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Climate Change

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Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Ireland

Note by the expert review team


Summary

According to decision 2/CMP.8, each Party with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B to the Kyoto Protocol, as contained in annex I to decision 1/CMP.8, shall submit to the secretariat a report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol. In accordance with decision 22/CMP.1, annex, paragraph 11, in conjunction with decision 4/CMP.11, the report to facilitate the calculation of the assigned amount is subject to a review. This report presents the results of the technical review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol, conducted by an expert review team in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol.” The review took place from 29 August to 3 September 2016 in Bonn, Germany.

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I. Introduction¹

1. The review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol (hereinafter referred to as the report to facilitate the calculation of the assigned amount) of Ireland was organized by the UNFCCC secretariat, in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”.² The review took place from 29 August to 3 September 2016 in Bonn, Germany, and was coordinated by Mr. Tomoyuki Aizawa (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of Ireland.

2. A draft version of this report was communicated to the Government of Ireland, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

Table 1

Composition of the expert review team that conducted the review of Ireland

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mr. Christopher John Dore	United Kingdom of Great Britain and Northern Ireland
	Ms. Kristina Saarinen	Finland
Energy	Ms. Tahira Munir	Pakistan
	Mr. Peter Seizov	Bulgaria
	Ms. Nina Uvarova	Russian Federation
IPPU	Ms. Pia-Kristiina Forsell	Finland
	Mr. Andrew Neal	New Zealand
Agriculture	Ms. Marci Baranski	United States of America
	Mr. Abdulkadir Bektas	Turkey
	Mr. Paulo Cornejo Guajardo	Chile
	Mr. Pa Ousman Jarju	Gambia
LULUCF	Mr. Rizaldi Boer	Indonesia
	Mr. Johannes Brötz	Germany
	Ms. Oksana Butrym	Ukraine
	Ms. Naoko Tsukada	Japan
Waste	Mr. Seungdo Kim	Republic of Korea
	Ms. Mayra Rocha	Brazil
Lead reviewers	Ms. Mayra Rocha	
	Ms. Kristina Saarinen	

¹ At the time of publication of this report, Ireland had not yet submitted its instrument of ratification of the Doha Amendment, and the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

² Decision 22/CMP.1 and its annex and any revisions contained in decision 4/CMP.11 and its annex I.

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry.

II. Summary of the reporting on mandatory elements in the report to facilitate the calculation of the assigned amount

3. Table 2 provides a summary of the ERT’s assessment of the reporting of mandatory elements by Ireland in its report to facilitate the calculation of the assigned amount. Key data and elections by the Party are included in table 4.

Table 2

Expert review team’s assessment of the reporting of mandatory elements by Ireland in its report to facilitate the calculation of the assigned amount

<i>Item</i>		<i>Comment</i>
<i>General Party information</i>		
Date of submission		Original submission: 17 June 2016
Are there any missing categories or issues related to completeness ^a in the reporting of GHG emissions by sources and removals by sinks for the base year or period?	Yes	See FCCC/ARR/2016/IRL
Was the GHG inventory recalculated in accordance with decision 4/CMP.7 for all years from 1990 to the most recent year available?	Yes	
Did the Party report the base year for NF ₃ ?	Yes	See annex I, table 4
<i>Information related to agreement by the Party under Article 4 of the Kyoto Protocol to implement commitments jointly</i>		
Has complete information been reported in accordance with decision 3/CMP.11, paragraph 11, by the Party in fulfilment of its Kyoto Protocol, Article 4, agreement in relation to the following:		
(a) Application of decision 1/CMP.8, paragraphs 23–26, related to carry-over and the previous period surplus reserve account	Yes	For further information, see ID#8 in table 3
(b) Calculation of base year emissions	Yes	See annex I, table 4. For further information, see ID#s1 and 2 in table 3
(c) Calculation of the assigned amount	Yes	For further information, see ID#s1 and 2 in table 3, and annex I, table 4
(d) Calculation of the commitment period reserve	Yes	For further information, see ID#3 in table 3, and annex I, table 4
(e) Application and calculation pursuant to decision 2/CMP.7, annex, paragraph 13	Yes	See annex I, table 4. For further information, see ID#7 in table 3
<i>Information related to the assigned amount and the commitment period reserve</i>		

