

NEPAL'S ELECTRICITY SCENARIO

in FY 2016/2017

Presented by:

Bikash Raghubanshi

Deputy Manager, Nepal Electricity Authority

INTRODUCTION

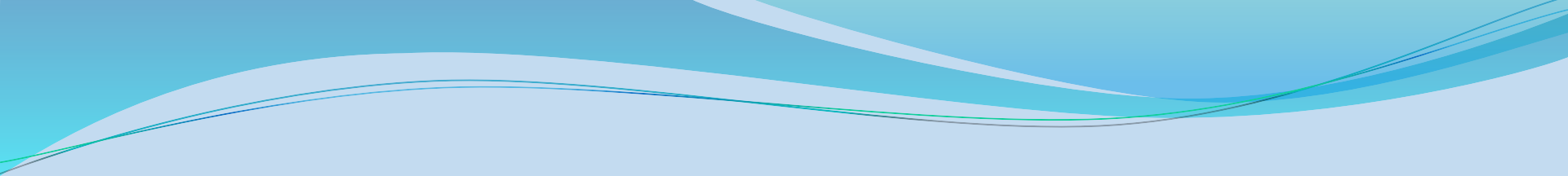
• Country Location	Between China and India
• Latitude	26° 22' N - 30° 27' N
• Longitude	80° 04' E - 88° 12' E
• Area	147,181 km ²
• Population	28.8 millions
• Access to Electricity	67%
• Per capita Energy Consumption	14 GJ
• Per capita Elec. Consumption	132 kWh
• Annual Runoff	225 Billion Cubic Meter
• Hydropower Potential	83,290 MW (Theoretical)
•	42,130 MW (Practical)

in FY 2016/2017 -

Availability of Energy : 6257.73 GWhr

Peak demand reached : 1444.10 MW

Total Installed Capacity: 972.50 MW



Deficit in Power Production for supply is met by

- Import from India (around 300 MW)
- 2 hours of Industrial Load shedding

In FY 2016/2017 -

Energy consumed fulfilled by:

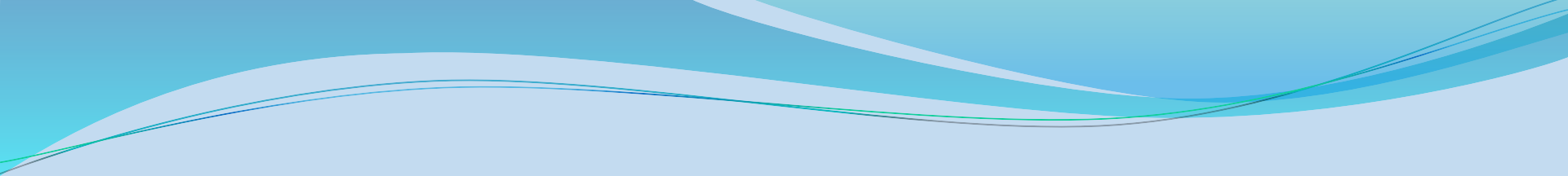
Nepal's Generation	65.24 %
(Including IPPs)	

Import from India	34.76 %
(from 10 various border points)	
	100.00 %

System Loss	22.90 %
-------------	---------

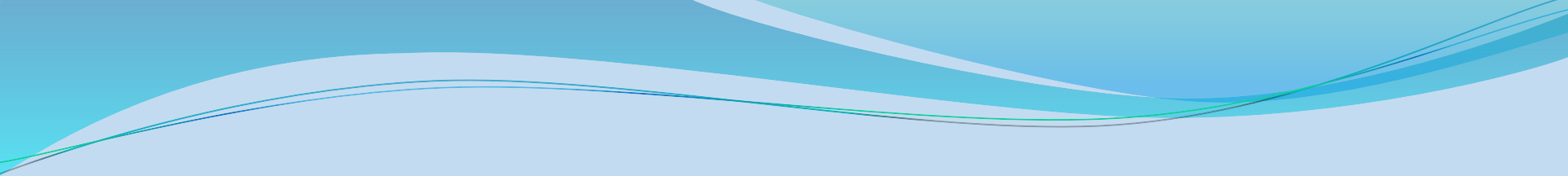
Energy Utilization by consumer category:

Domestic (Residential consumer)	45.02%
Industrial	36.32%
Others	18.66%



About only $\frac{3}{4}$ of the population has access to national grid electricity

