Energy Sector Development: Role of Development Partners

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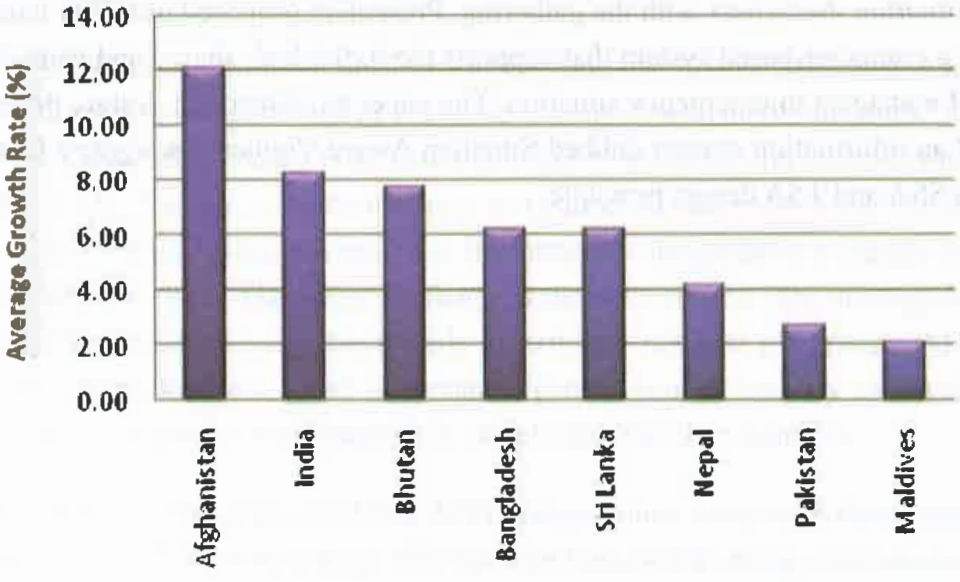
1. Introduction

It is the fundamental responsibility of a country to provide the basic needs of its population in order for them to have adequate food, water, shelter and clothing. Energy is an essential ingredient in the activities required to maintain and improve living standards of people, particularly the poor and the vulnerable and to develop to socioeconomic infrastructure required for sustainable growth. Over 2.7 billion people still rely on traditional use of biomass for cooking. They rely on traditional biomass to satisfy their basic energy needs and in certain cases, even primary energy required for lighting. About 1.3 billion people, or 20% of the world population, mostly in Africa and Asia, do not have access to electricity. Lack of access modern energy services is a barrier to industrialization which is essential to liberate the disadvantaged from the poverty trap. All these factors lead to the need for energy sector development as a priority in poverty alleviation efforts in the developing countries. At the same energy is a key contributor to the economic development of the countries particularly in those where the development partners such Asian Development Bank play a key role in their development efforts.

2. Economic Growth and Energy Sector Development

While two of the South Asian countries, Afghanistan and India were listed within the best ten performers during the last three years up to 2011, even the performance of the others were acceptable under difficult global circumstances. The South Asia region as a whole grew at an average annual rate of 6.15%.

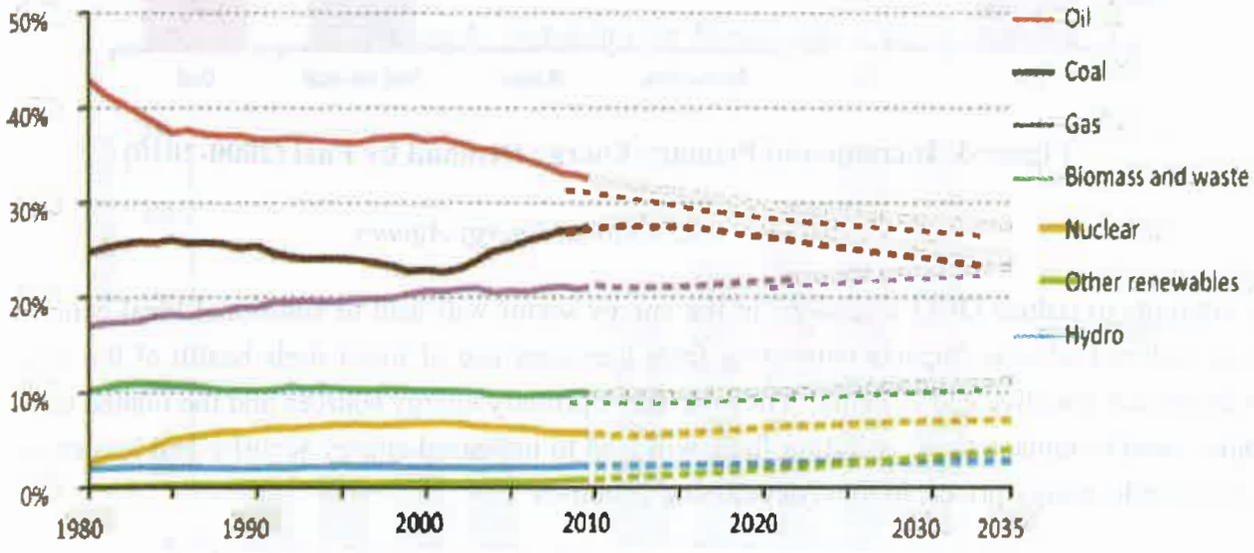
Figure 1: Average Annual Real Economic Growth Rate in South Asia: 2009-2011



Source: International Monitory Fund

The economic growth and energy sector growth are strongly correlated. To realise the expected growth, the economies will need increased energy supplies. On the other hand such economic growth will also result in increased demand for energy due to improved living standards of the people. If it is assumed that the latest national policies on reducing emissions are implemented in full the global primary energy demand in 2035 will increase by 40% compared to the level in 2010. Of the increase in demand 90% will be largely confined to the developing world.

