

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

- 1. Shri Ashok Basu, Chairman**
- 2. Shri K.N. Sinha, Member**

**In the matter of**

Terms and conditions, etc for grant of licence for inter-state trading

**ORDER**

The Electricity Act, 2003 empowers the Appropriate Commission to issue licence for trading and for that purpose to specify by regulations, the form and manner of application for grant of licence for undertaking trading in electricity, particulars and manner of publication of notice by person who has made the application for grant of licence and other related matters. A Discussion Paper, in this regard, has been placed before us.

2. We have perused the Paper. On perusal, we feel that the Discussion Paper should form the basis for framing of regulations mandated by the Electricity Act, 2003. We, therefore, direct that the Discussion Paper be treated as a *suo motu* petition and be given wide publicity, with a view to inviting suggestions or comments from the stakeholders and interested persons. The Discussion Paper shall also be posted on the website of the Commission. The suggestions/comments shall be filed by the persons concerned latest by 30<sup>th</sup> September 2003.

**Sd/-  
(K.N. SINHA)  
MEMBER**

**Sd/-  
(ASHOK BASU)  
CHAIRMAN**

**New Delhi dated the 10<sup>th</sup> September, 2003**



**CONCEPT PAPER  
ON  
ELIGIBILITY CONDITIONS  
FOR GRANT OF POWER TRADING LICENCE**

**September, 2003**



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
7<sup>th</sup> Floor, Core-3, SCOPE Complex,  
7 Institutional Area, Lodhi Road,  
New Delhi-110003**

**Tel.: 91-011-24361051, Fax 91-011-24360010**

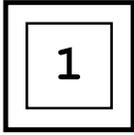
***E-mail: [cercind@ndf.vsnl.net.in](mailto:cercind@ndf.vsnl.net.in)***

***Website: <http://www.cercind.org>***

# Contents

---

Enabling Environment for trading – The Electricity Act 2003.....	1
Introduction .....	1
Electricity Act 2003 and Trading.....	2
Players for trading .....	2
Important transitional provisions .....	4
Revocation of licence .....	4
Present and possible future market scenario for trading.....	5
Present market scenario .....	5
Existing mechanism and arrangements of trading.....	6
Payment Security Mechanism and trading margin.....	6
Future market scenario.....	8
Role of trader under ABT scenario.....	9
Mechanism of trading .....	11
Issues in the Trading.....	12
Eligibility Criteria – Technical requirement.....	13
Technical criteria for Electricity Trader.....	13
International Experiences.....	13
<i>Technical Qualifications</i> .....	13
Eligibility Criteria – Financial requirement.....	16
Financial criteria for Electricity Trader.....	16
License Fees .....	18
Capital adequacy requirement.....	18
What if the trading limit is exceeded.....	19
Annexure.....	21



# Enabling Environment for trading – The Electricity Act 2003

---

## Introduction

The Electricity Act, 2003 (hereinafter: Act), which came into force on the 10<sup>th</sup> of June, 2003, repeals the Indian Electricity Act, 1910; the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998. This Act introduces and recognizes the concept of “trading” as a distinct licensed activity. The intention of the Act by introducing trading is to provide choice before the consumers and to introduce the competition.

There are two CERC functions that are directly related to trading. In the first instance, the issuing of licenses to persons to function as electricity trader with respect to inter-state operations (S.79.e), Section 52 of the Electricity Act 2003 stipulates that the appropriate commission may specify the technical requirement, capital adequacy requirement and credit worthiness for being an electricity trader. This aspect, of course, lies at the heart of the current Report, and will be discussed in-depth in the chapters below. In the second instance, the CERC may also fix the trading margin in the inter-State trading of electricity, if considered necessary (S.79.j).

It is important to mention at the outset that the Act distinguishes trading and the prerequisite trading licence according to the geographical spread of the activity undertaken, to know:

- i. Inter-State trading Licence; and
- ii. Intra-State trading Licence.<sup>1</sup>

For the purpose of this Report, we will focus on the relevant aspects of inter-State trading licenses and, only in rare instances refer to the intra-State trading licenses.

This chapter will further highlight the crucial provisions of the newly adopted Act, by providing an overview of the relevant definitions and enabling provisions (2), focus

---

<sup>1</sup> A literature review indicates that other countries have depending on their local market conditions distinguished trading licenses along different lines, e.g. under the Electricity Industry Act, 2000, in Australia both wholesale and retail trading licenses have been developed; in the recent legislation adopted by Bosnia-Herzegovina a demarcation is made between a ‘first tier licence’ for the sole supplier for non-eligible customers (regulated prices) and a ‘second tier licence’ for selling to qualified customers and traders (negotiated prices).

on the trading licence conditions referred to in the Act (3); identify who can not trade (4); indicate the players that would be allowed to trade (5); discuss the current and future market scenario (6), mechanism by which trading may take place (7); and finally issues which need attention.

## **Electricity Act 2003 and Trading**

The Act broadly defines *trading* as “[the] purchase of electricity for resale thereof and the expression “*trade*” shall be construed accordingly” (see S. 2.71).

The definition of an *electricity trader* reads as follows: “a person who has been granted a licence to undertake trading in electricity under S.12” (see S. 2.26).

From the above it is clear that trading would necessarily involve two activities: both the purchase and the resale of electricity by the same person. Or conversely, the single activity of sale or the mere purchase of electricity by a person would not suffice to qualify as trading, since it does not combine both activities by the same person. In other words, trading of electricity implies that the trader buys electricity from one party and sells it to another party for some consideration.

Furthermore, a person under the Act “shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person” (S. 2.49). According to S.12 of the Act, no person shall undertake trading in electricity unless he is authorized to do so by a licence issued by the Appropriate Commission, i.e. the Central Electricity Regulatory Commission or the State Electricity Regulatory Commission respectively (see S.2.4). The CERC may, on application made to it, grant a licence to any person to undertake trading in electricity as an electricity trader, in any area which may be specified in the licence (S. 14). Importantly, the Act states unambiguously that the licence shall continue to be in force for a period of twenty-five years, unless such licence is revoked (S. 15.8).

## **Players for trading**

The Act excludes several entities from engaging in the trading activity, namely:

- i. The National Load Dispatch Centre (S. 26.2);
- ii. The Regional Load Dispatch Centre (S.27.2, second proviso);
- iii. The State Load Dispatch Centre (S.31.2, second proviso);
- iv. The Central Transmission Utility (S.38.1, first proviso);
- v. The State Transmission Utility (S.39.1, first proviso); and
- vi. A transmission licensee (S.41, third proviso).

Given the broadly phrased definitions quoted above, any company or body corporate or association or body of individuals (whether incorporated or not, or artificial juridical person) that intends to purchase electricity for resale thereof, and meets the eligibility criteria determined by CERC, should be granted a trading licence.

For the sake of efficiency, the Act enumerates several entities would be “deemed” holders of a trading licence, and hence are not obliged to apply for a trading licence even when undertaking a trading activity. We will provide an overview of these entities below. Firstly, in case the Central Government undertakes trading in electricity, whether before or after the commencement of the Act, it shall be deemed to be a licensee (S. 14, third proviso). Secondly, the Act also states that a distribution licensee shall not require a licence to undertake trading in electricity (S.14, ninth proviso). Thirdly, the Act enables the CERC, on the recommendation of the Central Government, to direct by notification (subject to such conditions and restrictions, if any, and for such period as may be specified) that no trading licence is required for any local authority, Panchayat Institution, users’ association, co-operative societies, non governmental organizations, or franchisees (S. 13).

