BIMSTEC: The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organization comprising seven member states (Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand). The regional group constitutes a bridge between South and South East Asia and represents a reinforcement of relations among these countries.

Economy & Investment
BIMSTEC region is one of the fastest growing with a combined GDP of US$3.75 trillion (2018) and is home to 1.65 billion populations. BIMSTEC region has recorded a robust economic growth over the past twenty years (figure 1) and expected to remain robust in coming years. In 2018, global economy grew at an average of 3.6%. Except Sri Lanka, all other BIMSTEC countries grew faster than the world average. Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand reported GDP growth rate of 7.9%, 4.6%, 6.8%, 6.8%, 6.7%, 3.2 and 4.1% respectively as per the world Economic outlook1. The inflow of investments is considered as a key driver for accelerating the economic growth through employment generation, global capital, global technology transfer, product markets and distribution network. Foreign Direct Investment (FDI), an important catalyst for economic growth in the developing countries, for the year 2018, region received 61.7 billion USD (only 4.8% of the world FDI). The other regions such as ASEAN, BRICS, SAARC, ECOWAS, EAC, Euro Area received 148.6 billion USD (11% of the world FDI), 261.2 billion USD (20% of the world FDI), 50.7 billion USD (3.9% of the world FDI), 9.4 billion USD (1% of the world FDI), 4.7 billion USD (8% of the world FDI), 163.8 billion USD (13% of the world FDI)2.

Energy & Power Sector Scenario
To sustain this high economic growth, the BIMSTEC economies required affordable and competitive supply of energy/electricity on long term basis. Adequate, affordable, clean and sustainable supply of energy is a fundamental pre-requisite for all the development pursuits and endeavors;
from economic development to scientific research, knowledge creation, education, affordable healthcare, quality of life, prosperity, well-being and happiness for the people of BIMSTEC region.

Yet despite this impressive macro-economic growth, the energy sector in the BIMSTEC region has not been able to keep pace, BIMSTEC per capita electricity consumption continues to be low in many BIMSTEC countries and there is a wide variation among BIMSTEC countries (figure 2). BIMSTEC countries’ per capita consumption ranges from 190 kWh per person for Nepal to 2,821 kWh per person for Thailand, 2,976 for Bhutan and the region on an average, it is only around 1,086 kWh per person, which is much lower than the world average of 3,132 Kwh per person. This demonstrates limited energy supplies even though electricity installed capacity of the region have more than doubled since 2010, grown from 176 GW in 2010 to 447 GW by 2019.

Despite the recent focus on renewable energy by BIMSTEC country governments, electricity sector (figure 3) continues to be dominated by fossil fuels. As of 2019, coal constitutes around 48% of the energy mix, renewable energy constitutes around 20%, gas constitutes of 14%, oil & diesel takes up 8.2%. Most of the large BIMSTEC countries imports large amount of its energy needs from outside of the region and are vulnerable to the disruption in global energy supplies. As per the world energy trilemma index³, (based on Energy Security, Energy Equity, and Environmental Sustainability of Energy Systems), BIMSTEC countries have poor ranks (best rank is 68). Bangladesh, India, Myanmar, Nepal, Sri Lanka and Thailand rank 114, 67, 42, 126, 63 and 76 respectively among 128 countries. As per NITI Aayog report⁵, India’s overall energy import dependency is projected to increase to 61% by the year 2047 from 31% in the year 2012 in business as usual scenario.

Energy Resource Potential of BIMSTEC

Fortunately, the region is endowed with abundant natural resources comprising of 323 billion tonnes of coal, 664 million tonnes of oil, 144 trillion cubic feet (TCF) of natural gas, 11,346 million tonnes of biomass and 328 GW of large hydropower and renewable energy potential of 1,117 GW potential (Table-2). There is huge amount of resource diversity among the countries. The coal resource is mainly concerted in India (319 billion tonnes) followed by Bangladesh (3.3 billion tonnes) and Thailand (1 billion tonnes). Whereas India, Myanmar, Bhutan, Nepal possess 145 GW, 100 GW, 42 GW and 23.8 GW of hydro power potential respectively. Renewable energy potential is dominated by India (1000 GW) followed by Myanmar (60GW) and Thailand (23 GW).

