



OPERATIONALIZING THE POWER TRADING COMPANY IN NEPAL

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EVOLUTION OF POWER TRADING IN NEPAL

Milestones	Description
Nepal-India Power Exchange, 1971- 2018	Power exchange with Indian states of Bihar, UP and Uttarakhand through 132, 33 and 11 KV links in various quantum
Electricity Act 1992	Import and export of electricity was allowed to the distribution licensee with the prior approval of Nepal Government or entering into an agreement with Nepal Government. (Section 22, Sub-section 1&2)
	Sale of generated electricity allowed to private sector developers so as to purchase or cause to purchase it to national grid (Section 21, Sub-section 1)
Hydropower Development Policy 1992	Hydro electricity project established by private sector not to be nationalized during the period of validity of the license :NEA's monopoly in generation remained only for the period 1985-1992.

EVOLUTION OF POWER TRADING IN NEPAL

Milestones	Description
Nepal Electricity Authority Act 1984 (Amended 1992)	NEA executing the power to sell electricity to foreign countries or to purchase it from foreign countries and the (domestic) private sector [Section 20, Sub-Section (1), Clauses (d) and (f)]
	Power Trade Department under NEA carrying out the function of buy and sale of power accordingly
First PPA between NEA and IPP, 1996	Signed between NEA and Himal Power Ltd for Khimti Khola (60 MW) on January 15, 1996, the first FDI HEP; Commissioned on July 11, 2000
PPA with Private sector, 1996-2018	NEA signed PPA for 5488 MW till date.

EVOLUTION OF POWER TRADING IN NEPAL

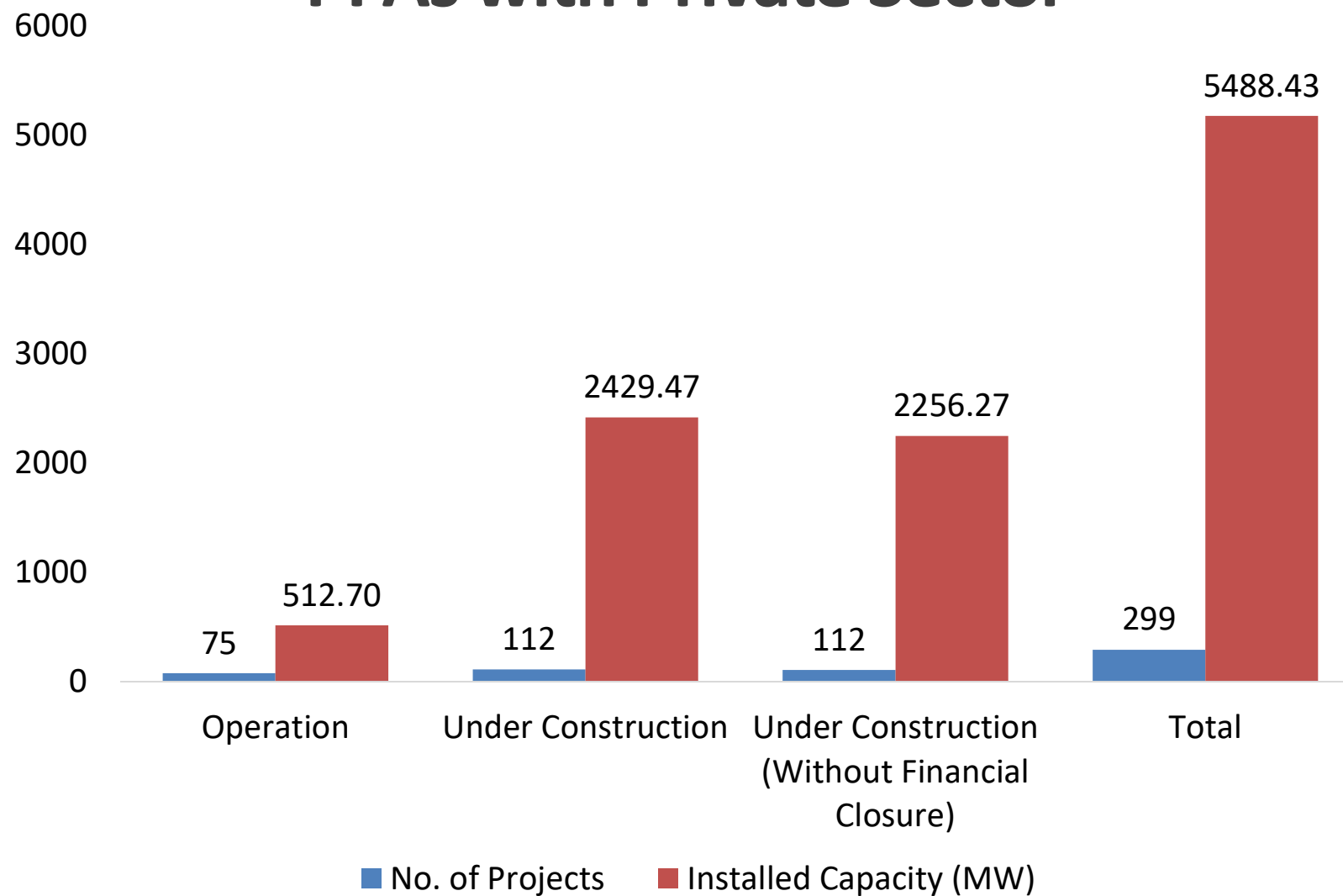
Milestones	Description
Nepal Power Trading Company Limited, 2017	NPTC was incorporated on March 9, 2017 as per the prevailing Company Act of Nepal
	NPTC is at the stage of preparation for function in near future.
Electricity Regulatory Commission Act, 2017 (September 4)	Power trading is considered as a separate licensed activity like generation, transmission and distribution of electricity.
Electricity Regulatory Commission Act Rules, 2018	The Commission is in the process of formation soon.

