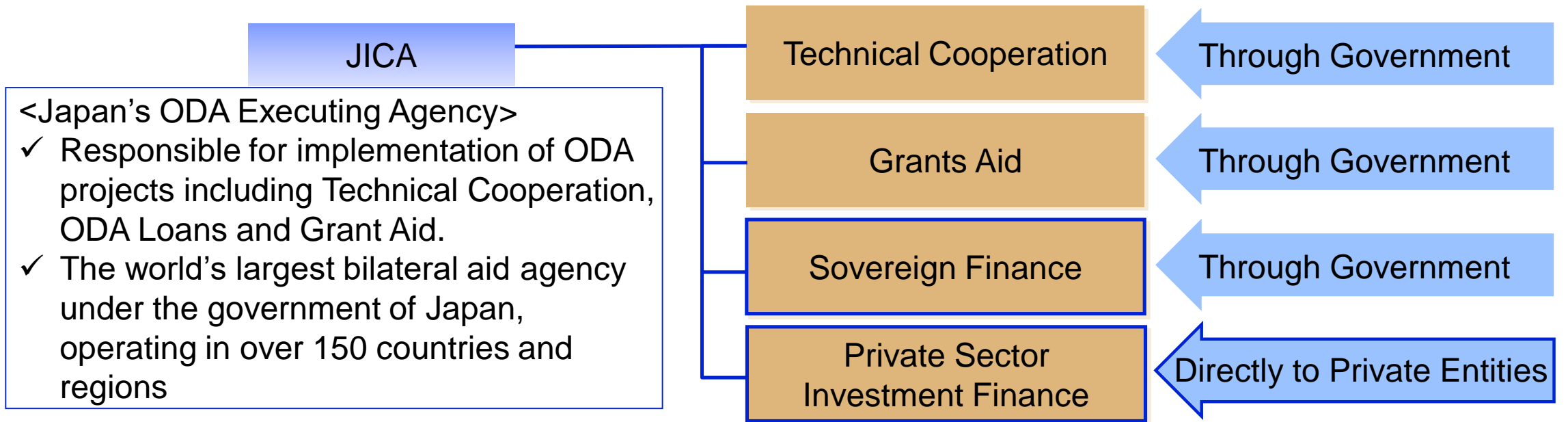


A light blue world map is centered in the background of the slide. Two horizontal blue lines are drawn across the map, one above and one below the main title text.

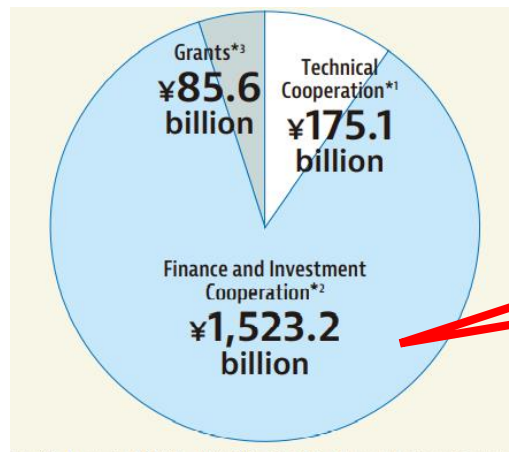
# JICA's Strategy and Development Cooperation for Sustainable Energy in Egypt

Energy and Mining Group,  
Infrastructure Management Department,  
The Japan International Cooperation Agency

