CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM-SSC-PoA-DD) Version 01

CONTENTS

A. General description of small-scale programme of activities (SSC-PoA)

B. Duration of the small-scale programme of activities

C. Environmental Analysis

D. Stakeholder comments

E. Application of a baseline and monitoring methodology to a typical small-scale CDM Programme Activity (SSC-CPA)

Annexes

Annex 1: Contact information on Coordinating/managing entity and participants of SSC-PoA

Annex 2: Information regarding public funding

Annex 3: Baseline information

Annex 4: Monitoring plan

NOTE:

(i) This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.

(ii) At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).

SECTION A. General description of small-scale programme of activities (PoA)

A.1 Title of the small-scale programme of activities (PoA):

Enlightened Solar PoA
Version 3.0
Date: 25th July 2012

A.2. Description of the small-scale programme of activities (PoA):

1. *General operating and implementing framework of PoA*

The Enlightened Solar PoA is a programme to promote the implementation of small-scale, solar photo-voltaic (PV) grid connected power plants in Israel.

The proposed PoA will be operated and implemented by four key parties, each with defined roles and responsibilities:

1. The CPA Operator (CO) – *Enlightened Capital*;
2. Coordinating Managing Entity (CME) – *Tricorona Carbon Assessment Management Pte Ltd;*
3. CER Buyer - *Tricorona Carbon Assessment Management Pte Ltd*;
4. CDM Consultant - *Biosphere Capital Pte Ltd*;
5. Plant Owners (POs) - developers and owners of the solar plants;

The CO will have a contract with each PO, ensuring that the POs are aware of, and have agreed that their activity is being subscribed to the PoA. The POs will ascribe the CERs from their projects to the CO. The CO has an Emission Reductions Purchase Agreement (ERPA) with the CME such that the CME will buy all the CERs generated by the PoA. The CME will liaise with the DOE and the UNFCCC, and is the Sole Focal Point authority for the PoA.

2. *Policy/measure or stated goal of the PoA*

The stated goal of the PoA is to develop a platform which will assist the development of small-scale grid connected solar PV power plants in Israel (either on-ground or roof top or both), thereby displacing carbon-intensive electricity from the grid and reducing associated Greenhouse Gas (GHG) emissions. The PoA will assist the small-scale solar PV projects by overcoming the financial hurdles faced by the development of such projects in Israel.

3. *Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.*

The proposed PoA is a voluntary action by the CME and is not required by Israeli law. Each CDM programme activity is implemented voluntarily by project developers.

A.3. Coordinating/managing entity and participants of SSC-POA:

Table 1: Project participants

Name of the Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Sweden	Tricorona Carbon Asset	No

	Management Pte Ltd	
Israel	Tricorona Carbon Asset Management Pte Ltd (Coordinating/Managing Entity)	No
(*)In accordance with the CDM Modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved as required.		

A.4. Technical description of the small-scale programme of activities:

A.4.1. Location of the programme of activities:

The PoA is located at separate sites all across Israel.

A.4.1.1. Host Party(ies):

Israel

A.4.1.2. Physical/ Geographical boundary:

The geographical boundary of the PoA is Israel.

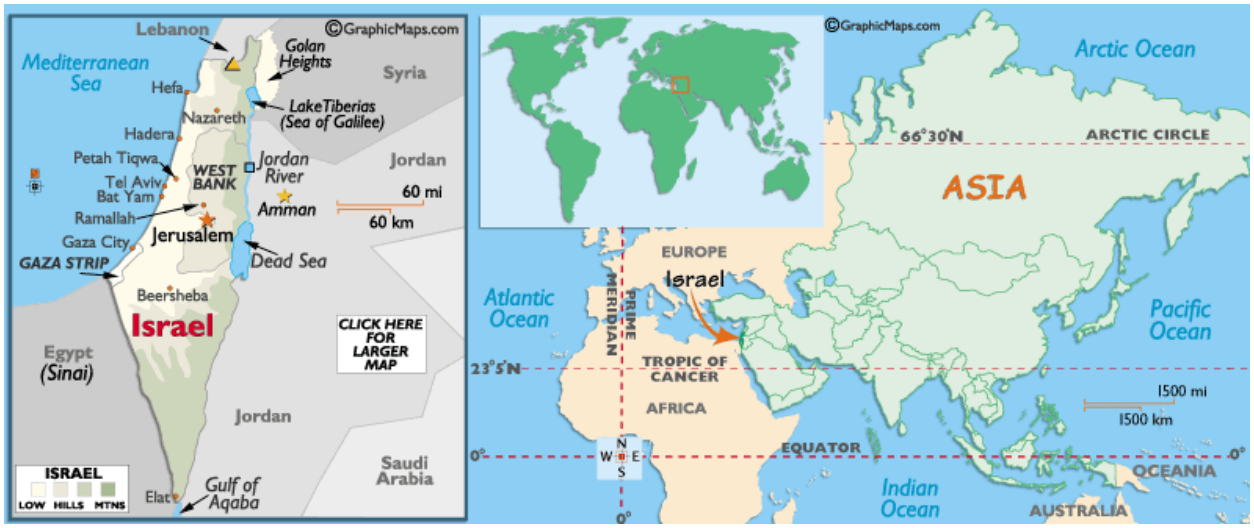

Figure 1: Geographical boundary of PoA-Israel

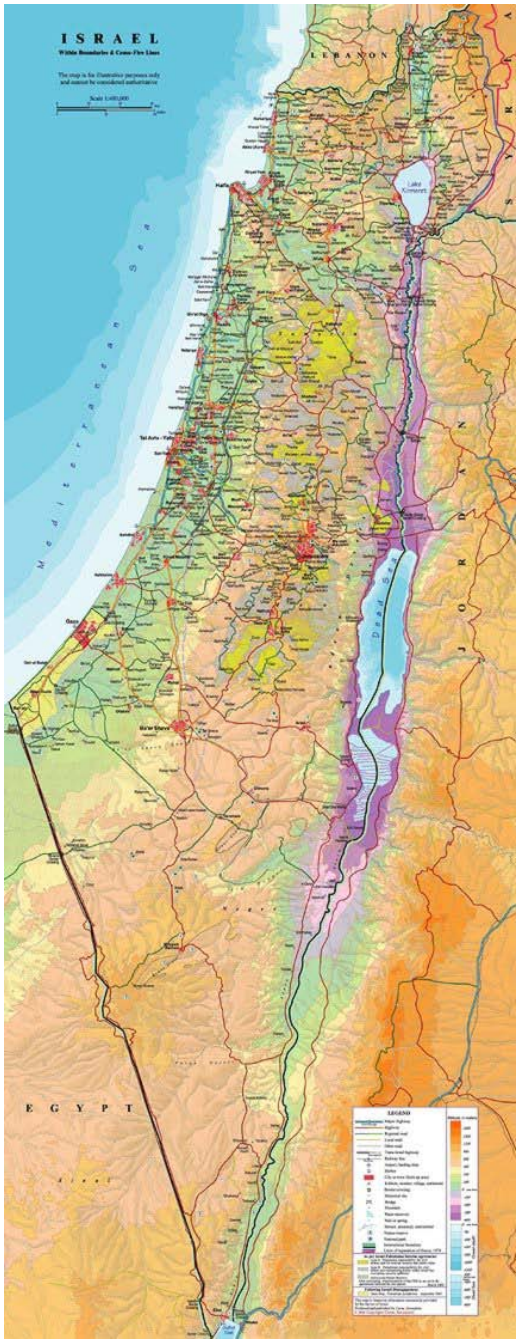

Figure 2: Geographical boundary of PoA-Israel (official map)

A.4.2. Description of a typical small-scale CDM programme activity (CPA):

A.4.2.1. Technology or measures to be employed by the SSC-CPA:

A typical CPA under the current PoA comprises one or more Solar PV power plants with a maximum installed capacity up to 15 MW, including newly built plants at Greenfield sites and capacity additions at existing facilities. In the case of capacity additions, the capacity added by the CPA will be up to 15MW. Each CPA may include several solar PV power plants across several sites which belong to the same or different owners (POs). The CDM 'debundling' rules will be observed.

Solar PV power plants generate electricity by converting solar radiation into direct current electricity using semiconductors that exhibit photovoltaic effects. CPAs or the constituent plants of a CPA will typically comprise an array of solar panels or modules installed on rooftops or on the ground. The power plants will export electricity to the Israeli national grid. The installation of the various constituent power plants of the CPA at various sites would include mounting of Solar PV panels either on ground or on rooftops, installation of grid connections and monitoring equipment.

The solar panels typically have a load factor between 15% and 19%. As the solar panels age, the efficiency decreases slightly so the load factor and electricity supplied to the grid also decreases over time.

The solar panels will typically, but not necessarily, be installed on existing rooftops (either on rented or owned space) and connected to the grid. Many of the CPAs may be installed on the ground (either on rented or owned space) and connected to the grid.

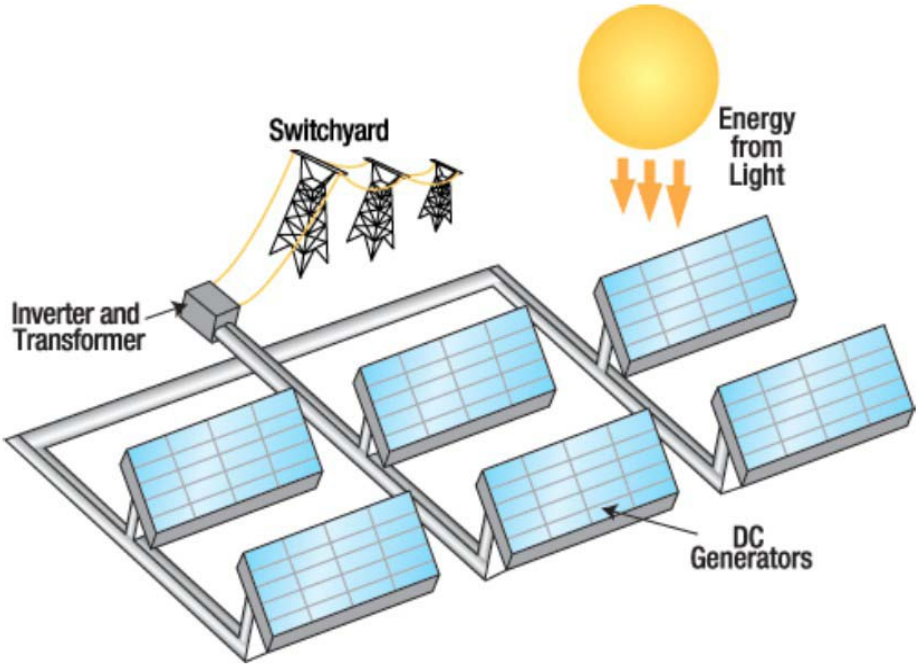

Figure 3: Schematic diagram of a typical SSC-CPA

A.4.2.2. Eligibility criteria for inclusion of a SSC-CPA in the PoA:

The following technical criteria must be met by each SSC-CPA, in order to be eligible to be included into the PoA.

