

Source: Karobar; 9 April 2016

Power cut to be limited to five hours from New Year, claims Minister Rayamajhi

Deputy Prime Minister and Minister for Energy Top Bahadur Rayamajhi on Saturday said that power cut will be reduced significantly from mid-April.

Speaking at an interaction organized at the Reporters' Club in the Capital, he claimed that load-shedding will end within two years. Saying that infrastructures for ending load-shedding has already ended been set-up, Minister Rayamajhi said that its impact will be seen from Nepali New Year.

“Load-shedding will be limited to five hours from Nepali New Year as works are in full swing as per energy crisis reduction master plan,” he said.

Source: Karobar; 10 April 2016

Minister claims load-shedding will end in 2074

Deputy Prime Minister (DPM) and Energy Minister Top Bahadur Rayamajhi claimed that load-shedding will be reduced significantly in the coming Nepali calendar year 2073 and will be completely ended in the year 2074.

Stating that necessary infrastructure for ending load-shedding are being prepared, he added that positive impact can be seen in the upcoming calendar year itself. "It will be limited to around five hours a day in the next dry season and we have already started work to end it completely in the succeeding year," he added. He claimed Nepal will increase generation in the next few years and be able to even export electricity.

Speaking at a function in Reporter's Club he revealed that capacity of Dhalkebar-Mujaffarpur, Kushaha-Kataiya and Parwanipur-Raxaul transmission lines is being increased to import more electricity from India. He said Nepal is mired in acute energy crisis despite starting hydropower generation over a century ago due to inability to develop the sector.

The government plans to import 580 MW from India in the next year. The Nepal Electricity Authority (NEA) is currently importing 300 MW from different transmission lines in the bordering areas. It aims to increase supply to 1,567 MW by expanding domestic generation to around 1,000 MW including hydropower and other alternative resources.

The Energy Ministry projects that load-shedding will be completely ended during the monsoon and limited to six hours a day during the dry season. Repair of 45 MW Upper Bhotekoshi and other projects damaged by the earthquake will be completed by September. Similarly, the ministry projects demand in 2074 to rise to 1550 MW. But it aims to end load-shedding even in the winter by importing 930 MW from India. Supply, in this way will rise to 1,850 MW.

Indian Ambassador to Nepal Ranjit Rae has already said India will provide up to 940 MW to Nepal in the short-term.

Chhyangdikhola starts generation

The 2 MW Chhyangdikhola Small Hydropower Project, constructed in Faleni VDC of Lamjung by Chhyangdi Hdropower Limited, was inaugurated by DPM Rayamajhi. The project developed with cost of Rs 400 million had started generation from March 6.

State of Demand and Supply

2072

Demand: 1391 MW

Supply including that imported from India: 800 MW

Import from India: 300 MW

Domestic Generation: 500 MW

Daily Load-shedding: up to 14 hours

2073

Demand: 1423 MW

Supply including that imported from India: 1567 MW

Import from India: 580 MW

Domestic generation including wind and solar: around 1000 MW

Daily Load-shedding: up to 6 hours

2074

Demand: 1550 MW

Supply including that imported from India: 1850 MW

Import from India: 930 MW

Daily Load-shedding: 0

Source: 10-Year Hydropower Development Concept Paper

Source: The Himalayan Times; 12 April 2016

Energy efficiency: Relieving the funding burden

Pramod Raj Pokharel

The ESCO is not only responsible for the construction but also for the operation and maintenance of the facility at a predetermined and guaranteed price

Supplying energy for sustainable economic development is an objective shared by developed and developing countries alike, although the urgency is particularly great in the developing world, where large populations do not have access to modern energy services such as electricity and instead rely on traditional and often unsustainable energy sources such as fuel wood.

Demand for global energy services to support economic growth has been growing significantly and so does the fuel share of CO₂ emissions. The increased CO₂ emissions from 15,637 MtCo₂ in 1973 to 31,734 MtCO₂ in 2012 (IEA 2014) tells the story of anthropogenic induced emissions in the world atmosphere. Recent events of Beijing red alert in last December and massive pollution level in Delhi call for a drastic change in our energy practices mainly dominated by fossil fuels.

There are two options available to meet the increased demand for energy; one way is to supply more and more energy to meet the ever increasing energy demand and other way is to reduce the energy demand by improving energy end-use and supply efficiencies so that saved energy can meet increased part of energy demand.

