



New & Renewable Energy Authority
هيئة الطاقة الجديدة والمتجددة

2022 Annual Report



HYDROGEN H₂

Green Future... in Egypt

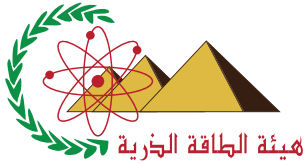


COP27
SHARM EL-SHEIKH
2022 EGYPT

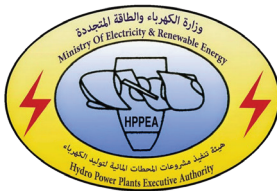


**Proud of
Our Projects and Achievements**

1	Ministry of Electricity and Renewable Energy Structure	22	New & Renewable Energy Authority Projects
2	Executive Chairman’s Speech	23	Private Sector Projects
3	NREA Organizational Chart	24	Other Technologies
4	Board of Directors		Green Hydrogen
5	Renewable Energy 2022		Electric Vehicles
6	Electricity Statistics		Geothermal Energy
7	Electricity Mix	27	Energy Efficiency
8	Renewable Energy Regulations	28	Testing and Research Centre
10	Wind Energy		Home Appliances Testing Labs
	Wind Atlas For Egypt		Solar Water heaters testing lab
	Wind Energy Projects		PV Testing Labs
13	Solar Energy		PV Lab Tests
	Solar Atlas For Egypt	33	Regional and International Cooperation
	Solar Energy Projects	34	Training and Promotion
	Egypt-PV project		Solar Water Heater Training centre
18	Biomass energy projects	36	Environmental Studies and Emigrants
20	Renewable Energy In Egypt		Birds protection
21	Technical Indicators of Renewable Energy	38	Digital Transformation
		40	Abbreviation



وزارة الكهرباء والطاقة المتجددة
Ministry of Electricity and Renewable Energy



COP 27, held in Sharm El-Sheikh last November, has created momentum and aspiration for new roles played by renewable energy in achieving sustainable development.

Renewable energy markets have remained dynamic and energetic despite the global economic slowdown. This is due to the adoption of flexible legislative frameworks and financial mechanisms that maintained the competitiveness of renewable energy projects. In addition, the average capacity of each project has increased from tens to hundreds of Mega Watts. This was a positive sign of the role of "economies of scale" in scaling up these projects in 2022. Economies of scale also enhanced the localization of some relevant components and led to the transfer of knowledge and increased employment opportunities that year.

By signing more than twenty MOUs for green hydrogen projects and its derivatives, with total investments that exceeded 80\$ billion, renewable energy has taken on a new dimension to improve its economic performance. Using unique natural resources from wind and solar, renewable energy enhances its role in sustainable development as a clean source of energy and improves the economic performance of other projects such as water desalination and electric vehicles.

At the same time, it is recommended for markets to develop their partnerships with the private sector and provide a suitable investment climate with attractive tools.

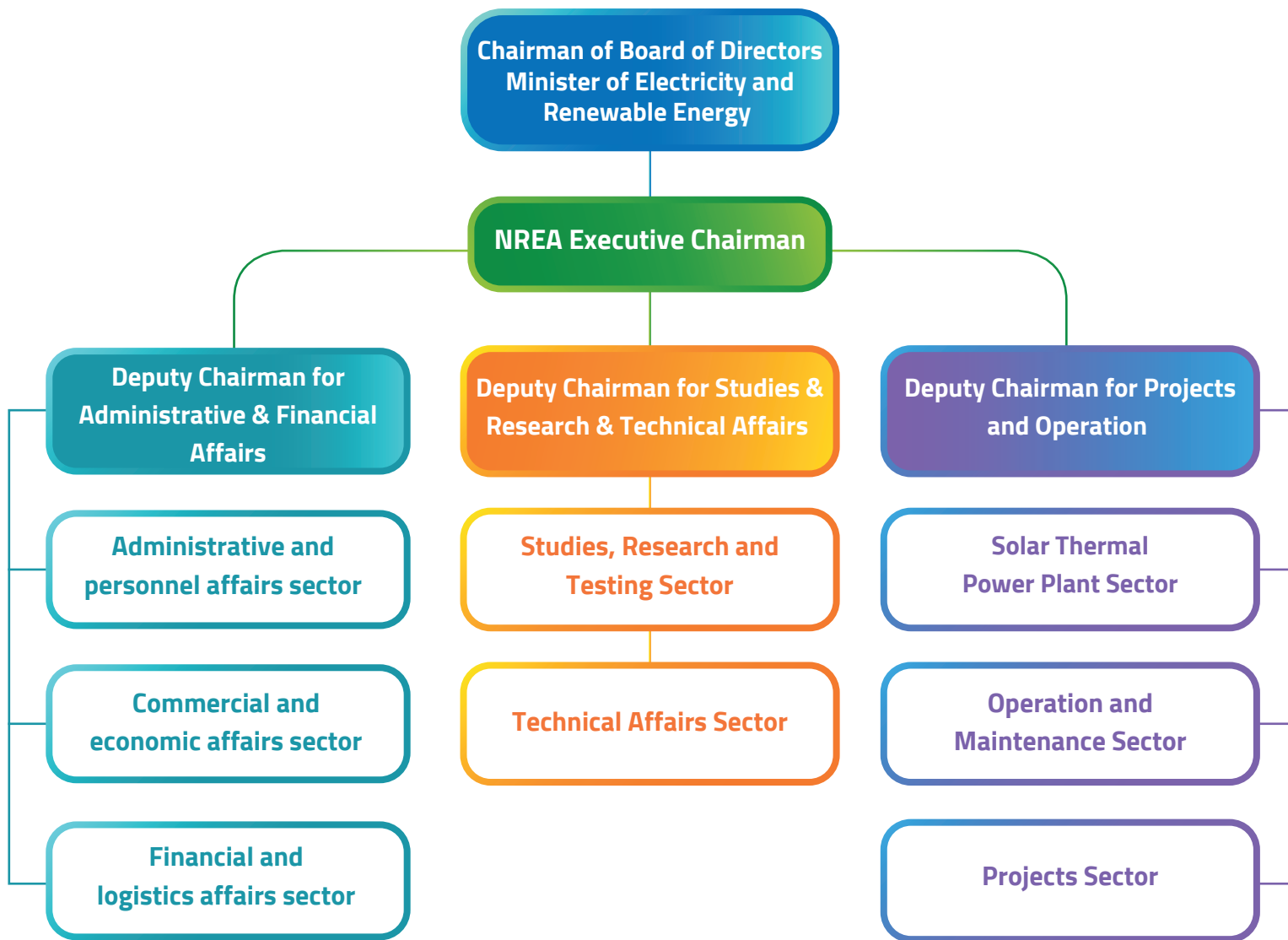
It is important to encourage pioneering investors who can provide innovative business models with a low level of risk and reasonable profits. This emphasizes the need for continuing cooperation between public and private sectors, so that investors can become partners instead of competitors. The goal is to increase the percentage of renewable energy in the Energy Mix to %42 by 2035. The private sector is currently working on developing projects with a total capacity of 2800 MW of wind and about 700 MW of solar. This will support Egypt's vision to be a regional energy hub.

Last year's performance indicators showed an increase in the profitability of NREA (EGP +300 Million), with a production of hydropower of about 15,000 GWh, wind 6,100 GWh, solar 4,400 GWh, and biomass projects about 90 GWh. Furthermore, in 2022, the 50 MW Zafarana PV project was commissioned, and another 252 MW wind project in the Gulf of Suez area is under construction. Meanwhile, the 20 MW Hurghada PV and its battery storage system are in the tendering phase.

We are in a crucial energy transition phase, not only on the local level, but also on the global level. We want to ensure that Egypt is on its path towards a greener future by utilizing every gust of wind and every ray of sun.

