



State of Israel  
Ministry of Environmental Protection

# CLIMATE CHANGE: Turning Challenges Into Opportunities

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# INTRODUCTION

Nearly five years ago, at the Copenhagen Conference on Climate Change, Israel announced its intention to reduce greenhouse gas (GHG) emissions by 20% in 2020. At the same time, “business-as-usual” scenarios anticipated major increases in GHG emissions due to rising energy consumption based on Israel’s growing population and economic development. It was clear that reaching the target would represent a major challenge. It could also represent a major opportunity.

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To help meet its climate change target, the Israeli government took a milestone decision in November 2010. It approved a multimillion dollar national plan for GHG emissions reduction, based on two significant existing resolutions:

- A 2008 government decision on a 20% reduction in electricity consumption by 2020;
- A 2009 government decision on the generation of 10% of Israel’s electricity from renewable sources by 2020.

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In parallel, additional measures are helping to catalyze progress toward the target while promoting environmental, social and economic progress: power plants and industries are switching to natural gas following the discovery of large reserves off Israel’s coast; a national program on oil alternatives in transportation aims to reduce the share of crude oil in the transportation sector and turn Israel into a center of knowledge on oil substitutes; a waste recycling revolution is being advanced; and a green growth strategy, based on cleantech industries, eco-innovation, sustainable production and consumption, green building and green procurement, is in implementation.

In recognition of the importance of climate protection, Israel is determined to reinforce its efforts in the struggle against global climate change and the drive for sustainable, low-carbon growth.



## National Plan for GHG Emissions Reduction >

The national plan for GHG emissions reduction calls for a subsidy program for energy efficiency investments in the industrial, commercial, municipal and transportation sectors; measures to increase energy efficiency in the household sector;

pilot projects for green building; energy efficiency standards and regulations; demonstration of new Israeli technologies for emissions reduction; and education and information projects.

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In its first two years (2011-2012), some NIS 539 million (about \$155 million) were allocated for the successful plan, with half the funds going toward subsidies for energy efficiency in the household sector by replacing old air conditioners and refrigerators with more energy-efficient models. In the non-household sectors, government subsidies of just over NIS 100 million helped leverage investments of more than NIS 470 million in 206 projects, mostly energy efficiency projects, with a reduction potential of 450,000 tons of CO<sub>2</sub>eq per year and a savings potential of approximately NIS 140 million per year in electricity and fuel costs.

## Energy Efficiency >

Israel's National Energy Efficiency Program, which was published in 2010 and is currently being updated, specifies steps to reduce electricity consumption by 20% by 2020. Among others, it calls for financial incentives for energy-efficient electrical appliances in the home, the replacement of water cooling systems for air conditioning, especially chillers, in industry, energy-efficiency surveys

and energy efficiency standards.

Based on the recognition that small and medium enterprises often lack the means to undertake energy surveys and to act on the recommendations, a new program was launched in 2013 by the Ministry of Environmental Protection and the Ministry of Economy. It provides these businesses with the opportunity to hire energy efficiency

consultants at a subsidized cost to map their energy consumption, analyze their potential for savings, and design appropriate solutions.

More recently, in 2014, the Ministry of Environmental

Protection partnered with the Beersheba municipality in the south of the country to provide small businesses with consulting services and recommendations on energy and resource savings. Based on the successful Beersheba model, a database on energy efficiency will be developed to assist other localities throughout the country to launch similar initiatives.

## Renewable Energy >

In 2011, the Israel government reaffirmed its 2009 decision on production of 10% of the country's electricity from renewable sources by 2020. Renewable energy is largely promoted through quotas and feed-in tariffs for large solar installations (thermo-solar and photovoltaic), PV installations designated for independent consumption (rooftop PV facilities), electricity generation from biogas, biomass and waste, and electricity from wind power. A project for a 250 megawatt station, which will include one photovoltaic and two solar power plants is planned for the Negev desert.



In addition, a “net metering” reform was introduced in 2013 which enables both domestic and larger consumers to produce and use their own renewable energy, thus reducing their electricity bills. Notably, the net metering program will be used by Israel’s Parliament, as part of its “Green Knesset” project that was launched in January 2014 and which includes the installation of a 400 kW solar PV system on its roof.

## Reporting and Verifying GHG Emissions >



Based on the understanding that what gets measured gets managed, a voluntary GHG registry was established in Israel in mid-2010. The reporting protocol provides the private sector and industry with tools to calculate their emissions and to identify the potential for energy and financial savings as well as emissions reduction. About 55 companies and organizations, including several of Israel’s major contributors to GHG emissions, have joined the registry, reported on their 2013 emissions and gained recognition from the Minister of Environmental Protection in the form of award certificates. With the accreditation of Israel’s first verification body, organizations will be eligible for higher level awards for verified and certified emissions reduction.

In accordance with the requirements of the United Nations Framework Convention on Climate Change (UNFCCC), the Ministry of Environmental Protection is preparing for the establishment of a national system for GHG management which will include an MRV element for measuring, reporting and verifying GHG emissions. The system

will follow up on the implementation of government measures for energy efficiency and GHG reductions, examine additional policy and abatement measures to meet current and post-2020 national targets, and prepare mandatory reports for submission to the government and to the UNFCCC.

