Chapter 4

United Nations Climate Change Process

The UN hosts international action, discussions and negotiations between countries in the issue of global climate change. Hereby presented, are descriptions of agreements. Work groups and other bodies taking part of negotiations. Additional funds and individuals related to the process, which will assist in guiding Israeli decision makers and negotiators in the formal international process.

a. IPCC: Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess the "risk of human-induced climate change." The Panel is open to all members of the WMO and UNEP, and includes more than 2,500 scientists from around the world. In 2007, the IPCC was awarded the Nobel Peace Prize, among them former vice president Al Gore.

The IPCC does not carry out new research, nor does it monitor climate-related data. It bases its assessments on published and peer-reviewed scientific technical literature. The IPCC was created specifically to inform international policy and negotiations on climate issues. IPCC reports are the most comprehensive and reliable statements of what the world's scientists know about climate change.

IPCC released its first Assessment Report in 1990 and the Fourth Assessment Report (AR4) on global climate change in 2007. The AR4 is organized into three Working Group Reports covering science, impacts and adaptation, and mitigation.

IPCC capacity increased significantly during the last six years, as did the growing awareness of human contribution to climate change. The panel concluded with high certainty that global warming has been influenced by human actions since 1750. The fourth report states that most global GHG emissions increased by 70% between the years 1970 and 2004. It is very probable that nearly all increased averages in temperatures reported from around the world are a result of an increase in human GHG concentrations. Almost 90% of 29,000 data sequences examined by the panel in 2007 showed climate changes correlating with global warming.\(^1\) Although it is not entirely certain, climate change models are very accurate and reliable.\(^2\)


b. UNFCCC: United Nations Framework Convention on Climate Change

The 1992 UN Framework Convention on Climate Change (also known as “The World Summit”) was signed by 154 states at Rio de Janeiro. The Convention entered into action on 21 March 1994 and was ratified by 192 countries. Israel ratified the convention and became a party within it in June of 1996.

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." To coincide with this objective, information is gathered and distributed amongst parties in the convention framework (See IPCC, chapter 4A), national adaptation and strategic mitigation initiatives are developed, and collaboration between participating parties is promoted.

The mechanism of the financial convention is managed by the GEF (Global Environment Facility).

i. UNFCCC Bodies

Conference of the Parties

The primary decision-making body of the UNFCCC is the Conference of the Parties (COP), which is made up of all of the Parties in the Framework Convention. The COP reviews national communications and emissions inventories, as well as the progress made toward the overall objective of the Convention to stabilize concentrations of GHGs in the atmosphere.

The COP meets every year in the beginning of December, while other subsidiary bodies meet more frequently. The Presidency of the COP is rotated every five years among the different UN regions, and the venue for the COP also changes from year to year.

---

In 2007, the COP-13 convened in Bali, Indonesia, and COP-14 convened at December 2008, in Poznan, Poland. The COP-15 is to convene in Copenhagen, Denmark in 2009. The Copenhagen convention is extremely important due to the necessity of reaching a new, post Kyoto agreement, (See chapter 4d) which will include all the countries in the world.

(A Secretariat to the Convention handles the administrative procedures, collects national action plans, inventories, and so on. The Secretariat is located in Bonn, Germany.)

Subsidiary Bodies

To support the work of the COP, two permanent subsidiary bodies were established:5

1) Subsidiary Body for Scientific and Technological Advice (SBSTA): Provides information and advice on scientific, methodological, and technological matters relating to the Convention. Primarily, the SBSTA facilitates the transfer of environmentally-friendly technologies and designs guidelines to help countries prepare their national action plans and emissions inventories (also mentioned in the COP).

The SBSTA also acts as a link between the scientific bodies, such as the SBI (described below), the Intergovernmental Panel on Climate Change (IPCC) (described separately in Chapter 4A), and the policy bodies or Conference of the Parties (COP). The SBSTA also conducts specific methodological research about Land Use, Land Use Change and Forestry (LULUCF).

The SBSTA meets at least twice a year, with its last session of the year being held in conjunction with the sessions of the COP.

2) Subsidiary Body for Implementation (SBI): Assists the COP on all issues related to the implementation of the Convention. The SBI helps the COP assess and review the UNFCCC’s implementation and its overall effectiveness, for example, by analyzing national communications and emissions inventories provided by the Parties. Moreover, it deals with financial and administrative matters, and reviews the non-Annex I countries' (see chapter 4B) use of financial assistance that is provided to help them implement their Convention commitments.