The Act mandates CTU to provide non-discriminatory open access to its transmission system for use by any licensee or generating company (on payment of the transmission charges); and any consumer as and when such open access is provided by the State Commission (under sub-section (2) of section 42) on payment of the transmission charges and a surcharge thereon, as may be specified by the Central Commission (S. 38(2).d). The Act enables the SERC to introduce open access, or the non-discriminatory provision for the use of the distribution system with such lines by any licensee, consumer or generator, to the distribution system (See. S.2.47). Indeed, the SERC must introduce open access in such phases and subject to such conditions (including cross-subsidies) as may be specified within one year of the entry into force of the Act (S. 42.2). The SERC may also permit a consumer or class of consumers to receive supply of electricity from a person other than the distribution licensee of his area of supply (S. 42.4). These provisions will provide a level playing field for trading.

To render a complete picture, we must as well briefly mention the functions of the Central Electricity Authority pertaining to trading. It should, in particular, advise the Central Government on improving trading of electricity (S. 73.h). Its other related functions would consist of collecting and recording the data concerning trading and carrying out studies relating to cost, efficiency, competitiveness (S. 73.i) as well as promoting research in matters affecting trading of electricity (S. 73.k).

## **Important transitional provisions**

The Act contains several transitional provisions clarifying the relationship between the Act and the repealed legislation. Of relevance is (e.g. for distribution licenses) that all licenses granted under the provisions of the repealed laws, may for a period, not exceeding one year from the appointed date, continue to operate as if the repealed laws were in force, and thereafter such licenses will be governed by the Act (S.172.b). Importantly, the State Government, may, by notification, declare that that any or all the provisions of the Act shall not apply in that State for such period not exceeding six months from the appointed date (S.172.d).

## **Revocation of licence**

A licence, including a trading licence, may be revoked in several instances. Firstly, where the licensee makes willful and prolonged default by not doing anything required of him under the Act, rules or regulations made there under. Secondly, where the licensee breaks any of the terms or conditions of his licence which expressly state that breach thereof would render it liable to revocation. Thirdly, where the licensee fails to show that he is in a position to fully and efficiently discharge the duties and obligations imposed on him by his licence; or to make the deposit or furnish the security, fees or other charges; or where the financial position of the licensee is such that he is unable to fully and efficiently discharge the duties imposed on him by his licence (see S. 19.1). However, the Commission may, instead of revoking a licence, permit it to remain in force subject to such further terms and conditions as it thinks fit (S. 19.4).



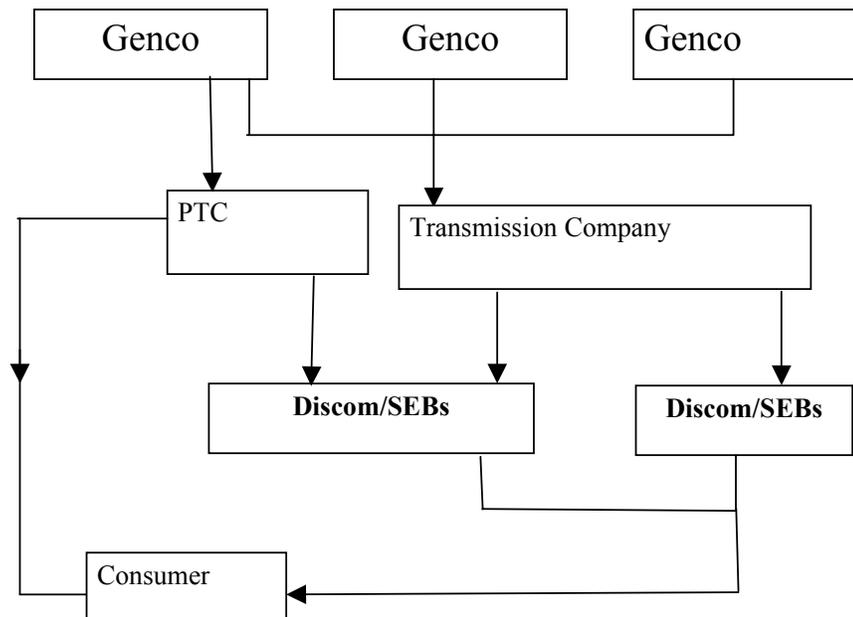
## Present and possible future market scenario for trading

---

### Present market scenario

With the enactment of the Electricity act 2003, trading in India has received a legal shape, however, trading did occur in India, albeit modestly and mainly by a single player: the Power Trading Corporation of India Ltd (hereinafter PTC). Prior to the establishment of PTC, in April 1999, trading only took place sporadically. In the beginning the PTC was set up with the mandate of catalyse development of Mega and other large Power Projects by acting as a single entity to enter into Power Purchase Agreements (PPA) with the Independent Power producers(IPP) and SEBs. Subsequently, PTC has entered into short term contracts and real time contracts for trading.

The following chart depicts the market scenario of trading.



PTC has mainly developed its trading activity around inter-State transactions by organizing the purchase from any surplus location and then selling it to the deficit State. For instance, PTC is buying surplus power from Himachal Pradesh and selling it to Delhi. Similarly, PTC is trading power from Uttaranchal to Delhi. It has also undertaken trading with neighbouring countries like Nepal and Bhutan [Chukha (336 MW) and Kurichhu (60 MW) plant], and anticipates this market to expand. PTC was designated as the Nodal agency for exchange of power between India and Nepal and

it is already trading about 50 MW. PTC has also entered into a contract with Bhutan for Tala project (1020 MW), which is scheduled for commissioning by 2005-06.

### **Existing mechanism and arrangements of trading**

PTC has mostly acted as a match trader, who signs agreements with both the seller and the buyer of electricity. Till now, the PTC has not been entering into a seller contract till they are able to fix a buyer/s agreement.

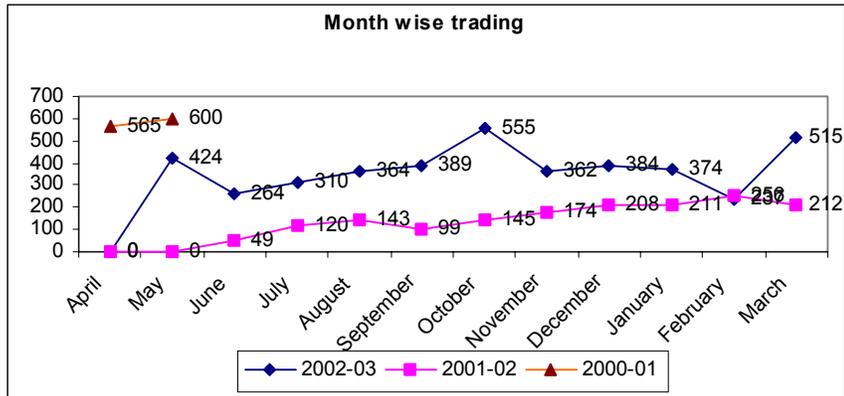
PTC has entered into long term power contracts (for a period of 5 or more years Chukkha Project in Bhutan and is in process to enter into long term contract with Hirma project and Tala project. PTC has entered into short term contracts, for time spans less than 5 years (even for a period of 3 days), like it traded power with Assam during there festival season. PTC is also trading power under a “time of day” concept with differential pricing by identifying the differences in demand during different hours of the day and supplying power from surplus States to deficit States during selected hours. It has even facilitated real time surpluses in power to avoid the penalties that the SEBs may encounter on account of unscheduled interchanges. PTC has also attempted to facilitate sale of surplus power from captive power plants, but due to various reasons it was not successful.

To conduct the above mentioned activities, PTC studies the transmission feasibility for transfer of power including transfer through displacement. Apart from this, an important role of a trader is to coordinate with agencies for dispatch, metering, billing, revenue realisation and energy accounting. PTC claims to play this role till now.

### **Payment Security Mechanism and trading margin:**

In order to resolve the payments issues which are persistent with some utilities, a weekly billing for the transactions has been devised as a payment security mechanism by the PTC. This mechanism includes direct payment, payment through letter of credit and escrow or access to revenue stream of the utilities. This has brought down the instances of default significantly. The possibility of default cannot be ruled out in future and therefore while determining the eligibility criteria capital adequacy and security mechanism need to be developed.