STATUS OF POWER TRADE IN NEPAL

- 43,000 MW techno-economically feasible hydropower potential**
- High prospects of power trade in domestic market as revealed by the new load forecast.**
- NEA alone purchasing power from private sector generators through long term PPAs.**
- PPAs of 5,488 MW projects already signed between NEA and IPPs.**
- Total PPA applications in pipeline 5,828 MW**

STATUS OF POWER TRADE IN NEPAL,

PPAs with Private Sector



STATUS OF POWER TRADE IN NEPAL

- India already linked through 400kV Dhalkebar-Mujaffarpur Cross Border Transmission line.
- Power Trade Agreement (PTA) signed with India in 2014 and SAARC Framework Agreement also signed at cross border level.
- PTA has ensured non-discriminatory access to cross-border interconnections for all authorized/ licensed producers/buyers/traders of each country in the cross-border power trade.
- Power Trading with Bangladesh to turn into reality as MoU between Nepal & Bangladesh is signed already.

INDO-NEPAL CROSS BORDER POWER TRADE/EXCHANGE

Interconnections	Voltage Level (kV)	Import Power (MW)
Kataiya – Kusaha Exchange	132	125
Kataiya – Rajbiraj Exchange	33	10
Sitamadi-Jaleswor Exchange	33	12
Raxaul-Birgunj Exchange	33	12
Ramnagar-Gandak Exchange	132	25
Jaynagar-Siraha Exchange	33	7
Nanpara-Nepalgunj Exchange	33	12
Tanakpur-Mahendranagar Trading (PTC)	132	30
Dhalkebar-Mujaffarpur Trading (NVVN)	220	120
Kataiya – Kusaha II Exchange	132	50
Raxaul-Parwanipur Exchange	132	50
Jhulaghat (0.6MW), Jaulijibi (0.1MW), Lali (0.1MW) and Huti (0.1MW) Exchange	11	0.9

STATUS OF POWER TRADE IN NEPAL

- China – Nepal first High voltage cross border transmission line (Kerung-Galchhi) at study phase
- 11 high voltage cross border transmission lines proposed between Nepal and India for different time frames as per India-Nepal Transmission master Plan.
- The second Indo-Nepal 400 kV cross border transmission line is at the stage of implementation & funding modality finalization.
- India-Nepal power trading along with grid connectivity between China and Nepal can be extended into SAARC regional/BIMSTEC/BBIN sub-regional power trading in future.