The financial mechanism for the UNFCCC is operated by the World Bank’s Global Environment Facility (GEF). The GEF operates somewhat independently from the Bank. The SBI works with the COP to provide “guidance to the financial mechanism.”6

5 Note: The SBI and the SBSTA were established under the COP but serve the CMP as well.
6 UNFCCC website, description of Convention Bodies – SBI.
http://unfccc.int/essential_background/convention/convention_bodies/items/2629.php
SBI and SBSTA were established under the COP gathering, but also serve CMP (See Kyoto Protocol, chapter 4C)

SBI sessions are held at the same time as SBSTA sessions.

ii. Expert Groups (also called “Constituted Bodies”) \(^7\)

To facilitate the work of the COP and the subsidiary bodies, several Expert Groups or “Constituted Bodies” were formed. These include:

1) **Consultative Group of Experts (CGE):** The CGE is also known as the Consultative Group of Experts on National Communications from Non-Annex I Parties and was established in 1999. As the full name indicates, the CGE was established to look into ways to improve national communications prepared by non-Annex I Parties. It consists of 5 developing country members, six Annex I country members, and several organizational representatives.

2) **Expert Group on Technology Transfer (EGTT):** The EGTT “provides scientific and technical advice” to facilitate the transfer of environmental-friendly technologies and identify ways of advancing activities in this area. The EGTT meets twice a year, in conjunction with the subsidiary bodies, and reports to the SBSTA.

3) **Least Developed Countries Expert Group (LEG):** The LEG supports LDCs in the preparation of their national adaptation programmes of action. The LEG and CGE coordinate on adaptation issues by requiring two members from the LEG also to be part of the CGE.

iii. UNFCCC Parties\(^8\)

The convention differentiates between developed and developing countries based on their contribution to greenhouse gas emissions and their responsibility to stabilize atmospheric greenhouse gas concentrations. These have been coined, "common but differentiated responsibilities.” Thus, developing and developed countries are grouped into Annexes, to

---

\(^7\) United Nations Framework Convention on Climate Change, Constituted Bodies under the Convention.  

\(^8\) United Nations Framework Convention on Climate Change, Parties and Observers.  
negotiate and reach goals designed in the Convention. This distinction between countries is validated by the Kyoto Protocol (see Chapter 4C), the convention’s feasibility tool.

Source: cache.daylife.com/...04E55si3VLgHa/610x.jpg

Annex I Countries: Annex I countries are those that are industrialized (members of the Organization for Economic Cooperation and Development – OECD - as of 1992), as well as several that are transitioning to market economies (EITs – Economies in Transition). These countries have acknowledged the need to take the lead in addressing climate change and recognizing "common but differentiated responsibilities."

Annex II Countries: OECD members as defined here, but not the Economies in Transition.

Non-Annex I Countries: Industrializing countries. Israel is in this category.

Least Developed Countries (LDCs): The countries in greatest need of assistance, largely for adaptation support, financial assistance and technology transfer.

Historically, these countries didn’t emit significant quantities of GHG, though some have changed their emission quantities with time.
National Adaptation Programmes of Action (NAPAs)\(^9\): Recognizing the special situation and needs of Least Developed Countries (LDCs), the National Adaptation Programmes of Action (NAPAs) are supposed to help the LDCs prepare, prioritize and implement adaptation strategies. The NAPA focus on urgent and immediate needs, whose delay could increase a country’s vulnerability to the projected impacts of climate or to higher costs in the future. The NAPA measures are supposed to be “action-oriented, country-driven, flexible, and based on national circumstances.”

iv. Party Groupings\(^10\)

Based on the United Nations tradition, Parties are organized into five regional groups, mainly for the purposes of electing the Bureaux, namely: African States, Asian States, Eastern European States, Latin American and the Caribbean States, and the Western European and Other States (the "Other States" include Australia, Canada, Iceland, New Zealand, Norway, Switzerland and the United States of America, but not Japan, which is in the Asian Group). Please note that the United Nations typically divides countries into 5 regional groups: African States, Asian States, Eastern European States, Latin American and the Caribbean States, and the Western European and Other States (the “Other States” include: Australia, Canada, Iceland, New Zealand, Norway, Switzerland and the USA), but the divisions for this Convention are different, as described here.

These Parties are grouped according to region and/or interest. Israel does not easily fit into any of the first five groups, though it might fit best into the EIG (#6 below) according to its high economical development, at least until or if new groupings are created for the post-2012 period.

1) **Group of 77 and China (G-77):** Consists mainly of developing countries and includes approximately 130 countries.

2) **Alliance of Small Island States (AOSIS):** This group consists of 43 low-lying and small island nations. Most of members of the AOSIS are also members of the G-77. These countries are particularly threatened by climate change, due to expected sea level rise and extreme weather events. AOSIS now is often referred to as “SIDS”: Small Island Developing States.

3) **Least Developed Countries:** The LDCs consist of 49 such countries that are likely to be among the most vulnerable to climate change impacts and least able to afford adaptation measures. Most of them need financial and technical assistance.

