

CENTRAL ELECTRICITY REGULATORY COMMISSION

Staff paper

On

National Open Access Registry

Technology solution to Short Term Open Access process

November 2016

This paper analyzes the procedural issues in availing open access and subsequently provides a solution in form of electronic registry which would act as a repository of approvals and transactions

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1. Background

- 1.1. With the enactment of the Electricity Act, 2003 (Act), power sector reforms were set in motion. Among the gamut of initiatives, power trading along with provision of implementation of Open Access was introduced as an activity distinct from generation, transmission, and distribution of power. Trading of power is further segregated into long term, medium term and short term based on open access granted to the participants. Provision of open access provides for non-discriminatory use of transmission and distribution facilities thereby enabling participants to choose buyer/seller of their own choice.
- 1.2. One of the main intents of the Act is to promote competition by facilitating the movement of power sector from vertically integrated market model to competitive power markets. Trading too has witnessed competition and has resulted in an increased entry of new trading licensees over the years. This has been accompanied by an increase in volumes traded in the short term market. A snapshot of total power generation since 2009-10 along with the percentage share of short-term electricity market is shown in Figure 1.

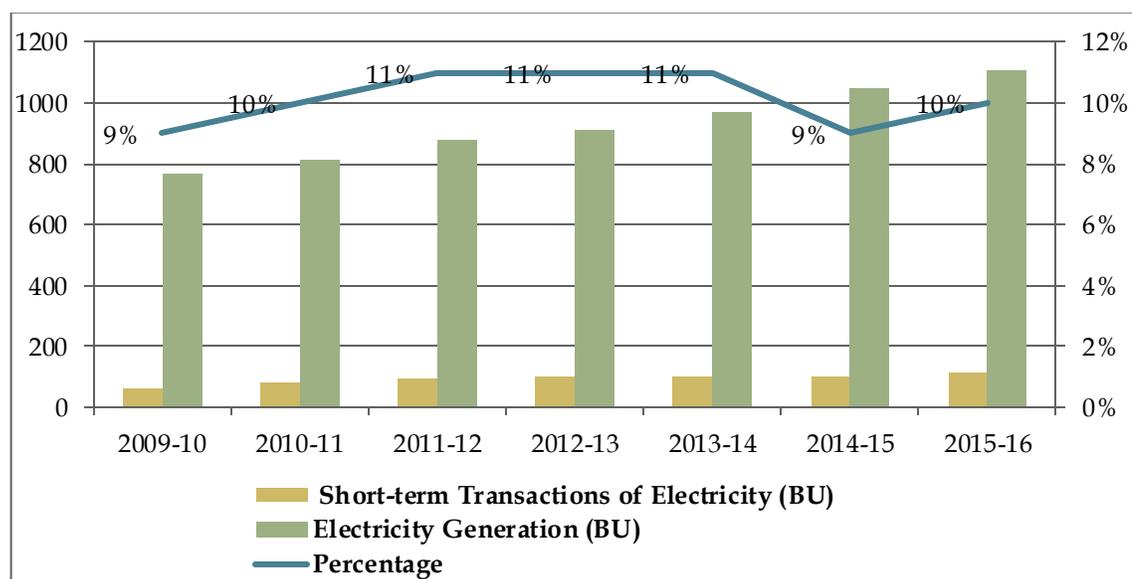


Figure-1- Trends in growth of Short term Power market

1.3. The short-term market includes bilateral transactions, collective transactions, and Deviation Settlement Mechanism (DSM) and Banking arrangements between the distribution companies (DISCOMs). Bilateral trading has been continuing for many years now, collective transactions through power exchanges started in 2008. The participants can avail the following types of Short Term Open Access in Over the Counter (OTC) market:-

- i. Advance scheduling facilitated by e-bidding,
- ii. First come first served application
- iii. Bilateral transactions in a contingency

1.4. The power exchanges were set up in the country in 2008 and since then they have demonstrated a new and systematic way of power trading. The exchanges provide an online platform for trading of power and from the time of their inception they have attracted volumes and new participants in the short term market space. Power exchanges offer standard contracts for trading namely Day Ahead, Contingency, Intra Day & Any Day/Daily, Week Ahead contracts.

1.5. However, even after 13 years of enactment of the Act, formulation of regulations and procedures by various statutory authorities, open access is yet to realize its full potential. It is still not available to all consumers with load above 1 MW; cross subsidy surcharges approved/levied by the states make Open Access charges onerous, power holidays for industrial consumers are still a constant reality, peak hour restrictions and other non-price barriers dent the confidence of the participants.

One of the major problems faced by the Open Access Participants is at times cumbersome approval process they have to go through for approval of their Open Access Applications. Most of the State Load Dispatch Centers (SLDCs) have their own procedure for application approval and this process at both national and state level is manual. This leads to time lags and missing of trading opportunity.

- 1.6. CERC, vide order dated 08.04.2015 in petition no. 006/SM/2015, in the matter of Extended Market Session on Power Exchanges had directed as under in regard to creation of National Open Access Registry (NOAR): -

“The paper by the staff of the Commission recognizes the need of automated and a common web based application that can be used by stakeholders for electronic processing of applications for open access. IEX had earlier submitted a concept paper on National Energy Registry based on the depository system to the Commission. The staff of the Commission is in the process of preparing a paper on the centralized registry on which views of the stakeholders would be elicited.”

- 1.7. The issue of NOAR was also discussed in the CERC Central Advisory Committee (CAC) meeting held on 18.04.2016 where the participants supported the creation of such a platform for facilitating Open Access. This paper takes forward the concept proposed by IEX and as discussed at CAC for analyzing the operational issues faced in the process of availing open access by the customers trading in short term power markets and suggests a solution in the form of setting up of an e-registry for open access transactions thus saving time and simplifying the present procedure.

2. Open Access Framework

- 2.1. The open access framework involves various regulatory and operational entities along with the generators, intermediaries and consumers. These constituents of the framework can be categorized into the following stakeholders as shown in Figure-2:

- i. Government agencies (Both State and Central)
- ii. Regulators
- iii. System operators / open access approver
- iv. Open access customers

2.1.1. Governing Laws and Policies

a. Electricity Act 2003

The enactment of the Electricity Act, 2003 (Act) has accelerated the process of reform in power sector. The Act provides consolidated laws relating to generation, transmission, distribution, trading and use of electricity. The Act envisioned promoting competition & protecting interests of consumers and therefore reforms in regulatory environment of power sector were initiated. The Act, inter alia, envisaged institutional reforms for inter-state and intra-state power trading within India. In addition, the basis of power trading - such as licensing electricity traders, ensuring non-discriminatory access to transmission & distribution network have been put in place that allow for development of power market.

