South Asia Regional Initiative for Energy Integration

Session-4
Theme Presentation on

Creating Conducive Environment-Regional Investment Framework for Mobilizing Investment in Regional Energy Infrastructure projects in South Asia

Presented by
Rajiv Ratna Panda, Technical-Head, SARI/EI/IRADe
Marco Economic Growth & Level of Economic Integration of South Asia

Success story of South Asia Energy/Power Sector

Challenges of South Asia Energy/Power Sector

Emerging Trends and Future Scenario

South Asia Energy/Power Sector: Investment Requirements

Opportunities and Challenges: Future Energy Investment

Regional Investment Framework

Points for Discussions
Macro Economic Growth
South Asian Growth Story: Dynamic and Vibrant

South Asia: One of the most populous regions in the world with 1.8 billion people, accounting for 23% of the world's population. China has a population of 1.39 billion, India has 1.35 billion, and the European Union (EU) has 0.51 billion. The United States (US) has 0.32 billion.

GDP: South Asia's GDP is valued at US$ 3.66 trillion, making it the third-largest GDP region globally. China has a GDP of US$ 14 trillion, India has US$ 2.9 trillion, Japan has US$ 5.15 trillion, Germany has US$ 3.8 trillion, and the US has US$ 21.43 trillion. The IMF, through its World Economic Outlook (October 2019), estimates that South Asia is the fastest-growing region in the world and is expected to remain so in the future.

Economic Growth: Real GDP growth in South Asia is substantial, with annual percent change figures of 6.7%, 5.2%, and 2.2% in recent years. This growth is consistently higher than that of other regions such as Africa, East Asia, Europe, North America, and Southeast Asia.

Source: IMF - World Economic Outlook (October 2019, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/SAQ/EAQ/EUQ/SEQ/AFQ)
South Asia: Bangladesh, India—the fastest growing large economy among South Asian Countries

Economic Integration of South Asian Countries
South Asia: Yet ....................... Least Integrated

**Intra-regional Trade Share (%)**
(Intra-regional trade to total trade of the region)

<table>
<thead>
<tr>
<th>Region</th>
<th>Intra-regional Trade Share (%) 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>63.8</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>57.5</td>
</tr>
<tr>
<td>ASEAN+3</td>
<td>46.5</td>
</tr>
<tr>
<td>East Asia</td>
<td>35.5</td>
</tr>
<tr>
<td>ASEAN</td>
<td>23.1</td>
</tr>
<tr>
<td>Africa</td>
<td>16.0</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>15.5</td>
</tr>
<tr>
<td>Middle East</td>
<td>13.7</td>
</tr>
<tr>
<td>Central Asia</td>
<td>7.6</td>
</tr>
<tr>
<td>SAARC</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Source: The Integration Indicators Database [https://aric.adb.org/database/integration](https://aric.adb.org/database/integration). ASEAN+3 consists of the 10 ASEAN member economies, the People's Republic of China (including Hong Kong, China), Japan, and the Republic of Korea.
South Asia: Intra-regional trade (Asia) increased but is still low in comparison to other sub-regions of Asia.

Source: Asian Economic Integration Report
Key Investment Scenario in South Asia
South Asia: FDI Inflows

Major Regions in the world FDI inflow (B US$)
South Asia is one of the Lowest

FDI inflows, in Billion USD
South Asia

Source: UNCTAD Database, accessed on 9-02-2020

2018-India: 83% (42 B US$), Bangladesh 7% (3.6 B US$), Pakistan 4% (2.3 B US$)
South Asia: Share of FDI in Asia, 9.1%, East Asia & South-east Asia Dominates

Global Inward FDI to Asia by Destination Sub-region

Intraregional FDI Inflows—Asia

South Asia: Share of Intraregional FDI in Asia, 8.6%, East Asia & South-east Asia Dominates