STATUS OF POWER TRADE IN NEPAL

The first power trading company, NPTC, was incorporated in Nepal on March 9, 2017 with the following objectives:

- To buy and sell power generated and sold by domestic / foreign generators and suppliers
- To import power from foreign private or public sector entity, Government entity or international organization/entity and sell or cause to sell it in Nepal.
- To export and sell power purchased from domestic private or public sector generators
- To buy and sell power generated by domestic power producers directly or as their representative
- To carry out research and organize seminars and workshops regarding the purchase, sale, import and export of power and the electricity market.
- To promote power trading at domestic, regional and international levels.
- To develop efficient and competitive electricity market through optimum utilization of electricity resources and promote energy security.
- To carry out activities associated with the promotion of power exchange and trading with neighboring countries or at regional level.
- To implement or cause to implement energy banking.

STATUS OF POWER TRADE IN NEPAL

Share Structure of Newly Incorporated NPTC

No.	Share Holders	Share %
1	Nepal Electricity Authority	51
2	Electricity Generation Company Limited	17
3	National Transmission Grid Company Limited	17
4	Hydroelectricity Investment and Development Company Limited	15

NEA as the major share holder of the Company can be its strength by virtue of NEA's experience of power trading with domestic IPPs and power traders / state utilities of India.

STATUS OF POWER TRADE IN NEPAL

Issues in Operationalizing NPTC

- **Electricity Act, 1992 is silent about “power trading” as a licensed activity while Electricity Regulatory Commission Act, 2017 mentions power trading as a licensed activity.**
- **Operationalisation of Electricity Regulatory Commission is expected soon.**
- **Harmonization of existing laws and policies to facilitate power trading.**
- **Existing cross border guidelines issued by India requires some changes.**
- **Options of transition strategy from NEA to trading company needs clarity:**
 - a. **NPTC carrying existing PPAs signed with NEA**
 - b. **NPTC handling only new PPAs**
- **Capacity building involved with power trading not enough**
- **Business Plan in progress with the support from World Bank**
- **Capacity constraints in existing transmission infrastructure of NEA may be a hindrance in power trading.**

