Greenhouse Gas Emission Reductions Action Plan for the State of Israel

Extended Abstract # 016

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INTRODUCTION

Within the United Nations (UN) negotiated framework on greenhouse gas (GHG) mitigation, participating nations have recognized the need for developing countries to formulate their own Nationally Appropriate Mitigation Actions (NAMAs), taking into account their national circumstances, size of their economies and their key emitting sources. Developed and developing countries alike are addressing opportunities and barriers which affect GHG emission reductions across economical sectors (electricity generation, transportation, industrial processes, commerce, agriculture and more)[1].

Israel, the newest member of the Organization for Economic Cooperation and Development (OECD), has a fast expanding economy and a growing population and is attempting to chart a course for steering its economy into a low-carbon future, while accommodating continued economic growth.

At the 15th Conference of the Parties (COP-15), held in Copenhagen in December 2009, Israel's president declared that Israel would undertake to reduce the amount of GHG emissions by 20% by 2020, relative to "business as usual" (BAU) scenario[2], i.e. reducing the GHG intensity of the economy without mandating an economy-wide absolute emission reductions.

GHG EMISSION REDUCTIONS PLAN

Overview

The State of Israel ratified the UN Framework Convention on Climate Change (UNFCCC) in 1996 and the Kyoto Protocol to the convention in 2004. At the time of entry of the Kyoto Protocol into force in 2005 Israel was listed as a developing country, or non-Annex I; and thus it does not have mandatory GHG reduction targets under the Protocol. Israel's entry into the OECD does not alter its defined status in the Protocol, and the declaration by Israel's President at COP-15 in December 2009 was intended to demonstrate Israel's engagement in the international process and its commitment to voluntary actions that are nationally appropriate.

Table 1 provides a list exhibiting Israel's GHG emission reductions commitment as compared to voluntary pledges by other countries with rapidly growing economies

Table 1. Select Listing of Country Pledges to UNFCCC

Country	Emission Reductions	Baseline
Brazil	-36.1 to -38.9%	BAU
India	-20 to -25%	2005
Indonesia	-26 to -41%	BAU
Israel	-20%	BAU
Mexico	up to -30%	BAU
Singapore	-16%	BAU
South Africa	-34%	BAU
South Korea	-30%	BAU
Thailand	-30%	BAU

Source: T, Fransen, World Resource Institute, June 2010

For Israel, the 'business as usual' (BAU) projection to 2020 indicates that total GHG emissions are expected to reach 109 million metric tonnes of CO_2e[3]. Therefore a national target of 20% GHG emission reduction as compared to BAU would require Israel to reduce 22 million metric tons of CO_2e by 2020.

It has well been recognized that the key goals for policy makers, when evaluating technologies and practices to mitigate GHG emissions[4], is to assess the potential contribution of such actions to the national economy, and identify policy measures that will enhance the implementation of the action plan. In order to undertake such an assessment, the Israeli government assembled an intergovernmental task force to develop a National GHG Emission Reductions Plan as a means of implementing its 2009 commitment[5].

The task force was comprised of Directors General of relevant government ministries under the chairmanship of the Director General of the Ministry of Finance, and was charged with developing a detailed plan to reduce GHG emissions across all sectors of the economy. Expert teams working with the intergovernmental task force proceeded by integrating the assessment of costs of applicable mitigation technologies with the benefits expected to accrue from reducing GHG emissions (e.g., lower national expenditures on electricity purchases, co-benefit of local pollution reductions, lower infrastructure costs due to reduced energy demand). In keeping with this approach, the plan that emerged by the end of 2010 identified a list of specific actions that

were assigned to appropriate ministries, and included applicable budgetary allocations for implementation.

The plan was developed by three working groups consisting of experts in the areas of: energy efficiency, energy performance of buildings (residential and commercial) and transportation. Each working group developed a list of cost-effective and feasible strategies that could be implemented by 2020. The plan also summarized the GHG emission reductions projected for 2020 and included an economic analysis that evaluated both the cost to the Israeli economy in terms of budgetary outlays or the potential revenue loss together with the projected benefit or savings that could be attained if these actions would be implemented.

GHG Emission Reductions Plan Projections

The GHG Emission Reductions Plan was authorized by the Israeli government in November 2010[6] and was allocated a budget of NIS 2.2 billion (New Israeli Shekel) for the ten year period of 2011 – 2020 (equivalent to about US$ 613 million at the current currency exchange rate of NIS 3.6 = US$ 1.0). Table 2 provides a summary of the budgetary allocations by sector, the benefits anticipated to the overall economy, and the GHG emission reductions that are expected to result from the implementation of the detailed list of GHG reduction measures for each of the listed sectors. The Ministry of Finance has already appropriated NIS 543 million (or about US$ 150 million) for implementation activities in 2011 and 2012. The remainder would be appropriated in 2-year increments in accordance with the Israeli budget cycle.