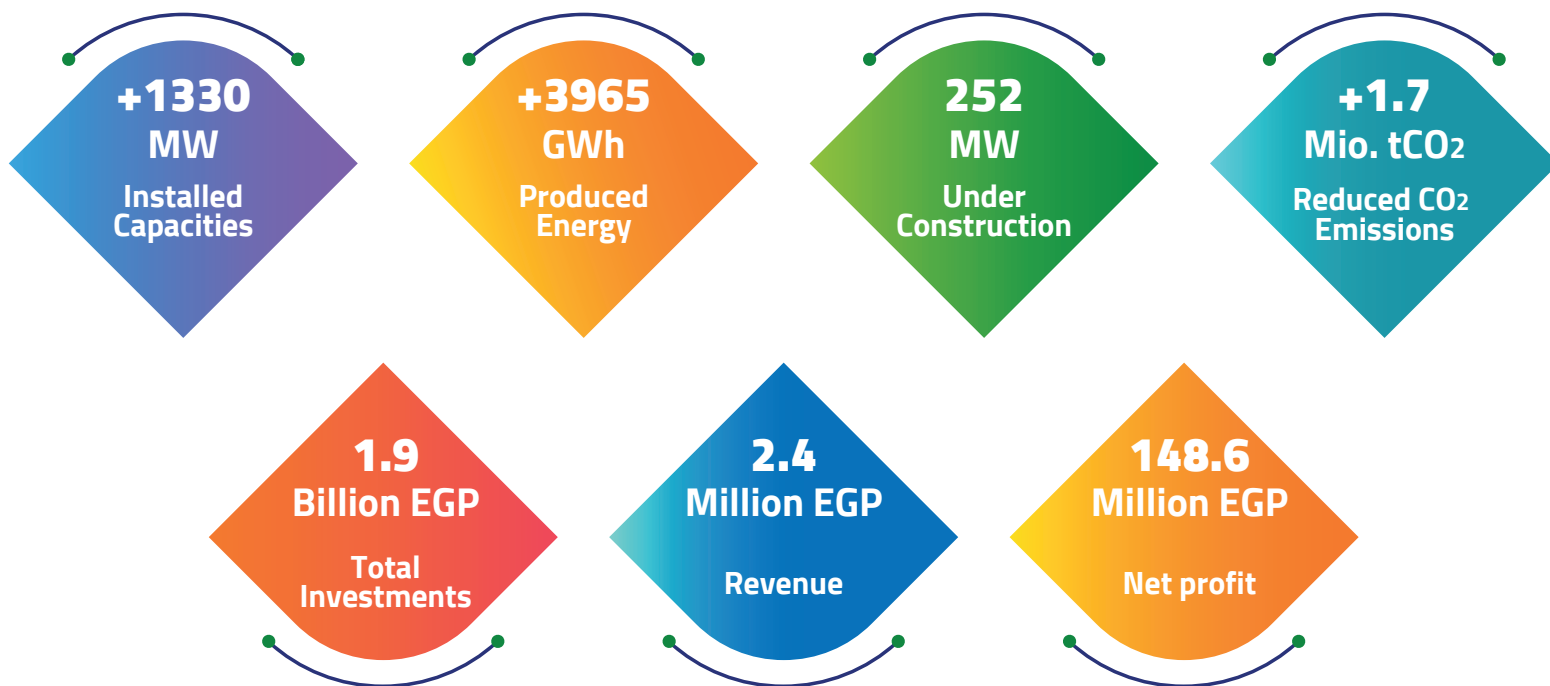


Dr. Mohamed El Khayat

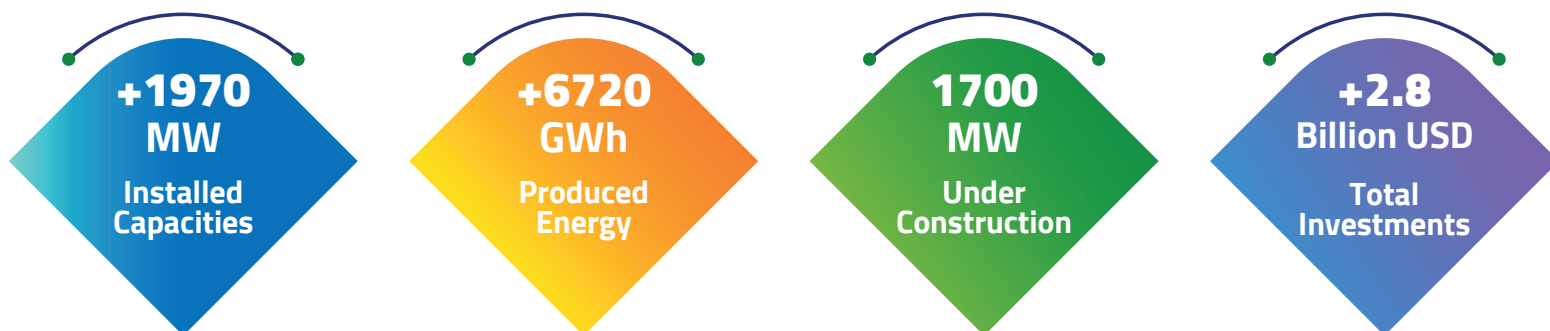




New & Renewable Energy Authority Projects



Private Sector Projects



Description		2019/2020	2020/2021	Variation %
Total Installed Capacity ⁽¹⁾	MW	59530	58818	(1.4)
Hydro	MW	2832	2832	0
Thermal (Affiliated Companies & EEHC Plants) ⁽²⁾	MW	51634	50922	(1.4)
New and Renewable Energy (Wind & Solar) ⁽³⁾	MW	3016	3016	0
Private Sector BOOT (Thermal)	MW	2048	2048	0
Peak Load	MW	32000	31900	(0.3)
Total Power Generated	GWh	197357	204794	3.7
Hydro	GWh	15038	14769	(1.8)
Thermal ⁽⁴⁾	GWh	162092	168478	3.9
Renewable Energy ⁽⁵⁾	GWh	8663	10202	17.8
Private Sector (BOOT)	GWh	11408	11188	(1.9)
Power Generated from Isolated Plants	GWh	136.4	133	(2.5)
Energy Purchased from (IPPs)	GWh	19.5	24	23.1
Total Fuel Consumption ⁽⁶⁾	Ktoe	32133	32408	0.9
Production Companies (including EEHCs Plants)	Ktoe	29688	30034	1.2
Private Sector (BOOT)	Ktoe	2445	2374	(2.9)
Fuel Consumption Rate at Production Companies	gm/KWh gen.	183.2	178.3	(2.7)
Fuel Consumption Rate, including BOOT	gm/KWh gen.	185.2	180.4	(2.6)
Thermal Efficiency (including Private Sector BOOT)	%	47.4	48.6	2.5
N.G Ratio to Total Fuel including BOOT	%	94.1	98.2	4.3
N.G Ratio for P.P connected to gas grid Including BOOT	%	95.9	99.7	4
T. Length of Transmission Lines & Cables on HV & Extra HV	Km	51956	53854	3.6
T. Substation Capacities on HV and Extra HV	MVA	157848	177372	12.4
T. Length of Distribution MV&LV Lines and Cables	Km	539865	551102	2.1
T. Capacity for distribution transformers MV&LV	MVA	90163	93177	3.3
No. of Customers at Distribution Companies	M. Customer	37.1	37.9	2.2
No. of Customers at EETC	Customer	150	158	5.3
No. of Employees at EEEC and Subsidiaries	K. Employee	152.7	148.6	(2.7)

1- There are isolated units with a total nominal capacity of 217.2 MW.

2- Including EEHC power plants (Beni -Suef, Burullus and New Capital) constructed in Cooperation with Siemens AG.

3- the solar component of kuriemat Solar/Thermal Plant is 20 MW.

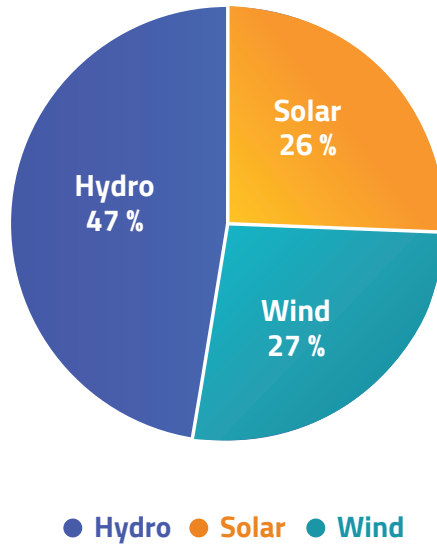
4- Including commissioning test and EEHC plants.

5- Connected to the national unified grid.

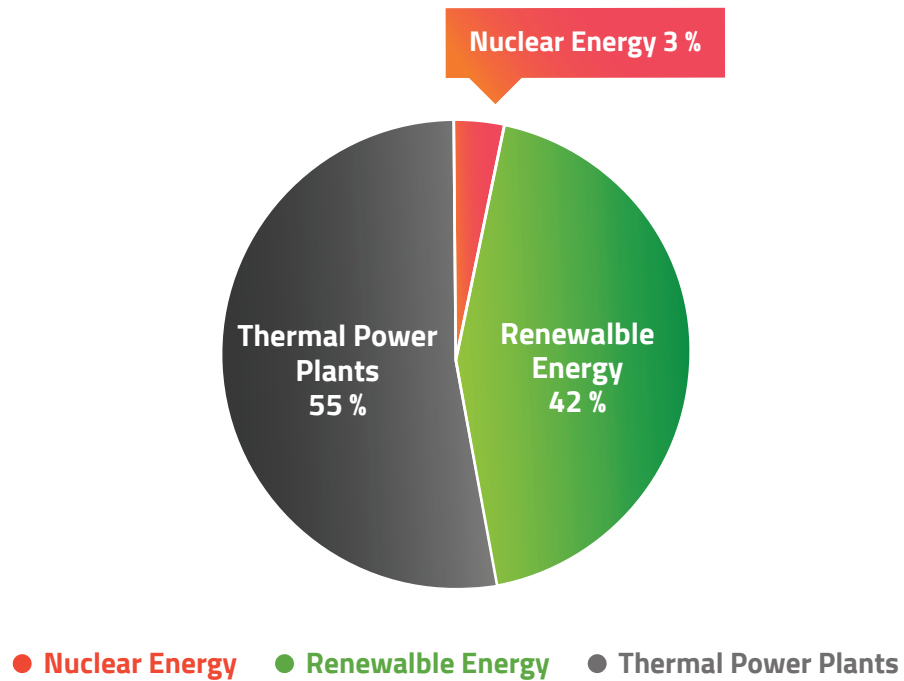
6- In addition to the total consumed fuel at the isolated plants and reserves amounting to 25.6 K toe.

Source: Annual Report 2021, Egyptian Electricity Holding Company

RE Mix 2022



Planned Mix 2035



Sources: TARES Scenario 4b

Renewable Energy Regulations

**JUL
1986**

Law No. 102 / 1986, Presidential Decree on the establishment of New and Renewable Energy Authority.

**JUL
2014**

Electricity Tariffs Reform.

**SEP
2014**

Cabinet Decree No.1974 / 2014, The First round of Fit in Tarrif Mechanism.

**OCT
2014**

Presidential Decree No. 135 / 2014, OF NREA.

**DEC
2014**

Renewable Energy Law No. 203 / 2014.

**JUL
2015**

The Electricity Law No.87 / 2015.

**SEP
2016**

Cabinet Decree No. 2532 / 2016 the Second Round of Fit-in Tariff Mechanism.

**OCT
2016**

Presidential Decree No. 116 / 2016 for allocating around 7600 km² of arid areas to NREA to be used in implementing renewable energy projects.

**AUG
2017**

Periodical Decree No. 3 / 2017 Net meterings scheme for photovoltaic projects up to 20 MW.

**OCT
2019**

Cabinet Decree for Electricity Prices for Biomass under Fit scheme.

**MAY
2020**

Periodical Decree No. 2/2020 Restructuring the Net Metering Scheme.

**JAN
2022**

Periodical Decree No. 3 Regarding Net Metering and self-consumption system.

**FEB
2022**

Periodical Decree No. 5 Regarding Electric Vehicles charging Stations regulation.

**FEB
2022**

Periodical Decree No. 6 Regarding Net Metering Amendments

**MAR
2022**

Law No.11 for the year 2022 amending provisions of law no102 for the year 1986 on establishing New and Renewable Energy Authority and Law No. 203 for the year 2014 on generating electricity from renewable energy sources and repealing Hydro power plant

**APR
2022**

Periodical Decree No.7 Regarding Integration of renewable energies used for irrigation projects on medium voltage.

**SEP
2022**

Periodical Decree No.10 Regarding Amending the Model of the Net Metering Electrical Power Exchange Contract on the Distribution Networks of a Solar Power Station with a Capacity of Up to 20 MW.

**JAN
2023**

Periodical Book No. 2 Regarding the Regulations for the Purchase of Electricity Generated From Renewable Energies Produced by the New and Renewable Energy Authority.

