

PROJECT INCEPTION REPORT

Grid-Connected Small-Scale Photovoltaic Systems

Egypt-PV

February 2018

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List of Acronyms

CAPEX:	Capital Expenditures
FiT:	Feed in Tariff
GEF:	Global Environment Facility
GoE:	Government of Egypt
IMC:	Industrial Modernization Centre
kWp:	Kilo Watt peak
MWp:	Mega Watt peak
NM:	Net-metering
NREA:	New and Renewable Energy Authority
PMU:	Project Management Unit
PV:	Photo-Voltaic
RE:	Renewable Energy
TWh	Terra Watt hour
UNDP:	United Nations Development Program

Basic Data

UNDP PIMS ID	4998
GEF ID	5064
Title	Grid-Connected Small-Scale Photovoltaic Systems
Country(ies)	Egypt, Egypt
UNDP-GEF Technical Team	Energy, Infrastructure, Transport and Technology
Project Implementing Partner	Industrial Modernization Center

Executive Summary

Grid-Connected Small-Scale Photovoltaic Systems (Egypt-PV) funded by Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP) was formally launched in June 2017 after the Government of Egypt (GoE) and UNDP signed the project document. The specific Renewable Energy (RE) related components of that programme, particularly on grid-connected small-scale PV systems are included in the GEF-UNDP Egypt-PV project as baseline activities. The project will catalyze the development of decentralized, grid-connected small-scale renewable energy (RE) power generation market in Egypt and the solar PV in particular. The target is to facilitate the installation of at least 4 MWp of new decentralized private PV capacity during the lifetime of the project, resulting in direct GHG reduction benefits of 66 kilotonnes of CO₂eq. Complementary indirect mitigation benefits are expected from the sustained market growth of the PV market after the project with estimated GHG reduction of about 0.6-0.7 million tonnes of CO₂eq.

The main objective of Egypt-PV project is to support removing barriers for scaling up promotion of small scale grid connected Photo Voltaic (PV) systems. The project intends to provide incremental support to the clients by providing technical support for developing sustainable implementation modalities, introduce financing packages for clients, also suggesting new policies to facilitate permits and interconnecting techniques through Net metering (NM). The core strategies of the project include demonstration projects, private sector involvement for financing and attainment of financial sustainability through promotion of productive end use.

This inception report covers a 7-month period July 2017 – January 2018, which is considered to be a Project inception period. A brief introduction of the project (background and objectives) is given as well as information about organization of the inception workshop, its purpose, activities and conclusions which was organized on December 3rd, 2017. The work plan of 2018 is presented in the end of the reports as annex 3.

1. Project Objectives and Outcomes

The objective of the project is to remove the barriers to increased power generation by small, decentralized, grid-connected PV systems implemented by households and small- and medium-size enterprises. The project strategy builds on the planned Government initiatives to develop a market for small, decentralized renewable energy power generation by ensuring adequate returns on targeted private sector investments.

The project will catalyze the development of decentralized, grid-connected small-scale renewable energy (RE) power generation market in Egypt and the solar PV in particular. The target is to facilitate the installation of new decentralized private PV, resulting in direct GHG reduction. Complementary indirect mitigation benefits are expected from the sustained market growth of the PV market after the project with estimated GHG reduction at least 0.6-0.7 million tons of CO₂ eq.

By the end of the project, the project seeks to establish a basis for sustainable market growth by:

- Supporting the design, purchase and installation of the first PV systems as an easily replicable model;
- Establishing an enabling policy and institutional and regulatory framework to provide the basis for sustainable market growth of small, decentralized RE (primarily PV) applications and for attracting adequate financing for the required investments;
- Strengthening the supply chain by building the capacity of the key supply-side stakeholders such as system designers, equipment vendors and installers to offer competitively-priced, good-quality products and services to the targeted stakeholders (including required after-sales services) and by introducing adequate quality control mechanisms to build up customer confidence and positive customer experiences of small, decentralized PV systems;
- Facilitating the establishment of a financing framework and a network of local financial institutions to support the development of the decentralized PV market by providing long-term financing on attractive terms for PV investments and, as applicable, dedicated funds especially for those households which, without a previous credit history and/or required collateral, may face difficulties in convincing the banks of their credit-worthiness.

The project has the potential to drive a major transformation in the small, decentralized renewable energy power generation market in Egypt, specifically contributing to the following:

- Allowing Egypt to scale-up the supply of electricity to meet ever-growing demand without burdening the State with additional subsidy payments and the need to invest in large power plants, while also contributing (although still at a relatively modest level) to the Government's target of having 20% of all power generation produced by renewable energy sources by 2022;
- Establishing a premium price for the sale of power from decentralized rooftop PV systems to serve as a precursor and powerful proof-of-concept for a feed-in tariff;
- Creating a cadre of stakeholders who profit from renewable energy and have an interest in promoting it;

- Involving individuals and households in their own power generation, when today they are only consumers.
- Strengthening a base of skilled PV technicians;
- Strengthening a supply chain for PV system components; and
- Working with local financial institutions to increase the available financing for small- and medium-size renewable energy projects.

2. The intended outcomes

Outcome 1:- Support Market takeoff of PV systems

Design of small PV systems installed based on easily replicable and scalable system design

- Finalized design of the support scheme to facilitate Market Takeoff
- Manuals and templates for PV system design & installation to be released as hard & soft copies, internet based, and smart phone apps
- Establishing project support center “ONE STOP SHOP”; hotline and website
- Public awareness-raising & marketing campaigns
- In-depth reviews and evaluations of the progress
- Workshops to discuss the results and potential next step

Outcome 2: - Enabling policy and institutional framework

Establishing an enabling policy, institutional and regulatory framework to provide the basis for sustainable market growth

- Ensuring fully operationalized net-metering schemes for selected tariff
- Technical constrain analysis and updating guidelines accordingly
- Complete analysis of regulations for both constructions and management for rooftop PV system implementation
- Drafted amendments to the existing laws and regulations
- Finalize proposal for the eventually required financially and fiscal incentives
- Assessment for PV waste and recycling

Outcome 3: - Strengthening the supply chain

Strengthening the supply chain by building the Capacity of the key supply-side stakeholders

- Finalize technical and quality criteria installations and system integrators
- Quality control and certification scheme for hardware and installations and institutional agreements to ensure effective implantation after the project
- Public awareness and marketing support to support establishing a local Solar Energy Industry Association
- Agreed methodology, institutional arrangements, procedures and mechanisms for effective market monitoring to continue after the end of the project
- Complementary training and development programs to help promote PV system in new buildings.