Regional Energy Cooperation (REC) & Cross Border Energy Trade (CBET)

Governments of the BIMSTEC countries have recognized issues and challenges
being faced by the energy/electricity sector and the need to cooperate in energy sector. It is arguable that in the BIMSTEC region, probably energy/electricity cooperation has been most successful among other forms of regional cooperation. It is certainly the case in BIMSTEC region in particular in the BBIN region. CBET has been increasing in a rapid pace in the region. CBET has increased from ~1350 MW in the year 2012 to almost ~3563 MW by 2020. Currently CBET between Bhutan-India is ~1800-1900 MW; India – Bangladesh is ~1160 MW, India-Nepal is ~550 MW and India-Myanmar is ~3-5 MW. Despite progress in REC & CBET, the potential remains large. There is approximately 328 GW of hydro power potential existing in the region, which can be only exploited through accelerating cross border electricity trade. The domestic demand of large hydro resource rich countries such as Bhutan (23.8 GW), Nepal (42 GW) and Myanmar (100 GW) are limited, development of these hydro resources will require a regional approach and robust regional energy/power market. Due to lack of a robust regional outlook/approach and limited cooperation, only a small portion of these resources have been utilized. Against the total hydro potential of 328 GW, the BIMSTEC’s total installed capacity of hydropower is only 57 GW i.e. only 17% has been exploited so far (figure 4).

The BIMSTEC countries complement each other in the areas of energy resources, load curve, demand and supply scenario. For example, India is abundant in coal reserves (319 MT) whereas countries such as Bhutan (23.8 GW), Myanmar (100 GW) are rich in hydro resource. Myanmar and Bhutan can supplement their additional power requirements through cross border trade links with India and other BIMSTEC countries. The demand-supply seasonal variations exist throughout the day, weekends, weekdays among BIMSTEC countries, demand can be met through energy trade links with countries that are surplus in other alternative resources. Due to the high variation of seasonal demand across the countries, provides opportunities for optimal utilization of resources. Seasonal differences during the monsoon provides sufficient to excess hydro power output, whereas in lean periods (dry winter season), more thermal power support can be provided. This optimization of energy resources will also lead to affordability of energy/electricity among the citizen of BIMSTEC countries. There is also a difference in time zone (Thailand is 1 hour and 30 minutes ahead of India) between the countries of the region, leads to diversity in the exact time of peak demand among the BIMSTEC member states. This offers the possibility of meeting peak demand with less peak generation capacity coupled with CBET, instead of each country trying to meet peak demand entirely on its own. The difference in the daily load curve provides opportunities for optimizing the load-generation balance across the region. BIMSTEC nations should capitalize on the complementary nature of their resource base and their differential power demand to satisfy their energy needs. With focus on shifting towards renewable energy in most BIMSTEC countries, deepening regional grid integration can help balancing the grid by managing the intermittency of renewable energy. The current power generation mix varies widely among BIMSTEC countries. The hydro rich (Nepal, Bhutan and Myanmar) and gas power rich countries (Bangladesh and Myanmar) can provide balancing power to the BIMSTEC regional grid. Apart from electricity cooperation, there exists a huge potential for other forms of cooperation in oil and gas sector. The governments have already taken steps in

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**Table 2: BIMSTEC Energy Resource Potential**

<table>
<thead>
<tr>
<th>Resources</th>
<th>Coal (Million Tonnes)</th>
<th>Oil (Million Tonnes)</th>
<th>Gas (Trillion Cubic Feet)</th>
<th>Biomass (MT)</th>
<th>Hydro (GW)</th>
<th>Renewable *(GW)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>3,300</td>
<td>-</td>
<td>5.7</td>
<td>218</td>
<td>-</td>
<td>3.67</td>
</tr>
<tr>
<td>Bhutan</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>625</td>
<td>23.8</td>
<td>12.76</td>
</tr>
<tr>
<td>India</td>
<td>3,19,020</td>
<td>600</td>
<td>45.5</td>
<td>4,150</td>
<td>145</td>
<td>1000</td>
</tr>
<tr>
<td>Myanmar</td>
<td>120</td>
<td>64.3</td>
<td>41.3</td>
<td>3,303</td>
<td>100</td>
<td>60.7</td>
</tr>
<tr>
<td>Nepal</td>
<td>&lt;1</td>
<td>-</td>
<td>-</td>
<td>1,056</td>
<td>42</td>
<td>4.829</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>155.5</td>
<td>2</td>
<td>11.6</td>
</tr>
<tr>
<td>Thailand</td>
<td>1,063</td>
<td>-</td>
<td>6.6</td>
<td>1,838</td>
<td>15.2</td>
<td>23.0</td>
</tr>
<tr>
<td><strong>BIMSTEC Total</strong></td>
<td>3,23,504</td>
<td>664</td>
<td>99</td>
<td>11,346</td>
<td>328</td>
<td>1,117</td>
</tr>
</tbody>
</table>