In the existing scenario, trading margin is not fixed by a regulator. The PTC charges 5 paisa per unit extra to the buyer as a trading margin.



(Volume of Trade done by PTC in last three years)

To sum up, the importance of trading has already been recognised in India. Trading enables utilities to sell power either round the clock<sup>2</sup> or during certain hours<sup>3</sup> of the day or during certain seasons<sup>4</sup> at a price above their incremental cost of generation. It also enables the deficit States to obtain power at a much lower cost than what they would have to incur otherwise.

Till now, there has been light hand regulation that enabled trading of power<sup>5</sup>. However, with the enactment of the Electricity Act, the Commission is mandated to formulate eligibility criteria for traders and accordingly will issue license.

While framing these criteria it has been kept in mind that enabling arrangements needs to developed, such that, more traders are encouraged to venture into this business, to facilitate the overall success of the power sector reforms.

<sup>2</sup> Haryana, Gujarat, Delhi, MP, Rajasthan and Maharastra are the examples who have being buying power from PTC round the clock

<sup>3</sup> Punjab is buying electricity in night for agricultural consumer

<sup>4</sup> Himachal Pradesh is selling electricity in summer season

<sup>5</sup> Order issued by CERC dated 16<sup>th</sup> October 1999 enabled PTC to trade

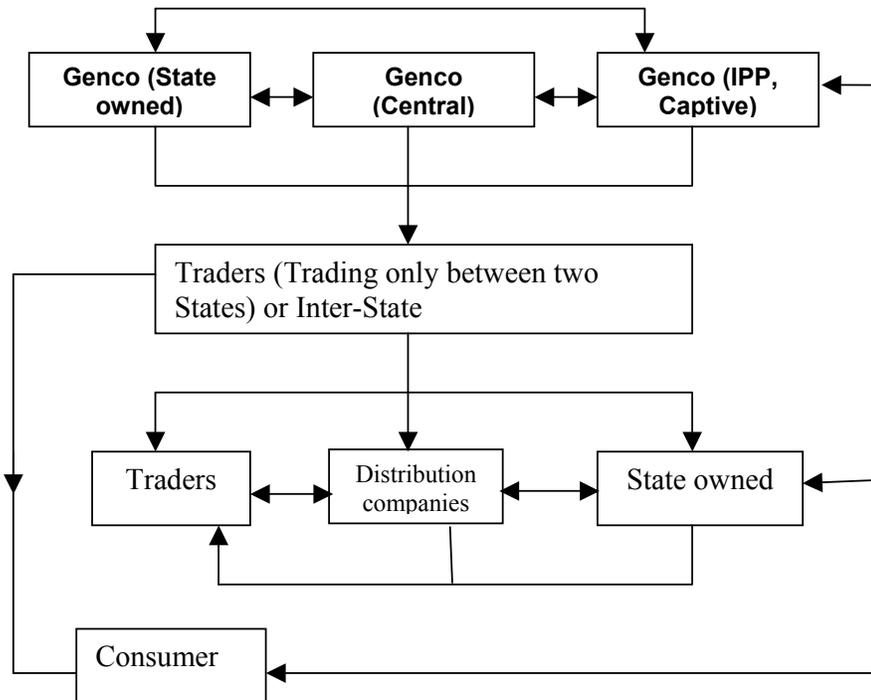
## **Future market scenario**

As we know trading has become a separate activity and the legal system has opened the conditional doors for any eligible person to participate in trading activity. Indian electricity market is poised for myriad changes as in future, competition between players will be high. Prediction of future market is a complex exercise and requires considerable understanding of market players and their relationship. However, an electricity trader would attempt to offer the customer electricity that it purchased from another market player at competitive rates, keeping a suitable margin for himself. In this scenario, the trader is not (necessarily) a traditional market player, such as a generation company or a distribution company, since its main activities are to purchase electricity for resale thereof without owning any physical assets required for the flow of electricity. Hence, the trader would guarantee to its contracting party the purchase and/or delivery of electricity at a particular time and at a particular price without necessarily owning a physical network enabling the delivery. Meaning that there would be a separation between the commercial business contracts and the physical transactions of electricity. This emerging market structure will trigger a variety of commercial arrangements.

This section explores the various possibilities (theoretical and practical) of players in trading and level of trading. In the new scenario where CTU and STU are excluded from trading business, they will act as an entity that holds the wire business and facilitates the flow of power between generators and consumers. This way a trader will act as a bridging link between the two.

Let's understand what kind of roles each is going to play. The main players in the market will be generators, transmitters, Discoms, system operators and traders. Traders may purchase electricity from generating company or from another trader and will sell to its customers, through the network of transmitters or distributors, which may be a distribution company, another trader, consumer (bulk or captive)

The following chart depicts the possible relationship between two players in the market in light of trading business.



Generating company can purchase electricity from another generating company to meet their contractual obligation which may arise from any undesired situation. It would be necessary to inform at the outset here that regulator will fix the generation tariff only for distribution companies not for traders. This will create competition between traders to purchase maximum quantum of electricity from a generator who is supplying at the lesser price. This will also create the competition between generators to capture the maximum market for this electricity. There is also a possibility that a hierarchal system depending on the area of service may come up in the future as this is a case in stock market. A trader (inter-State) can sell power directly to any consumer of a State.

## **Energy Accounting and Wheeling charges**

### **Active Energy**

The principles of regional energy accounting are well established for transactions between Inter-State Generating Stations (ISGS) and States as well as among the States. All inter-State transactions are scheduled by the RLDC on the basis of availability declared by ISGS, drawal requirements submitted by States, bilateral exchanges and inter-State power trading schedules. This is done on a day ahead basis for each time block of 15 minutes as per the procedure laid out in the Indian Electricity Grid Code (IEGC). The drawal schedules are topped by the estimated losses to arrive at the generation schedules of the Generating Stations. The power

trader has to ensure that for his transaction matching generation/injection and drawal schedules are given to the concerned RLDC. The scheduled energy charges are settled directly between the buyers and the sellers or through the power traders as the case may be. Any deviation from the drawal or generation schedule is monitored by the concerned RLDC as per IEGC and priced as per frequency dependent unscheduled interchange (UI) rate approved by CERC. At present, the UI pool account is managed by RLDC on behalf of REB. The UI bills are served separately to each generating and drawing entity controlled by RLDC. At present, the power trader is not involved in the UI transactions.

### **Reactive Energy**

The drawing entity has to follow the rules/norms in respect of reactive energy as applicable at the point of drawal. The reactive energy is not being traded per se at present.

### **Energy losses**

At present, the energy losses are adjusted in kind by suitably topping the generation schedules based on weekly average losses of the previous week in a Region. When a power trader is involved, he has to take into account these losses in his billing.

### **Transmission/wheeling charges**

The transmission capacity for a trader has to be purchased by a generator or a distribution licensee or a trader or any other person. Whoever, procures the transmission capacity, will have to pay for it.

## **Mechanism of trading**

Based on international experience in electricity trading we anticipate that the following arrangements may emerge:

### *(a) Long-term Bilateral Contract market*

In a long-term bilateral contract market customers, traders, generators and other market players have a choice of entering into contractual arrangements which typically cover long-term commitments between buyers and sellers of electricity and have a fixed volume over a specified period of time. These contractual agreements are purely financial trade instruments. Typically, these long-term bilateral contracts are the cornerstone of all electricity trading markets. Alternative mechanisms (such as the ones listed below) are mainly developed to cover additional demands, shortages, as a risk management tool, etc. For instance, in the US electricity market, the majority of sales occur under bilateral market contracts, with the day-ahead and real-time markets not accounting for more than 20 per cent of the sales<sup>7</sup>.

