



## Promoting Cogeneration in Nepal adding a new source to the electricity mix

Harnessing electricity through cogeneration stands as a promising new source in the electricity mix of Nepal. The country currently faces extended hours of load shedding as it is lagging behind in harnessing its hydropower potential. The severity of the problem intensifies particularly during the winter season, when most of the hydropower plants run well below their installed capacity as they do not get enough water flow on the turbines. In such a situation, electricity through cogeneration, a sequential generation of thermal and electrical energy from a single primary source, stands as a viable option to reduce the gap between demand and supply of electricity.

A baseline survey of energy intensive industries undertaken in 2012 identified a potential of generating electricity of around 25 MW through cogeneration at the sugar industries. Through additional measures at the sugar industries, the capacity could be increased to 93 MW which is equivalent to one fourth of the current hydropower generation during the dry season. Out of the total potential, more than 50% of the capacity could be connected to the national grid. This would provide a sigh of relief during the dry season, when the country faces its longest hours of load-shedding. Further, the industries have been depending on fossil fuel as an alternative source for electricity. Hence, cogeneration would support not only in operating the industries smoothly but also in reducing adverse environmental impact caused by burning of fossil fuel and decrease dependency from import of fossil fuel.

Despite considerable potential the existing legal framework in the country did not allow electricity generation and feed-in into the national grid. Understanding the potential contribution of cogeneration in the sustainable development of the

country, the Ministry of Energy (MoEn), Government of Nepal with support from Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), has been promoting cogeneration in Nepal within the framework of the Nepal Energy Efficiency Programme (NEEP).

In this regard, the German Development Cooperation has been playing a crucial role in creating an enabling framework conditions for the promotion of cogeneration in the country. The set-up of a political and legal framework for the promotion of cogeneration is enabled by the programme. For this the main stakeholders fostered their dialogue and partnership between the main stakeholders and applied proven Human Capacity Development (HCD) measures to increase capacities and competencies of key personnel. Following this multi-level approach the support for capacity and competence enhancement is being directed simultaneously at individuals, organizations and society groups.

### Capacity Development – People

At the onset, with the objective of increasing capacities and competencies of the key stakeholders on cogeneration a study tour was organized in India from the 10th to 16th February 2013 via the Regional Energy Efficiency Programme (REEP) with the objective of transferring the know-how and technology within the region. During the tour, 10 representatives from the government and the private sector, primarily from the sugar industries, got acquainted with experiences on the promotion of cogeneration in India, including information on technical and financial requirements for the promotion of cogeneration.



## Capacity Development - Organization

Within the NEEP framework, industries received technical advisory services for energy efficiency measures in conjuncture with energy audits. In this line, industries with cogeneration potential have been supported for harnessing this potential. A two day workshop on cogeneration was organized by the Energy Efficiency Center under the Federation of Nepalese Chamber of Commerce and Industry (EEC-FNCCI). During the workshop, 45 representatives from the government and the private sector interacted on the steps required for the promotion of cogeneration along with getting information on experiences of several vendors in promoting cogeneration in the region.

With enhanced knowledge on cogeneration, the private sector, together with the government, placed impetus on its promotion. Its significance was emphasized during the Economic Summit organized jointly by the Government of Nepal (GoN) and FNCCI in February 2014. Cogeneration was highlighted as a potential intervention for a sustainable energy solution for Nepal. The promotion of cogeneration was announced in the list of 19 point declarations for the sustainable economic growth of the country.

## Capacity Development - Society

Facilitating dialogue and partnership in the sector for the creation of enabling framework conditions have been additional major steps taken within NEEP. In its role as an “honest broker” GIZ was in a position to support a series of dialogue events between policy institutions, society and private sector towards the formulation of a conducive policy for cogeneration and its implementation. In this regard, MoEn organized a preparatory meeting on investment dialogue on cogeneration on the 6th of November 2014 within NEEP framework. The meeting organized together with close cooperation with Nepal Sugar Mills Association (NSMA) and International Financial Cooperation (IFC) of the World Bank Group. During the meeting government and private sector representatives focused

on identification of opportunities through discussion on issues and barriers in the promotion of cogeneration. All together 42 participants including the then Minister of Energy and representatives from different line ministries, government institutions, sugar industries, paper and pulp industries, FNCCI, distilleries and development partners participated in the meeting.

Following the meeting, MoEn submitted a policy proposal for harnessing cogeneration in sugar industries to the Cabinet. Prior to the proposal a study was made by Nepal Sugar Mills Association with the support of IFC with close coordination with GIZ. The Economic Infrastructure Committee of the Cabinet approved the proposal on 3rd of June 2015 marking a milestone in the Nepalese electricity mix. The approval sets the legal framework required for harnessing electricity through cogeneration for self-consumption and selling the surplus to the national grid.

Following the cabinet approval, MoEn organized a dialogue between key stakeholders on 26th of June 2015 within the NEEP framework for gaining momentum in harnessing cogeneration at sugar industries. Later on to identify ways to speed up the realization of cogeneration, another dialogue was organized on 15th of December 2015.

## Way Forward

Along with the setting of political and legal framework, the commitments from key stakeholders show that cogeneration will prove to be a viable source for reducing the current gap between demand and supply of electricity. The commitment of the government for promotion of cogeneration is reflected in the “National Energy Crisis Alleviation and Electricity Development Decade (2016-2026)” as well as in the “Energy Crisis Alleviation Action Plan 2016”. Following commitment from the government seven sugar industries have already submitted their interest for cogeneration. This indicates a positive outlook on having a new source in the Nepalese electricity mix in the very near future.

Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ) GmbH

Nepal Energy Efficiency Programme (NEEP)  
NTNC Complex  
Khumaltar Lalitpur  
PO Box 1457  
Kathmandu, Nepal  
T +977 (1) 5538129  
F +977 (1) 5551706  
E neep@giz.org.np  
I energyefficiency.gov.np

September 2016

Commissioned by