---


4) **European Union (EU):** The EU consists of the 27 members that formally make up this body and the European Community.

5) **Umbrella Group:** The Umbrella Group “is a loose coalition” of industrialized, non-EU countries, essentially as follows: Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, Ukraine and the US. This group essentially evolved from the JUSSCANNZ group, which was active during negotiations on the Kyoto Protocol (described separately). JUSSCANNZ stands for the countries: Japan, the US, Switzerland, Canada, Australia, Norway and New Zealand).

6) **Environmental Integrity Group (EIG)**\(^{11}\): A sixth group has been formed more recently, consisting of Switzerland, Mexico, and the Republic of Korea. Other countries that are joining or being considered for this group include Monaco and Liechtenstein.

The EIG might be an appropriate group for Israel to join, at least through 2009 if not from 2012 and beyond. Contacts have been made between Israeli officials and representatives of this Group.

**Countries also work in the climate negotiations under the following groupings:**

- The Organization of Petroleum Exporting Countries (OPEC);
- The League of Arab States;
- The CG-11, a group of 11 central and eastern European countries;
- The CACAM, a group of countries from Central Asia, the Caucasus, Albania and Moldova.

c. **Kyoto Protocol**\(^{12}\)

The major distinction between the Kyoto Protocol and the UN Framework Convention is that while the Convention *encouraged* industrialised countries to stabilize GHG emissions, the Protocol *commits* them to do so. Most of the countries in the world ratified the protocol, in the distinct absence of the USA.

The Kyoto Protocol relates to the period between the years 2008-2012, and was adopted in Kyoto, Japan, on 11 December 1997. It was entered into force on 16 February 2005, after being delayed by Russia’s ratification. So far, 181 countries, including the European Community ratified it, thus it applies to 63.7% of all Annex 1 emissions (i.e. the industrialized countries). Israel ratified the protocol in February 2004. Australia was one of two industrialized countries

---


not to ratify it, though after a rotation of government, it did eventually ratify it in December 2007. Today, the USA is the only industrialized country that has not ratified the protocol, though this policy is expected to change dramatically during the elections of November 2008.

A major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. They amount to an average of five per cent against the 1990 levels over the five-year period between 2008-2012.

According to the protocol, Israel is classified as a developing country (not included in Annex 1), thus, not required to meet the targets for reducing emissions.

As noted, the Kyoto Protocol is valid until 2012 and the international arena is working to form a new agreement for entry into force.

i. Kyoto Bodies

“The Conference of the Parties (COP) (see Chapter 4A) serves as the meeting of the Parties to the Kyoto Protocol. This is referred to as the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP). Parties that have not ratified the Protocol can participate in the CMP as observers but they cannot formally vote or make decisions. The CMP has similar functions as the COP under the UNFCCC.

The Subsidiary Bodies (SBSTA and SBI) (see Chapter 4B) established under the UNFCCC serve the CMP/Kyoto process and the Convention process.

An Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) was established in 2005 to develop future emissions reductions commitments by the Annex I countries (industrialized countries), particularly as a follow-up to the Kyoto Protocol, whose commitment period ends in 2012. The AWG-KP is only expected to operate until the end of 2009.14

ii. Protocol Parties

The Parties to the Kyoto Protocol are grouped in the same way as those in the UNFCCC. Of course, participating countries are only those that have ratified the Protocol. The Protocol specifies the commitments for each group of Parties, as described below.

**Annex I Countries:** Annex I countries are those that are industrialized (members of the Organization for Economic Cooperation and Development as of 1992), as well as several that are transitioning to market economies (EITs – Economies in Transition).

Under the Protocol, Annex I countries agree to take on binding emissions reductions commitments that are specified in the Protocol and that achieve an overall reduction of 5 percent below 1990 levels between 2008-2012.

**Non-Annex I Countries:** Consists of industrializing countries and defined by countries that are not in Annex I.

The Protocol underscores the principle outlined in the UNFCCC of "common but differentiated responsibilities" for Annex I and Non-Annex I countries.

**Israel** is a Non-Annex I country. Under the Protocol, Non-Annex I countries do not have to take on binding emissions reductions targets.
The Non-Annex I Parties, like all other Parties, are supposed to “formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change.” Moreover, they are supposed to improve the quality of their emissions data for national inventories and cooperate in promoting clean technologies, as well as in research and education. Non-Annex I countries must submit national communications reports, but not on the same timetables as Annex I countries. (Source: KP, Article 10)

Non-Annex I countries can participate in and benefit from CDM projects.

**Least Developed Countries:** The countries in greatest need of assistance in terms of adaptation, financial assistance and technology transfer.\(^{15}\)

### iii. Flexible Mechanisms

A number of mechanisms were developed in order to help countries fulfill their Kyoto Protocol commitments, such as the Emissions Trade, CDM, and JI mechanisms.

