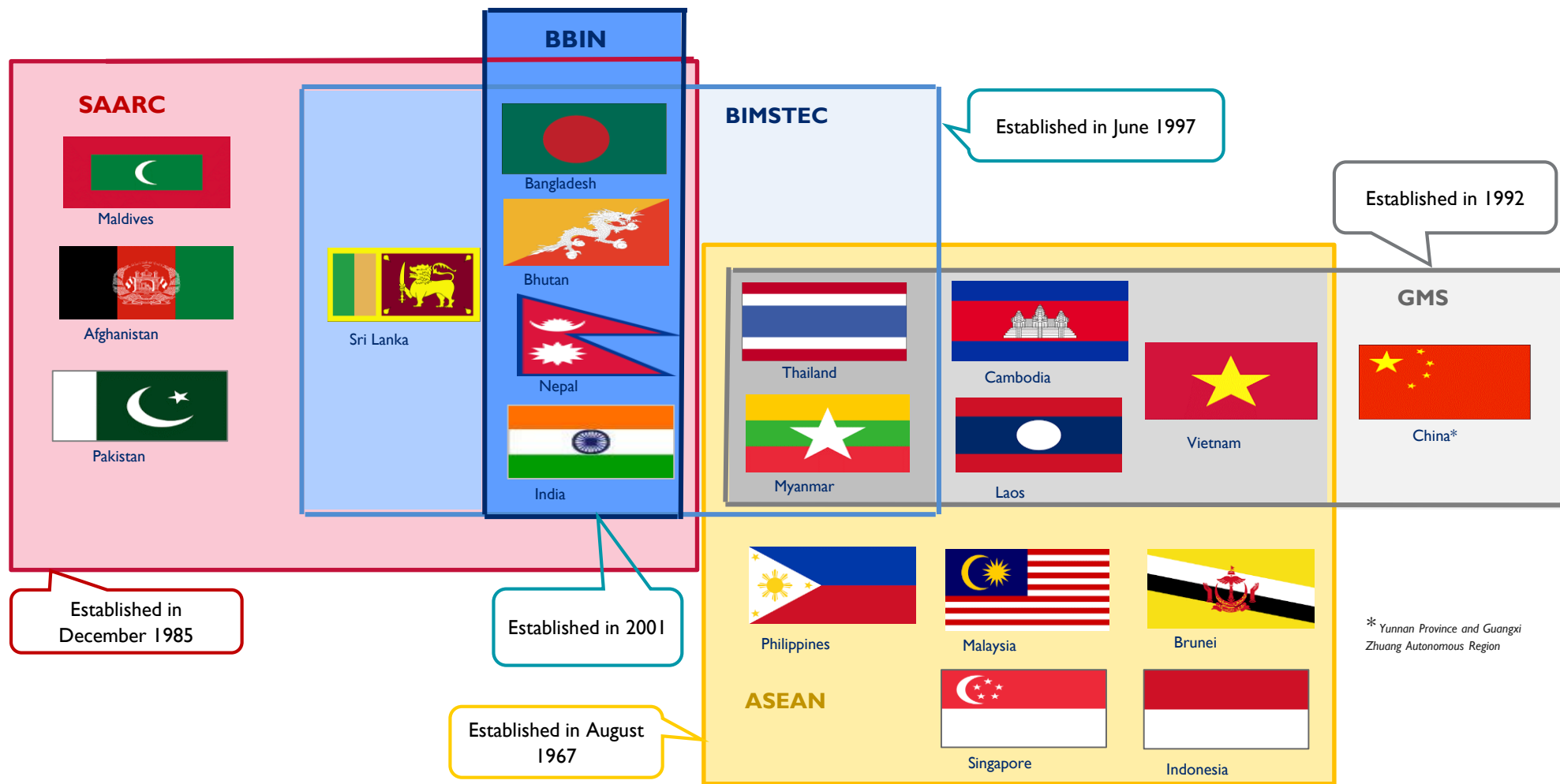


## Session- VIII

# “Linking South Asia with South-East Asia and synergizing regional/ sub-regional initiatives for Energy Cooperation”

**August 31, 2018  
New Delhi**

# Regional groupings: South Asia and Southeast Asia



There are five well established institutional mechanisms dealing with regional/ sub-regional cooperation amongst the South Asian and Southeast Asian countries in energy sector