Section 66 of the Act provides as under in regards to promoting development of power market:-

"The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard."

The Act provides for the functions of various statutory bodies such as CERC, SERCs, NLDC, RLDC and SLDCs to operationalize open access in India. The governing framework for Inter-state/ Intra - State Open Access is shown in Figure - 2.

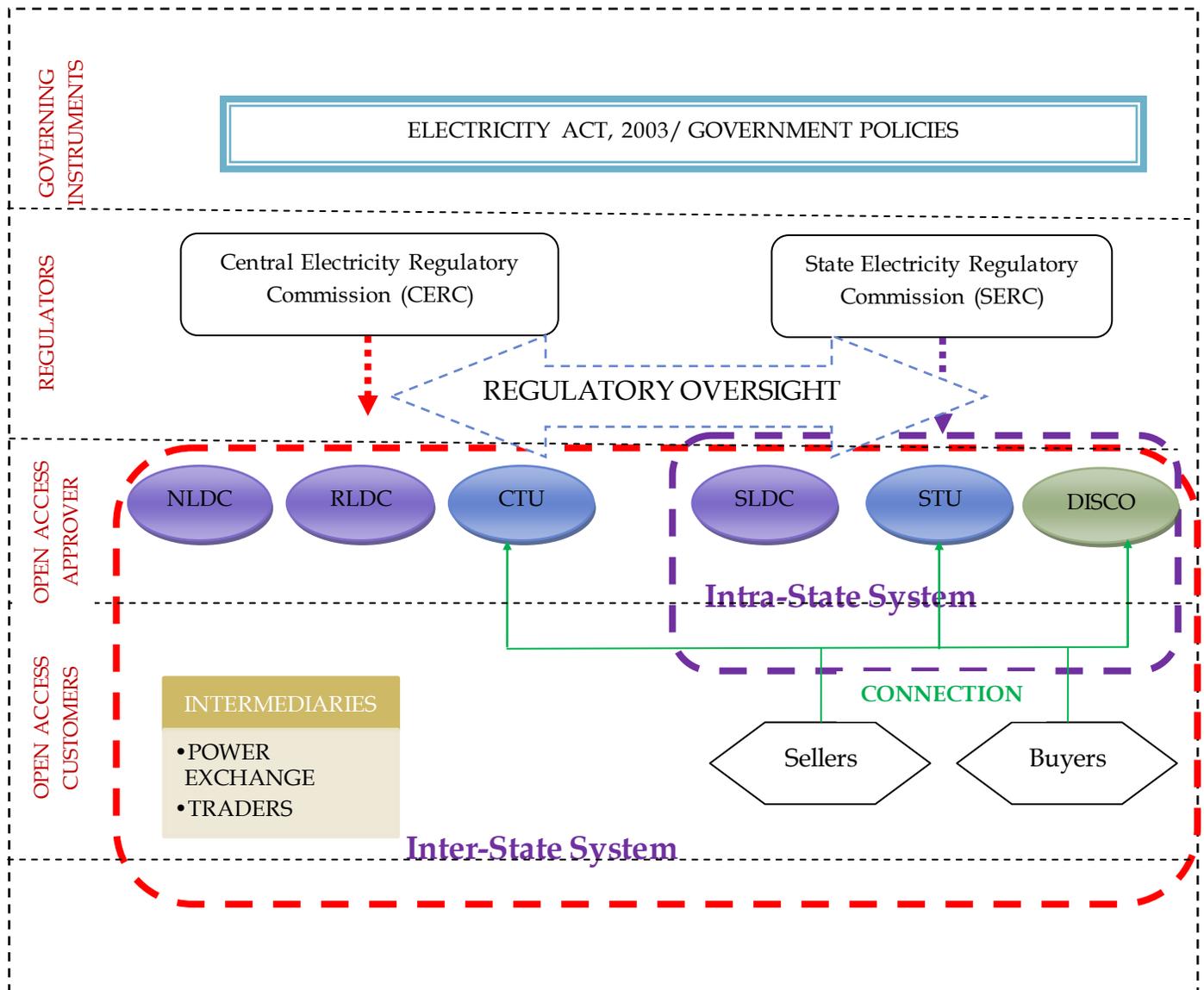


Figure 2:-Governance Framework

b. Tariff Policy & National Electricity Policy

According to the Act, the Tariff Policy guides CERC & SERCs for framing their regulations. The Tariff policy specifies the methodologies for calculation of charges like cross subsidy and wheeling charges and intends progressive reduction in cross subsidy surcharges. The Policy further provides that the regulatory commissions need to monitor the market and may fix trading margin to contain profiteering in shortage situation by market participants.

The National Electricity Policy provides that the regulatory commissions need to provide the facilitative framework for non-discriminatory open access in both transmission and distribution as under: -

"The Regulatory Commissions need to provide facilitative framework for non-discriminatory open access. This requires load dispatch facilities with state-of-the art communication and data acquisition capability on a real time basis. While this is the case currently at the regional load dispatch Centres, appropriate State Commissions must ensure that matching facilities with technology upgrades are provided at the State level..."

2.1.2. Central, State & Joint Electricity Regulatory Commissions

The Electricity Act, 2003 casts duty on Electricity Regulatory Commissions to establish regulatory framework for operationalization of open access in the country. Therefore regulatory commissions play vital role in operationalising open access. Open access in inter-State is governed by CERC through Open Access regulations and Intra State Open Access is governed by regulations framed by respective State Electricity Regulatory Commissions (SERCs).

The Central Commission notified CERC inter-state open access regulations in 2004 for bilateral trading in short term market and in 2008 issued amendments for both bilateral and collective transactions. The State Commissions have notified/are required to notify regulations and terms & conditions for availing open access and these Regulations vary from State to State. Many State

regulatory commissions have implemented open access in their respective States and with some yet to implement the same.

2.1.3. System Operators

System Operator or Load Dispatch Centres are responsible for maintaining grid discipline and supervising optimum scheduling and dispatch of electricity and they act as nodal agency for short term open access. There is one National Load Dispatch Centre and five (5) Regional Dispatch Centres that are regulated by the Central Commission. In addition, there are thirty three (33) State Load Dispatch Centres across States and UTs of India which are regulated by respective State Commissions and Joint Commissions.

