



## Site Visit C: Overview

Site Visit Theme	<b>Renewable Energy Alternatives for Indonesia</b>
Location	Subang and Lembang, North Bandung, West Java
Main site visit	Community-based micro-hydro plant, Cinta Mekar Village, Sagalaherang, Subang
Additional site visits	Home Unit Biogas Project, Wangun Harja Village, Lembang



<b>Main Issues</b>	<p>Energy scarcity is a major challenge facing the country's economic and social development. Only half the population of Indonesia receive electricity. Indonesia's energy policy places heavy reliance on fossil fuel power generation. With increased awareness about the impacts of carbon emissions from the use of fossil fuels, further exacerbated by deforestation and fuel price increases, Indonesia is well positioned to review the sustainability of its energy policy, not only in meeting the needs of those without access to energy, but also providing for those whose needs continue to increase.</p> <p>Indonesia is well endowed in renewable (non carbon emitting) energy resources such as micro hydro, biomass, solar, wind and geothermal however economic and to a lesser degree technological obstacles prevent its widespread adoption.</p>
<b>Cross Cutting Issues</b>	<ul style="list-style-type: none"> <li>• Community empowerment and development</li> <li>• Community-State relationships</li> <li>• Social justice/equity</li> <li>• Gender and development</li> <li>• Negotiation and decision-making processes</li> </ul>
<b>Background</b>	<p>Indonesia's future economic growth is heavily dependent on energy and electricity use. Globally, per capita consumption of energy is used as a measure of economic and social development. Realising the important role of energy for economic development, the Indonesian government is working to secure long term reliability and security of its national energy supply to the entire nation. Indonesia's National Energy Policy is aiming to increase energy diversification by utilising its renewable energy sources however the evidence suggests otherwise.</p>

<p><b>Challenges and Potential Solutions</b></p>	<p>Many parts of Indonesia still do not have electricity. Only half of the population of the country are connected to the national electricity grid system. Remote villages are supplied with relatively expensive energy compared to those in urban areas due to lack of infrastructure and supply costs.</p> <p>Indonesia possesses large potential for power generation from hydro, biomass, wind, solar and geothermal. Hydro power has begun to take off in small areas, amidst estimates of its total energy potential exceeding 75,000 MW. There is significant scope for micro-hydro and other renewable energy systems to meet the energy needs of rural and remote communities providing appropriate pricing structures, technology development incentives and information dissemination mechanisms are put in place.</p>
<p><b>About the Site Visit</b></p>	<p>Developing and connecting community-based micro-hydro power to the national grid, Indonesian NGO IBEKA builds capacity and supports local cooperatives to take advantage of Indonesia's new policy permitting small-scale producers to sell surplus power to the National Grid (State Electricity Company), meanwhile enhancing their own economic activities and the development of remote regions.</p> <p>In different areas, the PESAT Foundation and YPBB (NGOs) in collaboration with various partners, developed biogas home units using cow manure. Using the relatively simple technology, farmers have been able to reduce their spending on cooking fuel while at the same time benefiting from readily available fertilizer.</p> <p>Both site visits will explore the viability of micro-hydro and biogas sources of renewable energy as an alternative to fossil fuel power generation to meet the energy needs of rural communities.</p>
<p><b>Key Stakeholders</b></p>	<ul style="list-style-type: none"> <li>• Cinta Mekar Community Cooperative</li> <li>• IBEKA (People-Centred Business and Economy Institute) - originator, financier and facilitator of the project</li> <li>• PESAT Foundation</li> <li>• YPBB – Bioscience &amp; Biotechnology Development Foundation</li> <li>• State-owned power/electricity Company (PLN)</li> <li>• Local communities</li> </ul>

### **Innovative Aspects of the Site Visit**

IBEKA's pilot project in Subang is a part of the pro-poor community - private partnership. Community empowerment is at the heart of this and similar projects as the key for successful rural electrification. Such community run initiatives enable local community cooperatives to own and operate their own micro-hydro power plant to not only provide electricity for local needs but to sell back excess electricity to the state government grid, and invest the profits in their own community development.

IBEKA facilitates such projects across West Java by cultivating a sense of belonging and ownership among the community, introducing inclusive decision-making processes, and raising awareness about community rights and responsibilities.

PESAT and YPBB's initiatives have gained some support locally leading to partnerships with some cooperatives and a milk company. Simple technology, using cheap materials combined with the appropriate pricing system can make this biogas home unit easily replicable in the future.

### **Impacts of the Project Towards Sustainable Development**

The development of the micro-hydro and biogas power generation provides a substitute to carbon emitting fossil fuel based power generation such as diesel and kerosene, contributing to a net decline in greenhouse gas emissions.

Environmental benefits include reduced pressure on harvesting firewood from local forests.

Reduced use of kerosene for lighting, and firewood for cooking rice, means improved indoor air quality, which is likely to bring health improvements, especially for women and children.

Women and children, having to spend less time gathering firewood, are able to spend more time participating in community activities and education.

Women have more free time and also feel empowered and supported, which leads to development of small community enterprises, such as sewing cooperatives, which bring an additional income to their families and the community at large.

Income from micro-hydro power generation has enabled the establishment of a community radio station. Community radio regularly features programmes on agriculture, farming, small-scale businesses and other information relevant to the community.