United Nations FCCC/SBI/ICA/2016/TASR.1/ISR

Framework Convention on Climate Change

Distr.: General
1 March 2017

English only

Technical analysis of the first biennial update report of Israel submitted on 18 April 2016

Summary report by the team of technical experts

Summary

According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation. This summary report presents the results of the technical analysis of the first BUR of Israel conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

GE.17-03449(E)

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I. Introduction and process overview

A. Introduction

1. According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, resulting in a summary report for each BUR analysed, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation.

2. This summary report presents the results of the technical analysis of the first BUR of Israel undertaken by a team of technical experts (TTE) in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

B. Process overview

3. Israel submitted its first BUR on 18 April 2016 and did not provide an explanation for the delay of its submission.

4. The technical analysis of the BUR took place from 19 to 23 September 2016 in Bonn, Germany, and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Mr. Pierre Brender (France), Ms. Madeleine Diouf Sarr (former member of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) from Senegal), Ms. Patricia Grobben (CGE member from Belgium), Mr. Agustín José Inthamoussu (Uruguay), Mr. Kakhaberi Mdivani (Georgia), Ms. Emily Ojoo-Massawa (former CGE member from Kenya) and Ms. Jeonghyun Emily Park (Republic of Korea). Ms. Grobben and Ms. Ojoo-Massawa were the co-leads. The technical analysis was coordinated by Ms. Verónica Colerio, Ms. Karen Ortega and Ms. Xuehong Wang (secretariat).

5. During the technical analysis (in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR) the TTE and Israel engaged in discussion via videoconferencing on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Israel on 8 December 2016 for its review and comment. Israel, in turn, provided its feedback on the draft summary report on 7 February 2017.

6. The TTE responded to and incorporated the Party's comments referred to in paragraph 5 above and finalized the summary report in consultation with Israel on 27 February 2017.

II. Technical analysis of the information reported in the biennial update report

A. Scope of the technical analysis

7. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of the actions, increase the transparency of mitigation actions and their effects, and shall entail the following:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) have been included in the BUR of the Party concerned (see chapter II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC reporting guidelines on BURs) contained in annex III to decision 2/CP.17, and any additional technical information provided by the Party concerned (see chapter II.C below);

(c) The identification, in consultation with the Party concerned, of capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention (see chapter II.D below).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Israel's BUR outlined in paragraph 7 above.

B. Overview of the elements of information reported

9. The elements of information referred to in paragraph 7(a) above include: the national greenhouse gas (GHG) inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic measurement, reporting and verification (MRV); and information on support received.

10. Further, according to decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 9 above have been included in the BUR of the Party concerned. The results of that analysis are presented in tables 1, 2 and 3 below.

1. National greenhouse gas inventory

11. The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paragraph 41(g), and paragraphs 3–10 of the UNFCCC reporting guidelines on BURs. Further, as per paragraph 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints

and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

12. Table 1 presents the results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Israel in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 1
Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Israel

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available	Yes	The latest inventory year reported is 2013 (see para. 27 below)
Decision 2/CP.17, annex III, paragraph 4	Non-Annex I Parties should use the methodologies established by the latest UNFCCC guidelines for the preparation of national communications from non-Annex I Parties approved by the COP or those determined by any future decision of the COP on this matter	Yes	Israel used the Revised 1996 IPCC Guidelines (see para. 27 below)
Decision 2/CP.17, annex III, paragraph 5	The updates of the sections on the national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the emission factor may be made in the subsequent full national communication	No	An update of the inventory for 2000 and 2007 is provided in the BUR; however, Israel has not provided updated data on activity levels and relevant information explaining the changes. During the technical analysis, Israel stated that it will be able to include updated data on activity levels and relevant information explaining the changes, to the extent that such information is not deemed proprietary, in its next submission
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including:		
	(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors)	Partly	An inventory summary is provided, but the reporting format does not correspond to table 1 (see para. 28 below)

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6)	Partly	An inventory summary is provided, but the reporting format does not correspond to table 2 (see para. 28 below)
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF	No	During the technical analysis, Israel stated that emissions and removals from soil account for a relatively insignificant share of Israel's total GHG emissions, and therefore were not separately reported in the BUR using the tables in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF. However, these emissions have been reported as a separate item in the national inventory report
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines	No	See paragraphs 36–38 below
Decision 2/CP.17, annex III, paragraph 7	Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in the previous national communications	Partly	Israel reported consistent time series from 2007 to 2013, but its second national communication provided inventories back to 1996. Information back to 1996 is not reported in the BUR (see para. 31 below)
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their national communications are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000)	Partly	Israel reported consistent time series from 2007 to 2013, but its second national communication provided inventories back to 1996. Information back to 1996 is not reported in the BUR (see para. 31 below)
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex	No	During the technical analysis, Israel stated that it will include

