REPUBLIC OF BULGARIA

MINISTRY OF ENVIRONMENT AND WATER

Bulgaria's Second Initial Report under the Kyoto Protocol

Report to facilitate the calculation of the assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period 2013–2020

May 2016

CONTENTS

Introduction

The United Nations Framework Convention on Climate Change (UNFCCC) sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change.

UNFCCC entered into force on 21 March 1994 and it was ratified by the Parliament of Bulgaria in March 1995. Bulgaria is included in Annex I of the Convention as it is a country with economy in transition.

The Kyoto Protocol (KP) was adopted on the Third Session of the Conference of the Parties to the Convention (December 1997, Kyoto). Bulgaria ratified the Kyoto Protocol in August 2002 and it entered into force in February 2005.

With the Kyoto Protocol, the Parties of the Convention assumed the obligation not only to stabilize the GHG emissions, but also to reduce them with a certain rate regarding the base year for each country.

As the first commitment period of the Kyoto Protocol ended in 2012 at the Conference of the Parties serving as the meeting of the Parties to the Protocol (CMP) on 8 December 2012 in Doha, Qatar was adopted an amendment to the Kyoto Protocol known as the Doha Amendment. The Amendment establishes the second commitment period of the Kyoto Protocol, which began on 1 January 2013 and will end on 31 December 2020.

In accordance with Decision 2/CMP.8 Bulgaria has prepared its initial report to the UNFCCC Secretariat, to facilitate the calculation of its assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period and to demonstrate its capacity to account for its emissions and assigned amount (hereinafter referred to as the report to facilitate the calculation of the assigned amount).

In addition, this report also reflects the additional guidance contained in Decision 3/CMP.11 and Decision 4/CMP.11. These decisions contain relevant provisions related to reporting and accounting, and review and adjustment for the second commitment period under the Kyoto Protocol.

In this respect, the present report includes the following information about Bulgaria:

a) Complete inventories of anthropogenic emissions by sources and removals by sinks of GHG not controlled by the Montreal Protocol;

b) Identification of base years for the second commitment period;

c) Joint fulfilment of the commitments under article 4 of the Kyoto Protocol for the second commitment period;

d) Calculation of the assigned amount;

e) Calculation of the commitment period reserve;

f) Application of paragraphs 23 – 26 of decision 1/CMP.8;

g) Application and calculation pursuant to paragraph 13 in the annex of decision 2/CMP.7;

h) Information related to LULUCF activities under Article 3(3) and (4) of the Kyoto Protocol;

i) Description of the Bulgarian National System;

j) Description of the Bulgarian National registry.

1 Greenhouse gas inventories for 1988-2014

A complete inventory on greenhouse gas emission and removals for the period 1988 -2014 is provided in the Bulgaria's National Inventory Report 2016 and the Common Reporting Format (CRF tables). They serve as the basis to facilitate the calculation of Bulgaria's assigned amount for the second commitment period (2013–2020).

The methodologies used in the preparation of Bulgaria's greenhouse gas inventory are consistent with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, and the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol.

In 1988 (base year), total GHG emissions accounted for 114 577.79 Gg CO_2 eq. The biggest fraction among gases belongs to CO_2 (76.8%), followed by CH_4 with 14.5%, N_2O with 8.7% and F–gases with 0.003% of GHG emissions.

The largest fraction in emissions among the sectors (without LULUCF) belongs to the energy sector (71.2%), agriculture accounts for 12.3% of total GHG emissions, industrial processes and product use for 10.2% and waste for 6.3%.

In 2014 (last submission), total GHG emissions accounted for 57 197.22 Gg CO_2 eq. The biggest fraction among gases belongs to CO_2 (78.8%), followed by CH_4 with 12.8%, N_2O with 6.6% and F–gases with 1.8% of GHG emissions.

The largest fraction in emissions among the sectors (without LULUCF) belongs to the energy sector (75.4%), agriculture accounts for 8.9% of total GHG emissions, industrial processes and product use for 8.2% and waste for 7.4%.

The greenhouse gas emissions time series for the period 1988 to 2014 is shown in Table 1 and Table 2.

Table 1 GHG emission trends by gas

GREENHOUSE GAS EMISSIONS	Base year	1990	1995	2000	2005	2010	2011	2012	2013	2014
	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)
CO_2 emissions without net CO_2 from LULUCF	87955,61	79278,07	57352,89	45040,83	50105,17	47587,52	52925,85	48045,17	42479,94	45082,93
CO_2 emissions with net CO2 from LULUCF	72612,03	64307,62	43934	34618,62	40753,13	38241,28	43234,16	38306,73	32286,97	33743,73
CH_4 emissions without CH4 from LULUCF	16618,51	16078,16	11255,28	9219,05	8178,50	7539,43	7766,84	7415,51	7361,71	7326,14
CH_4 emissions with CH4 from LULUCF	16619,59	16080,58	11256,56	9353,78	8181,87	7554,62	7783,50	7445,85	7369,43	7328,29
N_2O emissions without N2O from LULUCF	10000,37	8681,53	4915,29	3973,06	4204,21	4080,68	3731,35	3798,55	4186,02	3755,11
N_2O emissions with N2O from LULUCF	10068,19	8750,21	4983,22	4129,37	4275,51	4161,44	3813,43	3889,99	4262,86	3828,43
HFCs	NO	NO	2,99	25,62	157,45	600,31	657,56	751,88	898,62	1017,39
PFCs	NO	NO	NO	NO	NO	0,06	0,06	0,06	0,05	0,04
SF_6	3,30	3,69	4,89	6,49	8,16	12,47	14,19	19,29	19,72	15,62
NF_3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	114577,79	104041,45	73531,35	58265,05	62653,49	59820,46	65095,85	60030,46	54946,07	57197,22
Total (with LULUCF)	99303,11	89142,11	60181,67	48133,88	53376,13	50570,18	55502,91	50413,82	44837,66	45933,50
CO_2 emissions without net CO_2 from LULUCF	87955,61	79278,07	57352,89	45040,83	50105,17	47587,52	52925,85	48045,17	42479,94	45082,93

