

Hydropower for Sustainable Development 2011, Addis Ababa

Magat Hydropower Project - Water for rice and electricity

Economic expansion and a fast growing population brought the Philippines to the verge of an electricity shortage. SN Power and local partner Aboitiz Power's joint venture company, SN Aboitiz Power, is one of the largest private renewable energy companies in the country. The company's largest power plant, the Magat hydropower plant, keeps two-and-a-half to three million people supplied with rice and power.

Over the past 10 years, the Philippine government has restructured the nation's electricity market through privatizing most of the electricity production and establishing a competitive wholesale market. The aim has been to reduce national debt and secure a sustainable supply of energy.

Developing hydropower in emerging markets is the core business of the SN Power Group. The company's business model involves capturing all the positive impacts on society and the environment in which the projects are located, as well as limiting any negative effects.

SN Power partnered with the Philippine Aboitiz Power in 2006 and formed a 50–50 joint venture company, SN Aboitiz Power (SNAP). Following the acquisition of the Magat power plant in 2007 and Ambuklao and Binga power plants in 2008, SNAP has grown to become one of the largest players in the Philippine power sector.

Magat is the largest hydropower plant in the Philippines and serves as a multi-purpose dam for irrigation, flood control as well as renewable energy. At Magat, irrigation and flood control are the primary purposes – electricity generation only comes third.

The 117 km² reservoir irrigates one of the largest rice-growing areas in the country, made up of about 85 000 hectares of agricultural lands, as well as supplying water to the 360 MW hydropower plant with an annual generation capacity of 910 GWh. This provides sufficient rice and electricity to supply between 2.5 and 3 million people. The dam also has enormous capacity to deal with flooding, and through the efforts of SN Power, the governments of Norway and the Philippines entered into an agreement in November 2009 to improve the flood forecasting and warning system. This project improves downstream communities' preparedness for floods by building on expertise from the Norwegian Water Resources and Energy Directorate (NVE).

Furthermore, Magat is one of the largest providers of reserve capacity to the Luzon grid. Its provision of ancillary services is necessary to maintain reliability in the transmission of electric power and prevent blackout and other system disturbances. Only a very limited number of hydropower plants in the Philippines can be used to provide these kinds of services and the plant therefore makes a valuable contribution to the country's main power grid.

When SNAP took over Magat in 2007, creative thinking was key to ensure the project's operation. Magat had operational restrictions due to its main role, irrigation, hence the irrigation requirement dictated the water release pattern from the reservoir. Furthermore, no long term power purchase contract was available, and the electricity generated had to be sold at the newly established spot market. To optimize the water value, SNAP decided to operate Magat mainly during peak hours, while at the same time guaranteeing the irrigation requirement. Close cooperation between the irrigation authorities, the government and the power operator, SNAP, maximized revenues for all. This strategy has proved successful and the Magat plant is operating as one of SN Power's most profitable assets.

SNAP has established corporate social responsibility as an important vehicle to reach company goals, while at the same time ensure social and environmental responsibility and create mutual respect between the company and the host communities. During the past years, SNAP has allocated significant numbers to more than 55 local projects involving economic development, environmental protection, health and education. The company also contribute to substantial local tax revenues and employment opportunities.

“SN Power and SNAP’s guiding principles are to contribute to social development and ensure the sustainable operation of its facilities. Great importance is attached to identifying measures that will help those most in need of assistance, create new business opportunities and more jobs” says Erik Knive, Executive Vice President SN Power Southeast Asia.

Water is essential to life and water is scarce, especially in the developing world. SN Power supports and respects that hydro projects should manage water for several interests: flood control, irrigation, recreation, drinking water, as well as generating renewable energy. Hydropower, when done right and responsibly, has mutual societal and economical benefits, as illustrated by our Magat hydropower project in the Philippines.

Magat Hydropower Plant

Location	Ifugao and Isabela provinces, Luzon, 350 km Northeast of Manila, Philippines
Installed Capacity	360 MW / 910 GWh
Type	Earth and rock-fill dam used for irrigation, flood control and electricity generation
Commercial Operation	1983



SN Power



SN Power is a commercial investor and developer of hydropower projects – the only one in the world to operate exclusively in emerging markets. The company was established in June 2002, and is owned by Statkraft (60%) and Norfund (40%). Total net installed capacity of 950 MW with mean annual generation of 4 000 GWh/yr.