Source: Asian Economic Integration Report

Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia” by Rajiv Ratna Panda, Technical-Head /SARI/EI/IRADE::Conference on “Regional Energy Integration and Cross Border Energy Trade: A New Renaissance for Growth and Development of South Asia Region” 19th February 2020, Hotel Imperial, New Delhi, India
Energy/Power Sector Scenario: Success story of South Asia
Energy/Power Sector Scenario: Success story of South Asia

Rapid Capacity Addition: Power Installed Capacity (GW)

Bangladesh: 5.2 GW in 2010 to 22.8 GW by 2020, India: 158 GW in 2010 to 368 GW by 2020, Pakistan: 20.9 GW in 2010 to 39 GW by 2020

Expansion in Cross Border Power Trade (MW)

- South Asia Cross Border Power Trade

2012 ~1350 MW
2015 ~2076 MW
2018 ~2986 MW
2020 ~3560 MW

Source: Compiled from various sources, PM Modi inaugurated Mangdechhu hydroelectric plant, Bhutan, Aug 17, 2019

Bangladesh: 5.2 GW in 2010 to 22.8 GW by 2020, India: 158 GW in 2010 to 368 GW by 2020, Pakistan: 20.9 GW in 2010 to 39 GW by 2020

Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia - "by Rajiv Ranjan Panda, Technical-Head / SARI/EI/IRADE: Conference on "Regional Energy Integration and Cross Border Energy Trade: A New Renaissance for Growth and Development of South Asia Region" 19th February 2020, Hotel Imperial, New Delhi, India
Energy/Power Sector Scenario: Success story of South Asia

Rapid Capacity Addition: Power Installed Capacity (GW)

- Bangladesh: 5.2 GW in 2010 to 22.8 GW by 2020
- India: 158 GW in 2010 to 368 GW by 2020
- Pakistan: 20.9 GW in 2010 to 39 GW by 2020

Significant Achievement in Access to Electricity

Proportion of the population (%) with access to electricity

Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia © by Rajiv Ratna Panda, Technical-Head /SARI/EI/IRADE::Conference on “Regional Energy Integration and Cross Border Energy Trade: A New Renaissance for Growth and Development of South Asia Region”19thFebruary 2020, Hotel Imperial, New Delhi, India

Energy/Power Sector Scenario: Success story of South Asia

India Electricity Installed capacity Growth (GW)

Large Green Energy Capacity Addition

Power Mix of South Asian Countries (2019)

Significant Private Sector Participation in Generation

Green Has been Growing in SA countries, India: 13 GW in 2009 to 86 GW in 2020

Green Energy (RE+ Hydro) in most of the Countries

Bangladesh -42%, India , 47%, Nepal-48%, Pakistan-57%
Energy/Power Sector
Scenario: Challenges
Despite High Economic Growth, Rapid Capacity Addition, Per Capita Electricity Consumption is low

Electric power consumption (kWh per capita)

Source: Compiled and Calculated from various sources [Bhutan, India, Sri Lanka, Pakistan, Bangladesh**, Nepal, Afghanistan * Maldives | Afghanistan, Bhutan and Nepal are calculated values | USA, South Korea, Saudi Arabia, JAPAN, EU, South Africa, CHINA – data is 2014 world Bank database.]
Quality is a Concern, reliability and availability of Electricity infrastructure