Table 2. Costs and Benefits to Implement GHG Emission Reductions Plan (in million NIS & US $ equivalent)

Sector	Benefit to Economy (million NIS to 2020) [million US$ equivalent]	Budgetary Appropriation (million NIS to 2020) [million US$ equivalent]	2020 GHG Reductions (million tonnes CO_2e)
Energy Efficiency	22,198 [3,166]	2,088 [580]	10.59
High Energy Performance Buildings	3,417 [949]	66.5 18.5	0.32
Transportation	8,357 [2,321]	12.5(a) [3.5]	2.37
Waste	-	(b)	2.66
Overarching	(c)	40	(d)
TOTAL	**33,976** **[9,438]**	**2,207** **[613]**	**15.94**

Notes:
(a) Implementation incentives mainly by lowering specific taxes and not by new budgetary appropriation
(b) Budgeted separately through a broader plan addressing overall solid waste management
(c) Difficult to estimate
(d) No direct GHG emission reductions estimated

NATIONAL GHG REGISTRY

Rationale

Concurrent with setting up the national GHG emission reductions plan, recognition arose that a national system (Registry) is needed for reporting and recording GHG emissions. Information that would be calculated and reported in a "bottoms-up" fashion by Israeli entities was deemed essential to setting nationally appropriate policies and mitigation measures.

In Israel, like in other parts of the world, organizations and businesses are beginning to recognize the importance of assessing their carbon footprint and making that information publicly available. The voluntary greenhouse gas registry in Israel is expected to contribute to the following:

- Creating a database of greenhouse gas emissions of organizations and industrial plants;
- Managing business risks which may result from greenhouse gas emissions and identifying opportunities for their reduction;
- Facilitating public reporting and participation in voluntary reporting programs;
- Preparing for mandatory reporting and future emission reductions requirements;
- Participating in carbon trading markets, as applicable.

GHG Registry Development Process

Israel initiated a voluntary greenhouse gas registry that was formally launched on July 1, 2010. The initiative called for participating organizations to report their GHG emissions annually, with the first reports due by June 30, 2011. The system design allows for voluntary participation, but once entities declare that they are joining the initiative, they are expected to calculate and report emissions by the quantification methods and procedures described in the Israeli Protocol[7].

The voluntary GHG registry was developed by a multi-stakeholders working group that comprised of representatives from governmental ministries as well as representatives from the industrial, power, cement, civil society and local governments sectors. The working group met over a period of 18 months and reviewed comparative material from similar registries around the world as part of the process of adopting the appropriate elements for the Israeli program. During that process, three public workshops were held to describe and discuss the program, launch the draft protocol, and open up the system for public comments and input.

Operational Protocol and Guidelines for Reporting

The guidance document and operational protocol was prepared via collaboration between the Ministry of Environmental Protection (MOE) and the Samuel Neaman Institute (SNI) at the Technion - Israel Institute of Technology. The protocol is largely based on the WRI/WBCSD GHG Protocol for entity reporting[8] and is compatible with ISO 14064-1 for organizational level GHG reporting[9]. It consists of guidance for mapping, quantifying and reporting greenhouse gas emissions in Israel and provides a starting point for companies in the process of identifying, quantifying and reporting their GHG emissions. The quantification methods described also assist in forming the basis of a consistent database for assessing future GHG emission reductions.

The protocol is comprised of eight chapters with appendices that contain check-lists and detailed tables of emission factors to guide the reporting entities. The protocol chapters include:

1. Introduction,
2. Comparison of reporting systems around the world and in Israel,
3. Structure of the registry and reporting system,
4. Guidelines for calculating emissions that are characteristic across sectors,
5. Sector specific guidelines for calculating emissions from processes and operations,
6. Data aggregation and reporting procedures,,
7. Data quality management,
8. Specific procedures (with appropriate forms) for implementing the reporting system in Israel.

In order to test the system the first year of implementation (2010) was designated as a "pilot" period to allow for in-depth review of methods and tools. Accordingly, an Excel based calculation tool was developed to facilitate data collection and reporting by organizations and companies that have joined the program.

SUMMARY

Israel has taken a major step forward towards planning for, and initiating implementation of, measures that are expected to lead to GHG emission reductions and benefit its economy. The GHG emission reductions plan that has been adopted is expected to lead to reductions of close to 16 million tonnes of CO_2e, which is short by 6 million tonnes of the 22 million tonnes CO_2e emission reductions target previously declared. It is therefore essential to continuously review other actions that could be undertaken either by mandatory measures and/or voluntary initiatives that could help in closing the gap between the targeted and the anticipated GHG emissions reductions

For example, the plan presented does not address fuel switching in the power sector or the introduction of renewable energy technologies, such as solar and wind, into the local energy market. The government of Israel agreed on a target of 10% electricity generation from renewable sources by 2020 anticipating new solar power generating capacity of 250MW annually, starting in 2010. However, delays in the availability of public lands and financing difficulties are jeopardizing attainment of these renewable electricity goals and the GHG emission reductions potential associated with it.

Next steps are expected to include a top-down review of the energy market in Israel, and instituting appropriate indicators to track progress towards achieving the stated national GHG emission reductions goal.

ACKNOWLEDGEMENTS

The Samuel Neaman Institute's Energy & Environment team wishes to acknowledge the collaboration and to thank all the entities that participated in the working group effort, while special thanks must go to our partners at the Ministry of Environmental Protection for helping to make this project possible.

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