Outcome 4:- Facilitating finance of PV systems

Establishing a financing framework and a network of local financial institutions to facilitate the financing of small PV systems for a broad range of consumers

- Proposal for financial schemes and required consultation support
- Involving local community associations to help promoting and supporting
- Technical due diligence of projects proposed for financing and training staff of the participating banks
- Monitoring the impact and performance of the financing schemes
- Final report, including results, experiences, lessons-learned and recommendations

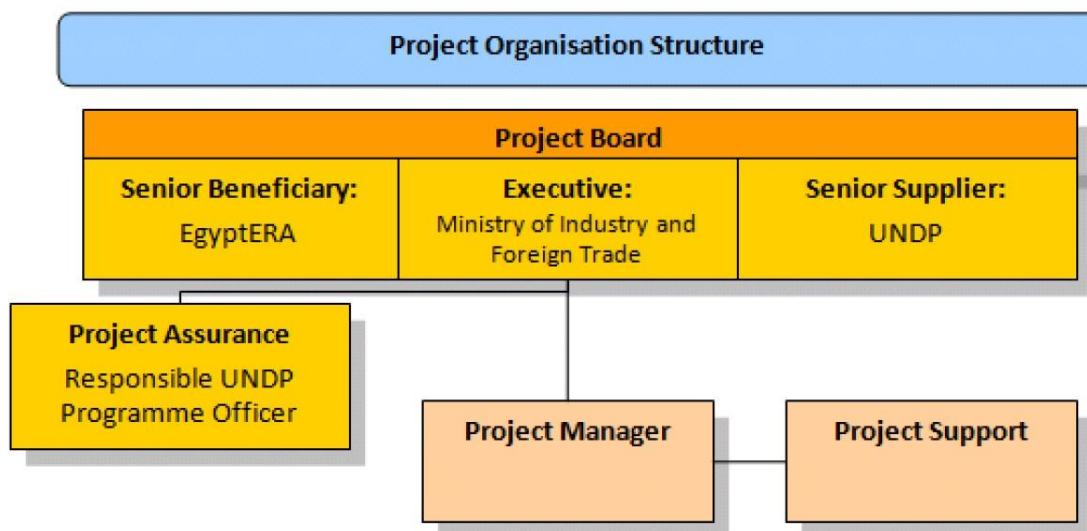
3. Activities Carried Out During Inception Phase

The project was launched officially on July 2017 following the finalization of all signatures of respective implementing and executing agencies.

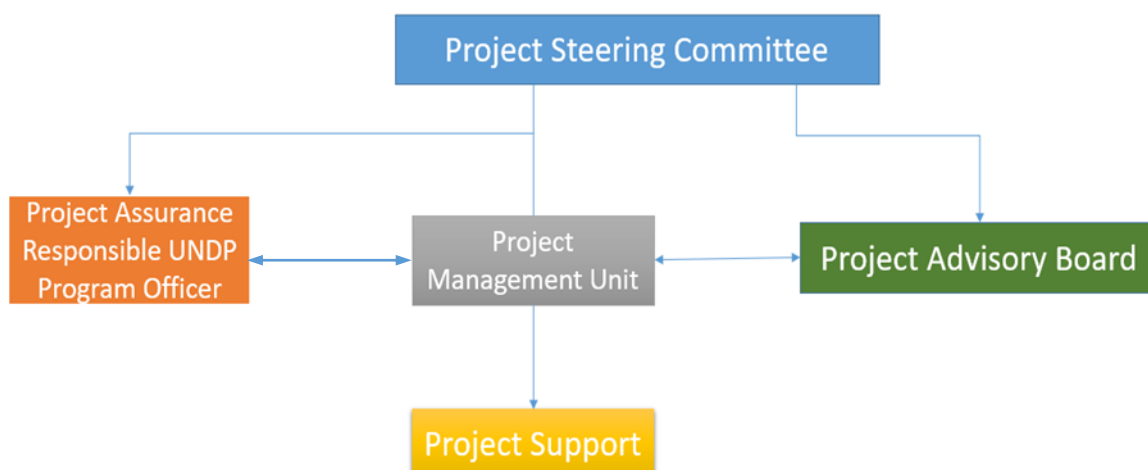
3.1 Egypt-PV Organizational Structure

Restructuring the Egypt-PV hierarchy: The Advisory Board was added for Egypt-PV project structure according to an administrative order. The Advisory Board is chaired by Dr. Amr Taha, IMC deputy executive director and Egypt-PV project director. The Advisory Board's tasks include giving technical, strategic guidance and recommendations to achieve the objectives and outcomes of the project.

Hierarchy according to project document



Hierarchy after the amendment



3.2 Market Analysis

A study has been conducted by Egypt-PV was carried out to:

- Analyze the market barriers
- determine financial and technical support schemes to catalyze the small-scale PV market
- assess key client segments for on grid small scale PV systems and relevant support packages
- planning support to be provided for key clients over the coming 4 years
- provide policy recommendations to enable further integration of small scale grid connected PV markets
- accounting for Egypt small scale on grid systems
- develop accurate technical and financial models for small scale PV grid connected systems
- analyze key stakeholders
- determining key technical best practices in design and operation of PV systems

The study showed that there is a wide list of market barriers that hinders the penetration of Egypt-PV. This section specifically discusses the following:

- **Financial Barriers**
- **Technical Barriers**
- **Market Barriers**
- **Regulatory Barriers**

3.2.1 Financial Barriers

Specific financial barriers are specific to renewable energy technologies, including small scale PV system installations. Those barriers are either project finance criteria that are unaddressed in traditional banking systems, or are a result of macro-economic and regulatory conditions – e.g. foreign currency liquidity and FX risk.