<table>
<thead>
<tr>
<th>Economy</th>
<th>% of firms experiencing electrical outages</th>
<th>No. of electrical outages in a typical month</th>
<th>If there were outages, average duration of a typical electrical outage (hours)</th>
<th>If there were outages, average losses due to electrical outages (% of annual sales)</th>
<th>Percent of firms owning or sharing a generator</th>
<th>If a generator is used, average proportion of electricity from a generator (%)</th>
<th>Days to obtain an electrical connection (upon application)</th>
<th>% of firms identifying electricity as a major constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Countries</td>
<td>58.4</td>
<td>6</td>
<td>4.5</td>
<td>4.3</td>
<td>35</td>
<td>18.4</td>
<td>34.8</td>
<td>32.8</td>
</tr>
<tr>
<td>East Asia &amp; Pacific</td>
<td>56.8</td>
<td>4.2</td>
<td>3.4</td>
<td>3</td>
<td>35</td>
<td>16.2</td>
<td>18</td>
<td>18.2</td>
</tr>
<tr>
<td>Europe &amp; Central Asia</td>
<td>31.4</td>
<td>0.8</td>
<td>3</td>
<td>1.2</td>
<td>18.7</td>
<td>8.3</td>
<td>35.6</td>
<td>21.9</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>64.8</td>
<td>2.1</td>
<td>2.7</td>
<td>1.7</td>
<td>26</td>
<td>14.5</td>
<td>32.1</td>
<td>36.6</td>
</tr>
<tr>
<td>Middle East &amp; North Africa</td>
<td>50.2</td>
<td>13.8</td>
<td>8.7</td>
<td>5.1</td>
<td>41.3</td>
<td>26.8</td>
<td>53.1</td>
<td>37.8</td>
</tr>
<tr>
<td>South Asia</td>
<td>66.2</td>
<td>25.4</td>
<td>5.3</td>
<td>10.9</td>
<td>45.4</td>
<td>24.4</td>
<td>55.1</td>
<td>46.1</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>76.2</td>
<td>8.3</td>
<td>6.4</td>
<td>7.8</td>
<td>51</td>
<td>26.9</td>
<td>35.4</td>
<td>41.2</td>
</tr>
</tbody>
</table>

Source: [https://www.enterprisesurveys.org/en/data/exploretopics/infrastructure](https://www.enterprisesurveys.org/en/data/exploretopics/infrastructure), This is computed using data from manufacturing firms only.

South Asia: reliability & availability of Electricity infrastructure is concern. Need to focus on Quality.
## Quality is a Concern, reliability and availability of Electricity infrastructure

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<thead>
<tr>
<th>Economy</th>
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</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>66.2</td>
<td>25.4</td>
<td>5.3</td>
<td>10.9</td>
<td>45.4</td>
<td>24.4</td>
<td>55.1</td>
<td>46.1</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>70.4</td>
<td>11.5</td>
<td>3.8</td>
<td>9.6</td>
<td>48</td>
<td>38.3</td>
<td>111.3</td>
<td>65.8</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>73.4</td>
<td>64.5</td>
<td>1.2</td>
<td>5.5</td>
<td>62.8</td>
<td>26.1</td>
<td>84.7</td>
<td>52</td>
</tr>
<tr>
<td>Bhutan</td>
<td>44.2</td>
<td>0.4</td>
<td>8.1</td>
<td>3.7</td>
<td>9.5</td>
<td>10.2</td>
<td>21.3</td>
<td>14.1</td>
</tr>
<tr>
<td>India</td>
<td>55.4</td>
<td>13.8</td>
<td>2</td>
<td>3.7</td>
<td>46.5</td>
<td>8.8</td>
<td>21.9</td>
<td>21.3</td>
</tr>
<tr>
<td>Nepal</td>
<td>62.8</td>
<td>8.7</td>
<td>3.6</td>
<td>17</td>
<td>50.5</td>
<td>41.3</td>
<td>21.3</td>
<td>68.8</td>
</tr>
<tr>
<td>Pakistan</td>
<td>81.1</td>
<td>75.2</td>
<td>16.9</td>
<td>33.8</td>
<td>65.4</td>
<td>41.4</td>
<td>82.8</td>
<td>75.3</td>
</tr>
</tbody>
</table>

Varies among South Asian Countries

Cost of power sector distortions in South Asia: Bangladesh-11.1 Billion US$, India-86.1 Billion US$, Pakistan-17.7 Billion US$

South Asia Energy/Power Sector: Emerging Trends and Future Scenario
South Asia Power Sector: 1068 GW by 2040

Current South Asia-Power Installed Capacity (GW)

