

TARGETING CLIMATE CHANGE IN ISRAEL: TOWARD PARIS AND BEYOND

Israel has committed to reducing its greenhouse gas emissions through a series of measures including energy efficiency, renewable energy, transition to natural gas and public transport

The message released from Paris by the UN Climate Change Newsroom on December 12, 2015 was a message of hope: "An historic agreement to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future was agreed by 195 nations in Paris today. The Paris Agreement for the first time brings all nations into a common cause based on their historic, current and future responsibilities."

The optimistic message may have come just in time. It emphasized the global community's commitment to confront the challenges of climate change in the face of evidence, as reported by the Intergovernmental Panel on Climate Change, that "warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia." The report goes on to say that "continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks."

In the face of these significant findings, countries throughout the world, both developed and developing, are required to take measures to reduce greenhouse gas (GHG) emissions as part of a global effort. Therefore, even prior to the Paris UN Climate

Change Conference, 188 governments had already formulated and communicated their emission reduction targets, known as "intended nationally determined contributions" (INDC) for the post-2020 period, in accordance with decisions reached in the Warsaw and Lima climate conferences. Israel was no exception.

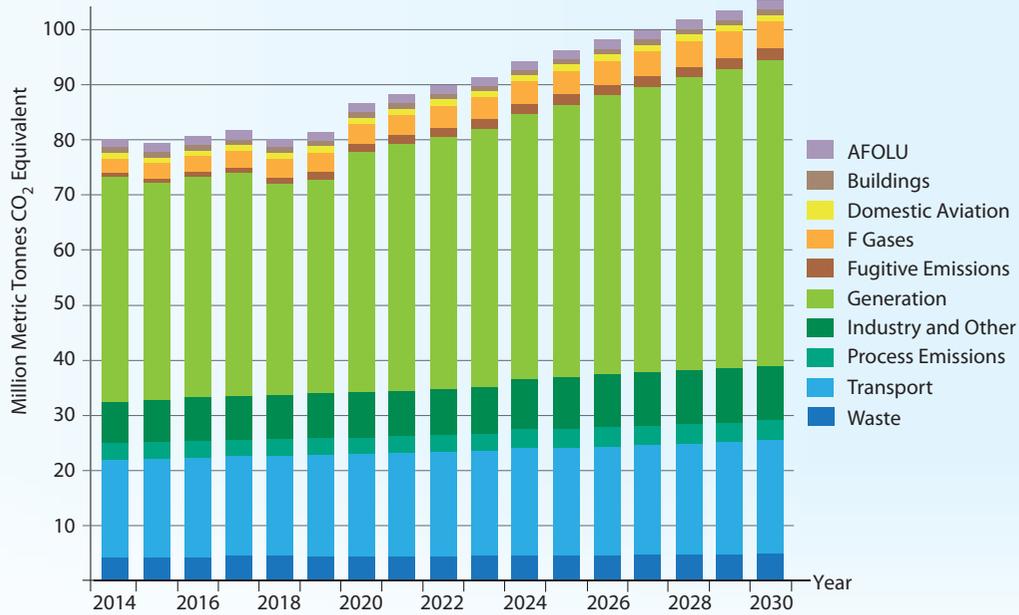
The Planning Process for Greenhouse Gas Emissions Reductions

Israel ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1996 and its Kyoto Protocol in 2004. In recognition of its global responsibility, on the one hand, and the multifold co-benefits associated with GHG reduction, on the other hand, the government of Israel has adopted a number of resolutions on energy efficiency, renewable energy and GHG emissions reduction through the years.

In order to reduce its GHG emissions in line with international developments, Israel set up an interministerial, multi-stakeholder committee tasked with assessing the country's emissions reduction potential until 2030, recommending a quantitative national target for GHG emissions and proposing an implementation program for compliance. The committee included representatives from relevant government ministries, public utility companies, industry and commerce, local government, environmental and non-governmental organizations, academia and national and international experts from various disciplines.



