

The 3rd IAEE Asian Conference

“Energy and Environmental
Cooperation in Asia”

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Thanks for invitation

- ❁ It is a pleasure to participate in the IAEE conference on a very timely and extremely important theme of:
- ❁ Growing Energy Demand, Energy Security and the Environment in Asia: Challenges under enormous uncertainty

Our world today

- ❁ World is still recovering from worst global financial crisis.
- ❁ Shift in global economic power as Africa and Asia emerging as new engines of growth.
- ❁ Widening and deepening impact of economic, fuel and food shocks to populations in world,
- ❁ Revolution/rebirth of democratic movements in North Africa/Middle East, “Arab Spring”.

Climate Change

- ❁ Climate change threatening to make earth less habitable and life more hazardous.
- ❁ Sea levels are rising, forests being destroyed, and over 2 billion people face water shortages.
- ❁ Rising incidence of “mega-disasters,” such as earthquake in Haiti, flooding in Pakistan and Thailand, triple disaster (earthquake, tsunami and nuclear radiation) in Japan, with huge loss of lives, livelihoods and development.

New global energy order

- ❁ World is at crossroads of new energy order as existing global energy supply systems unable to cope with growing energy demand in world.
- ❁ Major economies facing tremendous environmental pressure to minimize fossil fuel consumption and energy-related emissions,
- ❁ Clean energy sources are increasingly preferred



Unexpected developments

- ❁ “Arab Spring” and Fukushima disaster represent two different types of challenges to two of most important energy sources in world today, namely petroleum and nuclear energy.
- ❁ These two energy sources have so far enjoyed significant importance in global primary energy mix.

Challenges for Asia Region

- ❁ Asia is set for expansion of economy, population and urbanization – all of which mean higher energy consumption in Asian region, especially in China and India
- ❁ At same time, substantial proportion of population in Asia is poor, some at lowest level of per capita energy use in world
- ❁ Poor are affected by supply system shortfalls and are unable to pay for limited services available
- ❁ Asian countries need to find ways to address these issues comprehensively if they are to join ranks of more developed and prosperous countries

Challenges Contd.

- ❁ Meeting energy needs of Asia requires an understanding of current global energy situation: e.g. available resources, their utilization, prospects of meeting future demand, & energy, environment and poverty linkages
- ❁ In view of limited energy supplies and financial resources, realistic objectives should be quantified; one way to achieve them would be to incorporate them into each country's activities related to MDGs
- ❁ This way, countries of region may be able to achieve a certain minimum HDI level which may be lower than standard but still an improvement in living conditions and poverty levels

Global oil price fluctuations

- ❁ As world's population grows and emerging economies expand rapidly, global demand and competition for energy intensifying.
- ❁ It is driving up price of world's finite oil resources, which are concentrated mostly in politically unstable countries.
- ❁ Pace of global warming makes it clear future global economic growth cannot follow same fossil-fuel-based path that led to earth pollution/eco-degradation.

Move to low carbon economies

- ❁ Emerging economies should not repeat same mistake; Developing countries need access to energy options with focus on investing in renewable energy resources, eco-friendly infrastructure and energy efficiency.
- ❁ World needs transition to low carbon economies and to enhance adaptive capacities of vulnerable communities through financing mechanisms and technological resources.

Renewable energy sources

- ❁ China and India, with huge populations, face additional challenge of ensuring that basic needs of extremely poor for cooking and lighting are met without causing adverse global environmental impacts
- ❁ Non-fossil fuel e.g. solar, wind power, ethanol, bio-fuel and nuclear energy are gaining renewed momentum because of energy, environmental and national security concerns

India's National Action Plan on Climate Change (NAPCC)

- ❁ India's remarkable economic success story goes hand-in-hand with serious issues of sustainable development.
- ❁ To address these challenges in a holistic manner, India launched in 2008 its first National Action Plan on Climate Change (NAPCC)