3.2.1.1 Liquidity and FX risk

Common with project finance risks – and specific to the macro-economic conditions in Egypt – is the FX risk (PV Policy Report - Chemonics, 2017). This risk is significant if international stakeholders are involved – whether international commercial banks or donor agencies; as well as international system component suppliers. The foreign currency liquidity is yet a consequential barrier, where the actual price of the dollar is significantly higher outside of the formal lending institutions. In other words, the inter-related challenges do not only translate to inflated expenses, especially of imported equipment and so-forth, but also to informal transactions of purchasing the US \$ off the informal-market at a much higher value than that announced by the banks. In brief, the whole of the limited cash surplus SMEs suffers considerably from the fluctuation of the exchange rate.

3.2.1.2 Financial Institutions Maturity.

Another challenge for project financing of RE projects, is the long-term loans needed, since the project's life spans for 20 to 25 years, accompanied by the 'good track-record' for the sponsors in order to be accepted for the loan procedures. The longest duration of a loan issued by an Egyptian bank was 12 years, and thus, the project economics would become more difficult in that sense (Private Communication with Private Equity Company; Shoukry, 2016).

3.2.1.3 RE Policy Mechanisms

The question with the current regulations, is that they are still at a “testing” phase, whereby they are currently being revised – i.e. FiT or Net-Metering mandates. Stable tariff estimates are necessary to ensure financial feasibility of the projects.

3.2.1.4 Project Feasibility

It remains one of the most crucial challenges to the PV projects is that of finance, and more specifically accessing finance to support RE projects. The challenge relies in designing a balanced cashflow system that factors in the project’s high-up front costs, belated payback period, and long contractual duration – 25 years (Private Communication with Private Equity Company; Shourky, 2016).

3.2.1.5 Access to Finance

Building on to the project feasibility challenge and the FX risk, access to finance is a major hindrance to PV private companies. Tackling this issue, the CBE had dedicated a generous fund of 290 M\$ with 5% interest rate. To date, only a small fraction of the loan was dispersed. The problem remains that SMEs cannot access it due to – perhaps – unclear terms and conditions of the actual procedures that companies should undergo; in addition to the informality that shapes the business environment of small and medium enterprises in Egypt (PV Policy Report -Chemonics, 2017).

The individuals are currently facing financial problems towards funding RE projects through loans, as banks requires high collaterals, and some banks in the Egyptian market are not willing to work with individuals. The project will work with financial institutions to revisit the policy to allow the facilitate and remove the barriers of individual loans.

3.2.1.6 High Up-Front Cost

Though the cost of the PV technology is worldwide going-down it remains expensive when compared to the conventional subsidized electricity tariff by which power generation is concerned. Whether it is financing the client, or the PV company; high up-front costs is structural financial factor when designing an appropriate financial scheme of small scale RE.

3.2.2 Technical Barriers

The technical barriers include the technical performance indicators for service providers, as well technical issues provided by the project stakeholders.

3.2.2.1 Qualification of Service Providers – Internal Capacity.

According to NREA, there are about 200 participants who are given a license for RE power generation. However, the reality is, although there is a large number of service providers, “only a few have an adequate level of technical know-how.” This introduces a potential market risk, affecting the “reputation of the market.” To partially tackle this issue, NREA had developed a registry of PV installers – whether on-grid or off-grid – to certify professional installers. On the other hand, maintaining a resilient internal capacity of the SME company becomes a priority in order to maintain a good quality product and provide after sales services to maneuver its operations along the different activities of the value chain. (PV Policy Report - Chemonics, 2017; Private Communication with Dr. Hafez El-Salmawy – April 2017).

3.2.2.2 Point of Tying to the Grid, Infrastructure Cost

This issue was both raised by the PV Companies, and the distribution companies. Clear regulations need to be clarified to both parties in order to decrease the time required to install the meter, and validate the financial feasibility of the PV offer of the company. (UNDP – SMEs Meeting – Focus Group 1 November 2017).

3.2.3 Market Barriers

3.2.3.1 Lack of incentives.

From the perspective of the private sector, an under-developed market is a potential, but rather it is the lack of incentives to grow the RE market that presents a barrier. As an example, the GoE had promised a reduced taxation price for RE equipment, however, on practical grounds this is rarely the case. With the exception of PV panels, and some obvious RE equipment, the rest of the RE tools and equipment are highly taxed because there is no proof that it will be used in a particular RE project (Shoukry, 2016)

3.2.3.2 Non-Participation of End-Users

A significant market gap within the Egyptian context, is that of the non-participating end-users in RE generation. The main reason for this is because of pricing which remains comparatively high relative to subsidized conventional electricity. The alienation of the end-user which has to do with the macroeconomic context of subsidization as well as under-developed policies for RE decentralization, in total, contributes to the lack of awareness of citizens on the cost-benefits of RE technology. In other words, the private sector has to assume the role of the marketer and pave the way for the RE transition process to take place (Shoukry, 2016).

3.2.4 Legal / Regulatory Barriers

3.2.4.1 Institutional Representation.

The lack of ‘collaborative representation’ of the private sector in front of the public entities leads to a misrepresentation in the stakeholders’ discussion to pool ideas and push for an implementable agenda (Private Communication Dr. Hafez El-Salmawy, 2017).