GHG Emissions (million tCO₂e) until 2030 under a “business-as-usual” scenario



Source: Assessment of GHG Emission Reduction Potential and Recommended National Target for Israel, Final Report, September 2015

During the course of the committee’s deliberations, the business as usual (BAU) scenario for Israel was updated along with the development of abatement scenarios using the Long range Energy Alternatives Planning System (LEAP model). The BAU scenario reflects anticipated GHG emissions in Israel in 2030 based on current trends, existing government policy and implemented regulations as of 2015.

As part of the process, specific working groups assessed and quantified the costs and benefits of over 120 different abatement measures in each of the main sectors in the economy: electricity generation, transportation, buildings, industrial processes, waste and agriculture. This, in turn, led to the identification of about 70 abatement measures that were suitable for Israel and were assessed in further depth. The impacts of potential mitigation measures on energy and emissions savings and the abatement cost for each measure in a given year were assessed along with the associated total costs and benefits of these measures for each sector and for the economy as a whole.

Key Findings

The findings of the interministerial committee clearly demonstrate that the power sector continues to be the dominant source of GHG emissions in Israel, accounting for about 50% of total emissions, followed by the transport sector, which accounts for some 19% of GHG emissions.

Following are some of the major findings:

- **GHG Emissions:** According to the most recent national GHG inventory prepared by the Israeli Central Bureau of Statistics, Israel’s emissions in 2012 were 83.04 million tCO₂e (tonnes carbon dioxide equivalent) or 10.5 tCO₂e per capita. Under a BAU scenario, GHG emissions in Israel are expected to increase by 27.05% from 2012 levels, reaching 105.5 million tCO₂e (10 tCO₂e per capita) in 2030. A reduction target of 7.7 tCO₂e per capita will result in a reduction of 23.85 million tCO₂e in 2030, bringing total emissions down to 81.65 million tCO₂e.



Hadera power plant/Photo: Ilan Malester



- **Electricity Consumption:** Under the BAU scenario, electricity consumption is expected to grow by approximately 60% in 2030, from 60 TWh in 2015 to 96 TWh in 2030. Within the context of the interministerial report, 18 measures that impact on electricity consumption were analyzed, with findings showing that the greatest savings in both residential and commercial/public buildings would result from HVAC (Heating, Ventilation and Air Conditioning) measures. In industry, where uptake of energy efficient equipment is in more advanced stages, the greatest savings can be achieved through energy management systems.
- **Renewable Energy:** Under the BAU scenario, renewable energy is expected to peak at 10% in 2020 before declining to 8% in 2030. However, the study forecasts that renewable energy technologies can account for a much larger share of electricity generation, with a major growth in PV capacity in comparison to the BAU scenario, based on such measures as competitive tenders and quotas for renewable energy installations.
- **Merit Order Switch:** At present, the external costs of air pollution are not taken into account when costing the operation of coal-fired power plants. Once externality costs are taken into account, natural gas-fired combined cycle power plants are expected to be operated up to their full capacity, prior to ramping up the coal units. This change in the merit order of power plants is expected to yield significant reductions in GHG emissions along with major economic benefits.
- **Transport:** Under the BAU scenario, GHG emissions in the transport sector are expected to grow by 15% by 2030, with private car use accounting for nearly 50% of total transport

related GHG emissions. Emissions in the transport sector will be substantially reduced due to the construction of advanced mass transit systems in Israel's metropolitan areas. This, along with the uptake of alternative-fuel vehicles (such as CNG and electric vehicles) as well as more efficient conventional vehicles, will reduce the share of petroleum-based fuels used for land transport.

- **Economic Impacts:** Reducing GHG emissions in Israel will go hand in hand with significant economic and environmental benefits totaling an estimated NIS 100 billion (about \$26 billion). The greatest economic benefits will be achieved by reducing private car use due to increased investment in public transport (modal shift) as well as energy efficiency measures in industry and commercial, public and residential buildings. In addition, the combination of reduction in electricity due to energy efficiency measures and the increase in renewable energy generation should save the cost of constructing an additional large power plant while reducing air pollution and its associated morbidity and mortality. In fact, of the total GHG emission reduction potential that was assessed, approximately 80% was found to be cost-effective without carbon pricing (assuming a carbon price of NIS 0).

Determining Israel's Target for GHG Emissions Reduction (INDC)

While climate change is a global challenge, INDCs allow countries to tailor their national contributions to the global effort according to their national priorities, capabilities and circumstances.

