

CHAPTER 6

CONCEPTUALISING FRAMEWORK FOR RETAIL IN ELECTRICITY MARKET

This chapter conceptualizes a framework for the introduction of retail competition in India. The conceptualization is based on two conceptual lenses. The first conceptual lens is developed on the basis of study undertaken on various acts, regulations, and reports governing retail competition in India. The second conceptual lens is developed on the basis of various acts, regulations, and reports governing retail competition in New Zealand and United Kingdom. In last, the discussion on conceptualized framework leads in the formulation of interview protocol.

6.1 INTRODUCTION

The research objective of the study shows that there is a need to formulate a framework for bifurcation of carriage and content to introduce retail in Indian power sector. Though before developing a framework, conceptualization is necessary. Qualitative paradigm is used to develop a conceptual framework as per the examples seen in previous research (Labuschagne et al. 2005; Lipošcak et al. 2006; Zhou et al. 2007). The concept of a conceptual framework is rooted in Vygotsky's Sociocultural Theory of 1934 and 1986. The theory is used in this chapter to develop the conceptual framework.

The conceptualized framework is developed with the support of conceptual lenses. A conceptual lens is a visual display of key thoughts grasped from historical developments (Strauss (1987). Conceptual lens usually requires considerable reworking to get them to the point where they are most helpful for the research (Sage 1994). Keeping this in mind, in this particular research the conceptual lens has been brushed up twice with the support of Indian Regulations and Global Regulations.

To develop the conceptual lens of India, following documents were studied: i) Standing Committee on Energy (2014-15) Fourth Report on Electricity (Amendment) Bill, 2014 ii) Introducing competition in retail electricity supply in India 2013, Forum of Regulators. On the other hand, to

develop the global conceptual lens, following documents were studied for New Zealand's Power sector: i) Electricity Industry Reform Act 1998 ii) Electricity Industry Reform Amendment Act 2008 iii) Chronology of New Zealand Electricity Reform, Energy Markets Policy 2015; and following documents were studied for United Kingdom's Power sector: i) Electricity Act 1989 ii) Utilities Act 2000 iii) Regulation of The UK Electricity Industry, CRI, 2000. All the relevant quotes from the documents were transcript and coding was performed (Refer; Appendix A – Code Book (India), Appendix B – Code Book (New Zealand), Appendix C – Code Book (United Kingdom)) Relevant categories were found out in the code books. These categories were brought together in Appendix D to eliminate the overlapping categories by looking back the original data. This method is known as triangulation, which ensures the reliability and validity of codes.

Once the researcher gets the conceptual lens from refined categories, he makes protocol based on the understanding developed by conceptual lenses. Answers to the question of protocol were located in relevant documents and transcript has been prepared. As per the guidelines of Vygotsky (1934/1986) and Strauss and Corbin, 1998; the transcript has been processed for generating i) Syncretic Groups and Open Codes ii) Complexes and Axial Codes iii) Potential Concepts and Selective Codes (refer Appendix E); which resulted in conceptualized framework to introduce retail competition in India.

The conceptualized framework is then described. Based on the understanding developed by the conceptualized framework, an interview protocol was drafted. Before finalization, this draft was discussed with the industry experts and PhD guides for necessary modifications.

6.2 POWER SECTOR REGULATIONS FOR RETAIL IN INDIAN ELECTRICITY MARKET

Discussion on introducing Retail Competition in India through the separation of carriage and content went viral when the some of the media houses supported this action (Livemint, 2013; ET, 2013; ET, 2014; Business Standard, 2014; Business Line 2015) and some of the media houses oppose this action (Punjab News Express, 2015; Ganshakti, 2015, The Hindu 2015). However, Press Information Bureau; Government of India published the salient feature of the retail competition to answer the doubts raised by the different stakeholders. So far, there are two main

documents which govern the introduction of retail competition in India – i) Standing Committee on Energy (2014-15) Fourth Report on Electricity (Amendment) Bill, 2014 ii) Introducing competition in retail electricity supply in India 2013, Forum of Regulators. The researcher does the detailed study of these documents in order to make conceptual lens based on Indian Regulations. Study of these documents gives the familiarization about the ground realities of the retail regulations in India.

Standing Committee on Energy (2014-15) Fourth Report on Electricity (Amendment) Bill, 2014

Standing Committee on Energy (2014-15) felt that there is an imperative need of third generation reforms in Indian Power Sector. India already has moved from vertically integrated single buyer model to wholesale competition model. It was felt that next generation – “retail competition model” will increase the competition and consequently lead to viability and sustainability of Indian power sector.