- Afghanistan (2017) 22 (5%)
- Bhutan (2019) 2.2 (1%)
- Bangladesh (2019) 1.3 (0%)
- India (Nov-2019) 22 (5%)
- Nepal (2019) 36 (9%)
- Sri Lanka (2018) 4 (1%)
- Pakistan (2018) 1.2 (0%)
- Maldives (2017) .5 (0%)

364 (84%)

South Asia Power Installed Capacity (GW)-2040*

- Afghanistan
- Bhutan
- Bangladesh
- India (Nov-2019)
- Nepal
- Sri Lanka
- Pakistan
- Maldives

- Afghanistan
- Bhutan
- Bangladesh
- India
- Nepal
- Sri Lanka
- Pakistan
- Maldives

783 (73%)

* Projection as per the World Bank Report on "How Much Could South Asia Benefit from Regional Electricity Cooperation and Trade?" For Maldives 1000 MW of capacity is Assumed by 2040.

Source: Compiled from Various Sources

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SAARC - Significant Environment/Climate Change Challenge

SAARC Countries - fossil CO2 by sector in Mt CO2/yr (2018)

- Source: Climate Emergency COP 25: India is the only major economy to be '2 degree compatible', Fossil CO2 and GHG emissions of all world countries 2019 Report, JRC SCIENCE FOR POLICY REPORT. https://edgar.jrc.ec.europa.eu/booklet2019/Fossil_CO2andGHG_emissions_of_all_world_countries_booklet_2019report.pdf

- Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia: by Rajiv Ratna Panda, Technical Head / SARI/EI/IRADE. Conference on "Regional Energy Integration and Cross Border Energy Trade: A New Renaissance for Growth and Development of South Asia Region" 19th February 2020, Hotel Imperial, New Delhi, India
SAARC - Significant Environment/Climate Change Challenge

Fossil CO2 Emission by Sector-India (Mt CO2/yr) & Per Capita (t CO2/cap/yr)

Fossil CO2 Emission in Mt CO2/yr (% Share)
4 Nations - 60% Global Emission

Source: Climate Emergency CoP 25: India is the only major economy to be '2 degree compatible', Fossil CO2 and GHG emissions of all world countries 2019 Report - JRC SCIENCE FOR POLICY REPORT

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**INDIA POWER INSTALLED CAPACITY (MW) IN OCT. 2019**

- Total installed capacity: 364 GW
- Hydro: 14%
- Solar: 10%
- Coal + Lignite: 8%
- Gas: 7%
- Nuclear: 3%
- Wind: 2%
- Biomass: 3%

**RES (Hydro + Solar + Wind)** = 118 GW (32%)  
RES (Solar + Wind) = 68 GW (18%)  

**INDIA POWER INSTALLED CAPACITY (MW) IN 2030 **

- Total installed capacity: 831 GW
- Hydro: 36%
- Solar: 17%
- Coal + Lignite: 9%
- Nuclear: 2%
- Gas: 3%
- Wind: 1%
- Biomass: 3%

**RES (Hydro + Solar + Wind)** = 513 GW (62%)  
RES (Solar + Wind) = 440 GW (53%)  

* Including small hydro of 5000 MW and hydro imports of 4356 MW

**As per CEA-DRAFT REPORT ON OPTIMAL GENERATION CAPACITY MIX-2029-30, FEB 2019**
Rapid Expansion is envisaged.

43.8 GW of cross border Grid Interconnection by 2036.
South Asia Energy/Power Sector: Investment Requirements
India : National Infrastructure Pipeline, Released on Dec, 2019
India to Invest 1.4 Trillion USD (FY20-25)
Renewable energy share in consumption stands at ~9%, High AT&C losses of discoms currently at 8-41% (except J&K), Smart metering: <5% of meters installed as on June 30, 2018. Source: http://164.100.117.97/WriteReadData/userfiles/DEA%20DF%20IP%20Report%20Vol%201.pdf
Projected to require 1,390 billion US$ for expanding electricity generation (to add 750 GW of generation capacity).