Table 2: Eligibility criteria for the inclusion of the CPA in the PoA

S.No	Eligibility Criteria for the inclusion of CPAs	Suggested evidence to be provided

S.No	Eligibility Criteria for the inclusion of CPAs	Suggested evidence to be provided
a	The SSC-CPA should have its project site located in Israel and the electricity generated shall be supplied to the Israeli National Grid.	GPS coordinates and Suspended License(s)
b	The SSC-CPA shall be uniquely identified and defined by way of the unique identifying numbers (serial numbers) and GPS coordinates attached to each Solar PV installation, to ensure that all CPAs under this PoA are neither registered as an individual CDM project activity nor included in another registered PoA.	GPS coordinates, Suspended License(s), CO- PO contract.
c	The SSC-CPA shall generate electricity using solar photo-voltaic (PV) technology (including but not limited to thin film and crystalline technology).	Suspended License
d	The Panel purchase/EPC contract date, will be taken as the CPA start date. The CPA start date shall be after the PoA validation start date.	Panel supply/EPC contract.
e	The SSC-CPA shall comply with the applicability criteria of the methodology *AMS.I.D- Grid connected renewable electricity generation, version - 17.0.* The SSC-CPA shall: • Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant), OR • Involve a capacity addition. • Have installed capacity limits of: (a) for Greenfield projects: not more than 15 MW (b) for capacity addition projects: the added capacity of the units should be not more than 15 MW and should be physically distinct[1] from the existing units The CPA shall not include: • Project activities that are a combined heat and power (co-generation) system • Projects that involve the retrofit of an existing plant(s) • Projects that involve the replacement of an existing plant(s) • Projects that involve the use of equipment that has been transferred from a different existing operational project (i.e. to avoid leakage)	Suspended License(s), CPA O Operator – Plant Owner contract
f	The SSC-CPA should comply with the requirements stated in the generic CPA-DD for the following: • Stakeholder consultation • Environmental impact assessment	Suspended License; Record of local stakeholder consultation (i.e. meeting or interview records/ minutes)
g	The SSC-CPA shall undergo a de-bundling check as follows: A proposed small-scale CPA of a PoA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity which	CPA Owner - Plant Owner contract; Enlightened Solar

[1] Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered "physically distinct".

S.No	Eligibility Criteria for the inclusion of CPAs	Suggested evidence to be provided
	satisfies both conditions (a) and (b) below: 1. Has the same activity implementer as the proposed small scale CPA or has a coordinating managing entity, which also manages a large scale PoA of the same technology/measure, and; 2. The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point[2]. However, if the total size of such a CPA combined with a registered small-scale CPA of a PoA does not exceed an installed capacity of 15MW, then the proposed SSC CPA is not considered to be a debundled component of a large-scale activity.	Database check
h	Conditions to provide an affirmation that funding from Annex I parties, if any, do not result in a diversion of official development assistance.	A statement from each Plant Owner that no ODA has been diverted, as contained in the CPA Owner - Plant Owner contract.
i	All the POs shall formally/legally own the land/ rooftops, on which the equipment is going to be installed, or rent the land/ rooftops from the legal owners.	Suspended License
j	The PO shall own a Solar Suspended License[3].	Suspended License
k	Contractual provisions to ensure that those who own the power plants are aware of, and have agreed, that their activity is being subscribed to the PoA.	CPA Owner - Plant Owner contract
l	Each PO in the CPA should have a CPA Owner - Plant Owner contract with the CO, i.e. with Enlightened Capital (EC).	CPA Owner - Plant Owner contract

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

1. *The proposed PoA is a voluntary coordinated action;*

The POA is being developed by Tricorona Carbon Asset Management Pte Ltd in coordination and collaboration with Solar PV project developers. The development of solar PV projects in Israel is not mandated or required by law and project developers are free to choose the technology to be deployed. The POA is a voluntary coordinated action. There are no regulations mandating the development of solar plants in Israel.

2. *If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;*

[3] In Israel, each solar project must first be licensed by the Israeli government and apply for and be granted a Solar Suspended License. The Suspended License includes specification of the planned location, a roof or land rental agreement, planned technical specifications of the plant including load factor, plant design, a construction permit including approval regarding environmental impacts, and the authorised installed capacity.

The PoA is a voluntary coordinated action that would not be implemented in the absence of the PoA.

The Project Proponent has chosen to demonstrate additionality at the POA level, with only demonstration of compliance with the specified "additionality criteria" required by each CPA. In line with EB 68, Annex 27, version 9.0, "Guidelines On The Demonstration of Additionality of Small-Scale Project Activities", para 2, solar power projects with the installed capacity not more than15 MW are considered to be additional without the need for further demonstration.
Thus, a SSC-CPA is automatically additional if it meets the eligibility criteria for the inclusion of the CPA in the PoA, as per section A.4.2.2 of this PoA-DD.

3. *If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;*

Not Applicable

4. *If a mandatory policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.*

Not Applicable

A.4.4. Operational, management and monitoring plan for the programme of activities (PoA):

A.4.4.1. Operational and management plan:

(i) A record keeping system for each CPA under the PoA,

A database (hereafter referred to as "Enlightened Solar Database") will be set up and will include the following information for each solar PV installation included in a CPA under the current PoA:

- Name of its owner
- Suspended License number
- Location of the installation (geographic coordinates)
- Start date
- Installation date
- Serial number (CPA-XXX format)
- Scale (MW capacity)
- Contract between the CO and the owner of the solar PV installation (PO) confirming that the owner has agreed that their activity is being subscribed to the PoA and ascribing the CERs generated by this installation to the CO.
- Name of the CPA to which the installation is included.

(ii) A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,

Each proposed new power plant to be included in the PoA will be cross-checked against the Enlightened Solar Database and also against the database of CDM projects and PoA's on the UNFCCC website. The unique Suspended License number issued by the Israel Electricity Authority and/or the location (geographical coordinates) of each power plant will enable accurate identification of each new project.

(iii) The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity.

The CME will check each new CPA against the de-bundling rules before including it into the PoA, following the *Guidelines on assessment of debundling for SSC Project Activities" (*EB 54, Annex 13, version 03.1):

1. *There is no activity*[4] *yet which:*
   - ***(a)*** *Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same sectoral scope, and;*
   - ***(b)*** *Has the boundary within 1 km of the boundary of the proposed small-scale CPA, at the closest point.*

2. *If a proposed small-scale CPA of a PoA is deemed to be a debundled component in accordance with paragraph 1 above, but the total size of such a CPA combined with a registered small-scale CPA of a PoA or a registered CDM project activity does not exceed the limits for small-scale CDM project activity (15 MW), this CPA can qualify to use simplified modalities and procedures for small-scale CDM project activities.*

(iv) The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being ascribed to the PoA;

Contracts between the CO and PO(s) will be signed confirming that the PO(s) are aware and have agreed that their activity is being subscribed to the PoA.

A.4.4.2. Monitoring plan:

In the proposed PoA, *Option (ii)* is chosen i.e. CO opts for a verification method that does not use sampling but verifies each SSC-CPA.

For each CPA all parameters included in section E.7.1 will be monitored according to the monitoring plan set in section E.7.2. The data will given by the PO to the CO , who would be responsible for storing the data. Each plant in the CPA is uniquely identified by the Suspended License number and geographic coordinates of the site and each CPA's data is uniquely identified by a unique Serial Number (as explained above).

The PO will maintain log book of monthly meter readings taken manually. These readings have to be sent to the CO either quarterly or bi-annually with the electricity sales receipts for cross-checking.

The unique Suspended License number of each plant will be recorded against the monitoring data and cross-checked against electricity sales receipts. The CME will ensure that no double accounting occurs and that the status of verification can be determined anytime for each CPA.

A.4.5. Public funding of the programme of activities (PoA):

There is no public funding available for the Enlightened Solar PoA. No sources of public funding for individual CPAs likely to be included in the PoA have been identified.

Each CPA-DD will include declaration and description by the CO of any public funding used in relation to the development of the CPA.

[4] Which may be a (i) registered small-scale CPA of a PoA, (ii) an application to register another small-scale CPA of a PoA or (iii) another registered CDM project activity

SECTION B. Duration of the programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

01/01/2013[5](starting date of crediting period)
01/10/2012(starting date of 1st CPA)

B.2. Length of the programme of activities (PoA):

28 years

[5] The PoA start date is taken at a date which is four months after the PoA upload date for registration.

SECTION C. Environmental Analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures are undertaken. Justify the choice of level at which the environmental analysis is undertaken:

1. Environmental Analysis is done at PoA level ☐

2. Environmental Analysis is done at SSC-CPA level x

Environmental analysis will be done at the SSC-CPA level. This is considered appropriate as the potential environmental impacts of each CPA could differ in relation to the location and setting of each site.

The construction of PV power plants in Israel will not have strong positive environmental impacts in the Host Country, by significantly reducing the emissions of both greenhouse gases and other air pollutants from the generation of electricity.

If there are any project specific negative environmental impacts, which are highly unlikely, such impacts will be further elaborated at the CPA level.

Small-scale solar PV power plants are not required by the Host Country to conduct an environmental impact assessment. The Suspended License is only issued if the proposed project complies with the environmental regulations of Israel.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

Suspended licenses issued to solar power plants, affirms the compliance of the proposed projects with the Environmental regulations of Israel.
Environmental impacts including transboundary impacts are assessed at the CPA level.

C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA):

Environmental Impact Assessments for small scale solar PV projects (CPAs) are not required in Israel. According to the Suspended Licenses of all the installations, the Plants comply with the environmental regulations of Israel.