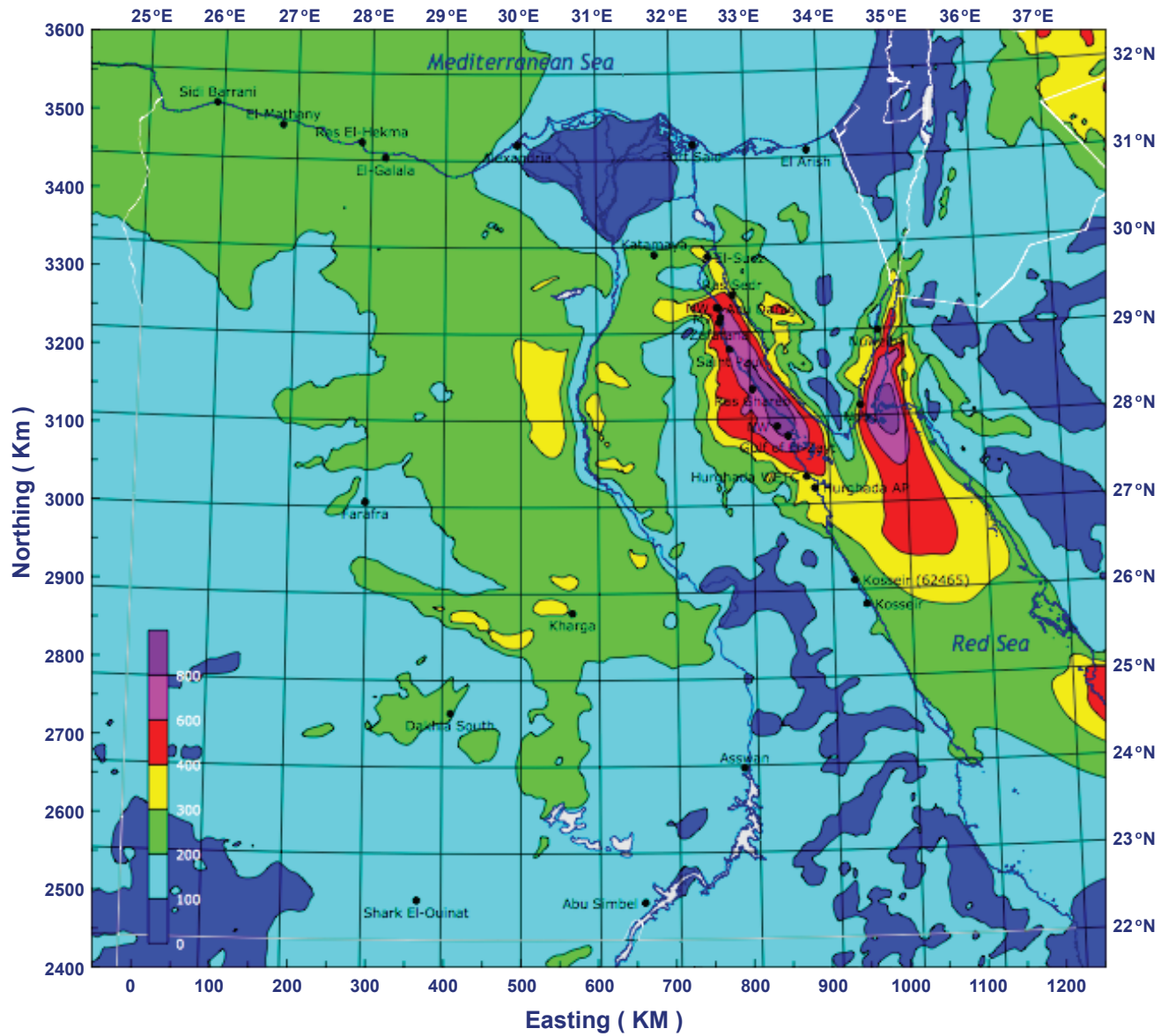
**FEB
2023**

Presidential Decree No. 51 for the Year 2023 allocating state-owned plots of lands in the governorates of Sohag and Aswan to carry out projects aimed at construction of renewable and new energy plants.

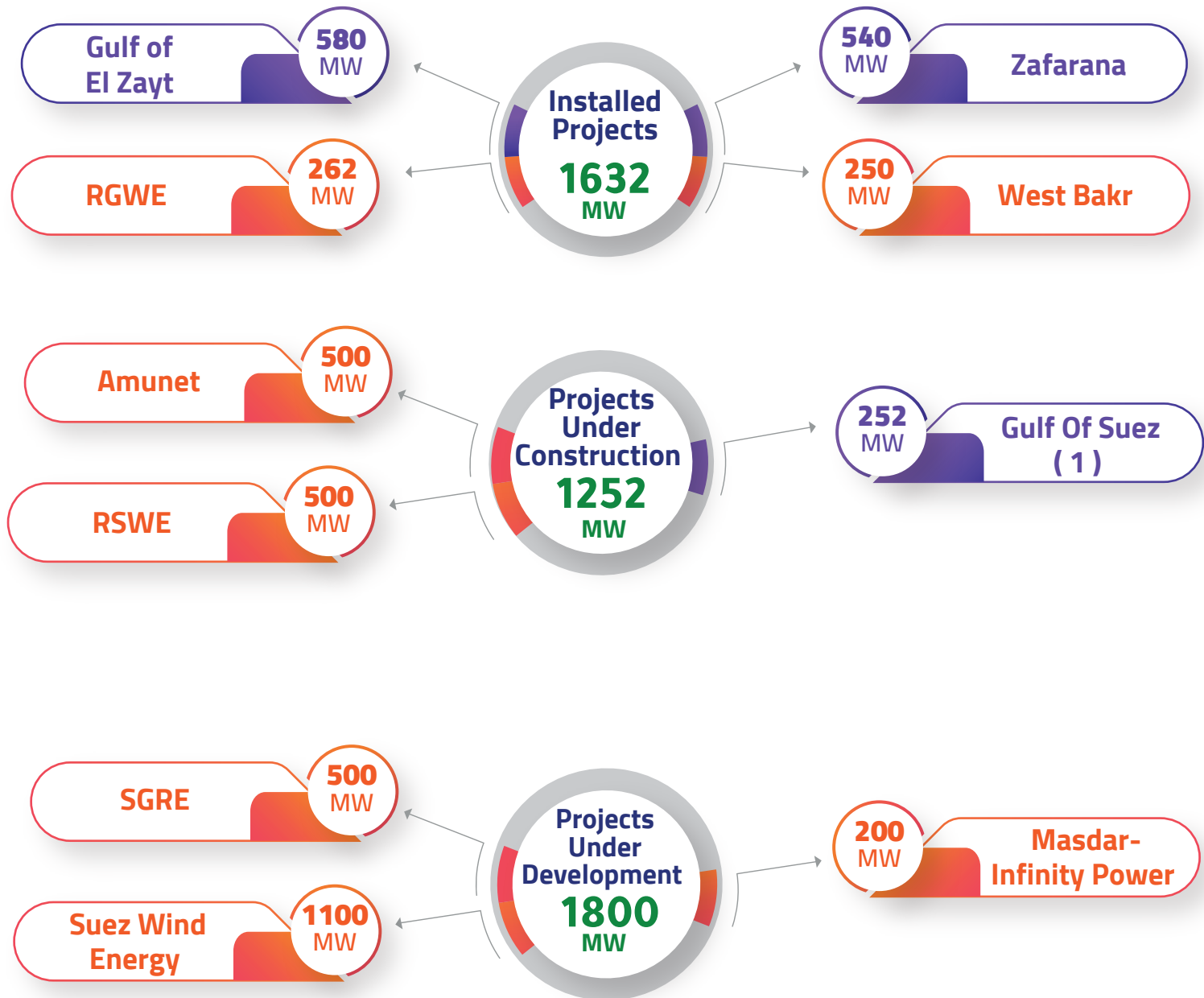
**FEB
2023**

Presidential Decree No. 55 for the year 2023 allocating 596234589 square meters of state owned plots in Sidi Barrani district in Matrouh Governorate to be privately owned by the New Energy Authority to be used in the establishment of renewable energy plants.





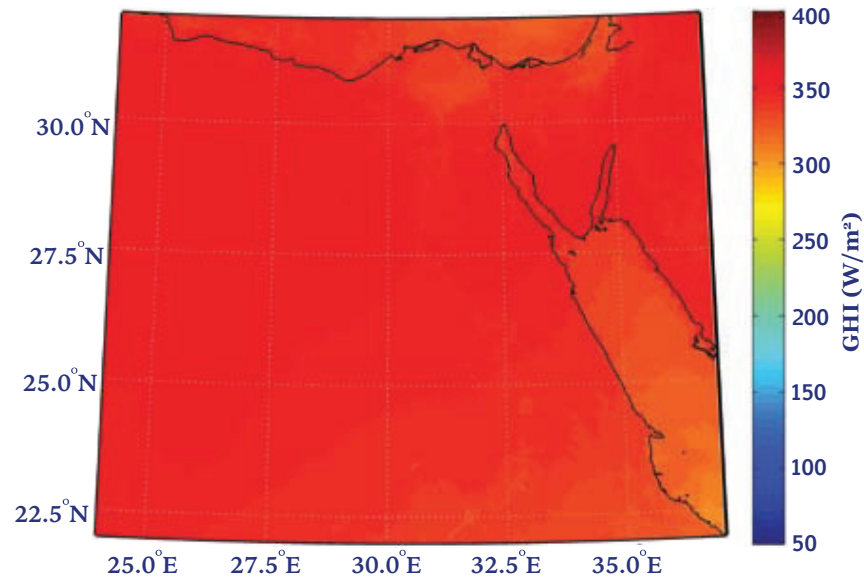
The map shows average wind speeds in (m/s) at a height of 50 meters ground level.



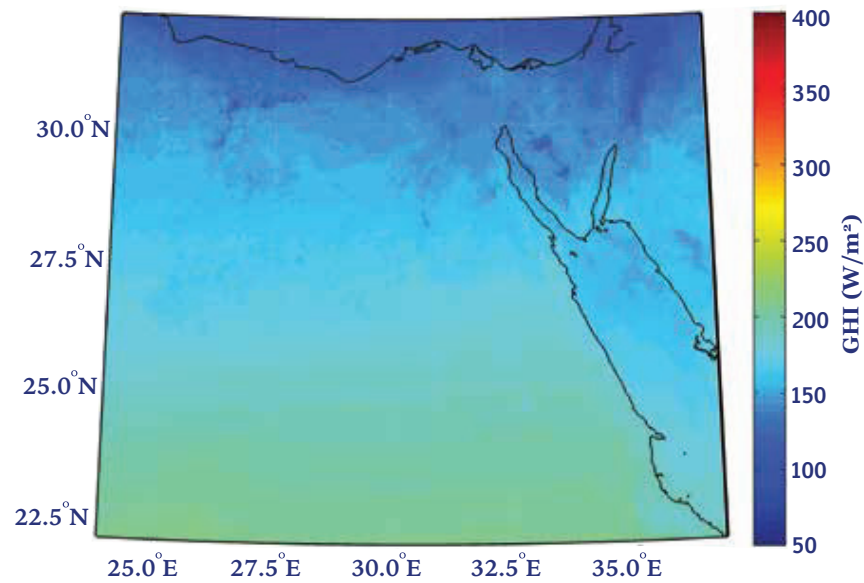
● Public Sector Projects ● Private Sector Projects