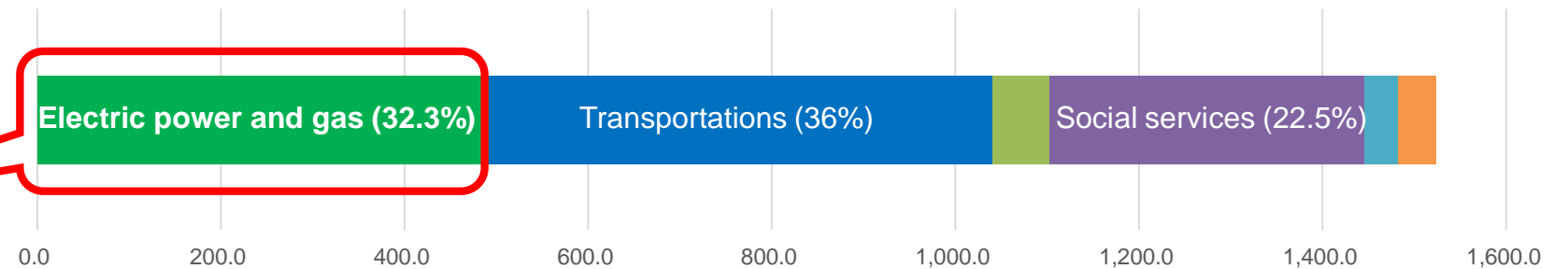
# JICA's Overall Activities



JICA's Operation Scale (2019)



Composition of Finance and Investment Cooperation (2019)

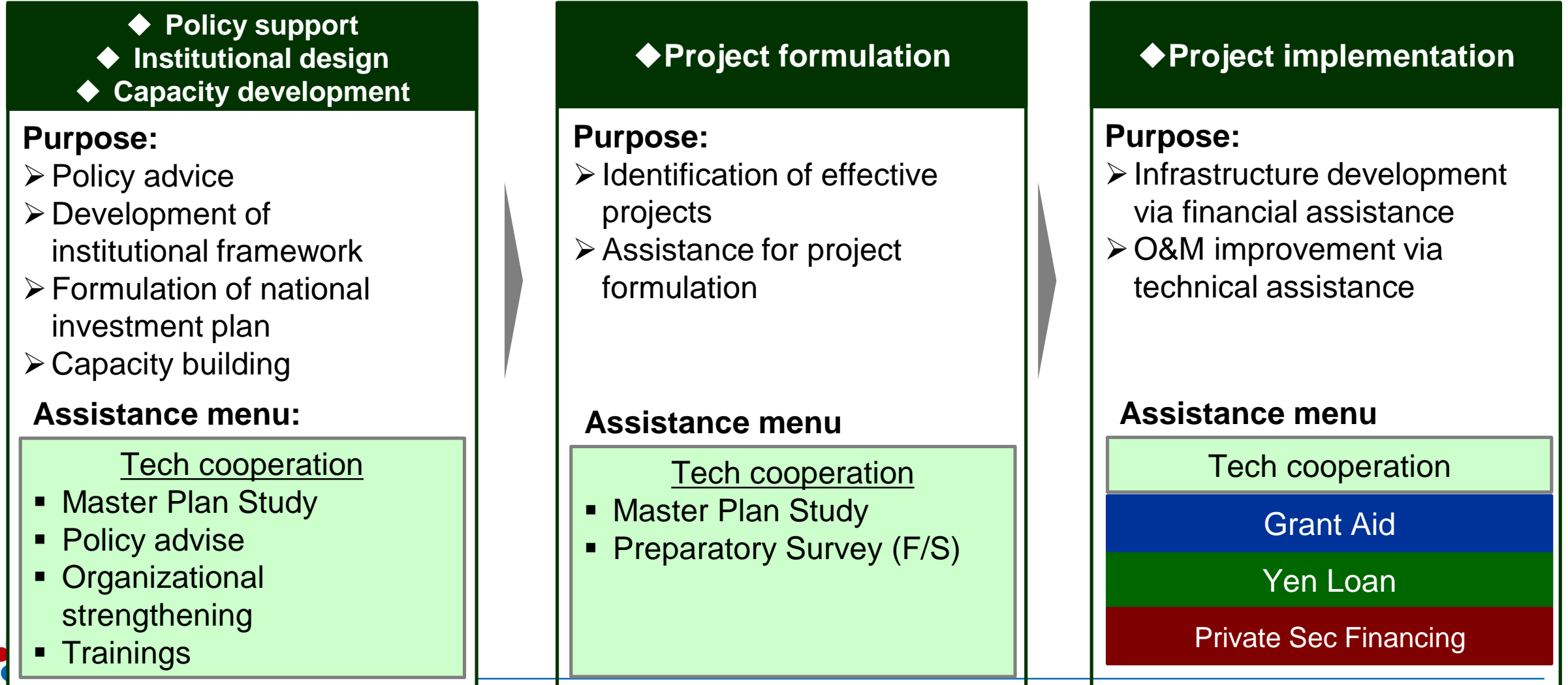


(Unit: JPY Billion)