2.1.4. Central Transmission Utility (CTU)/State Transmission Utility (STU)

Central Transmission Utility owns and operates inter-state transmission system whereas State Transmission Utilities own and operate intra-state transmission system. Open access is allowed based on surplus transmission capacity in these transmission systems. The nodal agencies for providing long-term access and medium term open access are CTU or the concerned STU.

2.1.5. Distribution Companies

State Commissions regulate distribution licensees (DISCOMs) and these DISCOMs supply electricity to consumers. The Act also requires the DISCOMs to provide non-discriminatory open access to the consumers. Consumers of DISCOMs are connected at either distribution or transmission network, Though some large consumers are connected to the State transmission network directly, still they remain consumers of DISCOM only.

2.1.6. Open Access Customers

- a. **Open Access Customers:** These are buyers or sellers who seek open access to transmission or distribution system to buy or sell electricity.

- b. **Trading Licensees:** The trading licensees are licensees by CERC/SERCs for inter-state/intra-state trading of electricity on behalf of consumers or generators.
- c. **Power Exchange:** Power Exchanges provide electronic trading platform to generators, trading licensees, and open access consumers for buying and selling power.

3. Types of Open Access¹ (Foot note at pg 26)

3.1. “Open Access” means the non-discriminatory provision for the use of transmission system or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission. The Open Access Regulations specified by the Central Commission categorize Open Access into three types on the basis of duration of Open Access i.e. Long Term Access, Medium Term Open Access and Short Term Open Access.

- **Long Term Access:** means the right to use the inter-State transmission system for a period exceeding 12 years but not exceeding 25 years;
- **Medium-Term Open Access:** means the right to use the inter-State transmission system for a period exceeding 3 months but not exceeding 3 years;
- **Short-Term Open Access:** means open access for a period up to one (1) month at one time

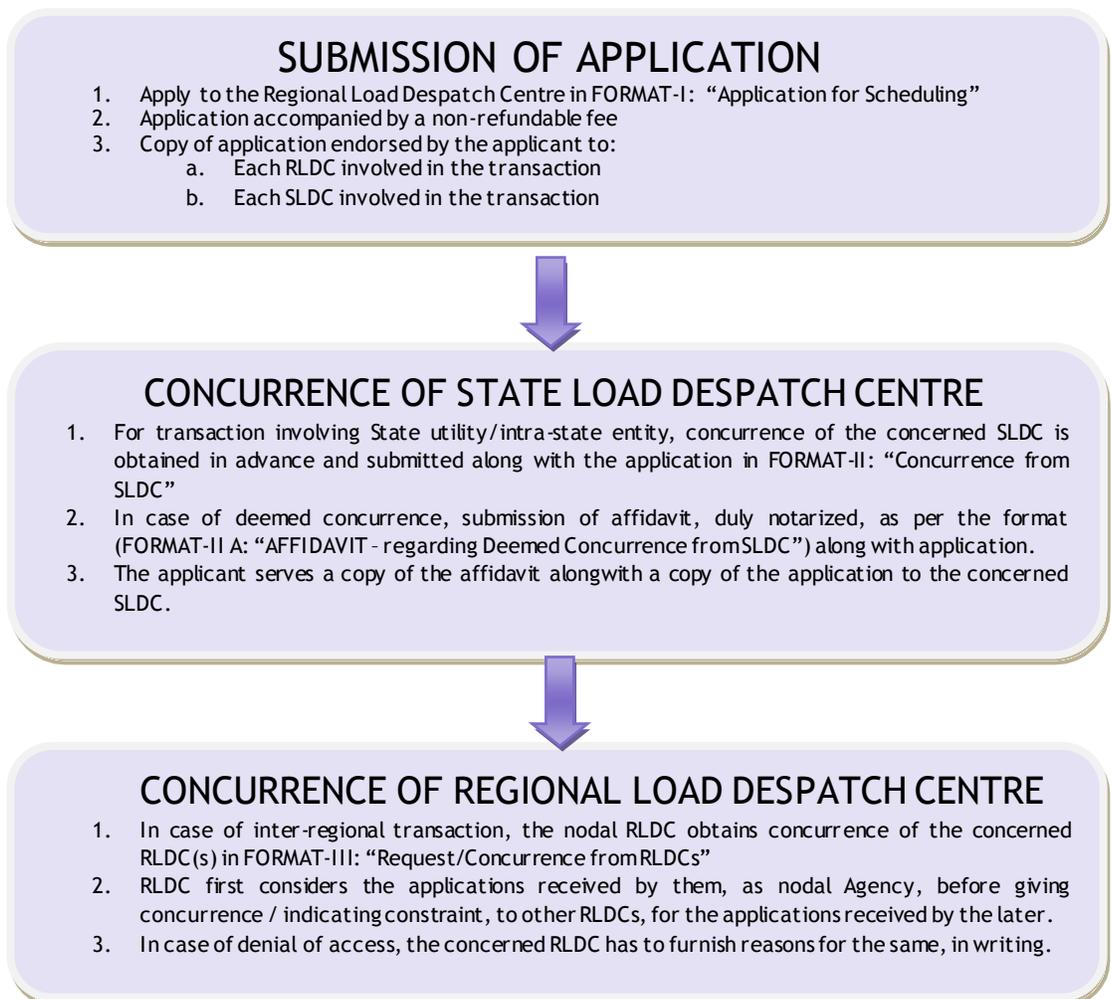
3.2. This paper focuses on short-term open access and procedure for availing it.

Short term Open Access Transactions: At present following two types of transactions exist in the short-term open access process:

- i. Bilateral transactions
- ii. Collective transactions

3.2.1. Bilateral Transactions

“Bilateral transaction” is a transaction for exchange of energy (MWh) between a specified buyer and a specified seller, directly or through a trading licensee or through a power exchange, from a specified point of injection to a specified point of drawl for a fixed or varying quantum of power (MW).The procedure of bilateral transactions has been approved by the Central Commission and implemented by POSOCO. The diagram below depicts the procedure for availing open access for bilateral transactions.

