

Multi-Country Research Dialogue on
ENERGING ECONOMIES IN THE NEW WORLD ORDER:
PROMISES, PITFALLS AND PRIORITIES

April 12-13, 2010

Introduction

The populous, fast-growing emerging economies of Brazil, China, Egypt, India and South Africa face daunting challenges on the energy, environment and climate change fronts. These five countries accounted for 42 percent of the global population in 2008 but only 26 percent of global energy supply. CO₂ emissions per unit of energy are lowest for Brazil, way below the global average, whilst China's energy mix is more CO₂ emitting than the global average. Emissions in the other three countries are around the global average. Energy consumption in these countries is growing and with economic growth and higher populations, the demand for energy will grow even higher. The pressure on these countries to reduce their dependence on energy imports and to reduce CO₂ emissions will increase the attractiveness of renewable energy sources in these countries.

Energy Mix

The five countries under consideration have different resources and problems and associated approaches to developing renewable sources of energy. Whilst China, India and South Africa are largely dependent on coal, Brazil uses a lot of hydropower and ethanol from sugarcane. Egypt, which uses mainly oil and gas, is running short of oil. The dependence on imports of oil and energy resources in general is significant for these countries. Brazil launched its ethanol programme in the 1970s when its oil import bill rose dramatically. Although Egypt has been a net oil exporter, it fears that it will soon need to import oil. Thus, all these countries have their own compulsions to push for the development of renewable and cleaner sources of energy.

Approaches to developing renewable energy

There are commonalities and differences in the approaches that these countries have followed to deal with their perceived problems in the context of their own resource base. Moreira (2010) argues that Brazil's strategy for clean and

renewable energy is based on its vast land and water resources. Forty-six percent of its primary energy in 2007 was from renewable resources. Gao (2010) describes three targets of China's energy policies: reducing energy intensity of GDP by 20 percent over 2006-20; increasing share of non-hydrocarbon sources to 15 percent by 2020 and reducing carbon emissions intensity of GDP by 40-45 percent over 2005-20. Given that more than 90 percent of energy came from hydrocarbons in 2008, of which 69 percent, this appears to be a big challenge. According to Selim (2010), Egypt, which has been an oil exporter, faces a problem different from other emerging economies. Oil production has been declining over the past decade and the country became a net oil importer in 2008. However, the country has discovered large gas reserves and shifted from oil to natural gas. Egypt is ranked third in consumption of natural gas with around 88 percent of total electricity being generated from natural gas and remaining from 12 percent coming from the Aswan high Dam. India's energy problems arise from meager oil and gas resources, small wind power potential, limited resources of hydropower and scarcity of land and water coupled with a fast growing economy and large and increasing population. India's clean energy options in the medium term are improving energy efficiency and rapidly developing renewables that are economical today. The Indian government has initiated a number of policy measures to promote renewable energy. Fig (2010) discusses the adoption of renewable energy sources in South Africa. South Africa has no oil, little gas and low hydro potential and is largely dependent on coal with 200 years worth of reserves. Despite its plentiful access to wind and solar energy, South Africa has till date concentrated on fossil fuel development like many other countries. South Africa has announced a target of 10000 GWhr, about 4 percent of current energy generated from renewable resources by 2013. According to Fig, the development of renewable energy in the country suffers from fragmentation of responsibilities for the energy sector among different ministries, a situation similar to that in India, where eight ministries look after the energy sector.

Insights from country studies

The studies reveal that energy policies, issues and strategies of the countries are dominated by their resource base. Brazil with its abundant land and water resources has promoted hydropower and sugarcane-based ethanol. China, India and South Africa are centered on coal and the former two countries recognize the need to shift away from coal and have strong programmes to promote energy efficiency and clean and renewable source of energy. South Africa, however, is only "reluctantly embracing" renewables. Egypt, however, has experienced no compulsion until now to promote renewable energy – not even solar – and is more concerned with about how to make the transition from oil, whose price has been kept at low level, to natural gas.

Conclusions

The emerging economies research dialogue on energy indicated that sector strategies and policies in these countries were driven by their desire for energy security and to reduce their dependence on imported energy as well as concerns of climate change. As a result, generation of energy from domestic renewable energy sources was found to be a very attractive strategy. Promoting energy efficiency that reduces the need for energy in the first place was deemed an even more attractive policy.

References:

Fig, David. "*Reluctant Embrace: South Africa and Renewable Energy*" paper presented at the research dialogue on Emerging Economies in the New World Order: Promises, Pitfalls and Priorities April 12-13 2010, New Delhi.

Gao, Shinxian. "*China's Energy: Present Situation and it's Policies*" paper prepared for the research dialogue on Emerging Economies in the New World Order: Promises, Pitfalls and Priorities April 12-13 2010, New Delhi.

Moreira, Jose. "*Brazilian Perspective on Clean Energy*" paper presented at the research dialogue on Emerging Economies in the New World Order: Promises, Pitfalls and Priorities April 12-13 2010, New Delhi.

Parikh, Kirit. "*Approaches to the Development of Renewable and Clean Energy in Brazil, China, Egypt, India and South Africa: Lessons for Emerging Countries*" 2011

Sawhney, Aparna and Meeta Mehra "*Indian Perspective on Clean Energy and Energy Efficiency*" paper presented at the research dialogue on Emerging Economies in the New World Order: Promises, Pitfalls and Priorities April 12-13 2010, New Delhi.

Selim, Tarek. "*Towards A New Energy and Environmental Policy for Egypt: Development of Clean Sources in An Emerging Economy*" paper presented at the research dialogue on Emerging Economies in the New World Order: Promises, Pitfalls and Priorities April 12-13 2010, New Delhi.

- This summary is based on Kirit S. Parikh (2011) review of the papers prepared for the first Emerging Economies Research Dialogue, "***Emerging Economies in the New World Order: Promises, Pitfalls and Priorities,***" 12-13 April, New Delhi.