FUTURE POTENTIAL & PROSPECTS OF POWER TRADE IN NEPAL

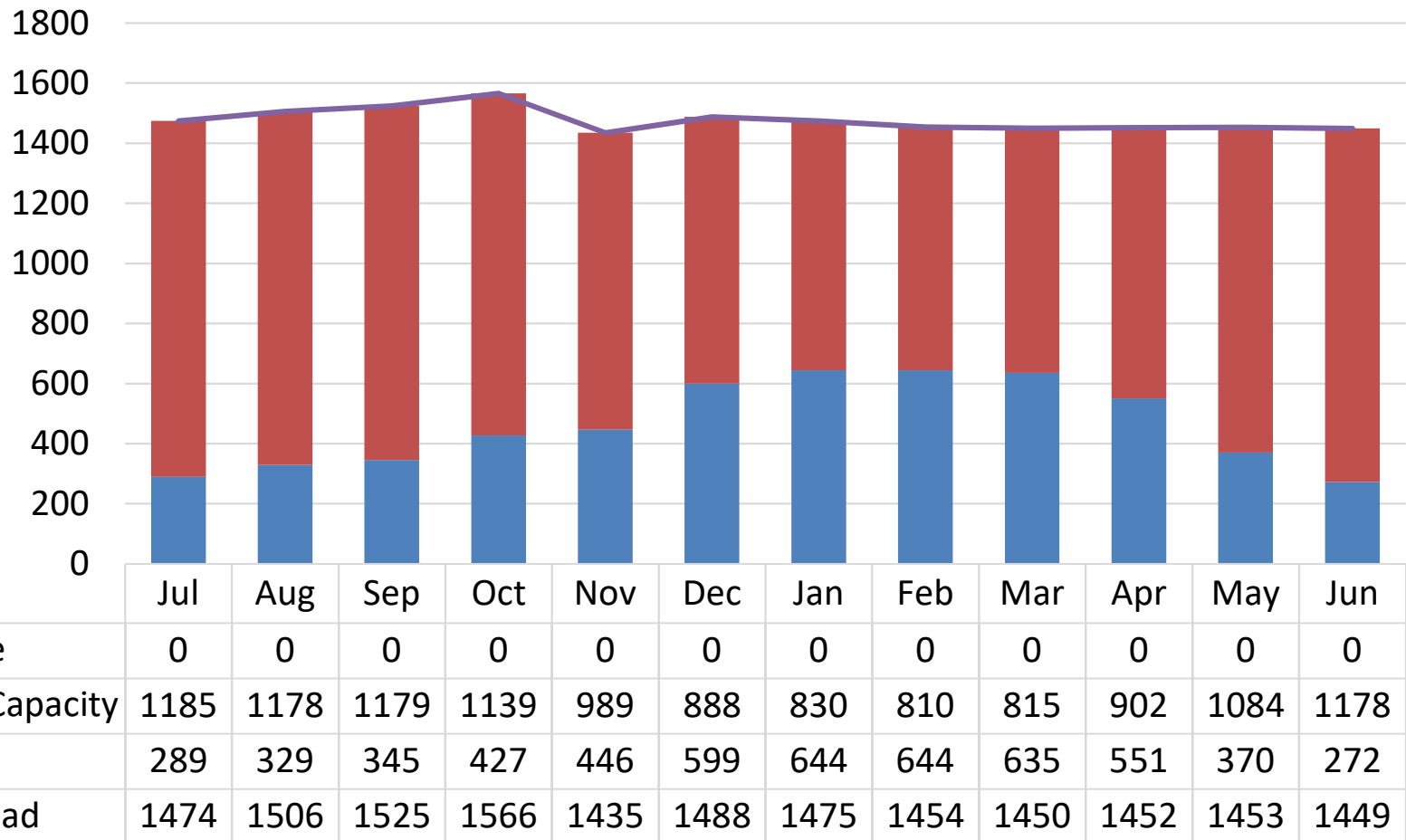
Year	Scenario Analysis of Generation Requirement (MW), WECS				
	BAU 4.5%	Reference Scenario 7.2%	High Scenario 9.2%	7.2% GDP Growth with Policy Intervention	9.2% GDP Growth with Policy Intervention
2020	3,384	3,611	3,794	6,621	6,814
2025	5,787	6,617	7,366	9,987	10,803
2030	8,937	11,111	13,296	15,731	18,371
2035	13,242	18,124	23,588	23,049	23,231
2040	19,151	29,427 with 20% outage & 30% addl. Power to support peak demand	42,228	36,489	51,330

FUTURE POTENTIAL & PROSPECTS OF POWER TRADE IN NEPAL

- South Asian region endowed with coal, gas & hydro resources.
- Low operating cost through optimum way of operating the power system by virtue of resource complementarities in these countries.
- High investment potential in Nepal's Hydropower development.
- Huge market for power trading available in BBIN sub-region in addition to Sri Lanka, Thailand and Myanmar.