#### 1. How Trading Programs Work

Emissions trading is a market-based approach to reduce greenhouse gas (GHG) emissions and to create a price for greenhouse gas (GHG) emissions. A “cap-and-trade” system starts by calculating the baseline amount of emissions that exist in the atmosphere, and the rate at which they are being emitted. Then, policy-makers set an overall cap, or limit, on the number of emissions that all regulated entities may release in a given time period. A cap-and-trade system is already in place in Europe. Several other countries, such as Australia and New Zealand, are planning to establish trading schemes as well. (For more information, see below, and see the section on Australia).

Determining the appropriate size cap is crucial in creating a successful cap-and-trade program. Next, the total emissions under the cap are divided into individual permits, and these permits are distributed as "allowances" (often referred to as "credits"). Every allowance is equivalent to a certain amount of GHG emissions. Thus, each allowance essentially gives its holder the "right" to emit a certain amount of GHGs. At the end of each trading period (e.g., often one year), each participant has to verify its emissions reductions. Each participant must have a number of allowances equal to its actual emissions. If the participant has more emissions than allowances, the participant pays a penalty for its excess emissions. If the participant emits fewer GHGs than its allocated allowances, then s/he has excess allowances. Some participants will be able to "bank" these allowances for use in future years (see explanation below).

---

\(^{15}\) United Nations Framework Convention on Climate Change, Parties and Observers

http://unfccc.int/parties_and_observers/items/2704.php
Allowances can be distributed free of charge, or, they can be auctioned at some cost to the purchasers. They can also be distributed using a combination of free and auctioned "allowance" distribution methods. For example, utilities that produce fewer fossil fuels and produce clean energy with solar or wind will have more "allowances." Companies that produce more fossil fuels have to pay to reduce their own emissions to meet the overall (national) cap or can buy "allowances" or "credits" on the market from those entities that have excess allowances (such as the clean utilities). Because the cap is a national one, each company does not have to meet a cap – they just have to contribute toward reducing overall emissions, so the national cap is reached. The "cap-and-trade" approach lowers the costs for companies to meet greenhouse gas emissions reductions requirements and does so in a flexible, market-based manner. (See chart.)

Explanation for the graphic: The initial situation is that there are two power plants, each with 5000 tons of CO2 emissions. The government wants to cut the emissions by 10% and therefore allocates permits worth only 9000 tons of emissions total to both plants (combined; 4,500 each). To reach these goals, both plants must reduce their emissions by 500t. Plant1 finds it worthwhile to cut its emissions by 1000 tons on its own; therefore, it has a surplus of 500 tons of emissions, which it can sell to Plant 2. Plant 2 can buy these allowances from Plant 1, rather than reducing emissions on its own. And, the overall emissions reductions of 1000 tons (combined) of CO2 is achieved.

The U.S. was one of the first countries to implement a "cap-and-trade" approach and did so to reduce nitrogen oxide (NOx) and sulfur dioxide (SO2) emissions from power plants to address an acid rain problem the nation faced decades ago. The acid rain cap-and-trade program in the United States proved to be cost effective and helped achieve reductions of these harmful emissions more quickly and less expensively than was initially anticipated. However, the way the U.S. distributed allowances (or allocations/credits) under that program was based on historical emission levels, i.e., how much power a utility generated (which usually consisted of fossil fuel). This meant that utilities were essentially rewarded for producing more "dirty" energy. Building on this lesson, current programs typically distribute allowances or allocations based on rewarding those facilities that produce energy more cleanly and/or efficiently (and produce fewer greenhouse gas emissions), rather than on historic levels.
Design Options for an Emissions Trading Scheme\textsuperscript{16}

Several design options exist for creating an emissions trading system. These different elements have different impacts on the environment effectiveness and the economic efficiency (i.e., the costs) of the program. Therefore, all of the implications must be taken into consideration during the planning stages.

- **Allocation Method – Auction vs. Free Allocation**
  Allocations refers "to the number of permits given to a particular entity under a cap-and-trade system."\textsuperscript{17} There are basically two different methods for distributing or "allocating" allowances. One involves an auction of permits at a cost to participants. The second method involves allocating some or all of the allowances free of charge. Often, facilities that are "grandfathered" also receive allowances free of charge (see definition below).\textsuperscript{18}
  For the participants, the major difference is that with an auction, participants pay for allowances equivalent to all of his/her emissions. This way the costs are all up front.
  
  On the other hand, with the free allocation, participants only pay for excess emissions. However, possessing free permits represents an opportunity cost for the participants, because the holders are possessing an item of value, which could be sold, and the earnings then could be invested.
  
  This is the most disputed and difficult design option.

