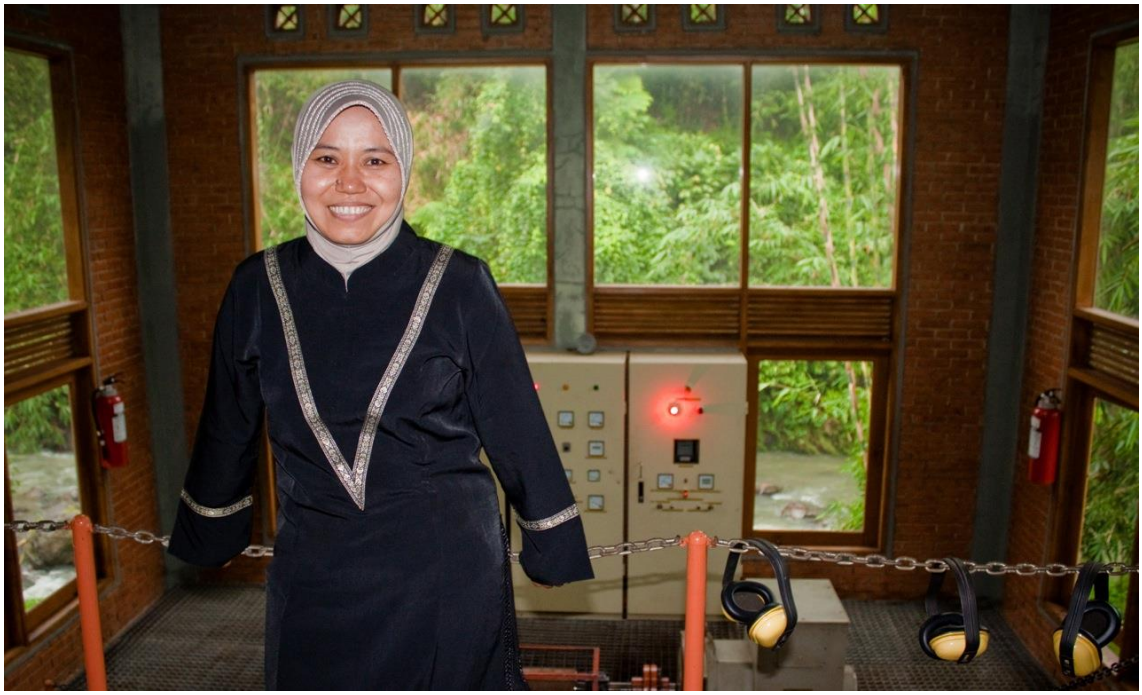
ECONOMIC PARTICIPATION CASE

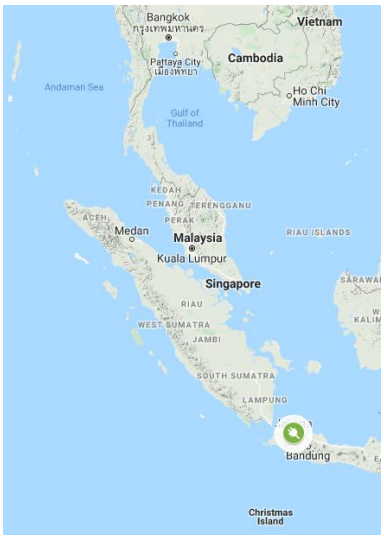


IBEKA: Community-owned and Managed Mini Grids in Indonesia

Highlights *Institut Bisnis dan Ekonomi Kerakyatan* (IBEKA), or People Centred Economic and Business Institute, supports rural electrification by installing small-scale hydro or wind mini grids and setting up village-based organisations to own, maintain and operate the systems. Elements that support participation include community ownership of energy infrastructure (mini grid) alongside community-managed enterprises to run them. Revenue generated from the mini-grids are shared through a community fund and spent based on collective decision-making.

Introduction

1.3 billion people globally do not have access to electricity with ten countries, including Indonesia, contributing to two thirds of that number (United Nations Economic and Social Commission for Asia and the Pacific Statistics Division (UNESCAP) 2014). The lack of electricity is amplified in rural areas which are difficult to connect to main grids (UNESCAP 2014). In 2012, 59.9 million people in Indonesia did not have access to electricity, representing 75.9 per cent of the population (UNESCAP 2016). In addition, only 11.4 per cent of energy in Indonesia was generated through renewable resources (UNESCAP 2016).



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Without access to electricity, people tend to depend more heavily on solid fuels – such as wood, coal and other types of biomass – for their energy needs, including cooking, lighting and heating. Using solid fuels is linked with adverse health effects and increased air pollution (UNESCAP 2016). Institut Bisnis dan Ekonomi Kerakyatan (IBEKA), a not-for-profit organisation founded in 1992 by engineer Iskandar Kuntoadgi, aims

to provide sustainable, community-managed energy to Indonesia's rural population through mini grids run on hydropower.