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
			additional or supporting information, including sector-specific information, in a technical annex, if necessary, in future national communications and BURs
Decision 17/CP.8, annex, paragraph 13	Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved	Yes	
Decision 17/CP.8, annex, paragraph 14	Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of the following gases by sources and removals by sinks:		
	(a) CO_2	Yes	
	(b) CH_4	Yes	CH_4 emissions are reported in units of CO_2 equivalent
	(c) N_2O	Yes	N_2O emissions are reported in units of CO_2 equivalent
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of HFCs, PFCs and SF_6	Yes	
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:		
	(a) International aviation	Yes	See paragraph 30 below
	(b) Marine bunker fuels	Yes	See paragraph 30 below
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emission by sources of other GHGs, such as:		
	(a) CO	Yes	
	(b) NO_x	Yes	
	(c) NMVOCs	Partly	Estimates for NMVOCs are provided only for international bunkers (see para. 29 below)
Decision 17/CP.8, annex,	Other gases not controlled by the Montreal Protocol, such as SO_x, included in the	Yes	Israel provided information on SO_2

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
paragraph 17	Revised 1996 IPCC Guidelines may be included at the discretion of the Parties		emissions from fuel combustion and industrial processes
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO_2 fuel combustion emissions using both the sectoral and the reference approach, and to explain any large differences between the two approaches	Partly	Estimates are provided using the reference approach. Their comparison with the sectoral approach is not reported (see para. 39 below)
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO_2 equivalents should use the GWP provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time horizon	Yes	
Decision 17/CP.8, annex, paragraph 21	Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol	No	See paragraph 32 below
	(b) Explanation of the sources of emission factors	No	See paragraphs 32 and 33 below
	(c) Explanation of the sources of activity data	No	See paragraph 32 below
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe: (i) Source and/or sink categories (ii) Methodologies (iii) Emission factors (iv) Activity data	NA	Israel did not provide information on the use of country-specific sources and/or sinks

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building	No	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1 and 2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17 of the same decision. In preparing those tables, Parties should strive to present information which is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated	No	
Decision 17/CP.8, annex, paragraph 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:		
	(a) Level of uncertainty associated with inventory data	No	See paragraph 35 below
	(b) Underlying assumptions	No	See paragraph 35 below
	(c) Methodologies used, if any, for estimating these uncertainties	No	See paragraph 35 below

Abbreviations: BUR = biennial update report, COP = the Conference of the Parties, GHG = greenhouse gas, GWP = global warming potential, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, NA = not applicable, NMVOC = non-methane volatile organic compound, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*.

2. Mitigation actions and their effects

13. The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in paragraphs 11–13 of the UNFCCC reporting guidelines on BURs.

14. Israel reported on mitigation actions in its first BUR. The information on mitigation actions reported is provided in tabular format.

15. Table 2 presents the results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Israel in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 2
Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Israel

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex	Non-Annex I Parties should provide information, in a tabular format, on actions to	Yes	

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
III, paragraph 11	mitigate climate change, by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol		
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or groups of mitigation actions including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information to the extent possible		
	(a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators	Partly	The quantitative goal of several measures has not been reported in the biennial update report (see paras. 44 and 46–49 below)
	(b) Information on:		
	(i) Methodologies	Partly	The methodology related to the estimation of emission reductions from connecting renewable energy to the grid has not been described in the biennial update report (see para. 46 below)
	(ii) Assumptions	Partly	Israel has not reported the assumptions used for estimating the mitigation impacts of feed-in tariffs for promoting renewable energy (see para. 46 below)
	(c) Information on:		
	(i) Objectives of the action	Yes	
	(ii) Steps taken or envisaged to achieve that action	Yes	See paragraph 47 below
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions	Partly	Israel has not reported on the progress of implementation of the mitigation action “Regulation and standards for commercial and household appliance energy efficiency”
	(ii) Progress of implementation of the underlying steps taken or envisaged	Partly	Israel has not provided information on progress of the underlying steps in several mitigation actions
	(iii) Results achieved, such as estimated outcomes (metrics depending	Partly	Israel has not reported the estimated reductions

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	on type of action) and estimated emission reductions, to the extent possible		of several mitigation actions (see paras. 47–50 below)
	(e) Information on international market mechanisms	Yes	See paragraph 52 below
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic measurement, reporting and verification arrangements	Yes	See paragraph 53 below

3. Finance, technology and capacity-building needs and support received

16. The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BURs are contained in paragraphs 14–16 of the UNFCCC reporting guidelines on BURs.