The first one is conventional energy management and second one is energy efficiency. Clearly, both approaches are needed. However, of the two, only energy efficiency can generate nearly immediate results with existing technology and proven policies and do so while generating strong financial returns that exceed those from investments in conventional energy supply. Simply increasing conventional energy supply is not a viable option because continued reliance on the predominant energy source, fossil fuel, exacerbates energy insecurity and raises serious environmental concerns, especially related to climate change.

The world at this moment needs rapid transformation in its global energy system and fortunately energy transformation presents a historic opportunity for developed and developing countries alike. Realizing the fact that the costs of inaction are far greater than the costs of action, the world needs to grab every possible chance and the best opportunity is to use energy more efficiently.

Energy efficiency represents the cheapest and surest means of curbing carbon emissions and saving money for other productive uses. Promoting this low-cost, high-impact “energy source”, the world-wide energy demand can be significantly reduced and this in turn will avoid additional exploitation of emission prone fossil fuel sources.

The idea of energy efficiency is not new. By the end of 19th century, all developed countries became dependent on energy for their industrial activities. As coal, oil and gas were abundantly available at a low price, availability and the costs of these energy sources were not an issue in the beginning. But with oil crisis in 1970s and consequent rise in fuel cost initiated an interest in energy conservation. At the same time, the rapport of the Club of Rome in 1972 raised questions

about the limits of growth and the effect of economic growth on the climate. The 70's were therefore a starting point for worldwide experimenting with energy efficiency.

Since then various approaches have been tried in the field of energy services focusing on the efficiency measures. For the people who know business, energy efficiency never is an attractive business option to invest. Investment in other sector yields much more profit compared to the monetary return from energy efficiency projects.

Thus funding has always been an issue while undertaking energy efficiency projects. Low and subsidized energy price (e.g. fuel and electricity tariff) in many countries are other hindrances while judging savings on EE investments. Low total energy cost as percentage of total operating cost is also a factor that demotivates energy saving in production business.

Hence the need for a new concept was felt where investment does not come as a burden to EE implementation and fund is made available within the box. Energy Contracting (and ESCO) is such a concept that relieves the funding burden as it provides financing opportunities to the energy efficiency projects through the energy savings. Energy contracting (EC) concept shifts the focus away from the sale of the units of final energy (like fuel or electricity) towards the desired benefits and services derived from the use of the energy. The EC model aims at providing useful energy or energy savings at minimal project cycle cost to the end user and it achieves environmental benefits due to the associated energy and emission savings.

Energy contracting (EC) models provide an instrument to optimize life-cycle performance, including the operational phase of the energy system.

The ESCO is not only responsible for the construction but also for the operation and maintenance of the facility at a predetermined and guaranteed price. Thus the ESCO has an inherent interest in taking good care of quality assurance at the construction site, optimizing the operation and performing proper maintenance.

Nepal does not have energy contracting and ESCO practices so far like those in mature energy markets of the world, but it is not late to start it by now. However, it will be beneficial to Nepal to focus on energy efficiency in supply side rather than in the demand side, and the reason is obvious.

The writer is an energy expert

Source: My Republica; 14 April 2016

Energy crisis work plan struggles to take off

RUDRA PANGENI

It has nearly been two months since the government unveiled a work plan to end load-shedding substantially within a year. But the progress in implementation of the work plan is not satisfactory.

Ministry of Energy on Thursday briefed members of the parliamentary Agriculture and Water Resources Committee about the progress in implementation of the plan. Report presented to the committee by the ministry shows needful preparations have been made but no visible result can be seen, except in one project.

The government managed to resume work on 75-kilometer Khimti-Dhalkebar transmission line, which had been halted for the past four years, due to locals' protest by mobilizing security forces. Except this project, all other projects are in preparatory phase.

If the project is completed within few weeks as per the work schedule, electricity imported from India via Dhalkebar-Mujaffarpur transmission line can be connected to Kathmandu.

"It is a key project as it will enable us to take electricity imported from India to Kathmandu Valley," Dinesh Ghimire, joint secretary of Ministry of Energy, told meeting on Thursday.

Discussion on energy ministry's progress report will continue on Sunday as well.

The energy ministry plans to import 580 MW of electricity from India by the end of this fiscal year. It has been importing 315 MW from the southern neighbor at present.

The government had announced the energy crisis related work plan on February 19 with objective to generate 10,000 megawatt of electricity in a decade and fully end the energy burden within the next two years. This is the fourth such plan unveiled by the government. Three other plans unveiled over past seven years are gathering dust in government shelves.