* Base year = 1988 and 1995 for F-gasses

Table 2 GHG emissions and removals by sector

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year	1990	1995	2000	2005	2010	2011	2012	2013	2014
	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)	CO_2 eq. (Gg)
Energy	81592,86	73877,94	51507,92	41139,49	45733,71	46151,39	51268,77	46422,24	40721,73	43148,73
IPPU	11643,8	10194,23	9915,72	6656,96	7029,75	4001,06	4551,53	4341,16	4380,31	4710,19
Agriculture	14131,18	12954,14	6080,46	5030,88	5023,29	5318,84	4959,57	5040,14	5501,79	5092,29
LULUCF	-15274,7	-14899,3	-13349,7	-10131,2	-9277,37	-9250,27	-9592,94	-9616,64	-10108,4	-11263,7
Waste	7209,95	7015,15	6027,26	5437,72	4866,74	4349,17	4315,99	4226,93	4342,25	4246,00
Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	114577,79	104041,45	73531,35	58265,05	62653,49	59820,46	65095,85	60030,46	54946,07	57197,22
Total (with LULUCF)	99303,11	89142,11	60181,67	48133,88	53376,13	50570,18	55502,91	50413,82	44837,66	45933,50

2 Identification of base year for the second commitment period

Base year for CO_2, N_2O and CH_4

For carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) Bulgaria has chosen 1988 as base year in accordance with Article 4(6) of the United Nation Framework Convention on Climate Change.

Base year for HFCs, PFCs, SF_6 and NF_3

In accordance with Article 3.8 of the Kyoto Protocol, for the first commitment period (2008–2012), Bulgaria has chosen 1995 as the base year for the emissions of the hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6), and this base year also applies for the second commitment period (2013–2020).

Bulgaria has chosen also the year 1995 as the base year for the emissions of nitrogen trifluoride (NF_3) in accordance with Article 3 paragraph 8bis of the Kyoto Protocol, which is newly included for the second commitment period.

Total emissions of these gases increased in the period 1995-2014, mainly due to the more widespread use of HFCs introduced as substitutes for ozone-depleting substances (CFCs/HCFCs).

The time series for the emissions of HFCs, PFCs, SF_6 and NF_3 in Bulgaria are presented in Table 3.

Table 3 Emissions of HFCs, PFCs, SF_6 and NF_3 for the period 1995-2014

	HFCs	PFCs	SF_6	NF_3	Total
	CO_2 eq. (Gg)				
1995	2,99	NO	4,90	NO	7,88
1996	5,17	NO	5,18	NO	10,35
1997	8,14	NO	5,48	NO	13,62
1998	13,36	NO	5,80	NO	19,16
1999	19,95	NO	6,14	NO	26,08
2000	25,62	NO	6,49	NO	32,11
2001	37,33	NO	6,87	NO	44,20
2002	52,27	NO	7,27	NO	59,53
2003	70,35	NO	7,69	NO	78,03
2004	104,03	NO	8,13	NO	112,16
2005	157,45	NO	8,16	NO	165,62
2006	220,37	NO	8,48	NO	228,86
2007	302,55	NO	8,81	NO	311,36
2008	497,35	NO	9,16	NO	506,51
2009	561,37	0,02	9,52	NO	570,91
2010	600,31	0,06	12,47	NO	612,83
2011	657,56	0,06	14,19	NO	671,81
2012	751,88	0,06	19,29	NO	771,23
2013	898,62	0,05	19,72	NO	918,39
2014	1017,39	0,04	15,62	NO	1033,05

3 Joint fulfillment of the commitments under article 4 of the Kyoto Protocol for the second commitment period

The Kyoto Protocol, under Article 4, provides the option for Parties to fulfill their commitments under Article 3 jointly, acting in the framework of and together with a regional economic integration organization.

The targets for the Union, its Member States and Iceland are inscribed in the Doha Amendment with a footnote stating that those targets are based on the understanding that they will be fulfilled jointly, in accordance with Article 4 of the Kyoto Protocol. The Union, its Member States and Iceland also issued a joint statement upon the adoption of the Doha Amendment on 8 December 2012, expressing their intention to fulfill their commitments for the second commitment period jointly. The statement was agreed during an ad hoc meeting of EU Ministers in Doha and endorsed by the Council on 17 December 2012.

With Council Decision (EU) 2015/146 of 26 January 2015 it was approved the signing, on behalf of the European Union, of the agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfillment of commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol.

The European Union, its Member States and Iceland have signed the Agreement necessary for the joint fulfillment of the second commitment period of the Kyoto Protocol on 01 April 2015.

With Council Decision (EU) 2015/1340 of 13 July 2015 the Agreement was approved on behalf of the European Union.

