

**PRESENTATION TO THE WORLD BANK MISSION ON
REGIONAL INTEGRATION STUDY: APRIL 26, 2013**

SAARC AGENDA FOR ENERGY INTEGRATION

- Vision to Promote Energy Security in South Asia

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SAARC ENERGY CENTRE

PRESENTATION PLAN

1. Rationale for South Asia Energy Cooperation
2. Brief Introduction to SAARC Energy Centre
3. SAARC Energy Ring
4. Activities in Energy Integration
5. Proposed SAARC Inter Governmental Framework Agreement (IGFA)

SOUTH ASIA ENERGY OUTLOOK

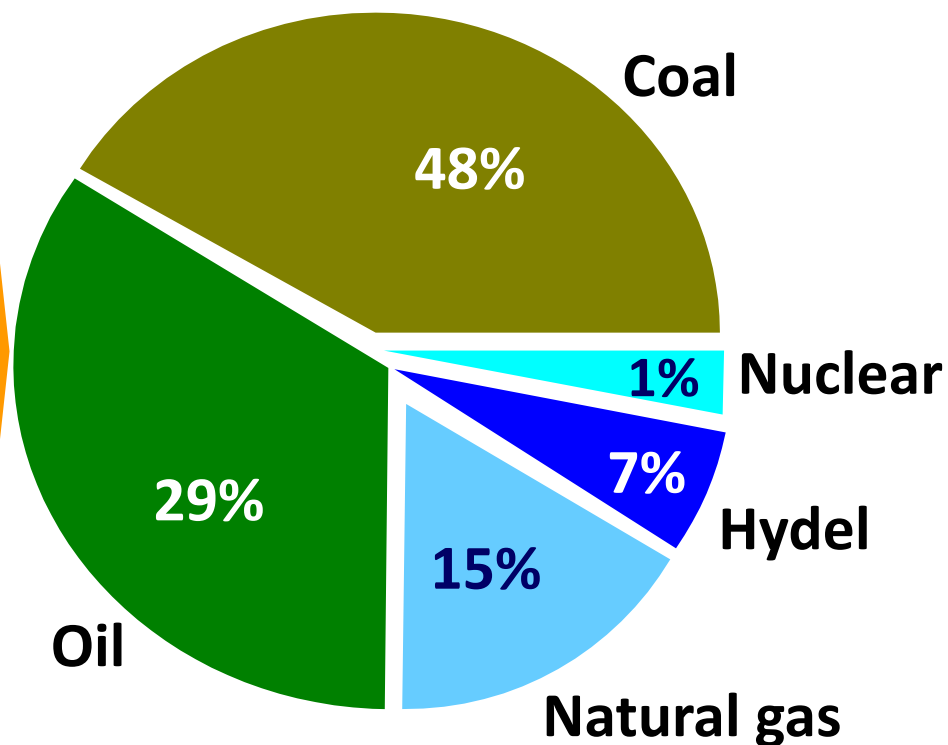
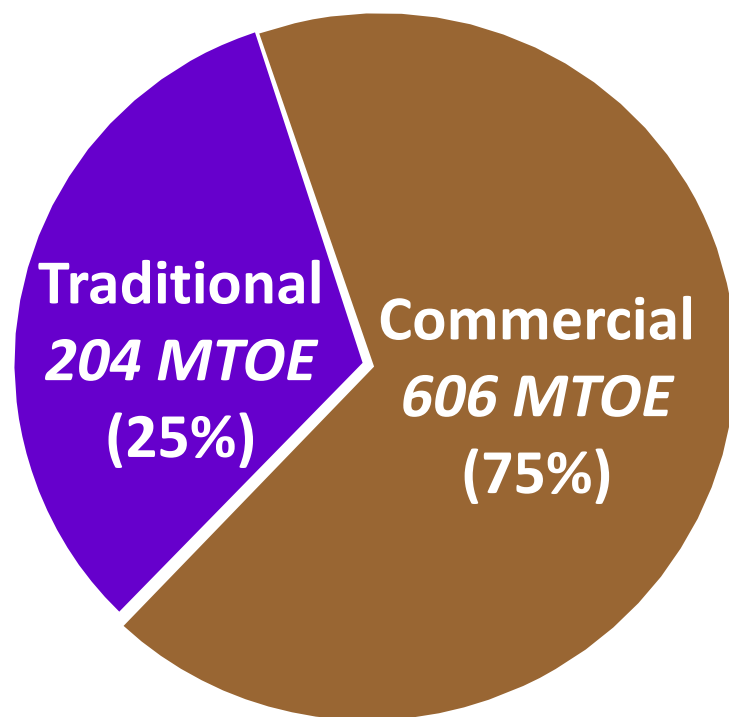
- 1.6 billion people
- 500 million live below \$1 per day poverty line
- All countries of South Asia
 - Oil importing
 - Energy deficit (except Bhutan)