Zafarana Project
50 MW
(starting october 2023)

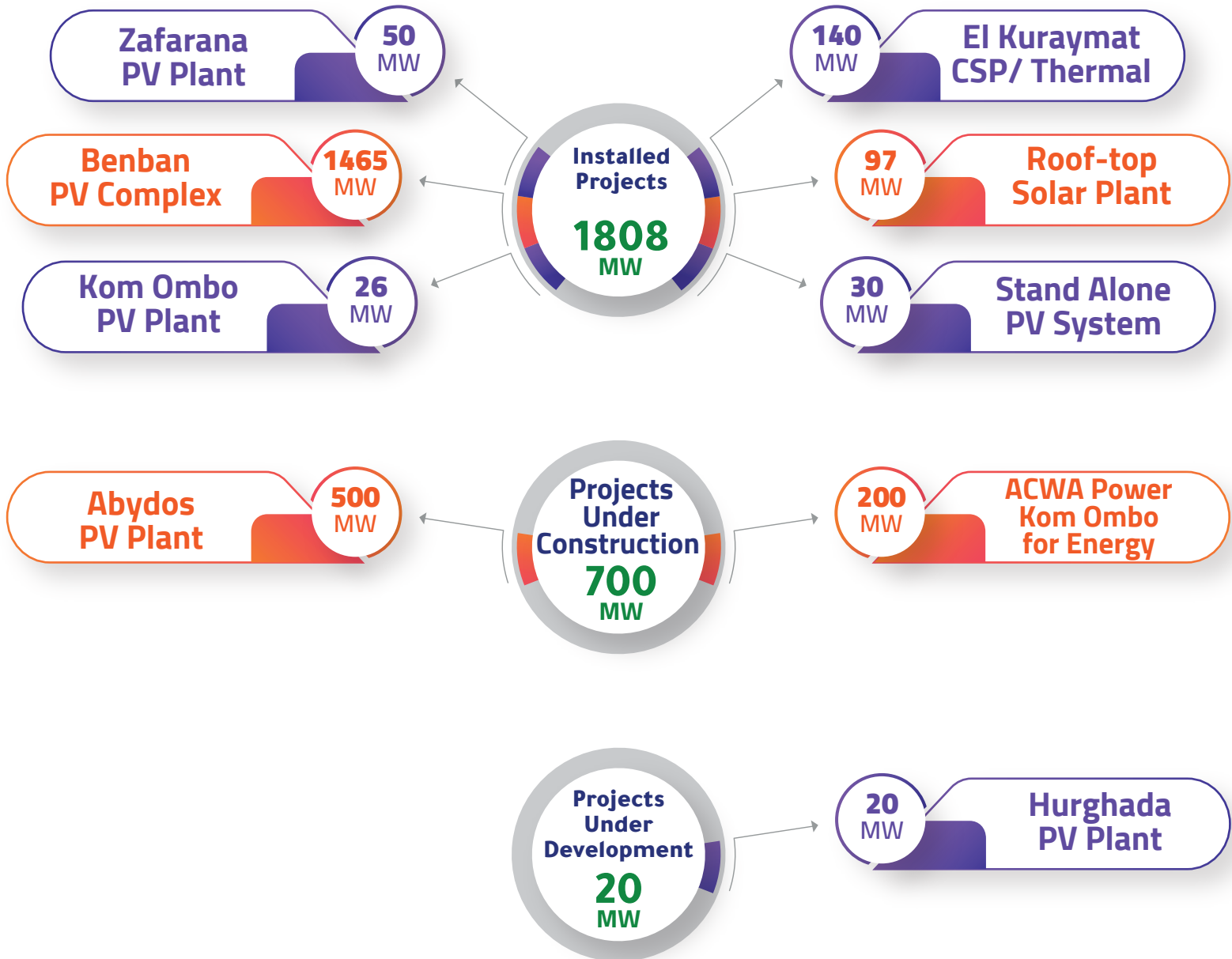




Average of solar irradiance in July
Max. radiation



Average of solar irradiance in December
Min. radiation



● Public Sector Projects ● Private Sector Projects

Egypt’s 2030 vision aims to achieve a diversified, competitive, balanced economy with a sustainable development framework. In this regard and within the framework to spread solar energy applications NREA works with small solar PV system project in Egypt (PV Egypt) that is implemented by the industry modernization Center (IMC) in cooperation with UN development program (UNDP) and funded by global environmental facility (GEF) to spread the utilization of small PV systems with a capacity less than 500 kW to open the market and provide technical and financial support to this project.

Egypt (PV Egypt) project was developed to support solar energy projects in Egypt by removing barriers which facing small on-grid solar systems.

Accordingly, the project provided technical and financial support for about 225 pilots PV projects for electricity generation from solar (PV) systems in various governmental sectors (industrial, residential, tourism and commercial) in which 141 projects were completed, and 83 projects are still under construction. This pilot projects were with installed total capacities 18 MW in 19 governorates and is expected to produce 30 GWh of electricity and will reduce CO2 emissions by 16760 ton/yr.

Also, this project total investment reached 13 million USD with 3 million USD non-refundable grant , in addition developing new administrative capital road map for 2023, and supporting PV roof top with 15 MW and total investments 12.5 million USD.

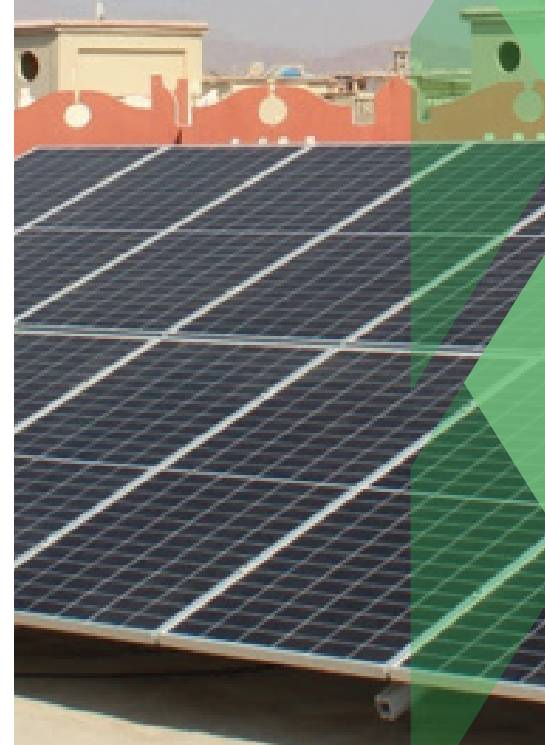
Capacity: **374 KWP**
Location: **Sharm El Sheikh**
Sector: **Tourism**



Grid Connected Small Scale Solar Systems Project “Egypt-PV”



Capacity: **467 KWP**
Location: **Sharm El Sheikh**
Sector: **Tourism**





Sakha (1)



Project Specifications:

Operation Date	May 2018
Substrate Sludge & manure	27,000 m ³ /year
Digester Capacity	8500 Digester
Produced Biogas	2.3 Million m ³ /year
Electricity	1067 KWh

● Public Sector Projects ● Private Sector Projects

Milkys



Project Specifications:

Operation Date	Oct. 2019
Substrate manure	73,000 m ³ /year
Digester Capacity	15.790 Digester
Produced Biogas	4.38 Million m ³ /year
Electricity	1067 KWh

Sakha (2)



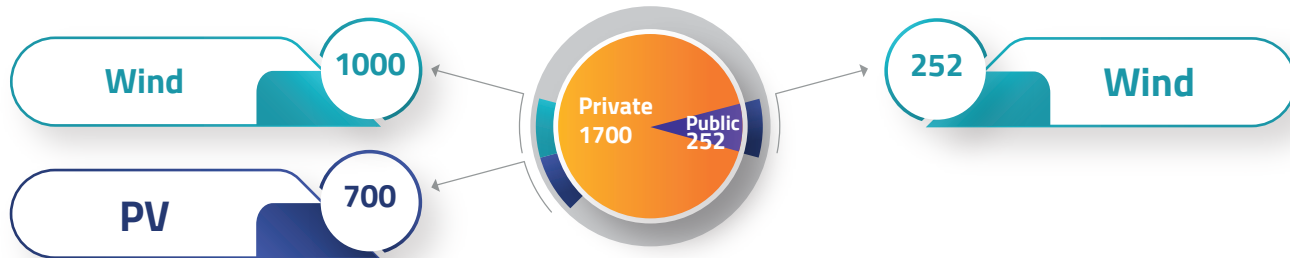
Project Specifications:

Operation Date	Sep. 2019
Substrate Sludge & manure	73,000 m ³ /year
Digester Capacity	15.790 Digester
Produced Biogas	4.38 Million m ³ /year
Electricity	1067 KWh