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**Figure 4: BIMSTEC – Hydro Resource Potential & Utilization**

Data Source: Compiled from various Sources; Prospects of Regional Energy Cooperation and Cross border Energy Trade in the BIMSTEC. BIMSTEC – Hydro Resource Potential and utilization (Rajiv Ratna Panda, Technical-Head, SARI/EU/IRADe) © SARI-IRADe-2020, All rights reserved.
Multidimensional benefits of BIMSTEC Regional Power/Electricity Grid

The diversity of endowments in BIMSTEC region as a whole is a great motivator for driving the countries in this region towards cross border energy interconnection. Electricity grid integration and CBET entails multidimensional benefits which have been summarized below and in the figure 5.

A) Economic & Financial benefits—This type of benefit allows for availability of power at competitive price, access to cheaper alternative sources of energy, utilization of surplus power generation of one country in another and accelerated economic growth and development of the region. The cheaper cost of electricity acts as a driver in case of import of power by Nepal from India. In Bangladesh, the cost of power generation in FY19 was 7.00 US cents per kWh. It purchases power from India at cheaper rates; from NVVN at 6.08 US cents per kWh and from PTC at 5.62 US cents per kWh. In 2019 Nepal recorded its import power cost from India at 6.08 US cents per kWh which was lower than their overall average power purchase cost of 6.52 US cents per kWh. Hydropower export contributes over 27% of government revenue & 14% of Bhutan’s GDP.

B) Technical & Operational benefits—This includes improved energy security and reliability of respective power systems. Increased power availability, optimized transmission network development, facilitating renewable energy grid integration, improved regional grid balancing and management of peak deficit are some of its other features. For example, Bangladesh imports coal, oil and LNG in order to meet its own energy demand. In FY 2019, the country imported 9.62% of its annual electricity requirement from India.

C) Environmental benefits & addressing climate change—BIMSTEC regional power grid would allow for energy and climate security, reduce fossil fuel imports, achievement of sustainable development goals, sustainable development of energy resources, mitigating the adverse impacts of climate change amongst others. For instance, “Bangladesh plans to buy 2000 MW solar power from India” as quoted by Dhaka Tribune (18 April 2018). India’s import of clean and green hydropower helps in decarbonising the power sector and to reduce emission of India.

D) Energy/power market development—The benefits include in bringing untapped energy resource to the market which otherwise will remain untapped, commercial and market form of trade, development of domestic and regional competitive power market. Bangladesh buys around ~750 MW on commercial/market basis from India. Concurrently, since climate change has emerged as a key global development challenge of the 21st century, policies and programs facilitating regional energy trade and the large-scale adoption and deployment of clean and renewable energy will need to play a central role in BIMSTEC region in meeting climate challenges and, at the same time, fulfilling energy requirements. Dealing with climate change is also important to meet the sustainable development goals. Currently (2018) the CO₂ emission of BIMSTEC countries is about 3064 Megatons of CO₂ per year. Power/energy sector (1360 Megatons CO₂ per year) and transport sector (398.9 MtoC0₂ per year) collectively contributes 57% of total CO₂ emission amongst the BIMSTEC countries (figure 6). Power and energy sector alone contribute to 44% of total CO₂ emission amongst the BIMSTEC countries. Thus, there is a need to focus on decarbonizing the power and transportation sector.