Missions under NAPCC

- Eight National Missions established
 - Solar
 - Enhanced Energy Efficiency
 - Sustainable Habitat
 - Water
 - Sustaining the Himalayan Ecosystem
 - Green India
 - Sustainable Agriculture
 - Strategic Knowledge for Climate Change



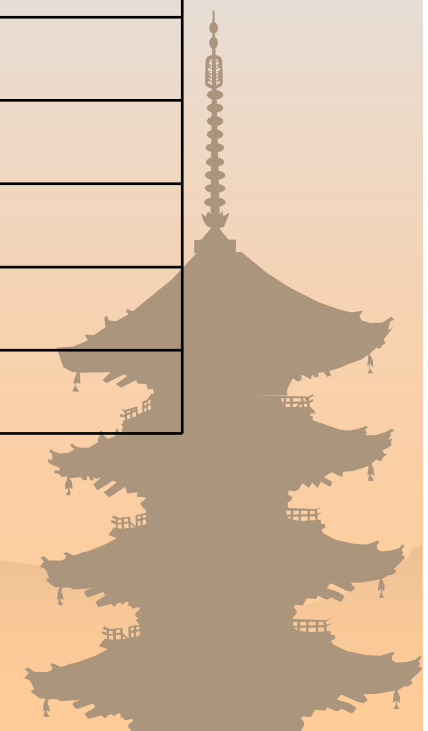
Principles of NAPCC

- ❁ Inclusive and sustainable development strategy
- ❁ Accelerated deployment of appropriate technologies for mitigation and adaptation
- ❁ Innovative market, regulatory, and voluntary mechanisms
- ❁ Effective linkages with civil society and public-private partnerships
- ❁ International cooperation for R&D, technology transfer and global IPR regime

