Session SBI46 (2016)

Session starts: 01-02-2017 00:00:00 [GMT+1]
Session ends: 30-04-2017 23:59:59 [GMT+1]

Exported from Session final result section

Multilateral assessment
Questions and answers Slovenia

Question by Japan at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: Projection of emissions from international transportation

In order to refer to our estimates, would you please provide an overview of estimation method of projected emissions from international transportation reported in the BR2?

Answer by Slovenia, Friday, 21 April 2017

Projections of emissions from international transportation in the BR2 have been estimated solely for the aviation sector. Fuel consumption attributed to international flights in Slovenia has shown significant correlation with Slovenian GDP; hence, the same correlation factor has been used for future projections. Furthermore, for the emissions calculation it has been assumed that all fuel consumption is attributed to JET kerosene, using the same emission factor as in inventory preparation.

Question by China at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: estimated mitigation effects

On Oct.31st 2015, Slovenia adopted the Long-term Strategy for Promoting Investment into Energy Renovation of Buildings (LTSERB) by way of which Slovenia has set a goal to significantly improve the energy efficiency of buildings. Could Slovenia provide more information on the estimated of mitigation effects of this action for year 2020?

Answer by Slovenia, Friday, 21 April 2017

In the Long-term Strategy for Promoting Investment into Energy Renovation of Buildings the projection of energy use, emissions, energy savings and economic effects were same as in Operational Programme of Measures for GHG reduction until 2020 (OP GHG) and were updated for the purpose of compiling the Strategy. A new base year of 2012 has been taken into account, with partial calibration for 2013 as well. The assumptions regarding transitions between energy efficiency classes have been aligned with the analysis from the Action Plan

for Nearly Zero-Energy Buildings (AP NZEB). The calculation period has been extended to 2050. The projection with measures from OP GHG has been selected as the scenario in the Strategy.

Emissions from existing buildings amounted to 1 208 kt CO2 equivalent in 2015. These will fall to 971 kt CO2 equivalent by 2020 and to 657 kt CO2 equivalent by 2030. This means that emissions will be 58 % lower in 2020 and 72 % lower in 2030 relative to the year 2005. Total emissions from existing and new buildings are slightly higher, estimated to be 681 kt in 2030 (a 71 % reduction relative to emissions in 2005). The projection is lower than the indicative sectoral target set in the OP GHG, as a result of the fact that the additional measures set out in the AP NZEB had not yet been taken into account in the preparation of the OP GHG.

Energy savings were estimated as well. Savings in end-use and primary energy for heating and domestic hot water preparation resulting from the implementation of measures for the energy renovation of existing buildings were estimated relative to 2015. End-use energy savings will amount to 5.4 PJ in 2020 (13.6 % of final energy use in buildings in 2015), and will increase to 14.3 PJ by 2030 (35.9%) and to 25.3 PJ by 2050 (63.6%). Primary energy savings will be higher, as 1 unit of electricity or district heating saved means over 2 units or 1.3 units of primary energy saved. Primary energy savings will amount to 5.8 PJ in 2020, 15.6 PJ in 2030 and 28.3 PJ in 2050. The projected energy savings in 2020 (5.8 GJ) are 2.0% in comparison to the projected total primary energy consumption in 2020 (297 PJ). Assumed average annual renovation rate was 1.7 % for residential buildings, for public sector 1.4% and for commercial sector 1.3 in the 2016– 2020 period.

In Slovenia the majority of measures are being implemented by pursuing several objectives at the same time, which contributes to a significant decrease in the cost of implementing measures and to an increase in benefits. An assessment has been made of the anticipated effects of the Long-term Strategy for Promoting Investment into Energy Renovation of Buildings on reducing air pollution levels in the period leading up to 2030 relative to 2015. A reduction in emissions of the following is expected: sulphur dioxide – reduction of 572 t (59 %); nitrogen oxides – reduction of 1 293 t (43 %); all particles – reduction of 5043 t, or 53 % (reduction of 4745 t of primary particles smaller than 2.5 m (P2.5) and of 4766 t of primary particles smaller than 10 m (PM10);volatile organic substances – reduction of 3995 t (39 %).

Question by China at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: the WEM scenario

According to the WEM scenario, CO_2 emission will increase during the period of 2016-2020. Could Slovenia elaborate on the drivers for this increase?