### *(b) Short-term Forward Trading Market*

The Short Term Forward Trading market is a market for buying and selling electricity in advance. A forward contract is an agreement to buy electricity from another party at a specified time in the future at a specified price with money changing hands at the future delivery date. These are bilateral physical trades, which mean that two parties such as a generator and a trader may enter into a bilateral contract to deliver electricity at an agreed time in future which may be say, for the coming winter or the following summer. In international power markets like UK these types of contracts are used both to manage price risk and speculate against futures prices to avoid the risk of having to buy or sell electricity at the last minute through balancing mechanism or the spot market where prices are very volatile.

*(c) Spot Trading Market*

In a spot trading market, the supply and demand of electricity is balanced at any point of time. There is a possibility that the electricity market may shift to pool arrangements along with bilateral contacts.

*(d) Balancing Mechanism*

Some one has to perform the role in balancing mechanism. In such scenario a system operator can play a role of information provider as he would be the most competent person to provide the information on availability and deficit of power in a region or any separating company can be made responsible.

It is anticipated that well developed spot-markets in electricity trading may emerge in India in the medium to long-term, whereas the short-term forward trading market may emerge in the short-term. In view of this, power exchanges may also develop in India over time.

Therefore, in due course of time the regulatory commission should come up with guidelines regarding rules and regulations for the operation of a power exchange in India. Until now, PTC has been engaging mostly in match trading, whereby they match demand and supply requirements, keeping a margin for themselves in the process.

However, in future, PTC and other potential traders might take positions and enter into short-term forward contracts. Trading positions entail additional risks such as those associated with price volatility and therefore margin requirements may be high. This would have a bearing on liquidity requirements of a trader. These issues need to

be duly addressed and can also form part of contractual agreement between respective parties. However it would be responsibility of a regulator to ensure an efficient electricity market and these issues may be addressed in the licence conditions.



## Eligibility Criteria – Technical requirement

---

### Technical criteria for Electricity Trader

It is necessary for the purpose of framing the eligibility criteria to understand the level of interaction; a trader will have with other stakeholders. A trader may be involved in following activities which actually depends on the nature of his business.

1. Contractual agreements with buyers and sellers
2. Communication with buyers, sellers, commissions, dispatch centers etc
3. Matching the requirements of buyers and sellers
4. Understanding the present & future market and future business plan
5. Understanding of system operation
6. Activities billing, collection, accounting, and other managerial decisions

It is clearly indicated in the above points that a trader should have the following capabilities.

- ability to understand the market and operations of the system
- ability to conduct commercial transactions
- ability to communicate with the business partners, Appropriate Commission and the system operators

### International Experiences

Available literature suggests (Annexure 2) that the Regulators mainly look for the following information as a technical requirement

1. Key staff and their experiences
2. Communication facility
3. Applicants ability to comply with the Regulatory decisions.

Practices in various countries have been detailed in the Annexure 2 of this discussion paper.

### *Technical Qualifications*

Trading business will require in depth technical understanding related to power system and its operation like generation availability, PLF, extra capacity, demand, flow of power, scheduling etc on the part of traders. The Grid code stipulates roles and responsibilities of each constituents of the system which will require a trader to

coordinate and share the information with SLDC, CTU, and STU and in some cases may be with RLDC. Undoubtedly the business of trading will require on the part of trader to have expertise in understanding the market operation, power system operation and scheduling of power etc.

This suggests that a trader should have technical expertise and should be able to communicate with various constituents of the system like, CTU, STU, SLDC and RLDC.

### **Discussion**

Here the main issue is whether specific information should be asked to judge the capability or it should be left up to the traders to demonstrate their capabilities by filing information which they feel relevant.

### **Suggestion**

Even if it is left up to the trader to demonstrate the capabilities, the commission would require to judge on specific parameters. It would be appropriate at this stage to ask for minimum specific information and a trader could submit other relevant information to prove its capability before the Commission. This will not only make the process transparent but also will not leave any room of ambiguity which in turn may delay the process. Specific questions mentioned in the subsequent sections are for the purpose of evaluating the applicant's capability.

The following could be the possible technical requirement for a trader.

#### **1. Licensee's ability to understand the market and operations of the system**

A trader should submit all the relevant information to demonstrate his capability on the following points

1. Number of experts, their area of expertise and level of expertise of professional/manpower; and
2. Minimum years of experiences for each expert

### **Suggestion**

Applicant's team should have at least one expert from each area like system operation, metering, financial matters & commercial transactions such as billing and legal matters. The professional should carry at least ten years of experience with them and should have graduation/postgraduation qualification in their respective areas (as the case may be). Applicants can file the required information as per the Annexure 3 and other documents as evidence for the information submitted.

#### **2. Licensee's ability to conduct commercial transactions**

As a trader will also conduct the activities like accounting, metering, billing and collection. This will require for a trader to have minimum level of expertise in commercial transactions. Such activities call for a different set of skills than the understanding in technical or legal matters. This can be demonstrated by a trader by having skilled staff in metering, billing and accounting that could be persons having expertise and relevant experience in commercial activities as required in commercial sections of other company.

### **Suggestion**

Manpower involved in metering and billing or any other commercial activities at lower level should carry at least a graduation degree with minimum of five years of experience in similar area. Manpower of the applicant should possess the minimum level of computer awareness in order to discharge their duties smoothly.

### **3. Licencee's ability to communicate with the business partners, Appropriate Commission and the system operators.**

The Trader's roles and interaction level may change as the market develops in the country. A trader in his day to day business would also be interacting with CTU, SLDC or in some cases with RLDC apart from its customers. Trading arrangements call for information sharing/ flow from a trader to above mentioned constituents of the system. This requires on the part of the trader to have communication link with customers, CTU, SLDC and RLDC. Such communication link may be direct (phone, fax), via internet or any other media of communication. A trader should also possess adequate communication facility to discharge its duties and roles with all other stakeholders. The following issues need attention.

### **Suggestion**

An applicant should possess adequate office area with minimum level of communication facilities like phone, fax, computer facilities with internet options or any other communication facilities (fast and reliable) to communicate efficiently with other constituents of the market like system operators.

As the market will develop in the future, qualification criteria could be different for the future traders. It is also suggested that the technical capabilities should be clearly reflected in the licence conditions.



## Eligibility Criteria – Financial requirement Financial criteria for Electricity Trader

---

Given the commissions duty to help in development of efficient and competitive power market in India, it becomes paramount to ensure that players with sufficient financial strength operate in the market. Efficient functioning of power markets requires market participants to have confidence in each other's stability and ability to transact business. Capital rules help foster this confidence because they require each member of this community to have, among other things, adequate capital. This capital must be sufficient enough to protect a power seller and counterparties from the risks of the institution's on- and off-balance sheet risks<sup>6</sup>. Capital standards should be designed to allow a firm to absorb its losses, and in the worst case, to allow a firm to wind down its business without loss to customers, counterparties and without disrupting the orderly functioning of power markets. Minimum capital standards are thus a vital tool to reducing systematic risk faced by the market participant. They also play a central role in how regulators assess and supervise future power market scenario.

Financial markets have the most stringent capital adequacy requirement. The Basel Committee on financial markets has suggested that the banks should hold capital against both expected and unexpected losses. The time period for assessing banks' capital and calculating credit risk charges is set at one year. However, here the purpose of capital is not explicitly related to the minimisation of banks' default probability over a given time period.

Stock exchanges have a minimum net worth requirement for the prospective traders. For instance, National Stock Exchange has a minimum net worth requirement of Rs.300 lakh for becoming primary dealer<sup>7</sup>. Similarly, in case of Colombo Stock Exchange, a trader is required to have minimum net worth of Rs. 250 lakhs.