Different layers of implementing agencies and statutory bodies, led by Chief District Officer at the district level and Prime Minister at the center, have been formed to implement the work plan, the progress report states. Similarly, the ministry has termed directions issued to Nepal Electricity Authority, Department of Electricity Development, and Alternative Energy Promotion Center, as 'progress' in relation to implementation of the plan.

Talking to Republica, Ghimire said effective groundwork is important to translate plans. "It's too early to expect visible results," he added.

The work plan states that penalty for hydropower projects generating lower than 80 percent of energy stipulated in the contract will be waived off within two months to encourage hydropower developers. Similarly, it envisages preparing draft of the contract to be signed with sugar mills to

purchase surplus electricity generated by them within two months. However, the progress report submitted to the parliamentary committee is silent on these issues.

Ghimire claimed that contract paper is in the final stage of preparation.

The work plan has given a two-month deadline to the energy ministry to extend date of commercial generation for hydropower projects affected by the earthquake by one year. But it has not happened.

Similarly, there was a plan to immediately issue force majeure notices to hydropower plants damaged by the earthquake. But nothing has been done in this direction. The work plan states that the government will ensure market for energy generated by hydropower plants developed by foreign investors for domestic consumption within a month by signing project development agreement. It is also limited to paper.

"Another major achievement will be made next week by mobilizing security forces to complete Bhaktapur-Chapagaun-Matatirtha transmission line," Ghimire said.

The project was stalled for more than decade after the locals launched protest against land acquisition.

Source: Karobar; 14 April 2016

American lobbying against reservoir projects

BABURAM KHADKA

America has urged international financial institutions to not invest in big reservoir based hydropower projects stating that doing so violates human rights and also disturbs environmental balance. Timely construction of Budhi Gandaki and other reservoir projects is now in doubt with America lobbying as per interest of different non-governmental organizations (NGO).

The American Congress has already passed a bill to prevent hydropower projects with big dams. America has urged international financial institutions to not invest in such projects for effective implementation of the bill that has come into implementation since 2014. The American message that has come at a time when the World Bank and other international financial institutions have been preparing to invest in big reservoir projects is being taken meaningfully. The International Rivers, in its website, has said that the decision of the American Congress has poured cold water on the plan of World Bank.

America has claimed that construction of projects with big dams will violate human rights, displace a large number of people and disturb environmental balance. The American decision will have direct impact on the World Bank, International Finance Corporation (IFC), Asian Development Bank (ADB) and other institutions. The Consolidated Appropriation Act was brought on initiation of Senator Patrick Leahy, according to the International Rivers. Leahy had also taken initiative for customs waiver for Nepali products in the American market.

The website says the American Secretary of Treasury has instructed heads of the international financial institutions to not provide any kinds of loans, grants or strategic or policy assistance for projects with big dams as per the dam and development framework of the World Commission on Dams. The commission had taken decision to stop big dams in 2000. America claims that decentralizing the prioritization of investment on big projects and investing that into renewable resources of energy will be more effective and will help in poverty alleviation and also contribute to environment conservation. The American opposition will also obstruct construction of projects with big dams in Congo, Togo, Guyana, Laos and other countries.

The World Bank has 200 member states. International Rivers and other international institutions have been urging for using US\$ 1.60 billion of the World Bank for renewable resources through the Green Climate Fund. Former water resources minister Deepak Gyawali said such instruction may have come as big reservoirs projects displace a large number of people and violate human rights. He argued that America may have adopted such policy as previous experiences with such big projects are bad and they had resulted in adverse impact on a large number of people.

Big projects in pipeline

Nepal has started homework for 5040 MW Pancheshwor, 11000 MW Karnali Chisapani, 245 MW Naumure, 1100 MW Budhi Gandaki, 750 MW West Seti, Dudhkoshi, Andhikhola and other reservoir based projects with dams higher than 50 meters with that of Budhi Gandaki 263 meters. The World Commission on Dams in 2000 had defined all dams higher than 15 meters as big. The government through its recent Energy Crisis Reduction and Electricity Development Decade Plan had aimed to generate 5000 MW through reservoir based projects.

Opposing elsewhere after constructing in America

America is trying to obstruct construction of projects with big dams in other countries under influence of different NGOs after completing construction of such projects in America. America has constructed more than 200 projects with dams 55-230 meters. There is also increased risk of different western institutions and NGOs working for environment conservation opposing construction of such projects after the American opposition. The Arun III project was also aborted in the mid 1990s in the name of conservation of butterflies.

Source: The Himalayan Times; 15 April 2016

Sustainable energy for all: Can Nepal achieve it?