Energy & Power Outlook

As per the BIMSTEC Energy outlook7 published by SARI/EI/IRADe, the total primary energy supply in the BIMSTEC region is projected to grow at an annualised rate of 3.36 per cent during the period 2015-30, to increase from 1,070 Mtoe to 1,758 Mtoe. The peak electricity demand in the BIMSTEC region grows at an annualised rate of 6.5 per cent during the outlook period, an increase from 175 GW in 2014 to 482 GW in 2030. Almost three-fourths of this demand will come from India and the remaining from the other countries in the region. BIMSTEC’s generation capacity is projected to increase threefold, from 293 GW in 2014 to almost 904 GW in 2030. The generation mix in the region would see a shift from predominantly thermal-based capacity to cleaner sources as more renewables get added in the system. Renewable-based capacity addition is expected to grow at an annualized rate of 16.6 per cent, the highest recorded rate during the outlook period, expanding from 38 GW in 2015 to 383 GW in 2030. The share of renewables in the electricity mix will be...
the highest, at 42 per cent, up from 12 per cent in 2015. This share is also expected to increase significantly with Government of India and Government of Thailand having revised their renewable energy targets. India has made a sharp upward revision of renewable energy targets, 450 GW8 of renewable energy by 2030 (earlier target was 175 GW). The current installed renewables capacity (excluding large hydro) in India is 86 GW (as on Feb, 2020). The Thai government has decided to raise the non-hydro renewable target from 20 percent to 30 percent by 20369 (As of April 2018, renewable energy supplied was about 15 % of total power consumption in Thailand.)

On cross border front, many cross-border interconnections are being planned and proposed. In the western side, the import of electricity from Bhutan and Nepal to India and to Bangladesh will be the key drivers for developing the transmission infrastructure. It is projected to have 30 GW of cross border transmission interconnection capacity by 2030-2035 (figure 7).

**Power Sector Investment Requirements**

BIMSTEC as a region offers significant business opportunities in the electricity sector. The region will require US$ 1,056 billion investments in the generation sector till 2030 in order to achieve the projected electricity capacity requirement. Renewables, coal and hydropower will attract approximately 93 per cent of the overall investment potential. The investments in renewables will be the highest at US$ 724 billion, which is approximately 68.6 per cent of the overall investment requirement, followed by coal that will require US$ 168 billion or 16% of the investment potential. Hydropower will require US$ 93.3 billion or 9% of the overall investments in the region.

**Opportunity for Comprehensive Energy Cooperation in BIMSTEC Region**

Globally energy and power system are under rapid transformation with technology improving swiftly. In addition to CBET, BIMSTEC countries should cooperate and focus on other areas of energy sector such as energy efficiency measures, industrial efficiency improvement, LED replacement, promotion of smart grid initiatives, integration of distributed generation, clean coal technologies, energy storage, electric vehicles and large-scale integration of renewable energy to the grid, hydrogen energy, fuel cell, clean coal, energy storage and electric vehicles. Countries like India (in particular) and Thailand are taking significant steps in this direction. Energy cooperation including transfer of new energy technologies among the BIMSTEC countries will help in social and economic development of their people.

While the MoU on BIMSTEC grid interconnection10 will promote electricity grid integration in the region, there is a need to develop a BIMSTEC-Comprehensive Plan for Energy Cooperation (BIMSTEC-CPEC) to augment all perspective area of energy cooperation (including oil and gas sector) for greater energy interconnectivity and promote regional energy trade.

**Issues & Challenges for Accelerating Cross Border Energy Trade**

Lack of common set of policy, legal, and regulatory frameworks, political commitments, inadequate transmission system interconnections and lack of regional electricity market creates various risks and challenges (figure 8) for accelerating CBET in BIMSTEC Region. There are various policies, regulatory, financial and commercial risks associated with the cross-border electricity projects. Cross-border project risks in general tend to be high without a comprehensive policy, regulatory framework in place for large scale CBET project development. Cross-border element greatly amplifies the risks due to geopolitical, economic and trade related factors. It is often seen that, even projects that appear to be feasible, rational, economical in practice struggle to get it financed and built.

For example, a what happens if the domestic policy, regulatory framework...
changes which impacts CBET project/investment? What is the protection available to buyers/sellers/investors? b) What happens if the economic assumptions on the project changes? What is the protection available to buyers and sellers? c) What happens if the infrastructure to transfer the energy is not built or not in time or is not available when needed? Hence, risk identification and balanced mitigation is important for promoting investment and CBET in the region.

