Funded by the
European Union

ACCESS TO SUSTAINABLE ENERGY PROGRAMME (ASEP)

POWERING OFF-GRID HOMES TODAY, ENSURING SUSTAINABLE AND EFFICIENT ENERGY FOR THE FUTURE

Project of the Year Entry to Mission:PHL

1. PROJECT INTRODUCTION

At the end of 2017, the household electrification level in the Philippines stood at about 90%. The number of households that remain unelectrified - many in Mindanao - totals to about 2.4 million. Beyond the statistics are the harsh realities in remote, off-grid households that lack even basic energy services and have very limited economic opportunities.

The Philippine Government aims for inclusive growth and poverty reduction and is vigorously pursuing a goal of total household electrification by 2022. It is a daunting task.

Many of the 2.4 million unserved households are in remote areas that can never be reached by grid extension

The only way to provide even basic electricity service is through a combination of innovative decentralized technical solutions, new business models, and drastic changes in policies and regulations that currently limit private sector participation in off-grid electrification.

The European Union (EU) is partnering with the Philippines Department of Energy (DOE) to identify and pursue these innovative solutions through the Access to Sustainable Energy Programme (ASEP).

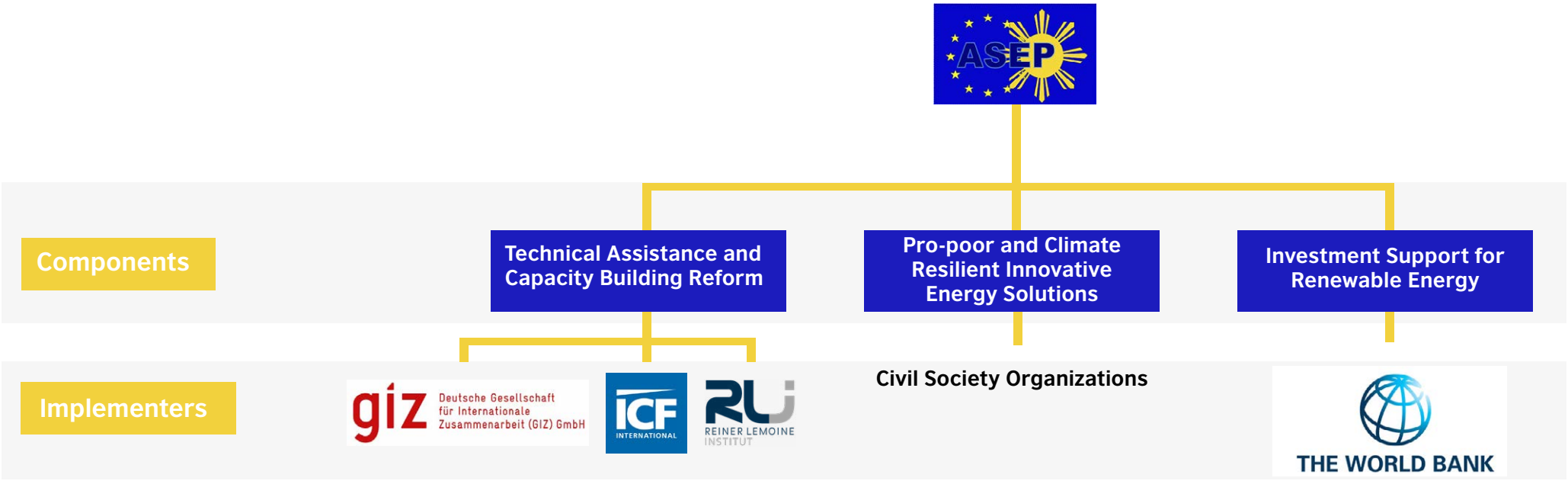
2. PROJECT DESCRIPTION

A. PROJECT OBJECTIVES AND COMPONENTS

The objective of the project is to support the Government of the Philippines in expanding its sustainable energy generation to meet the growing needs of its economy and provide energy access to the poor and marginalized sectors in accordance with the Philippine Development Plan.