Israel is a small and densely populated country which is characterized by an expanding population and economic

Israel's National Circumstances

- High population growth rate (~1.8% annually)
- High GDP growth rate per capita above the OECD average
- Electricity generation largely based on fossil fuels
- Limited land area available for solar installations and wind farms
- No hydro-electric, geothermal or nuclear power
- Energy island without grid interconnectivity
- Growth rate of electricity demand about 2.5% per year

Train alongside Ayalon Highway/Photo: Ilan Malester



growth. Therefore, its GHG emissions, which contribute about 0.2% of global emissions, are forecasted to increase significantly under a business as usual scenario while per capita emissions are expected to increase more minimally. Israel's projected annual population growth rate is 1.8%, three times more than the OECD average. By 2030, Israel's population is expected to reach about 10.6 million, as compared to 7 million in 2005 and 8.4 million in 2015. Its annual GDP growth per capita is high and continues to grow at a faster rate than the OECD average. Considering this projected growth in population and GDP, Israel has decided that a per capita target for GHG emissions

reduction is both fair and appropriate. Meeting the target will facilitate Israel's transition to a low-carbon and climate-resilient economy.

In preparation for the submission of Israel's INDC, the Ministers of Finance, National Infrastructures, Energy and Water Resources and Environmental Protection submitted a joint proposal which resulted in a landmark government decision on GHG emissions reduction and energy efficiency. The September 2015 decision established an economy-wide target of reducing GHG emissions in Israel.

SHULI NEZER ON THE IMPLICATIONS OF THE PARIS AGREEMENT



Senior Deputy Director General for Industry

The Paris Agreement of December 2015 is more ambitious than I could have envisioned prior to the Climate Summit. It is a good agreement, with strong principles and a clear review and updating process. Surprisingly, it also sets the foundation for a global carbon trading market. Clearly, the direction the world must take today is of low carbon economies, in which clean technologies will become more prevalent and less expensive.

Even prior to the conference and the agreement, the determination of both developed and developing states to address the climate issue was evident. In fact, 188 countries – both developed and developing – submitted their INDCs, demonstrating their intention to move away from business-as-usual to GHG emissions reduction policies. We are in a totally different place today than we were just ten years ago when the agendas of developed and developing countries were completely different. Countries today have shown their readiness to introduce low carbon strategies.

We relate to the Paris Agreement as an economic and environmental opportunity for Israel. If it was once thought that GHG emissions reduction disrupts economic growth, our work this past year has broken this paradigm. We showed that climate change mitigation presents an unprecedented opportunity to become more efficient, to save, to develop innovative technologies and to position Israel as a "Start-Up Nation" in the realm of climate change solutions as well.

The process we set in motion to recommend a national target for GHG emissions reduction was comprehensive. It was led by an interministerial committee, with the participation of dozens of experts from government, academia, consultancy companies, NGOs, business and more. It was characterized by long-term thinking, and at the end of the day it also led to important conclusions for the short term.

Everyone involved in the process saw, for example, that the growth rate of energy consumption in Israel is higher than the growth rate of the population. Six years ago a cost curve for the abatement of GHG emissions in Israel identified energy efficiency as a major lever for emissions reduction. This year we confirmed this for the second time. To my mind, efficiency equals competitiveness so that by improving energy efficiency, we will gain both environmental and economic benefits.

We identified over 120 abatement measures this year, and dozens were found to be cost-effective. Full implementation of these measures will result in significant benefits to the Israeli economy estimated at NIS 100 billion. As part of our emissions reduction plan, we will also create incentive and support mechanisms for Israeli innovation. By transforming Israel into a beta site for climate change technologies, we hope to better demonstrate our mitigation and adaptation technologies and to help solve global problems.

In the wake of the Paris Agreement, the time has come to embark on implementation. The agreement sends a clear and strong signal that we must revise our policies on energy and transportation. We must take the Paris Agreement and its implications into account. We cannot afford to do otherwise.



Government Decision: Paving the Way Forward

The government decision on a national emissions reduction target along with sector-specific targets was precipitated both by the requirement to submit Israel's INDC to the Climate Change Convention Secretariat in preparation for the adoption of a new international climate agreement in Paris and by Israel's recognition of the economic benefits associated with implementation of the targets while protecting Israel's energy security.