17. Table 3 presents the results of the identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the BUR of Israel in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 3
Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Israel

Decision	*Provision of the reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on constraints and gaps, and related financial, technical and capacity-building needs:		
	(a) Constraints and gaps	No	
	(b) Related financial, technical and capacity-building needs	No	
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide updated information on financial resources, technology transfer, capacity-building and technical support received from the Global Environment Facility, Annex II Parties and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current biennial update report	Yes	
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on:		.
	(a) Technology needs, which must be nationally determined	No	
	(b) Technology support received	Yes	See paragraph 55 below

C. Technical analysis of the information reported

18. The technical analysis referred to in paragraph 7(b) above aims to increase the transparency of mitigation actions and their effects, without engaging in discussion on the appropriateness of those actions. Accordingly, the technical analysis focused on the transparency of the information reported in the BUR.

19. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the Intergovernmental Panel on Climate Change (IPCC) and referred to in the UNFCCC reporting guidelines on BURs.

20. The results of the technical analysis are presented in the remainder of this chapter.

1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

21. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BURs should provide an update to the information contained in the most recently submitted national communication, including, among other things, information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis. For their national communications, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5.

22. In accordance with decision 17/CP.8, annex, paragraph 3, Israel, in its BUR, reported the following information on its national circumstances:

(a) Israel is about 470 km in length and 135 km in width at its widest point and has a varied **topography and climate**, with arid zones comprising 45 per cent of the country. Recent years have seen an increase in mean temperatures in the country;

(b) Israel is a non-Annex I Party and a member of the Organisation for Economic Co-operation and Development (OECD). The Party's gross domestic product (GDP) grew by 3.8 per cent annually over the 2010–2014 period, reaching an all-time high in 2014 of USD 268,537 million (in 2010 prices). GDP per capita also increased at an average annual rate of 1.9 per cent reaching, in 2014, USD 32,700. Israel's **economy** is quite diverse, with the biggest shares of the GDP being finance and business services (approximately 25 per cent), manufacturing (approximately 15 per cent) and commerce, restaurants and hotels (approximately 11 per cent);

(c) The **population** of Israel, which is highly urbanized (91 per cent of people live in cities), has continued to grow since 2000 at an average rate of 1.8 per cent annually. This growth has led to an increase in both **electrical power** consumption and generation demand. In 2013, consumption had grown by 16 per cent since 2008. Installed generating capacity at the end of 2014 was 15,581 MW, a 30.4 per cent increase on installed capacity in 2008. In 2014, renewable sources (primarily photovoltaic energy) comprised 580 MW (1 per cent) of the generated power;

(d) The total **water** consumption has remained stable in recent years, owing to public awareness of the need to conserve water. Approximately 25 per cent of the water consumed in Israel is from recycled sources and is used mainly in agriculture, while another 25 per cent is desalinated water and 50 per cent is groundwater;

(e) Israel practises intensive agricultural production despite challenges such as intense heat and water scarcity. In 2013, **agriculture** accounted for 1.1 per cent of the total workforce, 1.6 per cent of net domestic product and 58 per cent of water consumption.

Over the past two decades, the agriculture sector has undergone a substantial structural change, with farms becoming larger and more efficient, which has led to a fall in employment in this sector of nearly 10 per cent between 2010 and 2013.The agricultural area, however, has grown by 3 per cent over this same period;

(f) In 2013, Israel's forest area included 72,604 hectares (ha) of plantations and 110,138 hectares of natural woodlands. National **afforestation** programmes have contributed to an increase in the total area of land with natural groves and shrubs (137 per cent increase between 2008 and 2014).

23. As encouraged in decision 17/CP.8, annex, paragraph 4, Israel provided a summary of the above information regarding its national circumstances in tabular format (see table 2 in the BUR).

24. Israel transparently described in its BUR the institutional arrangements relevant to the preparation of its national communications and BURs. The description covers key aspects of the institutional arrangements, such as: legal status and roles and responsibilities of the overall coordinating entity; and involvement and roles of other institutions and experts.

25. Israel has several ministries with mandates relating to climate and the environment. These include the ministries of Environmental Protection; National Infrastructures, Energy and Water Resources; Transport and Road Safety; Agriculture and Rural Development; and Finance. The focal climate change institution is the Ministry of Environmental Protection, which is responsible for the compilation and submission of national communications and BURs, while the Central Bureau of Statistics is responsible for preparing the national GHG inventory. This current arrangement works well, as the bureau has the legal mandate to collect data from all stakeholders in the country. However, during the technical analysis, the TTE noted the need for adequate resources to meet the requirements for the preparation of national inventory reports on a continuous basis.

