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INCREASING THE ENERGY EFFICIENCY OF PDAM

The USAID Indonesia Urban Water, Sanitation and Hygiene *Penyehatan Lingkungan untuk Semua* (IUWASH PLUS) program

is a five year-and-eight-month initiative designed to assist the Government of Indonesia in increasing access to water supply and sanitation services as well as improving key hygiene behaviors among urban poor and vulnerable populations. USAID IUWASH PLUS works with governmental and donor agencies, the private sector, NGOs, communities and others to achieve the following "high level" results:

- An increase access to improved water supply service for 1,100,000 people in urban areas of which at least 500,000 are from the poorest 40% of the population (also referred to as the "bottom 40%" or "B40"); and
- An increase access to safely managed sanitation for 500,000 people in urban areas.

USAID IUWASH PLUS works with 35 Local Governments across Indonesia located in 8 provinces that include North Sumatra, West Java, Central Java, East Java, South Sulawesi, Maluku, North Maluku and Papua, and 2 special areas in DKI Jakarta and Tangerang district.

High Energy Costs Limit PDAM Services

Inefficient energy consumption is one of the critical problems that many PDAMs in Indonesia are facing. This significantly affects the PDAMs' performance and service quality because the inefficient energy consumption results in high energy cost, which in turn increases the water production costs. Consequently, the PDAMs' budget to expand their service coverage and to improve service quality is reduced.

The results of energy audit which was conducted by USAID IUWASH—a program before USAID IUWASH PLUS, in various regions of Indonesia from 2004 to 2010 indicated that the energy costs in some PDAMs reached more than 30% of their total operational costs. Most of the energy costs were due to the electricity usage to run the pumping systems, such as to pump ground water to the surface, to flow raw water to treatment plants, and to distribute treated water to consumers.

The inefficient energy consumption is commonly caused by inefficient use of electrical energy, which include unsuitable pump specifications, old equipment, less optimal maintenance of equipment, and limited ability of human resources to operate and maintain pumps and equipment.

USAID IUWASH PLUS Support in Increasing the Energy Efficiency

USAID IUWASH PLUS supports 10 partner PDAMs in its five regional offices to increase the energy efficiency by providing capacity building for the PDAM staff and technical assistance.

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Through the USAID and SECO partnership, USAID IUWASH PLUS assists four PDAMs in West Java and Central Java, namely PDAM of Bogor District, PDAM of Karawang District, PDAM of Surakarta City, and PDAM of Sukoharjo District in implementing the energy efficiency program from early 2019 to 2021.

The program is carried out through conducting trainings to improve the capacity of PDAM staff in the planning, operation and maintenance of pumping systems, providing technical assistance, as well as encouraging local governments and PDAMs to invest in improving and replacing inefficient equipment and to have equipment for measuring energy efficiency so that the PDAMs are able to measure energy consumption accurately and independently.

After participating in the USAID and SECO partnership, the energy efficiency program in the four assisted PDAMs in West Java and Central Java are expected to inspire other PDAMs to do the same.

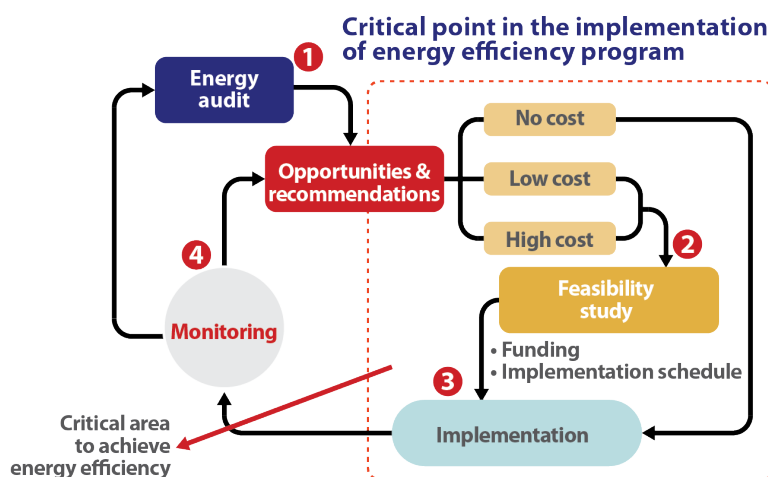
The activities of energy efficiency increase begin with an energy audit to evaluate and determine the existing energy efficiency levels, causes of the inefficiency, and opportunities and recommendations for increasing the energy efficiency.

Energy efficiency recommendations can generally be divided into three categories, namely (i) no cost/low cost energy efficiency, such as controlling pump operating hours and routine maintenance, (ii) moderate cost energy efficiency, for example minor replacements of cables that do not meet the requirements, and (iii) high cost energy efficiency, such as replacing new pumps or electric motor drives.

The next step is conducting a feasibility study to improve energy efficiency by calculating the ratio between energy savings or costs that can be resulted from the energy efficiency improvement and the costs required to carry out the energy efficiency.

Alternative funding for improving the energy efficiency can be sourced from the PDAMs' own funds, private sector partnerships, local governments, central government, or donors.

Stages in the Implementation of Energy Efficiency Program



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For further information:

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