCCC/IDR.4/FIN, table 4)	<ul style="list-style-type: none"> Finland recognizes that the current policy packages are not sufficient to meet the target and estimates the difference between its likely emissions and the target at about 9.3 Mt CO₂eq annually (carbon sink effects included). (para 18) 	<ul style="list-style-type: none"> Participation in the EU ETS and strengthened domestic measures are expected to account for 6.9 Mt CO₂eq per year. The flexibility mechanisms of the Kyoto Protocol, including the acquisition of emission reductions by the Finnish Government, will be used to compensate for the remaining deficit (expected to be about 2.4 Mt CO₂ annually), recognizing that the marginal cost of domestic emission reductions in Finland is one of the highest in the EU. (para 57)
France (FCCC/IDR.4/FRA, table 4)	<ul style="list-style-type: none"> Projections under the ‘with measures’ scenario show that France will not be able to reach its commitment of GHG stabilization with the current PaMs. (para 40) Following the updated GHG projections (EEA, 2007), France expects to meet its Kyoto target under the EU burden-sharing agreement and even reduce 3.4% beyond the target, if additional measures are implemented and delivered as projected. (para 40) 	<ul style="list-style-type: none"> There is no information in the NC4 regarding possible governmental use of the flexible mechanisms of the Kyoto Protocol. (para 62)
Germany (FCCC/IDR.4/DEU, table 4)	<ul style="list-style-type: none"> ERT noted that Germany is likely to reach its ambitious emission reduction target under the Kyoto Protocol by means of domestic measures alone. (para 66) 	<ul style="list-style-type: none"> Germany did not give details of the use of flexible mechanisms.
Greece (FCCC/IDR.4/GRC, table 4)	<ul style="list-style-type: none"> Greece intends to achieve its Kyoto Protocol target through the implementation of domestic measures. (para 38) 	<ul style="list-style-type: none"> Preparatory activities have been started which could allow Greece to use credits from the Kyoto Protocol mechanisms. (para 69)
Hungary (FCCC/IDR.4/HUN, table 4)	<ul style="list-style-type: none"> Projections indicate that Hungary can meet its Kyoto Protocol target, even under the baseline scenario, and GHG emissions are not expected to exceed the Kyoto Protocol target even by 2020. (para 48) 	<ul style="list-style-type: none"> NC4 does not specify the projected effect of the implementation of the EU ETS on GHG emissions. (para 17) Hungary did not give details of the use of flexible mechanisms.
Iceland (FCCC/IDR.4/ISL, table 4)	<ul style="list-style-type: none"> With the application of decision 14/CP.7 and the exclusion of single projects falling under this decision, Iceland expects to be able to meet its Kyoto Protocol target. (para 39) The ERT noted that Iceland expects to meet its Kyoto target with measures in the transport, industry and waste sectors. (para 42) 	<ul style="list-style-type: none"> Iceland expects to be able to meet its Kyoto target without accounting for LULUCF activities or using the Kyoto Protocol mechanisms. (para 58)
Ireland (FCCC/IDR.4/IRL, table 4)	<ul style="list-style-type: none"> Ireland will continue to face an average annual shortfall in its Kyoto Protocol target by around 7.174 Mt CO₂eq in the period 2008–2012. (para 37) The ‘with additional measures’ scenario that was provided during the review (EPA), suggests that Ireland would meet this target by using additional measures and LULUCF activities. (para 38) 	<ul style="list-style-type: none"> Ireland plans to reduce its emissions by at least 3.02 Mt CO₂eq annually by combining domestic emission reductions and purchasing allowances through the EU ETS. (para 59) According to the RDP, the remaining reductions of 4.154 Mt CO₂eq will be met through a combination of additional measures and the use of the Kyoto Protocol mechanisms. (para 59)
Italy (FCCC/IDR.4/ITA, table 4)	<ul style="list-style-type: none"> The ERT noted that using domestic PaMs alone will be insufficient for Italy to meet its Kyoto target, requiring Italy to also use credits from the flexible mechanisms. (para 23) 	<ul style="list-style-type: none"> However, the planned use of flexible mechanisms reported in the NC4 will not be sufficient to fill the gap between the projected emission levels and the Kyoto target. Therefore, additional measures would be required. (para 23) The ERT noted that even after taking into account all measures, Italy will still fall short of its Kyoto Protocol target by 3.2 Mt CO₂eq. (para 47)





Annex I Party	Domestic action	Use of flexible mechanisms
Japan (FCCC/IDR.4/ JPN, table 4)	<ul style="list-style-type: none"> The ERT noted that Japan intends to achieve its Kyoto Protocol target using a combination of domestic measures, accounting of LULUCF activities and use of the Kyoto Protocol mechanisms. (para 33) 	<ul style="list-style-type: none"> Besides the domestic action, Japan intends to achieve its Kyoto Protocol target in accounting of LULUCF activities (-3.9% of the Kyoto target) and with the use of the Kyoto Protocol mechanisms (-1.6% of the Kyoto target). (para 60)
Latvia (FCCC/IDR.4/ LVA, table 4)	<ul style="list-style-type: none"> Latvia's total GHG emissions projected for 2010 are well below its Kyoto Protocol target for the first commitment period (under both scenarios). The ERT therefore noted that Latvia is likely to meet its Kyoto Protocol target. (para 59) 	<ul style="list-style-type: none"> The main objective of the Climate Change Mitigation Programme 2005–2010 is (...) the participation in the EU emissions trading scheme (EU ETS) and the Kyoto Protocol flexibility mechanisms. (para 17)
Liechtenstein (FCCC/IDR.4/ LIE, table 5)	<ul style="list-style-type: none"> The ERT noted that Liechtenstein is far from reaching its Kyoto Protocol target through domestic PaMs alone. (para 51) Limited information was provided on how Liechtenstein intends to close the expected gap between its Kyoto target and the projected level of emissions. (para 46) 	<ul style="list-style-type: none"> In the Climate Protection Strategy of Liechtenstein submitted during the review, it is mentioned that two thirds of the reductions needed in order for Liechtenstein to reach the Kyoto Protocol target will be achieved through use of the flexible mechanisms. (para 33) The ERT noted that if Liechtenstein uses the flexibility mechanisms to close the projected gap, this will account for twice the amount of GHG mitigation effects that are projected to be achieved through the PaMs (which is approximately 20 Gg CO₂eq.). (para 46)
Lithuania (FCCC/IDR.4/ LTU, table 4)	<ul style="list-style-type: none"> Given the development of GHG emissions since 1990, Lithuania is expected to be able to achieve its emission reduction commitment without making use of the flexible mechanisms of the Kyoto Protocol. (para 52) 	<ul style="list-style-type: none"> The ERT reiterates the comment of the review of Lithuania's NC2 to the effect that compliance with reporting requirements is a precondition for use of the flexible mechanisms of the Kyoto Protocol. (para 53)
Luxembourg	Luxembourg submitted its fourth NC in conjunction with the submission of its fifth NC on 14 February 2010, thus no in-depth review of the fourth national communication is available.	
Monaco (FCCC/IDR.4/ MCO)	In its NC4, Monaco does not provide the required GHG emissions projections and at the time the IDR was carried out, none was available. (para 25)	
Netherlands (FCCC/IDR.4/ NLD)	<ul style="list-style-type: none"> The Netherlands will not meet its target under the EU burden sharing agreement under the Kyoto Protocol by means of domestic actions alone. (para 38) 	<ul style="list-style-type: none"> The Netherlands Government has already decided to acquire 100 Mt CO₂eq of credits from the project-based mechanisms under the Kyoto Protocol. The ERT noted that this will be sufficient to enable the Netherlands to meet its Kyoto target. (para 38)
New Zealand (FCCC/IDR.4/ NZL)	<ul style="list-style-type: none"> The difference between projected GHG emissions and New Zealand's target under the Kyoto Protocol is about 20.5 Mt CO₂eq per year on average (without considering the use of sinks) over the first commitment period (2008—2012). (para 35) The projections indicate that New Zealand will need to identify and implement additional policies and measures to meet its Kyoto Protocol target. (para 69) 	<ul style="list-style-type: none"> The ERT noted that New Zealand expects to generate removal units under Article 3.3 which will help it meet its Kyoto Protocol target. (para 35)
Norway (FCCC/IDR.4/ NOR)	<ul style="list-style-type: none"> The ERT noted that the difference between 'with measures' scenario and the Kyoto Protocol target was 11.2 Mt CO₂eq, which is close to the 'deficit' of 10 Mt, as reported in the NC4. (para 35) 	<ul style="list-style-type: none"> Norway indicates in its RDP that it intends to address this gap partly through additional domestic policies and measures, and partly through the use of the Kyoto Protocol mechanisms. (para 60)
Poland (FCCC/IDR.4/ POL)	<ul style="list-style-type: none"> The ERT noted that, according to Poland's latest GHG emission projections, the national GHG emission reduction target will be met by Poland in the first commitment period without applying additional measures. (para 44) 	<ul style="list-style-type: none"> The comprehensive measures for reducing GHG emissions in Poland include the emissions trading scheme and the JI mechanism. (para 63)