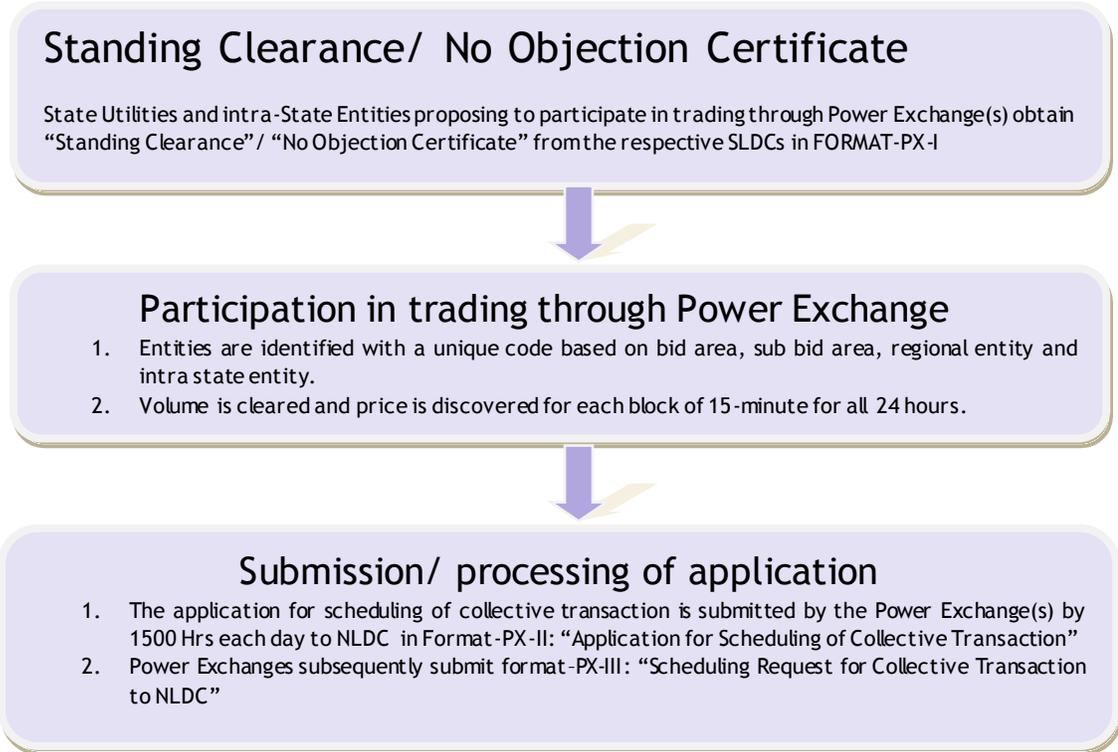


3.2.2. Types of Scheduling available in bilateral transactions

- i. **Advance Booking:** An application for advanced scheduling for a bilateral transaction submitted to the nodal RLDC from 2nd month up to the 4th month, considering the month in which the application is made being the first month.
- ii. **First Come First Served (FCFS):** An application can be considered under FCFS only if it is made after the period of expiry of making an application under advance scheduling and at-least 4 days prior to the commencement of bilateral transaction and all such applications are processed within 3 days of their receipt.
- iii. **Day-Ahead:** Applications received 3 days prior to the date of scheduling and up to 15:00 hrs of day immediately preceding the date of scheduling.
- iv. **Contingency:** Applications made after 15:00 hrs of the day immediately preceding the day of scheduling.
- v. **Extended Market Session:** Markets are now open 24X7 for Intra Day and Day Ahead Contingency trades on power exchanges and hence, applications can be made for the same/next day of scheduling.

3.2.3. Collective Transactions

“Collective transaction” is a set of transactions through power exchanges where anonymous, simultaneous competitive bidding by buyers and sellers is used for the price discovery. The following procedure of collective transactions has been laid down by the Power System Operation Corporation Ltd. (POSOCO) and is approved by the Central Commission:



3.2.4. Scheduling of Collective Transactionsⁱⁱ

- i. Concerned RLDCs accommodate the schedule of collective transactions to the inter-regional schedule of each regional entity, which are finally issued by RLDCs at 18:00 hrs of each day.
- ii. RLDCs incorporate all buyers within a State (clubbed together as one group) and all sellers within a State (clubbed together as another group), in the schedules of the collective transactions.
- iii. Power Exchange(s) sends the detailed breakup of each point of injection and each point of drawl within the state to respective SLDCs by 18:00 hrs after receipt of acceptance from NLDC.

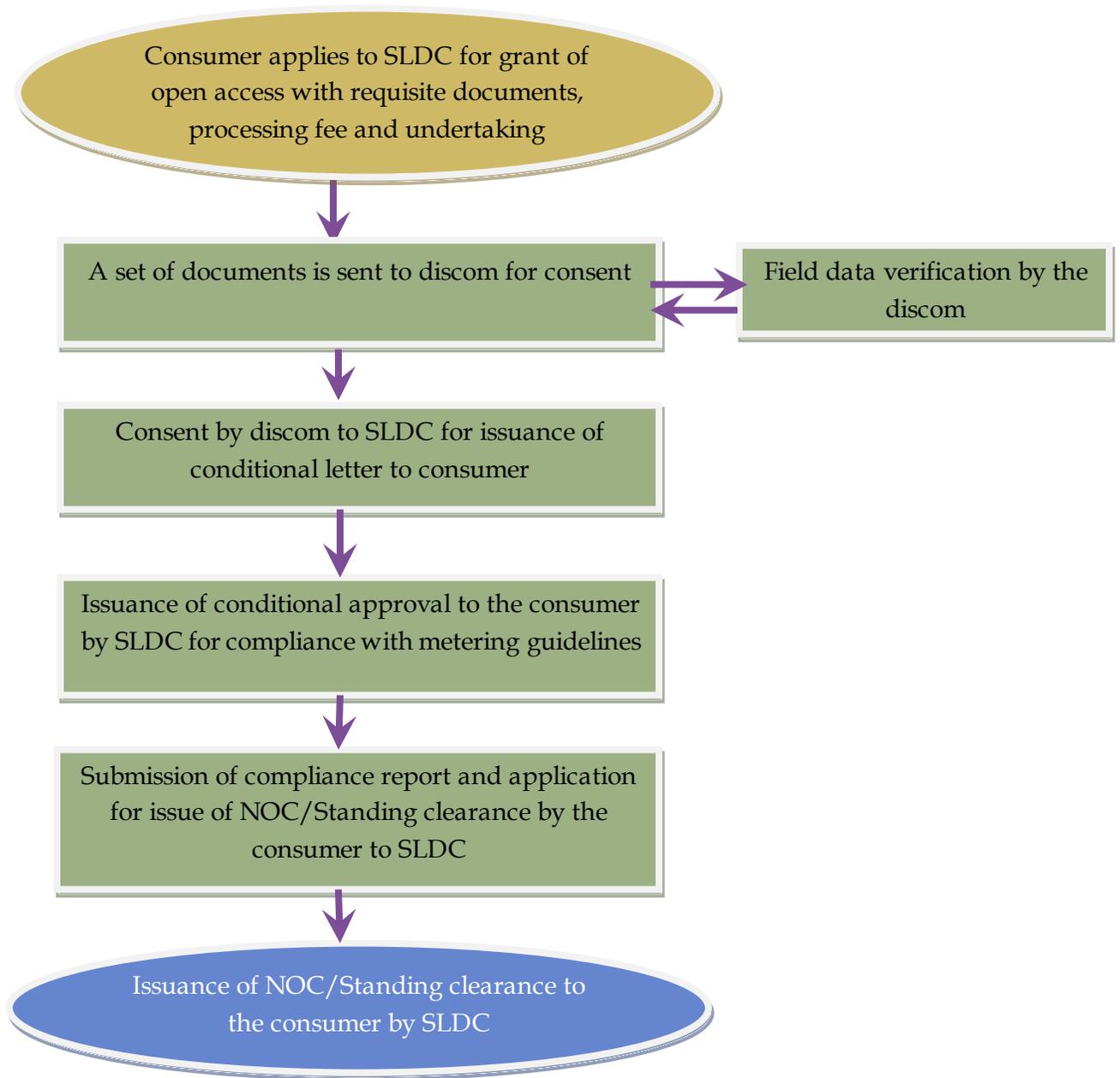
- iv. The details for scheduling request for collective transaction are submitted by Power Exchange(s) to the respective SLDCs as per Format-PX-IV: “Scheduling Request for Collective Transactions”.