## Regional groupings: A comparative analysis

Group	Land area (Square km)	Share of Global	Population (Million)	Share of Global	GDP (USD Billion)	Share of Global
SAARC	51,10,113	3.94%	1,766.38	23.73%	2,892.48	3.81%
BIMSTEC	48,75,783	3.76%	1,659.86	22.30%	3,060.13	4.03%
BBIN	36,20,463	2.79%	1,516.90	20.38%	2,508.55	3.31%
ASEAN	44,88,840	3.46%	638.62	8.58%	2,553.52	3.37%

The regional groupings in South Asia (SAARC) and Southeast Asia (ASEAN) are comparable in terms of geographic area and GDP

Regional Grouping	Inflows (USD Billion)	Outflows (USD Billion)	Total trade (USD Billion)
SAARC	489.50	332.19	821.69
BIMSTEC	537.56	643.25	1,180.81
BBIN	300.59	414.28	714.88
ASEAN	1,085.70	1,151.83	2,237.53

ASEAN region is ahead of SAARC in international merchandise trade volumes and also in attracting foreign direct investment (FDI) to the region

# Progress in terms of energy cooperation has been made across each of the regional grouping over the past few years...

## ***BIMSTEC regional group links the countries in South Asia and South East Asia***

The idea of regional co-operation mooted by Bangladesh, India, Sri Lanka and Thailand at a meeting in Bangkok in June 1997

Workshop on harmonization of Grid Standard was organized in Feb in New Delhi and

Bhutan and Nepal joined the forum in Feb 2004. Later in year, the first summit was organized where the group was renamed as BIMSTEC

Four more meetings of the Task Force on BIMSTEC Trans-Power Exchange and Development Project were held and hosted by member countries

**2** The MOU on Grid Interconnection was finalized



Myanmar was admitted to the grouping during a special ministerial meeting in Bangkok and the grouping was named to BIMS - EC

**1** The text of the MOU on the broad framework for the implementation of grid interconnections for promoting rational and optimal power transmission in the region was finalized