BIMSTEC member states are substantially different in levels of market evolution, varying policy and regulatory frameworks for regulation & institutional framework (figure 9). Most of the countries except India have single buyer model and limited power sector reforms. Except Myanmar, all other countries have electricity regulators in place. Thus, harmonization of grid requires deeper level of coordination and harmonization, institutional mechanism at various levels. While it may be a challenge, it is also an opportunity too to leapfrog, through learning and sharing from each other. Central Electricity Regulatory Commission (CERC), India has issued, Cross Border Trade of Electricity Regulations, 2019, a first of its kind dedicated regulations on CBET in the region. It comprehensively addresses various aspects of CBET and provides clarity, transparency, consistency and predictability in regulatory mechanism. This can be a learning process & starting point of reference towards development of Regional Regulatory Framework for CBET in the BIMSTEC Region. There is also a need to further improve ease of doing business in the BIMSTEC region (regional average rank is 99), 5th among 11 regions.

Emerging Trends (ETs) in Cross Border Energy Trade in the BIMSTEC Region
There are three key emerging trends in the region which are impacting or will impact CBET significantly. ETs-1: Currently most of the CBET are bilateral in nature. India’s Guidelines for Import/Export (Cross Border) of Electricity-2018 allows power trade through commercial and market basis. India also recommends introducing financial products in balancing market for trading of balancing services from fast response plants such as Hydro to enhance cross border trade through market products. It also recommends, introducing financial products (futures and derivatives) to enhance CBET. Therefore, the role of cross-border hydro in renewable energy grid Integration and regional grid balancing becomes extremely important. The five-year vision document for power sector of India recommends introducing products in balancing market for trading of balancing services from fast response plants such as Hydro to enhance cross border trade through market products.

Emerging Trends (ETs) in Cross Border Energy Trade in the BIMSTEC Region

ETs-2: As mentioned earlier, region is facing significant climate change challenges and countries are stepping up their renewable energy targets. In this context, the role of cross-border hydro in renewable energy grid Integration and regional grid balancing becomes extremely important. The five-year vision document for power sector of India recommends introducing products in balancing market for trading of balancing services from fast response plants such as Hydro to enhance cross border trade through market products. It also recommends, introducing financial products (futures and derivatives) to enhance CBET. Therefore, the role of cross-border trade in regional grid balancing is going to increase in the near future. There are already established global models in similar regional grid balancing for RE integration, such as in the case of Denmark and Norway, where Norway’s hydro power plants are utilized to balance Denmark’s wind power capacity. Similar models in BIMSTEC are expected to become a key driver of regional energy cooperation. ETs-3: CBET has increased in BIMSTEC region from ~1350 MW in the year 2012 to almost ~ 3563 MW by 2020. The major share of CBET has only been enabled between the four countries i.e. Bangladesh, Bhutan, India and Nepal (BBIN) and has been initiated primarily through Power Purchase Agreements (PPAs) signed as part of special MOUs (Memorandum of Understanding) between the various governments. More interestingly it is now moving towards commercial from of trade and hopefully soon will see trade through power exchanges. Out of 3500 MW of CBET, ~1100 MW is being traded on commercial and market basis. India’s Guidelines for Import/Export (Cross Border) of Electricity-2018 allows, cross-border power trade through Indian power exchanges. Going in future more and more CBET is expected to happen through commercial and market basis and through power exchanges platform of India.

Way forward & Recommendations for Accelerating Cross Border Electricity Trade and Mobilizing Investment in Energy Infrastructure Projects in BIMSTEC Region
We suggest a following 10-point concrete formula:

1. Harmonised Policy, Legal, & Regulatory Framework

The development of cross-border
physical transmission infrastructure and its complementary regulatory, policy, pricing, and market mechanisms are yet to evolve fully in the BIMSTEC regional context. It is desirable that each participating country needs to adopt complementary relevant policies, with interconnection being an integral element. Without a consistent and coherent regional regulatory framework in place, investment opportunities and consequently large-scale CBET that could benefit both importing and exporting in nations may not happen. In the BIMSTEC countries’ regional context, the risks associated with forging an intra-regional, CBET project would be greatly minimised if each participating country adopts complementary regulatory frameworks to facilitate cross-border interconnection and electricity trade. Therefore, there is a need to develop harmonised Policy, Legal, and Regulatory Framework, which will create the enabling systemic conditions for a sustainable market for investment for CBET by minimising the risks associated. While the, BIMSTEC MoU for establishment of the BIMSTEC grid interconnection has been signed, it is important to provide actionability to the various articles of MoU.