Annex I Party	Domestic action	Use of flexible mechanisms
Portugal (FCCC/IDR.4/ PRT)	<ul style="list-style-type: none"> The ERT noted that NC4 projections clearly indicate that total GHG emissions will exceed the Kyoto Protocol target level in 2010, as total national emissions under the 'with measures' scenario are projected to be 11.7 Mt CO₂eq above this level. (para 34) ERT gained the impression that reaching the Kyoto Protocol target will pose a challenge to Portugal. (para 36) 	<ul style="list-style-type: none"> In addition to implemented and planned domestic measures, a further reduction of 4.7 Mt CO₂eq in 2010 would be obtained by using carbon sinks, while an additional reduction of 5.8 Mt CO₂eq would result from making use of flexible mechanisms under the Kyoto Protocol. (para 35)
Romania (FCCC/IDR.4/ ROU)	<ul style="list-style-type: none"> The ERT noted that even under the 'business as usual' scenario, total GHG emissions in 2020 would not exceed the base year level. (para 35) 	<ul style="list-style-type: none"> Romania plans to make use of the flexibility mechanisms of the Kyoto Protocol but there is no intention or need to utilize their effect for compliance during the first commitment period 2008-2012. (para 57)
Russian Federation (FCCC/IDR.4/ RUS)	<ul style="list-style-type: none"> According to the projection 'with measures' presented by the Russian Federation in the NC4 and in response to a request made by the ERT during the review, the Party will meet its Kyoto target. (para 40) 	<ul style="list-style-type: none"> NR
Slovakia *(FC CC/IDR.4/SV K)	<ul style="list-style-type: none"> Total GHG emissions (without LULUCF) are projected to remain well below the Kyoto Protocol target during the first commitment period (2008–2012). (para 32) 	<ul style="list-style-type: none"> Slovakia does not consider the EU ETS as a measure to help it meet its Kyoto target. (para 54)
Slovenia (FCCC/IDR.4/ SVN)	<ul style="list-style-type: none"> Data indicate that for both scenarios there is still a gap between the projected GHG emissions and Slovenia's target under the Kyoto Protocol: this gap amounts to 2.61 Mt CO₂eq for the "with measures" scenario and 1.34 Mt CO₂eq for the "with additional measures" scenario on average in 2008–2012. (para 36) 	<ul style="list-style-type: none"> Slovenia mentions its decision to fill this gap using credits from sinks, which are projected to be at the level of 1.32 Mt CO₂ per year on average in the first commitment period. (para 36) Slovenia reports that it may need to use Kyoto Protocol mechanisms to achieve its reduction commitment, but no further information is provided. (para 38)
Spain (FCCC/IDR.4/ ESP)	<ul style="list-style-type: none"> With continued historical trends Spain would be far from meeting its Kyoto Protocol target between 2008 and 2012 through domestic measures alone; even if the full estimated effect of all the PaMs from both the 'with measures' and 'with additional measures' scenarios were achieved, the remaining distance to the target would still amount to 79 Mt CO₂eq. (para 33) 	<ul style="list-style-type: none"> Spain's submission to the EEA monitoring mechanism (EEA, 2007) and the Spanish strategy for climate change and clean energy envisage the use of carbon sinks amounting to 5.8 Mt CO₂eq, and Kyoto mechanisms amounting to 58 Mt CO₂eq annually to reduce the gap between its emissions and the target. (para 36) The ERT noted that this still leaves a gap of around 15 Mt CO₂eq not accounted for by any measures. (para 36)
Sweden (FCCC/IDR.4/ SWE)	<ul style="list-style-type: none"> Sweden will meet this target by means of policies and measures already adopted or implemented. (para 58) 	<ul style="list-style-type: none"> Sweden is developing the option of using the Kyoto Protocol mechanisms through its active participation in the pilot phase of the activities implemented jointly. (para 60)
Switzerland (FCCC/IDR.4/ CHE)	<ul style="list-style-type: none"> Table 4 and figure 1 show that total GHG emissions in 2010 (without LULUCF) under the "with measures" scenario are projected to exceed Switzerland's Kyoto Protocol target by approximately 2.5 Mt CO₂eq. (para 32) 	<ul style="list-style-type: none"> The implementation of additional measures, which includes the use of flexibility mechanisms under the Kyoto Protocol, would bring Switzerland in compliance with the target. (para 32)
Ukraine ¹⁾ (FCCC/IDR.2/ UKR)	<ul style="list-style-type: none"> The projections indicate that Ukraine can meet its Kyoto Protocol target even under a baseline scenario, which corresponds to a without measures scenario. (para 63) Under the 'with measures' scenario, emissions would be 47.6 % lower than the base year level. Even according to the 'optimistic' scenario, which assumes relatively high economic growth, Ukraine would remain well below the GHG emission level of 1990 - and its Kyoto target - by 2030. (para 63) 	<ul style="list-style-type: none"> The ERT noted that Ukraine puts emphasis on flexible mechanisms as a possible means to modernize its economy through increased investments and to raise the level of national production through more efficient use of energy resources. (para 19)



Annex I Party	Domestic action	Use of flexible mechanisms
United Kingdom of Great Britain and Northern Ireland (FCCC/IDR.4/GBE)	<ul style="list-style-type: none"> Table 4 and figure 1 show that even for the “with measures” scenario the projected emissions are expected to fall to about 19.0 per cent below the base year level by 2010, and thus the United Kingdom is likely to meet its Kyoto Protocol target. (para 38) 	<ul style="list-style-type: none"> Even though the United Kingdom is on track to meet its commitments using only domestic action, its designated national authority for the clean development mechanism (CDM) has issued 60 letters of approval for participation in 46 CDM projects. (para 22)

Notes: NR: Not reported

PaM: Policies and Measures

¹⁾ As Ukraine submitted a fourth national communication in conjunction with its third and fifth NC in 2010, only an in-depth review report of the second NC is available and presented here.





**IV. Additional information GHG emission projections until 2020,
Including description of projections**

17. Parties included in Annex I are requested to provide in the projections section of their NCs an indication of future trends in GHG emissions and removals, given current national circumstances and implemented and adopted policies and measures, and to give an indication of the path of emissions and removals without such policies and measures.¹⁷ Thus, such Parties shall report ‘with measures’ projections at a minimum; they may report ‘without measures’ and ‘with additional measures’ projections.

18. Table 2 provides an overview about information on GHG emission projections until 2020 as contained in reports of IDR, especially with respect to implemented and adopted policies and measures (‘with measures’, ‘without measures’ and ‘with additional measures’ projections).

19. A description of projections is included, which will enable a more comprehensive understanding of relevant recommendations and findings made by expert review teams in relation to GHG emission projections until 2020 (Table 3).

¹⁷ Section VI of the UNFCCC Reporting Guidelines on National Communications, paragraph 27.