\textit{In addition, several mechanisms exist to help make the system as efficient as possible and minimize the costs.}

- **Emissions Offsets**
  Offsets of carbon dioxide or other GHGs are emissions reduction credits that are gained through emissions reductions projects that help reduce a participant's (facility's) overall emissions and meet its emissions reductions target in a least-expensive manner.
  
  For example, a facility can conduct a CDM or JI project overseas and reduce emissions (e.g., through a forestry project in a developing country) to help reduce its emissions. This often is cheaper than reducing its own emissions domestically (even with a cap-and-trade program).


\textsuperscript{17} NET/Pew 110\textsuperscript{th} Congressional Guide, Glossary.

\textsuperscript{18} Grandfathering means: A method for allocating emissions credits/allowances to companies or other legal entities, usually free of charge, on the basis of their historic emission levels. \textit{(Point Carbon)}.
• **Banking**
Banking allows participants of an emissions trading scheme that have excess allowances or "credits" to store or "bank" them from one year to another to be used in a future trading period. Banking thereby increases the flexibility of achieving overall emissions reductions targets. It also provides an incentive for facilities to reduce emissions beyond required levels or targets in a given period, because they might expect a higher return for using or selling these allowances in the future. This way the allowances are not lost completely.

• **Borrowing**
Borrowing allows the participants to use permits from a future year or allocation period in a current trading period. A facility could emit more now than would otherwise be allowed, with the knowledge that it will be borrowing against future emissions limits and will therefore be required to emit less at some future point in time. Many stakeholders, however, are very critical of this borrowing mechanism as it adds uncertainty about achieving the overall emissions reductions targets and can offset the effectiveness of the whole scheme.

• **Enforcement Methods**
To ensure that an emissions trading program achieves overall reductions targets, a real enforcement mechanism must exist. One way to penalize a facility for excess emissions is to charge them penalty fines. Another enforcement method consists of deducting a certain number of credits, or "allowances," from a facility for excess emissions. In comparison, penalties that actually take remove credits from the system will not break the reductions cap, whereas a facility that pays a monetary penalty for excess emissions might not meet the emissions reductions cap.
2. Clean Development Mechanism (CDM)¹⁹

In addition to emissions trading, the Kyoto Protocol contains two other market-based, "Flexible Mechanisms," to mitigate climate change: the Clean Development Mechanism (CDM) and Joint Implementation (JI). The CDM allows an Annex I country with an emissions reduction or emission limitation commitment to invest in an emissions reduction project in a developing country (non-Annex-I country). The emissions reduction thus generates permits (or "credits") ("Certified Emission Reduction" - CER) that can be counted towards meeting a country's overall emissions reduction target.

The CDM has two objectives: 1) reducing emissions, and 2) promoting sustainable development through transfer of knowledge, technology and capital to developing countries. A major benefit of CDM projects is that they often enable a country to achieve emissions reductions in a less expensive way than simply reducing emissions "at home." Since climate change is a global problem, reducing emissions anywhere in the world will help address the overall problem. It is also an efficient mechanism for investors. According to the World Bank, the volume of CDM transactions in 2006 was 450 million tons CO₂ equivalent or 4,813 million US$.

Since Israel is a non Annex I country in the Kyoto Protocol, it has the benefit to receive CDM projects. Israel established a Designated National Agency (DNA) in February 2004 to determine whether the proposed CDM projects meet the sustainable development and other relevant criteria.²¹ As of March 2008, 31 projects were submitted for approval to the DNA, which are expected to deliver 3 million tons of CO₂ equivalent emissions reductions (and the equal amount of CERs). Numerous opportunities for emissions reduction projects exist in Israel, especially with waste-to-energy (reduction of methane) and other clean and energy-efficient projects.²² Israel’s first registered CDM project involved methane gas collection from the Hiriya landfill and conversion to biogas.²³

Another possible CDM project can focus on carbon absorption. Everything which absorbs, removes, or prevents carbon dioxide from entering the atmosphere is known as “absorption” or “sink.” As an example, trees absorb carbon dioxide, which removes it from the atmosphere and

¹⁹ United Nations Framework Convention on Climate Change. About Clean Development Mechanism
http://cdm.unfccc.int/about/index.html
prevent it from re-entering. These natural actions are termed “absorption,” which helps balance the damaging impacts of greenhouse gas emissions entering the atmosphere.

Another process related to absorption is “sequestration,” where carbon is stored underground, thus removing it from the atmosphere and preventing its re-entry.

**Carbon Capture and Storage**

Carbon Capture and Storage (CCS) is a process that prevents coal-fired power plants from releasing CO$_2$ into the atmosphere. Since these power plants contribute to approximately 25 percent of the global anthropogenic GHG emissions in terms of CO$_2$-equivalent, CCS only plays a minor role in regulating power plant GHG emissions. The process of CCS consists of capturing and storing. The first part of the process captures the CO$_2$ and separates it from other elements in the emissions cloud, which is very costly and requires intense energy. In the second part, the CO$_2$ is stored, or “sequestered.”