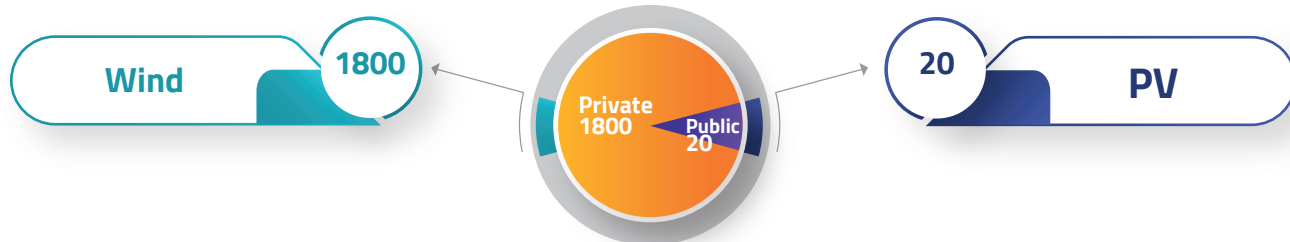
Installed Projects



Projects Under Construction

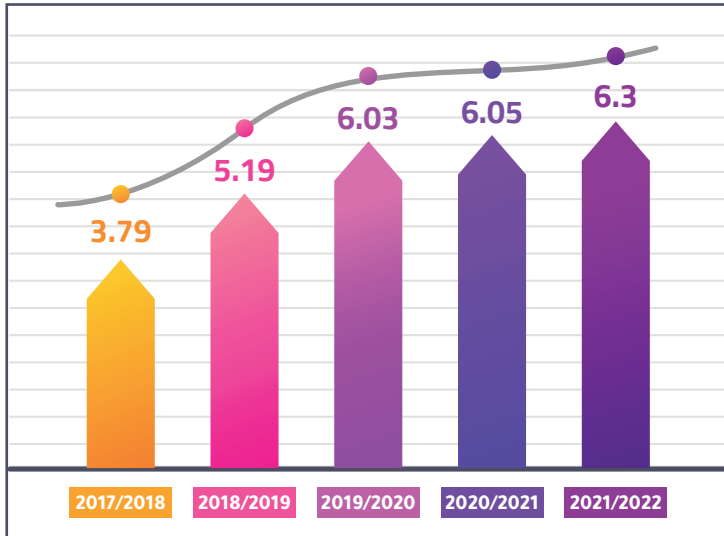


Projects Under Development

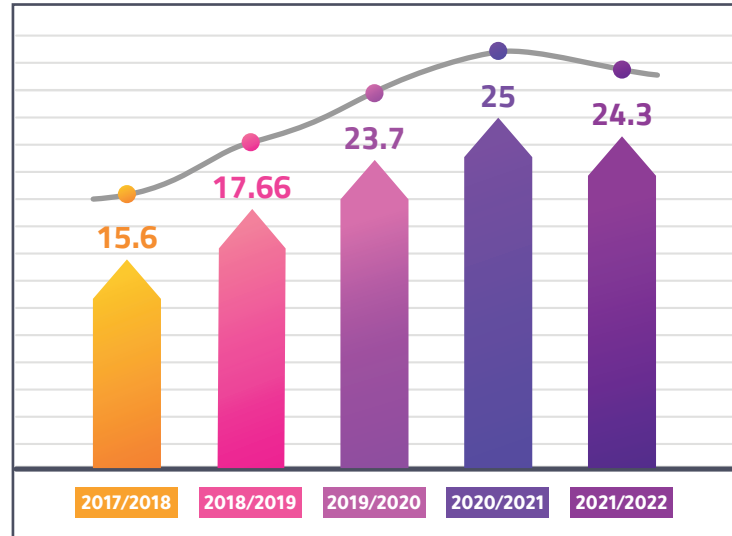


● Biomass
 ● Hydro
 ● CSP
 ● PV
 ● Wind
 ● Public
 ● Private Sector
 (Capacity MW)

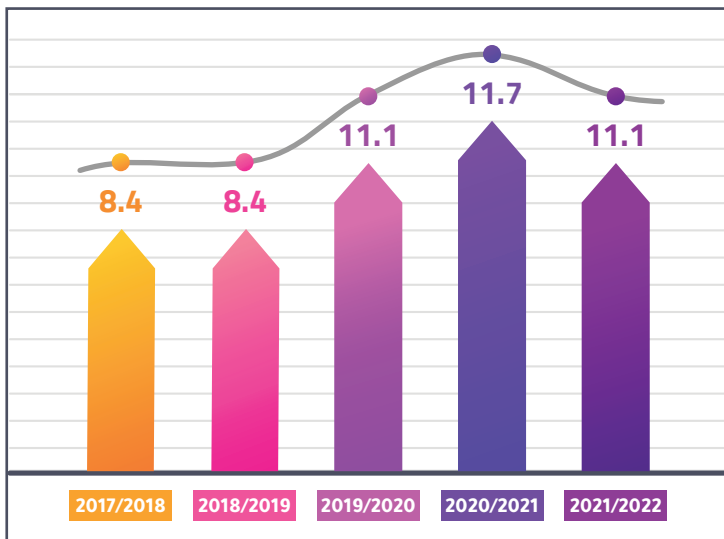
GW



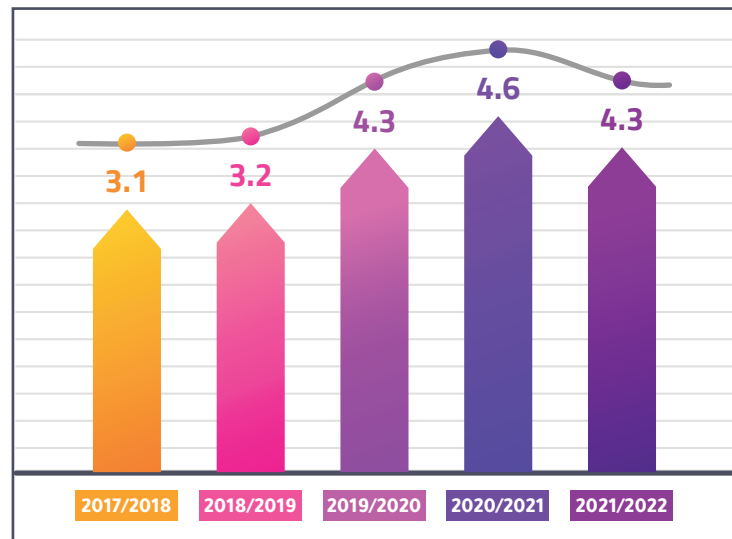
TWh



Mio.tCO₂



Mio.toe



	Installed				Under Construction	Under Development
Technology	Wind	Solar			Wind	PV
		PV	CSP	PV		
Project Name	Zafarana Wind Complex	Zafarana	Kuraymat CSP/Thermal	Roof-top and Central PV Plants Off Grid	Gulf Of Seuz 1	PV Plant Hurghada
Capacity (MW)	540	50	140	30	252	20
Development Parties	Germany - Spain Denmark- Japan	Germany	Japan -Spain	United Arab Emirates	EU - France - Germany	Japan
Project Name	Gulf of Zeit Wind Complex	PV Plant Kom Ombo				
Capacity (MW)	580	26				
Development Parties	EU - Germany - Spain - Japan	France				
Total	1120	76	140	30	252	20
Sub Total	1366				252	20
Total	1638					

	Installed				Under Construction		Under Development
Technology	Wind	PV		Bio	PV	Wind	Wind
		FIT	Net Metering				
Project Name	RGWE	Benban Solar Complex	Net Metering	Bio Energy	Abydos PV Plant	Amunet	Suez Wind Energy
Capacity (MW)	262.5	1465	97	56	500	500	1100
Plant Name	West Bakr				ACWA Power Kom Ombo for Energy	RSWE	Masdar-Infinity Power
Capacity (MW)	250				200	500	200
Plant Name							SGRE (Siemens-Gamesa Eenevable Energy)
Capacity (MW)							500
Total	512	1465	97	56	700	1000	1800
Sub Total	2130				1700		1800
* Total	5630						

* Doesn't Include Hydro Stations.

Green Hydrogen

During (COP27), the Egyptian government signed several framework agreements to establish green hydrogen projects from RE (wind and solar).

first phase - trial project - with a capacity of (100 MW)at Ain Sokhna Industrial Zone was launched to produce 15,000 tons of green hydrogen as a feedstock to produce up to 90,000 tons of green ammonia per year.

Egypt Hydrogen strategy aims to localize green hydrogen industry through the following main axes:

- 1- Manufacturing of green fuels (green hydrogen, green ammonia, methanol).
- 2- Providing complementary industries for green hydrogen industries (electrolyzers – solar panel – turbines)
- 3- Green fuel bunkering services through ports of the Suez Canal Economic Authority.

23 MOU were signed with an international companies to produce green hydrogen with a RE capacity 95 GW, as a result of Egypt's infrastructure that supports the presence of these projects, and Egypt is looking forward to being a center for exporting green hydrogen and its derivatives to Europe and the world by attracting foreign investments.

2020 s

Pilot Projects

Building on Egypt's hydrogen experience the pilot projects will lay the foundations for the developing low carbon hydrogen economy and export market. Providing close support for initial projects, and establishing a fit for purpose governance structure

2030 s

Scale Up

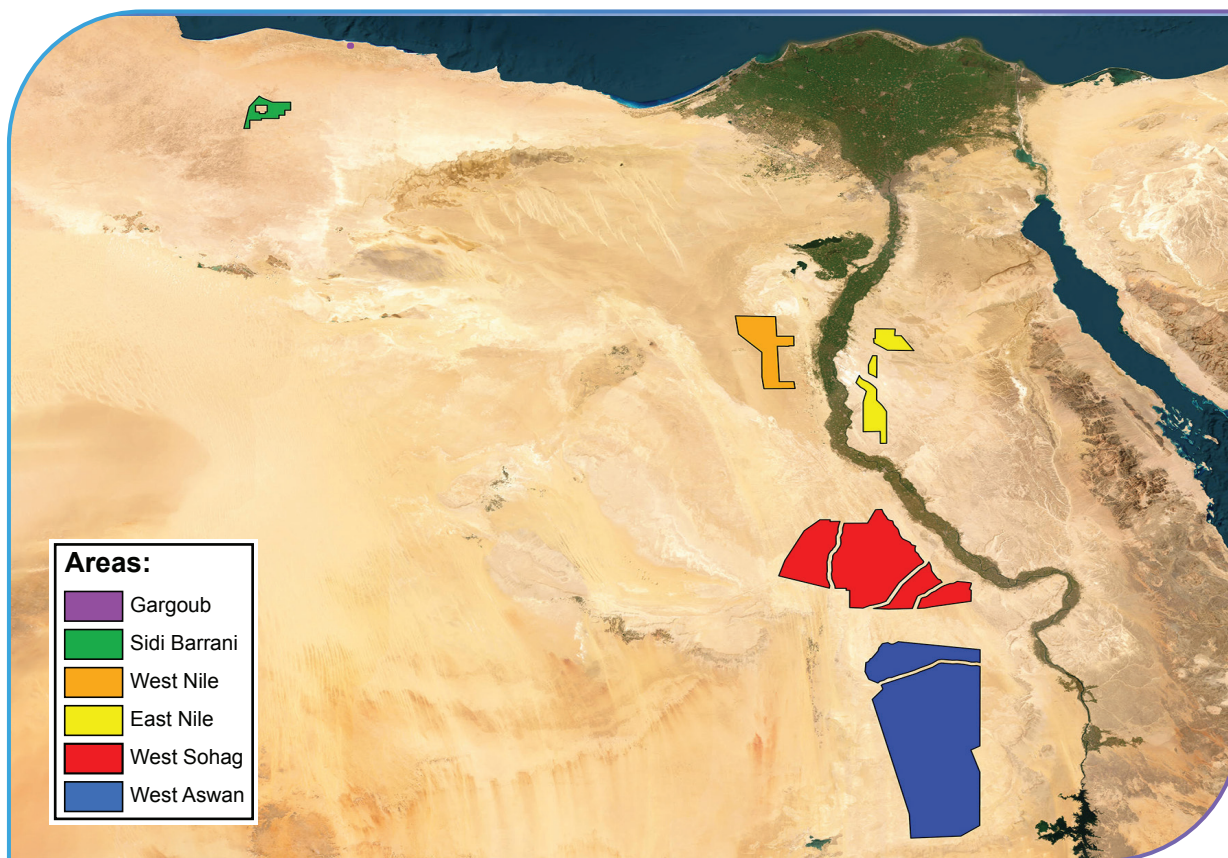
Securing market position in the growing hydrogen economy, using the lower costs for hydrogen to support the wider decarbonisation of Egypt replacing grey hydrogen. Scaling up hydrogen production to the GW scale and beyond

2040 s

Full Market Implementation

Maintain market position in the low carbon hydrogen economy

Using hydrogen across society to support decarbonisation and secure Egypt's low carbon future in industry and transport



Electrical Vehicles (e-Mobility)

Dec.