2. National greenhouse gas emissions by sources and removals by sinks

26. As indicated in table 1 above, Israel reported information on its GHG inventory in its BUR, partially in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8.

27. Israel reported in its BUR information on its national GHG inventories covering GHG emissions and removals for 2007–2013 using the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines). Israel also provided estimates for the year 2000 in summary tables. During the technical analysis, Israel stated that the inventory for 2014 has been prepared and will be included in its next national communication. In response to a technical clarification sought by the TTE, Israel explained that the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance) was also used, and that the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* were used for the agriculture sector, because these guidelines are more detailed and better suited to the characteristics of the agriculture sector in Israel.

28. Israel provided information on its national GHG inventory in terms of total emissions, sectoral estimates for selected gases and brief descriptions, including trends and emissions for some sectors and subsectors. However, the TTE noted that the information does not correspond to the reporting format of tables 1 and 2 contained in the annex to decision 17/CP.8. In response to a technical clarification sought by the TTE, Israel referred to its national GHG inventory submitted to the UNFCCC in November 2015, which

includes information in the reporting format of tables 1 and 2. Israel further stated that tables 1 and 2 will be included in future national communications and BURs. The TTE considers that the transparency of reporting would be enhanced by providing in the BUR additional information, including in the format given in tables 1 and 2 contained in the annex to decision 17/CP.8, on the national inventory of anthropogenic emissions, including a national inventory report, in accordance with decision 2/CP.17, annex III, paragraph 2(b).

29. The total emissions for 2013 reported by Israel in its BUR are 78,361 kilotonnes carbon dioxide equivalent (kt CO_2 eq), excluding forestry, which is an increase of 13 per cent from the 2000 level of emissions of the main GHGs, CO_2, methane (CH_4) and nitrous oxide (N_2O) (i.e. 75,624 kt CO_2 eq in 2013, compared with 66, 949 kt CO_2 eq in 2000). The GHG emissions reported in 2013 include 66,147 kt CO_2, 7,043 kt CO_2 eq of CH_4 and 2,434 kt CO_2 eq of N_2O. Other emissions reported include: 73 kt CO_2 eq of sulphur hexafluoride (SF_6); 2,557 kt CO_2 eq of hydrofluorocarbons (HFCs); and 106 kt CO_2 eq of perfluorocarbons (PFCs). Other, indirect GHGs, such as NOx, carbon monoxide and sulphur dioxide, are also covered in Israel's GHG inventory. For non-methane volatile organic compounds (NMVOCs), estimates are provided only for international bunkers. During the technical analysis, Israel clarified that it estimated NMVOCs for sources other than international bunkers, but when reviewing the results, it was assessed that the methodology used needed to be changed and hence these were not included in the BUR. Israel stated that NMVOCs will be included for other sources in future national communications and BURs once the revision of the methodology is completed.

30. Israel reported emissions from international bunkers for both aviation and maritime transport in its BUR, even though these are not included in its national inventory. Although the information is not fully in line with the reporting format of tables 1 and 2 contained in the annex to decision 17/CP.8, the TTE welcomes the efforts made by the Party to include the information to improve the completeness of reporting of emission estimates.

31. According to decision 2/CP.17, annex III, paragraph 7, each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in previous national communications. Although the Party provided estimations of emissions and removals back to the years 2000 and 2007, it did not include estimates for 1996, 2003, 2004, 2005 and 2006, years which were included in the first and second national communications. Moreover, the estimates presented for 2000 and 2007 in the BUR differ from those presented in the GHG inventory of the second national communication for the same year, and the BUR does not provide an explanation for the recalculation and consequent differences in estimates. During the technical analysis, Israel stated that it will include consistent time series back to all the years reported in the previous national communication, and information on any changes in methodologies, activity data or emission factors associated with the recalculated emissions and removals in future BURs. The TTE noted that the completeness and transparency of reporting would be improved by including this information.

32. While Israel indicated that it used the Revised 1996 IPCC Guidelines for its national inventory, the TTE noted that Israel does not provide in the BUR additional information on methodologies, emission factors and activity data used for the estimation of emissions by sources and removals by sinks. During the technical analysis, Israel stated that this information will be included in future BURs. The TTE considers that the transparency of reporting would be enhanced by providing information on the use of methodologies, emission factors and activity data, and their sources, in future BURs.