---

<sup>6</sup> Primarily credit risk

<sup>7</sup> An applicant acquiring membership of capital market, wholesale debt market and trading membership of Futures and Options segment must possess a minimum networth as prescribed by the Exchange. This networth is calculated as per stipulated method by the exchange. In case the applicant is member of any other Stock Exchange(s), it should satisfy the combined minimum networth requirements of all these Stock Exchanges including NSEIL. The minimum paid up capital of a corporate applicant for trading membership should be Rs.30 lakhs. For Further information please see: [www.nse-india.com](http://www.nse-india.com)

If we look at the power market, the scenario is different. First of all, a distinction needs to be made between power trading in an exchange and trading outside exchange. Internationally, it has been seen that power exchanges play a crucial role in power markets. Around the world, power markets are becoming more akin to financial markets, both in regulatory and behavioral terms. Experience of well developed power exchanges like the UK power exchange and Nord Pool show that the new trading environments introduce quite different conditions, based around spot trading at first and then moving towards sophisticated financial instruments like futures contracts as markets develop<sup>8</sup>. Whereas, in case of India, for some time we are envisaging non-exchange scenario only. At the same time, it is understandable that while drafting the eligibility criteria, one needs to contemplate the future market scenario, such as, development of power exchange in Indian power market and its impact on the financial requirement of an electricity trader.

Before discussing specific financial requirement for electricity traders, it would be appropriate to mention the characteristic of the electricity trader that would have some bearing on the financial requirement:

- 1) Most of the transactions done by a trader are bilateral in nature, with back to back agreements. These bilateral contracts can be handled at the individual level, without any interference of the Commission.
- 2) Accounts receivable and payable turnover becomes important in case of electricity trader.
- 3) The bare trader don't own any infrastructure as in case of distribution business<sup>9</sup>

In view of the above discussion, it is necessary that the Commission be fully satisfied with financial soundness of an applicant for carrying out electricity trade, before the license is finally granted. While setting up eligibility criteria for potential traders, it is required to create an enabling and conducive environment to promote efficiency and competition in the power market. To this end, while deciding the eligibility criteria, the following points have been considered

- 1) The trader should have sufficient capital employed to cover the credit and default risk
- 2) The trader should demonstrate seriousness in Business.
- 3) The trader should trade within a trading limit as proposed by him; beyond this limit equivalent equity should be raised.

### **License Fees**

---

<sup>8</sup> For more details see Annexure 1: International Experience : market development

<sup>9</sup> Eligibility criteria for getting a distribution license are normally stringent. For instance, in case of Delhi, minimum equity requirement was Rs.500 crore.

Internationally, a trader has to pay a license fees to cover the regulatory expenses incurred in the process of monitoring and scrutiny of information filled by the trader. Even in case of stock exchange, license fee is charged to a trader. For instance, in NSE (National Stock Exchange), the trader has to pay a license fee of Rs.2 lakh. Power exchanges like the Nord pool also charge an entrance fees of NOK 50,000 and annual fees of NOK 100,000 from the exchange members<sup>10</sup>.

In light of these experiences, the commission shall collect license fees from the potential traders to cover the costs, it incurs in regulating the power trade business, including administering their licences/authorizations and monitoring their compliance with license conditions. All electricity traders, seeking a license, will have to pay application fees (processing fees) of Rs.5 lakh and an annual fee of Rs. 25 Lakhs to the commission.

### **Capital adequacy requirement**

A trader should have sufficient capital employed<sup>11</sup> to cover approximately its current liability and fixed liability. To find out the current liability of a newly established trader following assumption were made:

- 1) The trader would do a minimum trade of 30 MU in a year. The assumption is based on the historic information. Like, PTC in its first year traded 26.79 MU. Similarly, if we look at the average inter state sale in last five years, approximately 29 MU is traded between the States.
- 2) To meet the liability of above volume traded, the trader should have Rs.7.5 crore in a form of capital employed in the business. This is derived by assuming an average tariff of Rs. 2.50 per unit.

One view is that for meeting other requirements (like employee cost, computers etc) the trader should have additional Rs.2.5 crore as a capital employed in the business. Therefore, at this stage, the applicant getting a license to trader should have a minimum capital employed of Rs.10 crore.

Apart from this, the trader needs to submit its business plan and strategy. It is mandated that the business plan should include the maximum trade (upper limit) a trader is proposing to conduct. This would help the Commission to assess the

---

<sup>10</sup> for further information see [www.nordpool.com](http://www.nordpool.com)

<sup>11</sup> Capital employed could be in the form of paid up capital and Bank deposits

financial prudence of the trader. One of the options for determining the financial prudence of the trader, the following formula could be used:

Capital employed = Trading limit \* Average generation tariff in India

Therefore, the trader has to demonstrate its financial soundness by having a capital that is able to cover financial liability arising out of the maximum trade envisaged by the trader. For instance, if the trader is contemplating to trade maximum 200 MU in month<sup>12</sup>, then ideally the trader should demonstrate capital equivalent to Rs.50 crore. So the capital adequacy is linked with the business strategy of the trader and the maximum trade the trader is contemplating in a month. The following capital band are proposed which the market traders should follow according to the **maximum** trade done in a month:

- 1) Minimum Capital employed = Rs. 10 Crore
- 2) Trade greater then 50 MU and upto 100 MU = Rs. 15 Crore
- 3) Trade greater then 100 and upto 150 MU = Rs. 25 Crore
- 4) Trade greater then 150 MU and upto 200 MU = Rs. 35 Crore
- 5) Trade greater then 200 MU and upto 300 MU = Rs. 50 Crore
- 6) Trade greater then 300 MU and upto 500 MU = Rs. 75 Crore
- 7) Trade greater then 500 MU and upto 700 MU = Rs. 100 Crore
- 8) Trade greater then 700 MU and upto 1000 MU = Rs. 200 Crore
- 9) For anything greater then 1000 MU per month; the trader should have capital = Average generation tariff \* trade per month

### **What if the trading limit is exceeded?**

The trader should not exceed the maximum trading limit (MU), proposed by the trader without reporting to the Commission. Experience in Australia shows that all the market participants need to strictly adhere to the maximum trading limit, determined according to the guidelines laid down in the National Electricity code. If this trading limit is exceeded, the market participant must provide additional credit support<sup>13</sup> to the National Electricity Market Management Company Limited

<sup>12</sup> We are assuming that the billing cycle for a trader would be 30 days

<sup>13</sup> A credit support is an obligation in writing which:

- (a) is from an entity (the "Credit Support Provider") which meets the acceptable credit criteria and which is not itself a Market Participant;
- (b) is a guarantee or bank letter of credit in a form prescribed by NEMMCO;
- (c) is duly executed by the Credit Support Provider and delivered unconditionally to NEMMCO;

(NEMMCO), which is the body responsible for the administration and operation of the wholesale national electricity market in accordance with the National Electricity Code<sup>14</sup>.

In case of India, power market is still in a nascent stage. However, some checks and balances are essential for efficient working and development of the power market. To this end, the Commission believes that if a trader exceeds the trading limit, the trader would have to immediately report to the Commission. Simultaneously, the trader would have to raise a bank guarantee in favor of the Commission equivalent to the additional trade multiplied by the average generation tariff. Subsequently, within one year, the trader should raise equivalent capital. In case of non-reporting of excess trade, the trader would have to face penalty and may lead to revocation of license.

To sum up, for getting a trading license, the potential trader should meet following criteria:

- b. Application fees of Rs. 5 Lakh should be submitted to the Commission
- c. Annual license fees of Rs. 25 lakh should be submitted to the Commission
- d. The potential traders should possess a capital employed equal to the capital band mentioned earlier which is dependent on the maximum trade (as proposed by the potential trader) and the multiplied by average generation tariff, and this capital employed should not be less than Rs. 10 Crore.
- e. If the trading limit exceeds, equivalent amount of capital amount should be raised.

The above mentioned criteria are open for consultation and further discussion.