SECTION D. Stakeholders' comments

>>

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

1. Local Stakeholder consultation done at PoA level ☐
2. Local Stakeholder consultation done at CPA level x

Local stakeholder consultation will be done at the CPA level. This is considered appropriate since the stakeholders associated with the different CPAs in Israel would be different and specific to each CPA, as the CPA locations are different.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

Refer to the Generic CPA-DD and each CPA-DD

D.3. Summary of the comments received:

Refer to CPA-DD (specific)

D.4. Report on how due account was taken of any comments received:

Refer to CPA-DD (specific)

SECTION E. Application of a baseline and monitoring methodology

E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

Methodology : AMS I.D
Title : Grid connected renewable energy generation
Version : 17
Meeting Number : EB 61

E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

Table 3: Methodology Justification

S.No	Applicability criteria	Project eligibility
1	This category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to a national or a regional grid.	All the CPAs to be included in the current PoA are solar photovoltaic projects that will supply electricity to the national grid.
2	This methodology is applicable to project activities that (a) install a new power plant at a site where there was no renewable energy power plant	The project activities (CPAs) could include: • a new Solar PV power plant at a site where there are no renewable energy power plants operating prior to the

S.No	Applicability criteria	Project eligibility
	operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement[6] of (an) existing plant(s).	implementation of the project activity (Greenfield plant) • Projects that involve a capacity addition
3	If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel[7], the capacity of the entire unit shall not exceed the limit of 15 MW.	All the CPAs have only a renewable component as a Solar PV installation.
4	Combined heat and power (co-generation) systems are not eligible under this category.	The project activities under the PoA are not a combined heat and power project.
5	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct[8] from the existing units.	For CPAs that involve a capacity addition to (an) existing plant(s), the added capacity of the units added by the project shall not exceed 15MW and will be physically distinct from the existing units
6	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	The PoA will not include retrofit or replacement projects

E.3. Description of the sources and gases included in the SSC-CPA boundary

>>

The spatial extent of the project boundary includes the project power plants included in the CPA and all power plants connected physically to the electricity system that the CDM project power plant is connected to, which in this case is the Israeli national electricity grid.

The sources and gases included in the SSC-CPA boundary are described below.

[6] Replacement, It involves investment in a new power plant or unit that replaces one or several existing unit(s) at the existing power plant. The installed capacity of the new plant or unit is equal to or higher than the plant or unit that was replaced.

[7] A co-fired system uses both fossil and renewable fuels.

[8] Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.

Table 4: Major and Minor emission sources

Source		Gas	Included?	Justification / Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project activity	For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam	CO_2	No	N.A.
		CH_4	No	N.A.
		N_2O	No	N.A.
	CO_2 emissions from combustion of fossil fuels for electricity generation in geothermal power plants	CO_2	No	N.A.
		CH_4	No	N.A.
		N_2O	No	N.A.
	For hydro power plants, emissions of CH_4 from the reservoir	CO_2	No	N.A.
		CH_4	No	N.A.
		N_2O	No	N.A.

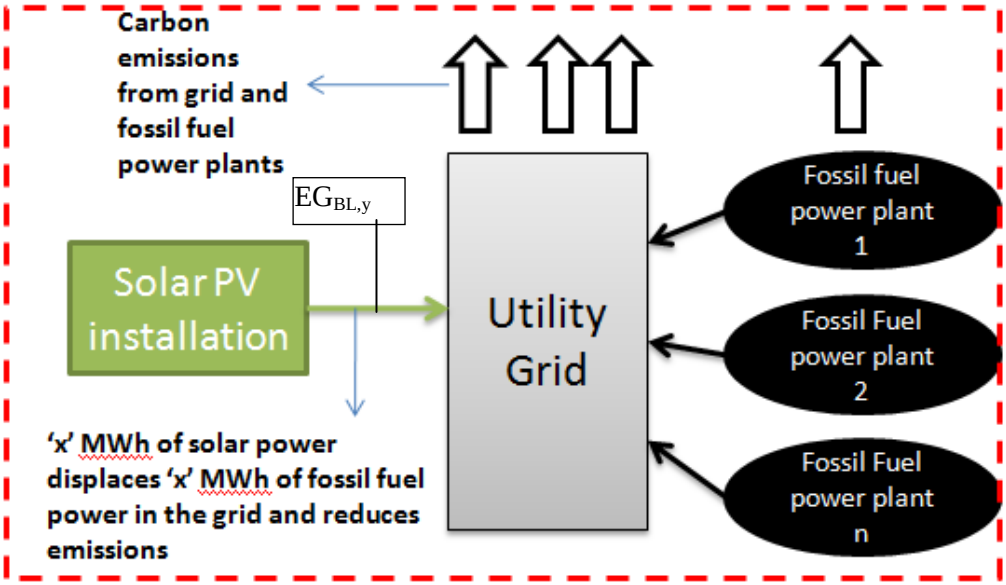

Figure 4: Typical SSC-CPA project boundary

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

As per the Methodology, the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

In the baseline, electricity is provided from the existing Israeli national electricity grid and planned expansions of the grid, consisting largely of fossil-fuel fired power stations. The PoA and constituent CPAs will displace electricity from the grid and thus reduce Greenhouse Gas emissions associated with the combustion of fossil fuels for electricity generation. There are no national or sectoral policies (E+/E-) or circumstances affecting the baseline scenario.

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:

A typical SSC-CPA for the current PoA will demonstrate additionality based on EB 68, Annex 27 : *"Guidelines On the Demonstration of additionality of small-scale project activities"*, version 09.

E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:

A SSC-CPA that is eligible for this PoA is automatically additional.

In line with EB 68, Annex 27, version 9.0, "Guidelines On The Demonstration of Additionality of Small-Scale Project Activities", para 2:

"Documentation of barriers, as per paragraph 1 above, is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds (eg. Installed capacity up to 15 MW). The positive list comprises of:

(a)The following grid-connected and off-grid renewable electricity generation technologies:

i. Solar technologies (photovoltaic and solar thermal electricity generation);
ii. Off-shore wind technologies;
iii. Marine technologies (wave tidal);
iv. Building-integrated wind turbines or household rooftop wind turbines of a size up to 100 kW;"

Therefore there is no extra criteria and data for assessing additionality for the potential CPAs under the current PoA.

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:

The CPAs under this PoA will apply the small scale methodology AMS.I.D, "Grid connected renewable electricity generation", version 17.

According to the methodology, the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.

The baseline emissions are the product of electrical energy baseline expressed in megawatt hours (MWh) of electricity produced by the renewable generating unit multiplied by the grid emission factor.

The equations used to determine the emission reduction are discussed in E.6.2.

For capacity addition, the addition of new capacity will not significantly affect the electricity generated by the existing plant(s) or unit(s). As such, capacity additions will be monitored using separate meters for the added component(s).

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:

Baseline Emissions:

The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.

$BE_y = EG_{BL,y} * EF_{CO2,grid,y}$

Where:

BE_y	Baseline Emissions in year *y* (tCO_2)
$EG_{BL,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh)
$EF_{CO2,grid,y}$	CO_2 emission factor of the grid in year *y* (tCO_2/MWh)

In the case of CPAs that include a capacity addition to an existing power plant, as the addition of capacity would not significantly affect the electricity generated by existing plant(s) or unit(s), the added capacity will be monitored separately using a separate electricity meter for the added component(s). This meter will be used to monitor $EG_{BL,y}$ for the added capacity.

Calculation of Grid Emission Factor:

The baseline CO_2 emission factor of the grid ($EF_{CO2,grid,,y}$) is calculated as per the *"Tool to calculate the emission factor for an electricity system" (version 2.2.1):*

The Emission factor of the grid applicable for the current PoA and its constituent CPAs are calculated in a transparent and conservative manner using option (a) of the methodology AMS I.D, version 17, by the Israel Electric Corporation (IEC). IEC is the official national agency responsible for calculating the emission factor of the Israeli national grid. The data provided by IEC is considered the most accurate and is specific for fuels used for power generation in Israel and is collected from the power plant operators.[9]

1. A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the Emission Factor for an electricity system', version 2.2.1

To find the grid emission factor ($EF_{gridCM,y}$), Project participants shall apply the following six steps:

STEP 1: Identify the relevant electricity systems.
STEP 2: Choose whether to include off-grid power plants in the project electricity system (optional).

[9] http://www.iec.co.il/environment/Pages/AirQualityMonitoringIN.aspx (The grid emission factor has been updated recently by the IEC, as compared to the grid emission factor that was used at the time of the start of validation.)

STEP 3: Select a method to determine the operating margin (OM).
STEP 4: Calculate the operating margin emission factor according to the selected method.
STEP 5: Calculate the build margin emission factor.
STEP 6: Calculate the combined margin (CM) emissions factor.

STEP 1: Identify the relevant electricity systems.

The power plant will be connected to the Israeli national grid. There are no significant transmission constraints within the Israeli national grid, and the Israeli grid is not connected to any other grids in the region and therefore functions much like the grid of an island – without importing or exporting any electricity to other electric power systems[10].

"The 1,645-mile, IEC transmission grid is a closed loop system connecting power stations to major load centres throughout Israel and to the Palestinian Authority[11]."

The Israeli national grid therefore constitutes all power systems that are physically connected through transmission and distribution lines to the project activity, and is identified as the relevant electric power system.

STEP 2: Choose whether to include off-grid power plants in the project electricity system (optional)

As per the "Tool to calculate the emission factor for an electricity system", project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation
Option II: Both grid power plants and off-grid power plants are included in the calculation.

Option I will be used and as such only grid power plants will be included in the grid emission factor calculations.

STEP 3: Select a method to determine the operating margin (OM)

According to the "Tool to calculate the emission factor for an electricity system" (version 2.2.1), to calculate the operating margin (OM) project developers have the option to select from the following four methods:

(a) Simple OM; or
(b) Simple adjusted OM; or
(c) Dispatch data analysis OM; or
(d) Average OM.

Option (d) Average OM is selected. The average OM emission factor ($EF_{grid,OM\text{-}ave,y}$) is calculated as the average emission rate of all power plants serving the grid, using the methodological guidance as described under (a) above for the simple OM - , but including in all equations also low-cost/must-run power plants. Thus, the Average OM emission factor is calculated as the generation-weighted average CO_2 emissions

[10] CIA World Factbook, Israel. Section: Economy.), https://www.cia.gov/library/publications/the-world-factbook/geos/is.html. Accessed November 2011. Please Note: This publication mentions Israeli exports of electricity. This does not refer to exports to a different grid, as the Israeli grid is not connected to any other grid. Rather, it refers to the fact that the Israeli grid also supplies the Palestinian Authority.

