CHIPWI
HYDROPOWER PROJECT

Powering Myanmar's future

Upstream Ayeyawady Confluence Basin Hydropower Co., Ltd.

Introduction to Chipwi Hydropower Project

The Chipwi Hydropower Project is one of seven proposed cascade hydropower projects along the N'mai and Mali Rivers. The hydropower project is named after Chipwi, a town some 7.5km away downstream the dam site on the N'mai River.

Located on the downstream of the N'mai River, approximately 104 kilometres north from the confluence of the N 'mai and Mali Rivers, electricity generated from the Chipwi Hydropower Project will help to solve the problem of power shortages and boost economic development in Myanmar.

Priority will be given to meet the energy demands of Myanmar. Only surplus to the country's requirements will be exported to neighbouring countries to boost regional development and cooperation. Myanmar will gain revenue by taxing these exports.

Capabilities of Chipwi Hydropower Project

Chipwi dam is a roller-compacted concrete (RCC) gravity dam. When completed, the dam will be 206 metres in height and will have a total reservoir capacity of almost 2.5 billion m^3. The Chipwi Hydropower Project consists of five 680 megawatts (MW) turbine generators, with a total output of 3,400MW.

The dam is capable of generating approximately 17.1 billion kilowatt-hours of electricity every year, more than the total amount of electricity generated in Myanmar in 2015.

The design of the hydropower project takes into account of the region's flood history and is built to withstand and control floods in the area.

Construction of the Chipwi Hydropower Project will be completed in eight years, although the first turbines can be in operation in seven years.

Commitment to Chipwi

Construction of the Chipwi Dam began in December 2010 but was forced to stop in April 2012 due to regional armed conflicts. All staff working on the Chipwi Hydropower Project were evacuated.

Despite the challenges, ACHC continues to be committed to the long term development of the project and the region.

The N'Mai River

Benefits of Chipwi HPP

The Chipwi Hydropower Project will transform Kachin State for the better. Despite the abundance of natural resources in the state, the region remains underdeveloped due to a lack of capital, facilities and knowledge.

The construction of the dam will bring an inflow of investment into the region. Chipwi Hydropower Project will improve the road network and drive the development of commerce, trade and tourism in the region. Most importantly, Chipwi will improve the quality of life for those who live in the area.

Solution to power shortages

Chipwi Hydropower Project will generate much needed electricity for Myanmar's development. The dam is capable of generating approximately 17.1 billion kilowatt-hour of electricity every year, more than the total amount of electricity generated in Myanmar in 2015.

The dam helps Myanmar to optimize its natural resources to boost its economic growth. Clean energy generated from the hydropower project would be transmitted to various parts of the country, including Yangon and Mandalay, to solve power shortages in these cities.

Reduce carbon footprints

Chipwi Hydropower Project will also help Myanmar reduce its reliance on non-renewable fossil fuels and its carbon footprints to ensure sustainable development. Hydropower is a sustainable renewable energy that is widely regarded as a solution to climate change.

Chipwi HPP would help Myanmar reduce its emission of carbon dioxide by 15.0 million tonnes per year as compared to using fossil fuels for electricity.

Revenue for Myanmar

Myanmar will gain tax, free electricity and 15% share dividends from the Chipwi Hydropower Project. Myanmar has the right to procure as much of the electricity generated as it wishes. Surplus electricity will be taxed and Myanmar gains revenue from the export. The total monetary benefit for Myanmar exceeds that of investor.

Navigation and Tourism

Once completed, the reservoir of Chipwi will form a 60 kilometres of waterway that would facilitate water transport and tourism in the area.

Provide massive job opportunities

During the construction period of the project, plenty of jobs can be provided for the local residents and residents to be resettled with the salary level much higher than the domestic average. This will be of major significance to the improvement of living standards of local people.

Dam safety & Environmental and social considerations

Planning and design of the Chipwi Hydropower Project is supported by an Environment Impact Assessment (EIA) conducted for all seven cascade hydropower projects by Myanmar and Chinese experts.

Safe from earthquakes

The Chipwi Hydropower Project is safe from any potential earthquakes or seismic activities in the region. It is not situated close to any active fault lines or seismic danger zones. In addition, geographical conditions at the proposed dam site and reservoir are excellent and the river bank is stable. These facts were ascertained during a geographical assessment conducted by the Changjiang Institute of Survey, Planning, Design and Research, a leading institute that specialises in the design and planning of hydropower projects.

Safeguarding the environment

Comprehensive assessments of environmental and social impact of all seven proposed cascade hydropower projects in the N'mai and Mali rivers were conducted as part of the due process. A wide range of stakeholders including local government officials and residents were involved in the social impact assessment.