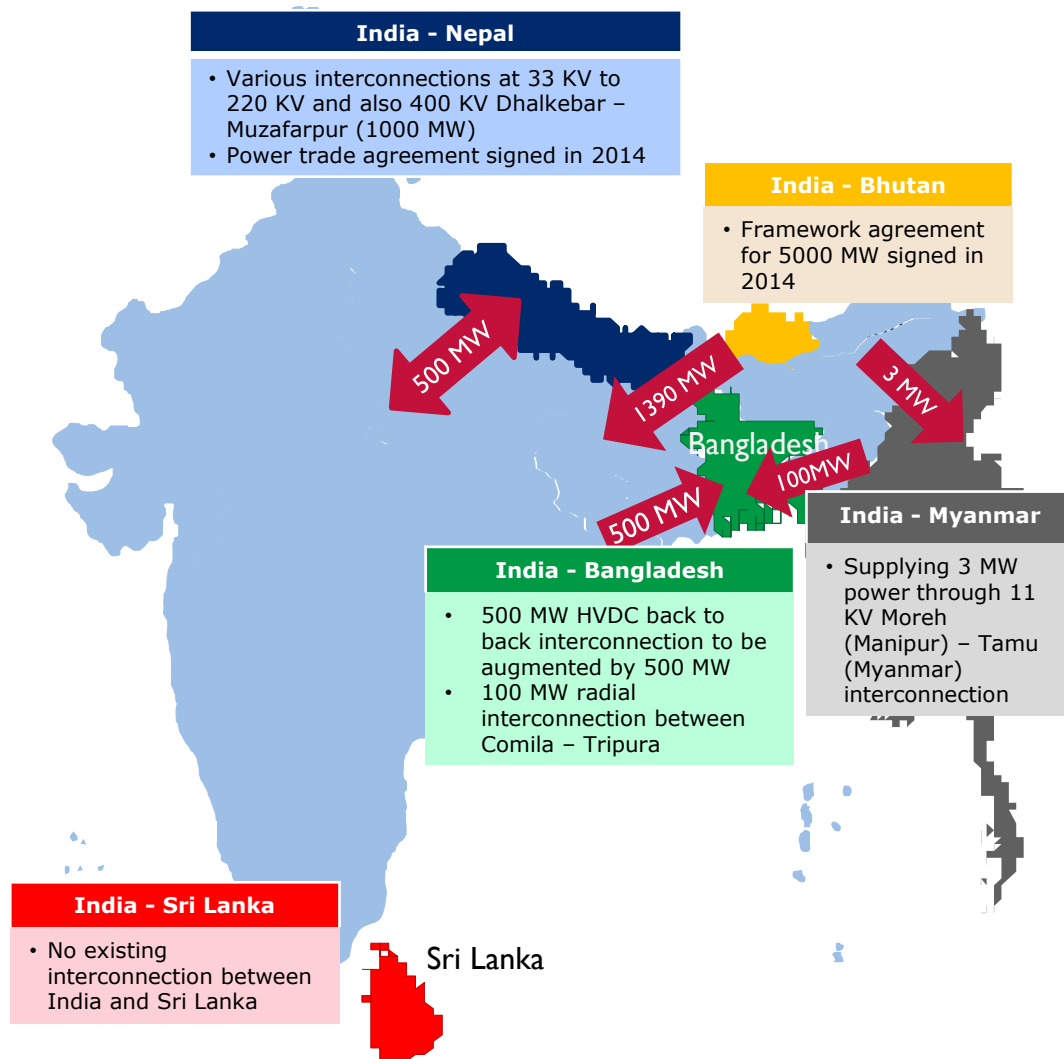
First Meeting of Task Force for BIMSTEC Trans-power Exchange and Development Project in March

**Agreement on the broad framework for grid interconnection is one of the key areas of development in BIMSTEC region as far as energy cooperation is concerned**

First Ministerial Conference on Energy Cooperation was organized and BIMSTEC Energy Centre was constituted