Table 2 – Information on GHG emission projections until 2020 as contained in reports of in-depth review of the fourth National Communications

Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Australia (FCCC/IDR. 4/AUS, table 4, figure 1)	553.8 Mt CO ₂ eq	598.1 Mt CO ₂ eq (8%)	685.6 Mt CO ₂ eq (23.8%)	815.1 Mt CO ₂ eq (47.2%)	598.1 Mt CO ₂ eq (8%)	663.5 Mt CO ₂ eq (19.8%)	NR	NR	<ul style="list-style-type: none"> Australia had prepared and made available a new set of GHG projections, which are referred to here as 2007 projections. The 2007 projections exclude the potential effect of emissions trading, because the introduction of an ETS was still under discussion and its impact on emissions cannot yet be estimated. (para 55)
Austria (FCCC/IDR. 4/AUT, table 4, figure 1)	79.05 Mt CO ₂ eq	68.77 Mt CO ₂ eq (-13.8%)	NR	NR	89.93 Mt CO ₂ eq (13.8%)	96.26 Mt CO ₂ eq (21.8%)	80.97 Mt CO ₂ eq (2.4%)	87.31 Mt CO ₂ eq (10.5%)	<ul style="list-style-type: none"> Key assumptions for the 'with measures' scenario include: <ul style="list-style-type: none"> continued growth in the population, a certain number of households and the growth of Austria's gross domestic product (GDP); (the ERT noted the use of an annual GDP growth rate of around 2 % for 2005–2020, while in 2007 the GDP growth rate was actually 3.1 %), a growth of the production in the manufacturing industries by 3 per cent annually in 2005–2020, a slight decrease of the number of cattle, and the assumption that the amount of landfilled waste would stay more or less constant. (para 42) The ERT noted that the most important planned measures for reducing emissions between 2005 and 2010 would be those implemented in the transport and energy supply sectors. (para 45)
Belgium (FCCC/IDR. 4/BEL, table 4, figure 1)	145.7 Mt CO ₂ eq	134.8 Mt CO ₂ eq (-7.5%)	NR	NR	141.6 Mt CO ₂ eq (-4.1%)	145.8 Mt CO ₂ eq (+0.07%)	NR	138.6 Mt CO ₂ eq (-7.1%)	<ul style="list-style-type: none"> The national projections reported in the NC4 are based on the sum of the projections developed by the three regions as part of their respective climate strategies; assumptions and key parameters were harmonized across the regions in early 2005. (para 35) Only limited information on factors and activities for each sector as required by the UNFCCC reporting guidelines, but more comprehensive information from the European Environment Agency (EEA) was provided during the review (EEA, 2007). (para 37)
Bulgaria (FCCC/IDR. 4/BGR, table 4, figure 1)	132.6 Mt CO ₂ eq	122 Mt CO ₂ eq (-8%)	107.2 Mt CO ₂ eq (-19.2%)	135.6 Mt CO ₂ eq (2%)	91 Mt CO ₂ eq (-31.4%)	105 Mt CO ₂ eq (-20.8%)	82.8 Mt CO ₂ eq (-37.6%)	93.6 Mt CO ₂ eq (-29.4%)	<ul style="list-style-type: none"> The 'without measures' scenario has 1995 as the base year and is based on a different set of input assumptions from other scenarios, and some of these assumptions diverge substantially from the actual data during the period 1995–2005. (para 33) The projections do not include effects from LULUCF, which would bring total emissions even further below the KP target level. (para 33)





Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Canada (FCCC/IDR. 4/CAN, table 4, figure 1)	594 Mt CO ₂ eq	558.4 Mt CO ₂ eq (-6%)	NR	NR	828 Mt CO ₂ eq (39.9%)	897 Mt CO ₂ eq (51%)	682 Mt CO ₂ eq (14.8%)	NR	<ul style="list-style-type: none"> The GHG emission projections are <ul style="list-style-type: none"> presented on a sectoral basis, but the sectoral categories used do not entirely correspond with those used in the PaMs section. (para 44) Key assumptions included steady growth in economic activity (2.7 per cent GDP growth per year until 2010 and 2.3 per cent GDP growth per year between 2010 and 2020) and an increase in real disposable income. (para 45)
Croatia (FCCC/IDR. 4/HRV, table 4, figure 1)	36.03 Mt CO ₂ eq	34.23 Mt CO ₂ eq (-5%)	36.1 Mt CO ₂ eq (0.2%)	NR	35.54 Mt CO ₂ eq (-1.4%)	NR	31.55 Mt CO ₂ eq (-12.4%)	NR	<ul style="list-style-type: none"> The GHG emission projections are <ul style="list-style-type: none"> presented on a sectoral basis, using the same sectoral categories used in the PaMs section. (para 39)
Czech Republic (FCCC/IDR. 4/CZE, table 4, figure 1)	194.3 Mt CO ₂ eq	178.7 Mt CO ₂ eq (-8%)	147.4 Mt CO ₂ eq (-24%)	138.6 Mt CO ₂ eq (-29%)	145.7 Mt CO ₂ eq (-25%)	135.5 Mt CO ₂ eq (-30%)	139.7 Mt CO ₂ eq (-28.1%)	128.3 Mt CO ₂ eq (-34%)	<ul style="list-style-type: none"> Assumptions used to estimate the GHG projections by sector are clearly presented: <ul style="list-style-type: none"> Prices in 2010 were projected for petroleum (CZK 157 per GJ), natural gas (110), black coal (48) and electricity (360); the population was estimated by the Czech Statistical Office and the economic growth scenario was prepared by the company EGÚ Brno. (para 34)
Denmark (FCCC/IDR. 4/DNK, table 4, figure 1)	70.4 Mt CO ₂ eq	55.6 Mt CO ₂ eq (-21%)	95.6 Mt CO ₂ eq (35.8%)	NR	72.5 Mt CO ₂ eq (3%)	67.8 Mt CO ₂ eq (-3.7%)	NR	NR	<ul style="list-style-type: none"> In addition to the “with measures” scenario, Denmark presents in annex B2 to the NC4 the results of projections of GHG emissions in the period 2008–2012 from the Effort Analysis study (2005): <ul style="list-style-type: none"> the results show that emissions during the period 2008–2012 would be about 15.6 Mt CO₂eq greater than under a scenario with these measures, however, these projections are not fully comparable with the projections data in the NC4. (para 34)
Estonia (FCCC/IDR. 4/EST, table 4, figure 1)	37.5 Mt CO ₂ eq	34.5 Mt CO ₂ eq (-8%)	17.2 Mt CO ₂ eq (-55.7%)	NR	16.5 Mt CO ₂ eq (-57.5%)	NR	16.5 Mt CO ₂ eq (-57.5%)	NR	<ul style="list-style-type: none"> The GHG emission projections are <ul style="list-style-type: none"> presented for CO₂ emissions from the energy sector, CH₄ and N₂O emissions from agriculture, and CO₂ emissions from forestry. (para 37)





Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
European Union (FCCC/IDR. 4/EC, table 4, figure 1)	4265.5 Mt CO ₂ eq	3924.3 Mt CO ₂ eq (-8%)	NR	NR	4109 Mt CO ₂ eq (-3.6%)	NR	3939 Mt CO ₂ eq (-7.7%)	NR	<ul style="list-style-type: none"> The GHG emission projections are <ul style="list-style-type: none"> presented on a sectoral basis (although the sectoral categories are not identical to those used in the PaMs section), and on a gas-by-gas basis for the following GHGs: CO₂, CH₄, N₂O and F-gases. (para 46) During the review, the Party provided updated information on projections from the European Environmental Agency (EEA) GHG data viewer: <ul style="list-style-type: none"> aggregate projections based on existing domestic PaMs show that GHG emissions of the EU-15 will be 3.6% below base-year levels by 2010. (para 48)
Finland (FCCC/IDR. 4/FIN, table 4, figure 1)	71.5 Mt CO ₂ eq	71.5 Mt CO ₂ eq (0%)	NR	NR	79 Mt CO ₂ eq (10.5%)	82.2 Mt CO ₂ eq (15%)	69.7 Mt CO ₂ eq (-2.5%)	69.4 Mt CO ₂ eq (-3%)	<ul style="list-style-type: none"> NC4 contains an estimate for the total effect of additional measures, which is calculated as the difference in GHG emissions between the “with measures” and the “with additional measures” scenarios. (para 34) No estimate of the total effect of policies and measures implemented and adopted has been provided, but the individual effects of such policies and measures have been estimated. (para 34)
France (FCCC/IDR. 4/FRA, table 4, figure 1)	563.9 Mt CO ₂ eq	563.9 Mt CO ₂ eq (0%)	–	–	569 Mt CO ₂ eq (0.9%)	568 Mt CO ₂ eq (0.7%)	545 Mt CO ₂ eq (-3.4%)	494 Mt CO ₂ eq (-12.4%)	<ul style="list-style-type: none"> The final energy demand projections were modelled using a technical-economic model and an energy supply and demand equilibrium economic model. (para 38) The following demographic and socio-economic assumptions were applied: <ul style="list-style-type: none"> for population 61.1 million for 2010 and 62.7 million for 2020, for GDP, an average annual growth rate of 2.3 per cent per year from 2002 to 2020, for energy prices, the International Energy Agency assumption of USD 30 per barrel in 2003 for oil, for the whole period, with the price of gas closely following the oil price. (para 39)
Germany (FCCC/IDR. 4/DEU, table 4, figure 1)	1231 Mt CO ₂ eq	973 Mt CO ₂ eq (-21%)	1027 Mt CO ₂ eq (-16.6%)	1036 Mt CO ₂ eq (-15.8%)	940 Mt CO ₂ eq (-23.6%)	863 Mt CO ₂ eq (-30%)	923 Mt CO ₂ eq (-25%)	743 Mt CO ₂ eq (-40%)	<ul style="list-style-type: none"> The effect of individual implemented and adopted PaMs was presented by sector (energy, industry, transport, trade/commerce/services, private households, agriculture, and waste management/recycling/materials efficiency) and on a gas-by-gas basis for all relevant GHGs. (para 36)



Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Greece (FCCC/IDR.4/GRC, table 4, figure 1)	111.7 Mt CO ₂ eq	139.6 Mt CO ₂ eq (25%)	NR	NR	150.4 Mt CO ₂ eq (34.7%)	166.8 Mt CO ₂ eq (49.3%)	139.5 Mt CO ₂ eq (24.9%)	NR	<ul style="list-style-type: none"> During the review, Greece provided emission projections related to fuels sold for use in ships and aircraft engaged in international transport, which are reported separately. (para 36)
Hungary (FCCC/IDR.4/HUN, table 4, figure 1)	122 Mt CO ₂ eq	114.9 Mt CO ₂ eq (-6%)	88.4 Mt CO ₂ eq (-27.7%)	100.5 Mt CO ₂ eq (-17.6%)	87.4 Mt CO ₂ eq (-28.5%)	97.8 Mt CO ₂ eq (-19.8%)	87.1 Mt CO ₂ eq (-28.7%)	93.7 Mt CO ₂ eq (-23.2%)	<ul style="list-style-type: none"> The sectoral projections are based almost exclusively on official statistical data and statistical models. The only exception is the electricity production capacity model, which was developed by the Hungarian electricity system operator. The assumptions for each scenario are presented clearly and transparently. (para 30) Total effects of implemented and adopted policies and measures, as well as of additional (planned) measures are given and show that the major effects from implemented and adopted measures fall mainly in two sectors – transport and LULUCF – followed by agriculture. (para 33, 34)
Iceland (FCCC/IDR.4/ISL table 4, figure 1)	3.282 Mt CO ₂ eq	3.610 Mt CO ₂ eq (10%)	–	–	(1): 4.519 Mt CO ₂ eq (37.7%) (2): 4.959 Mt CO ₂ eq (51.1%) (1, w/o 14/CP.7): 3.294 Mt CO ₂ eq (0.4%) (2, w/o 14/CP.7): 3.360 Mt CO ₂ eq (2.4%)	(1): 4.52 Mt CO ₂ eq (37.7%) (2): 5.34 Mt CO ₂ eq (62.7%) NR NR	NR	NR	<ul style="list-style-type: none"> Iceland provides two variants of the “with measures” scenario. Scenario 1 assumes no additions to the energy-intensive industries (1) and scenario 2 assumes that all energy-intensive projects which currently have a licence to operate will be built (2). (para 37) Iceland applies decision 14/CP.7 on the impact of single projects on emissions in the commitment period, that stipulates a set of conditions under which CO₂ emissions from single projects could be excluded from accounting for the purposes of verification of Parties’ compliance with their commitments under the Kyoto Protocol. (para 37)



Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Ireland (FCCC/IDR.4/IRL table 4, figure 1)	55.61 Mt CO ₂ eq	62.84 Mt CO ₂ eq (13%)	NR	NR	65.4 Mt CO ₂ eq (17.4%)	77.3 Mt CO ₂ eq (39%)	61.8 Mt CO ₂ eq (11.1%)	NR	<ul style="list-style-type: none"> The projections for each activity were carried out using the methodology specific to the activity. The NC4 describes the type of model and approach used, stating in some instances whether a bottom-up model, expert judgement, biological system model or econometric model was used. Explanations of the models used were provided in an annex to the NC4 and information on the characteristics, strengths and synergies of most of the models was provided. (para 36)
Italy (FCCC/IDR.4/ITA table 4, figure 1)	516.85 Mt CO ₂ eq	483.26 Mt CO ₂ eq (-6.5%)	NR	NR	Trend Scenario: 587 Mt CO ₂ eq (13.6%) Scenario (a): 554.2 Mt CO ₂ eq (7.2%) Scenario (b): 529 Mt CO ₂ eq (2.3%)	Trend Scenario: 623.4 Mt CO ₂ eq (20.6%) Scenario (a): 611.4 Mt CO ₂ eq (18.3%) Scenario (b): 511.3 Mt CO ₂ eq (-1.1%)	NR	NR	<ul style="list-style-type: none"> The GHG emission projections <ul style="list-style-type: none"> include a ‘trend’ scenario including some measures, a scenario ‘with the effect of all implemented measures’ (a) and a scenario ‘with the effect of all possible measures’ (b) until 2020, (para 41) During the review, Italy provided updated information on projections in the Climate Policy Progress Report, that includes two scenarios: a ‘trend’ scenario and a ‘with PaMs’ scenario, where PaMs refers to implemented and adopted measures. (paras 45, 46)
Japan (FCCC/IDR.4/JPN table 4, figure 1)	1237 Mt CO ₂ eq	1163 Mt CO ₂ eq (-6%)	NR	NR	1311 Mt CO ₂ eq (6%)	NR	1231 Mt CO ₂ eq (-0.5%)	NR	<ul style="list-style-type: none"> The GHG emission projections are <ul style="list-style-type: none"> presented on a sectoral basis, using the same sectoral categories used in the policies and measures section, and on a gas-by-gas basis for all relevant greenhouse gases. (para 31)
Latvia (FCCC/IDR.4/LVA table 4, figure 1)	25.3 Mt CO ₂ eq	23.3 Mt CO ₂ eq (-8%)	NR	NR	13.7 Mt CO ₂ eq (-46%)	16.6 Mt CO ₂ eq (-34.4%)	13 Mt CO ₂ eq (-48.6%)	14 Mt CO ₂ eq (-44.7%)	<ul style="list-style-type: none"> Latvia presents the estimated and expected total effect of planned policies and measures and relevant information on factors and activities for each sector for the years 1990–2020. (para 42)
Liechtenstein (FCCC/IDR.4/LIE table 5, figure 1)	0.23 Mt CO ₂ eq	0.21 Mt CO ₂ eq (-8%)	0.28 Mt CO ₂ eq (22%)	NR	0.26 Mt CO ₂ eq (13%)	NR	NR	NR	<ul style="list-style-type: none"> Owing to its size, Liechtenstein does not have a comprehensive system for drafting GHG emission projections. The 2010 projections presented in the NC4 and the RDP are based on crossreferences and comparison with equivalent data from Switzerland. No further information about the models used has been reported, and a reference was made to the NC4 of Switzerland for details. (para 32)



Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Lithuania (FCCC/IDR. 4/LTU table 4, figure 1)	37.2 Mt CO ₂ eq	34.2 Mt CO ₂ eq (-8%)	27.3 Mt CO ₂ eq (-26.6%)	30.8 Mt CO ₂ eq (-17.2%)	22.2 Mt CO ₂ eq (-40.3%)	24.7 Mt CO ₂ eq (-33.6%)	NR	NR	<ul style="list-style-type: none"> Projections of emissions from other sectors, including agriculture, industrial processes (cement and lime production only), LULUCF and waste (landfills only), are provided in a separate scenario, by sector, for the same three GHGs. (para 33) In its NC3&4 Lithuania presents for the first time a description of the methodology used for the development of GHG emission projections; it is based on a combination of various modelling tools and approaches. (p.34)
Luxembourg	Luxembourg submitted its fourth NC in conjunction with the submission of its fifth NC on 14 February 2010, thus no in-depth review of the fourth national communication is available.								
Monaco	In its NC4, Monaco does not provide the required GHG emissions projections and at the time the IDR was carried out, none was available. (para 25)								
Netherlands (FCCC/IDR. 4/NLD, table 4, figure 1)	213 Mt CO ₂ eq	200.3 Mt CO ₂ eq (-6%)	239.6 Mt CO ₂ eq (12.5%)	285Mt CO ₂ eq (33.8%)	SE: 211.6 Mt CO ₂ eq (-0.7%) GE: 218.1 Mt CO ₂ eq (2.4%)	NR GE: 243.2 Mt CO ₂ eq (14.1%)	SE: 212.9 Mt CO ₂ eq (-0.05%) GE: 219.1 Mt CO ₂ eq (2.9%)	NR GE: 240.9 Mt CO ₂ eq (13.1%)	<p>The Netherlands has presented two scenarios for emission projections:</p> <ul style="list-style-type: none"> Strong Europe (SE): International cooperation is coupled to public responsibility, lower population growth, the annual average growth rate of the gross domestic product is 1.7 between 2002 and 2020, the single nuclear plant remaining in the Netherlands is assumed to be closed in 2013, Global Economy (GE): is oriented sharply towards international trade, higher population growth, the annual average growth rate of the gross domestic is 2.7 per cent between 2002 and 2020, the single nuclear continues to operate after 2013. (para 36)
New Zealand (FCCC/IDR. 4/NZL, table 4, figure 1)	61.89 Mt CO ₂ eq	61.89 Mt CO ₂ eq (0%)	NR	NR	82.43 Mt CO ₂ eq (33.2%)	91.2 Mt CO ₂ eq (47.3%)	NR	NR	<ul style="list-style-type: none"> Key historical and projected input data for projections are gross domestic product (GDP), oil and coal prices, exchange rate and population growth up to 2020. (para 33) The methodology and modelling tools used for projections in the energy sector have not changed in New Zealand since the first national communication. (para 34) For all sectors projected emissions increase continuously up to 2020, except for the forestry sector, where considerable fluctuations over the period 2005–2020 are observed. (para 35)
Norway (FCCC/IDR. 4/NOR, table 4, figure 1)	50.1 Mt CO ₂ eq	50.6 Mt CO ₂ eq (1%)	–	–	61.8 Mt CO ₂ eq (23.4%)	76.5Mt CO ₂ eq (52.7%)	NR	NR	<ul style="list-style-type: none"> Norway presents an estimate of the total effect of its policies and measures in accordance with the “with measures” definition, compared to a situation without such policies and measures, in terms of GHG emissions avoided or sequestered, by gas (on a CO₂ equivalent basis) for the years 1995, 2000, 2003, 2005 and 2010. (para 38)





Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Poland (FCCC/IDR. 4/POL, table 4, figure 1)	563.4 Mt CO ₂ eq	529.64 Mt CO ₂ eq (-6%)	No information provided in IDR, although included in NC4.		403 Mt CO ₂ eq (-28.4%)	459.5 Mt CO ₂ eq (-18.4%)	NA	NR	<ul style="list-style-type: none"> The emission projections in the NC4 were prepared using the methodology of the International Atomic Energy Agency. (para 39) During the review the Party provided the ERT with an updated set of projections, as contained in a 2008 report of the European Environment Agency. (para 44)
Portugal (FCCC/IDR. 4/PRT, table 4, figure 1)	60.1 Mt CO ₂ eq	76.3 Mt CO ₂ eq (27%)	NR	NR	88 Mt CO ₂ eq (46.4%)	96 Mt CO ₂ eq (56.4%)	85.6 Mt CO ₂ eq (59.7%)	94 Mt CO ₂ eq (56.4%)	<ul style="list-style-type: none"> An elaborate bottom-up model was used, with methodology and input parameters (macroeconomic indicators, demand growth, sectoral activity, energy intensity, etc.) presented in detail. (para 33)
Romania (FCCC/IDR. 4/ROU, table 4, figure 1)	278.2 Mt CO ₂ eq	255 Mt CO ₂ eq (-8%)	201.8 Mt CO ₂ eq (-27%)	NR	183.3 Mt CO ₂ eq (-34%)	231.9 Mt CO ₂ eq (-16.6%)	181.3 Mt CO ₂ eq (-34.8%)	227.2 Mt CO ₂ eq (-18.3%)	<ul style="list-style-type: none"> Romania provided information on variables such as gross domestic product (GDP) growth, population growth, energy consumption, energy intensity and energy production structure; but no information was provided on tax levels and international fuel prices. (para 33) During the review, Romania provided the ERT with a new set of projections, including a business-as-usual, with measures and a with-additional measures scenario, as contained in the 2009 progress report. (para 34) Romania recognizes that a considerable potential exists to further reduce the carbon intensity of the economy and to decouple growth in GHG emissions from GDP growth. (para 37)
Russian Federation (FCCC/IDR. 4/RUS, table 4, figure 1)	3323.4 Mt CO ₂ eq	3323.4 Mt CO ₂ eq (0%)	2432 Mt CO ₂ eq (-27%)	NR	2393.7 Mt CO ₂ eq (-28%)	2908 Mt CO ₂ eq (-12.5%)	NR	NR	<ul style="list-style-type: none"> Projections for CO₂ emissions are given for the years 2005, 2010, 2015 and 2020 for the following sectors: power, iron and steel, wood and wood products, and oil and gas exploration. (para 35) In response to a request made by the ERT during the review, the Russian Federation provided additional information on a new energy-modelling framework for GHG emission projections. (para 38)
Slovakia (FCCC/IDR. 4/SVK, table 4, figure 1)	71.1 Mt CO ₂ eq	66.3 Mt CO ₂ eq (-8%)	56.9 Mt CO ₂ eq (-21.1%)	79.4 Mt CO ₂ eq (10.1%)	55.8 Mt CO ₂ eq (-22.7%)	77.4 Mt CO ₂ eq (7.4%)	54.1 Mt CO ₂ eq (-24.9%)	74 Mt CO ₂ eq (2.6%)	<ul style="list-style-type: none"> The assumptions for each scenario are presented clearly and transparently in the NC4. The methodology used is briefly described for the energy sector. (para 30)
Slovenia (FCCC/IDR. 4/SVN, table 4, figure 1)	20.2 Mt CO ₂ eq	18.58 Mt CO ₂ eq (-8%)	-	-	21.2 Mt CO ₂ eq (5%)	20.4 Mt CO ₂ eq (1%)	19.9 Mt CO ₂ eq (-1.5%)	18.9 Mt CO ₂ eq (-6.4%)	<ul style="list-style-type: none"> Information about all key assumptions and parameters used to develop the “with measures” and “with additional measures” scenarios is clearly and comprehensively presented. (para 31)





Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
Spain (FCCC/IDR.4/ESP, table 4, figure 1)	289.9 Mt CO ₂ eq	333.4 Mt CO ₂ eq (15%)	499.4 Mt CO ₂ eq (72.3%)	645 Mt CO ₂ eq (122.5%)	440.2 Mt CO ₂ eq (51.8%)	464.6 Mt CO ₂ eq (20.3%)	412.4 Mt CO ₂ eq (42.2%)	420.8 Mt CO ₂ eq (45.2%)	<ul style="list-style-type: none"> Spain produced an updated set of projection scenarios within its communication under EU decision 280/2004/EC, submitted in December 2007. This document included three emission scenarios ('without measures', 'with measures' and 'with additional measures') for the period 2005–2020, with a revised set of incorporated PaMs; the 'without measures' scenario was obtained in a similar way to that in the NC4. Unfortunately, the level of detail of reporting in the NC4 was not maintained. (para 32)
Sweden (FCCC/IDR.4/SWE, table 4, figure 1)	72.2 Mt CO ₂ eq	75.1 Mt CO ₂ eq (4%)	–	–	71.5 Mt CO ₂ eq (-1%)	76.6 Mt CO ₂ eq (6%)	NR	NR	<ul style="list-style-type: none"> Four sensitivity analyses have been drawn up to complement the projections using alternatives to the assumptions used in the "with measures" scenario with respect to the lifetime of nuclear power plants, increase of GDP, oil and gas prices. (para 33) <ul style="list-style-type: none"> The results of these analyses suggest that higher oil and natural gas prices would have a major effect on GHG emission reductions (-3.2% in 2010). (para 34) During the review process, the ERT received additional information from Sweden on quantified effects of new policies and measures proposed in recent government bills, which are expected to reduce GHG emissions by another 1–1.25 Mt CO₂eq in 2010. (para 38)
Switzerland (FCCC/IDR.4/CHE, table 4, figure 1)	52.4 Mt CO ₂ eq	48.3 Mt CO ₂ eq (-8%)	NR	NR	50.8 Mt CO ₂ eq (-3.2%)	49.3 Mt CO ₂ eq (-6%)	47.9 Mt CO ₂ eq (-8.6%)	NR	<ul style="list-style-type: none"> A complete "with additional measures" scenario is not provided in the NC4, but the potential effects of additional measures in 2010 are estimated. (para 30)
Ukraine ²⁾ (FCCC/IDR.2/UKR)	920.8 Mt CO ₂ eq	920.8 Mt CO ₂ eq (0%)	630 Mt CO ₂ eq (-31.6%)	917 Mt CO ₂ eq (-0.4%)	482.3 Mt CO ₂ eq (-47.6%)	571 Mt CO ₂ eq (-38%)	NR	NR	<ul style="list-style-type: none"> The first 'baseline with measures' scenario is derived from Ukraine's 'baseline' scenario of economic development. The other two 'with measures' scenarios, labelled 'pessimistic' and 'optimistic', reflect different sets of assumptions concerning macroeconomic development and possible corresponding pathways of GHG emissions. (para 34)