Already committed and planned inter-grid connection, especially within India would require around 29 billion US$.

<table>
<thead>
<tr>
<th>Country</th>
<th>Investment (Generation) (Billion US$)</th>
<th>Investment (Interconnection)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>16.36</td>
<td>0.18</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>105.12</td>
<td>0.63</td>
</tr>
<tr>
<td>Bhutan</td>
<td>32.08</td>
<td>0.54</td>
</tr>
<tr>
<td>India</td>
<td>929.67</td>
<td>27.93</td>
</tr>
<tr>
<td>Nepal</td>
<td>10.75</td>
<td>0.00</td>
</tr>
<tr>
<td>Pakistan</td>
<td>276.96</td>
<td>0.00</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>18.67</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,390</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

Source: Projection as per the World Bank Report on "How Much Could South Asia Benefit from Regional Electricity Cooperation and Trade?"
South Asia: Future Energy Investment Opportunities

- De-carbonising Power Generation
- Cleaner and Efficient Public Transport
- Renewable Energy
- Electric Vehicle & Charging Infrastructure
- Natural gas, LNG and Region Gas Grid
- Modernising power grid, smart grid, smart utility
- Cross Border Hydro Power Projects and Cross Border Power Transmission
Regional Investment Framework and Guidelines for promoting investment in South Asian Power Sector & in Cross Border Electricity Trade Projects in South Asian Region
Regional Guidelines for investment framework

Opportunities

+ Liberal FDI Policies in all South Asian countries
+ Well defined PPP framework for infrastructure in most SA countries like Bangladesh, India and Pakistan
+ Independent electricity regulators in all SA, except Maldives

Challenges

- Time consuming process for dispute settlement and judicial processes
- Legal and dispute resolution mechanism is not very strong in most countries
- Issues, processes for land acquisition, environmental clearances and rehabilitation, leading to project delays
- Financial Viability of Infrastructure
- Lack of Deep energy markets
South Asia: Ease of Doing Business

Ranks of Subregions: Ease of doing business rank (DB20)

- **Organization for the...** 154
- **Sub-Saharan Africa** 140
- **South Asia** 118
- **Arab World** 118
- **Latin America and Caribbean** 116
- **Middle East and North Africa** 107
- **East Asia and the Pacific** 96
- **Europe and Central Asia** 54
- **European Union (EU)** 39
- **OECD High Income** 30

**South Asia-Ease of Doing Business Ranking -2020**

- Resolving insolvency: 104
- Enforcing contracts: 145
- Trading across borders: 109
- Paying taxes: 132
- Getting credit: 97
- Registering property: 142
- Getting electricity: 62.6
- Dealing with construction permits: 98
- Ease of doing business rank (DB20): 118

**Note/Source:** Values are Regional Average Rank. For more information, visit [https://www.doingbusiness.org/en/reports/regional-reports](https://www.doingbusiness.org/en/reports/regional-reports).

**South Asia & Arab: Ranks (Regional Average) 7th among regions (10) of World**

**Note/Source:** The ease of doing business ranking ranges from 1 to 190. Values are Regional Average Rank. For more information, visit [https://www.doingbusiness.org/en/rankings](https://www.doingbusiness.org/en/rankings).
Regional Guidelines for investment framework

1. Policy and Regulatory harmonization
2. Guarantees against Political and country risks
3. Regional dispute resolution and settlement mechanism
4. Streamline project approval and clearance process
5. Standardize contractual framework
6. Tariff rationalization for the hydropower projects
7. Access to innovative and cheaper sources of funding
8. Develop region specific financing instruments
9. Support private participation through innovative models
10. Regional institutional coordination mechanism
Points for Discussions