33. Based on a technical clarification provided by Israel, the TTE noted that the Party used a tier 1 approach in principle for energy, industrial processes, and land use, land-use change and forestry. Israel further clarified that a tier 2 approach was used in general for agriculture and waste and stated that this information will be included in future BURs. The

TTE considers that the transparency of reporting would be enhanced by including information on the use of tiers in future BURs.

34. In accordance with paragraph 12 of the guidelines contained in the annex to decision 17/CP.8, non-Annex I Parties are encouraged, to the extent possible, to undertake key category analysis as indicated in the IPCC good practice guidance. The TTE noted that Israel has not provided information on key sources or key categories in the BUR. In response to a technical clarification sought by the TTE, Israel explained that the key category analysis has been partially conducted but not published and that it will include general data on key category analysis in future national communications and BURs. The TTE considers that the transparency of reporting would be improved by including, in future BURs, information on key category analysis for the prioritization of activities for developing the national GHG inventories in a manner that better reflects the national circumstances.

35. Israel has not provided information on uncertainty analysis in the BUR. While providing technical clarification on this matter, Israel acknowledged that it has encountered challenges in conducting its uncertainty analysis because of a lack of resources and because of knowledge gaps, and capacity-building is envisaged to improve reporting in this regard. Consistent with the guidelines contained in the annex to decision 17/CP.8, the TTE considers that the transparency of reporting would be enhanced by providing, in future BURs, information on the level of uncertainty associated with inventory data, the underlying assumptions, and the methodologies used for estimating the uncertainties.

36. In its BUR, Israel did not provide sectoral report tables annexed to the Revised 1996 IPCC Guidelines as encouraged in decision 2/CP.17. However, the Party indicated in its BUR that the national GHG inventories include the following sectors: energy, industrial processes, agriculture, waste and wastewater, and forestry. While Israel provided brief descriptions on sectoral emissions in the BUR, it did not provide numerical values for all sectoral emissions. While providing technical clarification on this matter, Israel referred to its national inventory report, which reports emissions from energy as 64,371 kt CO_2 eq (82 per cent of total emissions), emissions from industrial processes as 5,874 kt CO_2 eq (7 per cent of total emissions), emissions from agriculture as 1,997 kt CO_2 eq (3 per cent of total emissions), emissions from waste as 6,392 kt CO_2 eq (8 per cent of total emissions) and removals from forestry as 273 kt CO_2 eq. Furthermore, during the technical analysis, Israel stated that it will include sectoral report tables in future national communications and BURs.

37. Israel does not provide in the BUR information on emissions from industrial processes. During the technical analysis, Israel explained that these emissions were not reported separately because they were considered insignificant, but that there are no challenges to report these emissions. The Party made reference to its national GHG inventory, submitted to the UNFCCC in November 2015, as a source for relevant information.

38. The TTE noted some categories are missing in the GHG inventory of Israel provided in the BUR; for example, forest and grassland conversion, and abandonment of managed lands. During the technical analysis, Israel clarified that emissions from these categories are not calculated because they are considered to be negligible, and are therefore not reported. The TTE considers that the completeness and transparency of reporting would be enhanced by including data for all sectors in the format of sectoral report tables annexed to the Revised 1996 IPPC Guidelines or by explaining in the BUR the reasons for not reporting this information.

39. For the energy sector, the TTE noted that Israel reported its estimates of CO_2 emissions from fuel combustion using the sectoral approach only. During the technical

analysis, Israel stated that it needs to build the capacity to estimate these emissions using the reference approach. Consistent with decision 17/CP.8, the TTE considers that the transparency of reporting would be enhanced by providing the estimates using the reference approach, and by providing a comparison of these estimates with those obtained by the sectoral approach.

40. Israel, in its BUR, presents information on key economic, demographic and geographic data for the country from 2008 to 2014 (see table 2 of the BUR), including the total planted forest area of 1,118 thousand dunams in 2013, which excludes natural forest (according to footnote 5). In the GHG inventory (see table 14 of the BUR), Israel's forest area, including conifer, eucalyptus, broadleaf and natural woodlands, is reported as amounting to 182,742 ha. During the technical analysis, the Party clarified the equivalence of dunams to hectares and explained that the data presented in tables 2 and 14 of the BUR are not fully comparable for all categories, as for some categories both the definition and the data source are different. Israel further stated that it will report using the same units and subcategories in future national communications and BURs. The TTE notes that the transparency of reporting the forest land area would be improved by reporting the total forest land area with the same units and subcategories.