Presidential Decree no. 419 for the year 2018 on exemption of e-vehicles from custom duties.

Dec.

The minister of Trade and Industry Decree no. 255 for the year 2018 on regulating Import of used cars.

Dec.

Egyptian Electric and consumer protection Agency Circular No: 5 for the year 2022 on rules regarding the organization of work in charging electric cars/ Vehicles.

NREA cooperates with different international bodies (ie: world bank, GIZ, KfW and EBRD) to consider the possibility of EV entry to the market and determine the share of renewable energy. The cooperation would include the project feasibility study, market research, infrastructure, and charging stations.

The Minister of Military Production will have been developed E-Vehicles industry strategy by the year 2040 in cooperation with china.

Pillars of industrialization strategy and promoting the use of E-vehicle :-

- Establish local manufacturing.
- Acquire e-vehicle industrialization technology with 65% by the end of 2030.
- Egypt will be at the forefront of E-vehicles exporters by the end of 2040.
- Increase the market share of e vehicle in the Egyptian markets by 2% at the end of 2030 and 5% by the year 2040.
- Increase the rate of the industrial output to 50% to increase the national income
- Reduce the health and environmental risks resulted from the use of fossil fuel by 75% by the year 2040.
- Prepare infrastructure.
- Establish public and private charging units.
- Increase grid capacity to cope with high loads.
- Improve current vehicles.
- Substitute obsolete cars.

Strategy phases:

- 1st phase (2024-2019).
- 2nd phase (2030-2025).
- 3rd phase (2040-2031).

Source: Automotive Industry Localization Program Study Electricity in Egypt (Ministry of Military Production)





شركة جنوب الوادي للبترول



New & Renewable Energy Authority
هيئة الطاقة الجديدة والمتجددة



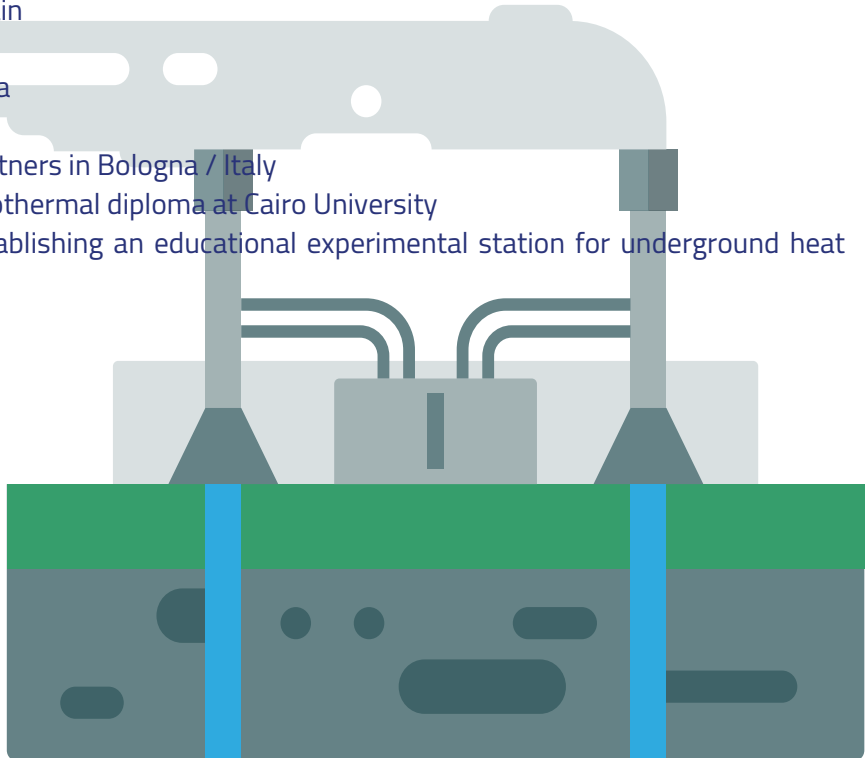
مرصد حلوان

NREA participates in the committee which formed to encourage investment in Geothermal projects with Egyptian South Valley Petroleum Holding Company, National Institute for Astronomical and Geophysical Research and Egyptian Electricity Holding Company to provide technical support and facilitate the selection the places to set up stations.

NREA participates in the Capacity Building project which funded by Erasmus (EU)Program , with five Egyptian universities (Cairo University - Ain Shams University - Suez Canal University - Aswan University - Egyptian- Japanese University)also with three European universities (University of Zagreb in Croatia - University of Bologna in Italy - University of Valladolid in Spain)

First phase of this project during 15/1/2021 to 31/10/2022 included the following:

- Training (2) Engineers at University of Valladolid / Spain
- Training (1) Engineer at University of Zagreb / Croatia
- Training (1) Engineer at University of Bologna / Croatia
- Training (1) engineer at Aswan University
- Attending the coordination meeting of the project partners in Bologna / Italy
- Participation in preparing the general structure of Geothermal diploma at Cairo University
- Participation in the selection of suitable site for establishing an educational experimental station for underground heat energy in Cairo University.



Energy efficiency Procedures in different sectors

More than 24 energy efficiency improvement procedures in different sectors (Building - Tourism - Industry - Lightening - Education)

Training and capacity

Professional diplomas and masters with different universities.
 - Energy efficiency improvement training programs
 - All entities governed by the electricity law , capacities equal to 500 KW or above, are obliged to develop training programs for their employees

Awareness campaigns, seminars and manuals

Public outreach plans.

Cooperation with civil society

Awareness through Seminars, Media and initiatives.

Energy efficiency in supply

- reliance on natural gas and renewable energy.
- improve performance of distribution grids.
- distribution of 20 Millions smart meters within 10 years.

Restructure of electricity tariff

Expected saving due to tariff reforming is:

- 12935 Millions L.E./Year
- 17177 Giga Watt hour.

Financing mechanisms for energy efficiency activities

- Establishment of energy efficiency fund.
- Development of a database to support energy efficiency.

Completion of the institutional buildup of energy efficiency in Egypt

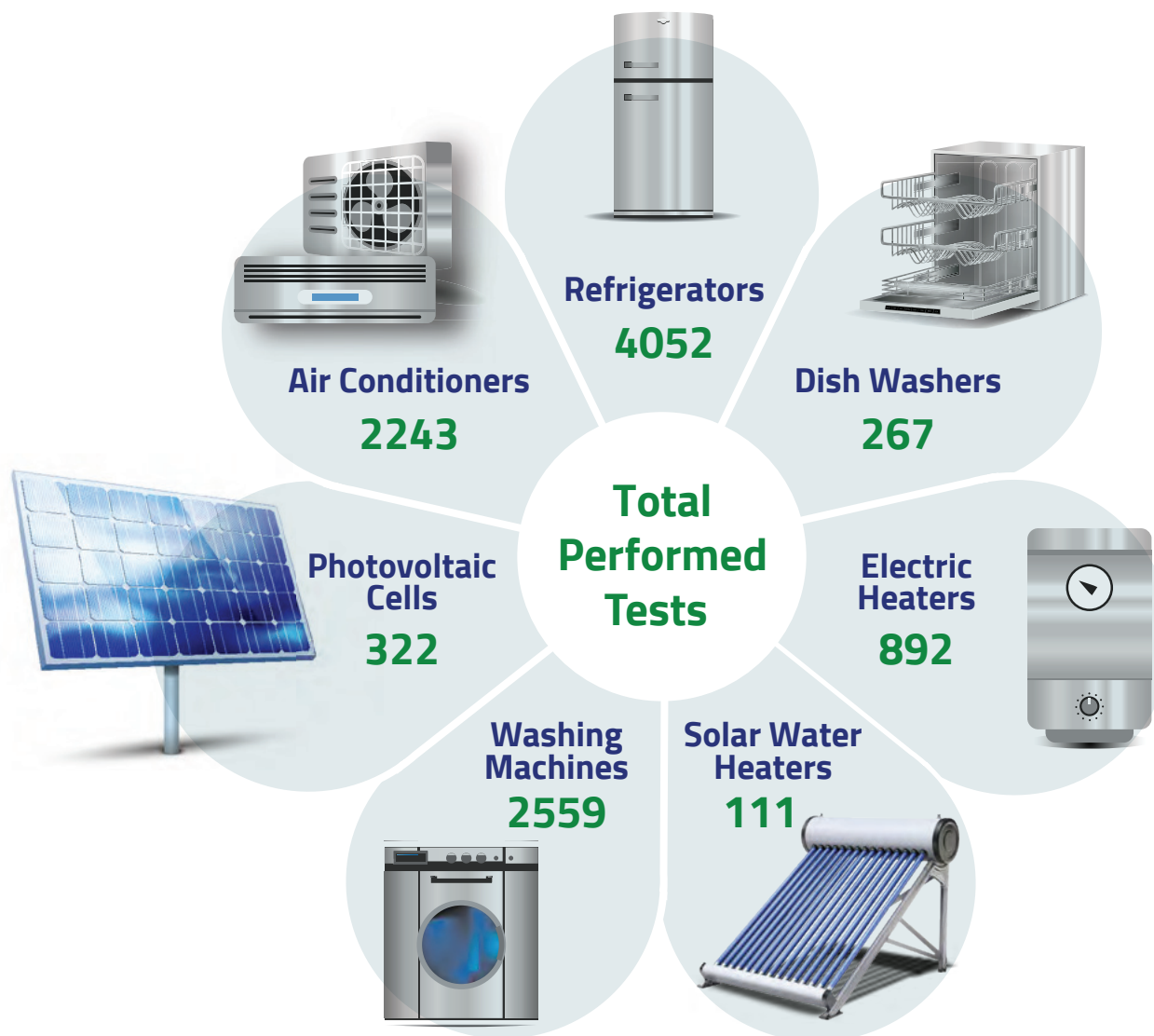
- Complete the establishment of EE units in all ministries.
- Develop monitoring, verification and follow-up system