<i>Item</i>		<i>Comment</i>
Was the assigned amount in the original submission calculated in accordance with Article 3, paragraph 8, of the Kyoto Protocol, Article 3, paragraphs 7 bis and 8 bis, as contained in the Doha Amendment, and decision 13/CMP.1 in conjunction with decision 3/CMP.11?	No	For further information, see ID#1 in table 3, and annex I, table 4
Has the Party reported in the original submission the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by 8?	No	For further information, see ID#4 in table 3, and annex I, table 4
Has the Party indicated in the original submission the approach ^b used to calculate average annual emissions for the first three years of the first commitment period?	No	For further information, see ID#4 in table 3, and annex I, table 4
Did land-use change and forestry constitute a net source of GHG emissions in the base year, and therefore did the Party include emissions from deforestation in the calculation of the assigned amount?	Yes	For further information, see ID#1 in table 3, and annex I, table 4
Was the commitment period reserve in the original submission calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1, the annex to decision 13/CMP.1, paragraph 8 quinquies, and decision 1/CMP.8, paragraph 18?	Yes	For further information, see ID#3 in table 3, and annex I, table 4
<i>Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</i>		
If the Party identified activities elected under Article 3, paragraph 4, of the Kyoto Protocol, are these elections in accordance with decision 2/CMP.7, annex, paragraphs 6–8?	Yes	See annex I, table 4
Do the activities elected under Article 3, paragraph 4, of the Kyoto Protocol for the second commitment period include at least those activities elected for the first commitment period?	Yes	Under CP 1 no activities were elected
Is information reported on how the national system under Article 5, paragraph 1, of the Kyoto Protocol will identify land areas associated with all additional elected activities and how the Party ensures that land that was accounted for in the first commitment period continues to be accounted for in the second commitment period?	Yes	
Has the Party identified for each activity under Article 3, paragraphs 3 and 4, of the Kyoto Protocol whether it intends to account annually or for the entire commitment period?	Yes	See annex I, table 4
Did the Party provide information on the forest management reference level, including, if appropriate, information on technical corrections and information on how emissions from harvested wood products originating from forests prior to the start of the second commitment period have been calculated in the reference level?	Yes	See annex I, table 4. For further information, see ID#6 in table 3
Has the Party reported the quantity amounting to 3.5% of the base year GHG emissions, excluding LULUCF, in the original submission?	No	See annex I, table 4. For further information, see ID#7 in table 3
Did the Party indicate whether it intends to apply the provisions	Yes	See annex I, table 4

<i>Item</i>	<i>Comment</i>
to exclude emissions from natural disturbances for the accounting for afforestation and reforestation and/or forest management and provide the relevant information in accordance with decision 2/CMP.7, annex, paragraph 33?	
<i>Information related to the national system and national registry</i>	
Was a description of the national system provided, in accordance with the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol?	NA This information was already reported and reviewed as part of the initial review of the report to facilitate the calculation of the assigned amount for the first commitment period and did not need to be reported
Was a description of the national registry provided, in accordance with the requirements contained in the annex to decision 13/CMP.1, the annex to decision 5/CMP.1 and the technical standards for data exchange between registry systems adopted by the CMP?	NA This information was already reported and reviewed as part of the initial review of the report to facilitate the calculation of the assigned amount for the first commitment period and did not need to be reported

Abbreviations: CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable.

^a Issues related to missing categories and completeness are only for those categories for which methods are available in the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories.

^b Parties may elect to calculate average annual emissions for the first three years of the first commitment period by including either the gases and sources listed in Annex A to the Kyoto Protocol, or the GHGs, sectors and source categories used to calculate the assigned amount for the second commitment period.

III. Technical assessment of the elements reviewed

4. In accordance with decision 22/CMP.1, and in conjunction with decisions 4/CMP.11 and 10/CMP.11, the review of the report to facilitate the calculation of the assigned amount for Ireland has been undertaken together with the review of the inventory submission for the first year of the second commitment period.³ Table 3 contains additional information, if any, to support the ERT's assessment included in table 2 above of the Party's capacity to account for its emissions and the assigned amount, specifically related to: the calculation of the assigned amount for the second commitment period and any adjustments applied; information related to Article 3, paragraph 7 ter, as contained in the Doha Amendment; information related to reporting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol; calculation of the commitment period reserve; and the national system and national registry.

³ The annual review report on the 2016 inventory submission of Ireland is available at <<http://unfccc.int/resource/docs/2017/arr/irl.pdf>>, while the annual review report on the 2015 inventory submission of Ireland is available at <<http://unfccc.int/resource/docs/2016/arr/irl.pdf>>.