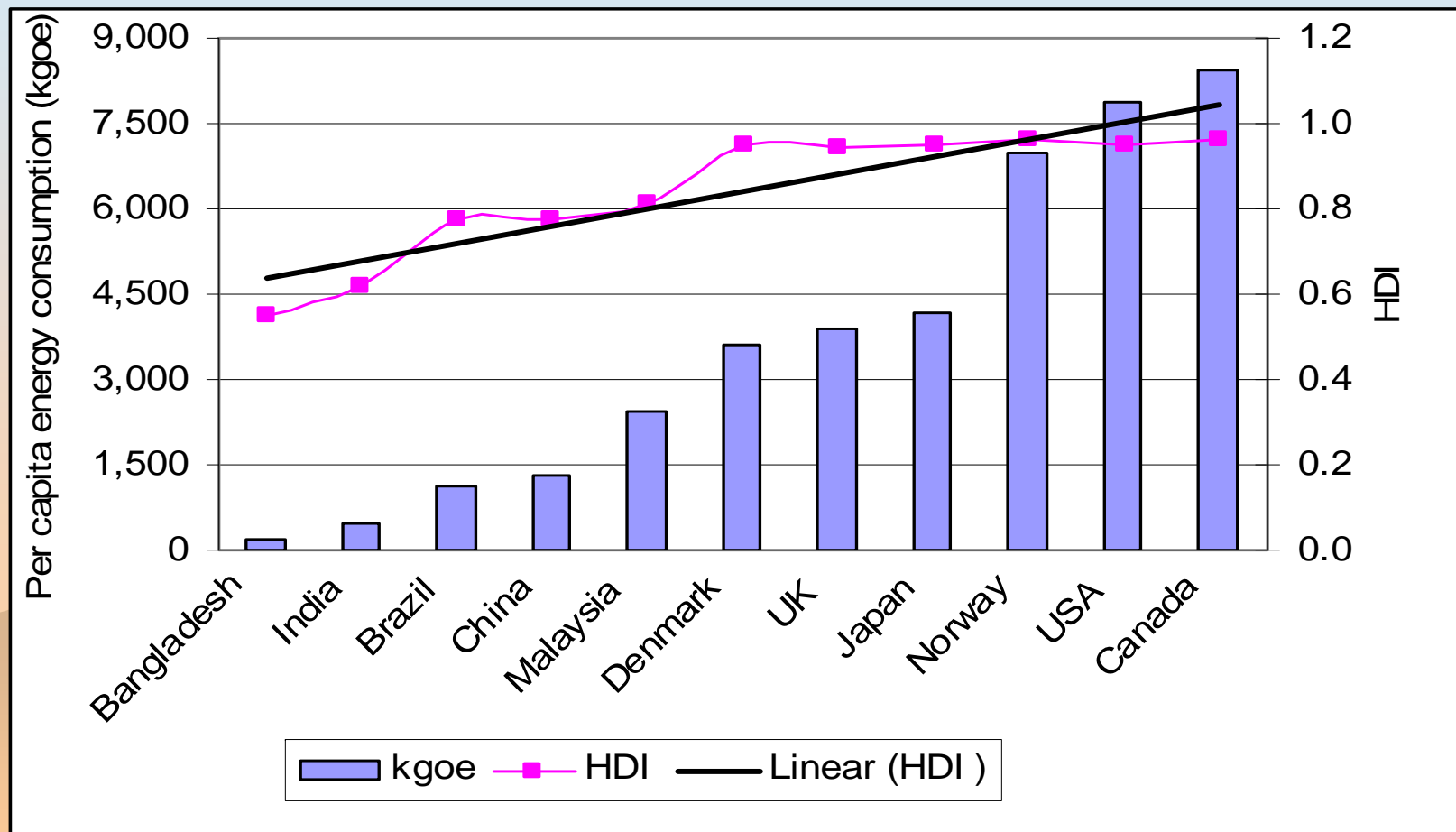


India's GHG emissions vis-à-vis other countries

Country	Per capita carbon-dioxide emissions (metric tons)
USA	20.01
EU	8.40
Japan	9.87
China	3.69
Russia	11.71
India	1.02
World Average	4.25



Energy is Critical For Development and Improving HDI



People still living in darkness

- ❁ For any nation wanting to grow in economic and social terms, sufficient and efficient electricity power generation must be readily available for consumers, as electricity is a basic and necessary public service.
- ❁ We should not forget that 1.3 billion people in world, with large contingent in Asia, including India, still have no access to electricity at all.
- ❁ In India, for over 75% rural and 22% urban households, wood is primary energy source for cooking

Lighting a Billion Lives (LaBL)

TERI's LaBL focuses on rural communities to displace kerosene lanterns with solar lighting



Program already
in operation in
around 300
villages in India



Overpopulation in developing countries

- ❁ Rapid population growth is linked to issue of environmental security through impact people have on earth's life-supporting resources.
- ❁ In developing countries, environmental pressure is linked to extreme poverty, and people moving from rural areas to cities
- ❁ Cities cannot provide jobs, homes, water, sanitation and other basic services – most such cities are in developing world

Traditional knowledge

- ❁ There is wealth of traditional knowledge, rural skills and wisdom in remote inaccessible villages in Asia.
- ❁ From poor living in rural areas, we could re-learn how to live simply and sustainably and how to respect earth, water and air and not abuse limited resources we still have. Time to apply real life low-cost solutions to save planet
- ❁ India's Mahatma Gandhi had said: "Live simply so others may simply live."

Twin challenge

- ❁ World faces twin challenge of meeting rapidly expanding energy demand to ensure economic growth and mitigating associated environmental impacts.
- ❁ This particularly true in Asia, where energy demand is projected to rise rapidly.
- ❁ Growth in demand for energy will be felt most acutely in power generation sector, which is increasingly reliant on coal.

Coal

- ❁ There has been incremental demand for coal from power plants in Asia.
- ❁ Coal is cheap, domestically available in China and India, which see coal as indispensable for growth, staying self-sufficient in energy, and lifting their vast populations out of poverty.
- ❁ Coal-fired power plants generate almost 70% of India's electricity.

Clean coal technology

- ❁ It has become crucial for Asian countries to come together to adopt new technologies for coal, this age-old energy source, and reshape region's future energy mix.
- ❁ They should focus attention on reducing local pollution and toxic releases from coal plants.
- ❁ It would also help if rich countries could support R&D and pilot deployment of technologies that burn coal more cleanly.