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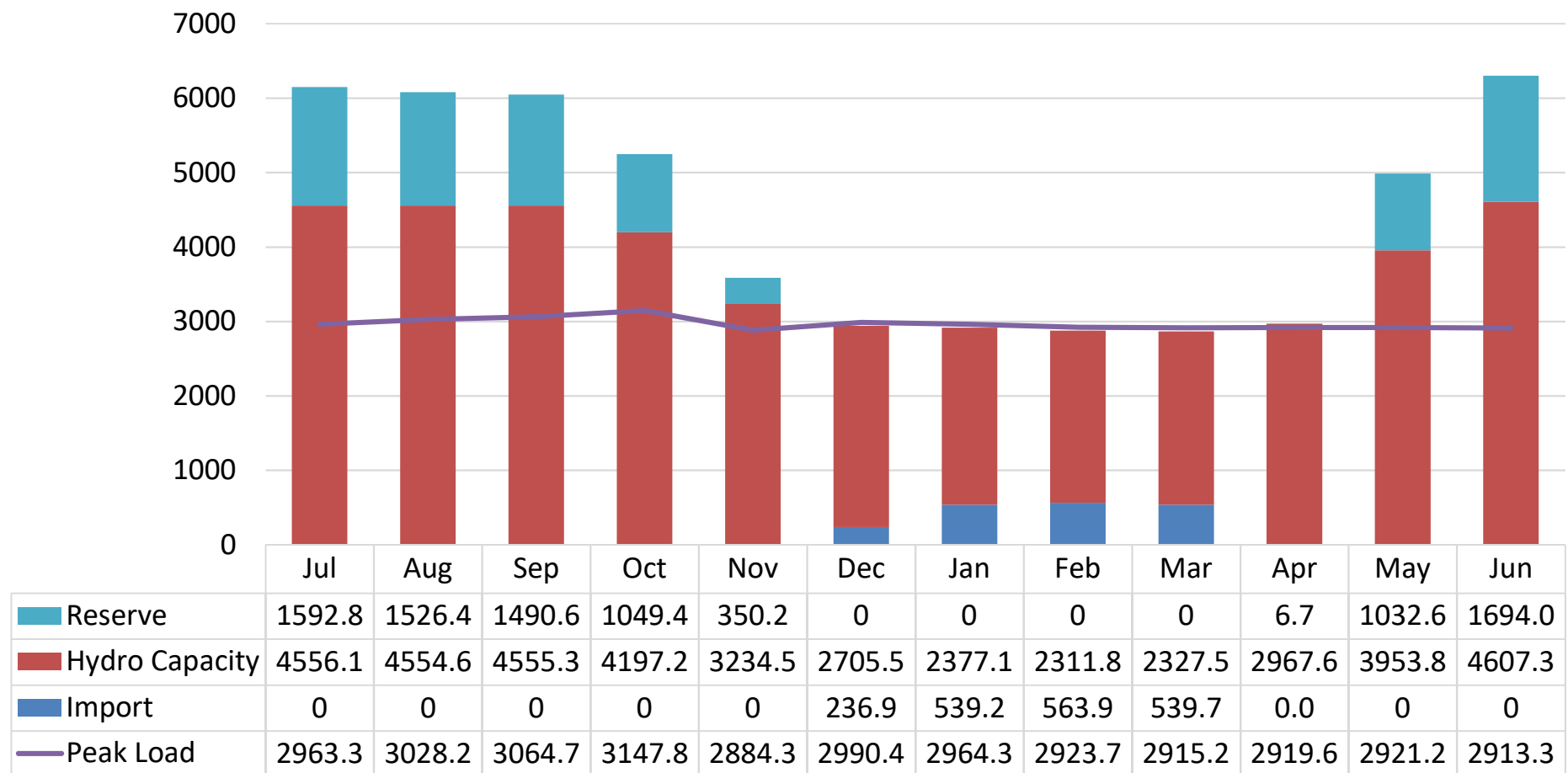
Power Simulation Results – FY 2018/19