3. Mitigation actions and their effects, including associated methodologies and assumptions

41. As indicated in table 2 above, Israel reported in its BUR, partially in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on mitigation actions and their effects, to the extent possible.

42. In 2010, Israel approved a target to reduce GHG emissions by 20 per cent by 2020 relative to the 'business as usual' (BAU) scenario, and in 2015, Israel approved a target to reduce per capita GHG emissions to 7.7 t CO_2 eq by 2030, constituting a 26 per cent reduction relative to the 2005 level of emissions. Most mitigation actions are in the energy sector. The targets for the energy sector are a 17 per cent reduction in electricity consumption relative to the BAU scenario by 2030, 17 per cent of the electricity generated in 2030 to come from renewable sources, and a 20 per cent shift from private to public transportation by 2030. Israel reports mitigation actions in the energy sector under five groups: energy efficiency, renewable energy, green buildings, transportation and industry. Another sector where mitigation actions are taken into account is waste, for which the mitigation actions are mostly recycling and waste separation measures.

43. Israel, in its BUR, reports that prior to the submission of its intended nationally determined contribution (INDC), the Government of Israel had approved an economy-wide unconditional target on emission reductions (see para. 42 above), which is included in the INDC. The Party also reports that strategic documents, such as the green buildings standard and an action plan to assist Israeli companies in developing cutting-edge technologies for energy conservation and management, renewable energy and storage, and so on, are under development.

44. Israel presented in its BUR information on the overall **energy efficiency** mitigation actions, including the establishment of a country-wide energy efficiency target of 20 per cent reduction in electricity consumption by 2020. In 2014, Israel reduced emissions by 2,647.38 kt CO_2 eq (5.9 per cent) compared with the BAU scenario through the implementation of energy efficiency measures. The TTE noted that although the quantitative goal of the country-wide energy efficiency target has been reported, for most individual energy efficiency measures, the Party has not reported a quantitative goal. During the technical analysis, Israel clarified that many of the measures do not have a quantitative goal and as such no goal was reported. Further, limited access to activity data as well as inherent uncertainties hinder the estimation of energy efficiency achieved by

individual measures. The TTE noted that Israel could report the effect of these measures as a package in its next BUR, clearly explaining why the impact of individual measures could not be reported.

45. Israel further reported on the following two mitigation actions in **energy efficiency**: "Household appliance energy efficiency – air conditioners" and "Household appliance energy efficiency – refrigerators". The total emission reductions by saving energy consumption through these two actions reached 124.49 kt CO_2 eq for 2014. In spite of the utilization of HFCs in household cooling devices, information on the impact of these devices on HFC emissions has not been provided in the BUR. During the technical analysis, Israel clarified that the two mitigation actions have been implemented by the Ministry of National Infrastructures, Energy and Water Resources, with the aim of reducing energy consumption by households. However, HFC-related emissions are not a focus of these mitigation actions, and hence information is lacking. The TTE notes that assessment of the impact of the whole emission profile of each mitigation action would provide holistic information on the mitigation action.

46. Israel provided a general description of the mitigation actions related to the development of **renewable energy** in the country. The main mitigation action to increase renewables' installed capacity and electricity generation is the use of fixed feed-in tariffs. The total mitigation effect of these actions in 2014 was 758.28 kt CO_2 eq. In that year, Israel generated 1.8 per cent of its electricity from renewable sources (primarily photovoltaic energy). However, the methodology for the estimation of the mitigation effect from renewable energy development has not been described in the BUR. Further, the quantitative goals, assumptions used for the influence of feed-in tariffs on the mitigation action, and estimated emissions of the mitigation impact have not been reported in the BUR. During the technical analysis, Israel clarified that although there is a significant uncertainty concerning the actual uptake that will occur, it has no challenges in reporting the potential contribution to emission reductions in 2020, nor in estimating the specific contribution of feed-in tariffs. Israel further clarified that the methodologies and assumptions for monitoring the effects of renewable energy are currently under development as part of the MRV system (see para. 53 below), after which a better estimation of the effects of the mitigation action in this sector will be possible.

47. Israel reported five mitigation actions under the **green building** group. The green building group includes measures to: increase the number of buildings (residential, commercial and public) adhering to recognized green building standards; train professionals (contractors and planners) to increase the awareness in the field of green building; and update the green building standards in Israel. The progress indicators and indicator values for the last reporting year are presented for each mitigation action in this group. However, information on estimated reductions and quantitative goals is not reported. During the technical analysis, Israel clarified that training professionals and updating the green building standards are steps taken to achieve the overarching measures to increase the number of buildings adhering to recognized green building standards. The TTE notes that the transparency of reporting would be improved by including this explanation in the BUR.