4 Calculation of Bulgaria's assigned amount

The quantified emission limitation and reduction commitments for the members of the European Union (including Bulgaria) listed in the third column of Annex B to the Doha Amendment to the Kyoto Protocol are 80%. The joint assigned amount of the members for the second commitment period will be determined pursuant to Article 3(7 bis), (8) and (8 bis) of the Kyoto Protocol, and its calculation will be facilitated by the report submitted by the European Union pursuant to paragraph 2 of Decision 2/CMP.8.

The assigned amounts of the members shall be equal to their respective emission levels.

In accordance with Annex 2, Table 1 of the Agreement concerning Emission levels of the Member States and Iceland (before application of Article 3(7bis)) in terms of tonnes of carbon dioxide equivalent for the second commitment period of the Kyoto Protocol the prescribed amount for Bulgaria should be equal to **222,945,983.**

The method of calculation of the assigned amount pursuant to Article 3(7 bis), (8) and (8 bis) is applied only to the calculation of the joint assigned amount. It does not apply to the calculation of the individual assigned amounts, which are instead determined pursuant to the joint fulfillment agreement. In that connection the assigned amount of Bulgaria even after the application of Article 3(7bis) of the Kyoto Protocol will be as mentioned above.

5 Calculation of Bulgaria's commitment period reserve

Parties are required by decision 11/CMP.1 under the Kyoto Protocol and paragraph 18 of Decision 1/CMP.8 to establish and maintain a commitment period reserve as part of their responsibility to manage and account for their assigned amount. The commitment period reserve (CPR) equals the lower of either 90% of a Party's assigned amount pursuant to Article 3(7bis), (8) and (8bis) or 100% of its most recently reviewed inventory, multiplied by 8.

The national commitment period reserve is calculated in accordance with paragraph 6 of the Annex to decision 11/CMP.1 as 90% of the proposed assigned amount or 100% of eight times its most recently reviewed inventory, whichever is the lowest.

The first method calculation as 90% of the proposed assigned amount of Bulgaria gives the estimate:

CPR = 0,9 x 222 945 983 = 200 651 385 Mg CO_2 equivalent

The second method calculation as 100% of the most recently reviewed inventory (emission level 2014) of Bulgaria times eight gives the estimate:

CPR = 8 x 57 197 219 = 457 577 755 Mg CO_2 equivalent

Bulgaria has interpreted the 'most recently reviewed inventory' as the year 2014, which will be reviewed by October 2016.

Therefore Bulgaria's estimated CPR is **200 651 385** Mg CO_2 equivalent.

6 Difference between the assigned amount for the second commitment period and the average emissions for the first three years of the preceding commitment period

According to Article 3(7ter) of the Doha Amendment of the Kyoto Protocol, any positive difference between the assigned amount of the second commitment period and the average annual emissions for the first three years of the preceding commitment period multiplied by eight shall be transferred to the cancellation account.

In line with the terms of the joint fulfilment of the European Union, its Member States and Iceland under Article 3 of the Kyoto Protocol, Article 3(7ter) is applied to the joint assigned amount of the second commitment period.

7 Application of paragraphs 23 – 26 of decision 1/CMP.8

According to decision 1/CMP.8, paragraph 23, each Party included in Annex I with a commitment inscribed in the third column of Annex B as contained in annex I to this decision shall establish a previous period surplus reserve (PPSR) account in its national registry. Based on this provision, the European Union, each Member State and Iceland will establish previous period surplus reserve accounts in their respective registries.

According to decision 1/CMP.8, paragraph 24, where the emissions of a Party referred to in paragraph 23 above in a commitment period are less than its assigned amount under Article 3, the difference shall, on request of that Party, be carried over to the subsequent commitment period, as follows:

(a) Any ERUs or CERs held in that Party's national registry that have not been retired for that commitment period or cancelled may be carried over to the subsequent commitment period, up to a maximum for each unit type of 2.5 per cent of the assigned amount calculated pursuant to Article 3(7) and (8);

(b) Any AAUs held in that Party's national registry that have not been retired for that commitment period or cancelled shall be added to the assigned amount for that Party for the second commitment period. That part of a Party's assigned amount consisting of AAUs held in that Party's national registry that has not been retired for that commitment period or cancelled shall be transferred to its previous period surplus reserve account for the subsequent commitment period, to be established in its national registry;

Based on this provision, the European Union, each Member State and Iceland will carry over any remaining ERUs, CERs or AAUs that have not been retired of cancelled for the first commitment period in their respective registries to their respective previous period surplus reserve accounts. The 2.5 per cent limit in paragraph 24 (a) of decision 1/CMP.8 will be calculated based on the assigned amounts of the Member States, Iceland and the European Union calculated pursuant to Article 3(7) and (8) for the first commitment period.

According to decision 1/CMP.8, paragraph 25, units in a Party's previous period surplus reserve account may be used for retirement during the additional period for fulfilling commitments of the second commitment period up to the extent by which emissions during the second commitment period exceed the assigned amount for that commitment period, as defined in Article 3(7 bis), (8) and (8 bis), of the Kyoto Protocol. This provision will be applied to the European Union, its Member States and Iceland individually due to the fact that the previous period surplus reserve accounts will be established in the Kyoto registries of the European Union, its Member States and Iceland. Units in a member's Previous Period Surplus Reserve account may be used for retirement during the additional period for fulfilling commitments of the second commitment period, up to the extent by which that member's emissions during the second commitment period exceed its respective assigned amount for that commitment period.

According to decision 1/CMP.8, paragraph 26, units may be transferred and acquired between previous period surplus reserve accounts. This provision will be applied to the European Union, its Member States and Iceland individually due to the fact that the previous period surplus reserve accounts will be established in the Kyoto registries of the European Union, its Member States and Iceland.