Maximum Import Quantity (MW)	644.3
Maximum Peak Load (MW)	1565.8

FUTURE POTENTIAL & PROSPECTS OF POWER TRADE IN NEPAL

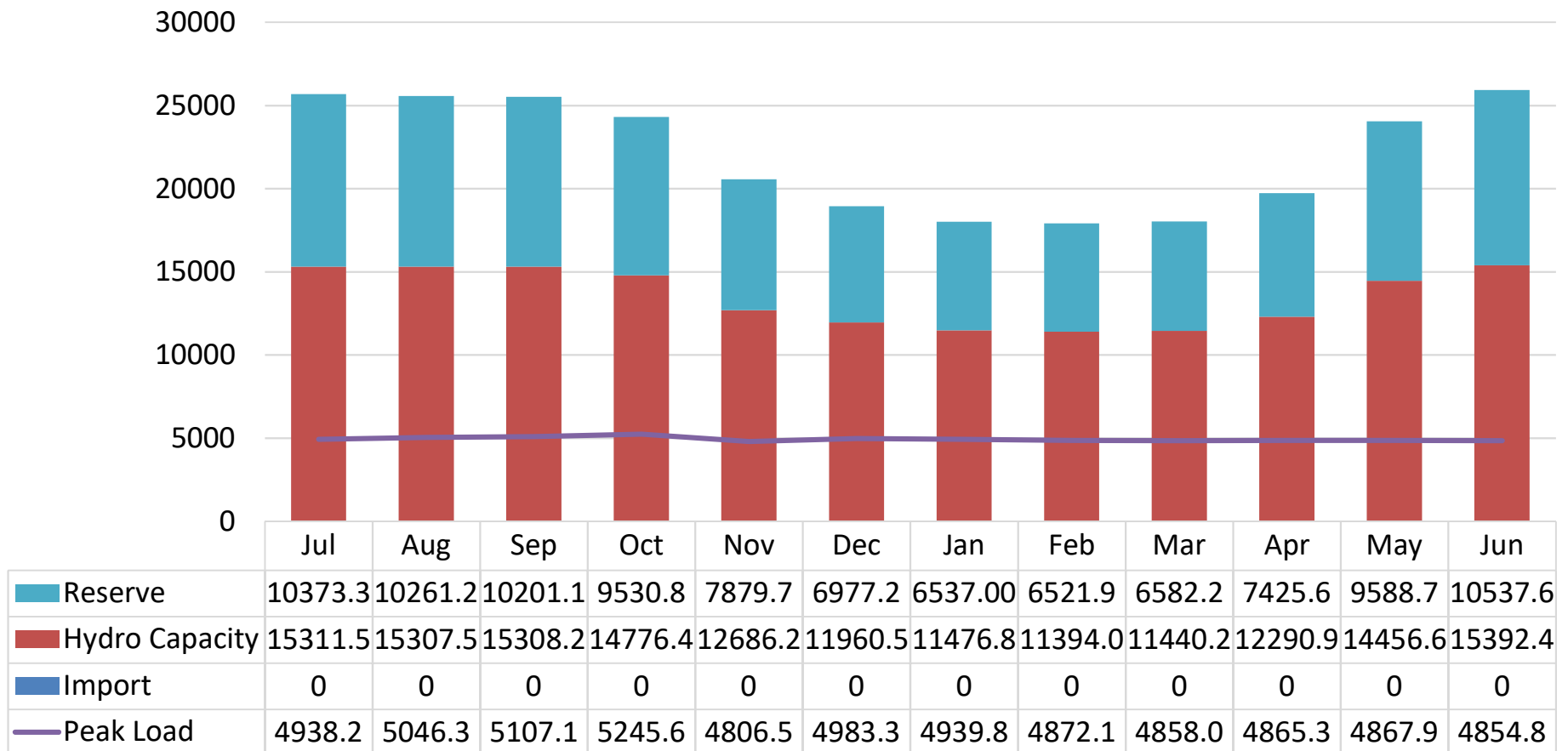
Power Simulation Results – FY 2023/24



Maximum Import Quantity (MW)	563.9
Maximum Peak Load (MW)	3147.8

FUTURE POTENTIAL & PROSPECTS OF POWER TRADE IN NEPAL

Power Simulation Results – FY 2028/29



Maximum Import Quantity (MW)	0
Maximum Peak Load (MW)	5245.6

FUTURE POTENTIAL & PROSPECTS OF POWER TRADE IN NEPAL

India-Nepal Transmission Master Plan

2018-19 (Peak Deficit)	2021-22 (Off-Peak Surplus)	2025 (Off-Peak Surplus)	2035 (Off-Peak Surplus)
-1,000 MW	+5,700 MW	+13,200 MW	+24,900MW

- All together, 11 high voltage cross border transmission lines are identified for power import/export between Nepal and India for different time frames.



Thank You