Following are the major provisions of the government decision:

- **GHG Emissions:** Establishing a national target of 8.8 tCO₂e per capita in 2025 and a target of 7.7 tCO₂e per capita in 2030, which is equivalent to the emission of 81 million tCO₂e in

2030. Emissions reached 72 million tCO₂e in 2005, equivalent to 10.4 tCO₂e per capita, and are expected to increase to 105.5 million tCO₂e or 10.1 tCO₂e per capita in 2030 under a BAU scenario. Israel's national target therefore constitutes a 26% reduction in anticipated GHG emissions in 2030 relative to the 2005 per capita level.

- **Energy Efficiency and Renewable Energy:** Establishing national targets for energy consumption reduction and efficiency in the economy and for the production of energy from renewable sources for the purpose of meeting Israel's national target for GHG emissions reduction, as per the following:

GALIT COHEN ON CLIMATE CHANGE OPPORTUNITIES



Senior Deputy Director General for Planning and Policy

The climate change story is an international economic story in which Israel must take part. We are committed to reducing our emissions because we are part of this world-wide process. And we now have the opportunity to do this right, opening up new opportunities for growth. We can become more efficient within Israel while at the same time offering solutions outside our country.

Energy efficiency, for example, which we identified as a central measure for emissions abatement, opens up enormous economic opportunities in every aspect of our lives – using less energy for each unit of product, boosting the competitive edge of Israeli industry by lowering energy costs, and reexamining entire production processes in an effort to reduce energy use. At the same time, it offers an opportunity for our cleantech industry to provide energy efficiency solutions for industry, local authorities, and households – freeing up funds that can be directed toward social benefits rather than electricity bills, reducing living expenses and improving quality of life.

Tackling the challenge of climate change presents Israel with major opportunities. The Israeli economy can enjoy the benefits from both sides, both inside our country and outside of it, by utilizing the technologies in which we excel – smart grid technologies, transition to green ICT, energy management, and much more. And, of course, in the world of adaptation, we can contribute our many years of experience in overcoming the challenges of land and water scarcity to provide technological solutions to a world in which climate change threatens water depletion and desertification. Our

water solutions – water management, wastewater treatment, desert agriculture – hold immense opportunities to countries throughout the world as do our innovations in the area of renewable energy and energy storage.

Clearly, it is the private sector that can bring the greatest changes, but what is the role of government? This is where the world of regulation, finance and information comes in. We must find ways for government to leverage the business and banking sectors, to fund innovative and even high-risk projects. We must find ways to raise the awareness of both the general public and decision makers and to increase public participation in the field of climate change. Everyone can make a difference.

The Paris Climate Summit sharpened our understanding that government must promote policy and regulations that will signal to markets that the new direction is a low carbon, energy-efficient economy. This means reducing coal use in electricity generation, transitioning to efficient public transportation, improving energy efficiency in industry, promoting energy efficient buildings. At the same time, the conference highlighted the important role of partnerships, both with local government and with the business sector, in facilitating change. And of course, the international aspect is of utmost importance. Israel has developed outstanding capabilities in adaptation, mitigation and fuel alternatives, and we must take part in the international process and in climate financing so that Israeli companies can provide some critical solutions to the climate change crisis.

Climate change is not only a challenge. It is also an opportunity to take part in the international effort toward a new world economy. This is our message.



Highlighting the Opportunities of Climate Change

Israel's commitment to climate change mitigation and adaptation provides a host of co-benefits which are based, inter alia, on Israel's innovative and entrepreneurial spirit. The co-benefits of a long-term program for GHG emissions reduction in Israel include:

- › **Economic viability:** The reduction of GHG emissions through energy efficiency and alternative sources of energy is economically viable. GHG emissions reduction leads to major economic savings and to lower costs of living for the population, with dividends both in the short and long terms.
- › **Creation of new jobs:** The reduction of GHG emissions provides major business opportunities including opportunities for the development of new technologies and for the creation of new jobs.