# The eastern region in South Asia has witnessed significant developments in cross border electricity trade

## Cross-border transmission interconnections in South Asia

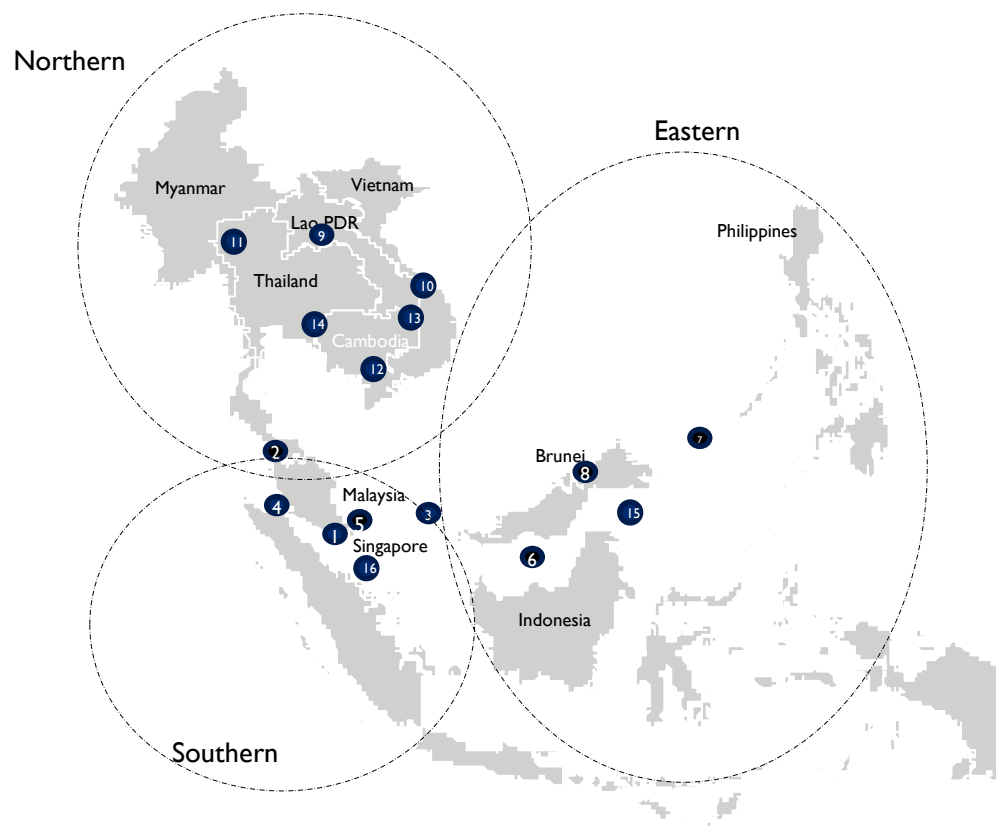


## Key Insights

- India has existing bilateral arrangements and cross-border interconnections with Nepal (500 MW), Bhutan (~1,400 MW), Bangladesh (600 MW) and Myanmar (3 MW)
- Multiple new interconnections are under consideration across the region, that is likely to step-up cross border trade
- Cross border transaction in electricity between BBIN countries is essentially through medium and long term bilateral contracts
- More recently, trilateral electricity trade arrangements are being evaluated

# South east Asia has also planned significant investments in the cross-border transmission infrastructure

*Transmission interconnection across ASEAN region for cross border electricity trade*



			MW	
	Interconnection	Existing	Proposed	Total
1	P.Malaysia – Singapore (New)	450	600	1050
2	Thailand – P.Malyasia	480	300	780
3	Sarawak – P. Malaysia		3200	3200
4	P.Malaysia – Sumatra	600		600
5	Batam – Singapore		600	600
6	Sarawak – West Kalimantan	230		230
7	Philippines – Sabah		500	500
8	Sarawak – Sabah – Brunei	200	100	300