![Diagram of CCS process](image)

*Figure SPM.1. Schematic diagram of possible CCS systems showing the sources for which CCS might be relevant, transport of CO$_2$, and storage options (Courtesy of CO2CRC).*

---


Several potential options exist for CO$_2$ storage. CO$_2$ can be stored in geological formations (e.g., oil fields, coal beds, deep saline formations), deep in the ocean, or via inorganic carbonates through industrial fixation. Several nations are in the process of developing demonstration sites. Norway, for example, began a CCS project in its North Sea in 1996, which stores about one million tons of CO$_2$ each year.

The process of sequestration is still in the early stages of development and is a very expensive operation, which is why it is still unclear whether this is a suitable avenue to use to address global climate change. Whether it is ready for commercialization is also in question, and if so, at which point in time (meaning, commercialization in 10, 30, 50 years time or longer).

**Joint Implementation (JI)**

The Joint Implementation (JI) is the second “flexible mechanism” outlined in the Kyoto Protocol to mitigate climate change. Similar to the Clean Development Mechanism (CDM), JI allows a country to invest in emissions reductions projects in another country and to earn the resulting carbon credits. The important difference between Joint Implementation and the CDM is that, with JI, an Annex I country can only invest in another Annex I (i.e., developed) country to earn the JI certificates or “credits,” also known as “Emissions Reductions Units” (ERUs) that can be counted towards meeting the investing country's Kyoto emissions reduction target.

JI creates benefits for both parties. Besides the emissions reduction, the host country profits from the transfer of capital and technology, while JI provides access to a broader pool of abatement options for the investing country, making compliance with the reduction target more cost-efficient and flexible.

According to the World Bank, the volume of JI transactions in 2006 was 16 million tons of CO$_2$ equivalent, and 141 million US$.  

*When calculating all direct greenhouse gas emissions, we convert methane and nitrogen oxide emissions into equivalent units of carbon dioxide. We then measure them against the radiation effects of GHG and carbon dioxide.*

---


iv. Registry

An Annex I Party that wants to use the mechanisms established by the Kyoto Protocol (i.e., CDM, JI, Emissions Trading) must have a National Registry to “record and track the creation and movement” of the different types of permits, including Emission Reduction Units (ERUs), Certified Emissions Reductions (CERs), and Removal Units (RMUs). These registries build the necessary foundation for emissions trading because they account for and verify transactions. (See "Basics of Cap-and-Trade for further description of permits, trading, verification and compliance to meet national targets).

Moreover, the UNFCCC secretariat has created a CDM Registry to issue and distribute CDM credits.

Each registry (including the CDM Registry) links to an International Transaction Log (ITL), which the UNFCCC Secretariat operates. The ITL verifies the Registry transactions and ensures their consistency with the rules of the Kyoto Protocol. After the end of the Kyoto Protocol’s first commitment period (2008-2012) the credits held by a country will be compared to its emissions during the commitment period to determine the Party’s compliance with its Kyoto Protocol emissions reduction target.

v. GEF: Global Environment Facility Climate-Related Funds

In 2001, the United Nations Framework Convention on Climate Change (UNFCCC) created two special funds managed by the Global Environmental Facility (GEF), which functions independently but has affiliations with the World Bank. These two funds are the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF).

Special Climate Change Fund (SCCF)

The SCCF helps the most vulnerable countries cope with the impacts of climate change and with the implementation of adaptation measures. Activities receive funding based on national communications, the National Adaptation Programmes of Action (NAPAs) for Least Developed Countries (LDCs), and other relevant information. The fund primarily supports activities in the following priority areas: water resources management, land management,

30 ERUs: Permits created through Joint Implementation Projects. CERs: Permits created through the Clean Development Mechanism. RMUs: Units resulting from projects in the Land Use, Land Use Change and Forestry Sector.
32 National Adaptation Programmes of Action (NAPAs) are supposed to help the LDCs to prepare, prioritize and implement adaptation strategies.
agriculture, health, infrastructure development, fragile ecosystems and integrated coastal zone management. It also focuses on capacity building. To date, the amount of money pledged by 12 donor countries is $60 million. This Fund intends to leverage financial assistance from other sources.

NAPAs national adaptation action plans are supposed to help the least developed countries prepare prioritize and apply adaptation strategies.