Total no. of Household consumer about 3 million



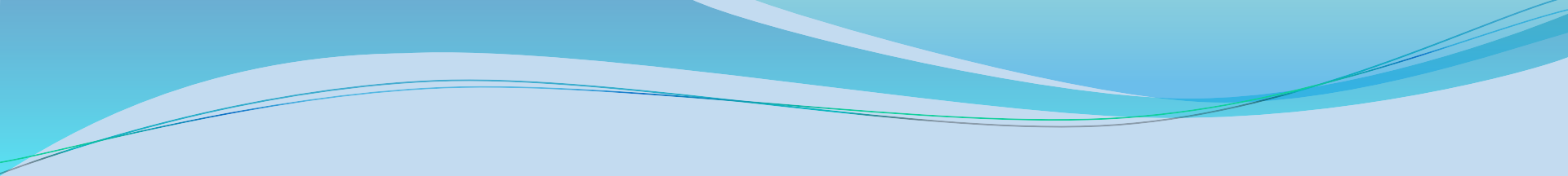
Peak demand now 1444.10 MW

Total Installed Capacity 972.492 MW

Total Installed Capacity – Grid connected 967.856 MW

Isolated – Solar 0.1 MW & small hydro 4.536 MW

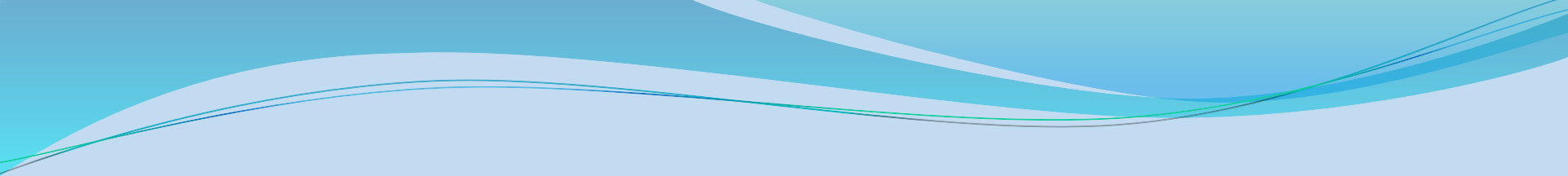
ROR Project – 92 MW, Thermal Plant – 53 MW,



NEA Under construction hydro projects (456 MW Upper Tamakoshi to be completed by Dec. 2018)	1047.100 MW
---	--------------------

IPP's Under construction hydro projects	2043.613 MW
--	--------------------

Total Under Construction hydro Projects	3090.713 MW
--	--------------------



NEA Planned and Proposed hydro projects	2770.200 MW
--	--------------------

IPPs Planned and Proposed hydro projects	910.311 MW
---	-------------------

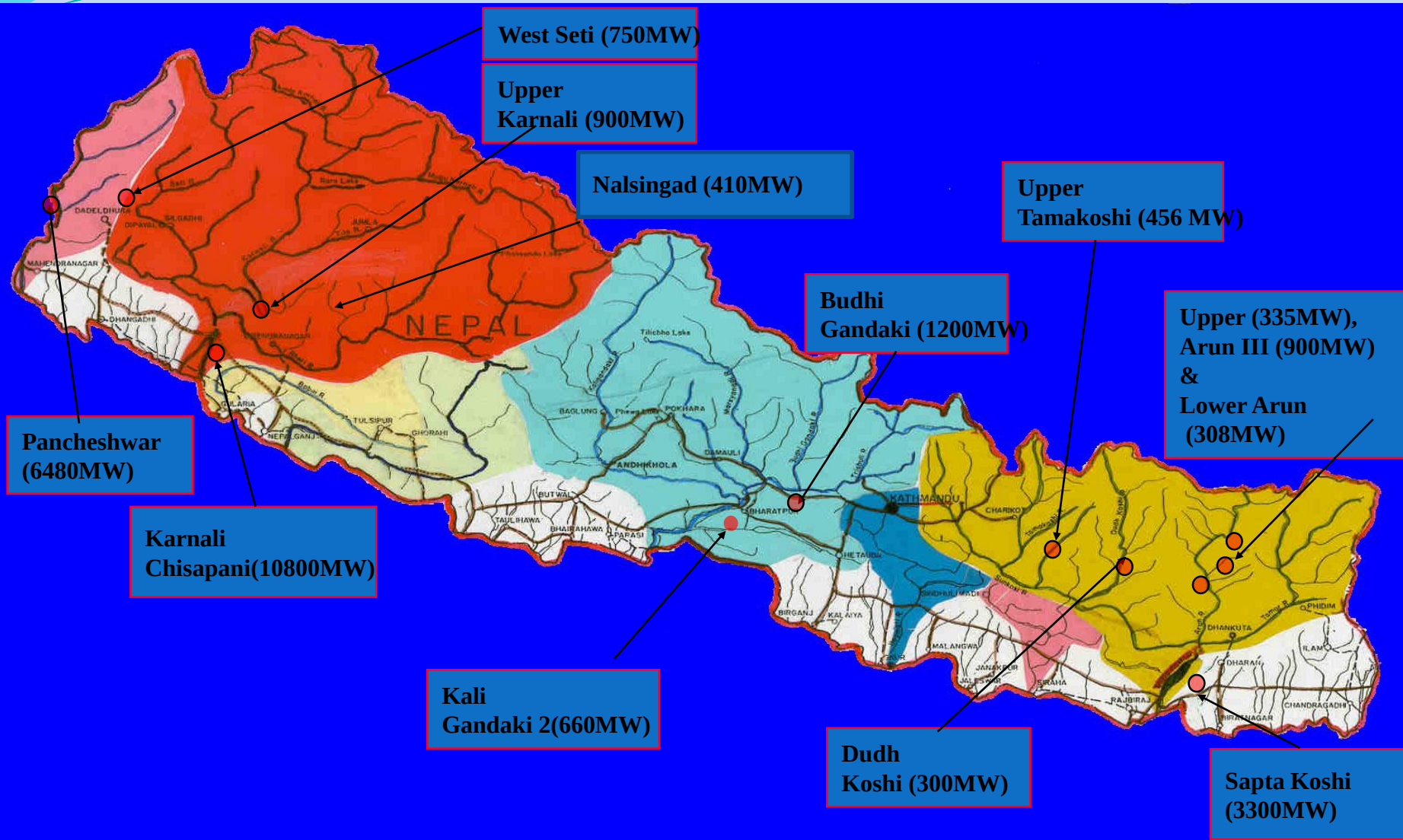
Total Planned and Proposed hydro Projects	3680.511 MW
--	--------------------