[11] http://israelpower.com/

per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system including low-cost/must-run power plants/units.

For average OM, the emissions factor can be calculated using either of the two following data vintages:

- *Ex ante option*: If the ex ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation. For off-grid power plants, use a single calendar year within the 5 most recent calendar years prior to the time of submission of the CDM-PDD for validation.

- *Ex post option:* If the ex post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring. If the data required calculating the emission factor for year y is usually only available later than six months after the end of year y, alternatively the emission factor of the previous year y-1 may be used. If the data is usually only available 18 months after the end of year y, the emission factor of the year preceding the previous year y-2 shall be used.

The average OM shall be calculated using the ex ante option and therefore is determined at the validation stage for the entire crediting period.

STEP 4: Calculate the operating margin emission factor according to the selected method

The simple OM emission factor can be calculated using one of the following two options:

Option A: Based on the net electricity generation and a CO_2 emission factor of each power unit

Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

Option A is chosen, and as mandated by the average OM calculation requirements, the low-cost/must-run power plants are not included.

According to this option the OM emission factor is calculated based on the net electricity generation of each power unit and an emission factor for each power unit, as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

where:

$EF_{grid,\ OM,simple,y}$	Simple operating margin CO_2 emission factor in year *y*, tCO_2/MWh
$EG_{m,y}$	Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y*, MWh
$EF_{EL,m,y}$	CO_2 emission factor of power unit *m* in year *y*, tCO_2/MWh
m	All power units serving the grid in the *y* (including low-cost/must-run power units)

y The relevant year as per the data vintage chosen in Step 3

Determination of $EF_{EL,m,y}$:

The emission factor of each power unit m should be determined as follows:

Option A1: If for a power unit *m* data on fuel consumption and electricity generation is available
Option A2: If for a power unit *m* only data on electricity generation and the fuel types used is available
Option A3: If for a power unit *m* only data on electricity generation is available

Due to the fact that both fuel consumption and electricity generation data are available, Option A1 is selected and the emission factor of each power unit m is calculated as follows:

$$EF_{EL.m.y} = \frac{\sum FC_{i,y} \times NCV_{i,y} \times EF_{co2,i}}{EG_y}$$

Where:

$EF_{EL,m,,y}$ = CO_2 emission factor of power unit m in year y (tCO_2/MWh)

$FC_{i,y}$ = Amount of fossil fuel type i consumed in the project electricity system in year y (mass or volume unit)

$NCV_{i,y}$ = Net Calorific value (energy content) of fossil fuel type i in year y (GJ/mass or volume unit)

$EF_{co2,i,y}$ = CO_2 emission factor of fossil fuel type i in year y (tCO_2/GJ)

EG_y = Net electricity generated and delivered to the grid by all power sources serving the system, including low-cost/must run power plants/units, in year y (MWh)

i = All fossil fuel types combusted in power sources in the project electricity system in year y

y = The relevant year as per the data vintage chosen

STEP 5: Calculate the build margin (BM) emission factor

As per the Tool, project participants can choose between one of the following two options regarding data vintage:

Option 1: For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2: For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

Option (1) shall be selected regarding vintage of data, and therefore the build margin emission factor shall be calculated ex ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation.
The sample group of power units *m* used to calculate the build margin shall consist of either:

a) The set of five power units that have been built most recently, or

b) The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently.

In accordance with the Tool, power plants registered as CDM project activities shall be excluded from the BM calculation sample group, unless this results in a sample group that contains power plants built earlier than the previous 10 years.

The sample group, SET_{sample}, shall be the set of power units that comprises the larger annual generation. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then SET_{sample} will be used to calculate the build margin. If not, steps (d), (e) and (f) of STEP 5 of the Tool will be applied.

The build margin is the generation-weighted average emission factor of all power units m during the most recent year y of which electricity generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

where:

$EF_{grid,BM,y}$	Build margin CO_2 emission factor in year *y*, tCO_2/MWh
$EG_{m,y}$	Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y*, tCO_2/MWh
$EF_{EL,m,y}$	CO_2 emission factor of power unit *m* in year *y*, tCO_2/MWh
m	Power units included in the build margin
y	Most recent historical year for which electricity generation data is available

<u>STEP 6: Calculate the combined margin (CM) emissions factor.</u>

The combined margin emission factor can be calculated using option (a), the Weighted Average CM, as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$$

$EF_{grid,CM,y}$ - Combine Margin emission factor in year 'y' (tCO_2/MWh)

$EF_{grid,OM,y}$ - Operating Margin emission factor in year 'y' (tCO_2/MWh)

$EF_{gridBM,y}$ - Build Margin emission factor in year 'y' (tCO_2/MWh)

W_{OM} - Weighting of Operating Margin emission factor

W_{BM} - Weighting of Build Margin emission factor

According to the "Tool to calculate the emission factor for an electricity system" (version 2.2.1), for Wind and Solar power generation project, $w_{OM} = 0.75$, $w_{BM} = 0.25$.

The emission factor values of Israel are as follows:

Table 5: Grid emission factor of Israel.

S.No	Grid Emission Factor Type	Value (tCO_2/MWh)
1	Average Operating Margin	0.7449
2	Build Margin	0.3943
3	Combined Margin	0.6572

Project Emissions:

According to the methodology AMS 1.D version 17, the project emissions for a solar PV installation are zero, $PE_y = 0$.

Leakage:

Solar power plants that use equipment transferred from another different existing operational power plant are not eligible for inclusion in this PoA. As such, the energy equipment of solar PV installations in this PoA is not transferred from another project activity, so the leakage is considered to be zero.

Emission Reductions:

$LE_y = 0$

$ER_y = BE_y – PE_y - LE_y$

Where:

ER_y Emission reductions in year *y* (tCO_2/y)

BE_y Baseline Emissions in year *y* (tCO_2/y)

PE_y Project emissions in year *y* (tCO_2/y)

LE_y Leakage emissions in year *y* (tCO_2/y)

E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:

Data / Parameter:	$EF_{CO2,grid,y}$

Data unit:	tCO_2/MWh
Description:	Combined margin CO2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"
Source of data used:	Refer, SD_13:Underlying GEF data, published by Israeli Electric Corporation (IEC)
Value applied:	0.6572
Justification of the choice of data or description of measurement methods and procedures actually applied :	As per the recent version of "Tool to calculate the emission factor for an electricity system"version 2.2.1
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

Data / Parameter:	$NCV_{i,y}$
Data unit:	GJ/tonne
Description:	The net calorific value (energy content) for fossil fuel type *i* in year *y*
Source of data used:	Refer, SD_13:Underlying GEF data , published by Israeli Electric Corporation (IEC)
Value applied:	Refer SD_30-Israel_GEF_EB_clean. The NCV values for the fuels used in the calculation are as follows:

Fuel type	NCV, 2008 (GJ/TON)	NCV, 2009,(GJ/TON)	NCV, 2010, (GJ/TON)
Coal (weighted average between coal used at Orot Rabin and Rutenberg site)	25.0030	25.0169	25.0071
Natural Gas (weighted average between Israeli and Egyptian Natural Gas)	49.52843	48.94211	48.80570
Fuel Oil (IEC)	40.61196	41.31953	41.39489
Diesel/Gas Oil (IEC)	42.70536	42.55045	41.7891

Justification of the choice of data or description of measurement methods and procedures actually applied :	Israel Electric Corporation (IEC) is the official national agency responsible for calculating the emission factor of the Israeli national grid. The data provided by IEC is considered the most accurate and is specific for fuels used for power generation in Israel and is collected from the power plant operators.
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

Data / Parameter:	$EF_{CO2,i,y}$
Data unit:	tCO2/GJ

Description:	CO2 emission factor for fuel *i* in year *y*
Source of data used:	Refer, SD_13:Underlying GEF data , published by Israeli Electric Corporation (IEC)
Value applied:	Refer SD_30-Israel_GEF_EB_clean

Fuel type	Emission factor (tCO2/GJ),2008	Emission factor (tCO2/GJ),2009	Emission factor (tCO2/GJ),2010
Coal (weighted average between coal used at Orot Rabin and Rutenberg site))	0.0955	0.0939	0.0951
Natural Gas (weighted average between Israeli and Egyptian Natural Gas)	0.055354	0.055897	0.056023
Fuel Oil (IEC)	0.077645	0.077381	0.07724
Diesel/Gas Oil (IEC)	0.074698	0.074453	0.074045

Justification of the choice of data or description of measurement methods and procedures actually applied :	The data provided by IEC is the most accurate available data that is specific for fuels used in Israel.
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

Data / Parameter:	$FC_{i,m,y}$
Data unit:	tonnes
Description:	Amount of fossil fuel type i consumed by power plant unit *m* in year *y*
Source of data used:	Refer, SD_13:Underlying GEF data , published by Israeli Electric Corporation (IEC)
Value applied:	Refer SD-30, Israel_GEF_EB_clean

	2008	2009	2010
Fuel Consumption (tonne)	16,160,568	15,400,463	16,186,795

Justification of the choice of data or description of measurement methods and procedures actually applied :	The data provided by IEC is the most accurate available data that is specific for Israel
Any comment:	All data will be stored electronically for the duration of the project activity plus

	two additional years.

Data / Parameter:	$EG_{m,y}$
Data unit:	MWh
Description:	Net quantity of electricity delivered to the grid by power plant unit *m* in year *y*
Source of data used:	Refer, SD_13:Underlying GEF data , published by Israeli Electric Corporation (IEC)
Value applied:	Refer SD_30-Israel_GEF_EB_clean 2008: Net electricity generated per year (MWh/year): 52,160,155 2009: 50,965,418 2010: 53,978,201
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data provided by IEC is the most accurate available data and the IEC report is based on government records.
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

Data / Parameter:	$EF_{grid,OM,average,y}$
Data unit:	tCO2/MWh
Description:	Average operating margin
Source of data used:	Israel Electric Corporation (IEC)
Value applied:	0.6572
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data provided by IEC is the most accurate available data that is specific for Israel
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

Data / Parameter:	$EF_{grid,BM,y}$
Data unit:	tCO2/MWh
Description:	Build Margin grid emission factor
Source of data used:	Israel Electric Corporation (IEC)
Value applied:	0.3943
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data provided by IEC is the most accurate available data that is specific for Israel
Any comment:	All data will be stored electronically for the duration of the project activity plus two additional years.