- 
- (d) constitutes valid and binding unsubordinated obligations of the Credit Support Provider to pay to NEMMCO amounts in accordance with its terms which relate to obligations of the relevant Market Participant under the Code; and
  - (e) permits drawings or claims by NEMMCO to a stated certain amount

<sup>14</sup> For online version of the National Electricity Code of Australia see:  
<http://www.neca.com.au/files/necacode/>

## Annexure

### Annexure 1

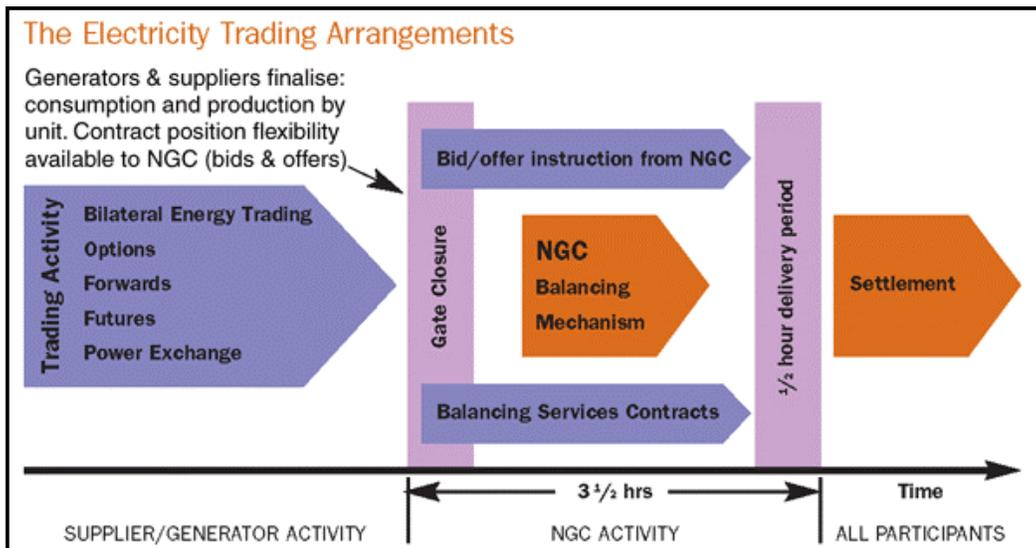
#### International Experiences- Market Development

#### UK

#### New Electricity Trading Arrangements

Introduced in England and Wales in March 2001, NETA was designed to introduce a more competitive and demand led trading market than had been available under the previous pool-based central dispatch model. Prior to NETA, virtually all electricity was sold through a central pool. The UK market is now fully liberalized. Although the over the counter market (OTC), involving bilateral contracts dominate the trading market in UK, power exchanges have also developed in UK, such as the UK power exchange and the UK automated power exchange. Online trading is also possible on, for example Spectron and ICE.

The New Electricity Trading Arrangements are represented in the diagram below:



#### Power Exchanges:

Online power exchanges provide the forum for buying and selling power from a few hours ahead to many months ahead. There are a number of power exchanges in existence through which traders can enter bids and offers onto a computer screen, and these can be taken up by other traders with neither party being aware of the other's identity. Contracts, mostly for the very short-term (next day) can be made for specified amounts of electricity at specified times and are binding.

Liquidity in the markets is enhanced by traders and other intermediaries who, while not having a physical presence, are prepared to take market risks or to manage risks on behalf of others. Players seek to balance their contractual obligations by trading demand and output with other generators, suppliers and end users. The vast majority of electricity traded is done so in forward and futures markets and power exchanges.

### **The UK Power Exchange (UKPX)**

The UKPX offers:

- Spot market contracts;
- Futures Contracts; and
- a Clearinghouse for spot and futures contracts traded on the UKPX only.

### **The Spot Market**

The spot market in NETA model operating in the UK Power Exchange (UKPX) includes both bilateral trading activities by suppliers and generators and the period from gate closure<sup>15</sup> to half-hourly delivery (NGC -National Grid Company<sup>16</sup> activity). The spot market enables participants to trade power either to meet their full requirements or to supplement contracts written under longer-term agreements. The spot market in UK allows trading up to 1 hour ahead of dispatch (delivery) of the electricity market.

---

<sup>15</sup> **Gate Closure:** In relation to a settlement period, the time 3.5 hours before the start of that settlement period. It defines the moment when bilateral contracting ends and the Balancing Mechanism for each associated trading period begins. See at: [http://www.british-energy.com/pet/main\\_glossary.html#forwards](http://www.british-energy.com/pet/main_glossary.html#forwards)

<sup>16</sup> National Grid Company is the system operator of UK market.

Bulk electricity can be traded on more power exchanges such as UKPX. All spot contract positions held by members of the UK power Exchange are reported to the Energy Contract Volume Aggregation Agent (ECVAA) by UKPX.

A very short – term ‘Balancing Mechanism’ operates between 1 hour prior to dispatch and the real time delivery of power into the transmission system. The system operator (National Grid Company) operates this mechanism, and acts as the sole counterparty to sales and purchases made through it. The mechanism is used to provide short –term increments and decrements in power production or consumption so that the National Grid Company can balance the physical grid system. About 2 percent of electricity demand is bought and sold by NGC in this mechanism.

<b>Balancing Mechanism</b>		
<b>Bids &amp; Offers</b>		
	<b>Offer</b>	<b>Bid</b>
<b>Generator</b>	Increase output	Decrease output
<b>Supplier</b>	Decrease demand	Increase demand

Offers are made to provide energy to the system  
 Bids are made to take energy from the system

Tip: think in terms of an auction:  
 - you **offer** goods (energy) for sale  
 - you **bid** to take goods away

Source: British Energy Wholesale Trading WebPage

### **Exchange traded Financial Derivatives.**

The UK power exchange also offers financial instruments like futures contracts but does not offer other financial derivative contracts such as forwards or options<sup>17</sup>,

<sup>17</sup> **Forward Contract:** An agreement to buy electricity from another party at a specified time in the future at a specified price with money changing hands at the delivery date.

which are traded in some other power exchanges like the Nord pool<sup>18</sup>. UKPX is a fully integrated exchange and clearing <sup>19</sup>house. It guarantees all contracts against counterparty credit default and also deals with the administration of settlement payments when contracts expire.

### ***OTC Financial Contracts***

There are no OTC (over the counter) financial contracts cleared through the UKPX. All OTC financial contracts are traded on bilateral basis and participants utilize their own credit mitigation measures to minimize counterparty risks.

### **Regulation**

The whole industry is regulated by a Government body, the Office of Gas and Electricity Markets (Ofgem)<sup>20</sup>. Ofgem's main remit is to protect the interests of customers. It therefore aims to promote competition in all parts of the gas and electricity industries. It does this by attempting to create conditions, which allow companies to compete fairly, and which enable customers to make an informed choice between suppliers. It also regulates areas of the gas and electricity industries where competition is not thought to be effective by setting price controls and standards, notably in transmission and distribution.

---

**Futures Contract:** Similar to a forward contract these are normally traded through an exchange on standard contract terms with profits or losses calculated and paid daily.

**Options:** Contracts that give the purchaser the right, but not the obligation, to buy or sell electricity at a certain price on or before an agreed date.

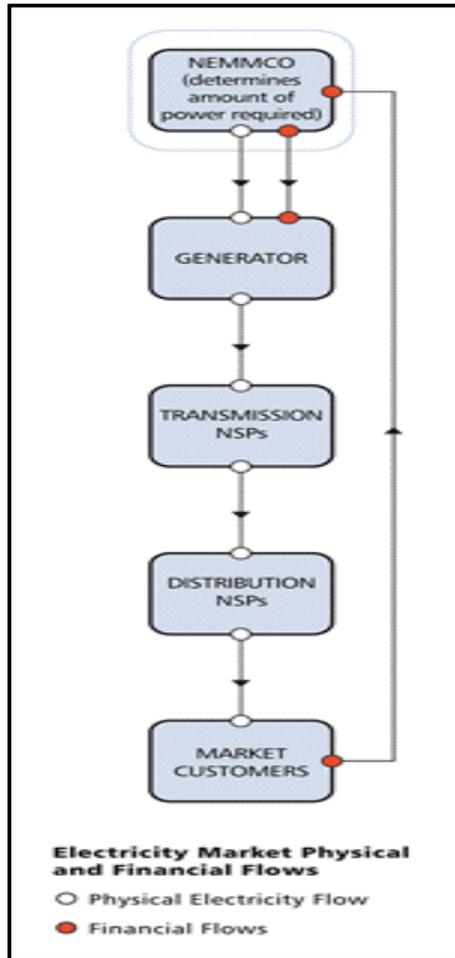
<sup>18</sup> Nord Pool, or the Nordic Power Exchange, is the world's first international commodity exchange for electrical power. Nord Pool organizes trade in standardized physical (Elsport) and financial power contracts including clearing services to Nordic participants, and provides customer-support in Sweden, Finland, Norway and Denmark. Being the Nordic Power Exchange, Nord Pool plays a key role as part of the infrastructure of the Nordic electricity power market and thereby provide an efficient, publicly known price on electricity, both in the spot and the derivatives market. See more at: [www.nordpool.com](http://www.nordpool.com)

<sup>19</sup> Clearing includes all processes that happen after a trade has been executed until all obligations due to the trade are fulfilled.