8 Application and calculation pursuant to paragraph 13 in the annex of decision 2/CMP.7

According to paragraph 13 in the annex of decision 2/CMP.7 for the second commitment period, additions to the assigned amount of a Party resulting from forest management under Article 3(4), and from forest management project activities undertaken under Article 6, shall not exceed 3.5 per cent of the base year greenhouse gas emissions excluding land use, land-use change and forestry pursuant to Article 3(7) and (8), or any amendments thereto, times the duration of the commitment period in years. Similar to the general accounting of emissions and removals under Article 3(3) and (4), Member States and Iceland will apply this provision individually. The maximum accountable quantities resulting from forest management that can be added to the assigned amounts to Bulgaria is presented in Table 4.

Table 4 Maximum accountable quantities resulting from forest management under Article 3, paragraph 4 in the second commitment period

Forest management cap for the second commitment period, tonnes CO_2 eq**.**	34,058,393

9 Information related to LULUCF activities under Article 3(3) and (4) of the Kyoto Protocol

9.1 Identification of the selection of single minimum values for tree crown cover, land area and tree height for use in accounting under Article 3(3) and (4)

The forest definition to be used in the second commitment period is the same definition adopted for the first commitment period.

For reaching the targets of KP the minimal figures of the defined range of parameters for tree height, tree crown cover and minimum area have been chosen by Bulgaria:

- Minimum forest area – 0.1 ha;
- Tree crown cover -10%;
- Tree height - 5 meters.

9.2 Election of activities under Article 3(4)

Article 3(4) of the Kyoto Protocol provides the option to include the activities forest management, cropland management, grazing land management and revegetation in the accounting of the commitments for the first commitment period. In the second commitment period all Parties included in Annex I have to account for anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from any activity under Article 3(4) already elected in the first commitment period, and for forest management (Decision 2/CMP 7, Annex, Paragraph 7). In addition, they may also choose to elect further activities from the ones above for inclusion in its accounting for the second commitment period as well as wetland drainage and rewetting can be chosen as an additional activity.

In the Initial Report for the first commitment period, Bulgaria has decided not to elect any of the activities under Article 3, paragraph 4, in the first commitment period. In the second commitment period, accounting for forest management is mandatory for all Parties included in Annex I.

Forest management will be accounted for in the second commitment period and Bulgaria does not elect any additional activities under Article 3, paragraph 4, of the Kyoto Protocol.

9.3 Identification of the period for accounting activities under Article 3 (3) and (4)

Bulgaria has chosen to account for each activity under Article 3, paragraph 3 and 4 for the entire commitment period at the end of the commitment period.

9.4 Bulgaria's Forest Management Reference Level as inscribed in the appendix to the annex to decision 2/CMP.7

The forest management reference level (FMRL) for Bulgaria, inscribed in the appendix to the annex to Decision 2/CMP.7, is equal to –8.168 Mt CO2 eq. per year assuming instantaneous oxidation of HWP, and –7.950 Mt CO2 eq. applying first-order decay function for HWP. Bulgaria is one of the member States of the EU for which the JRC of the European Commission developed projections in collaboration with two EU modeling groups. The FMRL is the averages of the projected forest management (FM) data series for the period 2013-2020, taking account of policies implemented before mid-2009, with emissions/removals from harvested wood product (HWP) using the first order decay functions, and assuming instant oxidation. The contribution of HWP to the reference level of Bulgaria amounts to 0,218 Mt CO2 as described in the Submission of the FMRL by Bulgaria (2011). It was calculated using the C-HWP-Model, which estimates delayed emissions on the basis of the annual stock change of semi-finished wood products.

9.5 Information on natural disturbances for the accounting for afforestation and reforestation under Article 3.3 of the Kyoto Protocol and/or forest management under Article 3.4 of the Kyoto Protocol

Bulgaria intends to apply the provision to exclude emissions from Natural disturbances in lands subject to AR activities during the second commitment period in accordance with the paragraph 33 from the Annex to Decision 2/CMP.7. In connection with the provision and following the requirement set out in the Decision 2/CMP.7 an AR background level (BL) of emissions associated with annual disturbances has been developed. The background level is defined as the average of a consistent and initially complete time series containing emissions associated with annual natural disturbances after application of an iterative process to remove outliers, based on twice the standard deviation around the mean until no outliers can be identified. The method used to develop the BL of emissions from natural disturbances follows the default method as described in the 2013 KP Supplement.

Table 4 Historical emissions associated with natural disturbances from lands under Afforestation/Reforestation

