

Challenges, Impacts of Restructured Power System

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Abstract—Deregulation is the tuning of the existing power system methodologies and limitations that responsible for control of power flow which is available. This type of upgradation to the system makes for effective. Also it provides efficient controls the electric sector to facilitate consumers for managing the business trading depends on the competitiveness. Moreover modifies the productive expansion of the existing system. Deregulation enhances the existing stock-rate and future expansion.

Keywords: System, Competition, Corporate Market, Modelling, Business Trading.

I. INTRODUCTION

There are different issues which are existing in the existing power system with the present methodologies are adopted. New-modelling and de-regulation is the property of the market over past years. There are quite different problems in market places in wholesale market and the retail market combined with the entry to the delivered entity can have many benefits to the utmost consumers, such as reduced electricity charges and betterment of services. Even, the various productive issues and challenges to the operation sector.

The corresponding units of each and every production related costs of each increasing day by day, It is a running problem throughout the business networks, hence there is a need to reduce those recurring problems pacify the power market. The whole intension behind this is to concentrate about wholesale and the retail market combined with the open access to the supply chain can combine various opportunities to the consumers. There are so many obstacles in the way to production and settle the issues in the operation sector.

It is also to coordinate the various departments and associated departments and their coordination of controls between the various independent sections. Every department has their own issues as well objectives. Every state government has their own set of rules and adopted methodologies and practices to benefit their expanded customers. The state govt. has few subsidized procedures and stipulated procedures to get the returns on their investments.

The deregulated power market has to satisfy the following requirements,

1. Without interruption provide the supply to all the consumers in the different networks at the most promised supply at economical cost.
2. To encourage all the different diversified customers
3. To maintain balance between esteemed consumers and the available supply demand.
4. Ensure the best quality of ofservice to all categories of consumers.
5. Design the best policies for the consumer, those who consumed more no.of units
6. Every time slot, Announce the discounts for those who paid regularly
7. Make the best policies for who are interested in power production and associated business

The need of restructuring the power market is to eliminate monopoly in the system is wholesale and retail market power. The wholesale type of markets having the power of whole system to deal with the whole supply systems covers distributed companies and independent power producing companies etc. with their utmost satisfaction at reasonable tariff. Also,

1. Also provides strong buyers and new producers.
2. To promote the competition in the generationand supply of electricity.
3. To supply electricity to all consumers without interruption with good quality.
4. To improve efficiency and economy of the power system.
5. To enable competitiveness based upon tropical environmental conditions and efficiencies.
6. By this process, the producer will try to sell the power at basic margin cost, in a perfectly competitive environment. So that Price will go down.
7. If more no.of power producing companies are available in the market, then there is a choice for customer. It yields to select according to the individual requirement and category, they can pick.
8. These could include better plans, better reliability, better quality,etc.

9. This type of environment creates customers-centric service, So that retailers would provide better service than monopolist job.
10. The most probable getting innovative designs with regulatory process and lack of competition gave new ideas that might increase the customer value.
11. Give better service.
12. It also provides strong buyers and new producers.

The power industry innovations across the world are varying day by day in all the aspects in its operative designs, slowly it enables an end to the environment. Right from beginning the running power system was facing the same issues. The Controlling part consisting of planning of organisation behaviour depends on the control and operation targets were administered by a single entity. The arrangement of the existing setup of the power sector was characterized by operation of a single utility may be generating, transmitting and distributing electrical power in terms of its operation. Thus, these utilities enjoyed monopoly in their area of operation. Either rules or regulations are strictly imposed by the government or the government authority identified companies. They frame significant set of rules or framework to run the system smoothly and properly.

II. ENTITIES PARTICIPATED IN DEREGULATION

The deregulation has introduced different new entities in the electricity market place and has slowly modified the scope of activities of many of the existing ones. There are dynamic variations occurs in the market structures over how each entity are influenced in the system. In a broad sense, the entities can be mentioned as:

1. Genco's are the owner-operator of one or more generators that runs them and bids the power into the competitive marketplace. Genco's have the power to sell their energy independently in their own sites.
2. Transco's are the transmitting companies transmit power in bulk quantities to where it is consumed. The Transco owns and maintains the transmission facilities management and engineering functions required to ensure the smooth running of the system done by Independent System Operator (ISO).
3. Discom (Distribution Company): It is the owner-operator of the local power delivery system, which delivers power to individual businesses and homeowners. In most of the places, Discom does not sell the power. It only owns and operates the local distribution system.
4. Resco (Retail Energy Service Company): It is the retailer of electric power. A Resco buys power from Genco's and sells it directly to the consumers.
5. Market Operator: Market operator creates a platform for the parallel operation for buyers and sellers to sell and buy the electricity. It runs a computer program

that matches bids and offers of sellers and buyers. The market adjustment process is the responsibility of the market operator on daily basis.

6. System Operator (SO): The SO is an entity entrusted with the responsibility of ensuring the reliability and security of the entire system. It will not participate in the electricity market trades.
7. Customers: A customer is an entity, consuming electricity. In a completely deregulated market where retail sector is also open for competition, the end customer has several options for buying electricity.

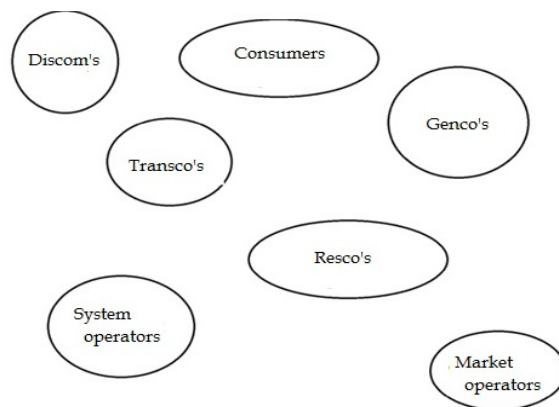


Fig. 1: Various Entities Involved in Deregulation

Deregulation of power sectors is mainly facing the issues with change in the technology day by day. The implementation of latest technologies with the existing set ups was little bit difficult, because cost plays a role here. In olden days least cost power production is happen with renewable sources. Even though the efficient use of the different distributed generated plants comes in to the picture with modern technologies. Also there is a chance of locating those plants near by load centers and given an opportunity for other existing competitors, If the financially supported. This change in technology transfer is given a chance of improving issue of independent power producers. It all depends on the economic aspects of the country, life style of the people and associated.

III. ROLE OF POWER EXCHANGES

For smooth and transparent transactions an environment supports where selling and purchasing can be done. It should be very near by the market places, providing a comfortable access to power producers and customers. The main objective is to create various forms to balance the energy flow in between and it can forecasts the demand of the energy required. The operation of the market involves hour based as well day based depends on the need they suit the market forums. Basically power exchanges get number of bids from different third party companies and they will be analysed.

Based on that market will fix one figure using software. It will provide an healthy platform by inviting all types of competitors with creating competition among them. By this the competitors can understand clearly there itself what is happening at outside, their requirements, existing powerful clients and the new comers inti the industry.

IV. CONCLUSIONS

Electrical power system is a very complex network with wide variety of complex loads. Deregulation is one of the useful tools to sort out problems and associated issues. This paper explains how restructured power system faces the problems at the same time how to eliminate those issues using Deregulation. Also analysed about power exchanges, importance and usefulness to the power generation companies and consumers in a balanced manner.

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