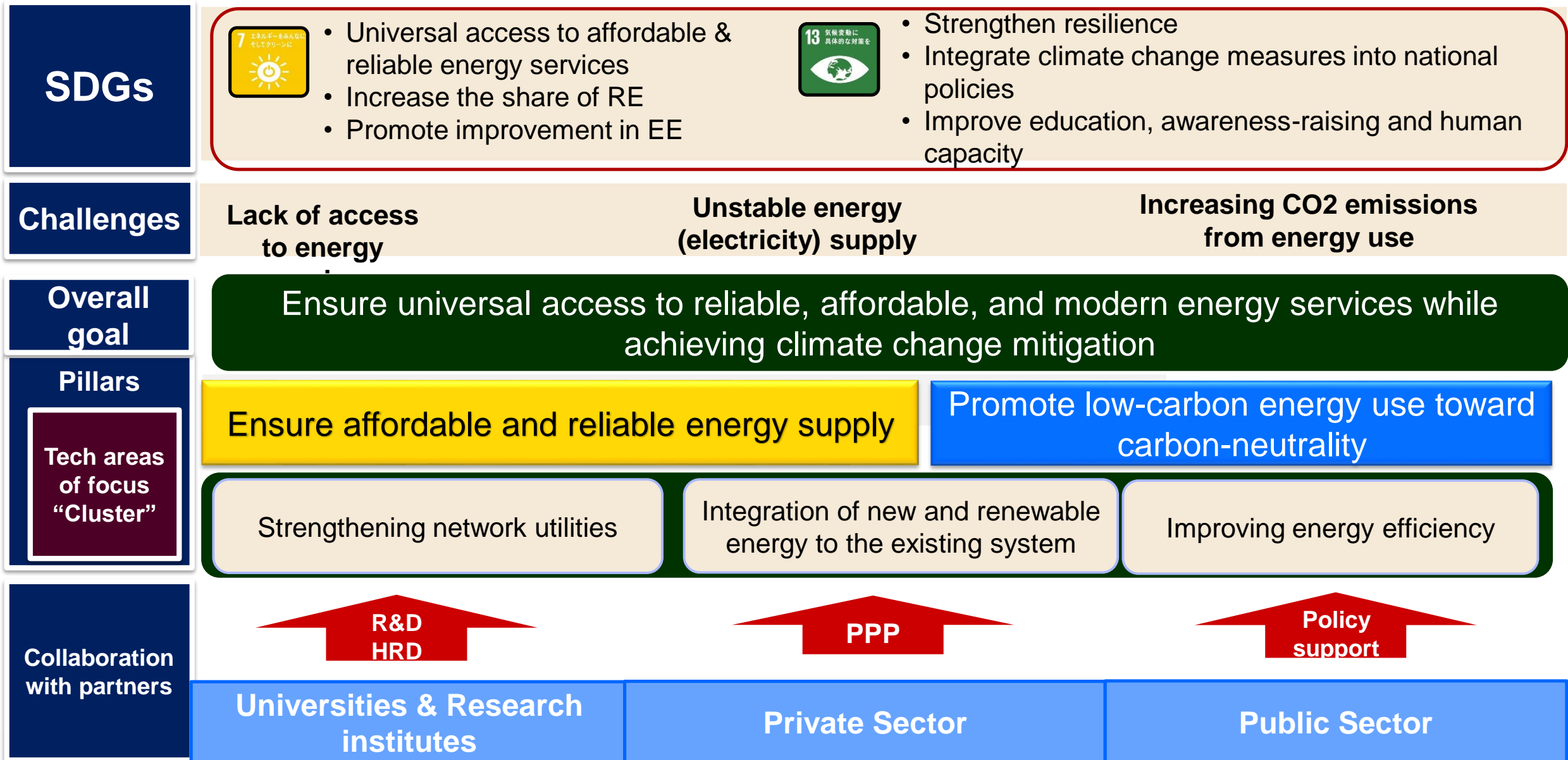
# JICA's Assistance Menu & Approach

Consistent support from the upstream to the downstream

- upstream: master plan formulation; human resource development; etc.
- downstream: implementation of infra projects; O&M support; etc.



