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SMART UTILITY
Week 2024

Supporting Ministries



Session : Super Grids for Energy Transition & Energy Security

Cross Border Electricity Trade in SA and interconnection of Regional Grids in Asia

Presented By

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Growth of CBET in BBIN Region during last 7 Years (GWh)

India - Bangladesh -- 1160 MW
Bhutan - India -- 2300 MW
Nepal - India -- 840 MW

~4300 MW

2022

~3760 MW

2020

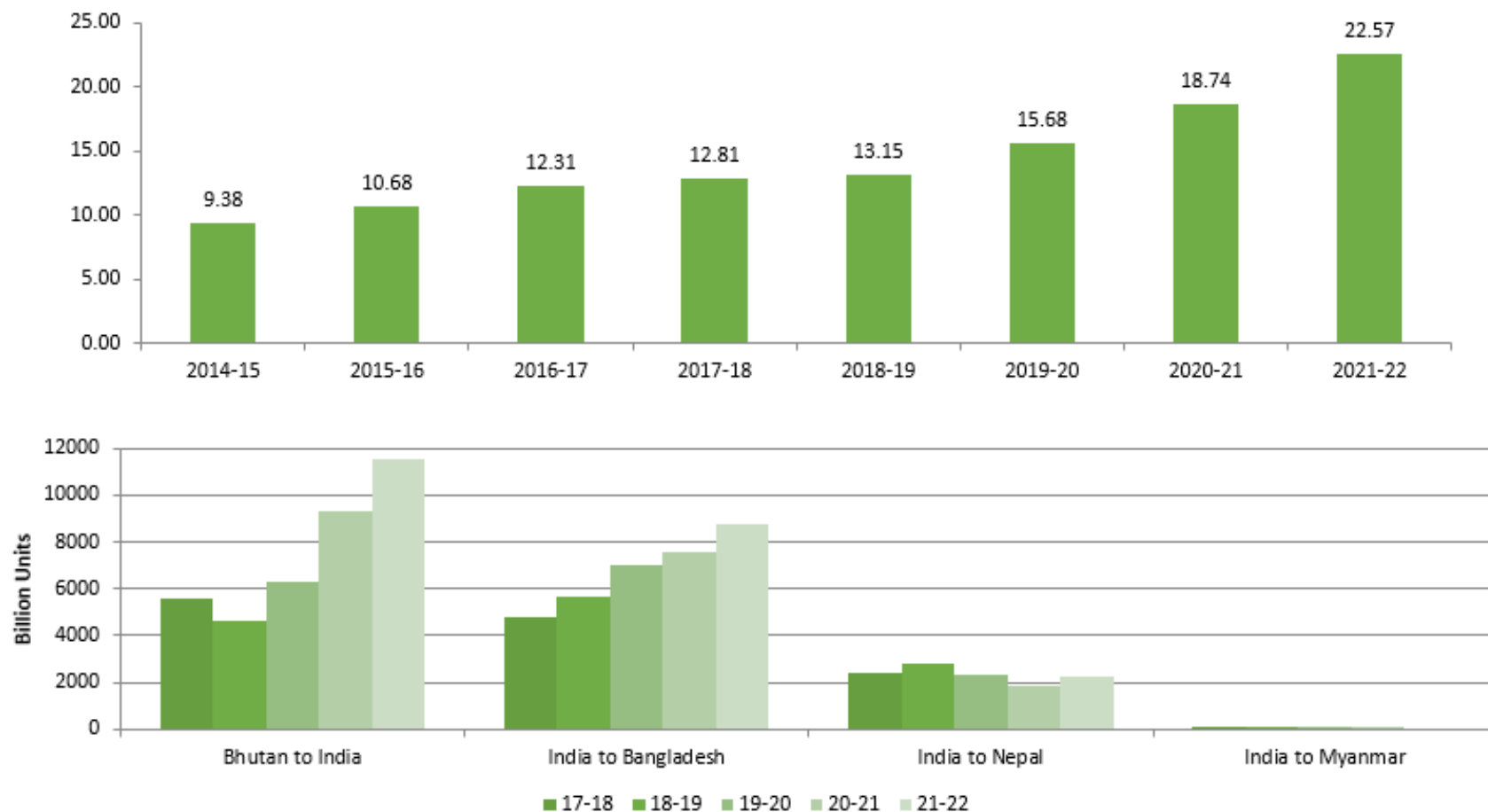
~2986 MW

2018

~2126 MW

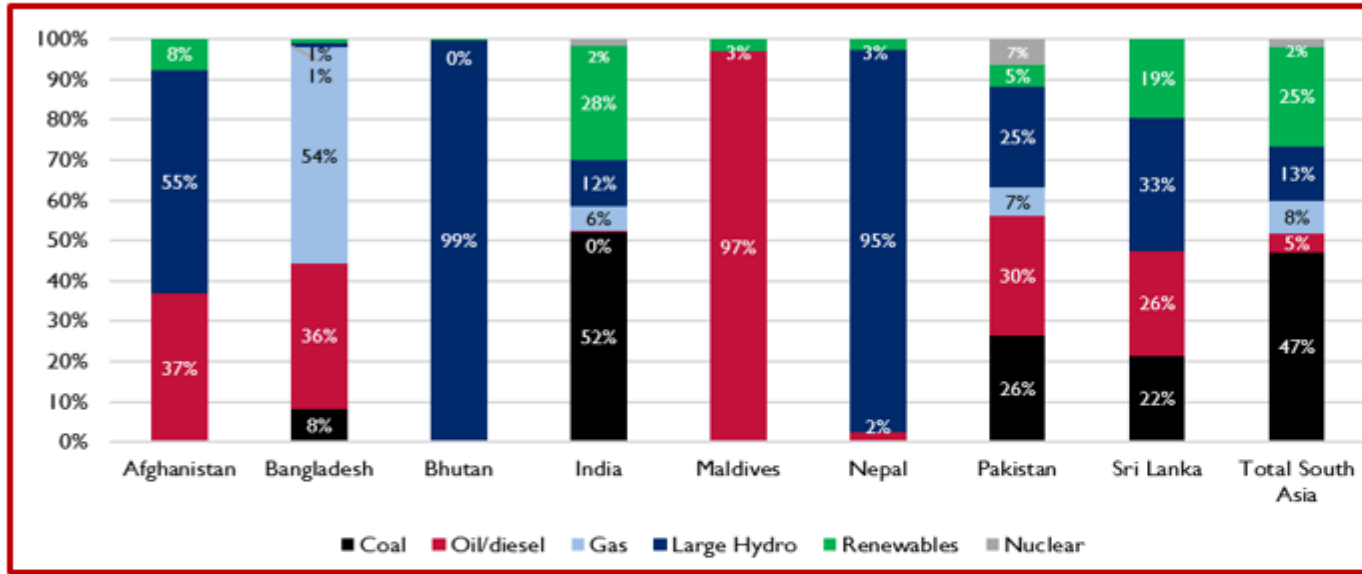
2015

CBET in South Asia - BUs (TWh)