Table 3

Additional findings of the expert review team, if any, related to Ireland’s reporting of mandatory elements in its report to facilitate the calculation of the assigned amount

ID#	Finding classification	Description of the finding	Classification of problem
1.	Calculation of the assigned amount	<p>The assigned amount submitted by the Party in its report to facilitate the calculation of the assigned amount was not calculated in accordance with Article 3, paragraphs 7 bis, 8 and 8 bis, of the Kyoto Protocol, the annex to decision 13/CMP.1 and annex I to decision 3/CMP.11</p> <p>The ERT notes that the European Union, its member States and Iceland stated that they will fulfil their reduction targets under the second commitment period jointly.^a The joint assigned amount for the European Union, its member States and Iceland is calculated pursuant to the QELRC listed in the third column of the table contained in Annex B to the Kyoto Protocol, while the assigned amount of each member State is determined in accordance with the terms of the joint fulfilment agreement. Specifically, the assigned amount for Ireland is fixed based on Annex II to European Commission decision 2013/162/EU and as adjusted by Commission implementing decision 2013/634/EU^b</p> <p>The ERT concludes that the assigned amount reported by Ireland before including deforestation in the base year (343,467,221 t CO₂ eq) is in accordance with Article 3, paragraph 7 bis, of the Kyoto Protocol and with the joint fulfilment agreement by the European Union, its member States and Iceland</p> <p>LULUCF was a net source of GHG emissions in 1990 (6,222.428 kt CO₂ eq) and the Party’s aggregate anthropogenic CO₂ equivalent emissions by sources minus removals by sinks in 1990 from land-use change (deforestation 8,339.54 t CO₂ eq) were included in the base year emissions for the purpose of calculating the assigned amount. However, during the review, the ERT could not replicate the CO₂ equivalent emissions by sources minus removals by sinks in 1990 from deforestation as reported in the report to facilitate the calculation of assigned amount (see ID# 2 below) that led to the incorrect calculation of the assigned amount. In response to a question on this matter raised by the ERT during the review week, the Party provided the corrected value for deforestation in 1990 (8,229.962 t CO₂ eq). Ireland recalculated the assigned amount by correcting the detected error, and determined the correct assigned amount to be 343,519,892 kt CO₂ eq (annual emission allocations 2013–2020: 343,467,221 kt CO₂ eq (as set under the EU agreement) + (8,229.962 kt CO₂ eq × 0.8 × 8)), to which the ERT agrees</p> <p>The ERT invites Ireland to communicate the revised base-year emissions to the EU with a view to being considered in the calculation of the joint assigned amount of the European Union, its member States and Iceland</p>	Not a problem
2.	Calculation of the assigned amount	<p>The ERT could not replicate the Party’s aggregate anthropogenic CO₂ equivalent emissions by sources minus removals by sinks in 1990 from land-use change (deforestation 8,339.54 t CO₂ eq) included in the base year emissions for the purpose of calculating the assigned amount, as reported in the report to facilitate the calculation of the assigned amount</p> <p>In response to a question on this matter raised by the ERT during the review, the Party identified an error in the calculation of the deforestation value. The</p>	Not a problem