# JICA's Assistance Strategy in the Energy Sector



# The Project for Capacity Development on Energy Efficiency and Conservation in Egypt

Project Period: Jan 2020 - Feb 2022 (2 yrs)  
JICA Experts: PADECO, MRI, KBC



## OVERALL GOAL:

Energy Efficiency and Conservation (EE&C) promotion system of the government of Egypt is strengthened, and the national goal for energy saving is accomplished.

## PROJECT PURPOSE:

The **institutional capacity** of government agencies will be developed which is necessary for formulation of EE&C promotion strategies and plans, data management, and promotion of high-efficiency equipment.

## PROJECT ACTIVITIES in 4 fields:

### EE&C Policy/program

- Review of EE&C policies
- Studies and examines future policies and its development mechanism

### Energy Data Management

- Establishes and manages data / statistics relating to energy.
- Data based priority among various EE&C policies will be concluded.

### Electric Power EE Technology

- Capacity development for energy audit.
- Room Air Conditioner pilot project.
- Labelling program

### Oil

#### EE Technology

- Reviews of EE&C framework in MOP
- Refinery pilot project
- Development of EE&C Strategy and Roadmap.

## PROJECT MAJOR OUTPUTS:

Through activities shown left, the following **tangible outputs** shall be prepared in cooperation with the counterparts:

- ✓ Progress review of existing EE&C policies and labeling program
- ✓ EECCD Operating Reference material (manual)
- ✓ EE&C annual report
- ✓ EE&C technical manual (household appliances)
- ✓ Energy data management information system and its manuals
- ✓ Roadmaps of Energy Management System Framework (MOP) as well as refinery EE&C technologies
- ✓ Raising awareness activities of this Project
- ◆ Counterparts at Egyptian government:  
MOERE (Ministry of Electricity and Renewable Energy);  
MOP (Ministry of Petroleum and Mineral Resources);  
CAPMAS (Central Agency for Public Mobilization and Statistics); and  
IDA (Industrial Development Authority)

# Hurghada Photovoltaic Power Plant Project

## Japanese ODA Loan Project

Loan Agreement: February 2016 Loan Amount: 11,214 million yen  
Interest Rate: 0.1% (consulting services 0.01%)  
Repayment (Grace) Period: 40(10) Procurement Method :STEP



### PROJECT OBJECTIVE:

The objective of this project is to construct a 20MW photovoltaic power plant and related facilities at the Hurghada Wind Power Plant, which is located 15 km northwest of Hurghada City on the coast of the Red Sea, in order to increase power supply, stabilize the network, and encourage use of renewable energy, thus contributing to promoting social and economic development and mitigating climate change.

### Project Components (ODA Loan):

- 1) Construction of a photovoltaic power plant (output: 20MW) and storage battery facilities (capacity: 30MWh), installation of Power Conditioning Systems (PCS) and an Energy Management System (EMS), and laying of cables up to the Central Hurghada Substation
- 2) Expansion of the Central Hurghada Substation to which the photovoltaic power plant is connected and connection of cables in the substation
- 3) Consulting services (such as assistance in bidding, supervision of construction, training)

### Implementation Agency:

New and Renewable Energy Authority (NREA)  
Egyptian Electricity Transmission Company (EETC)

### Japanese Technologies:

- (1) Storage batteries with a long life that enable stabilization of the network voltage in the project area and power supply at night when electricity demand is high
- (2) High-efficiency Power Conditioning System (PCS) with a function of stabilizing the network voltage through reactive power control
- (3) Energy Management System (EMS) that provides integrated control over PCS for photovoltaic modules and for storage battery

### Climate Change Mitigation:

Reduction in GHG emissions = approximately 16,660 tons/year-CO<sub>2</sub>.