9	Thailand – LaoPDR	5463	2465	7928
10	Lao PDR – Vietnam	2658		2658
11	Thailand – Myanmar		11709-14869	11709-14869
12	Vietnam – Cambodia (New)	170		170
13	Lao PDR – Cambodia	300		300
14	Thailand – Cambodia (New)	100	2200	2300
15	East Sabah – East Kalimantan			
16	Singapore – Sumatra		600	600

Source: Presentation on development of cross border trade between Thailand and neighbouring countries, 2014

(1) Existing interconnections also include on-going interconnections

# Linking South Asia and South East Asia can provide potential synergies

*Example of how countries in the region can utilize resources to unlock their resource potential*

**1**

**Diversify Resource Potential**

- The over-dependence on a single energy resource raises concerns for long term energy security.
- A cross-border electricity trading model can address the energy procurement portfolio mix and mitigate single energy source risk.

**2**

**Reduce Dependency on Imports**

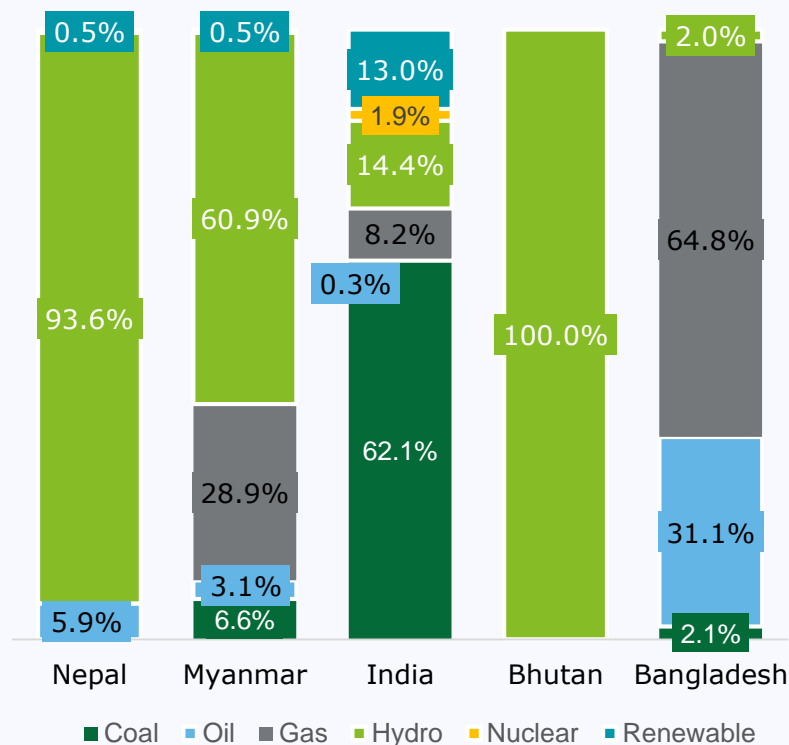
- Countries in South Asia and Southeast Asia are dependent on imports of crude oil and even petroleum products.
- Import dependence raises energy security concerns and also has foreign exchange reserves implications, including exposure of currency to pricing