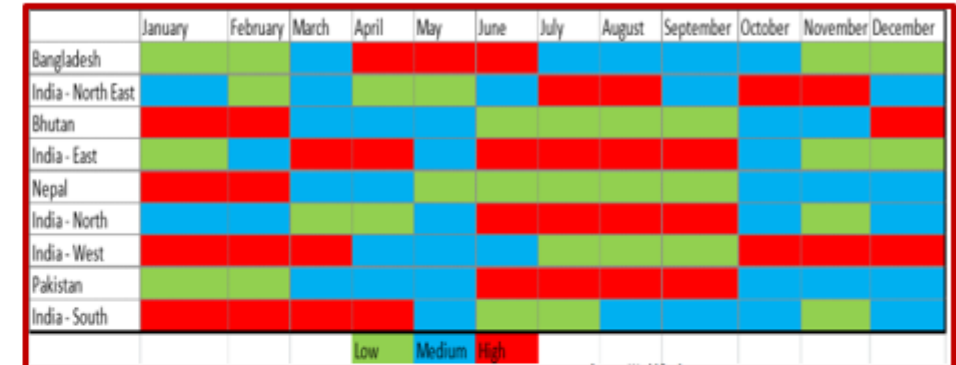


Enablers towards the Growth of CBET in the SA Region

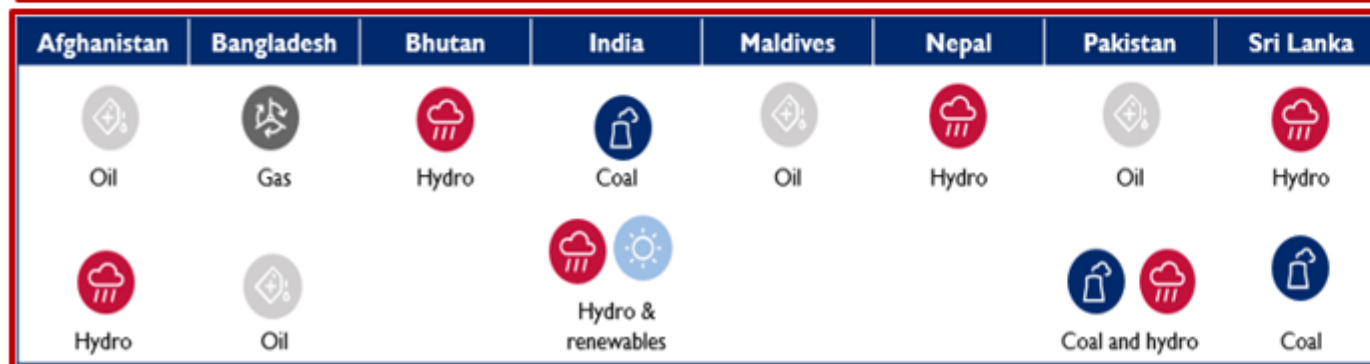
Resource Diversity



Seasonal Demand Diversity

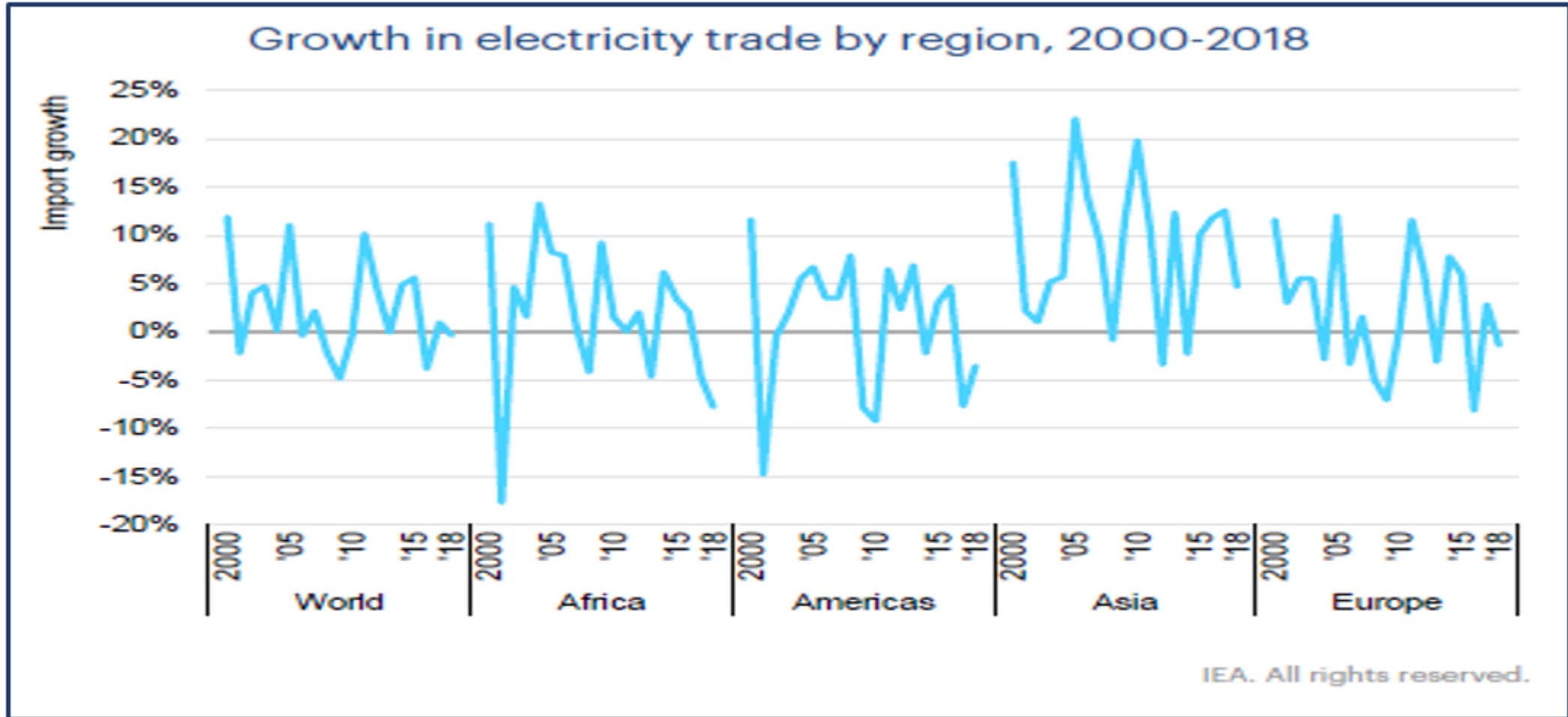


Time Diversity



Country	Time zone (In Hours)	IST Deviation (In Minutes)
India	UTC + 5:30	-
Bhutan	UTC + 6:00	+30 minutes
Bangladesh	UTC + 6:00	+30 minutes
Nepal	UTC + 5:45	+15 minutes

Global Trends in CBET in different Regions



CB Trade in different Regions in year 2018

Africa – 4.5%

Middle East – 2.2%

America – 1.9%

Asia – 0.6%

Europe – 9.1%

Critical Drivers for Success of CBET



Harmonized policies and Regulations

- Enabling policies allowing such trades;
- Technical parameters compatibility;
- Standard measurement and accounting principles;



Transmission Network Infrastructure

- Adequate network capacity to transmit power;
- Agreed philosophy to handle contingencies;
- Clarity about transmission charges & losses;



Avenues to trade through Contracts & Markets

- Availability of variety of trading products to meet need of all;
- Competitive prices determined in a transparent manner;
- Secure and flawless payment settlement mechanism;



Presence of Regional Platform/Forums

- Cross cutting deliberations and exchange of ideas;
- Learning from the experience of each other;
- Consensus building through discussions and trust ;



South Africa Power Pool

- 12 Countries, 17 Utilities