<sup>20</sup> Website: [www.ofgem.gov.uk](http://www.ofgem.gov.uk)

## Australia

### The National Electricity Market



The National Electricity Market (NEM) commenced operation on 13 December 1998, as part of the process of deregulation of the Australian power industry. A key objective of the NEM is to promote competition at each stage of the electricity production and supply chain.

Today, the NEM supplies electricity to 7.7 million Australian customers on an interconnected national grid that runs through Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. Approximately \$8 billion of energy is traded through the NEM per year.

The National Electricity Market Management Company Limited (NEMMCO) operates a **wholesale market for trading** electricity between generators and electricity retailers in the NEM. This means that **all the electricity output from generators is pooled, and then scheduled to meet electricity demand.**

This pool system has been adopted to reflect two particular aspects of electricity generation and use. Firstly, electricity cannot be stored for future use, therefore supply must always be responsive to variations in demand. Secondly, it is not possible to distinguish which generator produced the electricity consumed by a particular customer.

In the centrally coordinated dispatch process, NEMMCO continually balances electricity supply and demand requirements by scheduling generators to produce sufficient electricity to meet customer demand. Generator operators compete by providing offers and bids for supplying energy to NEMMCO. These bids are comprised of prices and associated quantities the generators are willing to schedule in the dispatch process. NEMMCO issues demand instructions and schedules generators based upon these bids.

The spot market is the whole process whereby prices for electricity are set and then settled. Generators are paid for the electricity they sell to the pool, and retailers and wholesale end-users pay for the electricity they use from the pool. In general, all electricity must be traded through the spot market. NEMMCO calculates the spot price using the price offers and bids for each half-hour period during the trading day. The spot price is the clearing price to match supply with demand.

### **The National Electricity Code**

Market rules governing the NEM's activities are laid down in a National Electricity Code (the Code). The Code was the product of a comprehensive consultative and trial process between governments, industry and customers conducted during the mid-1990s.

The rules and standards of the Code ensure that all parties seeking to be part of the electricity network should have access on a fair and reasonable basis. The Code also defines technical requirements for the electricity networks, generating plant, and customer connection equipment to ensure that electricity delivered to the customer meets prescribed standards.

### **Market Participants**

The National Electricity Market of Australia comprises more than 70 registered participants who fall into six categories based on the role they perform in the market. Some participants fill more than a single role within the NEM and therefore belong to more than one category (for instance, a participant may be registered as both a generator and a market customer).

The categories are:

- Generators
- Distribution Network Service Providers (DNSPs)
- Market Customers (electricity retailers and end-use customers)
- Transmission Network Service Providers (TNSPs)
- Market Network Service Providers (MNSPs)
- Traders

## **Nord Pool Background**

The world's first international commodity exchange for electrical power, Nord Pool organizes trade in standardized physical and financial contracts, including clearing services to Nordic participants, and provides customer support in Sweden, Finland, Norway and Denmark.<sup>21</sup>

## **Market Context**

Starting with the legal deregulation of the Norwegian power market in 1991, the Nordic retail and wholesale markets are now close to being fully liberalized. The system of no-discrimination grid access and border tariffs now integrated in the grid tariffs has encouraged the integration of the market.

## **Trading**

The exchange experiences high liquidity in financial futures, forwards, option and base contracts with most of the trading concentrated around the pan-Nordic reference price. More than 240 participants make between 250 and 700 trades per day (depending on season) on Nord Pool, representing between 50 and 70% of the trades and between 30 and 35% of the traded volumes in the Nordic market. Bilateral trades account for the rest. Liquidity on Nord Pool is further increased by the fact that most OTC deals are cleared and thereby converted to Nord Pool contracts. Currently, the exchange trading currency is NOK.<sup>22</sup>

## **Power Exchange:**

The Nord Pool <sup>23</sup>offers:

- A spot and forward market for physical contracts ( Nord Pool spot AS)
- Exchange traded financial contracts for futures , forwards and options ( Nord Pool ASA) ; and
- Clearing of OTC financial

The Nordic Electricity Clearing House (NECH) provides clearing services for financial derivative electricity contracts.

---

<sup>21</sup> Website: [www.nordpool.com](http://www.nordpool.com)

<sup>22</sup> For more information of energy trading please refer to: [www.pwcglobal.com/energytrading](http://www.pwcglobal.com/energytrading)

<sup>23</sup> Source: Supplementary Report in Energy Market settlement Mechanisms and Prudential Requirements, Report to the Council of Australian Governments Energy Market Review Secretariat.

## **The Spot Market**

Next day physical delivery contracts are traded in the spot market based on an auction trade system. Bids for purchase and sale of power contracts of on e-hour duration that covers the next 24-hours (next day) are traded. The spot market is known as the Elspot and operated in conjunction with OTC physical market trading.

Nord Pool Spot is exposed to settlement risk during the settlement period equal to the value of traded contracts for the period. To cover this risk each Elspot market participant must post security equal to his net Elspot market purchases over the previous 3-week period.

## **Exchange Traded Financial Derivatives**

The Nord Pool offers financial derivative contracts in futures and forwards. The NECH clears all contracts traded in the Nordic power exchange and a substantial number of financial contracts traded in the Nordic OTC and bilateral contracts market.

## **OTC Financial Contracts**

Participants are able to submit and clear OTC financial transactions through the NECH where those contracts have standard terms and conditions. Approximately 80 percent of financial electricity contracts traded in the Nordic OTC and bilateral markets are cleared via NECH. Once an OTC traded contract is registered for clearing, NECH assumes responsibility for counterparty clearing and settlement.

**Annexure 2****International Experiences – Qualification Criteria (Technical)****Canada**

Any company willing to participate in the electricity market of Ontario will require a licence. This includes generators, transmitters, local distribution companies, wholesalers, retailers and the Independent Electricity Market Operator (IMO). Applicants are required to submit the following information<sup>24</sup> (as given in the application)

1. **licensing history** of the applicant
2. Information describing **technical ability** to provide service including key technical and operational personnel and
3. **Personal Experience** in Energy Industry

**Australia**

- Victoria

The guidelines issued by Essential Service Commission, Victoria for obtaining a licence stipulates the following technical qualification

***Technical capacity***

Applicants must show that they have the technical capacity to comply with the conditions of the licence and associated codes and guidelines (refer to the Commission's website <http://www.esc.vic.gov.au/electricity138.html> for a list of applicable codes and guidelines). The conditions of the licence will vary from licence to licence, according to the type of licence issued and the specific application. In order to demonstrate technical capacity to the Commission, applicants should provide:

1. details of their experience in and knowledge of the electricity industry;
2. a summary of the skills and experience of the directors and senior managers, and their relevance to meeting the requirements of the licence;
3. evidence that the applicant has the capacity to comply with the licence conditions, codes and guidelines relevant to its application; and

---

<sup>24</sup> [http://www.oeb.gov.on.ca/documents/Whol\\_app.pdf](http://www.oeb.gov.on.ca/documents/Whol_app.pdf)

4. if the applicant is to rely on another entity to provide staff and resources, a summary of the relationship between the applicant and this entity, including any formal agreements to provide services, and a summary of this other entity's experience in and knowledge of the electricity industry, and technical capacity to meet the relevant requirements of the licence.