Devendra Adhikari

Fuel switching cannot be implemented overnight. It needs strong policy initiatives, adequate and reliable supply, financial incentives, technological breakthrough and awareness. It is difficult in the situation where electricity supply is inadequate

Nepal is facing an energy crisis. Access to clean and sustainable energy is limited. Sustainable energy for all (SE4All) has been a global initiative. The Government of Nepal had expressed its interest to join the SE4All initiative in June 2012, and made firm commitments to support it. The SE4All initiative aims at mobilizing action from the government, the private sector, and civil society for the achievement of three global objectives: (i) ensuring universal access to modern energy services, (ii) doubling the global rate of improvements in energy efficiency, and (iii) doubling the share of renewable energy in the global energy mix, all to be reached by 2030. Only 67 per cent of the country's households have access to electricity, comprising 58 per cent from the national grid and 9 per cent from the off-grid solutions. Around 94% of urban and 60% of rural households have access to electricity. About 30% of mountain households, 22% of hill households and 28% of Terai households are using lighting options other than electricity and solar. Only 49% population in the mountain region have access to electricity and 21% have solar. Still 30% population is relying on inferior energy sources for meeting their lighting needs in the mountain region.

A wide variety of technological options is available for fulfilling lighting demands. Nepal has made remarkable progress in the dissemination of solar home system and micro-hydropower. As the technological options are well tested and available, Nepal can easily achieve the objectives of energy access in fulfilling the lighting energy demand from different energy solutions such as grid extension, micro-hydropower and solar home system in a reasonably a short period of time.

The situation of energy access in terms of cooking is, however, bleak. A total of 64 per cent of the total households rely on firewood as a main fuel for cooking. Use of electricity is almost negligible in meeting cooking energy demand. The penetration of clean cooking fuel is limited to around 25 per cent of the households (considering liquefied petroleum gas and biogas). In the recent past, contribution of liquefied petroleum gas (LPG) is increasing and has reached 21 per cent of the total households; mostly in the urban area.

It is seen from the above figure that biomass is the main fuel used for cooking, which is largely used inefficiently. LPG and electricity are considered as the most preferred cooking fuel. As Nepal has no fossil fuel resources, all the petroleum products including LPG are dependent on import.

Consequently, use of LPG has a large economic cost to the economy. As Nepal has a huge hydropower potential, hydroelectricity would be the most preferred fuel for cooking. It is, however, not feasible to fulfill cooking energy needs from hydroelectricity in a short to a medium term. Biomass energy sector is the least developed in Nepal. Apart from improved cooking stove and biogas, other clean biomass energy options are the most urgently required to

promote and supplement the cooking energy needs. It is obvious that hydro electricity would be the best alternative for meeting cooking energy demands in a long term perspective.

Energy efficiency (EE) has, so far, not been able to draw national attention in Nepal. Nepal has the lowest energy productivity among the South Asian countries. It demonstrates, however, that Nepal has a great potential for efficiency improvement in its energy sector. Energy saving potential from EE is, however, insignificant in the present context because of low level of energy consumption. EE measures will become more and more attractive when the situation of energy supply and consumption is improved in Nepal.

Though Nepal has made remarkable progress in the rural and renewable energy (RE) sector, the contribution of renewable energy to the total energy supply is insignificant – only 1.66 per cent in 2012/2013. At the end of 2012/13, a total of around 36 MW was produced from the renewable energy sources that comprised 26.27 MW from micro-hydropower, 10 MW from solar photovoltaic, 18 kW from wind, and 43 kW from biomass energy sources. A total of 284,000 biogas plants were installed and 753,000 cooking stoves were improved.

Doubling the share of RE is not an issue in Nepal, as the share of RE is negligible in the total energy mix. The main issue is, however, to increase the share of RE – especially the hydroelectricity – to replace biomass and fossil fuels presently being used for cooking and transportation facilities. Fuel switching cannot be implemented overnight. It needs strong policy initiatives, adequate and reliable supply, financial incentives, technological breakthrough and awareness. It is difficult in the situation where electricity supply is inadequate to meet present demand. The following conclusions can be drawn: (i) increasing access to electricity is easy to achieve, (ii) meeting SE4All objective on increasing access to modern cooking energy is largely dependent on increasing electricity access and supplying clean biomass energy solutions, (iii) the objective of doubling the share of renewable energy and energy efficiency are achievable, (iv) the ‘business-as-usual’ scenario for the energy sector development falls far short for reaching the SE4All objectives, and (v) use of fossil fuel is increasing at an alarmingly rate, which Nepal cannot sustain in the long run.

The writer is an energy economist