- Installed Capacity 82 GW;
- Total Generation – 300 TWh
- **Total Trade – 8205 GWh;**
- Traded through Competitive Market-1498 GWh (18.26%);



Gulf Cooperation Council Interconnection Authority

- 6 Countries;
- 400 KV Backbone;
- Length of Line 900 KMs;
- Total Generation – 730 TWh;
- **Trade – 1098 GWh;**



Central American Electrical Interconnection System

- 6 Countries, 16 Substations;
- 2 Circuits with a capacity of 300 MW each;
- Total Generation – 55 TWh
- **Trade – 3018 GWh;**



ASEAN Centre for Energy - ASEAN Interconnection Master Plan

- 10 Countries;
- Total Generation – 1053 TWh;
- Cross Border Transmission Capacity – 7.6 GW;
- **Trade – 36 TWh;**

Network for Integrated Power System Planning and Operation in SA (SANIPO)

- ❖ Provide a Platform for crosscutting deliberations and exchange of ideas;
- ❖ Facilitate towards the development and implementation of common procedures/guidelines;
- ❖ Provide technological support towards harmonization of practices in the matters of CBET;
- ❖ Provide inputs and technical support in the matters related to system planning and operation;
- ❖ Promote and render assistance towards capacity building in power system operation and associated areas;
- ❖ Render support towards developing Cross Border Power System Planning & Operation Guidance Manual;

THANK YOU

*For discussions/suggestions/queries email: **isuw@isuw.in**
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