Timeline

1985	1992	1992 to 2012	2009
PLN is created and controls exclusive rights to electricity provision in Indonesia	IBEKA is founded by Iskander Kunoadgi	54,000 people in Indonesia are provided with clean energy from IBEKA mini grids	IPPs are granted permission to sell excess energy to PLN

How It Works

IBEKA was founded in 1992 by engineer Iskander Kunoadgi and is run today by his wife, Executive Director Tri Mumpuni. It aims to achieve sustainable community development through the provision of clean, local energy and human resource investment. Energy provision is via mini-hydro schemes built with funding from the Indonesian government, the Embassy of Japan in Indonesia, UN Economic and Social Commission for Asia and the Pacific and the German Development Agency, GIZ (Ashden 2017).

The process of setting up hydro schemes begins with discussions between community members and IBEKA staff about the opportunities that hydro power offers and the perceived energy needs of the community. Once funding has been secured, designs are developed to create a grid large enough to provide enough capacity for the community. Concurrently, IBEKA develops a management and ownership plan with the local people for the continued operation of the power plant once the organisation departs. A tariff structure is created so that the operational and maintenance costs of the plant are covered by a monthly household fee to the cooperative.

Although control gear is usually sourced from abroad, generators are made locally, and construction of the grids uses local people trained by IBEKA. Communities also contribute building materials when possible, enhancing local ownership of the plants (Ashden 2017).

Electricity provided to rural communities from micro-hydro schemes takes two forms: off-grid and grid-connected. Off-grid schemes deliver electricity directly to households. In grid-connected schemes the energy generated by the controller is connected to the main grid and sold to Perusahaan Listrik Negara (PLN), the state-owned electricity company (Sambodo 2015), and then connected to individual homes. Although the 1945 Constitution states that all utilities in Indonesia should be controlled by the state, PLN has failed to keep up with the nation's growing energy demands. In 2009, in an attempt to reduce some of the demand on PLN, the Government of Indonesia began allowing small-scale independent power producers (IPPs) to sell their excess electricity to PLN (Schmidt, Blum and Sryantoro Wakeling 2013).

For each grid-connected scheme, IBEKA helps to establish a social enterprise which acts as an IPP, running the grid and selling kWh to the national grid at a rate of between US$0.07 and US$0.13 per kWh. Households then buy electricity at a discounted price of US$0.06. Therefore, communities which are grid-connected make a profit due to the difference in sale price and purchasing price of the electricity.

Enabling Participation

IBEKA's core principle to develop human as well as physical resources has enabled many communities to become more independent and sustainable (Ashden 2017). IBEKA's long-term engagement with communities facilitates the development of skills necessary to maintain the power grids and strengthens community ownership of the generators (Ashden 2017). Once

the grids are set-up, the community members are employed as operators, maintenance staff, and household fee collectors. This practice of local management is representative of 'IBEKA's principles of community development, namely that electricity provision is not a goal in itself, but rather the means for socio-economic improvement' (Guerreiro and Botetzagias 2018: 167). Community's receive free or reduced electricity and a means for generating an income.

Furthermore, a percentage of the funds given as payment for the electricity usage is put into a community fund, and communities come together to decide how this money will be spent (Ashden 2017). It is often used to provide small business loans that lead to greater economic development and sustainability in communities (Guerreiro and Botetzagias 2018). One such example of community enterprise took place in the community of Cinta Mekar, in which local women decided to start a business making banana flour. These additional forms of income also guarantee that communities will be able to continue to afford to pay for electricity, creating a positive feedback loop (Guerreiro and Botetzagias 2018).

Outcomes

IBEKA has brought clean, renewable energy to thousands of people in rural Indonesia, directly addressing energy inequality. During a twenty period, from 1992 to 2012, IBEKA's minigrids provided approximately 54,000 people with electricity who would have otherwise gone without (Ashden 2017). This electricity is cheaper and more reliable than most of the country's rural electricity provision, where it exists (Guerreiro and Botetzagias 2018). Furthermore, the mini-grids are replacing inefficient, harmful, and resource-intensive energy, such as kerosene lamps, coal and oil, and contributing to healthier lifestyles in communities.

Furthermore, IBEKA's lobbying efforts have changed energy policy in Indonesia, leading to the 2009 policy which includes private mini-grids and their community managers in the national grid, effectively increasing the reach of energy across Indonesia.

Finally, building and managing mini-hydro schemes enables rural communities to control their own energy supply and generates additional income which they can then decide collectively how to invest.

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Image: Executive Director of IBEKA, Trimumpuni, at Cinta Mekar Microhydro Power Plant
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This Case Summary forms part of the collection of materials produced for the 'Linking Participation and Economic Advancement' project led by the Institute of Development Studies. This research project recognises that economic processes impact the lives and livelihoods of people who frequently have little or no power in these processes. Through this research we identify alternatives: ways that communities, governments and enterprises are making economic decisions in which 'ordinary' people have a real voice.

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