OVERALL ENERGY MIX IN SOUTH ASIA

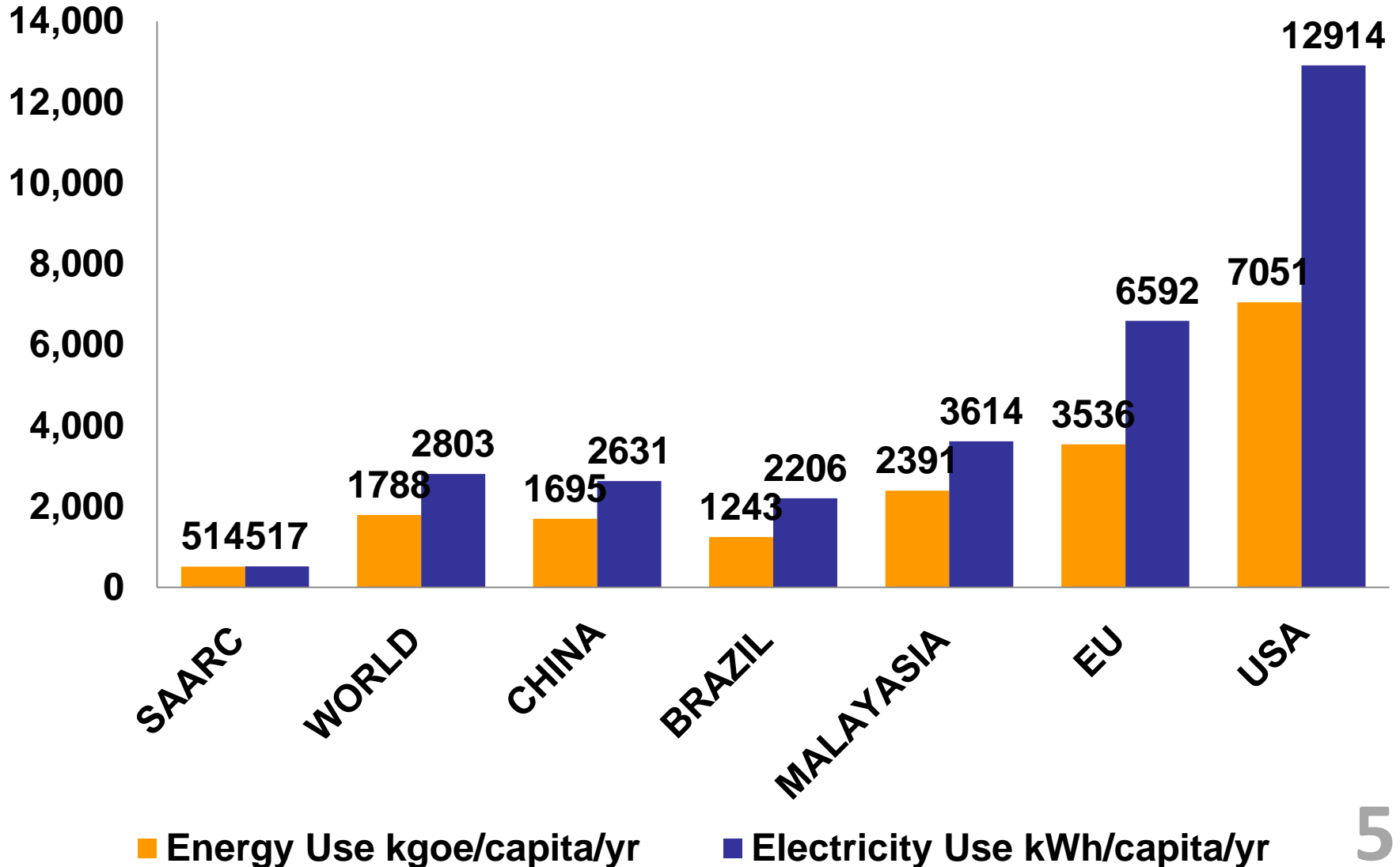
Total Energy: 810 MTOE

Commercial Energy: 606 MTOE



(MTOE - Million tonnes of oil equivalent)

ENERGY POVERTY OF SAARC REGION



RATIONALE FOR ENERGY TRADE

- Nepal and Bhutan together have over 100 GW of high quality (long term) hydropower potential and comparatively small local demand
- Bangladesh is reliant on gas for more than 80% of its generation:
 - Rapidly consuming its gas reserves and yet facing serious power shortages
 - Power demand in Bangladesh is expected to triple over the next 10 years

RATIONALE FOR ENERGY TRADE

Continued.....

- Pakistan is facing serious power shortages between 4000 to 6000 MW at peak demand. Hydro is seasonal, natural gas production is stagnant and oil is expensive
- Sri Lankan power demand has exceeded the capacity of its viable major hydropower development options.
 - It is embarking on thermal power projects that run on imported coal

RATIONALE FOR ENERGY TRADE

Continued.....

- India has a serious balancing act to play between growth, reliable power supply and emissions
 - The next decade presents far greater challenges particularly for provision of primary fuel
- Successful development of power exchanges in India over the last three years has laid a strong platform for cross-border power trade
- Transmission capability within India has improved remarkably over the last decade through an extensive expansion of the high voltage grid

SAARC ENERGY CENTRE (SEC)

Establishment	In the year 2006 at Islamabad, Pakistan
Objective	To initiate, promote and facilitate cooperation in energy sector of SAARC Member States for the benefit of all
Funding by	SAARC Member States; supervised by a Governing Board comprising all Member States
Technical Resources	<ul style="list-style-type: none">• Professional staff selected from Member States• Expert services obtained through outsourcing
International Networking	ADB, WB, UN, ESCAP, ASEAN, Japan, US, Germany