Nepal's Largest Hydroelectric Project in present: Kali Gandaki-A (144 MW)



Nepal's upcoming Largest Hydroelectric Project under construction and to be completed in near future: Upper Tamakoshi (456 MW)





Major Power Projects in Nepal

Licensing of Power Projects in Nepal :

- **License is required for Survey, Generation, Transmission and Distribution for projects larger than 1 MW.**
- **License is granted by the Ministry of Energy (MoEn).**
- **DOED facilitates license procedure by receiving the application, processing application for compliance, issuing public notice and recommending to MoEn.**

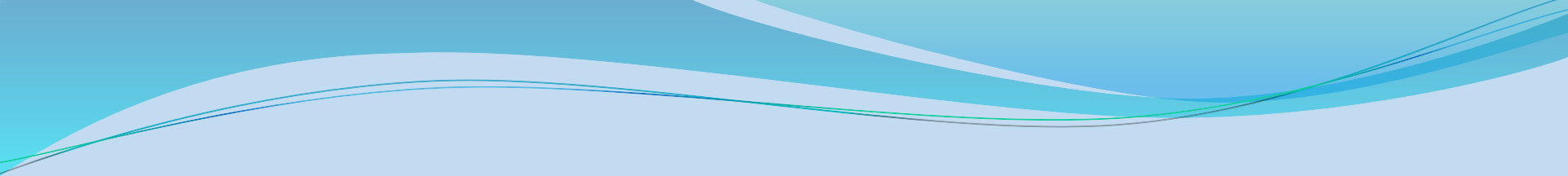
Energy Market :

1. Domestic Use

Nepal Electricity Authority : 100% government owned company which is responsible for electricity generation, transmission and distribution. NEA buys the electricity from IPPs and sells to the market (households and industries).

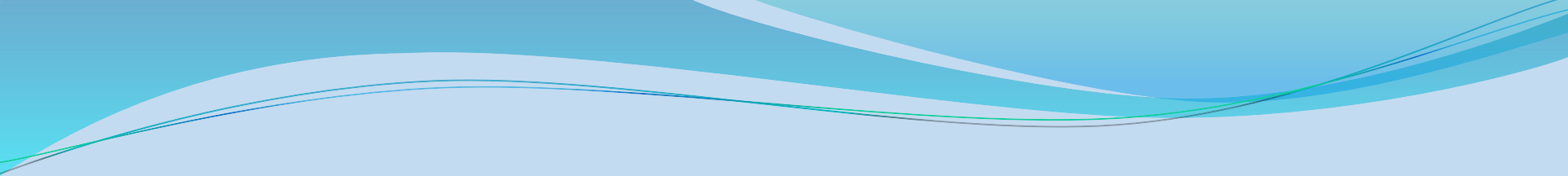
Butwal Power Company Limited: Less than 10% government shared private company which is also generating, transmitting and distributing the electricity for the domestic use .

2. Export to India: India is the nearest market for the export of electricity. Export market at present not fully developed.



Major Focus to be given, on Storage hydro Project

- to overcome power crisis challenges that prevail prominently, especially during dry seasons



Pumped storage in a hydro power - Electricity Storage Technology

Pumped storage

- planned for the first time in Nepal
- preparing to carry out DPR by DoED
- Sunkoshi II – 1100 MW
- Sunkoshi III – 536MW

Rupa-Begnas Tal (Lake)

- NEA plan to construct the project
- in preliminary phase of study
- 100 – 300 MW capacity potential
utilizing natural head of 56 m

Lake Begnas

Location	Pokhara
Surface Elev	650 m
Average Dept	6.6 m
Surface area	3.28 km ²
Catchment area	49 km ²





Lake Rupa

Location	Pokhara
Surface Elev	600 m
Average Dept	3.0 m
Surface area	1.35 km ²
Catchment area	30 km ²



NAMASTE