ID#	Finding classification	Description of the finding	Classification of problem
		<p>calculation error was that N₂O emissions from forestland converted to grass land that were added to the calculation did not occur. CH₄ emission values (0.36772 t) from land-use change had been counted in error under both CH₄ and N₂O. As a result, the deforestation values had a 109.58 t CO₂ difference (0.36772 × 298) from the correct value. The ERT could replicate the revised deforestation value (8,229.962 t CO₂ eq) from the CRF tables, and accepted the revised value</p>	
3.	<p>Calculation of the commitment period reserve</p>	<p>The commitment period reserve was calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18</p> <p>The Party reported its commitment period reserve as 309,168,535 kt CO₂ eq. However, during the review, the ERT identified that there was a calculation error that led to incorrect calculation of the commitment period reserve (see ID#1 above, calculation of the assigned amount). Owing to the calculation error, Ireland recalculated the commitment period reserve, and determined it to be 309,167,903 kt CO₂ eq, which the ERT accepted</p>	<p>Not a problem</p>
4.	<p>Reporting pursuant to Article 3.7 ter of the Doha Amendment</p>	<p>The ERT noted that the Party did not provide information in accordance with Article 3, paragraph 7 ter, of the Doha Amendment, specifically, the Party did not report the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the preceding commitment period, multiplied by 8, in accordance with decision 3/CMP.11, annex I, paragraph 4 (para. 8 bis (n))</p> <p>During the review, the Party indicated that, 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, and as described in the report to facilitate the calculation of the assigned amount of the European Union, Article 3, paragraph 7 ter, is applied to the joint assigned amount of the European Union, its member States and Iceland for the second commitment period. In its report, the European Union includes the value for the difference between the joint assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period for the member States and Iceland, multiplied by 8. The report of the European Union also clarifies that the approach used to calculate average annual emissions for the first three years of the first commitment period is the gases and sources listed in Annex A to the Kyoto Protocol</p>	<p>Not a problem</p>
5.	<p>Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</p>	<p>The ERT noted that information required under Article 3, paragraph 4, of the Kyoto Protocol on the land identification system for grazing land management was not provided in accordance with decision 2/CMP.8, annex, paragraph 1(g). In its original submission, Ireland does not clearly describe how it identifies land subject to grazing land management, and the total area of land subject to grazing land management is larger than the area of managed grassland reported under the Convention</p> <p>In response to a question on this matter raised by the ERT during the review week, Ireland explained that all grasslands in the country are deemed to be managed for the purpose of reporting under the Convention and its Kyoto Protocol, and all the land subject to grazing land management is included in managed land (managed grassland and grassland converted to settlements). The Party also provided further information on the land identification system</p>	<p>Transparency</p>

ID#	Finding classification	Description of the finding	Classification of problem
		for grazing land management	
		The ERT acknowledged the Party's explanation and understood that confusion had arisen from the Party's mixed use of "unmanaged grassland" under the national definition and under the definition of the Convention and its Kyoto Protocol (see FCCC/ARR/2016/IRL, ID#KL.7)	
6.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	In the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol and the national inventory report and CRF tables for 2016, Ireland reported its FMRL as -142.07 kt CO ₂ eq. The ERT noted that this value is not in accordance with the appendix to decision 2/CMP.7 (the FMRL for Ireland is inscribed as - 0.008 or - 0.142 Mt CO ₂ eq/year), and therefore is not in accordance with the requirements set out in decision 2/CMP.8, annex I, paragraph 1, and the appendix to the annex to decision 2/CMP.7. In response to a question on this matter raised by the ERT during the review week, Ireland agreed to correct the FMRL in the two reports and the CRF tables mentioned earlier in this paragraph to -0.142 Mt CO ₂ eq/year (see FCCC/ARR/2016/IRL, ID#KL.8)	Not a problem
7.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	Ireland has not reported the value of the forest management cap in its report to facilitate the calculation of the assigned amount for the second commitment period and in the CRF tables. However, during the review week, Ireland provided a value of 1,974.616 kt based on Ireland's base year emissions (56,417,601 t CO ₂ eq) calculated for the base year for CO ₂ , CH ₄ and N ₂ O is 1990; and the base year for HFCs, PFCs, SF ₆ and NF ₃ is 1995	Not a problem
8.	National registry	The ERT took note that the 2016 standard independent assessment report for Ireland and the initial report provided by the Party indicate that the establishment of the PPSR account by Ireland is planned as soon as this is technically possible after the next release of the consolidated registry software	Not a problem
9.	Adjustments	The ERT has not identified the need to apply any adjustments to the estimate for the assigned amount for the second commitment period, as reported by Ireland in its report to facilitate the calculation of the assigned amount	Not a problem

Abbreviations: CRF = common reporting format, ERT = expert review team, EU = European Union, FMRL = forest management reference level, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, PPSR = previous period surplus reserve, QELRC = quantified emission limitation and reduction commitment.

^a The report to facilitate the calculation of the assigned amount for the European Union is available at <http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/second_commitment_period_2013-2020/items/9499.php>.

^b At the time of publication of this report, the European Union had not yet submitted its instrument of ratification of the Doha Amendment or information on the joint implementation of such an amendment.

IV. Questions of implementation

- No questions of implementation were identified by the ERT during the review.

Annex I

Key relevant data for Ireland

1. Table 4 provides key data and parameters for, and elections by, Ireland, relevant for the implementation of the second commitment period of the Kyoto Protocol. The information included in table 4 is as given by the Party in its report to facilitate the calculation of the assigned amount, unless otherwise specified.