Total and area specific emissions from disturbances for the calibration period for AR																									
Distrubance type*	Inventory year during the calibration period																								
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Total annual emission [Gg CO2 eq.]																								
wildfires	0.15	0.14	2.24	10.27	12.75	0.46	2.43	1.00	10.08	13.30	102.03	45.35	16.59	14.52	3.58	4.97	14.91	188.57	25.41	11.31	34.56	42.98	82.54	22.10	6.45
extreme weather events																									
windstorms	0.38	0.75	1.15	1.54	1.92	2.27	2.99	3.32	3.61	4.76	5.13	6.19	6.35	6.65	6.53	6.57	25.19	11.00	7.79	3.27	6.66	1.71	4.64	13.03	40.98
wet snowfall	0.19	0.39	0.59	0.78	0.97	1.16	1.54	1.76	2.05	2.14	2.52	2.95	3.56	3.75	4.27	6.14	2.88	9.13	2.31	9.90	4.14	9.87	30.36	68.95	20.96
ice	0.02	0.04	0.06	0.08	0.09	0.11	0.16	0.19	0.22	0.22	0.21	0.23	0.33	0.60	0.58	0.66	0.02	0.02	0.00	1.53	4.19	0.00	1.47	0.05	0.00
others e.g. droughts, floods, landslides	0.01	0.01	0.02	0.03	0.04	0.04	0.06	0.06	0.07	0.08	0.09	0.12	0.12	0.14	0.15	0.16	0.26	0.19	0.34	0.10	0.31	0.16	0.22	0.32	0.19
SUM	0.74	1.34	4.05	12.69	15.77	4.05	7.18	6.34	16.04	20.50	109.97	54.84	26.95	25.66	15.11	18.49	43.26	208.91	35.85	26.11	49.86	54.72	119.23	104.44	68.58
For all land under AR	Total area [kha]																								
	6.99	14.07	21.26	28.24	35.26	42.32	49.37	56.42	63.47	70.53	77.58	89.76	102.03	114.27	126.51	138.86	151.18	163.63	176.62	188.88	201.35	213.62	226.01	238.64	250.96
	Area-specific emissions (Emissions per unit of land area under AR, Mg CO2 eq. ha-1)**																								
	0.11	0.10	0.19	0.45	0.45	0.10	0.15	0.11	0.25	0.29	1.42	0.61	0.26	0.22	0.12	0.13	0.29	1.28	0.20	0.14	0.25	0.26	0.53	0.44	0.27

Table 5 Historical emissions associated with natural disturbances from lands under Forest Management

Total and area specific emissions from disturbances for the calibration period for Forest Management																									
Distrubance type*	Inventory year during the calibration period																								
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Total annual emission [Gg CO2 eq.]																								
wildfires	76.0	37.2	381.3	1318.6	1311.4	39.7	178.3	64.3	575.7	683.8	4767.3	1831.3	589.3	460.4	102.5	129.6	357.5	4175.0	521.0	216.8	621.4	728.3	1322.0	335.1	93.0
extreme weather events																									
windstorms	194.9	192.9	195.4	197.1	197.1	194.7	219.6	213.3	206.1	244.5	239.6	250.1	225.6	210.9	187.1	171.4	603.8	243.5	159.6	62.7	119.7	29.1	74.2	197.6	590.9
wet snowfall	100.2	100.5	99.8	100.2	99.3	99.4	113.4	113.1	117.3	109.8	117.5	119.0	126.3	119.0	122.2	160.3	69.1	202.2	47.4	189.8	74.4	167.3	486.2	1045.6	302.2
ice	10.2	10.3	10.2	10.0	9.7	9.6	11.9	12.3	12.7	11.1	9.8	9.4	11.7	19.1	16.7	17.2	0.4	0.4	0.0	29.3	75.4	0.0	23.6	0.7	0.0
others e.g. droughts, floods, landslides	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.1	4.2	4.2	4.8	4.4	4.5	4.3	4.1	6.1	4.2	7.0	1.8	5.6	2.8	3.5	4.9	2.7
SUM	385.1	344.7	690.6	1629.5	1621.2	347.0	527.4	407.2	915.9	1053.5	5138.3	2214.7	957.3	814.0	432.8	482.6	1036.8	4625.3	735.1	500.6	896.6	927.4	1909.5	1583.8	988.8
For all land under FM	Total area [kha]																								
	3627	3627	3626	3626	3626	3626	3626	3625	3625	3625	3625	3625	3625	3624	3624	3624	3624	3623	3621	3621	3620	3620	3620	3619	3619
	Area-specific emissions (Emissions per unit of land area under FM, Mg CO2 eq. ha-1)**																								
	0.11	0.10	0.19	0.45	0.45	0.10	0.15	0.11	0.25	0.29	1.42	0.61	0.26	0.22	0.12	0.13	0.29	1.28	0.20	0.14	0.25	0.26	0.53	0.44	0.27

The expectation of net credits has been avoided comparing the emissions resulting by the application of step (3) above with the mean minus twice the SD (in this case the emissions should not be removed from the dataset). The main components related to background level and margin estimation process for AR activities have been reported in the tables below:

Table 6 Background level of emissions associated with natural disturbances from lands under article 3.3 of the Kyoto Protocol

Calibration period	1990-2014
Method used	IPCC Default
Background level	0.24 Gg CO2 eq.
Margin	0.13 Gg CO2 eq
BL plus margin	0.50 Gg CO2 eq
Number of excluded years	4
Excluded years	2000, 2001, 2007, 2012

Table 7 Background level of emissions associated with natural disturbances from Forest Management

Calibration period	1990-2014
Method used	IPCC Default
Background level	738 Gg CO2 eq.
Margin	258 Gg CO2 eq
BL plus margin	1255 Gg CO2 eq
Number of excluded years	7
Excluded years	1993, 1994, 2000, 2001, 2007, 2012, 2013

10 Bulgaria's National GHG Inventory System

The Bulgarian National Inventory System changed over time two times because of decisions of the particular government.

Until 2007 the national emissions inventory as well as the relevant NIR under UNFCCC was prepared by an external company through an open tender procedure under the rules of the Public Procurement Law.

Since 2008 the Executive Environment Agency (ExEA) is responsible for the whole process of inventory planning, preparation and management.

The national system defines the "road map" in which Bulgaria prepares its inventory. This is outlined in the national inventory preparation cycle (see below part Fulfilment of paragraph 10(a) from Decision 19/CMP.1 Guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol).

