



REGIONAL COOPERATION STRATEGY IN ENERGY SECTOR IN CAREC COUNTRIES

Discussions at
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Guidance Received from SOM for Preparation of Sector Strategies

- March 2007 SOM said sector strategies should:
 - Provide a long term vision/shared objectives;
 - Include specific and measurable actions;
 - Outline policy actions required;
 - List priority investments possible sources of Finance;
 - Be clear, practical and project-oriented; and
 - Be developed with the close involvement of CAREC countries



Process of Development of CAREC Energy Sector Strategy

- World Bank:
 - provided guidelines and samples to each country to prepare their respective Strategic Action Plans
 - Followed up vigorously and rigorously to receive the information
- Received information from all CAREC countries
- World Bank team with ADB funded consultant pulled together into a Strategy Document
- This was discussed at the ESCC in Sep. 2007
- Received written comments generally endorsing the Strategy
- The Strategy so developed complies closely with the guidance received from SOM



Country Background

- Geographical aspects - landlocked
 - Regional cooperation is an imperative
- Most of them are 'newly independent'
 - Less developed political; civil service and business environments
- Stage of Economic Development of each
 - Different pace; different status; different focus
- Infrastructure Status
 - Highly developed in FSU; not so well in AF
 - Criss-crosses neighbors



Current Regional Interdependencies

| | Azerbaijan | Kazakhstan | Kyrgyz Republic | Tajikistan | Uzbekistan | Afghanistan | China | Mongolia |
|-----------------|---|---|--|--|--|------------------------------|--|----------|
| Azerbaijan | xx | Kazakh Oil and gas exports through BTC and BTE under discussion. Littoral agreements in place | | | | | | |
| Kazakhstan | Kazakh Oil and gas exports through BTC and BTE under discussion. Littoral agreements in place | xx | Imports Kyrgyz hydro power. Transit for power exports north by swap arrangements. Water sharing agreements | Import Tajik hydro power. Water sharing agreements | Import of Uzbek gas/power. Water sharing agreement | | Export of Kazakh oil to China | |
| Kyrgyz Republic | | Imports Kazakh oil, coal and gas. Export Power to Kazakh | xx | Export of power. Electricity transit north-south in relation to Tajikistan | Import of Uzbek oil, coal and gas. Export of electricity to Uzbekistan | | Power exports to China | |
| Tajikistan | | Export power to Kazakhstan | Transit for Power exports north | xx | Tajik Power transit. Import of Uzbek oil and gas | Export of Tajik Power To AFG | | |
| Uzbekistan | | gas exports/power transit/ water agreements | Exports of Uzbek gas | Exports of Uzbek gas/power transit/water agreements | xx | Export of Uzbek power | Oil and gas exploration concessions to China | |
| Afghanistan | | | | Imports of Tajik power | Import of Uzbek power | xx | | |
| China | | Energy Investments in Kazakhstan. Import of Kazakh oil | | Chinese financing of North-South Power line and hydro power project | Investments in UZB. Oil and gas exploration | | xx | |
| Mongolia | | | | | | | | xx |



Issues and Challenges

- Political - Many are nascent states
- Geographic - landlocked
- Resource distribution - skewed nature
- Necessity of agreements with neighbors
- Financial and economic
 - Current weaknesses;
 - Necessary to find new markets
 - Investments and financing
- Environmental challenges
- High energy intensity
- Low capacity for analysis and decision making