The Environmental Impact Assessment (EIA) began with the formulation of the Terms of Reference in October 2007. The Term of Reference, which defined all aspects of how the field assessment team conduct the evaluation, adhered to guidelines from leading international organizations such as the World Bank and the Asian Development Bank and was evaluated by well-known experts. Over a hundred marine and wildlife biologists from China and Myanmar were invited to carry out a comprehensive assessment of

the ecosystem and wildlife in the region. Actual field assessment by marine and wildlife biologists took place from January 2009 to May 2009. An assessment of the quality of water and air, as well as the level of sound and environmental pollution was carried out simultaneously by experts from the Biodiversity and Nature Conservation Association (BANCA) from January 2009 to August 2009.

Results of the assessments were published in a report. While the construction of the hydropower project might cause some limited changes to the marine and natural habitat, experts concluded that the potential impact to the environment could be mitigated or minimised with appropriate measures in place. These will be introduced as part of the project and will be strictly adhered to in accordance to the ESIA report approved by the government. The environmental impact assessment report was submitted to the government in March 2010 and was approved in January 2011.

New villages and facilities for local communities

Approximately 136 families (or 628 people) will be affected by the project. To date, none of them have been resettled.

Based on our plans, seven new villages together with churches, temples, schools and hospitals will be built to ensure that those villagers who are affected by the project enjoy excellent facilities in their new villages. 6.83 kilometres of road will also be built to connect the new villages to the main transportation network.

Members of Parliament representing the affected constituencies have expressed their support for Chipwi HPP on several occasions and are keen to proceed with the construction of the dam.

Environmental and social considerations

Preliminary work on Environmental Impact assessment began in **July 2006**

July **2006**

Preliminary work ended in **October 2007**

The research concluded that hydropower development would not affect important cities in the region such as Myitkyina, Chipwi and Putao

October **2007**

Formulation of Terms of Reference for Environmental Impact Assessment took place in **October 2007**

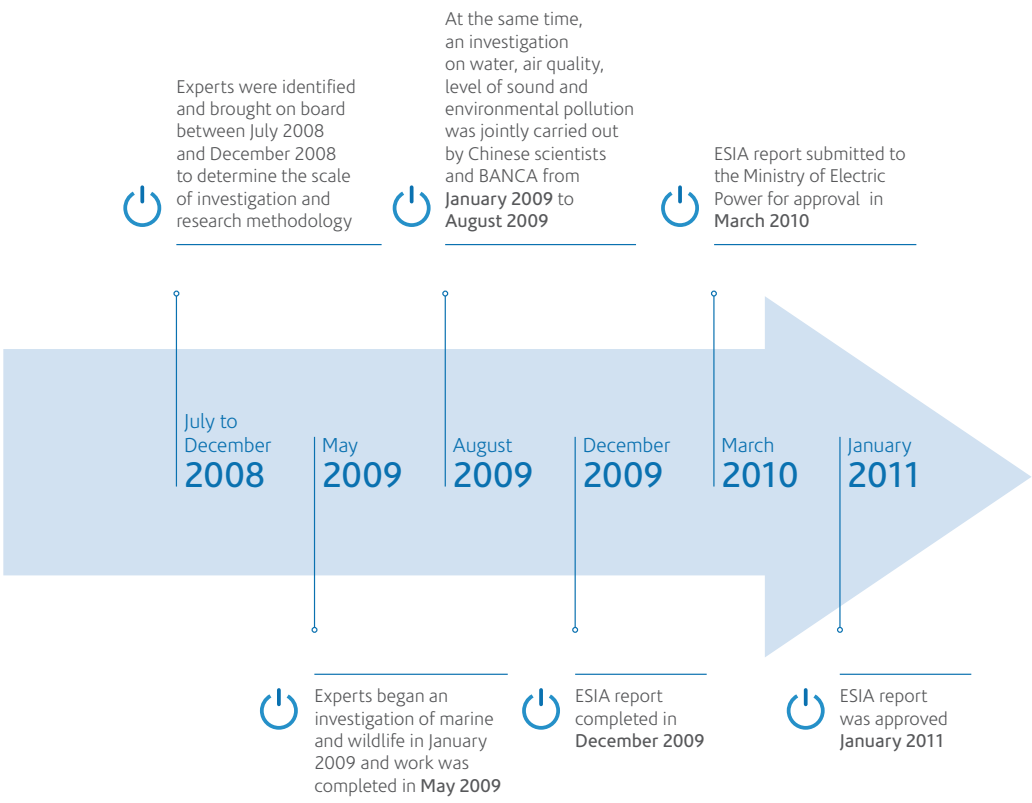
October **2007**

In the absence of Myanmar environmental laws and standards, both parties agreed to implement the ESIA in accordance to international and Chinese standards

March **2008**

Formulation of Terms of Reference concluded in **July 2008**

July **2008**



The individual ESIA of Chipwi HPP will be prepared and completed based on the overall ESIA requirements of the river basin and its construction characteristics, and after obtaining the approval of the government of Myanmar, the construction will commence.

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