E.7. Application of the monitoring methodology and description of the monitoring plan:

D.7.1. Data and parameters to be monitored by each SSC-CPA:	
Data / Parameter:	$EG_{BL,y}$
Data unit:	MWh
Description:	Net quantity of electricity supplied to the grid in year y
Source of data to be used:	Measured by electricity meters
Value of data applied for the purpose of calculating expected emission reductions in section B.5	To be specified in each CPA-DD.
Description of measurement methods and procedures to be applied:	Continuous monitoring, hourly measurement and at least monthly recording. The net electricity supplied to the grid by each power plant in the CPA will be added to derive the total for the CPA. In cases where the power plants consume electricity internally, electricity imported from and exported to the grid by the power plant may be measured by two separate meters or measured directly by one bi-directional meter. In the case where two meters are used, the net electricity supplied to a grid is the difference between the measured quantities of the grid electricity export ($EG_{exp,y}$) and the import ($EG_{imp,y}$): $EG_{BL,y} = EG_{exp,y} - EG_{imp,y}$ For capacity addition projects, separate meter(s) for the additional capacity will be used to directly monitor net electricity generated by the added capacity.
QA/QC procedures to be applied:	Meters will be calibrated at appropriate intervals according to national standards. Measurement results shall be cross checked with records for sold/purchased electricity
Any comment:	This data will be archived up to 2 years after the completion of crediting period or last issuance whichever is later.

E.7.2. Description of the monitoring plan for a SSC-CPA:

Monitoring Plan Objective

Each PO will monitor the electricity supplied to the national grid by the individual plants. The data will be archived and stored for 2 years after the end of crediting period of each CPA. The data will also be sent regularly to the CME.

Monitoring Parameter

The electricity supplied to the grid ($EG_{BL,y}$) is to be monitored continuously and recorded at least monthly. Meters will be calibrated as per national standards. For those plants, where there is material amount of electricity consumption, the internal consumption will be monitored by additional separate meter(s) or bi-directional meter(s) may be used.

In case of capacity addition:
The net electricity supplied to the grid ($EG_{BL,y}$) by the added capacity will be monitored by separate meter(s) for the added component(s).

QA & QC

Each month the electricity supplied to the grid will be manually recorded from the IEC[12] meter. The monthly recordings will be cross checked with IEC's electricity receipts, quarterly or bi-annually, and will be sent to the CME.
These QA & QC procedures will be followed for all the SSC-CPAs.

E.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

Date of completing the baseline study and monitoring methodology: 30/12/2011

The baseline and monitoring sections have been prepared by Biosphere Capital Pte Ltd (BC). BC is the CDM project developer who developed this PoA.

Company name	: Biosphere Capital Pte Ltd
Address	: 310A Lavender Street, Singapore 338815
Contact Person	: Dr. Wilfred Walsh
Telephone number	: +65 6733 9867
Email	: wwalsh@biospherecapital.com

[12] State utility of Israel

Annex 1

CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES

Organization:	Tricorona Carbon Asset Management Pte Ltd
Street/P.O.Box:	50 Raffles Place
Building:	#35-01, Singapore Land Tower
City:	Singapore
State/Region:	-
Postfix/ZIP:	048623
Country:	Singapore
Telephone:	+65-6499 1288
FAX:	+65-6499 1299
E-Mail:	moe@tricorona.com
URL:	www.tricorona.com
Represented by:	Moe Moe oo
Title:	Managing Director
Salutation:	Mr
Last Name:	Oo
Middle Name:	-
First Name:	Moe Moe
Department:	-
Mobile:	
Direct FAX:	-
Direct tel:	-
Personal E-Mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Annex 3

Calculation figures for emission factor of Greenhouse gasses from Israel Electric units

Power Station	Production Unit	Production Unit Type	Operation Date	Installed Capacity [MW]	Fuel Type	Fuel Consumption [TON]						Electricity - Manufactured [Gross - MWh]						Electricity - Self Consumption [MWh]						Electricity - Transferd to the Grid [Net MWh]					
						2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
Orot Rabin	1	Steam Generator	15/11/1982	360	coal	1,066,438	886,306	1,050,242	847,130	995,125	831,175	2,902,753	2,396,843	2,820,838	2,302,671	2,673,632	2,191,533	106,329	88,381	102,912	83,920	101,282	82,334	2,796,424	2,310,462	2,717,926	2,218,751	2,572,350	2,109,199
Orot Rabin	2	Steam Generator	07/02/1982	360	coal	910,136	1,055,500	929,476	950,460	857,859	989,700	2,489,876	2,863,281	2,490,452	2,562,973	2,306,284	2,673,200	95,551	110,456	94,662	98,791	87,607	102,239	2,394,325	2,752,825	2,395,790	2,464,182	2,218,677	2,570,961
Orot Rabin	3	Steam Generator	04/08/1983	360	coal	1,030,800	939,854	1,035,193	962,785	798,503	941,047	2,863,850	2,593,823	2,873,746	2,691,571	2,216,827	2,592,182	116,975	102,908	109,198	109,800	89,629	106,615	2,746,875	2,490,915	2,764,548	2,581,771	2,127,198	2,485,567
Orot Rabin	4	Steam Generator	07/07/1984	360	coal	820,239	1,054,241	1,026,581	900,854	972,968	777,535	2,268,387	2,843,358	2,768,406	2,462,455	2,632,084	2,115,981	82,565	99,131	96,550	89,833	99,594	78,145	2,185,822	2,744,227	2,671,856	2,372,622	2,532,490	2,037,836
Orot Rabin	5	Steam Generator	05/10/1995	575	coal	1,380,334	1,667,245	1,404,432	1,589,834	1,354,727	1,553,630	3,914,600	4,763,892	4,003,005	4,488,694	3,914,372	4,441,002	154,789	190,882	166,843	187,713	172,811	182,974	3,759,811	4,573,010	3,836,162	4,300,981	3,741,561	4,258,028
Orot Rabin	6	Steam Generator	02/07/1996	575	coal	1,649,334	1,496,495	1,626,656	1,430,967	1,492,014	1,537,614	4,746,299	4,245,492	4,639,095	4,009,627	4,307,623	4,394,680	171,744	160,756	181,688	161,024	170,848	170,048	4,574,555	4,084,736	4,457,407	3,848,603	4,136,775	4,224,632
Orot Rabin Site				**2590**	**coal**	**6,857,283**	**7,099,642**	**7,072,580**	**6,682,030**	**6,471,196**	**6,630,701**	**19,185,765**	**19,708,689**	**19,595,542**	**18,517,991**	**18,050,822**	**18,408,578**	**727,953**	**752,514**	**751,853**	**731,081**	**721,771**	**722,355**	**18,457,812**	**18,956,175**	**18,843,689**	**17,786,910**	**17,329,051**	**17,686,223**
Rutenberg	1	Steam Generator	28/11/1991	575	coal	1,523,647.6	1,357,009.0	1,582,499.1	1,372,100.0	1,584,142.0	1,215,114.0	4,478,526	3,840,192	4,314,526	3,829,251	4,385,032	3,299,788	194,681	178,899	183,302	172,267	181,614	138,092	4,283,845	3,661,293	4,131,224	3,656,984	4,203,418	3,161,696
Rutenberg	2	Steam Generator	11/08/1990	575	coal	1,610,354.7	1,373,312.9	1,680,606.8	1,586,127.0	1,418,887.0	1,601,286.0	4,535,246	3,860,514	4,655,216	4,375,305	3,878,776	4,404,464	213,417	156,009	198,518	196,033	181,018	226,716	4,321,829	3,704,505	4,456,698	4,179,272	3,697,758	4,177,748
Rutenberg	3	Steam Generator	19/02/2001	550	coal	1,492,653.7	1,269,851.3	1,625,653.8	1,418,099.0	1,506,748.0	1,305,031.0	4,420,240	3,711,560	4,634,493	4,095,756	4,280,625	3,732,787	242,697	188,780	211,971	193,094	205,540	182,067	4,177,543	3,522,780	4,422,522	3,902,662	4,075,085	3,550,720
Rutenberg	4	Steam Generator	28/06/2000	550	coal	1,210,133.3	1,592,561.5	1,409,721.0	1,613,831.0	1,329,931.0	1,543,443.0	3,507,616	4,614,287	4,048,409	4,568,303	3,761,754	4,420,814	185,493	215,837	191,032	219,218	181,772	211,320	3,322,123	4,398,450	3,857,377	4,349,085	3,579,982	4,209,494
Rutenberg Site				**2250**	**coal**	**5,836,789**	**5,592,735**	**6,298,481**	**5,990,157**	**5,839,708**	**5,664,874**	**16,941,628**	**16,026,553**	**17,652,644**	**16,868,615**	**16,306,187**	**15,857,853**	**836,288**	**739,525**	**784,823**	**780,612**	**749,944**	**758,195**	**16,105,340**	**15,287,028**	**16,867,821**	**16,088,003**	**15,556,243**	**15,099,658**
Haifa	1	Steam Generator	19/03/1961	72	Fuel Oil	89,024.0	83,409.0	23,051.0	26,172.0	0.0	0.0	340,071	311,044	87,244	96,428	0	0	32,975	27,195	8,568	10,231	0	0	307,096	283,849	78,656	86,197	0	0
Haifa	2	Steam Generator	12/02/1962	72	Fuel Oil	73,480.0	74,895.0	21,978.0	19,545.0	0.0	0.0	280,305	285,252	83,823	71,981	0	0	22,190	25,800	7,761	6,911	0	0	258,115	259,452	76,062	65,070	0	0
Haifa	3	Steam Generator	14/06/1967	141	Fuel Oil	68,415.0	150,144.0	153,937.6	153,707.0	62,332.0	26,585.0	301,303	664,714	673,456	672,028	267,533	110,003	16,778	37,118	37,241	36,984	19,045	12,439	284,525	627,596	636,215	635,044	248,488	97,565
Haifa	4	Steam Generator	17/10/1967	141	Fuel Oil	116,215.0	110,001.0	164,255.1	150,828.0	68,279.0	3,925.0	508,785	477,930	717,126	660,382	294,280	16,814	30,744	24,865	38,768	34,387	20,470	6,482	478,041	453,065	678,358	625,995	273,810	10,332
Haifa	**4**	**Gas Turbine**	**05/05/2010**	**234**	**Diesel Oil (Gas Oil)**						**12,684.0**						**51,957**						**1,313**						**50,644**
Haifa Site		**Steam Generator**		**426**	**Fuel Oil**	**347,134.0**	**418,449.0**	**363,221.7**	**350,252.0**	**130,611.0**	**30,510.0**	**1,430,464**	**1,738,940**	**1,561,649**	**1,500,819**	**561,813**	**126,817**	**102,687**	**114,978**	**92,358**	**88,513**	**39,515**	**18,921**	**1,327,777**	**1,623,962**	**1,469,291**	**1,412,306**	**522,298**	**107,896**
Reading	3	Steam Generator	11/10/1970	214	Fuel Oil	194,440	50,562	0	0	0	0	844,600	221,192	0	0	0	0	57,156	15,359	0	0	0	0	787,444	205,833	0	0	0	0
Reading	3	Steam Generator	01/07/2006	214	Natural Gas	0	117,374	257,874	234,596	158,630	172,573	0	615,460	1,344,184	1,235,145	820,984	902,068	0	36,399	75,389	65,424	50,100	51,711	0	579,061	1,268,795	1,169,721	770,884	850,357
Reading	4	Steam Generator	05/11/1971	214	Fuel Oil	197,470	61,460	0	0	0	0	858,121	268,912	0	0	0	0	54,523	17,432	0	0	0	0	803,598	251,480	0	0	0	0
Reading	4	Steam Generator	01/07/2006	214	Natural Gas	0	126,150	218,019	299,237	213,388	214,413	0	659,944	1,140,502	1,576,537	1,101,584	1,124,002	0	37,557	61,229	83,443	64,881	66,782	0	622,387	1,079,273	1,493,094	1,036,703	1,057,220
Reading		**Steam Generator**		**428**	**Fuel Oil**	**391,910**	**112,022**	**0**	**0**	**0**	**0**	**1,702,721**	**490,104**	**0**	**0**	**0**	**0**	**111,679**	**32,791**	**0**	**0**	**0**	**0**	**1,591,042**	**457,313**	**0**	**0**	**0**	**0**
Reading		**Steam Generator**		**428**	**Natural Gas**	**0**	**243,524**	**475,893**	**533,832**	**372,018**	**386,986**	**0**	**1,275,404**	**2,484,686**	**2,811,682**	**1,922,568**	**2,026,070**	**0**	**73,956**	**136,618**	**148,867**	**114,981**	**118,493**	**0**	**1,201,448**	**2,348,068**	**2,662,815**	**1,807,587**	**1,907,577**
Eshkol	4	Steam Generator	01/11/1963	75	Fuel Oil	44,121	39,386	11,076	2,445	0	0	172,020	153,086	43,261	9,603	0	0	24,367	21,171	6,072	1,765	0	0	147,653	131,915	37,189	7,838	0	0
Eshkol	5	Steam Generator	13/06/1964	75	Fuel Oil	51,396	40,619	9,792	569	0	0	200,510	165,933	38,176	2,235	0	0	18,067	14,930	3,583	178	0	0	182,443	151,003	34,593	2,057	0	0
Eshkol	6	Steam Generator	20/04/1974	228	Fuel Oil	5,204	22,557	4,971	2,092	3,433	24,837	23,224	101,030	22,059	9,205	14,906	104,709	1,406	6,842	1,311	510	857	6,869	21,818	94,188	20,748	8,695	14,048	97,840
Eshkol	6	Steam Generator	13/04/2004	228	Natural Gas	241,714	262,614	237,364	312,860	176,927	200,358	1,268,726	1,389,278	1,284,339	1,707,800	942,739	1,054,141	75,613	84,029	72,933	93,615	55,322	71,921	1,193,113	1,305,249	1,211,406	1,614,185	887,417	982,220
Eshkol	7	Steam Generator	16/07/1975	228	Fuel Oil	5,542	1,726	2,955	7,121	1,780	11,267	24,242	7,456	12,966	31,282	7,634	49,356	1,489	460	769	1,932	461	3,396	22,753	6,996	12,197	29,350	7,173	45,959
Eshkol	7	Steam Generator	14/03/2004	228	Natural Gas	261,950	222,331	267,536	269,450	226,217	75,768	1,361,758	1,148,237	1,421,106	1,442,889	1,193,692	401,391	81,770	69,823	86,034	81,656	73,634	28,508	1,279,988	1,078,414	1,335,072	1,361,033	1,120,058	372,884
Eshkol	8	Steam Generator	24/07/1977	228	Fuel Oil	2,301	6,522	4,587	6,993	2,785	28,123	10,261	28,804	20,236	30,916	11,991	119,559	602	1,612	1,435	1,866	734	7,217	9,659	27,192	18,801	29,050	11,257	112,342
Eshkol	8	Steam Generator	03/04/2004	228	Natural Gas	270,292	240,378	259,345	309,020	220,149	188,326	1,442,434	1,278,233	1,385,880	1,669,074	1,170,569	995,741	83,724	73,568	78,313	89,904	74,299	60,867	1,358,710	1,204,665	1,307,567	1,579,170	1,096,270	934,874
Eshkol	9	Steam Generator	23/06/1978	228	Fuel Oil	6,360	6,309	4,672	7,473	1,468	18,892	27,962	27,640	20,574	32,900	6,297	81,833	1,747	1,708	1,557	2,042	414	5,267	26,215	25,932	19,017	30,858	5,883	76,565
Eshkol	9	Steam Generator	19/02/2004	228	Natural Gas	282,119	232,152	250,087	318,253	184,806	186,787	1,468,569	1,237,845	1,335,346	1,714,002	983,009	993,437	90,226	76,724	82,499	98,977	64,790	64,532	1,378,343	1,161,121	1,252,847	1,615,025	918,219	928,906
Eshkol	**EM10**	**Combined Cycle**	**18/12/2005**	**377**	**Natural Gas**	96,095	354,995	342,111	296,621	215,885	339,157	416,621	2,755,607	2,656,332	2,211,668	1,664,431	2,625,775	6,334	50,454	45,585	38,661	32,455	50,279	410,287	2,705,153	2,610,747	2,173,007	1,631,976	2,575,496