Answer by Slovenia, Friday, 21 April 2017

In the WEM scenario, the total emissions have increased by 937 kt CO2 eq in the period between 2016 and 2020. The majority of this increase is attributed to energy supply sector (Production of electricity and heat) with 850 kt CO2 eq. This increase is related to the energy supply sector dynamics, namely the installation of a new thermal unit in Šoštanj in 2014 and 2015, which had a significant impact on the operation of other production units on this site (due to the installation process other units have operated less). Emissions from electricity production in 2015 were very (23 % lower than in 2013). Until 2020 it is envisaged that electricity production from coal will increase, due to expected electricity market dynamics. Increase in emissions in the period 2016-2020 can also be observed in the agriculture (123 kt CO2 eq), transport (111 kt CO2 eq) and industry – fuel combustion in industry and industrial processes (172 kt CO2 eq). The main driver for emissions growth in industry and transport sector is the economic growth. Slovenia being an export-oriented country is highly dependent on the EU and international economic situation. Increased production and transport needs in the addressed period, cannot be outweighed by measures that support the increase in energy efficiency and the use of renewables. In the agriculture emissions mainly increase due to increase in number of animals as a consequence of increasing food self sufficiency. On the other hand emission decrease in other sectors (253 kt CO2 eq) mostly due to intensive renovation of buildings (taking heating systems also into account) and in waste sector (75 kt CO2 eq) due to waste management improvement which will result in decrease of landfilled biodegradable waste.

Question by Brazil at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: table 6(a): BR1 and BR2

Regarding table 6(a) “Information on updated greenhouse gas projections under a ‘with measures’ scenario”, could Slovenia please explain why the projections in BR2 are below to those projections contained in BR1 (Totals with and without LULUCF)?

Answer by Slovenia, Friday, 21 April 2017

Lower projections in BR2 compared to BR1 are a consequence of the following factors:

- Slower economic recovery after crisis in 2008. In BR1 it was anticipated that in 2015 Slovenian GDP will be 17 % higher than it was in 2011 and in 2030 that it will be 82 % higher, while in BR2 it was projected that GDP in 2015 will be 5 % lower compared to 2011 and 38 % higher in 2030.
- Introduction of new measures and intensifying implementation of existing ones with Operational program for reduction of GHG for the period 2013-2020 with a view towards 2030. The government accepted the program in 2014. Operational program covered emissions from sources not included in the emission-trading scheme.
- Other factors. More detailed energy modelling of thermal power plants taking into account the construction of new unit (in 2015); changes in transport fuel prices ratio between Slovenia and neighboring countries, which resulted in decrease of the amount of fuel sold to foreign vehicles in Slovenia (Slovenia lies on crossroads of two European corridors, so the effect of transit transport on the fuel purchase in Slovenia is significant); methodological changes – in BR2 different emission factors have been used, according to 2006 IPCC Guidelines and the use of GWP from 4AR.

Question by Brazil at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: Table 6(c): BR1 and BR2

In BR1, Slovenia reported table 6 (c) “Information on updated greenhouse gas projections under a ‘with additional measures’ scenario”. Could Slovenia please explain why in BR2 table 6(c) was not reported?

Answer by Slovenia, Friday, 21 April 2017

Slovenia has a target for 2020 under EU effort sharing decision (406/2009/EC) under which it can increase emissions from sources not included in the ETS by as much as 4 % compared to 2005. For 2020, Slovenia also has a target regarding renewables share in gross final energy consumption, being 25 %, and energy efficiency target that limits the primary and final energy consumption in 2020. Action plans for renewable energy and energy efficiency have been prepared enlisting and evaluating measures that will help Slovenia reach set targets, and Operational program of measures for reduction of GHG emissions that covers also other emission sources besides energy use will enable Slovenia to reach GHG target. All the measures contained in these documents can be categorized as implemented or adopted so they have to be taken into account in the with measures projection. With measures projection is sufficient to reach all the targets, so there is no need to prepare additional / planned measures to reach even lower emissions. Under with measures projection nonETS emissions in 2020 are 6 % lower than in 2005, while total emissions are 11 % lower, thus

there is a significant over-compliance as regards GHG 2020 target in 2020 already under WEM scenario.

Comparing with measures projection form BR2 and with additional measures projection from BR1 it can be seen that they are quite similar, more than when with measures projections are compared from both BRs. Thus, it can be concluded that with measures projection from BR2 along implemented and adopted measures also contains majority of additional measures planned in the with additional measures projection in BR1, as a consequence of adoption of the above mentioned action plans and operational program.