3.2.4.2 Coordination and Communication.

As a subset of a low level of institutional coordination within and without governmental agencies, the communication and information dissemination of public entities relative to their exact role in the renewables transition is an issue that needs to be addressed. As stated by an RE expert, the role of the government needs to be clarified with reference to budgeting and managing finances, as well as how the subsidy system works. Adding to that, the government alone – i.e. the regulator – can lead the awareness campaign alone to build a public opinion about the renewables agenda. At the time being, the regulator handles targeted communication with the main customers – i.e. large scale – and critical stakeholders (Private Communication Dr. Hafez El-Salmawy, 2017)

3.3 Series of Focus groups and workshops

Egypt-PV has held a series of focus groups to analyze the market and to connect with main stakeholders and private sectors:

- **First focus group** was attended by 42 service providers and the project Advisory board. The goals of the focus group were to present the project's expected outcomes, survey the participants in the draft of the proposed requirements for qualifying companies that will be in the recommended list of Egypt-PV project (annex 1 showing the results of the survey) , gather the data base of the PV projects in Egypt with their geographical distribution, determine the appropriate technical and financial support mechanisms that the project will offer, and finally come up with recommendations that will identify the sectors of PV consumers.
- **The second focus group** was held in cooperation with the New and Renewable Energy Authority (NREA), in the presence of electricity distribution companies, where it was proposed that the project will establish a hub to link the nine distribution companies with the New and Renewable Energy Authority (NREA) and Egypt Era.
- **The third focus group** was held by bank representatives to discuss the financial barriers

The series of focus groups aimed at preparing the inception phase of the project and leading to the inception workshop which will be explained in details in the next section.

- **Egypt-PV & NREA workshop** for exchange and promotion of solar energy

NREA in collaboration with Egypt-PV has held a workshop to promote the use of solar energy, in the presence of his Excellency Minister of Electricity & Renewable Energy Dr. Mohamed Shaker. The workshop was attended by Egypt-PV's Advisory Board members, PV distribution companies and financial Institutions representatives. The workshop aimed at discussing the key drivers that will promote the PV market in Egypt, the solutions to overcome the obstacles that the PV market face, innovative financial mechanisms for promoting PV projects and the future steps for implementing PV promotional mechanisms.

Annex (2) showing the photos of the events and the media coverage

4 Inception Workshop

Egypt-PV Inception Workshop was organized on December 3rd, 2017 with active participation of all concerned sub/components of IMC, UNDP, Egypt-PV Advisory Board Members, NREA, 42 qualified companies under 500 kWp. The inception workshop aimed at introducing the project and its objectives, discussing key issues related to PV projects in Egypt to support the emerging markets of this technology. Also, the workshop aimed at presenting the results and recommendations of the Focus groups.

Through the inception workshop the project manager concluded the major barriers facing PV development in Egypt. A conclusion has been conducted with the following major issues:

- Prices benchmarking
- Lack of awareness between clients
- Financing PV projects. After the local currency devaluation in November 2016, the prices of systems nearly went double.
- Quality issues & weak supply-chain
- The availability of data
- Regulatory framework
- The interconnection with grid from administrative side with distribution companies
- Lack of qualified man-power whether engineers or technicians
- Clients lost trust in the quality of solar market due to previous bad experiences

4.1 Inception Workshop Objectives

- Present the Project objectives and expected outcomes.
- Survey of the participants in the draft of the proposed requirements for qualifying companies that will participate in the project.
- Discuss the financial and technical mechanisms that the project will implement for the first 4 MW system design.
- Present the results of the previous focus group sessions attended by companies, the suppliers as well as electricity distribution companies and some financial institutions working in this area.
- Present the overall work plan for the projects' implementation.
- Discuss the key issues related to the financial and technical aspects of PV market in Egypt to support the emerging PV markets and the local product.
- Review and finalize the project results framework for corresponding sub-components/activities in the work-plan approval by the steering committee.

4.1.1 Participants

The inception workshop was attended by 120 people from all target groups, representatives from the Ministries of Industry, Trade, Electricity, Renewable Energy, Investment, Housing, Tourism and Environment, representatives of banks and financial institutions, international representatives, experts, suppliers and manufacturers in the field of PV in Egypt.

4.1.2 Inception Workshop Outputs

- Recommendations to identify the sectors of consumers most likely to benefit from PV systems connected with the network.
- Recommendations to modify the approved guidance list.
- Identification of the Net Metering potential and obstacles regarding small scale PV systems in the four targeted groups.
- Updates on policy brief based on recommendations from Inception workshop regarding aggregated net metering, Procedures of Grid Connections and Net-metering and the implementation of KPIs and Incentives for Distribution Companies.

5 Conclusion and Recommendations

Following the inception workshop, a number of advisory board meetings were held to discuss the outputs of the inception workshop and start implementing the recommendations. In addition, the results of the inception workshop were presented with the suppliers, companies, as well as electricity distribution companies and some financial institutions working in this area in order to reach the removal of obstacles and opening the market.

The following are action items from the inception workshop:

1. Development of the technical guideline of PV.
2. Development of the non-technical guideline of PV.
3. Development of the PV supplier's guidance list.
4. Finalization of technical and financial support scheme
5. Explanation of the Net Metering to the targeted groups.
6. Preparing a meeting with nine distribution companies to discuss the requirements of the companies regarding the approved guidance list.
7. Adjustments of the work plan according to the outcomes of the project.
8. Launching a website for offering information about the project and technical support.

The following table showing the progress of activities done by a Local Technical Consultant in accordance to the Objectives and Outcomes of the updated Work plan prior to the action items from the inception workshop.

Selected Activity	Implementation – Status quo
Stakeholder Mapping	Completed
Targeted group analysis and prioritization	Completed- Consultant has proposed an analysis for the target group according to financial and technical factors
Design of support scheme for each target group	Ongoing
Technical Support Scheme	Ongoing
Financial Support Scheme	Ongoing
Database for on-grid and off-grid PV systems in Egypt	Completed
Draft of Policy Paper	Ongoing
Development of the technical guideline of PV. Development of the non-technical guideline of	Ongoing
TOR of the one stop shop	Ongoing
TOR of the communication plan	Ongoing

Annex 1- Proposed requirements for qualifying PV companies that will be in the recommended list of System Integrators by Egypt-PV project

