

The Goal of an Energy-Secure South Asia

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While universal coverage can catalyse the region's economic growth, energy trade must be linked to peace building.

South Asia has almost a fourth of the global population living on 5% of the world's landmass. Electricity generation in South Asia has risen exponentially, from 340 terawatt hours (TWh) in 1990 to 1,500 TWh in 2015.

Bangladesh has achieved 100% electrification recently while Bhutan, the Maldives, and Sri Lanka accomplished this in 2019. For India and Afghanistan, the figures are 94.4% and 97.7%, respectively, while for Pakistan it is 73.91%. Bhutan has the cheapest electricity price in South Asia (U.S.\$0.036 per kilowatt hour, or kWh) while India has the highest (U.S.\$0.08 per kWh.) The Bangladesh government has significantly revamped power production resulting in power demands from 4,942 kWh in 2009 to 25,514 MW as of 2022. India is trying to make a transition to renewable energy to provide for 40% of total consumption, while Pakistan is still struggling to reduce power shortage negatively impacting its economy.

The electricity policies of South Asian countries aim at providing electricity to every household. The objective is to supply reliable and quality electricity in an efficient manner, at reasonable rates and to protect consumer interests. The issues these address include generation, transmission, distribution, rural electrification, research and development, environmental issues, energy conservation and human resource training.

Geographical differences between these countries call for a different approach depending on resources. While India relies heavily on coal, accounting for nearly 55% of its electricity production, 99.9% of Nepal's energy comes from hydropower, 75% of Bangladesh's power production relies on natural gas, and Sri Lanka leans on oil, spending as much as 6% of its GDP on importing oil.

Electrification, growth, SDGs

Given that a 0.46% increase in energy consumption leads to a 1% increase in GDP per capita, electrification not only helps in improving lifestyle but also adds to the aggregate economy by improving the nation's GDP. For middle-income countries, the generation of power plays an essential role in the economic growth of the country.

More electricity leads to increased investment and economic activities within and outside the country, which is a more feasible option as opposed to other forms of investments such as foreign direct investment.

The South Asian nations have greatly benefited from widening electricity coverage across industries and households. For example, 50.3% of Bangladesh's GDP comes from industrial and agricultural sectors which cannot function efficiently without electricity. Nepal's GDP growth of an average of 7.3% since the earthquake in 2015 is due to rapid urbanisation aided by increased consumption of electricity. On the other hand, Pakistan suffered a drop in industrialisation of textiles by 9.22%, wiping off U.S.\$12.4 billion from the industry in 2014 due to power shortages. India leads South Asia in adapting to renewable power, with its annual demand for power increasing by 6%.

Solar power-driven electrification in rural Bangladesh is a huge step towards Sustainable Development Goal 7 (which is "Ensure access to affordable, reliable, sustainable and modern energy for all") by 2030 and engaging more than 1,00,000 female solar entrepreneurs in Sustainable Development Goal 5 (which is "achieve gender equality and empower all women and girls"). India's pledge to move 40% of total energy produced to renewable energy is also a big step. Access to electricity improves infrastructure i.e., SDG 9 (which is "build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"). Energy access helps online education through affordable Internet (SDG 4, or "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"), more people are employed (SDG 1: "no poverty"), and are able to access tech-based health solutions (SDG 3, or "ensure healthy lives and promote well-being for all at all ages").

Green growth, green energy

South Asian leaders are increasingly focused on efficient, innovative and advanced methods of energy production for 100% electrification. Prime Minister Narendra Modi in his 'net zero by 2070' pledge at COP26 in Glasgow asserted India's target to increase the capacity of renewable energy from 450GW to 500GW by 2030. South Asia has vast renewable energy resources — hydropower, solar, wind, geothermal and biomass — which can be harnessed for domestic use as well as regional power trade. The first-ever Clean Development Mechanism (CDM) benefits such as poverty reduction, energy efficiency and improved quality of life were realised when there was India-Bhutan hydro trade in 2010.

The region is moving towards green growth and energy as India hosts the International Solar Alliance. In Bangladesh, rural places that are unreachable with traditional grid-based electricity have 45% of their power needs met through a rooftop solar panel programme which is emulated in other parts of the world. This is an important step in achieving Bangladesh's nationally determined contributions target of 10% renewable energy of total power production.

Regional energy trade

The South Asian Association for Regional Cooperation (SAARC) prepared the regional energy cooperation framework in 2014, but its implementation is questionable.

However, there are a number of bilateral and multilateral energy trade agreements such as the India-Nepal petroleum pipeline deal, the India-Bhutan hydroelectric joint venture, the Myanmar-Bangladesh-India gas pipeline, the Bangladesh-Bhutan-India-Nepal (BBIN) sub-regional framework for energy cooperation, and the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline, rumoured to be extended to Bangladesh.