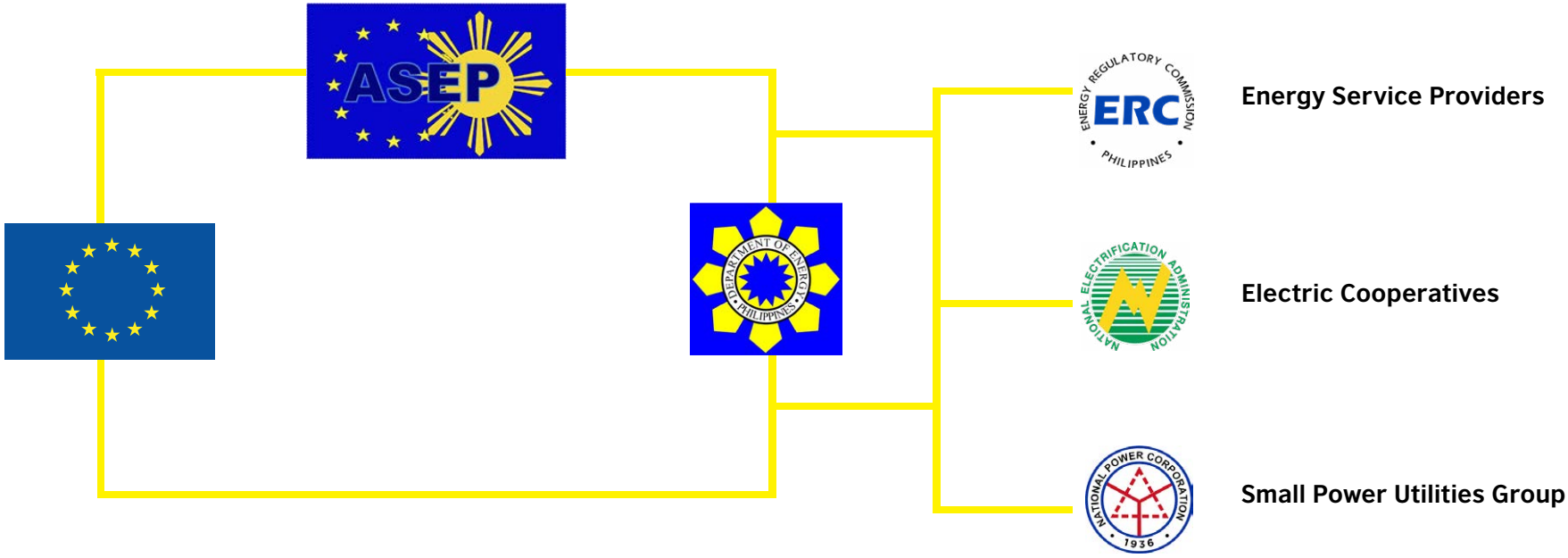
In particular, the project aims to generate more electricity from renewable energy, increase the efficiency of energy use, and increase access of the poor to affordable, disaster-resilient energy systems.

- Strengthen Capacity of Energy Sector
- Enhance Investment in Renewable Energy
- Expand Access to Innovative Pro-poor, Disaster-resilient Energy Solutions



B. PROJECT PARTNERS

Access to Sustainable Energy Programme (ASEP) is a joint undertaking of the **EU** and the **DOE**. ASEP also works with various stakeholders, including the **National Electrification Administration (NEA)**, **Energy Regulatory Commission (NRC)**, **National Power Corporation (NPC),** and local governments.

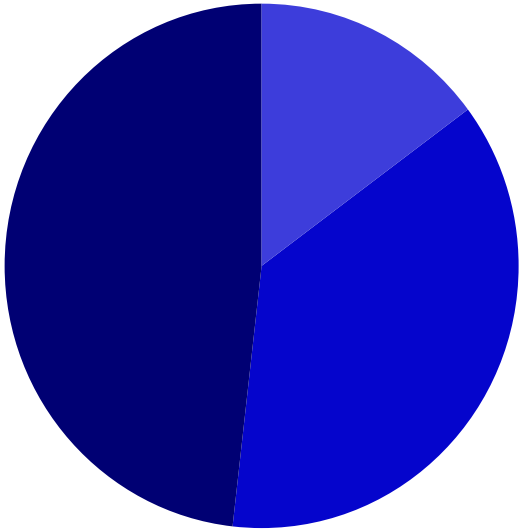


C. PROJECT DURATION AND COST

December 2015 - December 2021

The total EU contribution is **Php 60 million**.

THREE MAJOR COMPONENTS



- Technical Assistance and Capacity Building Reform
- Investment Support
- Pro-poor and Climate Resilient Innovative Energy Solutions

3. PROJECT REACH

A. PROJECT RESULTS

Installation of Solar Home Systems to provide light to poor families in several off-grid areas in Mindanao

Completion of technical assistance studies to support policy and regulatory reforms to accelerate private sector participation in off-grid electrification

Pursuit of an active capacity building program on energy efficiency and hybridization for the members of the Department of Energy and its attached energy agencies

DOE's official inclusion of the training on the use of the ASEP-developed Simplified Planning Tools as part of the mandate to Electric Cooperatives and Distribution Utilities to gradually increase the share of renewable energy nationwide

Strengthening of energy efficiency performance standards for domestic lightning products and appliances as well as government buildings

B. PROJECT RESULTS IN NUMBERS

100,000 +

New household connections in unserved areas, of which 50,000+ with solar home systems, others with microgrids, renewable energy hybrids

8 +

Electric cooperatives helped to serve off-grid parts of their franchise (6 in Mindanao)

12 MW

Embedded solar power plants in Electric Cooperatives showcasing renewable energy potential

4+

Solar-powered productive uses of energy equipment installed and operational in 2-3 pilot sites in Davao and Bohol to boost local economy

4+

Private Proponents awarded up to EUR 4M each in co-financing for innovative solutions and sustainable business models for off-grid electrification with a special focus on ARMM areas

60 +

Large diesel National Power Corporation and Small Power Utilities Group optimized and ranked for potential hybridization

5

Household appliances and LED lights covered by the new Philippine Energy Standards and Labeling Program (PESLP)

300 +

Energy staff members empowered through local and international trainings and events on renewable energy for rural electrification and energy efficiency

50 MW

Harmful emissions to environment AVOIDED equal to 50MW coal-fired power plant

20 Million

Stakeholders reached through awareness and visibility activities

C. SUCCESS STORIES

"Higher Quality Lightning"

Before the ASEP project, Cirila Concepcion's house was lighted at night with a few kerosene wick lamps, as it was for all of her neighbors in New Mabuhay. The lamps emitted a dim light, were smoky and smelly, and cost 160 pesos a week for fuel, a large fraction of the family's meager income. That changed with the ASEP project.