Proposed Requirement	PV companies Agreed	PV companies Do not agreed
1. The PV company must have a valid certificate from the New and Renewable Energy Authority (NREA)	39	0
2. The PV Company must have a total installed capacity (On grid +Off Grid) not less than 200 KW	27	12
3. The PV Company must provide a reference list and a statement of its executed previous projects	35	4
4. Providing a warranty on the system not less than 5 years <ul style="list-style-type: none"> The worldwide warranty period is 2 years only Cleaning the PV system is the responsibility of the owner 	30	9
5. Providing after sales service	39	0
6. Providing a list of PV system equipment for implementing the projects with attaching certified test certificates based on the international standard specifications ...IEC,ISO	38	1
7. Acknowledgment to submit quarterly reports for the project on the development of the company's projects <ul style="list-style-type: none"> The reports must be available online for the project and the New and Renewable Energy Authority (NREA). 	31	8
8. The project can survey the response of the clients towards the Implemented projects through New and Renewable Energy Authority (NREA).	39	0

<p>9. Acknowledgment to train 2 engineers and 3 technicians nominated from the Egypt-PV during the installation of the projects supported by Egypt-PV.</p> <ul style="list-style-type: none"> Revise the numbers 	37	2
<p>10. Acknowledgment to train 3 specialists from on periodic maintenance for the implemented projects supported by Egypt-PV.</p> <ul style="list-style-type: none"> The project shall ensure the interest of the organization by the training 	35	4
<p>11. Acknowledgment to submit periodic maintenance reports of the implemented PV systems for the projects supported by Egypt-PV .</p>	37	2
<p>12. Acknowledgement to be committed by the technician guideline that will be developed by Egypt-PV.</p> <ul style="list-style-type: none"> The project will concentrate on the clients' opinion through the development process 	39	0

The PV Company will submit the application form attached by all the required data

Annex 2 – Project Inception Phase Photos & Media

Focus group 1 with PV system integrators and suppliers

Date: November 8, 2017



Egypt- PV project manager presenting the project



Assistant Resident Representative UNDP, IMC Deputy Executive Director and Egypt- PV project manager



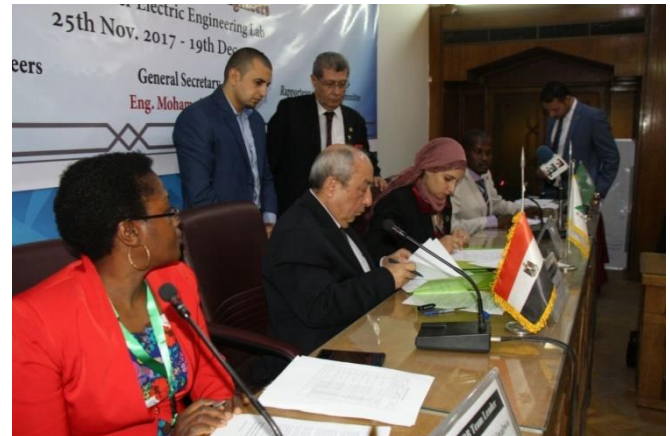
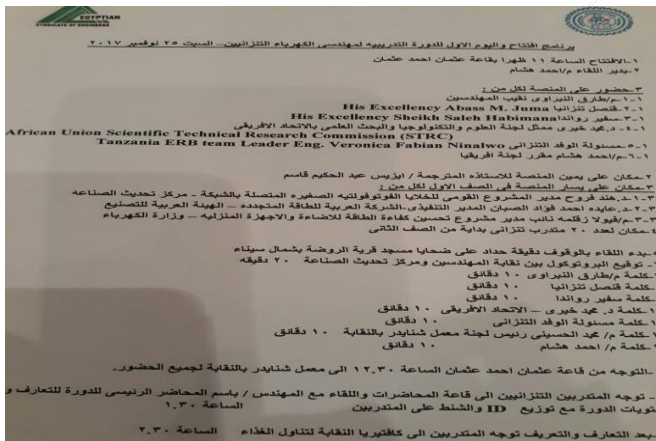


Focus group 1 participants



Signing cooperation agreement between the Egyptian Engineers Syndicate and the National Project Egypt-PV

Date: November 25, 2017



The head of Egyptian Syndicate of Engineers, Representative of the Ministry of Foreign Affairs and the Project manager while signing the agreement

Inception Workshop

Date: December 3, 2017



Egypt-PV Advisory Board Session



Assistant Resident Representative UNDP



Egypt- PV Project Manager



Dr. Anhar Hegazi, the Advisory Board member



Executive director of the Industrial Modernization Centre, Eng. Ahmed Taha, and Executive Chairman of New and Renewable Energy Authority and the project manager



Registration



Attendees the Inception Workshop

Egypt-PV & NREA workshop for exchange and promotion of solar energy

Date: January, 2018



His Excellency Minister of Electricity & Renewable Energy, Executive Chairman of New and Renewable Energy and the Project Manager in the opening session



His Excellency Minister of Electricity & Renewable Energy and Egypt- PV Manager discussing key issues of PV market in Egypt



Egypt- PV Manager presenting the project



The attendees of the workshop

The English Media Coverage



<https://www.egypttoday.com/Article/3/35246/Egypt-launches-new-photovoltaic-power-project>

Egypt launches new photovoltaic power project

CAIRO – 3 December 2017: In a conference on Sunday, Egypt has launched a new energy project entitled “Grid-connected Photovoltaic Power Systems – Egypt PV”, which is executed by the Industrial Modernization Center (IMC) and the United Nations Development Program (UNDP), the Trade Ministry said in a Sunday statement.

A grid-connected photovoltaic power system is an electricity generating solar PV power system that is connected to the utility grid, and it consists of solar panels, one or several inverters, a power conditioning unit and grid connection equipment.

The new project is being executed by the IMC in light of the challenges Egypt is facing in the energy sector, IMC executive director Ahmed Taha said in his speech during the conference.

He added that the country has a plan to develop systems of solar power and renewable energy. The plan includes generating 20 percent of Egypt’s power from solar and renewable energy, and will be implemented until 2035.

Taha highlighted that the project targets the installation of the small photovoltaic cells, particularly the non-central generation plants, on the roofs of residential buildings, public institutions, small and medium factories and tourist organizations, in addition to establishing a center for technical support.