Question by Brazil at Tuesday, 28 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: Table 3 - BR1 and BR2

Regarding “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, comparing BR1 and BR2, a decrease in the quantified estimates of mitigation impacts has been noted. Please, explain the reasons for that.

Answer by Slovenia, Friday, 21 April 2017

Two main reasons can be identified:

- Reference year for estimation of effect of measures is different. In BR1 reference year is 2008, while in BR2 reference year is 2012. Reference year is a year against which effect of measures is accounted. Estimating effect of measures in 2020 compared to 2008 means higher effect since more is done due to larger time span compared to the period 2012-2020
- In BR2 activity projections are lower due to slower economy recovery which results in lower effects of measures. Lower economic activity also means that less measures are needed for reaching set GHG reduction targets.

Question by Thailand at Tuesday, 21 February 2017

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: Emissions target with and without measures

In Section 2: quantified economy-wide emission reduction target, the Slovania's reduction target in 2020 is 20% compared to 1990. However, trends in greenhouse gas emissions in Figure 4 showed only inventory, and did not show the projected emissions with and without measures to achieve the target in 2020.

Answer by Slovenia, Friday, 21 April 2017

That is true. Figure 4 shows only inventory data. Emissions projections for 2015, 2020, 2025 and 2030 are presented in chapter 4 as is requested in the guidelines for the preparation of Biennial reports (Annex, decision 2/CP.17).

Question by Thailand at Tuesday, 21 February 2017

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: IPCC quideline

In the Section 1, what are the results of key category analysis of the GHG inventory?

Answer by Slovenia, Tuesday, 11 April 2017

The analysis of key source categories was performed based on sectoral distribution and use of the approach 1. This approach was used both for the base year and for the year 2014. A level assessment was undertaken for 1986 and 2014, and a trend assessment was performed for 2014. The analyse has been performed at a level of IPCC categories as suggested in Table 4.1 in Volume 1 of 2006 IPCC Guidelines. The results are presented on the table below.

The analyses have been performed with and without LULUCF sector. Based on the KCA including LULUCF, 25 categories were selected as keys in 2014 according to the level assessment, and 8 were chosen as key categories according to the trend assessment only. As many as 19 categories are key sources according to level and trend KC analysis. The most of the 33 key categories are from Energy sector: 13 categories are CO_2 emissions from fuel combustion, one is CH4 emissions from biomass combustion in other sectors, one is CO_2 emissions from SO_2 scrubbing and one is CH_4 fugitive

emissions from Coal mining and handling. The second most important sector is LULUCF with seven key source categories, five KCs are in the Agriculture sector, two are related to methane emissions and three to N_2O emissions, four KCs are in the industrial processes. Only one KC is in the Waste sector.

On the basis of the Tier 1 analysis excluding LULUCF one categories, which were KC according to level become KC according to the trend, and two additional categories become key according to trend and/or level; one in Fuel combustion sector and one in Waste sector.

In 2010 also the Tier 2 key categories analyse has been done for level assessment and as much as 27 categories have been determined as a key. Mainly due to the large uncertainty**,** the most KC were in Agriculture sector (9), following by LULUCF (5), Road transport (4), Waste (3), Fuel combustion in Residential sector (2), Fugitive emissions from solid fuels (2), Consumption of HFCs (1) and Electricity and heat production (1).

Following recommendation from the UNFCCC review in 2013, the qualitative approach has been also used to determine key source categories but no additional categories have been found to be keys. For determination the following criteria has been included:

- Mitigation techniques and technologies
- High expected emission growth
- High uncertainty
- Unexpected low or high emissions

Key source categories have received special considerations in terms of improvements and QA/QC.