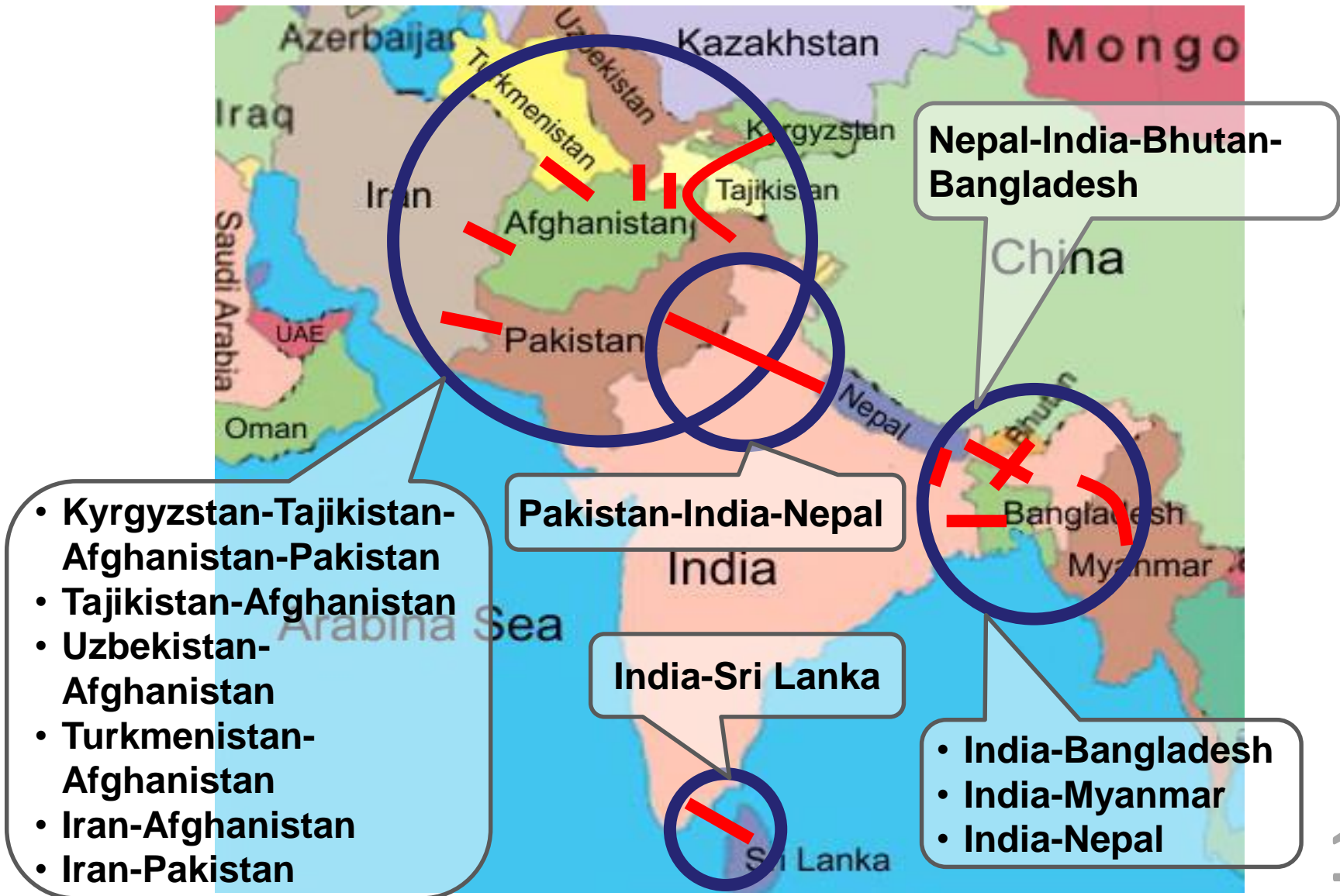
SAARC INSTITUTIONAL MECHANISM FOR ENERGY COOPERATION

- SAARC Summit of heads of State and Government
- Ministerial Level Energy Forum
- Inter-Governmental Working Group on Energy
- Expert Groups for different energy commodities
- SAARC Energy Centre

MATERIALIZATION OF SAARC ENERGY RING - SENERING

- Visualized by SAARC Leaders at the 2004 Islamabad Summit
- Vision translated into reality by SAARC Energy Centre
- Four SAARC Expert Groups engaged :
 - Oil and Gas
 - Electricity
 - Renewable Energy
 - Technology Transfer (including Coal and Energy Efficiency)

SENERING – 1. POWER GRID



SENERING – 2. GAS GRID



STUDIES ON SENERING: SAARC-ADB COOPERATION

- SAARC Regional Energy Trade Study (SRETS) identified four regional or sub-regional trade options:
 - i. Power Market
 - ii. Petroleum Refinery
 - iii. LNG Terminal
 - iv. Power Plant
- A recent ADB funded study on South Asia Regional Power Exchange has identified various opportunities in electricity trade

PLANNED POWER GRID INTERCONNECTIONS

	Interconnection	Capacity (MW)	Est. Cost (Million USD)	Annual Benefit (Million USD)
1	India-Bhutan	2,100	140-160	1840
2	India-Nepal	1,000	186	105
3	India-Sri Lanka	500	600	186
4	India-Bangladesh	500	192-250	145-389
5	India-Pakistan	250-500	50-150	335-491
6	CASA 1000	1,000	970	906