Table 4

Key relevant data for Ireland

<i>Key information or parameter provided</i>	<i>Comment</i>
<i>General Party information</i>	
Did the Party have a QELRC in the first commitment period?	Yes
Ireland's QELRC in the second commitment period	Ireland will implement its reduction target under the second commitment period jointly with the European Union, its member States and Iceland as described in ID#1, table 3). The QELRC for the European Union, its member States and Iceland is 80% of the base year emissions
Has the Party reached an agreement under Article 4 of the Kyoto Protocol to fulfil its commitments jointly with other Parties?	Yes
Base year	1990
Base year for HFCs, PFCs and SF ₆	1995
Base year for NF ₃	1995
Base-year emissions, as reported by the Party	The Party has not provided this value in its report to facilitate the calculation of assigned amount for the second commitment period
Base-year emissions, final, as calculated by the ERT and agreed by the Party	56 425 830 t CO ₂ eq, including GHG emissions from conversion of forests (deforestation)
<i>Information related to the calculation of the assigned amount and the commitment period reserve</i>	
Assigned amount, as reported by the Party	343,520,594 t CO ₂ eq, including GHG emissions from conversion of forests (deforestation)
Assigned amount, final, as recalculated by the Party and agreed by the ERT	343,519,892 t CO ₂ eq, including GHG emissions from conversion of forests (deforestation)
Approach used to calculate the average annual emissions for the first three years of the first commitment period	The gases and sources listed in Annex A to the Kyoto Protocol. The difference is calculated on the basis of the joint assigned amount of the European Union, its member States and Iceland
Difference between the assigned amount for the	This difference is calculated on the basis of the

<i>Key information or parameter provided</i>	<i>Comment</i>
second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by 8, as reported by the Party and agreed by the ERT	joint assigned amount of the European Union, its member States and Iceland and is based on the gases and sources listed in Annex A to the Kyoto Protocol
Commitment period reserve, as reported by the Party	309,168,535 t CO ₂ eq
Commitment period reserve, final value, as calculated by the ERT	309,167,903 t CO ₂ eq
<i>Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol</i>	
LULUCF parameters	Minimum tree crown cover: 20% Minimum land area: 0.1 ha Minimum tree height: 5 m
Elections under Article 3, paragraphs 3 and 4, of the Kyoto Protocol:	
(a) Afforestation/reforestation	Commitment period accounting
(b) Deforestation	Commitment period accounting
(c) Forest management	Commitment period accounting
(d) Cropland management	Elected. Commitment period accounting
(e) Grazing land management	Elected. Commitment period accounting
(f) Revegetation	Not elected
(g) Wetland drainage and rewetting	Not elected
FMRL	-0.142 Mt CO ₂ eq/year
Technical corrections to the FMRL as reported in the original submission and agreed by the ERT	-0.381 Mt CO ₂ eq/year
3.5% of total base year GHG emissions, excluding LULUCF, and including indirect CO ₂ emissions, as reported by Party and agreed by the ERT	1 974.616 kt CO ₂ eq (not reported in the original submission)
3.5% of total base year GHG emissions, excluding LULUCF and including indirect CO ₂ emissions, multiplied by 8, as reported by Party and agreed by the ERT	15 796.928 kt CO ₂ eq (not reported in the original submission)
Will the Party exclude emissions from natural disturbances in accounting for:	
(a) Afforestation and reforestation	Yes
(b) Forest management	Yes

Abbreviations: ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, QELRC = quantified emission limitation and reduction commitment.

2. Tables 5–7 provide an overview of total greenhouse gas emissions and removals as submitted by the Party. Where a Party has decided to voluntarily report indirect carbon dioxide emissions, this is noted in the relevant table.

Table 5
Total greenhouse gas emissions for Ireland, base year–2014^a
 (kt CO₂eq)

	<i>Total GHG emissions excluding indirect CO₂ emissions</i>		<i>Total GHG emissions including indirect CO₂ emissions^b</i>		<i>Land-use change (Article 3.7 bis as contained in the Doha Amendment)^c</i>
	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	
Base year	62 559.32	56 336.89	62 640.03	56 417.60	8.2299
1990	62 310.27	56 087.84	62 390.98	56 168.55	
1995	66 924.71	59 791.07	67 006.38	59 872.75	
2000	75 658.34	69 251.35	75 731.94	69 324.96	
2010	67 495.50	62 235.15	67 559.36	62 299.01	
2011	62 821.50	58 130.30	62 885.87	58 194.67	
2012	63 526.36	58 622.80	63 588.78	58 685.21	
2013	63 419.91	58 481.61	63 485.03	58 546.73	
2014	63 410.53	58 189.15	63 475.05	58 253.67	

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO₂, CH₄ and N₂O, and 1995 for HFCs, PFCs, SF₆ and NF₃.