Alternate energy options

- ❁ Easiest way to find alternative energy options to compete against fossil fuels such as oil and coal, is to guarantee an attractive financial return for those who invest in it.
- ❁ Many European countries have put in place “feed-in tariffs” for solar/wind power. China also used this for wind power development.
- ❁ Catch is that this is an extremely expensive way to reduce CO2 emissions.

Infrastructural barriers

- ❁ Without transmission infrastructure, renewable energy cannot be brought from areas with substantial wind and solar resources to population centers.
- ❁ Expensive natural gas pipelines or liquefied natural gas terminals are needed before gas-fired power becomes a viable option for end users located far from gas source.
- ❁ Government has a key role to play in making sure that needed infrastructure is built to connect energy sources to customers.

Cross-border cooperation

- ❁ Where infrastructure crosses borders, regional cooperation is critical.
- ❁ Cross-border gas pipelines provide benefits for source, transit, and destination countries alike,
- ❁ But development of such projects can be challenging and is another area where involvement of multilateral financial institutions can be very helpful.

Policy responses for energy supply and environmental challenges

- ❁ Over next two decades, rapid economic development in Asia-Pacific will drive energy demand and will require policy responses for energy supply and environmental challenges.
- ❁ Regional cooperation can provide a vehicle for ongoing collaboration and dialogue on topics of energy security and climate change and to forge lasting partnerships that address these challenges jointly.

Collective effort within region

- ❁ Participating countries can discuss current energy and demand trends; implications for Asia's economic growth and environmental conditions; public policy options for promoting investment and infrastructure development; and critical issues that stakeholders must address when determining their energy mix and investment goals, such as pricing mechanisms and market regulation

Sharing experiences

- ❁ Sharing experiences between policymakers, industry leaders, other stakeholders can help identify sustainable solutions to common challenges of growing energy needs in world.
- ❁ Many challenges countries face are similar to what others have faced before, so listening to how they have solved these issues and learning from successful case studies can reduce time and costs to solve problems

Regional cooperation

- ❁ Regional cooperation is critical for Asia's march towards prosperity.
- ❁ It will cement region's hard-won economic gains in face of vulnerabilities to global shocks;
- ❁ It could be important bridge between individual Asian countries and rest of world
- ❁ Through managing regional commons. it can contribute to Asia's long-term stability/peace, and help respond better to global challenges.

Regional cooperationcontd.

- ❁ Climate change could affect every human being on planet. With half world's population, Asia has more at stake than any other region and will need to take lead in:
- ❁ Energy efficiency and diversification programs by switching from fossil fuels to renewable energy;
- ❁ Adopting new approaches to urbanization by building more compact and eco-friendly cities;
- ❁ Relying more on mass transit for urban dwellers and railways for long-distance transport; and
- ❁ Changing lifestyles to alleviate pressures on finite natural resources

Asia's own model

- ❁ Given its diversity, Asia will need to develop its own model that builds on positive experience of East Asia.
- ❁ Crucial for increased regional cooperation is strong political leadership.
- ❁ Building Asia's regionalism will require collective leadership that recognizes a balance of power among participants.

Asian century of shared global prosperity

- ❁ When formulating its domestic or regional policy agenda, Asia will need to consider regional as well as global implications.
- ❁ Peace and security throughout world will be essential for Asia's long-term prosperity.
- ❁ The Asian Century should not be Asia's alone but century of shared global prosperity.

A final thought

- ❁ World needs a reliable and comprehensive system of global energy security but existing mechanisms for global energy governance appear to be inadequate to provide energy security, address energy-related environmental issues and ensure that energy services are sufficiently available to poor to meet MDGs and other development goals.
- ❁ Therefore, global community should consider creating or expanding mandate of an existing international organization to put in place a global organizational structure, with teeth, that can ensure provision of appropriate, reliable and affordable energy services on a sustainable basis to all countries on Planet.