- › **Pollution abatement:** The reduction of GHG emissions from industrial, transportation and other sources means pollution reduction and provision of clean air and a healthier environment. It contributes to reduced mortality and morbidity and their costs and allows resources to be allocated to other fields.
- › **Innovation for economic growth:** The reduction of GHG emissions through innovative technologies presents an opportunity for economic growth. As a major exporter of technological solutions to the world, Israel must also implement its technologies within the country to reduce emissions and enjoy the benefits. As a start-up nation and a world leader in innovation, Israel can make a major contribution to international mitigation and adaptation efforts while reducing its own GHG emissions and growing its economy.

- Reduction of electricity consumption by at least 17% relative to anticipated electricity consumption in 2030** under a BAU scenario. Meeting the target would reduce total electricity consumption in 2030 from 96 TWh as predicted in the BAU scenario for 2030 to below 80 TWh.
- Reduction of private kilometers travelled by 20% relative to anticipated kilometers travelled in 2030** under a BAU scenario. Meeting this target would decrease private kilometers travelled from 55.5 million kilometers per year as predicted in the BAU scenario to 44.4 million kilometers per year.
- Production of at least 13% of total electricity consumption from renewable energy in 2025, and at least 17% in 2030**, based on reaching the electricity consumption reduction target. Therefore, by 2030, 17% of the 78 TWh of electricity that will be consumed in Israel will be produced from renewable energy sources.

Toward Implementation

To implement the plan, the government approved NIS 300 million (about \$77 million) in spending authorization for the years 2016-2019 and NIS 500 million (about \$128 million) in government guarantees for the years 2016-2025. According to the government decision, an outline of economy-wide measures to meet the targets will be submitted. The implementation plan will include economy-wide regulatory and economic measures aimed at reducing the consumption of polluting fuels, increasing energy efficiency and promoting renewable energy.

Recommended measures include:

- › Establishment of mechanisms for leveraging private funding together with public funding of energy efficiency and GHG emissions reduction projects;
- › Support of new technologies on energy efficiency, renewable energy and GHG emissions reduction;
- › Removal of bureaucratic and regulatory barriers for the uptake of renewable energy;
- › Promotion of measures to increase the use of natural gas in Israel's fuel mix;
- › Promotion of public transportation and reduction of private car use;
- › Gradual adoption of the Israel Green Building Standard in new building and promotion of an energy rating for residential buildings and offices;
- › Increasing awareness of energy savings through education and information.



Light train in Jerusalem/Photo: CitPass



In parallel, initial steps have begun toward establishing a national MRV system for measuring, reporting and verifying GHG emissions. Quantitative and qualitative data collection and analysis will be carried out to track and record progress on implementation of the abatement measures and to examine additional policy and reduction measures to meet the national target.

When relating to the government decision on Israel's GHG emissions target, Environmental Protection Minister Avi Gabbay said: "We are presenting dramatic targets for Israel. Every citizen will feel significant savings in their electric and gas bills, and in the reduction of air pollution in the wake of implementation of this program. And we are keeping to targets that will take us another step forward toward the direction of OECD countries, saving billions for the economy and developing advanced green technologies."

The Economic Benefits and Opportunities of Climate Change

An implementation program for compliance with Israel's new GHG emissions target presents an unprecedented opportunity for advancing and strengthening Israel's economy, reducing the massive expenditures on energy and increasing the resilience and competitiveness of the Israeli economy in the long term. The implementation of measures to reduce GHG emissions will bring in its wake a host of co-benefits to Israel including air pollution reduction and thus lower morbidity and mortality, energy savings, energy security, job opportunities, and increased competitiveness, providing new opportunities for developing