4. Overview of Open Access implemented in India

- 4.1. The Central Commission has notified inter-State open access regulations and many States have notified intra-State open access regulations in their respective States. In India, open access to inter-State transmission has been successfully operationalized whereas open-access to transmission and distribution at the intra-State level are yet to be implemented.
- 4.2. To illustrate the process of grant of open access, procedure followed by some of the States is demonstrated herein below. It may be noted that the process of grant of open access varies from State to State and it may require some level of standardization.

- i. **Procedure for grant of open access at State level**

SLDC is the nodal agency for grant of short-term open access to all eligible customers. Procedure for availing open access and NOC by a consumer is shown below:-



5. Procedural Issues

- 5.1. The Current procedure is predominantly manual, starting from applying for grant of approval by state entities (SLDC/DISCOMs) to finally getting the approval. This makes entire process cumbersome with higher possibility of manual errors.

- 5.2. The number of participants in short-term market has increased significantly over time. This has not been accompanied with addition of appropriate number of operating staff at the SLDCs for processing of OA applications. This has led to additional burden on existing employees and this therefore leads to delay and/or errors in processing of the application. Open access applicants have to apply with almost the same data repetitively and RLDCs/SLDCs have to check the same data repeatedly which brings further inefficiency in the system. There may be many such operational constraints while processing an application. Presently there are about 3000 open access customers, more than 25 SLDCs, 5 RLDCs, NLDC, two power exchanges and several traders and advisory members. Even with the current number of stakeholders in the short-term open access market, the government agencies are facing difficulty in processing of OA application and this is bound to increase with further increase in participation.

- 5.3. A solution to the above problem is to move to an IT based system that can be accessed by all the market participants and the operationalizing entities. Additionally, the manual way of obtaining the open access needs to be changed to facilitate shorter turnaround time, for e.g. for an intra-State entity to do an inter-regional transaction, it has to first obtain a clearance from its SLDC and then apply to the RLDC. This entire workflow can be automated wherein an open access consumer submits its application to a central IT based system and the stakeholders give their respective online concurrences/clearances. The open access consumer should not be required to submit information to

different agencies for consummating a transaction. Instead, this central IT based system can function as a single window clearance. This central IT based system may be called as the 'National Open Access Registry'. This would be a single point interface for all the stakeholders of short-term open access. The concept of 'National Open Access Registry' is similar to IRCTC website for online booking of Railwaytickets, accounting and cheque clearing by the banks and depository system in stock markets. The relevant features of these platforms are detailed at Annexure -I.

'National Open Access Registry' platform will have similar features as that of the above mentioned platforms, automating the open access process along with creation of repository of information on open access transactions.

6. National Open Access Registry

- 6.1. Trading in short term market requires customers to avail conditional approval of open access and subsequently No Objection Certificate (NOC) from their respective nodal agency (either SLDC or STU and the DISCOM).
- 6.2. The process for obtaining NOC is very similar across States with some procedural differences. The conditional approval is granted for a period of one year and NOC is issued on a monthly or quarterly basis. The NOCs issued could be of varying duration, quantum and time intervals. These NOCs need to be tracked by SLDCs, RLDCs, power exchanges and traders for ensuring hassle free trading by customers under the ambit of extant regulations.

The process of issuance of conditional approval, grant of NOC, submission of NOC is done manually and is prone to human errors apart from other issues. World over information technology has brought in sophisticated processes and has helped in establishment of centralized automated paperless systems. On the contrary, in India a centralized IT system is yet to be established to manage the processes related to short-term market comprising power exchanges and

bilateral trades. National Open Access Registry can be one such platform that would manage the automation function centrally. NOAR platform is quite similar to OASIS platform in North America. Annexure II contains details of OASIS

a. Objectives of National Open Access Registry

The objectives of setting up National Open Access Registry are as under: -

- i. Establishing an integrated IT based system accessible to all stakeholders including open access participants, trade intermediaries and national/regional/state LDCs, regional power committees.
- ii. Maintaining repository of information like open access granted to all customers, inter-state corridor available for short term open Access (STOA) as uploaded by NLDC/RLDCs and availed STOA as per corridor limit in an electronic form.
- iii. Eliminating the voluminous and cumbersome paper work involved in the process (starting from taking standing clearance by entities to approval of STOA application by NLDC/nodal RLDC)
- iv. Reduce the gate closure time for executing a short term open access transaction.

b. Characteristics

National Open Access Registry would allow for seamless flow of information among stakeholders of open access. The proposed registry system is characterized by the following:

- i. Registry acts as an electronic platform and repository for Inter-State Open Access Approvals. SERCs can adopt it for intra-State transactions as well
- ii. It would be an Integrated IT based system, with access to all the OA Participants, Trade Intermediaries and National/Regional/ State LDCs.
- iii. SLDCs can give OA online clearance to a participant

- iv. Open Access granted and quantum already utilized, in earlier contracts, would be recorded in the system
- v. Applicants will make online application for STOA to RLDC/NLDC through registry
- vi. Registry, before issuance of approval for a STOA application, shall check availability of OA clearance of respective SLDC, and the corridor availability as uploaded by NLDC/RLDCs for the corridor requested for in the application.
- vii. NLDC/RLDC/SLDC would be able to access the registry online for accounting and management purposes of OA, they can precisely control quantum of clearance/corridor and withdrawal of clearance/corridor at any point
- viii. Financial transaction (application fee, STOA charges etc) can be handled online subsequently.
- ix. Registry shall allow SLDCs to upload details of issuance and remittance of OA and would also help automatic issuance of OA Clearances by NLDC/RLDC
- x. LDCs could use the Registry for OA accounting
- xi. Power Exchanges could access and use the data on a daily basis through Registry for Bid management & application for scheduling purposes w.r.t. Collective as well as Bilateral segments
- xii. Registry could be assigned a legal status in the lines of Registries in Capital Markets through appropriate regulations

c. Benefits of Registry to Indian Electricity Sector

- i. Logistic and communication problems w.r.t. OA issuance and processing being the foremost hindrance for SPOT transactions gets resolved. Workload and manpower requirements due to paperless settlement would get reduced.
- ii. This will help in formalizing contracts taking place closer to delivery as well as real time balancing market, as and when introduced. This will

reduce dependence on DSM and more and more quantity could be scheduled.

- iii. Regulators and LDCs get uniform and updated information, thereby bringing in transparency, efficiency and economy.
- iv. Chances of double counting get eliminated.
- v. Better communication and information increases the scope of transactions in Bilateral and Exchange based forward and Spot markets.
- vi. TTC/ATC/Transmission margins will be available to the stakeholders
- vii. Standardization and mapping of all the entities in India would be possible.
- viii. Accounting of open access transactions would be simplified. Secure repository of NOCs would be established

d. Open Access Registry as a Data Repository Unit

- i. The Open Access Registry can also function as a ‘Data Repository’ unit, where it will store all the Short Term Open Access transaction data. Currently accumulating data and processing this data for monitoring the markets takes approximately one month. If the Open Access Registry is to act as a data repository unit where the data for all short term transactions shall be kept, data from the corresponding market participants including the traders and the power exchanges should be available with registry. This can provide faster and better access to information to all the market participants.
- ii. Easily accessible and comprehensive data sets support effective market monitoring and facilitate market design evaluation. The regular update of the data would help in keeping a check on unfair market transactions, compliance by participants to the rules and regulations, exercise of market power by selective market players and other deficiencies of the system.

- iii. National Open Access Registry can be a key reform in power market functions, bringing in more transparency and thereby, can result in improvement of the extant system.

e. Working model of the registry

- i. The following process chart at Figure 3 gives an idea of working of Registry:-

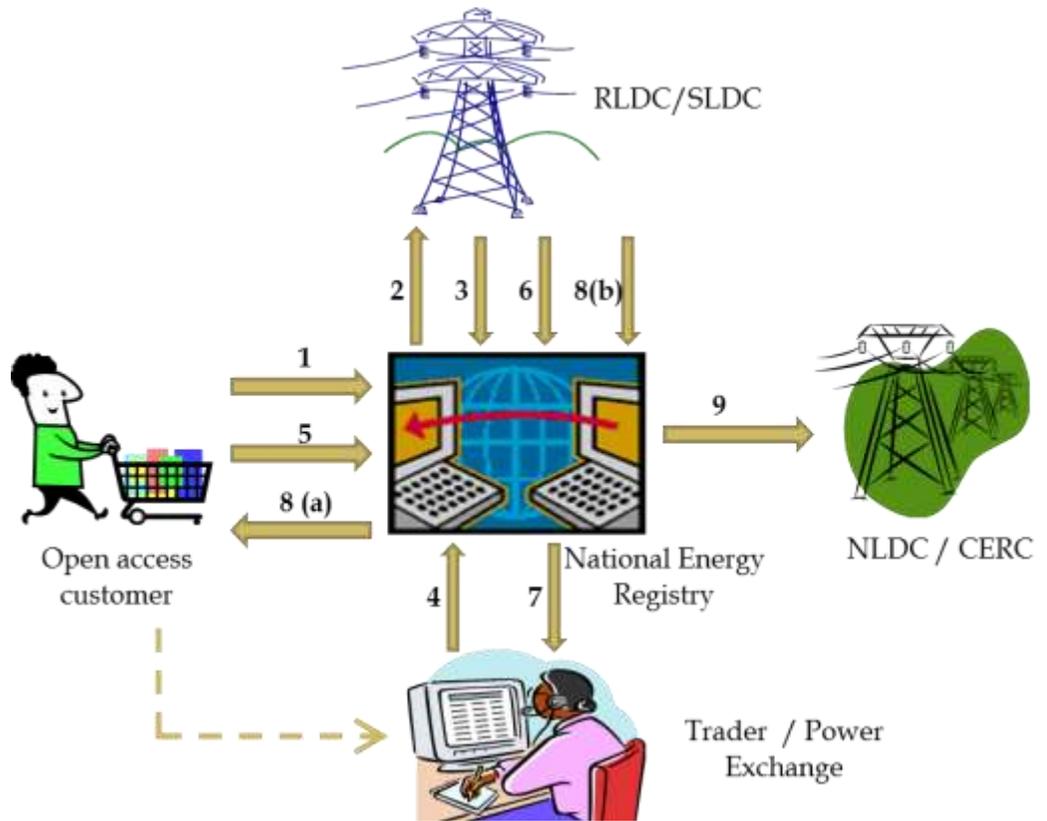


Figure 3: Process flow of application and scheduling of transactions through registry

ii. The following steps give an idea of working of Registry: -

Step 1:- Open Access Customer applies for Standing Clearance in the Registry, feeding information like quantity, time period, time blocks etc. seeking approval from its respective SLDC (Regional Entity to RLDC) for prior Standing Clearance/NOC.

