

Nepalese Power Sector- Impact of Pandemic

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| Industry Analysis

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Nepal's power sector has come a long way from decade long load shedding having more than 20 hours of scheduled power cuts to no scheduled power cuts currently. Nepal Electricity Authority (NEA) and Independent Power Producers (IPPs) have significantly increased the installed capacity of power projects in last 4 years. Capacity addition of power projects has grown at a CAGR of 12.05% in 3 year period till the end of FY19.

Nepal's installed capacity in power sector is dominated by hydropower which is also the largest available renewable energy source of Nepal. Nepal's potential in hydropower sector is large and yet untapped considering economically viable capacity of 42,000 MW out of which only 2.69% has been achieved at the end of FY19.

Development of hydropower has faced many challenges in the past. Earthquake of 2015 was one of the major setbacks for the sector with many under construction projects facing delays, which ultimately impacted cost of the projects. Recent Corona Virus (COVID-19) pandemic which has impacted entire Nepalese economy has affected power sector as well. The emerging disruption caused by the COVID-19 pandemic will add weakness to the sector which otherwise had been progressing well for last few years.

While the pandemic has affected various sectors across the country, we have analyzed and presented impacts of the pandemic on the stakeholders related to power sector.

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Snapshot of Nepal Power Sector

Parameters (At the end of FY19)	Status
Total Installed Capacity*	1177.68 MW
Hydropower Installed Capacity	1124.17 MW
Energy Demand	7583.92 GWh
NEA Generated	2548.11 GWh
Power Purchased from IPPs	2190.05 GWh
Power Purchased from India	2813.07 GWh

Source: NEA Annual Report 2019

*Includes only grid connected projects

Installed capacity (In MW)

Particulars	FY16	FY17	FY18	FY19
Hydropower				
NEA Owned*	473.39	473.39	503.39	563.39
IPP Owned	324.45	441.05	512.70	560.78
Total Hydropower Capacity	797.84	914.45	1,016.09	1,124.17
<i>% of total capacity</i>	<i>93.71</i>	<i>94.47</i>	<i>95.00</i>	<i>95.46</i>
Total Thermal Capacity	53.41	53.41	53.41	53.41
<i>% of total capacity</i>	<i>6.27</i>	<i>5.52</i>	<i>4.99</i>	<i>4.54</i>
Total Solar Capacity	0.10	0.10	0.10	0.10
<i>% of total capacity</i>	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>
Total Installed Capacity	851.35	967.96	1,069.60	1,177.68

Source: NEA Annual Report 2019

*Includes only grid connected projects

Energy Availability

Particulars	FY16	FY17	FY18	FY19
Peak Demand (MW)	1,385.30	1,444.10	1,508.16	1,320.28
NEA Generation (GWh)	2,133.22	2,305.45	2,308.37	2,548.11
Power Purchase from IPPs (GWh)	1,166.24	1,777.24	2,167.76	2,190.05
Power Purchase from India (GWh)	1,777.68	2,175.04	2,581.80	2,813.07
Available Energy (GWh)	5,077.14	6,257.73	7,057.93	7,551.23

Source: NEA Annual Report 2019

Generation License Details

Particulars	Hydro	Solar	Thermal	Total
Operating Projects	1,126.71	1.68	53.41	1,181.80
Issued Generation License	7,740.77	59.30	-	7,800.07
Application for Generation License	2,659.03	31.37	-	2,690.40
Total	11,526.51	92.35	53.41	11,672.27

Source: Department of Electricity Development (Data as on May 11, 2020)

Stakeholder Impact Analysis

Nepal Electricity Authority (NEA)

NEA has entered into Power Purchase Agreement (PPA) for purchasing of power with IPPs and is the sole customer purchasing power in Nepal from IPPs. Further, NEA is also a sole distributor of power to all the end consumers like Domestic consumers and Industries. NEA generates around 40% of its revenue from sale of power to Industries and around 38% from domestic consumers.

Consumer Category	Electricity Sales%	Revenue%
Industries	38.40	40.13
Domestic	42.20	37.77
Commercial	7.39	10.19
Others	9.06	7.62
Non-Commercial	2.95	4.29

Source: NEA Annual Report 2019

Owing to countrywide lockdown declared by Government of Nepal (GoN) to contain the pandemic, industries across Nepal has been shut down for more than a month. Though GoN has eased the lockdown and has allowed industries to start the operation, due to unavailability of labour and logistical issues few industries have started partial operations. This has resulted in decrease in demand of electricity. Considering 40% of NEA's revenue generated from industries during FY19, NEA's revenue is likely to be declined substantially during this period.

In case of Domestic consumers, NEA's revenue might not get impacted. However, due to lockdown, NEA has been unable to do meter reading for all the consumers and is unable to receive the payments for the due amounts from the consumers. Due to this reason, NEA is likely to have a stress in its cashflow position.