Eshkol	8	Steam Generator	03/04/2004	228	Natural Gas	270,292	240,378	259,345	309,020	220,149	188,326	1,442,434	1,278,233	1,385,880	1,669,074	1,170,569	995,741	83,724	73,568	78,313	89,904	74,299	60,867	1,358,710	1,204,665	1,307,567	1,579,170	1,096,270	934,874
Eshkol	9	Steam Generator	23/06/1978	228	Fuel Oil	6,360	6,309	4,672	7,473	1,468	18,892	27,962	27,640	20,574	32,900	6,297	81,833	1,747	1,708	1,557	2,042	414	5,267	26,215	25,932	19,017	30,858	5,883	76,565
Eshkol	9	Steam Generator	19/02/2004	228	Natural Gas	282,119	232,152	250,087	318,253	184,806	186,787	1,468,569	1,237,845	1,335,346	1,714,002	983,009	993,437	90,226	76,724	82,499	98,977	64,790	64,532	1,378,343	1,161,121	1,252,847	1,615,025	918,219	928,906
Eshkol	EM10	Combined Cycle	18/12/2005	377	Natural Gas	96,095	354,995	342,111	296,621	215,885	339,157	416,621	2,755,607	2,656,332	2,211,668	1,664,431	2,625,775	6,334	50,454	45,585	38,661	32,455	50,279	410,287	2,705,153	2,610,747	2,173,007	1,631,976	2,575,496
Eshkol	3	Gas Turbine	15/07/2010	260	Diesel Oil (Gas Oil)						13,874						57,979						824						57,155
Eshkol		Steam Generator		1062	Fuel Oil	114,924	117,119	38,053	26,693	9,466	83,119	458,219	483,349	157,272	116,141	40,828	355,457	47,678	46,723	14,727	8,293	2,466	22,750	410,541	437,226	142,545	107,848	38,362	332,707
Eshkol		Steam Generator		912	Natural Gas	1,056,075	957,475	1,014,332	1,209,583	808,099	651,240	5,541,487	5,053,593	5,426,671	6,533,765	4,290,009	3,444,710	331,333	304,144	319,779	364,352	268,044	225,827	5,210,154	4,749,449	5,106,892	6,169,413	4,021,965	3,218,883
Hagit	3&4&7	Combined Cycle	01/07/2002	330	Diesel Oil (Gas Oil)	124,571	111,133	163,032	103,836	12,599	3,704	646,667	556,931	828,840	517,398	56,338	19,844	13,393	10,074	15,109	9,315	809	211	633,274	546,857	813,731	508,082	55,530	19,633
Hagit	3&4&7	Combined Cycle	08/07/2009 - 27/05/2009	330	Natural Gas	0	0	0	0	188,417	258,851	0	0	0	0	1,270,808	1,662,623	0	0	0	0	23,136	28,936	0	0	0	0	1,247,672	1,633,687
Hagit	5&6&8	Combined Cycle	01/09/2002	330	Diesel Oil (Gas Oil)	75,584	110,657	149,008	115,533	24,168	7,793	394,705	543,103	737,965	561,413	114,425	42,221	8,549	9,860	13,834	10,589	1,881	549	386,156	533,243	724,131	550,825	112,544	41,671
Hagit	5&6&8	Combined Cycle	09/07/2009 - 15/06/2009	330	Natural Gas	0	0	0	0	103,871	219,874	0	0	0	0	688,128	1,364,254	0	0	0	0	11,404	20,660	0	0	0	0	676,724	1,343,595
Hagit	2	Combined Cycle	03/05/2007	311	Diesel Oil (Gas Oil)	0	0	85,660	102,692	9,245	1,199	0	0	459,887	597,925	50,335	7,072	0	0	22	5,686	4,520	163	0	0	459,865	592,239	45,815	6,909
Hagit	2	Combined Cycle	25/05/2009	359	Natural Gas	0	0	0	0	154,998	297,359	0	0	0	0	1,081,402	2,254,029	0	0	0	0	20,260	44,830	0	0	0	0	1,061,142	2,219,199
Hagit	1	Gas Turbine	10/08/2010	256	Diesel Oil (Gas Oil)						11,097						43,357						620						42,737
Hagit		Combined Cycle		1227	Diesel Oil (Gas Oil)	200,155	221,789	397,700	322,060	46,013	23,793	1,041,372	1,100,034	2,026,692	1,676,736	221,099	112,493	21,942	19,934	28,965	25,590	7,209	1,543	1,019,430	1,080,099	1,997,727	1,651,146	213,889	110,951
Hagit		Combined Cycle		1019	Natural Gas	0	0	0	0	447,286	776,084	0	0	0	0	3,040,338	5,290,907	0	0	0	0	54,799	94,425	0	0	0	0	2,985,539	5,196,481
Gezer	11	Gas Turbine	11/06/1999	148	Diesel Oil (Gas Oil)	31,737	25,024	16,316	9,427	162	407	114,098	90,722	54,190	32,091	562	1,380	342	445	353	186	2	8	113,756	90,277	53,837	31,904	560	1,372
Gezer	11	Gas Turbine	11/09/2008	148	Natural Gas	0	0	0	34,478	55,268	64,006	0	0	0	141,084	224,786	261,572	0	0	0	499	854	1,112	0	0	0	140,586	223,932	260,460
Gezer	12	Gas Turbine	16/04/1999	148	Diesel Oil (Gas Oil)	23,018	20,555	18,219	9,234	205	274	82,119	75,032	62,120	31,231	705	937	246	337	401	180	3	4	81,873	74,695	61,719	31,050	702	933
Gezer	12	Gas Turbine	26/09/2008	148	Natural Gas	0	0	0	28,732	52,112	68,960	0	0	0	118,099	211,469	282,490	0	0	0	402	812	1,105	0	0	0	117,698	210,657	281,385