# Data Collection Survey on Energy Efficiency & Conservation in Egypt

Survey Period: Sep 2019 - Mar 2022  
Consultants: Oriental Consultants Global, MRI



## SURVEY OBJECTIVES

1. Based on data collection and analysis, issues/ challenges for EEC Promotion in Egypt will be clarified.
2. New projects for EEC Promotion supported by JICA will be proposed.

## BACKGROUND

- In Egypt, electricity demand is expected to increase continuously due to economic growth and population increase.
- At the same time, measures such as the realization of energy conservation are urgent issues to be addressed in order to achieve environmentally friendly and sustainable growth.
- In order to promote energy efficiency and conservation, it is necessary to provide incentives for the introduction of energy efficiency and conservation equipment and for the operation of the system, and it is necessary to promote specific policy measures such as policy finance.

## SURVEY ITEMS:

- Governmental policy and support for EEC Promotion
- Current energy balance and EEC Potential
- Trends of other development partners in EEC field
- Issues/ challenge, countermeasures, benefit of EEC promotion
- Necessity and validity of EEC promotion supported by JICA



Course  
Objective

Participants will improve the policy-making and implementation capabilities necessary to promote the use of hydrogen energy in each country.

Course contents for 2021 (draft)

Technical, economic and security challenge for production, storage, transport, and use of hydrogen energy

The role & action of Japanese government for promotion of hydrogen energy

The role & action of Japanese local government for promotion of hydrogen energy

The role & action of research institutions for promotion of hydrogen energy

The role & action of private companies for promotion of hydrogen energy

Course outputs:

By the end of course, participants will be able to ;

1. Explain the advantages, issues, and countermeasures of hydrogen energy in the short-, medium-, and long-term framework.
2. Understand hydrogen production, storage / transportation, supply and utilization technologies, safety and security outlines and laws and regulations.
3. Explain the main points of various measures such as policies, technologies / infrastructure, and business necessary for promoting a hydrogen society in Japan.
4. Explain the main points of the roles and significance of governments, local governments, industrial and academic sectors, to promote a hydrogen-based society
5. Understand the challenges for realizing a hydrogen-based society in your own country and be able to propose short-, medium- to long-term countermeasures including transition.



## Background

In Egypt, the reform in the power sector is proceeding according to several policies and action plans. The reform shall bring about more competition, transparency while satisfying the financial sustainability of EEHC group and the new suppliers. On the same course, special attention should be paid to maintain the stable and efficient supply to all customers in all time frames.

During the reform process, it should be crucial for the power sector to set up the roadmap to tackle the various issues brought about by the peculiarities in the Egyptian power sector and the map should be incorporated into the reform process with a step by step approach. The roadmap should finally clarify the direction of EEHC group management and way to the solutions from short, mid and long-term perspectives.

## Area for advisory support:

- Development of the optimized Roadmap or timeline for the reform including the adjustment of TSO functions and demarcation of responsibilities among the entities in the power sector throughout the reform process.
- Identification of necessary actions/targets through SWOT analysis to be met by EEHC in preparation for the reform.
- Prioritization of the issues to be dealt with among the concerned parties. The parties should include MOERE, Egypt-ERA, EEHC, EETC, NREA and others if required.
- Appropriate reflection on the intentions of the international donors towards the reform activities.
- Streamlining of the organization including transactions and financial aspects among the concerned parties and related rules.
- Human resource development in EEHC group on the Reform.

A light blue, stylized world map is centered in the background of the slide. Two horizontal blue lines are drawn across the map, one above and one below the main text.

Thank you very much for your attention

YUZURIO Susumu (yuzurio.Susumu@jica.go.jp)

Energy and Mining Group,  
Infrastructure Management Department,  
The Japan International Cooperation Agency