48. The **transportation** group of mitigation actions has five mitigation actions presented in the BUR of Israel. The transportation group includes measures to: improve the efficiency in vehicles (green taxation and updated standards); increase the use of public transport (dedicated lanes for buses and light rail); and reduce the number of private cars entering city centres. The emission reduction effect in 2014 was estimated to be 163.94 kt CO_2 eq for the implementation of the mitigation action "Improved efficiency in vehicles, due to green taxation and updated". Emission reduction estimates for the other four mitigation actions are not reported. Moreover, none of the mitigation actions has a reported quantitative goal. During the technical analysis, Israel clarified that for some of the

transportation measures it does not have quantitative goals. Further, Israel explained that for some of these measures, calculation of the mitigation potential was not possible owing to data gaps. The methodology for estimating the mitigation potential will be designed within the context of establishing the MRV system (see para. 53 below). The TTE noted that Israel could report the effect of these measures as a package in its next BUR, clearly explaining why the impact of individual measures could not be reported.

49. Two mitigation actions are reported in the BUR for the **industry** group, both called "Natural gas fuel switch": one for promoting the fuel switch in industry to natural gas by subsidizing the costs of connecting to the distribution network, and one for expanding the natural gas distribution network in the country. These two mitigation actions described the steps taken to achieve the actions; however, there is no information in the BUR on emission reduction impacts and quantitative goals on these mitigation actions. During the technical analysis, Israel stated that the emission reduction impacts to be achieved by implementing this measure could not be calculated owing to data gaps regarding the fuel consumption of different factories in different industries, prior to the natural gas fuel switch.

50. Israel reported five mitigation actions for the **waste** sector, with a description of steps taken and targets for emission reduction. The emission reduction effect in 2013 was estimated to be 7.8 kt CO_2 eq for the implementation of the landfill gas capture and utilization mitigation action. However, the estimated reductions from mitigation actions such as recycling and waste separation are not reported in the BUR. During the technical analysis, Israel clarified that the mitigation impact was not assessed for the other four mitigation actions in the waste sector owing to the absence of activity data, and hence the methodology was not reported in the BUR. Israel further clarified that the designated methodology for measuring the impact of waste sector policy measures is currently under development, after which a better estimation of the effects of the mitigation actions in this sector will be possible. In addition, Israel stated that measures are being taken to improve the data collected from local authorities, as there are currently data gaps regarding the amounts of waste recycled, because the waste sector in Israel has undergone major reform over the last decade. Israel further explained that, although this methodology is under development, it is anticipated that the emission reduction calculations will be available for future national communications and BURs.

51. The TTE noted that the transparency of the reporting would be enhanced by providing information on the quantitative goals and the estimation of mitigation effects for the individual mitigation actions in the energy efficiency, renewable energy, green buildings, transportation and industry groups, and by providing methodologies and assumptions used for assessing the GHG reduction impact of mitigation actions in the waste sector and progress indicators of potential actions. The TTE further noted that, in cases where it is not possible for Israel to estimate the mitigation effect of individual measures, Israel could report the effect of these measures as a package (see paras. 44 and 48 above), clearly explaining why the impact of individual measures could not be reported.

52. Israel reported information on the **clean development mechanism** (CDM) in its BUR. Israel has 31 CDM projects which cover the following GHGs: CO_2, CH_4, N_2O and SF_6. The total number of issued certified emission reductions (CERs) is 3,079,103. Of the CERs issued, 55.2 per cent relate to projects aimed at reducing N_2O emissions from nitric acid production.

53. Israel reported that it is currently establishing an **MRV system** aimed at reviewing the effectiveness of its policies and mitigation measures. The system is being established by the Ministry of Environmental Protection with the assistance of a team of expert consultants from EcoTraders Ltd. The MRV system will facilitate the following: the assessment of the implementation of policies related to GHG mitigation; the assessment of

investments; barrier analysis; and the development of recommendations for additional mitigation actions. The Central Bureau of Statistics, because of its legal mandate, is considered a key player for data collection under the MRV system. The TTE noted that the MRV system will strengthen the institutional arrangements and hence will help to overcome the barriers in reporting mitigation impacts and quantitative goals for each mitigation action.

4. Constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received

54. As indicated in table 3 above, Israel reported in its BUR, partially in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received, as follows.