NEXT STEPS FOR SENERING

PROPOSED NEW STUDIES BY ADB

1. **Detailed Scenario Analysis on Regional Interconnection**
2. **Study on Regional Transmission Master Plan**

SEC's ACTIVITIES ON ENERGY INTEGRATION

1. Study on “**Developing Integrated Energy Policies in South Asia**”, *March 2008*
2. Study on “**Regional Hydropower Plants- Opportunities in Bhutan and Nepal**”, *August 2010*
3. Study on “**Regional Electricity Trade Legal Frameworks**”, *September 2010*
4. Study on “**Review of Electricity Laws and Regulation of the SAARC Member States**”, *April 2012*
5. Capacity Building Workshop on “**Cross Border Electricity Interconnection**” in Bhutan, *May 2012*

SEC'S PLANNED ACTIVITIES DURING 2013 ON ENERGY INTEGRATION

1. SAARC Seminar on **Participation of Private Sector in Regional Power Trade** in New Delhi, India on 26-27 August 2013
2. SAARC Dissemination Workshop on **Review of Electric Laws and Regulatory Frameworks of Member States**, Colombo in Sri Lanka on 24-25 September 2013

PROPOSED INTER-GOVERNMENTAL FRAMEWORK AGREEMENT FOR COOPERATION IN ELECTRICITY

- Draft of “**SAARC Inter-Governmental Framework Agreement for Energy Cooperation (Electricity)**” endorsed by Energy Ministers Meeting in Dhaka, September 2011, is under consideration of SAARC Member States
- Ultimate objective is to create a **SAARC Market for Electricity (SAME)**

17-POINT AGENDA OF PROPOSED IGFA

1. Unrestricted cross-border electricity trade
2. Commercial negotiation of PPAs
3. Exemption from levy of import/export duty
4. Sharing of technical & commercial data/information
5. Encourage process of reform, restructuring in the power sector
6. Joint planning of the cross border grid interconnection

17-POINT AGENDA OF PROPOSED IGFA

Continued.....

7. Build, own, operate & maintain associated transmission system
8. Enter into Transmission Service Agreements
9. Joint development of the grid operational procedures
10. Non-discriminatory open access to the transmission grids
11. Engagement of regional traders in the cross border electricity trader
12. Participation in power exchanges for collective trading

17-POINT AGENDA OF PROPOSED IGFA

Continued.....

13. Transfer of technology among the Member states
14. Networking of energy sector experts and professionals
15. Knowledge sharing and joint research in the specified fields
16. Promote sourcing of relevant equipment in the SAARC region
17. Development of an enabling environment for potential regulatory issues

SAARC ENERGY CENTRE
MITIGATING ENERGY POVERTY THROUGH
FOSTERING ENERGY COOPERATION
WITHIN AND ACROSS SOUTH ASIA
FOR A BETTER TOMORROW

THANK YOU FOR YOUR ATTENTION

CURRENT PROJECTS OF SEC

ENERGY EFFICIENCY

1. SAARC Action Plan on Energy Conservation & Efficiency
2. Gender-Energy nexus
3. Improved Cooking Stoves: “*SAARC Chullah*”
4. Energy efficiency in brick kilns
5. Capacity building of Energy Auditors/Managers

CURRENT EFFORTS IN ENERGY TRADE

Continued.....

1. Study on energy trade and power exchange
2. Study on harmonization of electricity laws
3. Study on energy pricing mechanism

CURRENT PROJECTS OF SEC

Continued.....

BEST PRACTICES

1. Lessons learnt in renewable energy technologies
2. Experience sharing of construction, operation and maintenance of LNG facilities
3. Power generation from lignite

CURRENT PROJECTS OF SEC

Continued.....

POWER

Promoting hydropower development

1. Feasibility Study and workshop for regional coal based power plant
2. Study on cogeneration in sugar and paper industries
3. Study on rural electrification policies

CURRENT PROJECTS OF SEC

Continued.....

ENERGY RESOURCES

1. SAARC Energy Data Bank
2. Geothermal energy potential of South Asia
3. Promoting extraction of non-conventional gas