^b Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.

^c The Party has reported indirect CO₂ emissions in common reporting format table 6.

^d The value reported in this column refers to 1990.

Table 6

Greenhouse gas emissions by gas for Ireland, excluding land use, land-use change and forestry, 1990–2014^a(kt CO₂ eq)

	<i>CO₂^b</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF₆</i>	<i>NF₃</i>
1990	32 849.24	14 881.83	8 402.25	1.23	0.12	33.88	NO	NO
1995	35 800.42	15 129.79	8 658.24	103.19	97.61	79.11	NO	4.37
2000	45 196.94	14 532.20	8 640.47	456.66	397.76	51.76	NO	49.17
2010	41 622.14	12 632.79	7 032.35	932.08	46.58	33.08	NO	NO
2011	37 959.57	12 594.40	6 624.15	955.22	15.88	45.45	NO	NO
2012	38 094.03	12 891.04	6 703.77	948.64	9.56	37.39	NO	0.78
2013	37 114.54	13 224.50	7 084.87	1 070.05	8.32	43.53	NO	0.90
2014	36 623.59	13 433.35	6 985.06	1 155.42	9.00	46.29	NO	0.96
Per cent change 1990–2014	11.5	-9.7	-16.9	93 524.9	7 417.8	36.6	NA	NA

Abbreviations: NA = not applicable, NO = not occurring.

^a Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.

^b CO₂ emissions include indirect CO₂ emissions reported in common reporting format table 6.

Table 7
Greenhouse gas emissions by sector for Ireland, 1990–2014^{a,b}
 (kt CO₂eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	31 118.46	3 280.73	20 123.65	6 222.43	1 645.71	NO
1995	33 893.12	3 280.88	20 722.75	7 133.64	1 975.99	NO
2000	42 526.07	4 746.85	20 300.42	6 406.99	1 751.62	NO
2010	40 358.42	2 450.65	18 315.27	5 260.34	1 174.67	NO
2011	36 871.68	2 327.11	17 729.52	4 691.20	1 266.35	NO
2012	36 911.88	2 527.14	18 060.13	4 903.56	1 186.07	NO
2013	35 726.89	2 568.52	18 905.48	4 938.30	1 345.84	NO
2014	35 000.11	3 006.81	18 754.32	5 221.38	1 492.43	NO
Per cent change 1990–2014	12.5	-8.3	-6.8	-16.1	-9.3	NA

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring.

^a Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.

^b Totals do include indirect CO₂ emissions reported in common reporting format table 6.

Annex II

Documents and information used during the review

A. Reference documents

“Guidelines for national systems for the estimation of anthropogenic greenhouse gas emissions by sources and removals by sinks under Article 5, paragraph 1, of the Kyoto Protocol”. Annex to decision 19/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=14>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex to decision 15/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Annex to decision 22/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”. Annex I to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=4>.

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf#page=6>.

“Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, Part I: Implications related to accounting and reporting and other related issues”. Decision 3/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=5>.

“Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, Part II: Implications related to review and adjustments and other related issues”. Decision 4/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=30>.

Intergovernmental Panel on Climate Change. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.

Intergovernmental Panel on Climate Change. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. Available at <http://www.ipcc-nggip.iges.or.jp/public/kpsg>.

Intergovernmental Panel on Climate Change. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. Available at <http://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>.

B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Duffy (Environmental Protection Agency, Ireland), including additional material on the methodology and assumptions used.

Annex III

Acronyms and abbreviations

CH ₄	methane
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CRF	common reporting format
ERT	expert review team
EU	European Union
FMRL	forest management reference level
GHG	greenhouse gas; unless indicated otherwise, total GHG emissions are the sum of CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs and SF ₆ without GHG emissions and removals from LULUCF
HFC	hydrofluorocarbon
IPPU	industrial processes and product use
kt	kilotonne
LULUCF	land use, land-use change and forestry
NA	not applicable
NF ₃	nitrogen trifluoride
NO	not occurring
N ₂ O	nitrous oxide
PFC	perfluorocarbon
PPSR	previous period surplus reserve
QELRC	quantified emission limitation and reduction commitment
SF ₆	sulphur hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