The Electricity Ministry's first undersecretary, on behalf of the electricity minister, Mohamed Omran expressed his ministry's keenness on working on the new and renewable energy strategy, through which the ministry aims to bring 42 percent of the total energy consumed by Egypt from new and renewable sources, especially solar and wind energy, by 2035.

The Electricity Ministry has signed a number of memoranda of understanding (MoUs) to implement 32 projects in this respect, he said.

The Egypt-PV Solar System is part of the ongoing cooperation between UNDP and the Egyptian government aimed at achieving Egypt's goals in the field of new and renewable energy within Egypt's sustainable development strategy 2030, said Director of Energy and Environment Programs at UNDP Mohammed Bayoumi.

Along with Taha, Omran and Bayoumi, the conference was attended by Chairman of the New and Renewable Energy Authority Mohamad al -khatat, Head of Egyptian Engineers Syndicate Tarek al-Nabarawi and some representatives from the ministries of Electricity, Housing, Investment, Tourism, Environment and Trade.

Annex 3 – Project Inception Workshop Agenda

9.00 – 9.30 Registration	
9339– 09.90	Opening Session: <ul style="list-style-type: none"> ▪ Eng. Ahmed Taha, Executive Director of IMC ▪ Ms. Randa Aboul- Hosn, Country Director of the United Nations Development Programme “UNDP” in Egypt ▪ Eng. Tarik Nabrawy, Head of the Egyptian Engineers Syndicate
Keynote Session:	
09.99 – 19.30	Renewable Energy Sector Scene in Egypt till 2022 Dr. Mohamed El-Khayat Executive Chairman of New and Renewable Energy Authority
09.30 – 19.35	5 minutes Break
Session 1: Egypt-PV Actions to Support Renewable Energy Sector	
19.35 – 19.55	Egypt-PV Overview and Future Steps & Work plan Dr. Hend Farouh Egypt-PV Project Manger
19.55 – 10.05	Proposed Egypt-PV Support Scheme Dr. Ahmed Huzayyin Project's Expert, Prof. at Cairo University
1 0.05 –00.30	Q & A
00.30 – 02.99	Coffee Break
Session 2: Advisory Board Egypt-PV Panel Discussion Moderator: Dr. Anhar Hegazi Energy & Sustainable Development Expert Former Deputy Executive Secretary UN ESCWA	

02.99 – 0.30	Advisory Board Panelist (Alphabetical Order) Dr. Amr Taha Egypt-PV Director & IMC Deputy Executive Director Dr. Ayman Zaki Technical Capacity Building Director, IMC Eng. Emad Hassan Energy Advisor for the Minister of Tourism Dr. Mohamed Bayoumi Environment Team Leader, Assistant Resident Representative UNDP
00.30 – 02.90	Q & A Stockholders Suggestions for Egypt-PV Future Steps Closing Remarks
02.90 – 03.90	Networking Lunch
9.00 – 9.30 Registration	
9339– 09.90	Opening Session: <ul style="list-style-type: none"> ▪ Eng. Ahmed Taha, Executive Director of IMC ▪ Ms. Randa Aboul- Hosn, Country Director of the United Nations Development Programme “UNDP” in Egypt ▪ Eng. Tarik Nabrawy, Head of the Egyptian Engineers Syndicate
Keynote Session:	
09.99 – 19.30	Renewable Energy Sector Scene in Egypt till 2022 Dr. Mohamed El-Khayat Executive Chairman of New and Renewable Energy Authority
09.30 – 19.35	5 minutes Break
Session 1: Egypt-PV Actions to Support Renewable Energy Sector	
19.35 – 19.55	Egypt-PV Overview and Future Steps & Work plan Dr. Hend Farouh Egypt-PV Project Manger
19.55 – 10.05	Proposed Egypt-PV Support Scheme Dr. Ahmed Huzayyin Project’s Expert, Prof. at Cairo University

1 0.05 – 00.30	Q & A
00.30 – 02.99	Coffee Break
<p>Session 2: Advisory Board Egypt-PV Panel Discussion</p> <p>Moderator: Dr. Anhar Hegazi</p> <p>Energy & Sustainable Development Expert</p> <p>Former Deputy Executive Secretary UN ESCWA</p>	
02.99 – 0.30	<p>Advisory Board Panelist (Alphabetical Order)</p> <p>Dr. Amr Taha Egypt-PV Director & IMC Deputy Executive Director</p> <p>Dr. Ayman Zaki Technical Capacity Building Director, IMC</p> <p>Eng. Emad Hassan Energy Advisor for the Minister of Tourism</p> <p>Dr. Mohamed Bayoumi Environment Team Leader, Assistant Resident Representative UNDP</p>
00.30 – 02.90	<p>Q & A</p> <p>Stockholders Suggestions for Egypt-PV Future Steps</p> <p>Closing Remarks</p>
02.90 – 03.90	Networking Lunch

Annex 4 - Annual Work plan 2018


XPECTED CP OUTPUTS	PLANNED ACTIVITIES <i>List all activities including M&E to be undertaken during the year towards stated CP outputs</i>	Brief Description	TIMEFRAME			
			Q1	Q2	Q3	Q4
Outcome 1: Design of small PV systems Output 1.1: Finalized design of the support scheme to facilitate market take-off for the first 4 MWp of SD PV power generation (rooftop) systems	Act.1.1.1: Project Design	Gather the information to prepare a data base for the current projects and activities in the fields (Official letter and meetings RCREEE, NREA, MOE, Egypt ERA, ECOFYI, ...etc)				
	Sub act 1: Design the Financial support scheme	The percentage of financial contribution in each sector				
	Sub act 2: Design the Technical support scheme	Min. Technical Guidelines, check-list, due diligence				
	Sub act 3: Allocate project budget in 4 years	Deciding the percentage of the grant of each sector				
	Sub act 4: different targeted sectors (proposed project list)	Suggesting the projects to be integrated in the project				
	Act 1.1.2: Prepare the procedures guideline:	A process to facilitate the selection of the projects				
	Sub act 1: Eligibility Criteria	Setting criteria for each sector to filter the submitted forms				
	Sub act 2: Flow Chart	A chart for the clients to guide them how to apply and what to do				
	Sub act 3: Grant Payment Methodology (Letter of commitment)	Announcing the methodology payment of the grant, whether after or before completing the project				
	Sub act 5: System Integrators filtration	Creating a list of the best systems integrators in the market to be recommended to the customers				
	Act 1.1.3 Analysis using surveys with various stakeholders (NREA. RECREE, EGYPTRA, DisCos,)	Finding the barriers that are hindering the progress of PV decentralized systems in the net-metering scheme & Grid Connection				
	Act 1.1.4: Design the required templates to apply for SD PV support.	Preparing the templates which will be our communication with the applicants to facilitate the process of support				