Bulgaria's reporting obligations to the UNFCCC, UNECE and EC are being administered by the MoEW. All activities on preparation of GHG inventory in Bulgaria are coordinated and managed on the state level by MoEW.

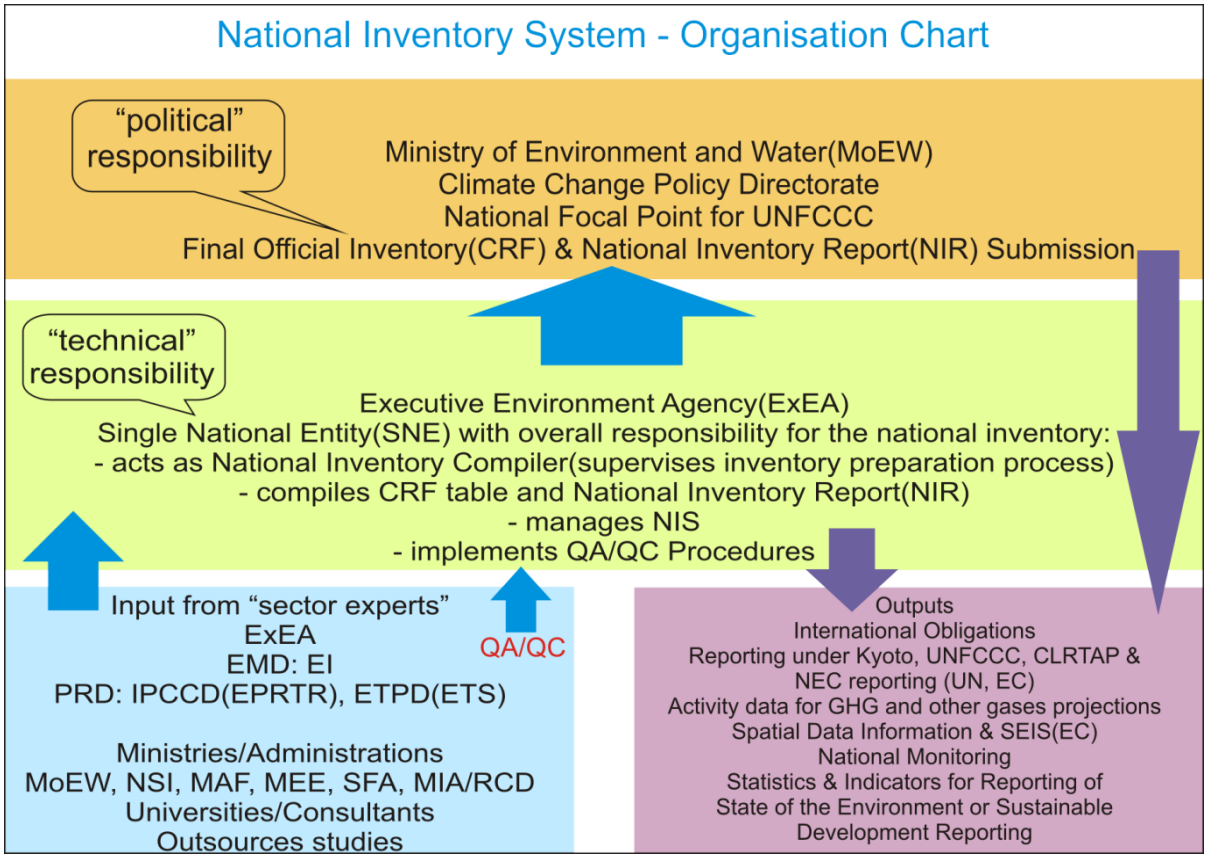

Figure 1 Organizational Chart of the Bulgarian National Inventory System

The Bulgarian Government by MoEW (Climate Change Policy Directorate) has the political responsibility for compliance with commitments under the UNFCCC and the Kyoto Protocol, including for functioning of BGNIS in accordance with the requirements of Decision 19/CMP.1 under Article 5, paragraph 1, of the Kyoto Protocol. In order to meet all challenges in this sphere, the Climate Change Policy has been transformed in a separate directorate and its staff consists of 13 experts.

The ExEA has been identified as the responsible organization for preparation of Bulgaria's National GHG Inventory under the UNFCCC and the Kyoto Protocol and designated as single national entity.

The ExEA is represented and managed by an Executive Director. The organizational chart of the ExEA is presented in Figure 2.

The ExEA's directorates and departments, which are directly involved in operation of the BGNIS are:

Environmental Monitoring and Assessment Directorate with the Emission Inventory Department (EID) and Waste Department (WD) and

Permit Regime Directorate with the **Integrated Pollution Prevention and Control Department** (IPPCD) and **Emission Trading Permit Department** (ETPD).