Applicants who will be required to comply with the National Electricity Code (NEC) in undertaking the activities for which they require a licence should demonstrate that they understand and have the capacity to comply with the relevant provisions of the NEC.

The Commission has published a separate Guidance to assist applicants for retail licences on the issue of technical capacity. This is available on the Commission's Web site (<http://www.esc.vic.gov.au/electricity402.html>).

### ***Financial viability***

(A) **Prudential Requirements**<sup>25</sup>: The National Electricity Code of Australia has laid down guidelines regarding prudential requirements, to be met by all market participants. The code has laid down directions regarding credit support, acceptable credit support, acceptable credit rating, maximum credit limit and trading limit. In particular, the following should be noted:

- **Acceptable Credit Limit**: NEMMCO may from time to time, after complying with the Code consultation procedures, determine what constitutes an acceptable credit rating for the purposes of this Code, including (without limitation) determining which organizations publishing ratings will be used for this purpose, which of the type of ratings issued will be used for this purpose, and which level of rating is to be acceptable
- **Maximum credit limit**: NEMMCO must determine for each Market Participant a maximum credit limit. The maximum credit limit for a Market Participant is a dollar amount to be determined by NEMMCO in accordance with this clause 3.3.8 on the basis of a "**reasonable worst case**" estimate by NEMMCO of the aggregate payments (after reallocation) to be made by the Market Participant to NEMMCO for 42 days trading in the market, to a probability level that the estimate would not be exceeded more than once in 48 months.

---

<sup>25</sup> National Electricity Code of Australia :<http://www.neca.com.au/files/necacode/>

- **Trading Limit :** The trading limit for a Market Participant is the dollar amount which is the product of the prudential factor and the greater of:
  - (i) : Market Participant's maximum credit limit; or
  - (ii) the credit support provided by the Market Participant.

Until otherwise determined and published by NEMMCO, the prudential factor is 84%. If trading limit is exceeded then a notice issued by NEMMCO to the concerned player. The Market Participant must before 11.00 am on the next business day following the issue of the call notice either agree with NEMMCO to an increase in the Market participant's maximum credit limit and provide to NEMMCO additional credit support or pay a security deposit to NEMMCO.

**(B)Essential Service Commission , Victoria :** Potential retail licensees are required to demonstrate their financial viability to the Commission, unless the applicant is applying for a licence, which includes a condition requiring compliance with the National Electricity Code and the prudential requirements of the Code (section 19(3) Electricity Industry Act 2000). As the standard conditions of a retail licence do not require compliance with the National Electricity Code, the Commission is generally required to be satisfied that the applicant is financially viable.

According to the guidelines for license applications , the Commission will base its assessment of the licence application on:

- Earnings history;
- Balance sheet structure;
- Short term cashflow;
- Medium term cashflow;
- Funding arrangements;
- Asset base;
- Risk management strategy;
- Management experience and depth; and
- Management controls.

#### **License Fees:**

- **New South Wales**

Independent pricing and regulatory tribunal of New South Wales is an independent body looking after electricity regulation in New South Wales. It administers issue of

licenses for electricity business and monitors compliance with the license conditions by electricity market participants. The Tribunal collects license fees on behalf of the government, to cover the costs that various government agencies incur in regulating these businesses, including administering their licences/authorizations and monitoring their compliance with licence conditions.

Annual electricity licences fees for retail suppliers of electricity 2001/02 included a fixed fee of \$10,000 plus \$4,000 for every one per cent of market share. Besides, an application fee of \$1,500 must accompany all applications for a new licence or to transfer an existing licence.<sup>26</sup>

**Singapore:**

Under the Electricity Act of Singapore, an entity may not engage in trading in wholesale electricity market unless it has been issued a license by the Electricity Market Authority of Singapore. Holding of electricity license is not sufficient to actively trade in the wholesale market as the following conditions must be met:

- Participation in the wholesale markets for energy, regulation and reserve require that the person also register with the Electricity Market Company of Singapore as a market participant. EMA can issue multi activity competitive licenses to generators and retailers that authorize not only principle activities (like generating or retailing) but also activities of trading in the wholesale electricity market.
- In addition, certain facilities of market participants are required to be registered with EMC as a separate , but mandatory process.

A market participant who intends to participate in the wholesale electricity market must determine and provide **credit support** to the Energy Market Company (EMC) of Singapore. EMC is responsible for providing governance for the market, operating the stock exchange for electricity, providing the IT systems and enabling the trading environment in electricity. A market participant must provide credit support, determined according to the following formula

**Credit Support Value = Estimated Average Daily Exposure x 30 day**

If at any point, the estimated net exposure of the market participant reaches **sixty percent of the credit support** provided by the market participant , a notification is issued by the EMC to the respective market participant.

---

<sup>26</sup> For further information please refer to <http://www.ipart.nsw.gov.au/>

## USA

### **Public utility commission of Pennsylvania**

Public utility commission of Pennsylvania of Issued an order<sup>27</sup> in 1998 which details the licencing requirement to be a marketer (trader). Section 54.33 in the order details the requirement which is reproduced here

#### **§54.33. Application Form.**

(a) The application form includes information that will be used in the evaluation of the financial fitness and technical fitness to render service. Information includes:

- (1) identification of the geographic area that the applicant proposes to serve;
- (2) identification of the type of service that the applicant proposes to furnish;
- (3) identification of the class of customers to which the applicant proposes to provide these services;
- (4) the identification of the applicant's utility affiliates;

(5) [designation] description of the applicant's business structure;

(6) financial information sufficient to demonstrate financial fitness. This information may include [regarding] credit ratings and history, audited financial statements, and insurance pertinent to the conduct of the applicant's business as an electric generation supplier;

(7) evidence of competency and experience in providing the scope and nature of the applicant's proposed services. This evidence may include descriptions of the applicant's prior experience, proposed staffing and employee training commitments, business plans, and agreements, arrangements and contracts for generation, transmission and related services. Documentation of the applicant's membership in ECAR, MAAC or other NERC regional reliability councils shall be submitted if applicable to the scope and nature of the applicant's proposed services; [and]

(8) evidence of information demonstrating the applicant's ability to comply with Commission's applicable requirements concerning customer billing, customer education, billing and terms of service, and customer information. This evidence may include prior regulatory experience of applicant, prior business experience in energy or other service-oriented industries, staffing and staff training commitments,

---

<sup>27</sup> <http://puc.paonline.com/electric/licensing.asp>

agreements, arrangements and contracts for customer education and information service, customer satisfaction survey results, government agency reports, and complaint statistics compiled by the Better Business Bureau or similar business organizations; and

## General Information

1. Name to Appear on Licence
2. Primary Contact
  - a. Name
  - b. Contact Address
  - c. Phone Number, Fax Number E-mail Address

### Company type

- Sole Proprietor
- Partnership
- Corporation
- Other (describe):

## Information about the Applicant

### Applicant Organization

1. Full Legal Name of Organization
2. Registration Number
3. Date of Formation or Incorporation
4. Business Address

### Affiliation

Details in case Applicant have any affiliates and information on the affiliate related to experience in trading

## Technical Information

### a. Manpower information

Name of professional/ manpower	Qualification	Experience	Area of expertise	Position in the company

### b. Office facility

1. List of office facilities and other technical details if any of such facility
2. List and functional/technical details of any material which will help in conducting the business efficiently

**Financial Information**

- a) Provide the most recent five years of audited financial statements, if any.
- b) Business plan in the near future with adequate required analysis
- c) Proof of financial strength like adequate equity, net worth etc