Step 2:- SLDC receives the information request from their Open Access Customers through Registry.

Step 3:- SLDCs accesses the application and processes the application as per its rules and regulations. If the application is in order, it permits the Open Access Customer to trade in Short-term Transaction by giving Clearance via Registry. The registry will have all information of Open Access Customers. The information of NOC can be viewed by OA Customers and SLDCs at any point of time.

Step 4:- Applicant (Trader/Exchange) will submit the Application for Short-term Transaction.

Step 5:- Registry will verify the Application. The Registry will automatically deduct the quantum and period from NOC received from SLDC with the Application made by Trader/Exchange.

Step 6:- NLDC/RLDCs will be required to upload the Corridor available for Short-term Transactions. The transactions could be approved based on corridor availability. In case NLDC/RLDCs want to revise the transmission corridor uploaded earlier, this option would also be available with them.

Step 7:- The Approval is received by Trader/Exchange on the basis of Standing Clearance of both parties and available Corridor on the applied corridor. Registry will update the balance quantum in NOC after deducting the approved quantum. Hence, leftover quantum for a

particular period in respect of an OA customer will be updated and would be available with Registry for further Applications.

Step 8 (a) and (b):- On day ahead basis, the Registry would create a report of all approved transactions for the next day which can be incorporated by the respective RLDC/SLDC in their schedule.

Step 9:- Various reports on short-term market (like CERC Monthly Report on short-term transactions of electricity in India etc.) can easily be generated through registry and downloaded by CERC/NLDC for analysis and reporting purposes. In addition to this, any information required by RLDCs, SLDCs, Open Access Customers and Trader/Exchange relevant to them can also be accessed through the Registry.

7. Key aspects on structure and functioning of the Registry

a. Establishment of the Registry

The Electricity Act, 2003 provides for development of the market under Section 66 by CERC. The Commission has facilitated development of the market by issuing trading licenses to electricity traders, notifying the Short Term Open Access Regulations for Short Term Bilateral Transactions and Power Market Regulations for collective transactions for purchase and sale of electricity. As the National Open Access Registry will be utilized for facilitating short term transactions and collective transactions involving inter-State Open Access, the establishment of registry may be approved by Central Electricity Regulatory Commission. The registry after approval shall be required to frame rules and bye laws for its day to day business with approval of the Central Commission.

b. Neutrality

- i. It is evident that the National Open Access Registry will have access to all information regarding short-term electricity transactions taking place all over the country by traders and power exchanges.

These transactions could be commercially sensitive in nature. The Registry should, therefore, be organized such that functioning of the management of the registry is completely insulated from the commercial interests of the promoters or the shareholders or any of their sister concerns.

- ii. It is envisaged that the registry would provide information to the Commission for analysis and reporting purposes and therefore it would also act as a layer of surveillance. Power Exchanges also serve as a surveillance system and this is reflected in Regulation 25 (iii) of the Power Market Regulation.

“Regulation 25 (iii) of the PMR provides that: The Power Exchange shall constitute a Market Surveillance committee headed by an independent director of the board and having members from the executive team of the Power Exchange. No member of this committee shall be a Member of the Power Exchange.”

- iii. To maintain integrity of the surveillance mechanism and to insulate market from systemic risk to the extent possible, one surveillance mechanism should not be in control of another surveillance mechanism. Accordingly, NOAR shall operate independently of the Power Exchanges. This will provide a check and balance to the system.

c. One or Many registries:

- i. One of the major and core functions of the registry would be recordkeeping of transactions apart from providing platform for smooth processing of open access applications. With limited offerings possible in this space at present level of Short Term

Transactions, the benefits of competition might not accrue if there are multiple registries. Multiple registries any way would require a seamless information flow between themselves. Achieving economies of scale on such a platform will be necessary to reduce the transaction costs.

- ii. Secondly, with more than one registry, there is possibility of duplication of effort. Further, all the open access permissions/NOCs would not be stored at one registry
- iii. We already have a single REC registry operational in electricity sector. Similarly, there can be a single National Open Access Registry.

d. Ownership

With a single National Open Access Registry, the function may be assigned to NLDC, the apex body to ensure integrated operation of the national power system, which is already entrusted with the functioning of REC registry. National Open Access Registry can be owned and operated by POSOCO (NLDC). A separate Advisory Board under NLDC may be constituted to manage the day-to-day operations of the Registry, with representation of RLDCs/ SLDCs on the Board. The OASIS implementation in North America is being undertaken by the public utilities that own, control or operate the transmission corridor as detailed in **Annexure-II**

e. Expenses of the registry

- i. Being a single entity of its kind, the registry should be a 'not-for-profit' organization. At this juncture, it becomes crucial to mention that National Open Access Registry as an organization may not

accrue profits to its owners but a financially viable functional registry would benefit the power sector as a whole.

- ii. The organization should meet its expenses through revenue earned by facilitating the platform. It can earn revenue through fees & charges levied on the lines of the REC registry like Application Processing & Registration Fees (One time), Annual Charges, Revalidation Charge, transaction Fee. These charges levied by the registry require an approval of CERC.

f. Dispute Resolution

- i. During the initial phase of operations of the National Open Access Registry, some disputes may arise between the participants of NOAR and NOAR. A clear dispute resolution mechanism needs to be in place to address the issues arising out of implementation. NOAR should have an internal Dispute Resolution Mechanism to resolve the dispute between participants of NOAR as well as between the participants and NOAR. If the dispute is not resolved, then the aggrieved party may approach the Commission.

g. Payment of Transmission and Operating Charges

- i. In the long-run, the NOAR can be used for payment of the Operating Charges and Transmission charges by the participants. Once the NOAR application approval process is operationalized, going forward, in a few years, the NOAR platform can provide for a payment gateway which can be used by the nodal agencies (SLDCs, RLDCs, NLDC, STU and CTU) for collecting the various operating and transmission charges. This will centralize the collection and

disbursal of the various charges and facilitate implementation of the e-payment gateway in a smooth & transparent manner.