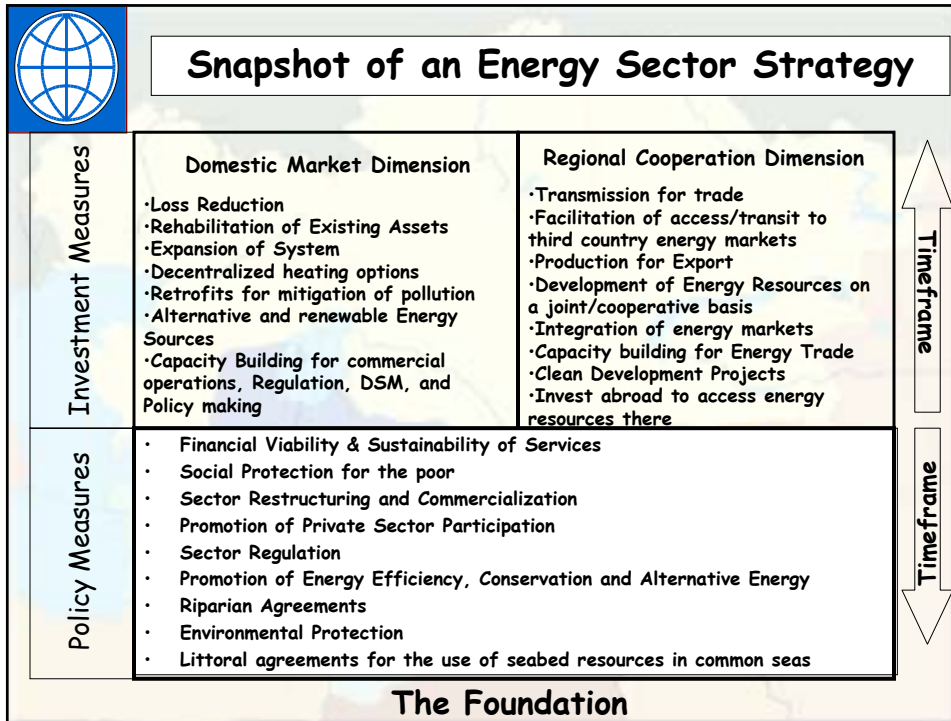
Long Term Vision for Energy Sector

- Vision needs to be country anchored
- For the energy sector, the objectives are:
 - The overarching objectives of the energy sector development of the Government of [Country X] are to: (a) ensure adequate volumes of commercial energy supplies are made accessible to every [physical and juridical] citizen in a reliable, financially sustainable and environmentally sound manner; and (b) enhance economic growth through energy trade



The case for regional cooperation for energy sector strategy is very strong

- | | |
|---|---|
| <ul style="list-style-type: none">• Necessity for Regional Cooperation<ul style="list-style-type: none">- Existing dependencies;- Least cost approach- New Opportunities | <ul style="list-style-type: none">• Forms of Cooperation<ul style="list-style-type: none">- Market relationships;- Transit relationships;- Investment relationships;- riparian relationships;- littoral relationships;- Knowledge sharing |
| <ul style="list-style-type: none">• Benefits of Cooperation<ul style="list-style-type: none">- New Market Opportunities;- Transit revenues- Least cost development - sharing resources | <ul style="list-style-type: none">• Pre-conditions for Successful cooperation<ul style="list-style-type: none">- Win-win for participants;- no excessive dependence on one another;- diversify dependencies;commercial orientation |