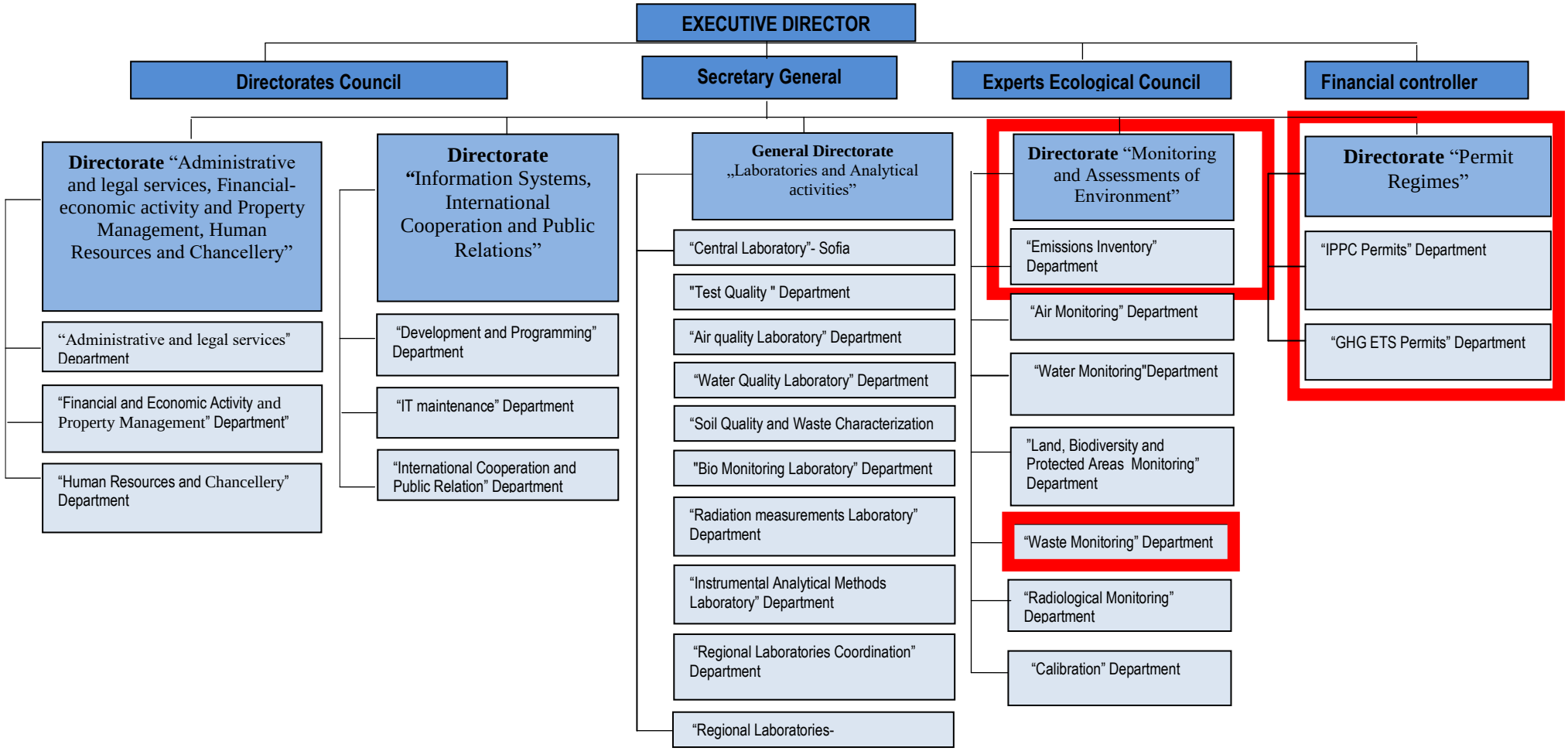

Figure 2 Organizational Chart of the Executive Environmental Agency (ExEA)

Since 1 January 2012, the Emissions Inventory Unit, responsible for preparation of the GHG Inventory, has been promoted as Emissions Inventory Department (see Figure 2).

The ExEA has been identified as the responsible organization for preparation of Bulgaria's National GHG Inventory under the UNFCCC and the Kyoto Protocol and designated as single national entity. ExEA has the technical responsibility for the national inventory:

- acts as National Inventory Compiler (supervises inventory preparation process);
- manages BGNIS;
- compiles CRF tables and NIR;
- coordinates the work of engaged consultants for supporting inventory;
- coordinates and implements the activity of National QA/QC Plan;
- National Inventory Focal Point.

The legal bases for BGNIS are:

- Environmental Protection Act (EPA, State Gazette No. 91/25.09.2002; corrected, SG No. 96/2002; last amendment August 2015);
- Statute on the organization and structure of ExEA (Decision of Council of ministers 162/03.08.2012 – final update 30.10.2015);
- Order № 296/04.12.2015 by the Executive Director of ExEA (Sector experts/QC experts);
- Order № RD-218/05.03.2010 by the Minister of Environment and Water (QA experts).
- Regulation of the Council of Ministers 216/05.09.2014 SG 76/2014 on the way and order of organization of the National Inventories of hazardous substances and greenhouse gases in the ambient air.

The regulation establishes and maintain the institutional, legal and procedural arrangements necessary to perform the general and specific functions of BGNIS, defined in Decision 19/CMP.1 for national systems. The regulation reinforces the existing institutional agreements by specifying the roles of all data providers.

Description of the present institutional arrangement for inventory preparation

In order to strengthen the institutional arrangements and to fulfil the required general and specific functions of BGNIS official agreements between MoEW and the main data providers were signed in 2010:

- National Statistical Institute (RD21-35/12.02.2010);
- Ministry of Agriculture and Food and its body Executive Forest Agency (04-00-517/26.02.2010 and RD 50-47/15.03.2010);
- Ministry of Economy, Energy and Tourism (14/06/2010);
- Ministry of Interior (MI) (08/06/2010).

The agreements ensure the support from these organisations regarding the choice of the activity data and EFs and methods, in the compilation of emission estimates and QA/QC of these estimates.