Power Station	Production Unit	Production Unit Type	Operation Date	Installed Capacity [MW]	Fuel Type	Fuel Consumption [TON]						Electricity - Manufactured [Gross - MWh]						Electricity - Self Consumption [MWh]						Electricity - Transferd to the Grid [Net MWh]					
						2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
Gezer	21	Gas Turbine	14/04/1999	148	Diesel Oil (Gas Oil)	19,700	18,866	22,756	10,051	8	90	71,444	68,530	73,810	33,733	27	314	214	324	529	238	0	1	71,230	68,206	73,281	33,495	27	313
Gezer	21	Gas Turbine	14/11/2008	148	Natural Gas	0	0	0	18,490	60,325	64,280	0	0	0	75,589	243,966	261,996	0	0	0	247	973	1,076	0	0	0	75,343	242,994	260,920
Gezer	22	Gas Turbine	12/05/1999	148	Diesel Oil (Gas Oil)	26,815	19,918	20,690	17,201	104	184	97,090	72,600	69,865	56,710	358	628	291	360	471	364	2	3	96,799	72,240	69,394	56,346	357	626
Gezer	22	Gas Turbine	31/10/2008	148	Natural Gas	0	0	0	22,214	59,575	64,981	0	0	0	92,072	241,093	263,858	0	0	0	277	1,003	1,029	0	0	0	91,796	240,090	262,829
Gezer	30	Gas Turbine	27/09/2005	206	Diesel Oil (Gas Oil)	4,049	15,594	3,964	0	0	0	15,758	57,677	17,758	0	0	0	47	2,479	3,452	0	0	0	15,711	55,198	14,306	0	0	0
Gezer	30	Combined Cycle	04/06/2007	319	Diesel Oil (Gas Oil)	0	0	51,618	30,769	0	0	0	0	274,370	163,118	0	0	0	0	10,719	2,765	0	0	0	0	263,651	160,353	0	0
Gezer	30	Combined Cycle	01/07/2008	372	Natural Gas	0	0	0	137,353	337,787	267,783	0	0	0	1,089,215	2,696,957	2,124,989	0	0	0	14,076	47,694	37,107	0	0	0	1,075,138	2,649,263	2,087,882
Gezer	40	Gas Turbine	16/02/2006	206	Diesel Oil (Gas Oil)	0	20,794	31,323	13,935	0	0	0	79,118	124,570	56,417	0	0	0	1,638	2,894	2,379	0	0	0	77,479	121,676	54,038	0	0
Gezer	40	Combined Cycle	25/05/2008	319	Diesel Oil (Gas Oil)	0	0	0	13,925	0	104	0	0	0	80,417	0	702	0	0	0	944	0	11	0	0	0	79,473	0	690
Gezer	40	Combined Cycle	12/07/2008	372	Natural Gas	0	0	0	126,314	344,134	295,224	0	0	0	995,589	2,738,987	2,343,596	0	0	0	11,940	44,305	39,069	0	0	0	963,650	2,694,682	2,304,528
Gezer		**Gas Turbine+Combined Cycle**		**1336**	**Natural Gas**	**0**	**0**	**0**	**367,580**	**909,201**	**825,254**	**0**	**0**	**0**	**2,511,650**	**6,357,258**	**5,538,501**	**0**	**0**	**0**	**27,440**	**95,642**	**80,497**	**0**	**0**	**0**	**2,484,210**	**6,261,617**	**5,458,004**
Gezer		**Gas Turbine+Combined Cycle**		**1230**	**Diesel Oil (Gas Oil)**	**105,319**	**120,752**	**164,885**	**104,542**	**478**	**1,059**	**380,509**	**443,679**	**676,683**	**453,716**	**1,652**	**3,961**	**1,142**	**5,584**	**18,819**	**7,057**	**7**	**27**	**379,367**	**438,094**	**657,864**	**446,659**	**1,645**	**3,934**
Ramat Hovav	1	Gas Turbine	01/11/1989	100	Diesel Oil (Gas Oil)	15,400	8,516	8,849	4,777	2,235	1,534	52,381	28,803	28,813	15,952	7,095	4,646	157	354	86	48	21	14	52,224	28,449	28,727	15,904	7,074	4,632
Ramat Hovav	1	Gas Turbine	01/08/2010	100	Natural Gas						20,990						87,255						274	0	0	0	0	0	86,981
Ramat Hovav	2	Gas Turbine	30/10/1989	100	Diesel Oil (Gas Oil)	25,393	9,425	18,638	8,120	3,903	4,033	86,517	32,967	60,811	26,735	12,488	17,519	260	99	182	80	26	53	86,257	32,868	60,629	26,655	12,462	17,466
Ramat Hovav	2	Gas Turbine	01/08/2010	100	Natural Gas						33,378						136,613						430	0	0	0	0	0	136,183
Ramat Hovav	3&4&5	Combined Cycle	15/07/1999	335	Diesel Oil (Gas Oil)	115,603	155,552	126,612	130,832	38,308	14,390	609,562	818,848	657,734	675,428	175,811	66,040	11,497	15,204	12,179	12,664	2,835	1,367	598,065	803,644	645,556	662,764	172,976	64,673
Ramat Hovav	3&4&5	Combined Cycle	01/06/2010	335	Natural Gas						127,473						819,721						13,363	0	0	0	0	0	806,358
Ramat Hovav	6	Gas Turbine	23/11/2009	118	Diesel Oil (Gas Oil)					582	3,992					1,866	12,512						58	0	0	0	0	1,866	12,454

Ramat Hovav	6	Gas Turbine	01/07/2010	118	Natural Gas						25,823						108,570						380	0	0	0	0	0	108,191
Ramat Hovav	7	Gas Turbine	06/01/2010	118	Diesel Oil (Gas Oil)						2,679						7,746						22	0	0	0	0	0	7,725
Ramat Hovav	7	Gas Turbine	01/06/2010	118	Natural Gas						22,961						96,924						308	0	0	0	0	0	96,617
Ramat Hovav	8	Gas Turbine	09/11/2010	250	Diesel Oil (Gas Oil)						6,563						25,055						428	0	0	0	0	0	24,627
Ramat Hovav		**Gas Turbine+Combined Cycle**		**1021**	**Diesel Oil (Gas Oil)**	**156,395**	**173,494**	**154,099**	**143,729**	**45,028**	**33,191**	**748,460**	**880,618**	**747,358**	**718,115**	**197,260**	**133,519**	**11,914**	**15,657**	**12,448**	**12,792**	**2,882**	**1,941**	**736,546**	**864,961**	**734,911**	**705,323**	**194,378**	**131,578**
Ramat Hovav		**Gas Turbine+Combined Cycle**		**771**	**Natural Gas**	**0**	**0**	**0**	**0**	**0**	**230,626**	**0**	**0**	**0**	**0**	**0**	**1,249,083**	**0**	**0**	**0**	**0**	**0**	**14,754**	**0**	**0**	**0**	**0**	**0**	**1,234,328**
Zafit	1	Gas Turbine	31/12/1990	110	Diesel Oil (Gas Oil)	24,090	13,566	12,106	9,660	5,347	9,545	77,090	42,543	39,223	31,911	17,388	33,590	248	128	118	96	52	263	76,842	42,415	39,105	31,815	17,336	33,327
Zafit	2	Gas Turbine	18/12/1990	110	Diesel Oil (Gas Oil)	23,994	13,695	14,857	9,228	4,258	9,852	76,657	43,269	46,864	30,288	13,879	31,295	230	130	141	91	42	264	76,427	43,139	46,723	30,197	13,837	31,031
Zafit	3	Gas Turbine	16/10/2006	248	Diesel Oil (Gas Oil)	0	7,358	35,742	26,531	14,793	4,436	0	25,884	135,474	99,869	49,855	15,058	0	0	406	300	150	220	0	25,884	135,067	99,570	49,705	14,838
Zafit	3	Gas Turbine	01/05/2010	235	Natural Gas	0	0	0	0	0	71,439	0	0	0	0	0	325,727	0	0	0	0	0	3,462	0	0	0	0	0	322,265
Zafit		**Gas Turbine**		**468**	**Diesel Oil (Gas Oil)**	**48,084**	**34,619**	**62,706**	**45,419**	**24,398**	**23,833**	**153,747**	**111,696**	**221,561**	**162,068**	**81,122**	**79,943**	**478**	**257**	**665**	**486**	**243**	**747**	**153,269**	**111,438**	**220,896**	**161,582**	**80,879**	**79,196**
Zafit		**Gas Turbine**		**235**	**Natural Gas**	**0**	**0**	**0**	**0**	**0**	**71,439**	**0**	**0**	**0**	**0**	**0**	**325,727**	**0**	**0**	**0**	**0**	**0**	**3,462**	**0**	**0**	**0**	**0**	**0**	**322,265**
Alon Tavor	1	Gas Turbine	01/12/1991	110	Diesel Oil (Gas Oil)	23,062	15,851	10,393	13,350	6,173	13,824	73,223	50,650	31,156	40,699	19,500	43,230	220	149	94	121	59	130	73,003	50,501	31,063	40,578	19,442	43,100
Alon Tavor	2	Gas Turbine	01/02/1992	110	Diesel Oil (Gas Oil)	20,927	14,328	14,360	10,345	6,374	8,334	67,333	44,958	43,878	31,991	20,560	25,758	202	132	132	93	62	77	67,131	44,826	43,746	31,898	20,498	25,681
Alon Tavor	3&4	Combined Cycle	11/12/2008	373	Diesel Oil (Gas Oil)	6,322	12,145	42,167	29,540	49,949	54,354	24,215	45,513	159,093	105,270	238,349	299,220	73	140	477	312	4,365	6,149	24,142	45,374	158,615	104,958	233,963	293,071
Alon Tavor		**Turbine+Combined Cycle**		**593**	**Diesel Oil (Gas Oil)**	**50,311**	**42,325**	**66,920**	**53,235**	**62,496**	**76,512**	**164,771**	**141,121**	**234,127**	**177,960**	**278,409**	**368,208**	**494**	**421**	**702**	**526**	**4,505**	**6,356**	**164,276**	**140,700**	**233,424**	**177,434**	**273,903**	**361,852**
Atarot	1	Gas Turbine	01/07/1997	34	Diesel Oil (Gas Oil)	1,431	2,259	2,866	2,911	2,267	1,034	4,400	6,800	8,310	8,440	6,650	3,060	13	20	25	25	20	9	4,387	6,780	8,285	8,415	6,630	3,051