Figure 2: Share of Different Energy Sources in Primary Energy Demand



Source: International Energy Agency

The increase in energy demand will continue to be supplied largely by the traditional fossil fuels such as oil, coal and gas. But their share in the overall energy supply will gradually decrease except in the case of gas of which share will continue to increase. Even then the total contribution of fossil fuels would stand at 75% of the total in 2035. The share of renewable energy sources and nuclear will gradually increase but only marginally.

3. Need for Environmental Sustainability

The incremental demand during the years 2000-2010 was largely supplied by coal, gas, oil and the renewable. The total contribution of coal was almost 50% of the non-coal contribution. That means there has been a serious adverse impact on the global emissions with coal having higher emissions per unit energy output. Even under the new policies with increased emphasis on Greenhouse Gas (GHG) emission reductions the coal consumption is likely to grow by 25% from the levels of 2009. This policy scenario is expected to lead to an average increase of global temperature above 3.5°C (under the current policies which already under implementation the expected average global temperature can rise catastrophic levels of above 6°C). Therefore stronger policy actions are required to meet the target of 2°C temperature rise which requires limiting the GHG concentrations to 450ppm of CO_2 equivalent.

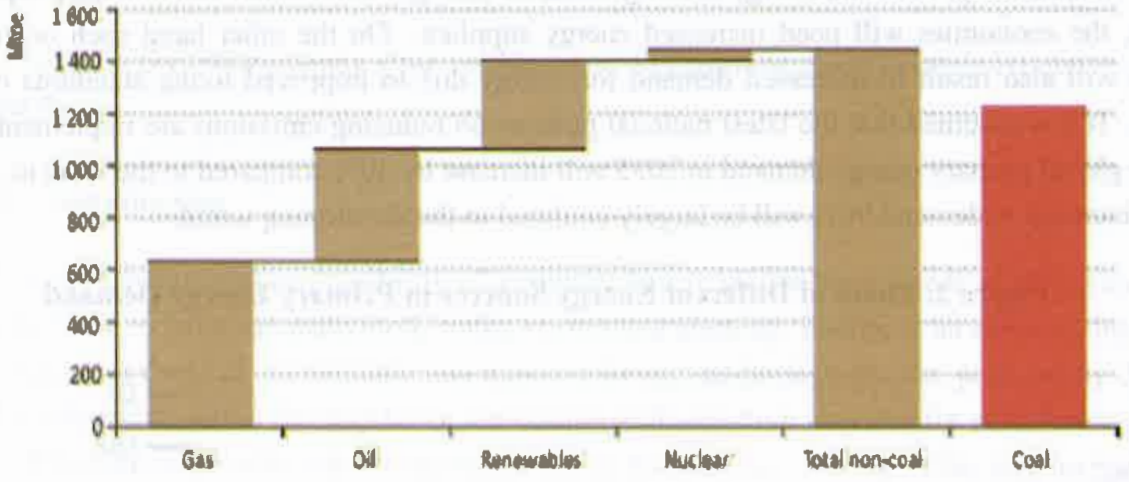


Figure 3: Incremental Primary Energy Demand by Fuel (2000-2010)

Source: International Energy Agency

Any attempts to reduce GHG emissions in the energy sector will lead to additional local benefits such as reduced adverse impacts emanating from increased use of fossil fuels health of the local population and sensitive eco systems. The alternative primary energy sources and the related technologies used to replace these polluting fuels will lead to increased energy security and less exposure to volatile energy prices, in most developing countries.

A study carried out in Zaozhuang city in eastern China has indicated that the health impact of the emissions from coal burning in 2000 was $ 0.28 billion or 10% of the GDP in the city. During the period 2000-2020 with no additional emission control measures installed, health damages can be as high as 16% of the GDP or $2.7 billion in 2020. A study carried out in Maharashta, India showed that the coal power plants seem to have adversely impacted on the agricultural output, particularly those of Sapota plantations in Dahanu during the decade ending in 2000.