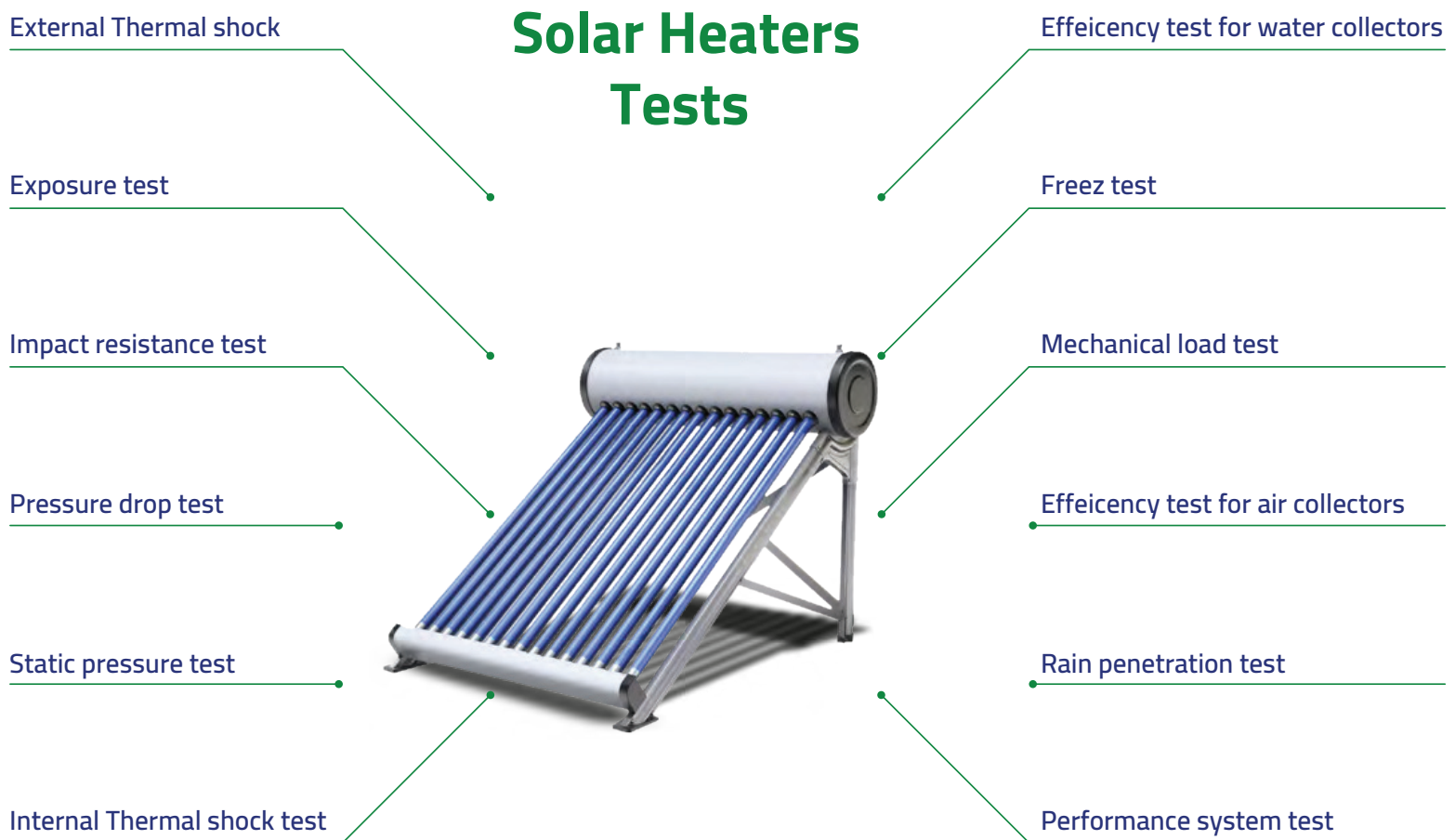
NREA's Home appliances testing labs granted its accreditation from the Egyptian Accreditation Council, EGAC.



The SWHs Testing Lab was established in to be aligned with the latest international standards ISO 9806 and EN12976. it's the biggest lab in the MENA region. It participates in the Solar Heating Arab Mark and Certification initiative (SHAMCI) and also participates in an initiative to use of Solar Water Heaters in industrial sector in cooperation with UNIDO.

The lab provide technical service for local companies working in that field.

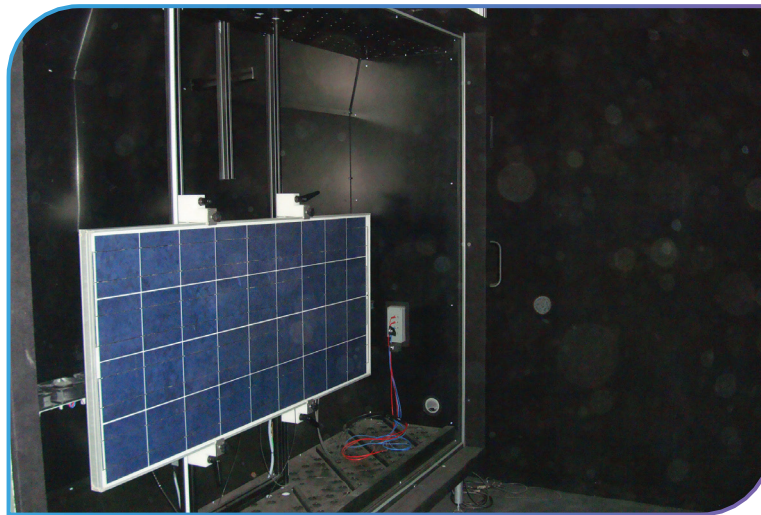
The procedures for accrediting the solar water heating lab for 15 tests have been completed in accordance with the standard specification ISO/IEC17025 : 2017



PV lab tests the efficiency of PV components; whether locally manufactured or imported in accordance to the latest Standards (IEC Standard 61215). It also provides consultancy services to the installed PV solar power plant, in addition to conducting Research and Development.

Accreditation for photovoltaic laboratory has been completed for 10 tests according to ISO/IEC17025 : 2017

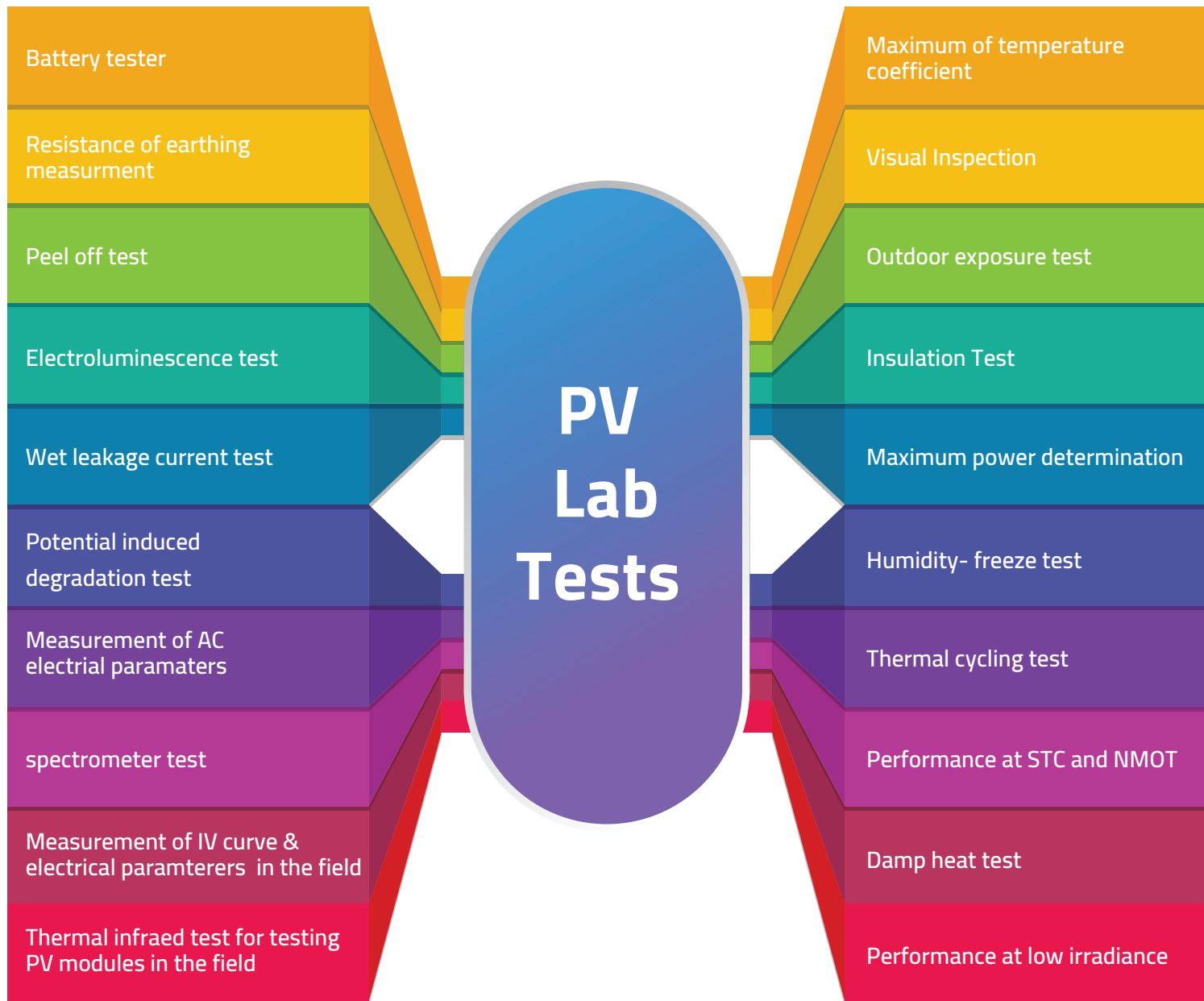
Some of PV Lab Devices



Sun simulator



Electroluminescence test





Within the framework of NREA's concern to develop the training services complying with the international standards, NREA received the ISO 2015-9001. This came as a culmination of its efforts exerted during the previous years.



Specialized training courses in cooperation with (SOLAR ASIL Academy - GIZ - National Alliance for Knowledge)
+700 trainee



Training programs provided for basin countries.
+490 trainee



Raising capacity building.
+3580 employee



Training courses for university students.
+4260 trainee



Fields of training carried out by the Authority
Renewable energy technologies
Photovoltaic technologies
Operation and maintenance of solar heaters
Wind energy technologies



- Promoting NREA's labs.
- Site visits arrangements.
- Holding workshops & conferences.
- Training programs
- Arranging awareness campaigns



Newsletter page
www.nrea.gov.eg/media/news

Training Centre for Operation and Maintenance of Solar Water Heaters

NREA established a training facility for installation and operation of solar water heaters in Egypt. This is part of an accreditation system of installation and maintenance team of swhs.

The system includes the following activities:

- Develop a criteria for testing operation and maintenance staff of SWH
- Develop guidelines manual for installation and maintenance works
- Theoretical and practical training on installation and maintenance works
- Certificate of accreditation granted by UNIDO for those who successfully completed the training course.

Two training programs on installation and maintenance has been conducted to train NREA staff and trainers from productivity Department and the Industrial Modernization Center. This is amongst the activities of NREA Solar water Heaters Training Center.