**3**

**Increased Power System Reliability**

- Leverage the complementarities in demand curves across the nations
- Increased interconnectivity of power systems increases their reliability compared to smaller isolated systems
- Interconnected systems can also address situations arising out of natural calamities

*Installed capacity fuel-wise breakup, 2016*

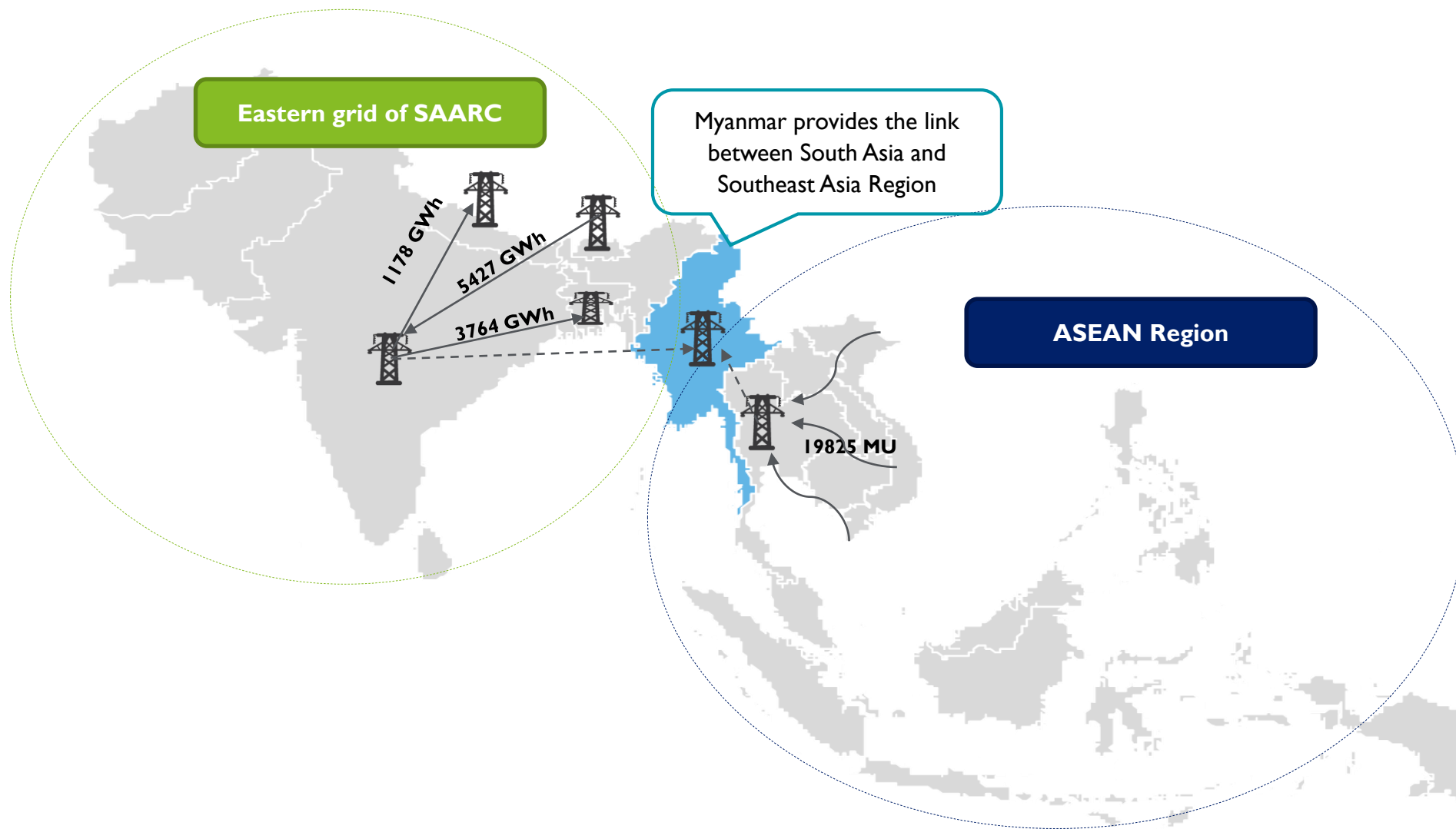


# The same has been observed across international regional electricity groupings e.g. SAPP, GCC etc.

	South African (SAPP)	Greater Mekong (GMS)	Gulf Cooperation (GCC)
1 Objectives for electricity trade	Resource diversification and the region's push to meet future energy demand through low cost hydropower from Northern Africa	Resource diversification, demand supply gap	Share reserve capacity, thereby reducing generation investments
2 Regional power trade agreements	Inter-government MOU, inter-utility MOU, agreement between operating members, operating guidelines	Inter-governmental agreements	General Agreement and Power Exchange Trading agreement
3 Trading arrangements	Long-term PPAs supplemented with short-term markets	Long term bilateral PPAs	Long term bilateral PPAs
4 Transmission and infrastructure investment	Regional infrastructure investments are financed and undertaken by the utilities involved or by special purpose vehicle (SPV)	Mostly through bilateral routes supported by multilateral funds	Investment by member states



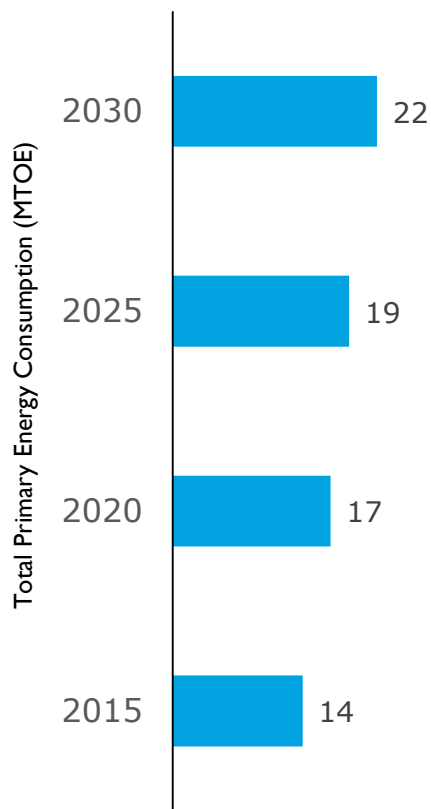
# Myanmar can play an important role in connecting the two regions because of its strategic location