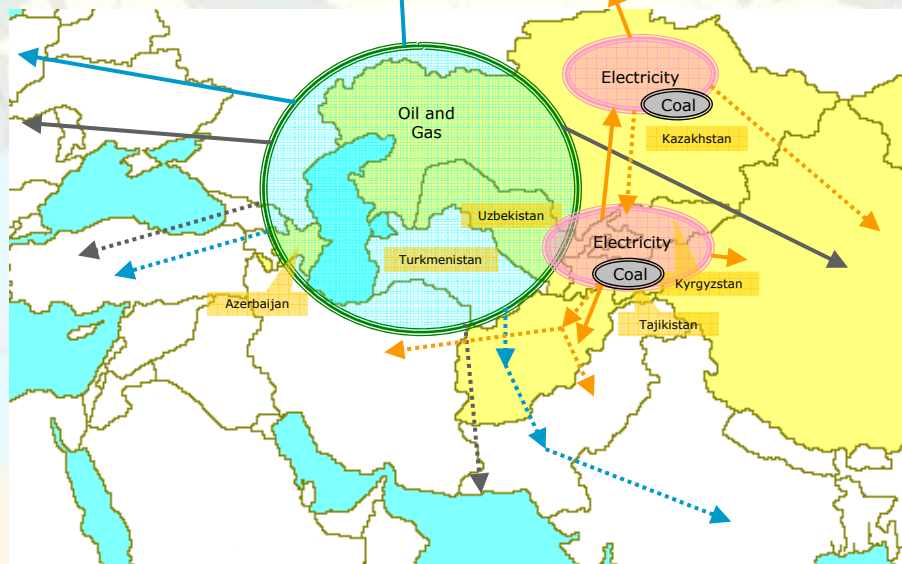


Studies to support/promote Regional Cooperation

| Study | Outcome | Time frame |
|---|---|------------|
| Study Mongolia's potential as an energy transit country. Cost: \$ 300,000 | Promotion of energy trade between Russia and China and also possibly Korean peninsula | short term |
| Study of options to Mongolia to access Kazakh or other Central Asian gas (via China or Via Russia). Cost \$ 300,000 | Promotion of energy trade between Kazakhstan and Mongolia | short term |
| Study of the potential of the Xinjiang province to emerge as a major energy transit province. \$ 250,000 | A detailed knowledge (of the energy potential, status and outlook (demand and supply) and its links to the east) of this province will promote further trade between Central Asia and China | short term |
| A study of China's role as a major investor in the energy resource development of Central Asia and as the market for Central Asian energy exports. \$ 350,000 | The Study will enable Central Asia to make effective use of the potential of China in this regard. | Short term |
| Study of the options for the export of Kazakh hydrocarbons to the west, east and the south. Cost: \$ 500,000 | Diversification of export markets | Short term |
| A study of options for the movement of primary energy commodities in the CAREC region. Cost: \$ 500,000 | Diversification of export markets | Short term |



Options for Movement of Primary Energy Commodities





Investment and Financing

| Item | Total Cost | Self Financing | IFI Financing | Other Sources |
|-------------------|------------|----------------|---------------|---------------|
| Investments | 18,481.1 | 3,942.6 | 3,479.1 | 11,059.4 |
| Capacity Building | 12.0 | 1.2 | 5.4 | 5.4 |
| Studies | 2.2 | 0.3 | 1.0 | 0.9 |
| Total | 18,495.3 | 3,944.1 | 3,485.5 | 11,065.7 |

- Self Financing level of about 20-30% is a necessity for maintaining financial viability and leverage debt and project finance
- Other sources include private and commercial as well as bilateral sources



Principal Drivers of Regional Cooperation in Energy

- High Demand for CAREC countries' resources
- High global energy prices
 - ambitious projects become more attractive
- Proximity of major markets
 - China, Kazakhstan, Russia, South Asia, Turkey
- Chinese and Russian investment and financing
- Other countries also stepping out as investors
- Relatively small markets vis-à-vis size of projects in several CAREC countries



Suggested Multi-dimensional approach to Implement the Strategy

| Central Asia - China | Central Asia - South Asia | Intra-Central Asia |
|---|--|---|
| Completion of Kekeyak-Kumkol section of the Kazakhstan-China oil pipeline | Kazakhstan Joining Uzbekistan and Turkmenistan in Central Asia Oil Pipeline project to access Gwadar deep sea port in Pakistan | Gas Flaring Reduction in Kazakhstan and Azerbaijan and elsewhere in the region for want of gas gathering and transmission facilities. |
| China-Uzbekistan partnership in surveying and drilling for oil and gas. | Kazakhstan and Uzbekistan joining Turkmenistan in the Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline project | The second phase of the North South Electricity Transmission Line Project in Kazakhstan |
| Kazakhstan- China gas pipelines | Projects to create the Central Asia - South Asia Regional Electricity market (CASAREM) | Rehabilitation of the Tashkent-Bishkek-Almaty (TBA) gas pipeline |
| Study of the potential of the Xinjiang province to emerge as a major energy transit province | Kazakhstan and Uzbekistan joining CASAREM project as exporters of thermal power | Studies on DSM and Retail price adjustment for gas in the light of steeply rising gas prices in the region |
| A study of China's role as a major investor in the energy resource development of Central Asia and as the market for Central Asian energy exports | A study on possibilities for movement of primary energy commodities from Central Asia | Study on Mongolia's potential as an energy transit country |

Two additional dimensions: Central Asia-Russia; and Central Asia-EU also need to be factored in