Further, with beginning of wet season of run of the river projects which generally starts from Mid-April, generation of power by IPPs are expected to increase during this period. Considering, the PPA of all the operational plants entered in take or pay basis, NEA is likely to have further stress in its cashflow if the lockdown is extended.

Summarizing the impact of COVID-19 in NEA's business;

- Impact on revenue due to decline in sales of power to Industries.
- Stress in cashflow due to delay in payment from domestic consumers.

Independent Power Producers (IPPs)

Government of Nepal has put energy sector as a priority sector and has been providing various incentives like tax rebate, loss carryforward etc. to attract private investments in the hydropower sector. Numerous IPPs have entered into power purchase agreement and are in different stages of construction and few are in operational stage.

Projects in Initial Stages:

Projects in initial stages which are yet to start construction and hasn't completed the financial closure of the project is likely to have less impact financially compared to other IPPs. However, delay in the construction or financial closure could lead to loss duration of generation license obtained from GoN which is usually 35 years. Further, such projects may not be able to timely complete the project within Required Commercial Operation Date (RCOD) as per the PPA signed with NEA which will attract the delay in RCOD penalties.

Under Construction Projects:

Projects which are under construction whether in initial stage of construction or in final stage and which have already availed loan from banks are likely to be get impacted. Such projects will have multiple impacts which are mentioned as below;

- Unavailability of contract labour for the construction of the project.
- Unavailability of construction material due to closure of factories and travel restrictions due to lockdown across Nepal.
- Delay in Electromechanical (EM) and Hydromechanical (HM) supplies due to effect of pandemic across different countries. Majority of power projects get HM and EM supplies from Indian, European and Chinese suppliers all of which are affected by the pandemic.
- Delay in execution of project due to various reasons will lead to cost overrun, primarily in interest during construction component. Increase in project cost especially in the projects which are already having higher cost will make such projects unattractive for investors.

Such projects are also likely to lose duration of its generation license obtained from GoN. Further, such projects may not be able to timely complete the project within Required Commercial Operation Date (RCOD) as per the PPA signed with NEA.

Operational Projects:

Projects which are operational are least likely to be impacted due to the current situation. With take or pay PPA with NEA, such projects will not lose revenue on back of decrease in demand of power. However, if NEA faces stress in its cashflow for a prolonged duration, there could be delay in payment by NEA for the power purchased. In this scenario, such projects are likely to have stressed cashflow situation and increases the credit risk for the banks.

Banking and Finance Institutions (BFIs)

Power sector has been categorized as a priority sector considering the opportunities it presents in the growth of Nepalese Economy. Apart from various incentives provided by GoN, Nepal Rastra Bank (NRB) through the Monetary policy has mandated Commercial Banks to disburse a minimum of 15% of their total credit to energy and tourism sector to boost the sector with required liquidity. As per the data published by NRB, BFIs has disbursed around 5% of total loans and advances in Electricity sector at the end of Mid-March 2020.

(Rs. In Millions)

Lending by BFIs in Electricity Sector



Source: NRB Monthly Report

With substantial amount of loans disbursed in the power sector, BFIs portfolio in the sector are prone to be impacted by current situation.

Under Construction Projects: BFIs would be least impacted from the under-construction projects as repayment of instalments would not be due and interest during construction are being capitalized by BFIs for such projects. However, the cost overrun in the projects due to current situation as discussed above might lead to have an impact on the project viability and could impact the asset quality in the long-term period.

Operational Projects: As operational projects are least likely to be impacted by the current situation, such projects might not put pressure in BFIs asset quality. However, if the current situation prolongs, operational projects could be also get impacted due to stress in cashflow of NEA as discussed above. In case of stress in NEA's cashflow, the payment which will be due to the operational projects for purchase of power could be delayed which can put pressure on debt repayment capability of such projects and increases the credit risk for the banks.

CARE Ratings Nepal View

Nepal's Power sector is expected to see a decline in coming months, due to the likely prolonged disruptions caused by the COVID-19 pandemic. As the pandemic has impacted other countries like India, China and European countries with whom the sector relies heavily for materials supply and technical support, power sector will take substantial time and effort to come on track.

Electricity demand is expected to contract during the year, largely driven by slippages in commercial and industrial demand. With the industrial and commercial sector together accounting for nearly 46% of the country's electricity consumption, a decline in their consumption would no doubt weigh down overall demand. With the pandemic bringing activity in these sectors to a standstill, electricity demand by these segments is to see a significant decline this year.

Additionally, with NEA being a sole customer to off take the electricity generated by IPPs, stress in its financial health could impact overall power sector.

The government may consider providing additional relief or stimulus to the sector. There could also be relaxation and flexibility in compliances, reduction in interest rates, increase in the moratorium period for repayment of loan obligations etc.

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