## Climate Protection at the Local Level >

The recognition that cities are responsible for significant air pollution and GHG emissions, but can also play a central role in mitigating climate change and improving quality of life, prompted the mayors of fifteen of the country’s major municipalities (Forum 15) along with three other cities to sign a Covenant for Reducing Air Pollution and for Climate Protection in 2008. To date, the municipalities have completed their baseline

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Cities can play a central role in mitigating climate change

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emissions inventories and forecasts and have formulated master plans for reducing GHG emissions and air pollution in four main areas: transportation and fuels, energy efficiency and green building, waste treatment and recycling, and green spaces.

Similarly, to provide Israel’s small and medium-sized local authorities with tools and targets for improving resource efficiency and reducing resource consumption, an “Environment Tag” covenant was signed by the heads of some 60 local authorities in 2010. The program, jointly managed by the Ministry of Environmental Protection and the Union of Local Authorities in Israel, uses a computerized model to compile and manage data on resource consumption in each municipality, including GHG emissions from different sectors, to forecast future expenditures and to simulate financial savings.



## Green Building >

Since buildings in Israel are responsible for more than 60% of the country's electricity consumption, sustainable building has emerged as a major lever for climate change mitigation and adaptation. The co-benefits of green building, in terms of resource and financial savings as well as improved health and productivity, have prompted a wide range of pilot projects on new green buildings and retrofits of existing buildings. At the same time, major efforts are invested in promoting professional training, financing research on green building, developing courses on green building in academic institutions and raising public awareness.

In recent years, the number of green buildings in Israel has increased dramatically. In addition, the Government Housing Administration, which manages thousands of buildings and construction projects, is promoting green building in new government buildings and in parts of existing buildings, and a Forum 15 decision calls for all new construction within the jurisdiction of its member cities to be green building.

In a recent breakthrough, a 2014 government decision calls for integrating green building in Israel's construction sector "in order to reduce living expenses, protect the health of residents, reduce resource consumption and advance Israel's energy independence." The decision on promoting green building allocates NIS 31.8 million for a three-year period (2014-2016) toward a four-pronged program consisting of information to the public, training of professionals, establishment of a knowledge center on green building and updating of green building standards.

## Solid Waste Management >

Under the motto, "From Nuisance to Resource," the Ministry of Environmental Protection is providing financial aid to local authorities and entrepreneurs for separation of waste at source and for the construction of material recovery facilities, recycling plants and renewable waste to energy facilities.

Since some 40% of Israel's waste is putrescible biodegradable organic waste, policy calls for the organic waste to be separated at source in order to turn it into compost or biogas for energy recovery, on the one hand, and to reduce

the environmental degradation caused by its landfilling, including the emission of GHGs, on the other hand.

Some 350,000 households, or more than a million residents, have joined the separation at source revolution, with their numbers expected to reach 2.5 million by 2019.

One source of GHG emissions is the uncontrolled burning of municipal solid waste in minority communities, especially in the Bedouin sector in the Negev desert. To remedy the situation, the government has allocated millions of dollars for environmental improvement, and especially waste collection and recovery systems, in Bedouin villages in the Negev and in minority villages in the center and north of the country. As part of the process, Bedouin families will be provided with in-house anaerobic digestion units for the disposal of their organic waste and its transformation into cooking gas. Based on the success of the pilot project, additional units will be introduced throughout the region as part of the Ministry of Environmental Protection's environmental and social justice agenda.

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Photo: Ian Malesier

## Adaptation to Climate Change >

Alongside mitigation measures, adaptation strategies to cope with the climate change impacts which are anticipated over the coming decades are imperative. An Israeli Climate Change Information Center (ICCIC) was set up in 2011 to compile the scientific knowledge base and the policy documents needed for the preparation of a national climate change adaptation program. Multidisciplinary think tanks compiled the existing knowledge in such areas as climate, water resources, public health, biodiversity and green building, and analyzed these areas on a multidisciplinary basis using geostrategic and economic perspectives. They then identified the risks and implications of climate change and the knowledge gaps in each of these areas and outlined their recommendations on a proposed national adaptation policy and on local adaptation measures. An interministerial committee on climate change is currently finalizing its recommendations on a climate change adaptation plan which will be presented to the government for approval.

An essential component of the work process was the identification of a range of no regret and low regret options - win-win measures that would yield benefits even if the effects of climate change prove less severe.

## With an Eye to the Future >

The measures initiated in Israel in recent years are based on the recognition that the reduction of GHG emissions does not only contribute to the mitigation of climate change in the long term, but contributes to environmental, social and economic well-being in the short term. This integrated approach is at the core of the environmental equality agenda which

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the Ministry of Environmental Protection is spearheading. It is also at the core of Israel's determination to transition to a sustainable, low-carbon and climate-resilient economy.

Today, more than ever, Israel recognizes the need to move

forward toward meeting its 2020 target as it readies to prepare its recommendations for an ambitious post-2020 emissions reduction target.

Research and innovation have helped Israel overcome many of the challenges of limited natural resources. Israel remains ever-ready to serve as a global laboratory for the development and application of cutting-edge technologies that can minimize the risks of climate change and provide food, water and energy for populations the world over. With the cooperation of stakeholders at all levels, Israel is poised to turn challenges into opportunities in the domestic and global effort for climate protection.

המשרד להגנת הסביבה



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Ministry of Environmental Protection

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