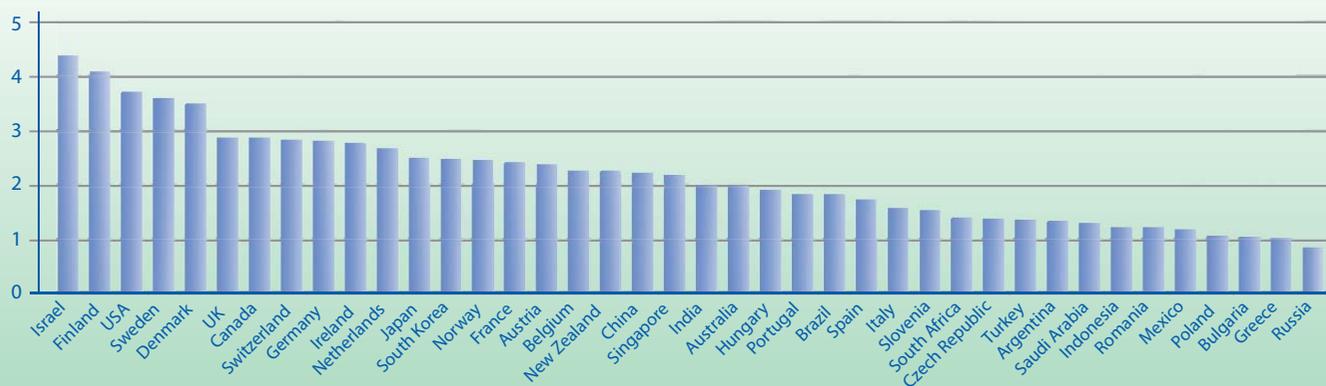
and applying cutting-edge technologies for climate change mitigation and adaptation in Israel and overseas.

Israel has long been identified as a global leader in innovation in a variety of sectors. In recent years, Israel has also begun to lead in the cleantech sector. According to the Global Cleantech Innovation Index 2014, Israel came in first among the forty countries that were ranked for the first time in the unique index especially developed for the cleantech sector. These data accord with a 2013 publication by the Ministry of Economy which puts the number of cleantech companies operating in Israel at more than 350, with the exports of the 200 leading Israeli companies in the water sector increasing from \$600 million in 2006 to \$1,988 million in 2013. The environmental technology and energy efficiency markets, which have continued to grow despite the economic crisis of 2009, offer Israel and countries throughout the world a new opportunity for economic growth alongside emissions reduction.

Paris and Beyond

The 21st session of the Conference of the Parties to the Climate Change Convention was a pivotal moment in the global effort to reduce GHG emissions. It called on the world community to reduce the risks and impacts of climate change through a number of steps, including: "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." To achieve this goal, the Paris Agreement stated that countries

Environmental Innovation Index



Source: Global Cleantech Innovation Index 2014



should "reach global peaking of greenhouse gas emissions as soon as possible," while at the same time relating to such issues as five-year reviews, loss and damage, a global "stocktake," adaptation, GHG monitoring, verification and reporting, financing, capacity building and technology.

In his address to the Paris Climate Conference, Prime Minister Benjamin Netanyahu affirmed Israel's commitment to the goals of the conference and focused on one element that is expected to go a long way toward meeting the global challenge – namely, technology. In his words, "technology gives us the ability to do the unimaginable." This message was reiterated by Environmental Protection Minister Avi Gabbay who called on the participants to close their eyes and imagine what the world could look like in 2030. He envisioned a world where "the electricity grid will be much more efficient, thanks to smart-grid developments; many of us will be producing the energy we consume; all factories will use co-generation; car companies will manufacture more electric cars than gas-powered cars; and public transportation will be smarter and more efficient."

The international activity around the Paris conference, as well as the national efforts of countries to comply with the reduction targets that they set for themselves, create major economic opportunities on the road to a sustainable, low-carbon and climate-resilient economy that would be good for everyone – people, the environment, and the planet. The agreements reached in Paris are not an end, but rather a beginning, as governments move from words to action, from decisions to implementation. Israel is committed to making the transition. It is committed to playing its part in the global mitigation and adaptation effort.



Minister Avi Gabbay at Paris Climate Change Conference/
Photo: International Institute for Sustainable Development

DR. SINAIA NETANYAHU ON CLIMATE CHANGE ADAPTATION



Chief Scientist

The Paris Agreement reached in December 2015 has been hailed as a landmark in the struggle against global warming. Yet, along with the optimism, the Intergovernmental Panel on Climate Change has reported, again

and again, that the effects of climate change will continue for decades, if not for centuries, even if ambitious greenhouse gas emission targets are met. Therefore, alongside mitigation measures, adaptation has emerged as a key component of the Paris Agreement which calls on parties to "engage in adaptation processes" and to implement adaptation action plans so as to better prepare for the impacts of climate change.