2. Regulatory Instrument for Fair, Transparent & Sustainable CBET
It is important that BIMSTEC member countries put in place various regulatory requirement for fair, transparent and sustainable CBET such as licensing provision for CBET; Open Access (OA) to transmission system; transmission pricing mechanism for cross border trade; regional transmission planning; imbalance settlement, scheduling & dispatch, congestion management framework; energy accounting and settlement procedures; harmonization of grid codes, dispute resolution: (transparent and fair legal framework).

3. Development of a Robust BIMSTEC Regional Power Grid (BRPG)
A strong, physically interconnected grid of BIMSTEC countries (both through HVDC and HVAC) will establish the BIMSTEC power grid, which is essential to reap the potential benefits of regional energy cooperation and CBET in the Region. A BIMSTEC Transmission Interconnection Master plan (BGIMP) will be of immense help towards the creation of BRPG. While countries will benefit from such grid, it is important to develop mechanisms/principles to fully recover the costs and share benefits equitably, resulting from the reductions in investments on generation, transmission systems and fuel cost. Such sharing of benefits builds trust and confidence among parties in the BIMSTEC regional power generation & transmission interconnections projects. BRPG will be immense social value to the region. Cross-border interconnection of regional/national electricity systems through BRPG will allow the BIMSTEC countries to enhance its security of supply and to integrate more renewables into energy markets.

4. Moving from Bilateral to Trilateral and Multilateral Power Trade (TMPT) in BIMSTEC Region
BIMSTEC countries have been successful in regional energy cooperation and cross border power trade through bilateral forms of cooperation between any two countries. Due to the immense diversity that exist among BIMSTEC nations, trilateral and multilateral power trade have the potential to accrue more benefits in terms of higher trade volumes, lower installed capacity and optimisation of investment cost, lesser reserve capacity due to sharing of reserve, reduced CO₂ emission and overall regional cost optimisation & economies of scale. There is a need to put in place concrete measures and a detailed roadmap for transition to TMPT.

5. Regional Energy Market Development- BIMSTEC Regional Market for Electricity (BRME)
While recognising the fact that, most of BIMSTEC countries are at early stage of market reform, it is important to have a concrete vision of regional power/energy market. For long-term sustainability, there is need for a transparent and reliable regional competitive power market, as well as preferably domestic markets in each BIMSTEC country. A vibrant regional competitive BRME will make the BIMSTEC power sector competitive, increase cross border trade and streamline investments, making it lucrative for investors who seek fair, steady, and risk-mitigated short- and long-term returns on their capital. Currently (2018) only 13 billion units of electricity is traded in the BIMSTEC region. In 2018, Europe, the traded volume of electricity in the market exceeded 12000 billion units.
6. Institutionalizing the Process of CBET in BIMSTEC Region

International experiences have shown that regional governing as well as enabling institutions play a strong role in enabling energy integration. For example, in South Africa Power Pool (SAPP), the Regional Electricity Regulators Association of Southern Africa (RERA) facilitate synchronization of regulatory policies, legislation, standards and practices and is the platform for effective cooperation among energy regulators within the region. Similarly, in European power market, there is European network of transmission system operators for electricity (ENTSO-E) to develop rules and coordinate grid operations and Agency for Cooperation of Energy Regulators (ACER) for coordination in regulations and legislations. While BGICC will be responsible for development of BIMSTEC transmission master plan, there is a need to create forums for discussion and deliberation at various levels to help/facilitate in coordination of regulations; transmission planning; system operations and market operations etc. Such forums could be developed in BIMSTEC region such as a) BIMSTEC Energy/Electricity Regulators Forum (BERF) b) BIMSTEC Power System Operators Forum (BPSOF) & C) BIMSTEC Energy Markets Forum (BEMF).


