



DATE - 22 June 2021

Power Sector Reforms

Context:

- Amid the Covid-19 pandemic last year, the government of India announced a rescue package for the power sector under the Atmanirbhar Bharat plan. This rescue package was arranged to prevent the entire power sector chain from suffering because of the discoms' inability to meet their obligations.
- This is not the first time (earlier intervention: UDAY scheme) that the Centre government has stepped in to aid discoms and tackle the problems plaguing the distribution segment.
- However, even after the repeated interventions, the end result has been the cash-strapped discoms looking for another rescue package.
- This highlights the major structural problems ailing the power sector, which must be rectified for a sustainable power sector in India.

Associated Challenges Power Sector:

- **AT&C Losses:** Aggregate technical and commercial (AT&C) losses stem from poor or inadequate infrastructure or on account of theft or bills not being generated or honored. The UDAY scheme had envisaged bringing down these losses to 15 per cent by 2019. However, as per data on the UDAY dashboard, the AT&C losses currently stand at 21.7 per cent at the all-India level.

- **Cost-Revenue Gap:** The difference between discoms' costs (average cost of supply) and revenues (average revenue realised) is still high. This is due to the absence of regular and revision in electricity tariffs.
- **Magnifying Effect:** Paradoxically, the government's push for ensuring electrification of all has contributed to greater inefficiency. As household connections are ramped up, to support higher levels of electrification, cost structures need to be reworked, and the distribution network (transformers, wires, etc) would need to be augmented.
In the absence of all this, losses are bound to rise.
- **Economic Fallout of the Pandemic:** Amid pandemic, with demand from industrial and commercial users falling, revenue from this stream, which is used to cross-subsidise other consumers, has declined, exacerbating the stress on discom finances.
- **Low Investment:** Owing to the poor financial health of the discoms, there are less new investments in the electricity sector (particularly by the private sector).
- **Fossil Fuel Dominated Energy Generation:** Thermal power based on fossil fuel such as coal, natural gas and diesel accounts for 80% of the country's generation.
Moreover, the majority of plants in India are old and inefficient.

Way Forward

- **Eliminate Cross Subsidization:** High industrial/commercial tariff and the cross-subsidy regime have affected the competitiveness of the industrial and commercial sectors.
Thus, there is a need to ensure effective enforcement of rationalization of cross-subsidy.
- **Covering up AT&C Losses:** To manage the demand for power, it is necessary to introduce 100% metering-net metering, smart meters, and metering of electricity supplied to agriculture.
There is also a need to introduce performance-based incentives in the tariff structure.
- **Greening The Grid:** The KUSUM scheme provides a suitable alternative to the power subsidy model in agriculture.
The scheme intends to promote the use of solar pumps for agriculture and make provisions that local discoms should buy surplus power from the farmer.
- **Cross-Border Trade:** The government needs to actively promote cross-border electricity trade to utilize existing/upcoming generation assets. The SAARC electricity grid is a step in the right direction.

Conclusion

A solution that has now been pitched forward to deal with the ailing discoms, is the creation of a national power distribution company. However, without addressing the systemic challenges, it is difficult to see how a sustainable turnaround in the financial and operational position of discoms can be engineered

Biotech-KISAN Programme

Context:

The Ministry of Science and Technology has issued a Special Call for the NorthEast Region as a part of its Mission Programme “Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)”.

Biotech-KISAN Programme

- It is a scientist-farmer partnership scheme launched in 2017.
- It is a pan-India program, following a hub-and-spoke model and stimulates entrepreneurship and innovation in farmers and empowers women farmers.
- The Biotech-KISAN hubs are expected to fulfil the technology required to generate agriculture and bio-resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.
- Farmers are also exposed to best global farm management and practices.

Ministry:

This is a farmer-centric scheme developed by and with farmers under the Department of Biotechnology, Ministry of Science and Technology.

Objective:

It was launched for agriculture innovation with an objective to connect science laboratories with the farmers to find out innovative solutions and technologies to be applied at farm level.

About the Present Call:

- The present call specifically focuses on the North East Region (NER) as it is predominantly agrarian with 70% of its workforce engaged in agriculture and allied sector for livelihood.
- The region produces merely 1.5 % of the country's food grain and continues to be a net importer of food grains even for its domestic consumption.
- The NER has untapped potential to enhance the income of the farming population by promotion of location specific crops, horticultural and plantation crops, fisheries and livestock production.
- The Biotech-KISAN Hubs in NER will collaborate with the top scientific institutions across the country as well as State Agricultural Universities (SAUs)/Krishi Vigyan Kendra's (KVKs)/existing state agriculture extension services/system in the NER for demonstrations of technologies and training of farmers.

Biotechnology in Agriculture

Agricultural Biotechnology:

Agricultural biotechnology is a range of tools, including traditional breeding techniques, that alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses.

Modern biotechnology today includes the tools of genetic engineering.

Examples:

Genetically Modified Organisms (GMO): These are plants, bacteria, fungi and animals whose genes have been altered by manipulation. GM plants (Bt Cotton) have been useful in many ways.

Biopesticide: *Bacillus thuringiensis* is a naturally occurring soil bacterium that causes disease on insect pests. It is accepted in organic farming and is considered ideal for pest management due to its low cost, ease of application, high virulence and narrow host specificity.

Benefits:

GMO leads to a number of advantages in the crops which include -there is less loss after harvest, the crops can be modified to have additional nutrients value for human welfare.

The use of some of these crops can simplify work and improve safety for farmers. This allows farmers to spend less of their time managing their crops and more time on other profitable activities.

Disadvantages:

Antibiotic Resistance: There is a concern that new antibiotic-resistant bacteria could emerge which would be difficult to tackle with conventional antibiotics.

Potential of 'superweeds': The transgenic plants could pollinate with the unwanted plants (weeds) and thereby relay the gene of herbicide-resistance or pesticide-resistance into them, thereby converting them into 'superweeds'.

Loss of Biodiversity in Organisms: The extensive use of agrotech varieties of seeds have made some agriculturists fearful as this may hurt the biodiversity of plant species.

The extensive use of GMO varieties is because of the fact that they are more profitable and drought resistant which has made farmers abandon their traditional varieties of plants.