The ExEA as Single National Entity coordinates all activities, related to collecting inventory data and aggregates the data relevant for GHG emissions on a national level by the following state authorities:

- National Statistics Institute (NSI);
- Ministry of Agriculture and Food (MAF) and their relevant services (Agrostatistic Directorate and Executive Forest Agency);
- Ministry of Energy (ME);
- Ministry of Interior (MI);
- Ministry of Environment and Water (MoEW);
- Ministry of Transport, Information Technologies and Communications (MTITC).

The Executive Environment Agency (ExEA) coordinates all activities, related to the large industrial plants and Branch Business Associations.

- Large industrial plants – official letters (questionnaire);
- Branch Business Associations – official letters (questionnaire).

For validation of the activity data we gather reliable country specific data from Branch Business Associations in Bulgaria and aggregate the data relevant for GHG emissions on a national level. Please see the list of all branch business associations in Bulgaria: http://www.bia-bg.com/memberCategory/278. The data must be representative for the whole period since 1988 (base year for Bulgaria).

The processed annual inventory and the NIR are presented by ExEA to the Ministry of Environment and Water/Climate change policy department for approval. The Ministry finally approves the national inventory and allows the submission to the UNFCCC Secretariat.

11 Bulgaria's National Registry

Bulgaria as an Annex 1 Party to the Kyoto Protocol has National registry for GHG emissions trading, which is a part of Union registry and fulfils the criteria for using the flexible mechanisms of the Kyoto Protocol. Following the revision of the *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emissions allowances trading within the Community in 2009*, EU ETS operations were centralised in a single EU registry, operated by the European Commission. The Union registry has replaced Member States' national registries. The Union registry is an online database that holds accounts for stationary installations, person holding accounts, trading accounts as well as accounts for aircraft operators, which have been included in the EU ETS since January 2012. The purpose of the Registry is to ensure accurate accounting of the issuance, holding, transfer, acquisition, cancellation and retirement of EUAs, ERUs, CERs, AAUs, RMUs and the carry-over of ERUs, CERs and AAUs.

Bulgaria National registry is in compliance with the requirements for the EU ETS registries, which has been elaborated by the European Commission and presented in the *Commission Regulation 389/2013/EC of 2 May 2013 establishing a Union Registry pursuant to Directive 2003/87/EC of the European Parliament and of the Council, Decisions 280/2004/EC and 406/2009/EC of the European Parliament and of the Council and repealing Commission Regulations (EU) 920/2010 and 1193/2011*.

According to Bulgarian legislation the availability of functioning of the National registry for GHG emissions trading is an obligation proceeding under art. 6(9) of *Climate Change Mitigation Act* and it is one of the indispensable conditions for the adequate and undisturbed functioning of the EU ETS as well as for transfer of units pursuant to Kyoto Protocol mechanisms.

According to Art. 2 of *Ordinance for the terms and procedure for administration of National registry for GHG emissions trading* the Executive Director of the Executive Environment Agency performs the functions of national administrator managing of the National registry for GHG emissions trading in relation with the Commission Regulation 389/2013/EC.

Name and contact information of the registry administrator designated by the Party to maintain the national registry

The registry administrator designated by Bulgaria to maintain the national registry is:

Executive Environment Agency

Address: 136 Tzar Boris III Blvd., P.O. Box 251

1618 Sofia

Bulgaria

Tel.:+359 2 9406416

Fax: +359 2 9559015

E-mail: registry@eea.government.bg

Contact persons:

Mrs. Zornica Ruseva, e-mail: z.ruseva@eea.government.bg

Mrs. Nina Dimitrova, e-mail: n.dimitrova@eea.government.bg

Mrs. Plamena Yordanova-Kapralyakova, e-mail: p.eneva@eea.government.bg

Description of the database structure to be used in the National registry

The central administrator shall operate and maintain the Union Registry, including its technical infrastructure. The central administrator shall ensure that the Union Registry conforms to the functional and technical specifications for data exchange standards for registry systems under the Kyoto Protocol elaborated pursuant to Decision 12/CMP.1 and have regard to the hardware, network, software and security requirements set out in the data exchange and technical specifications provided for in Article 105 of the Commission Regulation 389/2013/EC.

Communication links between registries, the ITL and the EUTL

The central administrator and Member States shall ensure that the Union Registry and KP registries maintain a communication link with the ITL for the purposes of communicating transactions with Kyoto units.

The central administrator shall ensure that the EUTL maintains a communication link with the ITL for the purposes of recording and checking transfers. All proposed transfers involving a KP registry shall be processed and checked by the EUTL before the transfer is recorded.

Information publicly accessible through the user interface to the national registry

Bulgaria considers that confidential is information referred to article 110 of the Commission regulation (EU) 389/2013. The following information is accessible to the public in line with the legislations' requirements, which is non-confidential:

http://eea.government.bg/bg/r-r/r-te/registry/main3

The registry terms and conditions, operators guide, forms and guidance for opening the holding accounts are available at the website of Executive Environment Agency:

http://eea.government.bg/bg/r-r/r-te/registry/main11

Joint implementation (JI) projects' publicly accessible information:

http://eea.government.bg/bg/r-r/r-te/registry/main

The information of approved Joint Implementation projects and their documentation is added on the website of the competent authority (Ministry of the Environment and Waters) of JI projects and can be downloaded from the following link:

http://www3.moew.government.bg/?show=top&cid=357&lang=en

Access to information through the user interface of the national registry

The internet address of the Bulgarian registry for GHG emissions trading:

https://ets-registry.webgate.ec.europa.eu/euregistry/BG/index.xhtml