Possible Regional Cooperation Imperatives

| | Azerbaijan | Kazakhstan | Kyrgyzstan | Tajikistan | Uzbekistan | Afghanistan | China | Mongolia | Other Countries |
|-----------------|--|---|--|---|--|------------------------|---|---------------------------------------|--|
| Azerbaijan | xx | Flow of Kazakh oil and gas through BTC and BTE pipelines | | | | | | | Flow of Turkmen oil and gas through BTC and BTE pipelines. Electricity trade with Russia, Georgia and Iran |
| Kazakhstan | | xx | Import of Kyrgyz hydropower. Investment in Kantarata Hydropower. Export of coal and gas to KYR | | Import of Uzbek gas for Southern Kazakh provinces | | Export of Kazakh oil, gas and possibly thermal power to China | | Kazakh oil, gas and power exports to Russia. Power exports through CASAREM. Join TAPI project |
| Kyrgyzstan | | Transit for power flow between Kazakh and Tajik systems | xx | Power exports to CASAREM through Tajik system | Import of Uzbek gas | | | | Power exports through CASAREM. Frequency support to CAPS |
| Tajikistan | | Transit for Kazakh power for CASAREM | Transit for Kyrgyz Power for CASAREM | xx | Import of Uzbek gas | Export of Power to AFG | Possible export of hydropower | | Export to CASAREM. |
| Uzbekistan | | Export Gas to South Kazakhstan | Export gas to Kyrgyzstan | Export of gas to Tajikistan. Power transit. | xx | Export of power to AFG | Export of oil and gas to China | | Join TAPI project. Russian imports of Uzbek gas |
| Afghanistan | | Potential for power imports through CASAREM | Potential for power imports through CASAREM | Direct power imports and imports via CASAREM. Possible gas exports to Tajikistan | Power imports from Uzbekistan | xx | | | Transit for TAPI pipeline and CASAREM power line |
| China | Energy investments | Energy exploration, production and pipeline investments and oil and gas imports | Potential power and imports | Investments in coal, hydropower and North-South power transmission. Possible power imports. | Investments in the oil and gas sector. Import of transit gas from Turkmenistan | | xx | Potential power imports from Mongolia | Oil, gas and power imports from Russia through Mongolia as transit country. |
| Mongolia | | | | | | | Potential power exports to China | xx | Become a transit country for energy flows between Russia and China |
| Other Countries | Power exchange with Georgia, Iran and Russia. Oil and gas exports to Turkey and further to the West Europe | Energy exports to and via Russia. Possible access to a Persian Gulf port and a Mediterranean port | Power imports via CASAREM | Power imports via CASAREM | Gas imports by TAPI project. Russian imports of Uzbek gas | | Russian export of gas and power to China | | xx |



Performance Indicators

| No. | Performance Indicator | 2006 Base line data | Targets for: | | |
|-----|--|------------------------------|--------------|------|------|
| | | | 2010 | 2015 | 2020 |
| 1 | Agreements reached (Riparian ^[1]) | | | | |
| 2 | Agreements reached (Energy trade) | | | | |
| 3 | Agreements reached (Energy transit) | | | | |
| 4 | Agreements reached (Littoral ^[2]) | | | | |
| 5 | Energy intensity | | | | |
| 6 | Volume of energy Investment funds raised from private investors (\$ m) | | | | |
| 7 | Volume of energy Investment funds raised from IFIs (\$million) | | | | |
| 8 | Volume of energy Investment funds raised from commercial sources (\$m) | | | | |
| 9 | Volume of energy Investment funds raised from self financing | | | | |
| 10 | Percentage of electricity demand met by imports | | | | |
| 11 | Percentage of Gas demand met by imports | | | | |
| 12 | Volume of energy exports and imports for gas | | | | |
| 13 | Volume of energy exports and imports for oil | | | | |
| 14 | Volume of energy exports and imports for electricity | | | | |
| 15 | Volume of energy exports and imports for coal | | | | |
| 16 | Contribution of the energy sector to fiscal revenues | | | | |



Success Factors For Sustainable Regional Cooperation in Energy

- Strong Political Will
- Commercial Orientation
 - Private Participation will ensure this
- Creation of specific Legal and Regulatory Framework
 - for each cooperation venture
 - Based on international conventions and practices
- Respect for Regional/Global Commons
 - Water resources; environment; climate change; Littoral space;
- These above factors are also risk mitigants



Looking forward to discussion and
further guidance from SOM?

Thank You Very Much