



Pathfinder Energy Alert

Sri Lanka's Energy Security: From Import Dependence to Production.

The Pathfinder Foundation (PF) plans to build expertise and contribute to the discourse on energy issues as Sri Lanka moves to become a natural gas producer. This is particularly important as there is a need to develop such capacity outside the government in this new context.

As a first step, two articles will be published on: (1) the broad landscape connected with Sri Lanka's energy security; and (2) issues to be addressed to attain the twin objectives of energy security and reduced cost of power, following the discovery of commercial quantities of natural gas in the Mannar basin. This article sets out the background landscape.

Global Trends

The global energy market will undergo sweeping changes in the next five years. The ongoing North American (US and Canada) hydrocarbon revolution (shell gas and oil) is a "game changer." In the short-run US and Iraq are expected to be leading contributors to supply growth. The anticipated significant rise in supplies in the medium-term will trigger a reaction which will affect all parts of the global supply chain.

On the demand side, non-OECD countries overtook the developed country grouping for the first time in 2013. In five years time, the non-OECD countries, with Asia in the lead, will be firmly entrenched as the largest importers of crude oil.

Despite the supply increases expected in the medium-term, including US energy independence within a decade, oil prices are expected to move upwards steadily due to the increased global demand, particularly in large emerging market economies.

The Sri Lankan Context

The combination of rising oil prices and increasing domestic demand for energy in middle-income Sri Lanka places a higher premium on achieving energy security. The concept of energy security involves the association of national security and the availability of natural resources for

energy consumption. In particular, it entails the provision of affordable power to the population while reducing dependence on volatile global oil markets.

Sri Lanka will experience considerable demand-side pressures for energy. The demand for fuel for transport will grow two and a half times by 2020 (75% of fuel is used for transport). In addition, the demand for power is expected to grow by 5.2% per annum (20% of imported oil is used for power generation).

In a context of rapidly increasing demand, the challenge for energy policy is to reduce the dependence on imported energy by developing supplies within the country. In 2013, oil imports amounted to \$4.3 billion and accounted for 24% of all imports. In 2012, the corresponding figures were \$5 billion and 26% respectively. (Thermal generation was higher due to less recourse to hydro power as a result of lower rainfall.) As the economy becomes more complex and income rises, demand for fuel (both transport and power) will rise. On the transport front, higher levels of economic activity will result in more haulage and rising incomes will lead to more private vehicles. In the power sector, demand will increase from both industries, fuelled by a more complex economy and households driven by rising incomes. At present, biomass accounts for about 40% of energy consumption. This figure will decline due both to higher incomes and increased urbanization.

It is noteworthy that while the CEB has a plan to meet increasing demand for power, there is no such plan for the transport sector which accounts for 75% of fuel consumption. This is the current state of affairs despite the fact that fuel consumption is expected to increase much faster than power-250% as supposed to 50% from a much higher base, by 2020. There is need, therefore, for an integrated multimodal transport plan which attaches high priority to fuel conservation/efficiency.

Balancing Supply and Demand to Increase Energy Security

There are a number of efficiency/conservation issues that need to be addressed on the demand side as part of a comprehensive energy policy. As mentioned above, there is also need for a plan to meet fuel requirements in an optimal manner. There are also efficiency/conservation issues to be tackled regarding energy consumption. While these are important issues, PF is seeking to launch a discourse specifically on the choices/challenges which have to be addressed regarding the availability of affordable power – the supply side of the energy equation.

In this connection, one needs to address the related issues of the power generation mix and the current high cost of generation. Energy costs in Sri Lanka are extremely high by international standards. With graduation to middle-income country status and increased exposure to rating agencies and international capital markets, Sri Lanka can no longer afford to subsidize fuel and power prices as in the past. The recent courageous price adjustments were necessary to protect the balance sheets of the two state banks which were being undermined by the losses incurred by CEB and CPC, largely as a result of the fuel and electricity subsidies. High energy costs are a

burden on households. This is vividly demonstrated by the table below which provides an international comparison of per capita energy consumption. Even more importantly, high energy costs reduce the competitiveness of the whole economy. They are an important factor in explaining Sri Lanka's poor export performance which is constraining the overall development of the economy.

Per Capita Energy Consumption (Kwh per head)

Korea	9851	Indonesia	644
Singapore	8306	Philippines	643
Malaysia	4117	India	641
China	2942	Pakistan	457
Thailand	2243	Sri Lanka	449
Vietnam	1035	Bangladesh	279

The Challenges Ahead.

The key challenge for strengthening energy security is to increase supplies to meet rising demand, while reducing the dependence on imported oil in a global context where its price is expected to increase steadily. At present, thermal generation (diesel, heavy oil, naphtha & coal) accounts for 70% of the energy supply; and hydro: 30% (includes other renewables). The whole thrust of future energy management should be to reduce the dependence on thermal generation, which not only absorbs valuable foreign exchange, involving very high opportunity costs, but also results in high unit costs. The way ahead needs to encompass the following: (1) exploring potential hydro capacity in the non-Maheweli river networks; (2) increasing renewables; (3) examining the role of coal, taking into account both direct as well as the indirect costs (externalities associated with the carbon footprint); and (4) maximizing the benefits of the discovery of commercial quantities of natural gas in the Mannar basin. The challenge is to develop the optimal generation mix to maximize energy security at the lowest possible unit cost. The PF will publish shortly a follow-up note which will seek to examine these issues, particularly in the light of the natural gas discovery which is a potential game-changer for Sri Lanka's energy security. The uncertainty regarding power supplies/costs being created by the current drought only adds greater urgency to the need for decisive policy action.

This is the First in the series of Energy Alerts issued by the Pathfinder Foundation.

Readers' comments via email to pm@pathfinderfoundation.org are welcome.