- Focusing on De-risking the Regional Energy Infrastructure Projects: Instruments and modalities.
- Strategy for Financing Cross Border Transmission Infrastructure: Business/Financing Models?
- What are the innovative market instruments/financing mechanisms for financing future energy system?
- Role of Government for fast tracking development?
- Concerns of Lender, private power project developers?
- Role of Private sector, Public private partnerships, Joint Ventures etc.?
- Modernising power grid and decarbonising power sector.
- Need of South Asia Regional Investment Facilitation Forum?
- How to accelerate the development of hydro power and mobilisation of investment?
Thank You

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rajivratnapanda@irade.org
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+91-9650598697
Investment Guidelines

1. Policy and Regulatory harmonization
   - Establish a Regional Regulatory body, Regional Electricity Regulatory Association to promote regional regulatory cooperation. This body will merely be an association of national regulatory institutions with no powers to intervene in regulatory matters in the region.

2. Guarantees against Political and country risks
   - Member countries to have guidelines for mitigating political risks such as nationalization, expropriation etc. for domestic and CBET power projects
   - Regional guidelines for leveraging available Instruments for political risks like MIGA

3. Regional dispute resolution and settlement mechanism
   - Develop guidelines for CBET projects for resolving disputes
   - Evolve regional consensus on conflict management and dispute resolution framework amongst member countries - Dispute resolution procedures, alternate Dispute resolution practices, arbitration in neutral third-country, Inter - Government’s agreements

4. Streamline project approval and clearance process
   - Prepare inventory of processes to be followed in member countries for CBET project approvals, etc
   - Member countries’ government to provide single window clearance for necessary approvals and licenses
   - Issues related to land, environment and R&R to be dealt with on priority basis
### Investment Guidelines

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>5</strong></td>
<td><strong>Standardize contractual framework for CBET</strong></td>
</tr>
<tr>
<td></td>
<td>• Standardized contractual documents (PPAs, TSAs, etc) based on commonly agreed regulatory guidelines for the region</td>
</tr>
<tr>
<td></td>
<td>• Evolve consensus on providing appropriate payment security mechanisms for cross border projects</td>
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<tr>
<td></td>
<td>• Member countries to have guidelines for foreign currency denominated PPAs to protect against currency risks, allow back to back currency swaps etc</td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>Tariff rationalization for the hydropower projects</strong></td>
</tr>
<tr>
<td></td>
<td>• Propose regulatory interventions for rationalization of tariffs for the hydropower projects to make them competitive in cross border transactions</td>
</tr>
<tr>
<td></td>
<td>• Long tenure loans with flexibility in repayments needs to be developed for the region</td>
</tr>
<tr>
<td><strong>7</strong></td>
<td><strong>Access to innovative and cheaper sources of funding</strong></td>
</tr>
<tr>
<td></td>
<td>• Attract concessional financing, low cost financing from MFIs, etc.</td>
</tr>
<tr>
<td></td>
<td>• Develop coordination mechanism for the domestic capital markets in the South Asian countries to promote liquidity and easy access to equity by private players</td>
</tr>
<tr>
<td></td>
<td>• Increased role of multi-lateral funding agencies in CBET projects</td>
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<tr>
<td><strong>8</strong></td>
<td><strong>Develop region specific financing instruments</strong></td>
</tr>
<tr>
<td></td>
<td>• Allows broad mass of institutional investors to gain access to green growth projects</td>
</tr>
<tr>
<td></td>
<td>• Establish a South Asian Regional Market Fund to offers long and medium term loans with fixed or variable rates to projects in the region</td>
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<tr>
<td></td>
<td>• Green Bonds to raise capital specifically for climate change and green growth related projects. Allow such bonds to be issued as structured notes mechanisms or other underlying derivatives</td>
</tr>
</tbody>
</table>
Investment Guidelines

Support private participation through innovative models

- Establish a clear, predictable and legitimate institutional framework supported by competent and well-resourced authorities
- Use the budgetary process transparently to minimize fiscal risks and ensure the integrity of the procurement process
- Ground the selection of Public-Private Partnerships in Value for Money

Regional institutional coordination mechanism

- Setting up of coordinating mechanism for the investment promotion in the region under existing SA institutions
- Develop and Implement guidelines for investments, project identification and prioritization, coordinating investments in CBET
Project Risk assessment matrix