	Act 1.1.5: Design PV Financial Tool	A tool to calculate the revenues of the system, financial feasibility and show the cashflows during the lifetime of the project				
	Act 1.1.6: Live calculator on the website	Creating a simple calculator for the applicates to help them figure out the system they need, payback period, and the required area				
Output 1.2: A manual and template for PV system design and installation to be released as a hard copy and internet-based.	Act 1.2.1: Prepare the manual template for PV system design (with a link to Output 3.1), including technical and financial requirements to be released as a hard copy, internet-based including social media. The manual will serve technicians, installers, designers.	This manual is to raise the market awareness of the know-how of the solar market				
Output 1.3: An established PV/project support center (including dedicated website + virtual hub)	Act 1.3.1: Prepare T.O.R to establish PV hub	This hub should be a one stop shop for all the info about the solar industry in the market to share and manage information on the 20 MWp programmed and advise and guide potential clients through the different steps of applying for the available support and the design, purchase and installation of a PV system.				
	Act 1.3.2: PV hub between (Ministry of Electricity, Distribution companies, NREA, Egypt PV ...etc)					
	Act 1.3.3: Mechanisms of One Stop Shop for PV in Distribution companies	A service center should be integrated in each distribution company to support everyone				
	Act 1.3.4: Design Website for the project and the support Center, the website will disseminate project news, implemented projects, stakeholders contact and publications.	To make the data available for everyone in the market				
Output 1.4: Public awareness-raising and marketing campaigns to promote the Egypt PV market	Act 1.4.1: Marketing campaigns with the five sectors	Such Meetings for offline awareness raising				
	Act 1.4.2: Public awareness-raising workshops, round tables, solar energy awareness sessions...etc					
	Act 1.4.3: Awareness sessions for Journalists					
	Act 1.4.4: Create A T.O.R for developing a Communication Strategy					

	Act 1.4.5: Hire a consultant for a communication strategy	Plan a strategy to raise the public awareness of the solar industry in the society				
	Act 1.4.6: Marketing campaigns with Investors, local manufacturers and companies	Including Social media and offline marketing				
	Act 1.4.7: Series of workshops with NREA					
	Act 1.4.8: Participation in a national & international conference					
Output 1.5: A project midterm and final workshop to present and discuss the results and potential next steps	Act 1.5.1: Meeting to follow up on the progress					
Outcome 2: Establishing an enabling policy & institutional framework	Act 2.1.1: Meetings with MOE, Egypt ERA, NREA, Distribution companies	Those meetings to understand and coordinate the policies and regulations for the solar market in Egypt				
	Act 2.1.2: Policy paper	Creating a policy paper that summarize the policies of the stakeholders to facilitate the market creation				
	Act 2.1.3: PV Injected Energy KPIs and Incentives	Those KPIs to ensure the quality of the process of the project				
	Act 2.1.4: Finalized implementation decrees and other required documents for ensuring Metering schemes to support small PV installations	To assure good coordination and best implementation				
Output 2.1: Finalized implementation decrees and other required documents for ensuring net metering schemes						

	Act 2.1.5: Workshop with PV installation companies to discuss the constraints, challenges and solutions encouraging PV Small scale				
Output 2.2: Completed analysis of eventual technical constraints in connecting small, decentralized PV systems to the grid and updating the related technical guidelines (or grid code), as needed, to overcome those constraints	Act 2.2.1: Meetings with MOE, Egypt ERA, NREA, Distribution companies to Complete analysis of eventual technical constraints in connecting small, decentralized PV systems	After the meetings with all the involved parties, to summarize the needs and make the goals crystal clear			
	Act 2.2.2: Updating the related technical guidelines (or grid code), as needed, to overcome those constraints and to scrutinize the connections with support of the local electricity distribution companies.				
Output 2.3: As applicable, recommendations for eventual grid strengthening needs and/or new guidelines for grid and load management for integrating small, decentralized PV systems into the power system on a larger scale.	Act 2.3.1: Recommendations for eventual grid strengthening needs and/or new guidelines for grid and load management for integrating small, decentralized PV systems into the power system on a larger scale.	Assuring a smooth process when it comes to regulations & implementation of PV in Buildings & Urban Planning			
	Act 2.3.2: Integrated PV in Buildings & Urban Planning for sustainable development guidelines				
Output 2.4: Completed analysis of the current building regulations for both construction and management of the buildings to identify any barriers to widespread implementation of rooftop PV systems in residential buildings	Act 2.4.1: Completed analysis of the current building regulations for both construction and management of the buildings to identify any barriers to widespread implementation of rooftop PV systems in residential building proposed amendments and measures to remove or overcome those barriers.	Overcoming any barriers which could slow down the implantation of PV Systems over the buildings by the coordination with HBRC			