Slovenian IPCC Key Source Categories for 2014, Approach 1

IPCC Category	Gas	w LULUCF	w/o LULUCF additional
1.A.1 Energy Industries, Gaseous Fuels	CO_2	L, T	
1.A.1 Energy Industries, Liquid Fuels	CO_2	T	
1.A.1 Energy Industries, Solid Fuels	CO_2	L, T	
1.A.2 Manufacturing Industries and Construction, Gaseous Fuels	CO_2	L	
1.A.2 Manufacturing Industries and Construction, Liquid Fuels	CO_2	L, T	
1.A.2 Manufacturing Industries and Construction, Other Fuels	CO_2	T	L
1.A.2 Manufacturing Industries and Construction, Solid Fuels	CO_2	L, T	
1.A.3.b Road Transportation, Diesel Oil	CO_2	L, T	
1.A.3.b Road Transportation, Gasoline	CO_2	L, T	
1.A.3.b Road Transportation, LPG	CO_2	T	
1.A.4 Other Sectors, Gaseous Fuels	CO_2	L, T	
1.A.4 Other Sectors, Liquid Fuels	CO_2	L, T	
1.A.4 Other Sectors, Solid Fuels	CO_2	T	
1.A.4 Other Sectors, Biomass	CH_4	L, T	
1.B.1.a Fugitive Emissions, Coal Mining and Handling	CH_4	L, T	
1.B.1.a Fugitive Emissions, Other	CO_4	T	

2.A.1 Industrial processes, Cement Production	CO_2	L	
2.C.3 Industrial processes, Aluminium Production	CO_2	L, T	
2.C.3 Industrial processes, Aluminium Production	PFC	T	
2.F.1 Industrial processes, Refrigeration and AC Equipment	HFC	L, T	
3.A Agriculture, Enteric Fermentation	CH_4	L, T	
3.B Agriculture, Manure Management	CH_4	L	
3.B Agriculture, Manure Management	N_2O	L	T
3.D.1 Agriculture, Direct Soil Emissions	N_2O	L, T	
3.D.2 Agriculture, Indirect Emissions	N_2O	L	
4.A.1 LULUCF, Forest Land remaining Forest Land	CO_2	L, T	
4.A.2 LULUCF, Land converted to Forest Land	CO_2	L, T	
4.B.2 LULUCF, Land converted to Cropland	CO_2	T	
4.B.2 LULUCF, Cropland remaining Cropland	CO_2	T	
4.C.2 LULUCF, Land converted to Grassland	CO_2	L, T	
4.E LULUCF, Settlements	CO_2	L, T	
4.G LULUCF, Harvested wood products	CO_2	L, T	
5.A.1 Waste, Managed waste disposal sites	CH_4	L	
5.D.1 Waste, Domestic and Commercial Waste Water	CH_4		L, T

Question by Thailand at Tuesday, 21 February 2017

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: IPCC guideline

Did Slovania apply the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Guidelines)?

Answer by Slovenia, Tuesday, 11 April 2017

Slovenia has not applied the Wetlands Supplement (WS) so far. However, as around 84 km^2 of Ljubljana Marshes (wetland) is considered managed the Ch. 2 (Drained Inland Organic Soils) of the WS will be studied to implement methodology, which indicates that two most important factors, considered for estimating on-site CO_2 emissions and removals from drained organic soils, are land use and climate. So primary task will be dedicated to analysis of land use of Ljubljana Marshes, which is predominantly agriculture. However, since other data are lacking, emissions in the first step will be assessed using Tier 1 approach. Other wetland areas in Slovenia are very small (e.g. peatland on Pokljuka, Lovrenška jezera or Cerkniško jezero) or are not relevant because no management is present.

Question by Thailand at Tuesday, 21 February 2017

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 28 February

Title: IPCC giudeline

In the Section 1 of BR2, it is clear that 2006 IPCC GL is used for estimation of GHG inventory, but which global warming potential values (GWP) are used in GHG inventory?

Answer by Slovenia, Tuesday, 11 April 2017

Global warming potential

-

According to the COP Decision 24/CP.19 since 2015 the GWPs from the IPCC Forth assessment report (4AR) have been used for calculation of total GHG emissions in CO_2 equivalents.

Global Warming Potentials (100 Year Time Horizon) Used in the Slovenian GHG inventory are presented in the table below.

Gas – common name	Chemical formula	GWP from 4AR
Carbon dioxide	CO_2	1
Methane*	CH_4	25
Nitrous oxide	N_2O	298
HFC-32	CH_2F_2	675
HFC-125	CHF_2CF_3	3,500
HFC-134a	CH_2FCF_3	1,430
HFC-143a	CH_3CF_3	4,470
HFC-227ea	CF_3CHFCF_3	3,220
CF_4	CF_4	7,390
C_2F_6	C_2F_6	12,200
SF_6	SF_6	22,800

The same GWP values (4AR) have also been used for the projections.

Session SBI46 (2016)

Session closes at 30-04-2017

UNFCCC - LAST PAGE OF EXPORT