In recognition of the importance of climate change adaptation, an Israeli Climate Change Information Center (ICCC) was set up by the Ministry of Environmental Protection in 2011 at Haifa University. Its mandate was to compile the existing knowledge in Israel and abroad, to identify knowledge gaps and to submit recommendations to the government on adaptation measures on both local and national levels. Over a three-year period, multidisciplinary think tanks, made up of representatives of government, academia, industry and NGOs, compiled and analyzed the existing knowledge on climate patterns and forecasts and their potential impacts on water resources, public health, biodiversity and green building in addition to their geostrategic and economic effects. They identified the risks and the knowledge gaps and submitted their recommendations for a national adaptation strategy as well as on adaptation measures in local authorities, research needs, and means of marketing the scientific and technological knowledge on adaptation in Israel and abroad.

We are currently finalizing the national climate change adaptation strategy for submission to the government. The proposed strategy is a comprehensive document that was prepared by Israel's interministerial committee on climate change adaptation, with the full collaboration of all stakeholders in a consensus-building process. All relevant government ministries and numerous other public agencies took part in the process, all recognized the impacts of climate change on their fields of responsibilities, and all owned up to their responsibilities for integrating climate change adaptation in their policies.



In parallel, professionals in several government agencies have integrated climate change thinking into many aspects of their work. For example, the Israel Meteorological Service recently published an analysis of extreme events over nearly 100 years of historic observations which presents trends related to droughts and heat waves, rain and flooding and snow and ice. Based on IPCC models that were adapted to Israel, winter temperatures are forecast to rise by 1.5°C-3.0°C and summer temperatures by up to 4.0°C while precipitation is expected to decrease by 10%-20% by the end of the 21st century. In addition, Israel Oceanographic and Limnological Research published the results of a survey on sea level rise, which shows a 6 millimeter rise each year.

There are two types of impacts that we must relate to: long-range, gradual impacts that will see temperatures climb over time, sea water levels rise and sudden and extreme events that will include heat waves, droughts and floods. These forecasts raise a lot of questions. How do we plan for the probability of more frequent flooding events? How do we plan for extreme events that will take place once in so many years? How do we prepare for scenarios in which localities may be disconnected from the national electricity grid due to extreme events? What does a 6 cm rise in sea level per decade or 60 cm per 100 years mean in terms of the coastal cliff or coastal power plants?

We will have to increase our forecasting capabilities and early warning system capabilities to better respond to the impacts of climate change on nearly every aspect of our lives – from when students can go on field trips to when is the best time to plant crops to how to increase water supply. Based on the predictions, maintenance and early preparations are essential.

It is significant that several government ministries and agencies have already begun to implement measures directed at better responding to the impacts of climate change. For example, in light of water scarcity forecasts, the Water Authority is planning to increase water production by 15% in order to avoid dependence on natural water sources during extreme events.

Over the past year, we have drafted a national strategy which aims to reduce potential damages and take advantage of opportunities and benefits related to climate change. The proposed national strategy is based on five main targets:

- Reducing damage to life and property and preventing losses and investments that are not sustainable;
- Taking measures to increase ecosystem resilience;
- Developing and updating the scientific database necessary for decision making;
- Promoting education, awareness and access to knowledge by decision makers and the public;
- Searching for regional and global cooperation to advance a climate-adapted economy.

The interministerial committee on adaptation invested a lot of time and effort on the strategy, but successful implementation will depend on two important steps: firstly, adaptation will have to be mainstreamed into decision making in every field by different authorities; secondly, a coordinating body will have to be established to lead the implementation process and coordinate between government ministries and public authorities.

At the same time, we know that there is a lot of uncertainty with regards by the types of changes we will experience, their intensity, scope, time of appearance and impacts. Therefore our adaptation strategy and sectoral action plans are largely based on “no regret” scenarios – measures that should be implemented even if the effects of climate change prove to be less severe than predicted.

Based on our accumulated experience and technological innovations in such fields as water, agriculture, desert forestry and energy, I believe that not only will we be able to reduce the adverse impacts of climate change in our own country but we will be able to contribute to the global effort to find climate resilient solutions for the benefit of people everywhere.



Carmel coast/Photo: Ilan Malester