55. Israel is a non-Annex I country and an OECD member country, and receives little climate-related international aid. Based on the information provided in the BUR, Israel has not identified any constraints and gaps, and related financial, technical and capacity-building needs. Nonetheless, the Party reported on three activities for which it has received international support. These are a joint HFC project with the Government of Bavaria, Germany, the European Union ClimaSouth project, and a capacity-building workshop on the GHG inventory report that was convened by the technical assistance and information exchange (TAIEX) instrument of the European Commission. During the technical analysis, Israel stated that, for some sectors in which Israel is interested in implementing reduction measures, there are knowledge gaps regarding the available technological alternatives and policy measures that can be taken. In particular, Israel is currently beginning to develop a national action plan to reduce HFCs.

56. Israel provides aid to a number of countries and is active in the field of technology transfer and international development activities, bilateral climate cooperation activities and international cooperation on climate change. Tables and figures are provided in the BUR showing the number of countries and sectors supported by Israel's international cooperation. Training courses provided by Israel address both adaptation and mitigation, and, while the agriculture courses attract the greatest interest, training and capacity-building has also been provided for the water, forestry and environment, education, community development, tourism and recreation, and research and development sectors.

5. Domestic measurement, reporting and verification

57. As indicated in table 2 above, Israel reported in its BUR, in accordance with paragraph 13 of the UNFCCC reporting guidelines on BURs, information on the description of domestic MRV arrangements in the context of its mitigation actions (see para. 53 above).

D. Identification of capacity-building needs

58. In consultation with Israel, the TTE identified the following capacity-building needs related to the facilitation of the preparation of subsequent BURs and participation in ICA:

(a) Further enhancing institutional arrangements in terms of increasing transparency in data flow among the key stakeholders under the MRV system;

(b) Further enhancing its capacity regarding certain aspects of the national inventory report, including conducting the uncertainty analysis and estimating emissions from fuel combustion using the reference approach;

(c) Reducing knowledge gaps regarding the available technological alternatives and policy measures that can be taken in some sectors for which Israel is interested in implementing reduction measures;

(d) Developing a country-specific methodology for the estimation of impacts of the mitigation actions in energy efficiency by taking into account international experience.

III. Conclusions

59. The TTE concludes that:

(a) Part of the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines have been included in the first BUR of Israel;

(b) Israel has provided a description of its **national circumstances**, including information on features of its geography, climate and economy (see para. 22 above). Israel has also provided a description of the **institutional arrangements** relevant to the preparation of its national communications and BURs. However, during the technical analysis, the TTE noted the need for adequate resources to meet the requirements for the preparation of national inventory reports on a continuous basis (see para. 25 above);

(c) Israel reported information on its GHG inventory in its BUR, partially in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8. Israel presented its **national GHG inventory** covering GHG emissions and removals for the period 2007–2013 in the BUR. While Israel provided information including total emissions, sectoral estimates for selected gases and brief descriptions for some sectors, the TTE considers that the completeness and transparency of reporting would be improved by presenting information in accordance with the reporting format of tables 1 and 2 contained in the annex to decision 17/CP.8, and by providing details on the methodologies used to estimate GHG emissions, updated activity data and emission factors, as well as additional information on the national inventory of anthropogenic emissions, including a national inventory report, in accordance with decision 2/CP.17, annex III, paragraph 2(b) (see paras. 26–40 above);

(d) Israel reported in its BUR, partially in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on **mitigation actions** and their effects, to the extent possible. The TTE considers that the transparency of reporting would be enhanced by providing information on the quantitative goals and the estimation of mitigation effects for the individual mitigation actions in the energy efficiency, renewable energy, green buildings, transportation and industry groups, and by providing methodologies and assumptions used for assessing the GHG reduction impact of mitigation actions in the waste sector, and progress indicators of potential actions. The TTE further considers that, in cases where it is not possible for Israel to estimate the mitigation effect of individual measures, Israel could report the effect of these measures as a package, clearly explaining why the impact of individual measures could not be reported (see paras. 41–51 above);

(e) Israel reported in its BUR, partially in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received. Israel has not identified any constraints and gaps, and related financial, technical and capacity-building needs. The Party has, however, provided information on the aid, including technology transfer, it has provided to a number of countries (see paras. 54–56 above).

60. The TTE, in consultation with Israel, identified four[1] capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention.

[1] This refers to the number of capacity-building needs listed in chapter II.D.

Annex

Documents and information used during the technical analysis

Reference documents

"Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention". Annex to decision 20/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12.

"Modalities and guidelines for international consultation and analysis". Annex IV to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention". Annex III to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention". Annex to decision 17/CP.8. Available at http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2.

First biennial update report of Israel. Available at http://unfccc.int/8722.php.

First and Second national communications of Israel. Available at http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php.