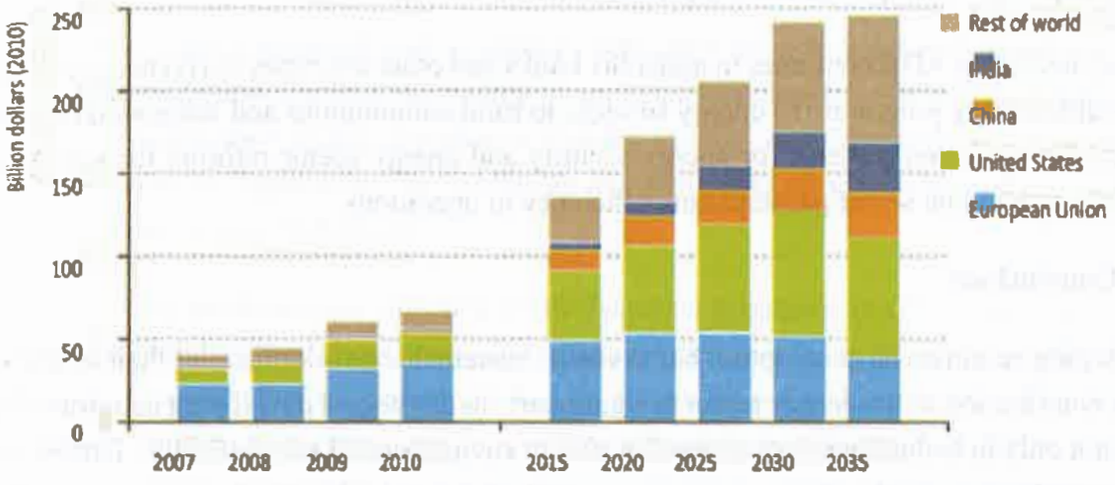
The only ways to reduce emissions in the energy sector is to improve efficiency in energy supply and use and increase the use of cleaner and renewable energy sources to meet the demand for energy. In many cases energy efficiency provides the most economic and the most convenient means of reducing emissions.

4. Financing Needs

It is estimated that the total investment requirement for the energy infrastructure from 2011 through to 2035 could be $38 trillion in order to meet the growing demand world-wide. A major component amounting 45% of this total is expected to be in the power sector. Power generation will absorb 58% of this investment while distribution sector takes 31%. Demand for a large part of these investments come from developing countries. It is a major challenge for these countries to find ways to finance these investments particularly with investors facing many risks. Further these investments need to be carefully planned and executed to minimise the adverse impact on the environment while meeting the aspirations of the people in terms of socioeconomic progress in their society. In this regard renewable energy and energy efficiency related interventions take a priority.

The need to deploy renewable energy technologies in large scale to address not only global and local environmental concerns but also energy security require continued subsidies for these technologies due to their higher costs of deployment and to compensate for direct and indirect subsidies enjoyed by fossil fuels. It is estimated that the fossil fuels world-wide received subsidies amounting to approximately $409 billion in 2010 while the subsidies for renewable energy was a mere $66 billion. These subsidies for renewable energy are expected to grow continuously with increased attention for renewable energy and will reach a total of $250 billion by 2035. A significant portion of these subsidies for renewable energy deployment amounting to about 50% of the total will be in the developing world led by China and India.

Figure 4: Subsidies for Renewable Energy



Source: International Energy Agency

These financing needs in the energy sector can be met in different forms. However considering the enormous public sector spending needs in the social sectors such as health and education, a large portion of the energy sector investment requirements needs to come from the private sector. Therefore improving the investment environment to attract the private sector is key to the development of the energy sector.

5. Investment Challenges

Some of the key investment challenges facing the energy sector are (i) weak policy and regulatory environment, (ii) absence of streamlined processes for approval projects (iii) weak implementation capacity of the government agencies when dealing with public sector investment (iv) heavy indebtedness of the power utilities which are the partners for the private sector in the energy sector operating environment and (v) the need to get the right balance of environmental sustainability and socioeconomic development. In the case of ensuring environment sustainability the developing countries has the advantage of leapfrogging in clean energy technology deployment which needs to be fully exploited. This will ensure that those countries would not have to go through the same long and difficult path of energy sector development in the industrialized countries where they first polluted the environment and now making efforts to clean up at substantial cost to the economy.

6. Role of Development Partners

The main task of the development partners such as ADB in energy sector development in the developing countries is to assist these countries to overcome investment challenges. It is not only in the form of investment itself with significant funding contributions but also add value through provision of soft assistance to improve overall investment environment by addressing policy, regulatory and governance issues.

ADB Strategy 2020 has identified its development agendas as inclusive growth environmentally sustainable growth and regional integration which the energy sector assistance is clearly embedded within. In this regard the drivers for change in addressing these energy sector challenges, as derived in the Strategy 2020 are (i) private sector development (ii) good governance (iii) gender equity (iv) capacity development and (v) partnerships.

Along these lines ADB continues to assist Sri Lanka and other countries in (i) energy efficiency and renewable energy programs (ii) energy services to rural communities and marginalized groups, (iii) regional cooperation projects for energy security and energy sector reforms for good governance, increased private sector participation, efficiency in operations.

7. Conclusions

Developing countries have no option but to ensure sustainable development of their countries in which the contribution of the energy sector is significant. In this regard developing countries should leap frog not only in technology acquisition but also in environmental sustainability. Further, these countries need to improve the energy sector investment environment to attract enormous investment requirements in the energy sector. The development partners such as ADB have a central role to play as honest brokers to ensure that these requirements in the energy sector are supported in an appropriate manner for timely development of the sector.

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