Power and energy projects being capital intensive, arranging cheaper source of funding, innovative financing and financial closure of the projects are always a challenge. Often such investments are Long term, irreversible in nature. Looking at the scale of investment (1,056 billion US$ investments in generation sector only by 2030) it is important to focus on innovative financing instruments/mechanism and public private partnership in CBET projects. BIMSTEC Countries can promote and facilitate for a) accessing Green funding options (e.g. green bonds, Green Climate Fund, clean energy tech funds) b) blend financing to improve project financial viability c) develop comprehensive financing ecosystem (exchange, platform, broker, market-makers, advisor, equity research etc.) d) work towards integration of capital market of BIMSTEC countries and e) prioritizing of cross border power projects (especially clean energy project) and economic incentives for investment in these. A BIMSTEC Energy Integration Fund (BEIF) may be created to finance regional energy integration projects in the Region. This can be created with the help and support of MDBs such as World bank, ADB and other DFI such as U.S. International Development Finance Corporation (DFC) and private sector. Regional energy projects will benefit from access to low cost finance from such fund and other development partners.

8. BIMSTEC Energy Investment Facilitation Forum (BEIFF)

For mobilising investment and addressing various issues & overcoming challenges, technical assistance and support and dedicated facilitation is required for development of regional energy projects, not just for financing, but also for risk mitigation. The BEIFF will act as a platform for promoting investments in cross-border energy infrastructure and addressing cross-cutting investment and financing issues among financial and investment community and other stakeholders. It will also suggest innovative policy, fiscal and market instruments required/needed to mobilize investments including specific financial/fiscal instruments for BIMSTEC energy sector. The forums should also help in capacity building and sharing success stories and international best practices.

9. BIMSTEC-Comprehensive Plan for Energy Cooperation (BIMSTEC-CPEC)

Energy sector in modern days are far more integrated than it is used to be in future. Integrated approach will help in deriving the best optimal outcome of the
REC in BIMSTEC countries. Therefore, there is a need to develop a BIMSTEC-Comprehensive Plan for Energy Cooperation (BIMSTEC-CPEC) to augment all perspective area of energy cooperation (including oil and gas sector) for greater energy interconnectivity, integration and promoting long term regional energy trade. The same is also echoed by the leaders of BIMSTEC countries during the 4th BIMSTEC Summit. BIMSTEC-CPEC should also provide a long-term road map and concrete action plan for implementation.

10. Sustainability of Energy Infrastructure Project Development

While there is large potential of energy resources in the region, it is important to develop these resources in a sustainable and environment friendly manner with limited environment degradation. People’s participation in the energy infrastructure development and sharing benefits with all project stakeholders and affected parties are important. This will not only help in development of energy Infrastructure robust but also will help in meeting sustainable development goals and benefits to the citizens of BIMSTEC countries.

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Mega Offshore Projects Needed to Safeguard Indonesian LNG Supply

Gas production from fields in Indonesia supplying LNG plants looks set to decline through 2030, according to analyst GlobalData.

However, gas supply may also pick up from 2026 if two planned mega-natural gas and LNG projects – Gendalo-Gehem and Abadi – go forward.

According to Cao Chai, oil and gas analyst at GlobalData, construction is progressing on the BP-operated offshore Tangguh expansion program, which will add a liquefaction unit of 3.8 MM metric ton/yr (4.19 MM t/yr) production capacity to the existing Tangguh LNG plant, lifting total capacity up by 50% to 11.4 MM metric tons/yr (12.57 MMt/yr).

“For Badak LNG, a pickup of the feed gas supply will be observed in 2021 after the Merakes field comes on-stream,” Chai said, adding that Gendalo-Gehem, the second phase of the Chevron-operated Indonesia deepwater development, could also add significant new supply to the plant.

But it looks like that project will not come onstream until 2025 at the earliest; due in part to continued discussions regarding the share of production between Chevron and SKK Migas.

The new development plan for the offshore Abadi gas field was finally approved in 2019, but operator INPEX and partner Shell still face challenges due to the remoteness of the planned onshore Abadi LNG facility and the layout of the infrastructure.

Tangguh LNG plant