‘South Asia’s regional geopolitics is determined by the conflation of identity, politics, and international borders. Transnational energy projects would thus engage with multiple social and ideational issues’ which is a major limitation for peaceful energy trade. If energy trade is linked and perceived through the lens of conflict resolution and peace building, then a regional security approach with a broader group of stakeholders could help smoothen the energy trade process. The current participation in cross-border projects has been restricted to respective tasks, among Bhutan and India or Nepal and India. It is only now that power-sharing projects among the three nations, Nepal, India, and Bangladesh, have been deemed conceivable.

India exports 1,200MW of electricity to Bangladesh, sufficient for almost 25% of the daily energy demand, with a significant amount from the Kokrajhar power plant in Assam worth U.S.\$470 million. Bhutan exports 70% of its own hydropowered electricity to India worth almost U.S.\$100 million. Nepal on the other hand, not only sells its surplus hydroelectricity to India but also exported fossil fuel to India worth U.S.\$1.2 billion.

What is needed

South Asia is reinforcing its transmission and distribution frameworks to cater to growing energy demand not only through the expansion of power grids but also by boosting green energy such as solar power or hydroelectricity.

Going forward, resilient energy frameworks are what are needed such as better building-design practices, climate-proof infrastructure, a flexible monitory framework, and an integrated resource plan that supports renewable energy innovation. Government alone cannot be the provider of reliable and secure energy frameworks, and private sector investment is crucial.

In 2022, private financing accounted for 44% of household power in Bangladesh, 48.5% in India, and 53% in Pakistan. Public-private partnership can be a harbinger in meeting the energy transition challenges for the world’s most populous region.

GS World Team Input

IN THE NEWS

What is the Sustainable Development Goal?

- Sustainable development is a process in which it is ensured that along with meeting the needs of the present generation, there is no difficulty in meeting the aspirations and needs of the future children.
- The Sustainable Development Goals (SDGs) or "2030 Agenda" calls for holistic action to ensure better health, poverty alleviation and peace and prosperous life for all.

What is Agenda 2030?

- It may be noted that in the 70th meeting of the United Nations General Assembly, starting from the year 2015, the Sustainable Development Goals for the next 15 years were set. It may be mentioned that the Millennium Development Goals (MDGs) were planned for the period 2000-2015, whose time period was completed in the year 2015.
- Thereafter, a new agenda for the coming years (SDG-2030) was formally adopted by all member states.

UN Agenda 2030 (17 Development Goals)

- Goal-1** End poverty in all its forms everywhere:- To end poverty of all the people in every country of the world. Right now people who live on less than \$ 1.25 a day are considered extremely poor.
- Goal-2** Zero Hunger: Zero Hunger, food security and better nutrition and promote sustainable agriculture.
- Goal-3** Good Health and Well-being:- To give a healthy life to all and improve the quality of life of all.
- Goal-4** Quality Education: To ensure inclusive and equitable, quality education and promote lifelong learning opportunities for all.
- Goal-5** Gender Equality:- To achieve gender equality and strive to empower all women and girls.
- Goal-6** Clean Water and Sanitation:- To ensure availability and sustainable management of clean water and sanitation for all.
- Goal-7** Affordable and Clean Energy: To ensure access to affordable, reliable, sustainable and modern energy for all.
- Goal-8:-** Decent work and economic growth:- Promoting productive employment and decent work for all, while promoting sustained, inclusive and sustainable economic growth.
- Goal-9:-** Industry, Innovation and Infrastructure:- Build strong infrastructure, encourage inclusive and sustainable industrialization and promote innovation.
- Goal-10:-** Reduced Inequality:- Reducing inequality within and between countries.
- Goal-11:-** Sustainable Cities and Communities:- Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal-12:-** Responsible Consumption and Production:- To make production and consumption patterns sustainable.
- Goal-13:-** Climate Action:- To ensure immediate action to deal with climate change and its effects.
- Goal-14:-** Life Below Water:- To ensure the conservation and proper use of oceans, seas and marine resources for sustainable development.

Goal-15: - Life on land: - To strive to prevent the increasing loss of terrestrial ecosystems, protected forests, land degradation and biodiversity, promoting sustainable use.

Goal-16:- Peace, Justice, and Strong Institutions:- Promoting peaceful and inclusive societies for sustainable development Solar Ensuring access to justice for all.

Goal-17:- Partnerships for the Goals:- Revitalizing the global partnership for sustainable development and strengthening the means of implementation.

Expected Question (Prelims Exams)

Q. Consider the following statements:-

1. Recently, Bangladesh has become the first country in Asia to achieve 100% electrification.
2. Bhutan exports 70% of its hydroelectric power to India.

Which of the above statement (s) is/are not correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Expected Question (Mains Exams)

Q. What are the Sustainable Development Goals? Mention the efforts being made by India to achieve the Sustainable Development Goals. (250 Words)

Note: - The question of the main examination given for practice is designed keeping in mind the upcoming UPSC main examination. Therefore, to get an answer to this question, you can take the help of this source as well as other sources related to this topic.