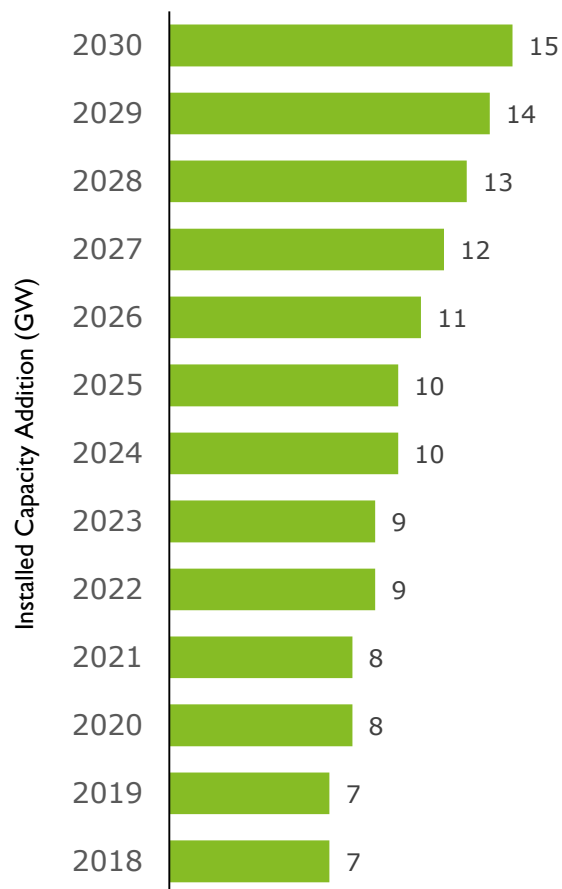
SOURCE: Lit Research, team analysis

# .....and also because of its growing electricity requirements and interconnections with Southeast Asia

To meet its growing energy requirements



...Major thrust is being given on capacity addition (GW)



and also on interconnections with neighboring state

	Proposed Interconnection	Capacity (MW)
1	Mai Khot – Mae Chan – Chiang Rai	369
2	Hutgyi – Phitsanulok 3	1190
3	Ta Sang – Mae Moh 3	7000
4	Mong Ton – Sai Noi 2	3150

SOURCE: Myanmar Energy Master Plan, team analysis

# Moving towards a regional cross border electricity trade is possible, however there are challenges

<b>A</b>	<b>Political, Social and Market Dynamics</b>	Limited understanding of the benefits of cross border electricity trade exists at the political and social level in most countries.
<b>B</b>	<b>Harmonization of Energy Policies</b>	Deeper levels of integration requires national power markets to be at similar stages of reforms. However, there is minimal political commitment to liberalize the sector by undertaking market oriented reforms in the region.
<b>C</b>	<b>Legal and Regulatory Framework</b>	<p>Cumbersome regulatory processes which causes decision making to be time consuming for governments and investors.</p> <p>Policy such as open, non-discriminatory access to transmission systems, regulatory independence are yet to be legally enforced across countries in the region.</p>
<b>D</b>	<b>Structural and Institutional Framework</b>	Lack of regional planning and development initiatives for cross-border interconnections. This has not only limited the quantum of trade among countries, but also has delayed the implementation of cross-border initiatives.
<b>E</b>	<b>Supporting Institutions</b>	The lack of market oriented reforms in the region have restricted the entry and establishment of supporting institutions such as power exchange, traders etc.

# A clear roadmap needs to evolve for promoting cross-border electricity trade

## Short-Term

## Medium and Long Term

1

### Policy and Regulatory initiatives to promote cross-border electricity trade

- Develop guidelines to facilitate cross-border electricity trade in a transparent, predictable and consistent manner
- Harmonize guidelines on technical standards for interconnection of power systems
- Gradually move towards rationalized tax regime for all transactions related to cross-border electricity trade

- Establish fair and transparent procedures determining the grant of open access
- Develop a common and consistent framework for dispute resolution for bilateral and regional electricity trade
- Develop a common set of procedures for Imbalance Settlement for cross-border electricity transactions

2

### Develop framework for evolution of regional electricity market/wholesale market

- Establish nodal agency to facilitate operational issues
- Promote trade on commercial strengths
- Constitute a regional coordination forum to coordinate with various stakeholder

- Undertake power sector reforms to remove disparity in the state of the sector
- Establish supporting institutions such as traders and exchanges. to promote efficiency in the functioning of the sector
- Establish efficient and independent institutions for effective functioning of the integrated market

3

### Strengthen Institutional Mechanisms – Role of multilateral agencies

- Create a platform for knowledge sharing
- Capacity building initiatives

- Develop institutional capacities in regional institutions

**Thank You**