Annex I Party	Base year emissions	Kyoto target ¹⁾	Without measures scenario		With measures scenario		With additional measures scenario		Description of projections
	[Mt CO ₂ eq (%)]		Changes in relation to base year level [Mt CO ₂ eq (%)]						
			2010	2020	2010	2020	2010	2020	
United Kingdom of Great Britain and Northern Ireland (FCCC/IDR. 4/GBE, table 4, figure 1)	768.2 Mt CO ₂ eq	672.1 Mt CO ₂ eq (-12.5%)	NR	NR	622.2 Mt CO ₂ eq (-19%)	626 Mt CO ₂ eq (-18.5%)	Low range: 595.5Mt CO ₂ eq (-22.5%)	Low range: 591 Mt CO ₂ eq (-23%)	<ul style="list-style-type: none"> The “with additional measures” scenarios were developed to reflect a low and a high range estimate for the impact of the second phase of the EU ETS on GHG emissions. (para 35) Key assumptions such as the gross domestic product (GDP) growth rate and fossil fuel price forecasts up to 2020 are presented together with links to external sources with further details. (para 37)
							High range: 577.1 Mt CO ₂ eq (-25%)	High range: 565 Mt CO ₂ eq (-26.5%)	

Notes: NR: Not reported

(-): The Party presented a ,without measures’ scenario in its NC4 but no appropriate numbers are given in the IDR.

¹⁾ Kyoto target in relation to base year level, as indicated by Party.

²⁾ As Ukraine submitted a fourth national communication in conjunction with its third and fifth NC in 2010, only an in-depth review report of the second NC is available and presented here.



V. Recommendation and findings made by the ERT in relation to GHG emission projections

20. Table 3 provides an overview about the most relevant findings and recommendations made by the ERTs in relation to GHG emission projections.

21. The ERTs recommended some Parties included in Annex I to provide ‘with additional measures’ scenarios for 2010 with their next NC (Belgium, Canada, Denmark, Liechtenstein, New Zealand, Sweden, Switzerland).

22. With respect to completeness, the ERT recommended that some Parties consider missing elements of the reporting elements required by the UNFCCC reporting guidelines or consider previously missing estimates for calculating new projections. For example, Australia should, for its LULUCF sector, include prescribed burning and wildfires in managed forests; while Lithuania should fill the remaining gaps in the coverage of sectors and sources, particularly in industrial processes and waste management. Furthermore, the consideration of drivers, on which Parties should report, might change Parties’ projections in the future, e.g. the inclusion of projections of perfluorocarbons (PFCs) in Latvia or the sensitivity to changes in petroleum prices in Norway is not quantified in the Norwegian NC4.

Table 3 - Recommendation and findings made by the ERT in relation to GHG emission projections until 2020

Annex I Party	Recommendations and findings by the ERT
Australia (FCCC/IDR.4/AUS)	<ul style="list-style-type: none"> • Combined emissions projections relating to fuel sold for use by ships and aircraft engaged in international transport are reported separately and not included in the national total. (para 53) • There is no uniform set of external drivers used for the modelling. For consideration for future projections the ERT suggested modellers to use a particular set of drivers and ranges associated with them. (para 58) • The ERT noted that projections for the LULUCF sector should include prescribed burning and wildfires in for managed forests. (para 67)
Austria (FCCC/IDR.4/AUT)	<ul style="list-style-type: none"> • Austria did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – the total effect in 1995 and 2000 of PaMs by gas in accordance with the ‘with measures’ scenario, compared with a situation without such PaMs, (para 39) • In the IDR of its NC3, Austria was encouraged to explain more thoroughly the slowdown in the growth of its emissions from transport. The ERT noted that this was not done in the NC4. (para 46) • The ERT suggests that Austria would benefit from the inclusion of a ‘without measures’ scenario in its next NC. (para 50)
Belgium (FCCC/IDR.4/BEL)	<ul style="list-style-type: none"> • Belgium has not provided the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – summary tables on PaMs by sector; and information on how Belgium believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention, (para 13) • The ‘with additional measures’ scenario has only been quantified for 2020, not for 2010. (para 36) • The key recommendations are that Belgium include in its next national communication summary tables of PaMs by sector, information on efforts to implement PaMs in such a way as to minimize adverse effects, information on the complementarity of the use of the flexible mechanisms and a ‘without measures’ scenario. (para 65 and 66)



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Annex I Party	Recommendations and findings by the ERT
Bulgaria (FCCC/IDR.4/ BGR)	<ul style="list-style-type: none"> • Bulgaria did not provide separate emissions projections relating to fuel sold to ships and aircraft engaged in international transport, required by the UNFCCC reporting guidelines. (para 31) • The input assumptions on forecasted fuel price trends were not provided. (para 32) • The projections presented in Bulgaria’s NC4 seem to be internally consistent, but the ERT noted that there is little connection between the set of assumptions and policies described for the ‘with measures’ and ‘with additional measures’ scenarios in the projections chapter, and the list of measures in the energy sector (or other sectors) in the chapter on policies and measures. (para 34) • The ERT recommended Bulgaria to prepare GHG emission projections relating to fuel sold for use by ships and aircraft engaged in international transport. (para 34)
Canada (FCCC/IDR.4/ CAN)	<ul style="list-style-type: none"> • Canada did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – projections in an aggregated format for each sector as well as for a national total, using global warming potential values agreed upon by the Conference of the Parties, – the estimated and expected total effect of implemented and adopted PaMs. (para 44 and 50) • Canada has not provided in its NC4 quantitative information on how it plans to close its ‘Kyoto Protocol gap’, as the PaMs included in the ‘with measures’ scenario are not sufficient to close this gap. (para 51) • Canada is recommended <ul style="list-style-type: none"> – to follow the UNFCCC reporting guidelines more closely and provide these reporting elements in its next national communication. (para 44) – to return to its earlier practice (NC3) and provide also a ‘without measures’ and a ‘with additional measures’. (para 48)
Croatia (FCCC/IDR.4/ HRV)	<ul style="list-style-type: none"> • Croatia did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – projections presented in tabular format by sector, to the extent possible, using the same sectoral categories used in the PaMs section. (para 39) • Croatia did not provide in its NC4 emission projections in tabular format for the energy sector and did not include emissions of PFCs, HFCs and SF6 in the projections. (para 41) • Croatia did not present any PaMs in the LULUCF sector or give details of the use of flexible mechanisms. (para 45) • Croatia is recommended to present projections on a sectoral basis, to the extent possible, using the same sectoral categories used in the PaMs section, in an aggregated format for each sector as well as for a national total, using GWP value. (para43)
Czech Republic (FCCC/IDR.4/ CZE)	<ul style="list-style-type: none"> • The Czech Republic is recommended <ul style="list-style-type: none"> – to include data from the base year (1990) when presenting emissions projections for the different scenarios in a tabular format. (para 39)
Denmark (FCCC/IDR.4/ DNK)	<ul style="list-style-type: none"> • Denmark is encouraged <ul style="list-style-type: none"> – to provide projections under the scenario “with additional measures” as this will help to identify the contribution additional policies and measures could make to filling in the estimated gap between emissions and the Kyoto Protocol target. (para 40)
Estonia (FCCC/IDR.4/ EST)	<ul style="list-style-type: none"> • Estonia did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – projections presented on a sectoral basis, for industrial processes and waste, – projections presented on a gas by- gas basis for CO₂ (all sectors other than energy and forestry), CH₄, N₂O (all sectors other than agriculture), PFCs, HFCs and SF₆. (para 37) • The projections section of its NC4 Estonia presents neither the estimated and expected total effect of implemented and adopted policies and measures nor the expected effect. (para 41) • Estonia is recommended <ul style="list-style-type: none"> – to follow the UNFCCC reporting guidelines and provide a complete set of projections, including all sectors and GHGs, in its next national communication. (para 37) – to provide an analysis of the sensitivity of the GHG emission projections to changes in the underlying assumptions, namely those concerning the rate of growth of gross domestic product (GDP), oil and gas price changes, and the construction of a new pulp and paper factory. (para 40)