	Act 2.4.2: Preparation of PV small scale code by HBRC in coordination with the project and technical committee from Experts and Egyptian universities and ministries				
Output 2.5: Drafted amendments to the existing laws and regulations and eventual new regulations to ensure adequate quality control of the PV systems offered in the market and their installations.	Act 2.5.1: Issuing a ministerial decree for the prepared code	Working with the government to amend the laws & regulation to improve the quality			
	Act 2.5.2: Finalized proposal (together with drafted legal and regulatory provisions) for the eventually-required complementary financial and fiscal incentives				
Output 2.6: Finalized proposal (together with drafted legal and regulatory provisions) for the eventually-required complementary financial and fiscal incentives and other measures (such as RE purchase obligations of national electric utilities, mechanisms for administering and setting national Net-Metering, etc.) to support sustainable growth of the small, decentralized PV market after reaching the initial 20 MWp target.	Act 2.6.1: Other measures (such as RE purchase obligations of national electric utilities, mechanisms for administering and setting national Net-Metering, etc.) to support sustainable growth of the small, decentralized PV market after reaching the initial 20 MWp target.	Supporting the sustainable growth is critical for the project goals			
	Act 2.6.2: Finalized technical and other quality criteria for the PV systems (including inverter and grid connection), installations and PV system suppliers and installers to benefit from the UNDP-implemented, GEF-financed project and related Government support.				
Outcome 3: Strengthening the supply chain by building the Capacity of the key supply-side stakeholders.	Act 3.1.1: Workshop with PV installation companies to discuss the proposed technical and quality criteria for the PV systems	Assure that every party is on the same page technically through those training programs			

Output 3.1: Finalized technical and other quality criteria for the PV systems (including inverter and grid connection), installations and PV system suppliers and installers to benefit from the UNDP-implemented, GEF-financed project	Act 3.1.2: Finalized training programme on the adopted technical and other quality criteria as a prerequisite for offering their products and services for the implementation of the 4 MWp programme and benefit from other financial and fiscal incentives.					
Output 3.2: Finalized training programme and training materials to train the key stakeholders (including system suppliers and installers tailored for youth, men and women) on the adopted technical and other quality criteria as a prerequisite for offering their products and services for the implementation of the 4 MWp programme and benefit from other financial and fiscal incentives.	Act 3.2.1: Participants of the key stakeholders (including system suppliers and installers tailored for youth, men and women)					
	Act 3.2.2: Qualification Criteria for the supplier & installers taking into consideration NREA's criteria for qualification					
Output 3.3: A quality-controlled PV suppliers' and installers' database (as applicable, including also pre-tendered prices to be updated at regular intervals) with at least 5 pre-screened and trained system suppliers and 20 installers that have obtained a quality certificate (or recognition) to offer their services to the PV projects supported by the UNDP-implemented, GEF-financed project (with an emphasis on a 'one stop shop' approach).	Act 3.3.1: Creating a quality-controlled PV suppliers' and installers' database	This database will be an essential element in the ONE STOP SHOP				
Output 3.4: Finalized design of a permanent quality control and certification scheme for both the hardware and installations, with	Act 3.4.1: Finalized design of a permanent quality control	Ensuring the quality of implementing the PV systems				

related market surveillance and enforcement mechanisms and institutional arrangements to facilitate their effective implementation after the project	Act 3.4.2: Finalized design of certification scheme for both the hardware and installations	Certification is for regulating the market and quality of the installation				
	Act 3.4.3: Exploring the related market surveillance and enforcement mechanisms and institutional arrangements to facilitate their effective implementation after the project	To ensure the sustainability of the projects				
	Act 3.4.4: producing regular annual market monitoring reports	Monitoring is an essential thing to evaluate the performance of the project goals which shall be communicated and understood well				
	Act 3.4.5: Continue such monitoring after the end of the UNDP-implemented, GEF-financed project.					
	Act 3.4.6: Finalized training program on decentralized PV power generation in new buildings through integrated building and PV system design.					
Output 3.5: Complementary training and other capacity development programs for different professional groups, such as architects, building engineers and construction companies, to promote decentralized PV power generation in new buildings through integrated building and PV system design.	Act 3.5.1: Finalize two manuals: technical manual and user non-technical manual	To gather different backgrounds to be involved in the taking off of the market				
	Act 3.5.2: Participants of the key stakeholders (including different professional groups, such as architects, building engineers and construction companies) of Workshops					

	Act 3.5.3: Support for the establishment of a local Solar Energy Industry Association, which can continue the policy dialogue and operate as a knowledge management hub	Such association is a good tool to sustain the market and keep the growth				
Output 3.6: Public awareness-raising and marketing support, including, as applicable, support for the establishment of a local Solar Energy Industry Association, which can continue the policy dialogue and operate as a knowledge management hub and training center for further promotion of both the solar power generation and solar thermal markets.	Act 3.6.1: Required background studies, analysis & market research	Market research and analysis of the background is critical to select the segment, and target the right audience				
	Act 3.6.2: The awareness campaign will be tailored to the needs of specific groups such as men, women, youth, etc. ...	Such Campaigns & training centers will help the market growth				
	Act 3.6.3: Training center for further promotion & best practices of both the solar power generation and solar thermal markets					
Output 4: Establishing a financing framework and a network of local financial institutions to facilitate the financing of small PV systems	Act 4.1.1: Initial drafting of the proposed financing scheme(s)	Using the project design a draft for the financing schemes shall be announced				
Output 4.1: Required background studies, analysis and initial drafting of the proposed financing scheme(s) and support for required follow-up consultations with the financing entities interested in developing the scheme further.	Act 4.1.2: Meetings with Banks & financial institutions	Banks and financial institutions are the gear for accelerating the market so meeting with them and convince them with the financial scheme will be very positive thing				
	Act 4.1.4: Support for required follow-up consultations with the financing entities interested in developing the scheme further.					

Output 4.2: Involvement of local community associations to act as intermediaries, helping to promote the lending mechanism and support the projects.	Act 4.2.1: Involvement of local community associations to act as intermediaries, helping to promote the lending mechanism and support the projects.	The local community role is essential for supporting the project as they can accelerate achieving the goals in more efficient way				
	Act 4.2.2: Technical due diligence of projects proposed for financing	To assure the efficiency of the project technically before financially				
Output 4.3: Technical due diligence of projects proposed for financing, and training of the staff of the participating banks on technical aspects of the projects.	Act 4.3.1: Prepare training programme and material on financing issues related to the project	Having trained calibers who works on the project goals from the financial institutions and banks will raise the performance of project				
	Act 4.3.2: Training of the staff of the participating banks on technical aspects of the projects.					