Least Developed Countries Fund (LDCF)

The LDCF will fund adaptation measures in the Least Developed Countries, as identified by their NAPAs. These countries are generally vulnerable to outside impacts and have low capacities for development on their own, making funding necessary to implement urgent actions and assist in their adaptation to current and future threats posed by climate change. Delaying adaptation activities will likely increase their vulnerability as well as costs. To date, the total amount of money pledged for the LDCF is $120 million by 15 donor countries.
d. Bali Roadmap

The 13th annual climate negotiations for COP/CMP were held in Bali, Indonesia in December 2007. The result is the “Bali Roadmap.”

The “Bali Roadmap” outlines the process for achieving a new global agreement to mitigate climate change by the end of 2009 (at the 15th COP/CMP in Copenhagen, Denmark) for the "post-Kyoto" period of 2012 and beyond (the Kyoto Protocol covers the years 2008-2012). However, the Bali Roadmap contains no specific targets or timeframes for emissions reductions by developed or developing countries. The next annual meeting of the Parties is in Poznan, Poland in December 2008. This meeting will help further set the stage for a post-2012 agreement by the 2009 meeting in Copenhagen.

The Kyoto Protocol regards Israel as one of the developing (non-Annex I) countries, though the treaty replacing the Kyoto Protocol will most likely update and include Israel in a different category, according to its financial development. A new classification requires additional commitments from Israel.

---

33 COP is the Conference of the Parties to the UN Framework Convention on Climate Change; CMP is the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol – those countries that have ratified Kyoto.
The Bali conference focused on four main issues: Adaptation, Mitigation, Financial Mechanism and Technology Transfer (see definitions provided below). Future discussions will stress these issues, as well as forestry.

In the Bali Roadmap, the Parties acknowledged that “deep cuts in global emissions will be required,” and that a "shared vision for long-term cooperative action, including a long-term global goal for emissions reductions" will be necessary to achieve the aim of the UNFCCC. Therefore, the Parties decided to take “enhanced” national and international action to mitigate climate change, including opportunities to use markets, taking into account "different circumstances of developed and developing countries,"34 as well as the following steps:

For developed (Annex I) countries:

“Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances.”35

For developing (non-Annex I) countries (including Israel):

Developing countries agreed to “nationally appropriate mitigation actions . . . in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner.”36

Also, developing countries will work to implement policy instruments and incentives to reduce deforestation (see the “Sinks” Section for more information) and to enhance cooperation in the effort to help countries adapt to climate change, which includes improvements of technology transfer, especially of clean energy technologies, to poorer countries.

Currently, the climate negotiations continue to run on two parallel tracks. One track involves the 192 Parties to the UNFCCC (i.e., the COP), that agreed on launching “a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012.”37 On the second track, the 178 Parties to the Kyoto Protocol (i.e., the CMP) focused on working toward a post-2012 emissions reduction commitment for the developed countries. The goal is to tie both tracks together into a comprehensive global agreement for post-2012 action.38

[Bali Action Plan]
The four main areas of focus in the Bali Roadmap are as follows:

**Mitigation**

Human intervention will prevent or reduce climate change by reducing the emission source or enhancing the ability to receive greenhouse gases, such as by switching to solar energies and forestation. Another means of mitigation may be carbon absorbing and storing technologies.

**Adaptation**

Adjusting the natural and human system in response to existing or foreseen climate change will reduce damages or utilize opportunities, such as by building dikes to stall flood waters.

**Technology Transfer**

By transferring technology to developing countries, Parties will promote access to affordable and environmentally-sound technologies.

**Financial Mechanism**

Enhancing actions on the provision of financial resources and investment will support actions on mitigation and adaptation projects.

Another result of the Bali international negotiations was the launch of an “Adaptation Fund,” which provides financial assistance for “developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change.” 39 The Fund will receive some money from proceeds of the Clean Development Mechanism (CDM) and other sources. The Global Environmental Facility (GEF, of the World Bank) will run the Adaptation Fund. 40

Two other GEF climate-related funds already exist as a part of the financial and technological help for the developing countries. The World Bank has approved the adoption of two Carbon Investment Funds: the Strategic Climate Fund (SCF) and the Clean Technology Fund (CTF), which will finance mitigation and adaptation projects.

Stemming from the Bali Action Plan on Climate Change ("Bali Roadmap"), the World Bank approved the creation of two Climate Investment Funds in July 2008 to assist developing countries to mitigate and adapt to climate change. These funds will be managed by the World Bank and the Regional Development Banks (African Development Bank, Asian Development

---

The two funds are called the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF), and both are supposed to be endowed with US$5 billion.

The proposed purpose of the CTF is to provide incentives to include mitigation strategies into national sustainable development plans and investment decisions of developing countries. Moreover, with the goal of long term GHG reductions, the CTF will "promote scaled-up demonstration, deployment and transfer of low-carbon technologies in the power sector,' as well as in the transportation, energy, industrial and agricultural sectors.