8. Issues and Challenges

- a. **Physical verification for conditional approval:** Before issuance of NOCs, the SLDCs issue conditional open access approval for duration of 1 year or so. Based on this conditional approval, NOC is issued on a monthly/quarterly basis. This conditional approval requires physical verification of infrastructure like meters etc. at the client premises which is essentially manual.
- b. **Integration with SLDCs:** The role of SLDCs would be critical for success of the National Open Access Registry. For inter-State trades to consummate, NOC from SLDC is required. The SLDCs need to integrate with the registry for its successful implementation. This would require IT implementation at the SLDCs and the integration and dematerialisation of NOCs (electronic form of NOCs) may require acceptance by the respective state regulators.
- c. **Corridor Allocation:** The corridor can be allocated through the registry either automatically or by NLDC/RLDCs. If the allocation is done automatically then on one hand the registry would be allocating corridor for short-term transactions and RLDC /NLDC would allocate transmission corridor for long/medium term transactions. This corridor allocation in this manner may create co-ordination issues. Hence, the NLDC/RLDCs may allocate corridor through the registry and the allocation should not happen automatically.
- d. **Financial Transactions:** The financial transactions in a depository take place through a clearing house. However, in electricity sector, such an institution is yet to be created. It would be better to route all the financial transactions centrally through a clearing house. But given the present circumstances,

with the operationalization of the registry the financial transactions may continue to take place as is being done presently.

- e. **Cyber security issues:** The open access registry would be a centralized system. With heavy reliance on computers, internet, communication etc. In such a scenario, cyber security becomes very important to prevent or respond to cyber-attacks.
- f. **Educating the stakeholders:** The stakeholders and participants would be spread across the nation. For a smooth functioning, the stakeholders would have to be educated about the system, processes and its usage.

9. Stakeholders Feedback

Comments are invited from system operators, market participants, power exchanges, electricity traders, distribution companies, generating companies and other stakeholders on the points discussed in this paper. Based on the comments, feedback and responses received, the staff will process the case and seek appropriate direction from the Commission with regard to the establishment, management and operation of the National Open Access Registry.

ⁱ To be aligned with CERC Regulations, as amended from time to time.

ⁱⁱ As per the Regulations of CERC , amended from time to time

Features of IRCTC, Bank Accounting and Depository relevant to NOAR

I. IRCTC e-Ticketing System

IRCTC e- Ticketing System is a platform for online booking of tickets. The IRCTC website displays seat availability status and accordingly allows booking of seats. This feature is some what similar to online application processing of the open Access customers with checking the availability of the required transmission corridor and online approval. This feature may be utilized for automation of payments/refunds for open access participants.

II. Bank Accounting

The bank accounting platform facilitate on line debit and credit, transfer of funds after checking the balances in the bank account on each transaction. The account holders are kept fully informed about the each transaction with details of available balance, transactions etc.

III. Depository System

- a) A depository in capital market is a specialist financial organization holding securities such as shares either in certificated or non-certificated (dematerialized) form so that ownership can be easily transferred through a book entry rather than the transfer of physical certificates. This allows brokers and financial companies to hold their securities at one location where they can be available for clearing and settlement. This is usually done electronically making it much faster and easier than was traditionally the case where physical certificates had to be exchanged after a trade had been completed.
- b) Although India had a vibrant capital market which is more than a century old, the paper-based settlement of trades caused substantial problems such as bad delivery and delayed transfer of title etc. With the establishment of the securities Depository in 1996, the securities are held in depository accounts, which are similar to holding funds in bank accounts. Transfer of ownership of securities is done through simple account transfers. This method does away with all the risks and hassles normally associated with paperwork. Consequently, the cost of transacting in a depository environment is considerably lower as compared to transacting in certificates.
- c) Security Depository itself functions as the central accounting and record keeping office and clearing house in respect of these shares and securities through electronic operations. As all these are electronically linked, speed, accuracy and safety are assured. Risks attendant on handling physical scripts are eliminated.

d) Depository helps eliminating the following problems:

- i. At the time of issue of securities, processing, printing and posting of physical securities increases the issue cost. In addition, very high load at the time of a public issue, both with the registrar and the postal system, results in inefficient distribution of securities leading to investor dissatisfaction.
- ii. The increase in trading in secondary market increase the cost to the company for effecting transfers and also increases time taken for transfer causing inconvenience to the investors.
- iii. The reconciliation of the securities in the hand of the various investors and market intermediaries is at best achieved once in a year in the physical form, which increases the possibility of proliferation of bad paper.
- iv. The system of handling market deliveries also increases the unchecked growth of bad paper. In addition, the issuing company is unable to monitor, in a regular fashion, the change in holding pattern of its securities.
- v. The load on the registrar and the postal system also increases at the time of book closure and record date for distribution of corporate benefits, which results in higher cost and delay in processing these.

e) Benefits of Depository

The main benefits of the depository will be:-

- i. Depository provides an efficient solution to the ills associated with paper and offers numerous benefits to various market participants and reduces transaction cost.
- ii. The electronic holdings reduce paperwork & thereby reduce direct costs of record keeping, physical handling, movement & safekeeping of certificates.
- iii. Corporate actions such as public offers, rights, conversions, bonus, mergers/ amalgamations, subdivisions & consolidations will be carried out without the movement of papers, saving both cost & time.

- iv. Information of beneficiary owners is readily available. The issuer gets information on changes in shareholding pattern on a regular basis, which would enable the issuer to efficiently monitor the changes in share holdings.
- v. Instances of loss/theft/mutilation/forgery, etc. of certificates will be completely eliminated.
- vi. The company acquires a progressive, investor friendly image.
- vii. Company can save substantial time of the secretarial department spent on transfer of shares, follow up with registrars, etc.

OASIS IN North America

The Open Access Same-Time Information System (OASIS), is an Internet-based system for obtaining services related to electric power transmission in North America. It is the primary means by which high-voltage transmission lines are reserved for moving wholesale quantities of electricity. The OASIS concept was originally conceived with the Energy Policy Act of 1992, and formalized in 1996 through Federal Energy Regulatory Commission (FERC) Orders 888 and 889.

OASIS provides information by electronic means about available transmission capability for point-to-point service and a process for requesting transmission service on a non-discriminatory basis. OASIS enables transmission providers and transmission customers to communicate requests and responses to buy and sell available transmission capacity.

FERC order no 889 provides rules establishing and governing OASIS and prescribes standards of conduct.

" Under this final rule, each public utility (or its agent) that owns, controls, or operates facilities used for the transmission of electric energy in interstate commerce will be required to create or participate in an OASIS that will provide open access transmission customers and potential open access transmission customers with information, provided by electronic means, about available transmission capacity, prices, and other information that will enable them to obtain open access non-discriminatory transmission service."