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Annex I Party	Recommendations and findings by the ERT
<p>European Union (FCCC/IDR.4/EC)</p>	<ul style="list-style-type: none"> • The EC did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – a 'with measures' projection, including currently implemented and adopted PaMs for 2015 and 2020. (para 46) • During the review, the Party provided updated information on projections from a report by the European Environmental Agency (EEA): <ul style="list-style-type: none"> – The estimates for aggregated savings for existing PaMs were based on information from only 12 of the 15 member States (para 52) – The projections provided in the EEA report do not account for the effects of the PaMs included in the 2008 Climate Change and Energy Package. These projections, however, do not form part of the NC4 and there is no information on their compatibility and comparability with the findings in the NC4 in general. (para 51) • The EC is recommended <ul style="list-style-type: none"> – to provide an estimate of the total effect of its policies and measures, compared to a situation without such policies and measures. (para 55) • The EC is encouraged <ul style="list-style-type: none"> – to provide more details on the key policy areas and the total impact thereof when the results of its ex-post analysis become available. (para 55)
<p>Finland (FCCC/IDR.4/FIN)</p>	<ul style="list-style-type: none"> • Emission projections relating to fuel sold for use by ships and aircraft engaged in international transport have not been reported due to non-availability of data. (para 31) • Finland is recommended <ul style="list-style-type: none"> – to prepare GHG projections relating to fuel sold for use by ships and aircraft engaged in international transport, and include these in its next national communication, (para 33) – to evaluate, in addition to the individual effects of the policies and measures implemented and adopted, the total effect of such measures, which could differ from the sum of the effects of individual measures. The development of a “without measures” scenario could help in this evaluation. (para 36)
<p>France (FCCC/IDR.4/FRA)</p>	<ul style="list-style-type: none"> • France did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – impacts of the ‘with measures’ scenario for the years 1995, 2000, 2005 and 2015. (para 43) • France is recommended to provide impacts of the ‘with measures’ scenario for the years 1995, 2000, 2005, 2015. (p. 43) • France is encouraged to provide more information on the complementarity regarding the use of the flexible mechanisms. (para 62)
<p>Germany (FCCC/IDR.4/DEU)</p>	<ul style="list-style-type: none"> • Germany did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – projections in an aggregated format for each sector, using GWP values, – projections related to fuel sold to ships and aircraft engaged in international transport. (para 36) • The total quantification of the impacts of PaMs is based on expert estimates for the individual sectors, although not all effects from individual measures were quantified in the NC4. (para 37) • In the context of the centralized review, Germany provided the ERT with a more recent set of projections (2007), in which the ‘with measures’ and ‘with additional measures’ scenarios were obtained using a consistent methodology. (para 38) • Germany is recommended <ul style="list-style-type: none"> – to prepare GHG projections relating to fuel sold for use by ships and aircraft engaged in international transport, and include them in its next national communication, (para 41) – to quantify the estimated effects of PaMs across all sectors (including waste, agriculture and LULUCF) and all gases, as well as to provide clearer links between the effects of PaMs and the projections. (para 45)

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Annex I Party	Recommendations and findings by the ERT
Greece (FCCC/IDR.4/ GRC)	<ul style="list-style-type: none">• Greece did not provide the following reporting elements required by the UNFCCC reporting guidelines:<ul style="list-style-type: none">– a section on the assessment of aggregate effects of policies and measures,– the estimated and expected total effect of implemented and adopted policies and measures. (p.40)• Greece is recommended<ul style="list-style-type: none">– to provide more detailed information on the methodologies, references and assumptions used for non-energy emissions. (para 39)– to provide a complete section on the assessment of the aggregate effects of policies and measures. (para 42)
Hungary (FCCC/IDR.4/ HUN)	<ul style="list-style-type: none">• Emission projections related to fuel sold for use by ships and aircraft engaged in international transport have not been reported. (para 29)• The projections do not cover PFCs, HFCs or SF6, and emissions from solvent and other product use have also not been reported. (para 29)• Hungary is recommended to prepare GHG emission projections relating to: fuel sold for use by ships and aircraft engaged in international transport; PFCs, HFCs and SF6; and the solvent and other product use sector. (para 32)
Iceland (FCCC/IDR.4/ ISL)	<ul style="list-style-type: none">• Iceland is recommended<ul style="list-style-type: none">– to provide data on projections in a tabular format as well, explaining in detail the application of decision 14/CP.7. (para 40)
Ireland (FCCC/IDR.4/ IRL)	<ul style="list-style-type: none">• Ireland is recommended to<ul style="list-style-type: none">– provide projections for fluorinated gases, (para 39)– provide an explanation on the main differences between the previous national communication and the NC under review, in particular the difference in the projections, (para 39)– to clearly distinguish existing measures from additional measures in order to provide a transparent assessment of their reduction effects. Providing a ‘without measures’ scenario may also be useful (p. 42)• Ireland is encouraged<ul style="list-style-type: none">– to provide more explanation on the underlying assumptions, such as growth in the gross domestic product (GDP) and population growth. (para 36)
Italy (FCCC/IDR.4/ ITA)	<ul style="list-style-type: none">• The ‘trend’ scenario does not correspond to the ‘with measures’ scenario of the UNFCCC reporting guidelines. (para 43)• The ‘with the effect of all implemented measures’ better corresponds to the ‘with measures’ scenario, because it includes the effect of all implemented measures, but it differs from a typical ‘with measures’ scenario by including already purchased JI and CDM credits and emission reductions resulting from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol. (para 43)• The scenarios presented in the Climate Policy Progress Report also do not correspond to those in the UNFCCC reporting guidelines, because the ‘with PaMs’ scenario also contains the effect of JI and CDM credits already purchased. (para 46)• Italy is recommended<ul style="list-style-type: none">– to use the definition of scenarios given in the UNFCCC reporting guidelines in its next national communication, and provide greater clarity in the presentation of the results. (para 48)
Japan (FCCC/IDR.4/ JPN)	<ul style="list-style-type: none">• The ERT noted that projections for the LULUCF sector are not provided. (para 31)• Japan has not provided the following reporting elements required by the UNFCCC reporting guidelines:<ul style="list-style-type: none">– estimated and expected total effect of implemented and adopted policies and measures,– a “without measures” scenario. (para 35)• Japan is recommended to<ul style="list-style-type: none">– provide projections for LULUCF, particularly in the light of the prominent role assigned to this sector by the Kyoto Protocol Target Achievement Plan, and to expand the time horizon for all projections to 2020 (at least), (para 34)

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Annex I Party	Recommendations and findings by the ERT
Latvia (FCCC/IDR.4/ LVA)	<ul style="list-style-type: none">• Latvia did not provide the following reporting elements required by the UNFCCC reporting guidelines:<ul style="list-style-type: none">– projections for perfluorocarbons (PFCs),– estimated and expected total effect of implemented and adopted policies and measures. (para 37)• In response to questions raised by the ERT during the review, Latvia clarified that PFCs have never been used and are not expected to be used or produced in Latvia. (para 37)• Latvia is recommended<ul style="list-style-type: none">– to provide projections for PFCs,– to report the effect of its implemented policies and measures in its next NC. (para 41)
Liechtenstein (FCCC/IDR.4/ LIE)	<ul style="list-style-type: none">• In its NC4, Liechtenstein has not included information on actions to address the gap between projected and required emission levels, partly because of uncertainty in estimates of 1990 emissions at the time the NC4 was drafted. (para 33)• Liechtenstein is recommended<ul style="list-style-type: none">– to provide projections on a sectoral basis, using the recommended list of sectors. (para 34)• Liechtenstein is encouraged<ul style="list-style-type: none">– to provide a ‘with additional measures’ scenario, and if possible even a ‘without measures’ scenario, which would enable the effect of existing and planned PaMs for all sectors and gases to be quantified. (para 34)
Lithuania (FCCC/IDR.4/ LTU)	<ul style="list-style-type: none">• Lithuania did not provide the following reporting elements required by the UNFCCC reporting guidelines:<ul style="list-style-type: none">– projections on fluorinated gases (PFCs, HFCs and SF6). (para 33)• The ERT noted that projections for emissions from industrial processes covered CO2 emissions from cement and lime production only, despite the fact that emissions from the chemical industry account for two-thirds of emissions from the sector. (para 35)• The ERT noted that emissions from waste-water handling have not been taken into account. (p. 35)• Lithuania is recommended<ul style="list-style-type: none">– to fill the remaining gaps in the coverage of sectors and sources, particularly in industrial processes and waste management. (para 36)
Luxembourg	Luxembourg submitted its fourth NC in conjunction with the submission of its fifth NC on 14 February 2010, thus no in-depth review of the fourth national communication is available so far.
Monaco (FCCC/IDR.4/ MCO)	<ul style="list-style-type: none">• As Monaco does not provide the required GHG emissions projections, the party is recommended to present a separate chapter, in its next national communication, on its GHG projections, following the UNFCCC reporting guidelines. (para 25)
Netherlands (FCCC/IDR.4/ NLD)	<ul style="list-style-type: none">• The Netherlands is recommended<ul style="list-style-type: none">– to include information on factors and activities for each sector in its next national communication and provide data for the ‘without measures’ scenario for 1995 and 2000. (para 42)