- 45 engineers and technicians have been trained in addition to training of 13 trainers.
- A training program on installation and maintenance of solar heaters trainees was organized from 26 -30 September 2021 to train 11 trainers. The program is under the supervision of UNIDO as part of the Solar Heater Training Center activities.



Within the framework of the NREA's commitment to environmental standards for renewable energy projects, a monitoring system has been established for migratory bird paths in the Jabal Al-Zayt region, which includes the wind energy complex with a total capacity of 580 MW. And the number of turbines reaches 290 turbines

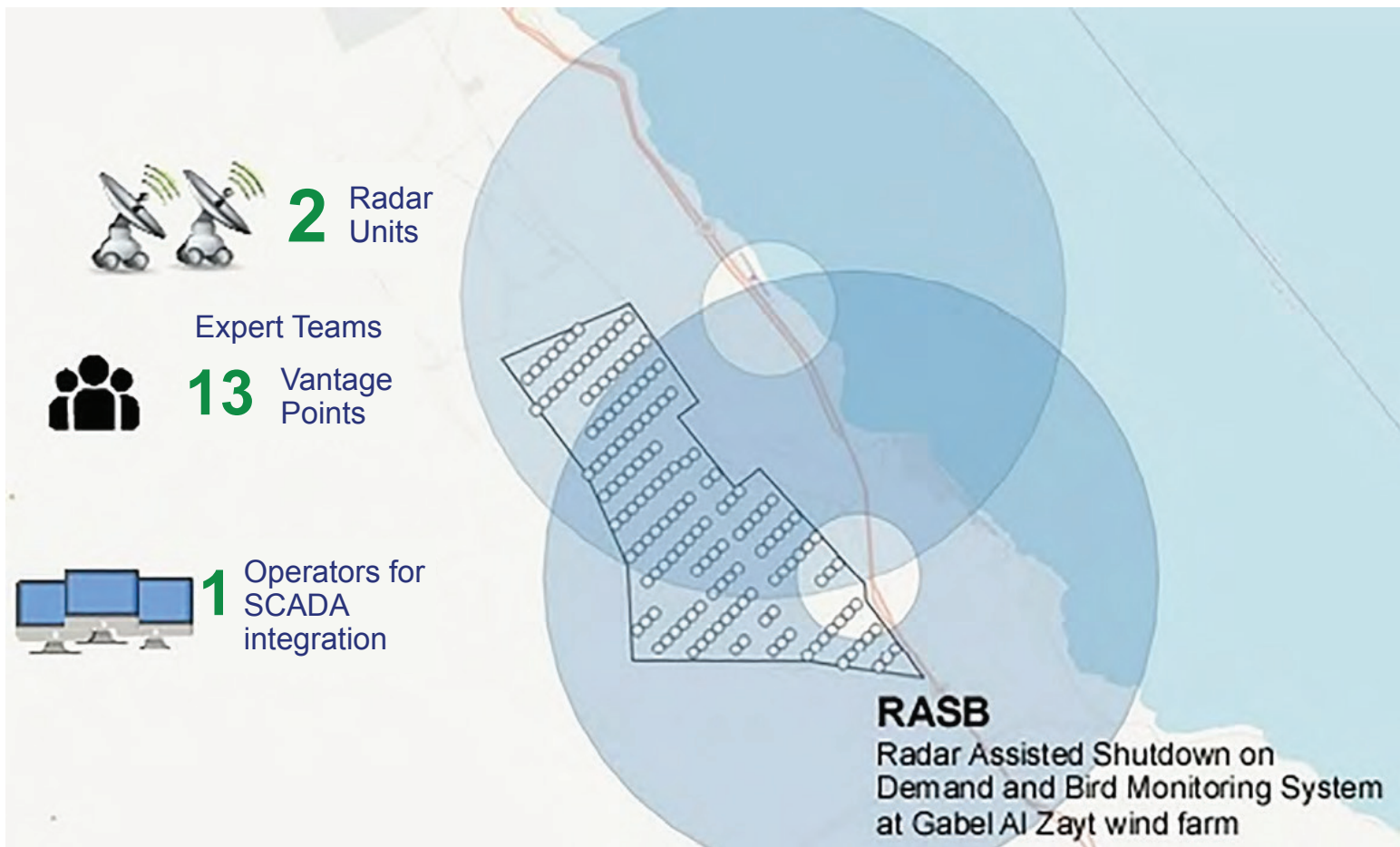
In order to preserve the birds during their transit, monitoring is carried out using two radars that allow monitoring birds from 12 km away before they reach the site and then determining their path and closing the site's turbines as they pass through them, thus preventing collisions with the turbines, while restarting them after they leave the wind station, and that Since 2016.



Shutdown parameter:

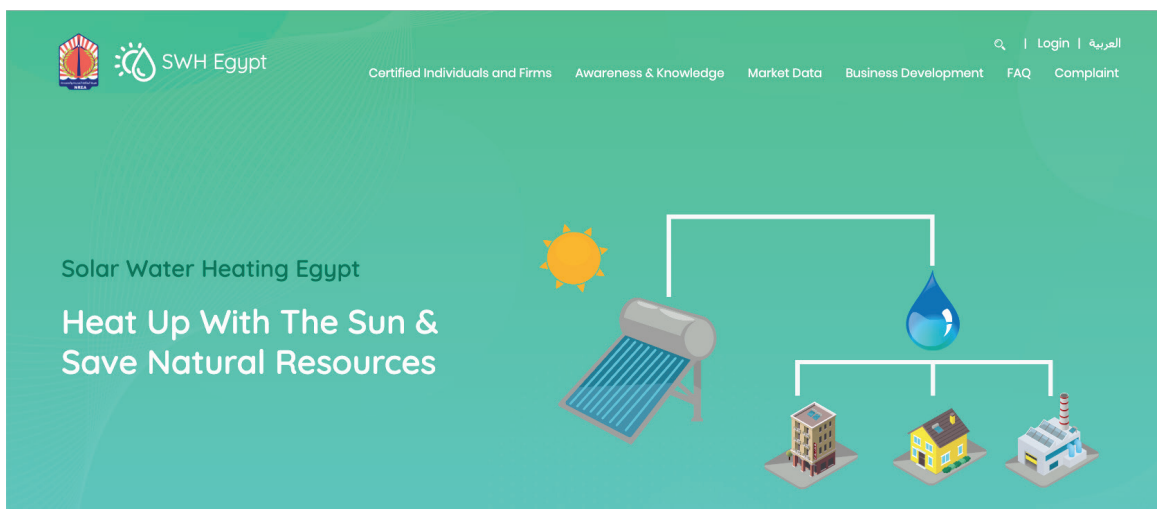
- Endangered species
- Groups of 10 or more hovercraft
- The risk of impending collision
- Sandstorms

Application of the RASB system at 13 observation points and 2 radar units



Services provided by NREA That Should be available in the system:

- Certification for energy efficiency testing labs., Solar heaters and solar panel according to international standards.
- Certification for biomass labs
- Review of environmental studies documents submitting them to EEA in addition to technical review of renewable projects (solar-wind)
- Allocating land for private sector to establish renewable energy projects under law 203 for the year 2014
- Following up the data of wind towers and meteorological units.
- Possibility of purchasing wind Atlas and Son Atlas data.



NREA -in cooperation with UNIDO- has developed and launched a solar water heater platform. The platform will be run by NREA to bring together all stakeholders and those who are interested in solar heater market providing them with the following services:

- raising awareness of solar water heaters systems providing corresponding know-how through studies and related reports.
- facilitate certification of solar water heaters suppliers
- Provide an updated list of certified water heaters suppliers
- Prepare feasibility studies of different systems of water heaters
- create investment opportunities for private sectors and banking sectors.

This platform is a part of the Industrial Heating Solar Energy Project, implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with the Ministry of Commerce and Industry and the New and Renewable Energy Authority with funding from the Global Environment Facility.

The platform launched in September 2021

The platform link: <http://swhegypt.com>



Human Resources Data

In its concern to apply digital transformation and management development programs, NREA established a human resource data with view to facilitating the exchange of information. The human resource data aims at:

- Recording of employee main data: work data-education and training courses-personal data-work experiences-leaves data
- Staff moves: illustrate all staff mobility and its different effects on the employee
- Creating an organizational structure of different administrative levels,
- Recording of fixed elements in a simplified way.
- Launching of assessment reports on all levels (staff, departments. Staff on site).



Family therapy Database

Coronavirus pandemic heightened the need to develop a medical system that allows the recording of health data of all the staff and their families. Accordingly, NREA creates health database that includes:

- Recording of data of all staff families included in the family therapy.
- Recording of data of the contracting body that will implement the family therapy programme.
- Recording of all health care transactions.



Transportation Database

As part of its ongoing development, NREA established a transportation system that provides the following:

- Recording of vehicle data and their routes as well as their drivers.
- Tracking vehicle routes and controlling costs of operation and maintenance.



Training and building capacity

NREA developed a training platform aiming at:

- Registering of Training courses conducted by NREA OR other training entities
- Registering of staff training courses.



The Authority's website

The Authority's website is now being updated in cooperation with the Information Systems Department of the Ministry of Electricity and Renewable Energy.



Interactive platform for solar cell system services (PVHUB)

The authority, in cooperation with the Egypt PV network-connected small-cell system project affiliated to the Industry Modernization Center and funded by the United Nations Development Program (UNDP), is establishing an interactive platform for solar cell system services.

NREA	New and Renewable Energy Authority	IRENA	International Renewable Energy Agency
AfD	L'Agence Francaise de Développement	JCEE	Egyptian - German Joint Committee on renewable energy, energy efficiency and environmental protection
BOO	Build , Own and Operate	JICA	Japan International Cooperation Agency
CSP	Concentrated Solar Power	KfW	German government-owned development bank
EBRD	European Bank for Reconstruction and Development	k-tco2	1000 ton carbon dioxide
e-Mobility	Electro Mobility	k-toe	1000 ton oil equivalent
EPC	Engineering Procurement & Construction	LAS	League of Arab States
EU	European Union	MW	Mega Watt
FIT	Feed in tariff	PV	Photovoltaic
GWh	Gega Watt hour	RCREEE	Regional Center for Renewable Energy and Energy Efficiency
IPP	Independent Power Producer	WB	World Bank
UNDP	United Nations Development Program		



New & Renewable Energy Authority
هيئة الطاقة الجديدة والمتجددة

Address: Dr. Ibrahim Aboulnaga St., Ext. of Abbas El Akkad St., Nasr City, Cairo, Egypt

P.O.Box: 4544 Masakin Dobat - Elsaff, ElHay El-Sades, Nasr City, Cairo

Tel. switch: (+202) 227 258 91/ 2 / 3 / 4

Fax: (+202) 22717172 - 22717173

e-mail: chairperson@nrea.gov.eg

Website: www.nrea.gov.eg