By October 2018, 3,000 solar home systems with a capacity of 50 Watts each have been installed in off-grid homes in Mindanao provinces, including Davao Occidental where the sitio of New Mabuhay is located. Cirila and other household recipients praise the higher quality lightning than kerosene lamps, brighter light for their children to study at night, and the ability to charge cell phones.

"Increasing Incomes"

Sitio Mahayag households obtain their cash income from the sale of corn that they raise in the hillsides. About 90% of Mahayag households are involved in the corn business. The kernels are removed from the corn hulls by hand, requiring days of labor for a single crop. ASEP installed a small solar-powered corn dehuller that reduced dehulling time from days to hours and improved product quality, boosting sales incomes.

The barangay captain of Sitio Mahayag, upon seeing the first operation of the solar-powered corn huller, expressed, **"This is the answer to our prayers!"**

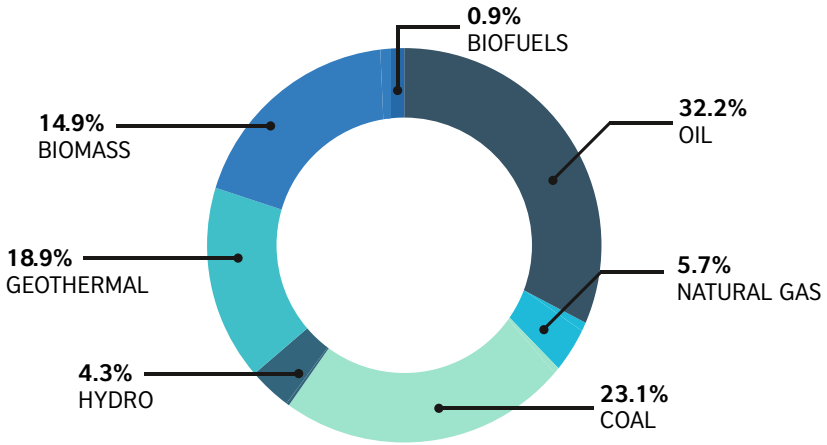
4. ALIGNMENT WITH THE PHILIPPINE DEVELOPMENT PLAN (PDP) 2017-2022

As with all EU programs in the Philippines, Access to Sustainable Energy Programme (ASEP) is fully aligned with the PDP 2017-2022, both in its overall goals for poverty reduction and in laying the foundations for sustainable development. The latter calls for accelerating infrastructure development in energy, including:

- **Increasing the share of clean, renewable energy** sources in the country's energy mix from its current 39% share
- **Consolidating important gains already made in energy efficiency**
- Putting high priority to **addressing the large gaps in access to electricity in rural and offgrid areas**

The PDP specifically points out the challenges in off-grid electricity provision, including high diesel generation costs and low capacity and willingness to pay for service by poor households. Socially oriented subsidy funds from the Government are becoming exhausted. A major part of ASEP's efforts address these challenges.

Total Installed Energy Capacity in the Philippines: 19,000 MW (2015)



5. PROJECT SUSTAINABILITY

ASEP activities incorporate provisions for financial and technical sustainability of projects both as an objective and as an element of project design.

- In the Investment support for renewable energy component Photovoltaic Mainstreaming that provides electricity service to remote households through solar home systems, long-term sustainability is maximized by the fee for service design, where the Solar Homes System (SHS) recipients do not own the units but pay 220 pesos per month to the electric cooperative for operation and maintenance (O&M) service. An electronic pre-payment system incorporated in each unit obviates the need for personal collection visits to the hard-to-reach sites.

- In the Davao pilot installations of solar powered corn huller and abaca spindles for income generation, long-term sustainability is enhanced by first doing a careful feasibility study and implementing a community-based business design where users pay for equipment use and collected funds are kept for maintenance and replacements.

- For the proposed investments on solar hybridization, sustainability is enhanced by ASEP first conducting pre-feasibility simulations of 61 National Power Corporation – Small Power Utilities Group (NPC-SPUG) diesel installations all over the country. The simulations determined the optimal share of solar photovoltaics for each system and ranked their potential project viability.

- The hybridization work and parallel effort to significantly improve the operational efficiency of NPC-SPUG diesel systems are part of a larger plan by ASEP to develop a national strategy for energy efficiency in the rural power sector that would reduce demands for subsidy from Missionary Electrification Development Plan funds and enhance the sustainability of the program.

Delegation of the European Union to the Philippines

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