Policy and Regulatory Risk
- Transparency in policies of award, incentives & benefits
- Independent regulatory framework
- Conflict management

Political Risk
- Political risk – expropriation, war
- Change in Law, taxation
- Currency devaluation, inconvertibility, or restrictions
- Breach of contract

Allocation of risk and return

Developer’s Risk
- Licenses and clearances
- Land acquisition
- Financial closure
- Currency fluctuation

Utility/Off-taker Risk
- Financial Condition
- Payment security mechanism
- Credit Rating
Evaluation framework to mobilize investments

1. Investment Promotion
   - Foreign Direct Investment (FDI) framework

2. Investment Promotion
   - Investment models for CBET

3. Taxation Policies and Incentives
   - Taxation Policies and Incentives

4. Investment Protection
   - Policy and regulatory frameworks

5. Risk Evaluation Matrix
   - Legal and Dispute resolution

6. Project Development Support - Land, Environment, R&R
   - Project Development Support - Land, Environment, R&R

7. Domestic Capital Markets
8. Financing Instruments
9. Institutional Framework

- Risk Evaluation Matrix:
  - Policy and Regulatory Risk
  - Political Risk
  - Developer's Risk
  - Utility/Off-taker Risk
Regional investment framework for CBET is still evolving

**Investment Promotion**
- **Foreign Direct Investment (FDI) framework**
  - FDI Policies are quite liberal across all countries
  - Lacks regional framework for CBET

**Policy and regulatory frameworks**
- Domestic regulatory frameworks at various levels of evolution (Nepal-Min, India-Max)
- Lacks harmonization at regional level

**Legal and Dispute resolution**
- Bilateral mechanism and contractual arrangements relied upon
- Lacks regional forum for resolving disputes

**Taxation Policies and Incentives**
- Regional initiatives under SAARC framework
- Domestic policies still to be harmonized

**Project Development Support - Land, Environment, R&R**
- Most project implementation delays caused due to local issues
- Regulatory frameworks are not very strong in many countries

**Investment Protection**
- **FDI Policies** are quite liberal across all countries
- Lacks regional framework for CBET

**Investment Facilitation**
- **Domestic capital markets**
  - Domestic capital markets in most countries except India lack depth for large investments
  - ECB comes with stringent conditions

**Financing Instruments**
- Low cost financing instruments (Green bonds) have not been utilized
- Lacking in innovative debt instruments for cross border hydro projects

**Institutional Framework**
- Lack of harmonization of technical and commercial frameworks increases risk
- Power trading framework still to be institutionalized in most SAC
South Asia: Ease of Doing Business Ranking 2020 (1-190)

Note/Source - The ease of doing business ranking ranges from 1 to 190. Values are Regional Average Rank. - https://www.doingbusiness.org/en/rankings

Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia: "by Rajiv Ratna Panda, Technical Head / SARI/EI/IRADE::Conference on "Regional Energy Integration and Cross Border Energy Trade: A New Renaissance for Growth and Development of South Asia Region" 19th February 2020, Hotel Imperial, New Delhi, India

South Asia: Country wise ranks varies among countries
Regional Investment Framework for Mobilizing Investment in Energy Infrastructure projects in South Asia

Key Issues and Mitigations

Issues
- Political instability
- High transaction cost
- Transparency & predictability
- Non-discrimination
- Change of law
- Public governance

Policy and country
- Political insurances
- International investment agreements (BIT, FTA)
- BOO, and BOOT business models under PPP
- Guarantee against expropriation

 Policy and Regulatory
- Standardize contract documents
- Alternative dispute resolution mechanisms
- Regional institution
- Capacity building

Project Development
- Standard technology specific project development guidelines
- Single window clearance
- Regional skill development center

Off-taker
- Currency risk (exchange rate, convertibility)
- Tax policies
- Corporate governance
- Liquidity issues, debt financing