Power Station	Production Unit	Production Unit Type	Operation Date	Installed Capacity [MW]	Fuel Type	Fuel Consumption [TON]						Electricity - Manufactured [Gross - MWh]						Electricity - Self Consumption [MWh]						Electricity - Transferd to the Grid [Net MWh]					
						2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
Atarot	2	Gas Turbine	01/07/1997	34	Diesel Oil (Gas Oil)	3,027	2,294	2,822	2,835	2,398	1,813	9,200	6,930	8,220	8,320	7,030	5,190	152	24	25	25	21	16	9,048	6,906	8,195	8,295	7,009	5,174
Atarot		**Gas Turbine**		**68**	**Diesel Oil (Gas Oil)**	**4,459**	**4,552**	**5,687**	**5,747**	**4,664**	**2,848**	**13,600**	**13,730**	**16,530**	**16,760**	**13,680**	**8,250**	**165**	**45**	**50**	**50**	**41**	**25**	**13,435**	**13,686**	**16,480**	**16,710**	**13,639**	**8,225**
Eilat	1	Jet Gas Turbine	25/03/1981	15	Diesel Oil (Gas Oil)	113	138	143	121	60	154	269	369	358	305	147	386	1	1	1	1	0.4	1.0	268	368	357	304	147	385
Eilat	2	Gas Turbine	23/06/1996	34	Diesel Oil (Gas Oil)	9,631	9,352	11,754	12,136	11,203	8,116	23,680	24,620	28,060	30,290	27,930	20,450	194	74	84	91	84	61	23,486	24,546	27,976	30,199	27,846	20,389
Eilat	3	Jet Gas Turbine	01/07/1980	43	Diesel Oil (Gas Oil)	1,703	1,205	1,273	578	725	1,988	3,270	3,280	3,490	1,460	1,800	5,160	8	8	9	4	5	13	3,262	3,272	3,481	1,456	1,796	5,147
Eilat		**Gas + Jet Turbine**		**92**	**Diesel Oil (Gas Oil)**	**11,446**	**10,695**	**13,170**	**12,835**	**11,988**	**10,258**	**27,219**	**28,269**	**31,908**	**32,055**	**29,877**	**25,996**	**203**	**83**	**94**	**95**	**89**	**75**	**27,016**	**28,186**	**31,814**	**31,960**	**29,788**	**25,921**
Haifa	1	Jet Gas Turbine	05/04/1974	40	Diesel Oil (Gas Oil)	1,233	304	470	335	207	472	3,265	919	1,092	822	432	1,183	8	2	3	2	1.1	3.0	3,257	917	1,089	820	431	1,180
Haifa	2	Jet Gas Turbine	01/09/1974	40	Diesel Oil (Gas Oil)	1,542	614	446	301	196	548	3,969	1,774	1,039	743	446	1,237	10	4	3	2	1.1	3.1	3,959	1,770	1,036	741	445	1,234
Haifa		**Jet Gas Turbine**		**80**	**Diesel Oil (Gas Oil)**	**2,776**	**918**	**915**	**637**	**403**	**1,021**	**7,234**	**2,693**	**2,131**	**1,565**	**878**	**2,420**	**18**	**7**	**5**	**4**	**2**	**6**	**7,216**	**2,686**	**2,126**	**1,561**	**876**	**2,414**
Caesarea	1	Jet Gas Turbine	06/09/1973	40	Diesel Oil (Gas Oil)	550	242	104	96	50	255	1,572	670	248	127	146	781	4	2	1	0.3	0.4	2.0	1,568	668	247	127	146	779
Caesarea	2	Jet Gas Turbine	06/11/1973	40	Diesel Oil (Gas Oil)	1,311	721	276	336	144	281	3,774	1,898	691	638	366	850	10	5	2	1.6	0.9	2.1	3,765	1,893	689	636	365	848
Caesarea	3	Jet Gas Turbine	16/07/1980	50	Diesel Oil (Gas Oil)	917	102	63	26	95	110	2,545	260	170	70	230	260	6	1	0.4	0.2	0.6	0.7	2,539	259	170	70	229	259
Caesarea		**Jet Gas Turbine**		**130**	**Diesel Oil (Gas Oil)**	**2,777**	**1,066**	**443**	**459**	**289**	**645**	**7,891**	**2,828**	**1,109**	**835**	**742**	**1,891**	**20**	**7**	**3**	**2**	**2**	**5**	**7,871**	**2,821**	**1,106**	**833**	**740**	**1,886**
Maor David	**1**	**Jet Gas Turbine**	**18/08/1989**	**15**	**Diesel Oil (Gas Oil)**	**381**	**163**	**25**	**3**	**25**	**106**	**998**	**484**	**63**	**7**	**71**	**362**	**3**	**1**	**0.2**	**0.02**	**0.18**	**0.91**	**995**	**483**	**63**	**7**	**70**	**361**
Rutenberg	1	Jet Gas Turbine	17/09/1989	20	Diesel Oil (Gas Oil)	2	74	90	25	76	117	9	269	272	87	210	395	0.0	0.7	0.7	0.2	0.5	1.0	9	268	271	87	209	394
Rutenberg	2	Jet Gas Turbine	18/09/1989	20	Diesel Oil (Gas Oil)	453	265	106	44	59	136	1372	880	285	146	144	383	3.5	2.2	0.7	0.4	0.4	1.0	1,369	877	284	146	144	382
Rutenberg		**Jet Gas Turbine**		**40**	**Diesel Oil (Gas Oil)**	**455**	**339**	**196**	**70**	**135**	**254**	**1,381**	**1,148**	**557**	**233**	**354**	**779**	**3.5**	**2.9**	**1.4**	**0.6**	**0.9**	**2.0**	**1,377**	**1,145**	**555**	**233**	**353**	**777**
Har Tuv	**1**	**Jet Gas Turbine**	**07/09/1972**	**40**	**Diesel Oil (Gas Oil)**	**165**	**97**	**30**	**31**	**49**	**41**	**398**	**277**	**52**	**72**	**118**	**135**	**1**	**1**	**0.1**	**0.2**	**0.3**	**0.3**	**397**	**276**	**52**	**72**	**118**	**135**
Eitan	**1**	**Jet Gas Turbine**	**28/02/1973**	**40**	**Diesel Oil (Gas Oil)**	**1,155**	**621**	**338**	**83**	**139**	**309**	**2,948**	**1,599**	**757**	**187**	**358**	**746**	**7**	**4**	**2**	**0.5**	**0.9**	**1.9**	**2,941**	**1,595**	**755**	**187**	**357**	**744**
Ranana	**1**	**Jet Gas Turbine**	**07/09/1973**	**11**	**Diesel Oil (Gas Oil)**	**584**	**153**	**69**	**36**	**18**	**277**	**1,467**	**345**	**110**	**80**	**50**	**678**	**3**	**0.3**	**0.3**	**0.2**	**0.1**	**1.7**	**1,464**	**345**	**110**	**80**	**50**	**676**
Kinarot	1	Jet Gas Turbine	21/08/1975	40	Diesel Oil (Gas Oil)	2,025	1,057	601	536	415	354	5,151	2,670	1,393	1,265	938	976	13	7	4	3	2	2	5,138	2,663	1,390	1,262	936	974
Kinarot	2	Jet Gas Turbine	23/10/1979	40	Diesel Oil (Gas Oil)	1,581	613	555	474	454	526	4,033	1,538	1,272	1,124	1,029	1,263	10	7	3	3	3	3	4,023	1,532	1,269	1,121	1,026	1,260
Kinarot		**Jet Gas Turbine**		**80**	**Diesel Oil (Gas Oil)**	**3,606**	**1,670**	**1,156**	**1,011**	**869**	**880**	**9,184**	**4,208**	**2,665**	**2,389**	**1,967**	**2,239**	**23**	**13**	**7**	**6**	**5**	**6**	**9,161**	**4,195**	**2,658**	**2,383**	**1,962**	**2,233**
Eshkol	1	Jet Gas Turbine	01/08/1974	10	Diesel Oil (Gas Oil)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
TOTAL				12769								48,238,083	50,265,567	53,497,098	54,315,109	53,061,889	56,101,033	2,200,369	2,157,102	2,207,503	2,234,429	2,094,605	2,122,832	46,037,714	48,108,464	51,289,595	52,080,680	50,967,284	53,978,201

Underlying grid data for Israel's grid emission factor calculation[13]:

Please refer to SD_13: Underlying-GEF-data and SD_30: Israel GEF Calc. for more details.

[13] SD_13-Underlying data for grid emission factor data

Annex 4

MONITORING INFORMATION