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Annex I Party	Recommendations and findings by the ERT
New Zealand (FCCC/IDR.4/ NZL)	<ul style="list-style-type: none">• New Zealand did not provide “with additional measures” and “without measures” projections (para 32).• The information provided in the NC4 on the models used is comprehensive, but the ERT noted that there is no information on updating of the models (including methods for cost calculation for different electricity supply options), although forthcoming updates were mentioned during the IDR of the NC3.4. (para 34)• The ERT suggests that New Zealand include in its next national communication clearer information on the projected use of LULUCF credits under Article 3, paragraphs 3 and 4, of the Kyoto Protocol. (para 35)• New Zealand is encouraged to<ul style="list-style-type: none">– to prepare scenarios “with additional measures’ and “without measures” (para 41).New Zealand is recommended to<ul style="list-style-type: none">– provide information on the use of the Kyoto Protocol mechanisms to supplement domestic action and activities implemented under Article 3, paragraph 3, of the Kyoto Protocol towards meeting its emission reduction target. (para 64)
Norway (FCCC/IDR.4/ NOR)	<ul style="list-style-type: none">• The ERT noted that the effect of policies and measures implemented after the year 2003 has not been taken into account. (para 34)• The ERT noted that the sensitivity to changes in petroleum prices is not quantified. Given the important role of the oil industry in Norway’s overall economic performance, the impact of higher petroleum prices could be significant. (para 36)• The ERT noted that the estimation of the total effect of policies and measures as presented is incomplete, as some of the energy efficiency policies and measures have not been taken into account. This is even more crucial in the case of the estimation of the effects of new policies and measures (introduced after 2003). (para 40)
Poland (FCCC/IDR.4/ POL)	<ul style="list-style-type: none">• The ERT also noted that Poland did not include a ‘with additional measures’ projection; the Party explained that, since it is sure to achieve its emission reduction target under the Kyoto Protocol, no such measures are planned. (para 38)• The ERT noted some differences between the projections provided in the NC4 and those in the NC3. In particular, there are remarkable differences between the emission levels projected for certain sectors, including transport. (para 41)• Poland also provided information on variables, such as growth in gross domestic product and population growth, but no information was provided on tax levels and international fuel prices. (para 42) The ERT welcomes the efforts made by Poland to address many of the problems identified during the IDR of the NC3, in particular by providing projections for the entire economy and for all gases. (para 45)
Portugal (FCCC/IDR.4/ PRT)	<ul style="list-style-type: none">• ERT noted that the level of information on emission projections is comprehensive, and its presentation is detailed and systematic. (para 37)
Romania (FCCC/IDR.4/ ROU)	<ul style="list-style-type: none">• The ERT noted that the projections made in NC4 also excluded HFCs and SF6 emissions because of the lack of quantified data and the low level of emissions. (para 38)• ERT noted that Romania did not provide actual data for the base year as required by the UNFCCC reporting guidelines. (para 32)• Romania is encouraged<ul style="list-style-type: none">– to report on the main differences between projections in the fourth national communication and those in the earlier national communications with regard to assumptions, methods used and results. (para 34)• Romania is recommended to<ul style="list-style-type: none">– provide projections for HFCs and SF6 emissions and included them in the aggregated projections in its future national communications. (para 38)– provide an estimate of the total effect of Romania's PaMs, in accordance with the ‘with measures’ definition, compared with a situation without such PaMs (para 40)



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Annex I Party	Recommendations and findings by the ERT
Russian Federation (FCCC/IDR.4/RUS)	<ul style="list-style-type: none"> • ERT noted that the Russian Federation did not provide the following reporting elements required by the UNFCCC reporting guidelines: <ul style="list-style-type: none"> – projections for the LULUCF sector (para 36), – projections for PFCs, HFCs and SF6 (treating PFCs & HFCs collectively in each case) (para 36), • The Russian Federation is recommended to: <ul style="list-style-type: none"> – provide projections for PFCs, HFCs and SF6 (treating PFCs and HFCs collectively in each case) (para 41), – provide more detailed information on the methodologies and assumptions used for emission projections in the non-energy sectors (para 41).
Slovakia (FCCC/IDR.4/SVK)	<ul style="list-style-type: none"> • Emission from the solvent and other product use sector, have not been reported. (para 29) • Slovakia is recommended to <ul style="list-style-type: none"> – describe the methodologies used for its projections in more detail, in particular for the non-energy sectors. (para 30) • In reviewing Slovakia’s GHG projections, the ERT noted again that the total effects of policies and measures are rather small in comparison to the mitigation potential estimated by the analyses of the Action Plan of Fulfilment of the Kyoto Protocol Commitments of the UNFCCC. (para 36)
Slovenia (FCCC/IDR.4/SVN)	<ul style="list-style-type: none"> • The ERT noted that the projections for the LULUCF sector are not presented in either tabular or diagram format, although data for projected sinks in the period 2008–2012 are given the NC4. (para 30) • The ERT noted that the “with additional measures” projection in the NC4 shows higher emission levels than the previous set of projections given in Slovenia’s third national communication as a result of the projected higher share of solid fuels in energy supply. (para 33)
Spain (FCCC/IDR.4/ESP)	<ul style="list-style-type: none"> • The ERT noted that Spain did not include a ‘with additional measures’ projection, which is consistent with the very limited number of additional measures reported in the NC4. (para 30) Spain is recommended to <ul style="list-style-type: none"> – to include emission projections related to fuel sold to ships and aircraft engaged in international transport in the information on projection in its next national communication. (para 30)
Sweden (FCCC/IDR.4/SWE)	<ul style="list-style-type: none"> • The ERT noted that Sweden has not provided a “with additional measures” scenario, as it expects that its Kyoto Protocol target will already be met under a “with measures” scenario. (para 36) • Sweden is encouraged to <ul style="list-style-type: none"> –to include a “with additional measures” scenario in its next national communication. (para 38)
Switzerland (FCCC/IDR.4/CHE)	<ul style="list-style-type: none"> • Switzerland is encouraged to <ul style="list-style-type: none"> – develop complete “with additional measures” and “without measures” scenarios and to include them in its next national communication. (para 34)
Ukraine ¹⁾ (FCCC/IDR.2/UKR)	<ul style="list-style-type: none"> • The ERT recommends that Ukraine provide projections of net emissions and removals from the LULUCF sector. (para 43) • Ukraine is encouraged to provide more detailed information on the methodologies and assumptions used for its projections of non-energy-related GHG emissions. (para 43)
United Kingdom of Great Britain and Northern Ireland (FCCC/IDR.4/GBE)	<ul style="list-style-type: none"> • The ERT suggested <ul style="list-style-type: none"> – to evaluate, in addition to the individual effects of the policies and measures implemented, adopted and planned, the total effect of such measures, which could differ from the sum of the effects of individual measures. (para 43) – to provide a “without measures” scenario. (para 43) • The UK is encouraged to <ul style="list-style-type: none"> – use CO₂eq as the main unit in the presentation of GHG projections and the impacts of policies and measures. (para 44)

¹⁾ As Ukraine submitted a fourth national communication in conjunction with its third and fifth NC in 2010, only an in-depth review report of the second NC is available and presented here.