The SCF is designed to be broader and more flexible in scope to support programs to test innovative approaches to mitigate climate change. Therefore, it is designed to provide financial assistance to pilot new development approaches or to programs aimed at a specific climate change challenge. The first planned program works to enhance climate resilience in a few highly-vulnerable countries. As the program is still in the early planning stages, specific information is not yet available. However, programs supporting energy efficiency, renewable energy, or working against deforestation are under future considerations.

In September 2008, Australia, France, Germany, Japan, Holland, Sweden, Switzerland, the UK and the USA announced they will grant 6.1 Billion Dollars for initial programs to receive at the beginning of 2009.

**World Bank funds were the focus of a significant argument based on these reasons:**

- The funds may overshadow other existing programs;
- The funds may diminish other aid development efforts;
- Some of the money will be transferred as loans;
- The bank has a history of funding fossil fuel projects;
- A US treasury senior confirmed the Clean Technology Fund may be used for coal projects (though projects using the cleanest technologies available).
- A new study by Heinrich Böll and the World Wildlife Fund states there’s a growing number of uncoordinated international funds, which could cause waste and overlap.

---

41 World Bank “Q&A: Climate Investment Funds” 2008
Available at: http://siteresources.worldbank.org/INTCC/Resources/Q&A_CIF_July_1_08.pdf.
i. Forestry

Forestry is another major issue referred to in the Bali roadmap. The destruction of forests is responsible for approximately 17-20 percent of global GHG emissions, making it one of the main contributors to climate change. Deforestation is a result of extensive logging, ranching and other related activities. When forests are cut down or cleared, the stored carbon is released into the atmosphere.

One possible solution to stop deforestation is being discussed in the context of the negotiations leading up to a successor agreement to the Kyoto Protocol. That is, the Bali Roadmap establishes a REDD Mechanism (REDD = Reducing Emissions from Deforestation and Degradation). This mechanism establishes a framework to compensate countries (especially countries with tropical rainforests) for protecting their forests, which might otherwise be cut down and used for profitable activities, such as for furniture or agriculture. Therefore, negotiators are considering establishing some type of credits for avoided deforestation that might ultimately be part of an emissions trading scheme. Alternatively, the negotiators are considering establishing a fund that would provide financial assistance to "heavily-forested" countries. This mechanism could then be expanded to fund forestation projects or other types of forest management activities.

Available at:

http://www.wwf.de/themen/waelder/klima-wald


United Nations “Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action” UN Framework Convention on Climate Change, Decision 2/CP.13 http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=8
Israel has planted many trees and forests over the past several decades. In fact, one of its mottos has been to “make the desert bloom,” and it has become one of the few countries in the world that has more trees than it had 100 years ago. In this way, Israel has the potential to become a world leader in carbon sequestration (absorbing carbon from the atmosphere) and in related REDD/forestation activities.

An organization in Israel known as the Karen Kayemet L’Yisrael (KKL), or Jewish National Fund (JNF), has launched the tree-planting efforts for the nation. Throughout the last century, KKL planted more than 230 million trees. It also declared to join the UN’s “Plant for the Planet” program, by planting 7 million trees, one for every resident in Israel. To enhance the potential of forests as carbon storage in Israel, KKL also launched the “Go Neutral” program, where people can offset their individual emissions (also known as a "carbon footprint") by planting trees in Israel.45 According to KKL, every person must plant about 200 trees in order to “deduct” the pollution created in their lifetime.46

KKL also conducts scientific studies in terms of carbon sequestration and storage. An average of only 2.5 carbon tons were measured in 10 acres at the monitoring station in the Negev. Although the station is located in the desert, it is still much lower than the world average of 26 tons, or the European average of 27 tons.47 This type of research can place Israel as a world forestry leader, especially in barren areas.


The UNFCCC parties agreed in Bali that the Ad Hoc Working Group on Long Term Cooperative Action under the Convention (AWG-LCA) will work on the process to ensure implementation of the UNFCCC up to 2012 and beyond. The goal is to reach a decision by 2009 (the 15th COP is the same goal as the Bali Roadmap) and it is intended that this group will operate only through 2009. Since this Group operates under the UNFCCC, all countries that are Parties to the Convention, and not necessarily to the Kyoto Protocol, are allowed to participate.

As noted under the section on the Kyoto Protocol, an Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) was established in 2005 to develop future emissions reductions commitments by the Annex I countries (industrialized countries) that are Parties to the Protocol, particularly as a follow-up to the Kyoto Protocol, whose commitment period ends in 2012. The AWG-KP is only expected to operate through the end of 2009.

46 Available at: [http://www.kkl.org.il/kkl/hebrew/nosimikaryim/global%20warming/universe%20warming%20up.x](http://www.kkl.org.il/kkl/hebrew/nosimikaryim/global%20warming/universe%20warming%20up.x)
47 ibid