The Government of India accepted the recommendations of Standing Committee. A Working Group on Power was formed by Government of India for the formulation of Twelfth Five Year Plan which was also supposed to recommend certain changes in the existing Act to support retail introduction. The working group on power recommended changes in existing Act through Electricity (Amendment) Bill 2014, The Bill was introduced in Lok Sabha on 19 December 2014. The Bill contains important provisions and features which are supposed to work as a pre-requisite to introduce retail competition in India.

For the data analysis, 49 significant quotations (refer Appendix A) were selected from the ‘Standing Committee on Energy (2014-15) Fourth Report on Electricity (Amendment) Bill, 2014’. These quotations may be summarized as below:

Electricity (Amendment) Bill, 2014 amends the existing Act i.e. Electricity Act 2003 and consolidates all the previous Acts i.e. Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998. The purpose of amendment is to introduce third generation reforms in India for preventing commercial losses and leakages. Competition in Distribution Sector needs to be introduced through the separation of carriage and

content. Carriage refers to distribution or network business and content refers to the electricity business. The separation is suggested after reviewing the performance of the sector in past 10 years. After the separation, multiple supply licensees shall be introduced based on the market principles which shall lead the competition in Content Business. The Carriage Business will remain as a regulated activity. The proposed amendment also provides specifications on the recovery of revenue covering the revenue gap, granting deemed licensee, composite electricity bills, and smart meters. The Bill also addresses the accountability and transparency in the working of Central Electricity Authority, Central Electricity Regulatory Commission and State Electricity Regulatory Commission.

The Bill describes defines new bodies to be formed. Ancillary services are defined for the power system and grid operations to maintain security, reliability and power quality. Distribution is defined as the system which conveys the electricity from one point to other by the use of distribution network. Area of distribution is defined by the license authorized by the appropriate commission. The Bill also introduces Incumbent supply licensee and Intermediary company as new bodies and fixes their responsibilities. Supply licensee is the authorized person for supplying electricity under section 14 and includes incumbent supply licensee. Provider of last resort is the supply licensee who is time to time designated by the Appropriate Commission under certain conditions. In the distribution activity, license for distribution will not be granted to more than one person in an area. Distribution franchisees can undertake distribution till the expiration of their licenses. The State Electricity Regulatory Commission may grant supply license to more than one person whereas one supply licensee needs to be Government Company. Upon unbundling, the distribution company shall remain in Government hands only. A person who wants to supply the renewable energy, will not require any license. The license period shall be the minimum twenty-five years, however, a license may be suspended under certain conditions as defined in the act. On the suspension of license, the utility shall be vested in Administrator and then within one year, it will be sold out to some other body.

Distribution licensee will not be able to undertake trading of electricity however supply licensee will be authorized for the same. Distribution licenses shall develop and maintain the distribution system and will provide non-discriminatory open access on the request. Within one year of the commencement of Act, State Government shall provide appropriate transfer scheme for the

separation of carriage and content through which transfer of functions and properties will be done among new companies. Power purchase agreements shall be transferred to the intermediary company. Supply function and distribution function will be divided between carriage and content companies. The consumer shall have the choice to choose their supplier. On the other hand, State Electricity Regulatory Commission shall draft the Electricity Supply Code and Electricity Distribution Code under which various provisions related to the tariff, metering and billing, connection and disconnection of supply shall be specified.

Introducing Competition in Retail Electricity Supply in India 2013, Forum of Regulators

Forum of Regulators gave a mandate to PwC to develop a roadmap for the introduction of competition in the retail electricity segment of India. PwC drafted this report on the basis of certain international experiences. The report was published by Forum of Regulators in 2013.

For the data analysis, 20 significant quotations (refer Appendix A) were selected from the 'Introducing competition in retail electricity supply in India 2013, Forum of Regulators'. These quotations may be summarized as below:

Separation of distribution business and retail business is essential for accurately allocating cost, financial losses, fixed assets, debts etc. Separation of accounts and assets shall help in regular and proper accounting. Employees will also need to be allocated between separated companies. Allocation of technical and financial losses among the separated companies will be the challenge. Technical losses may be transferred to distribution company while commercial losses may be transferred to the retail supply company. Accurate measurement of distribution losses is a challenge for many consumers in the country are still unmetered. Gradual elimination of cross-subsidies is the need of time and necessary changes in National Tariff Policy will be needed in this regard.

Separation of distribution and retail supply activities shall clearly demarcate various roles and responsibilities between two companies. Power procurement shall become the responsibility of supply licensee. All the existing Power Purchase Agreements shall be reassigned to the incumbent supply licensee. However, the creation of capacity market is necessary for the adequacy of power

generation. In the retail scenario, size of generation company should not be that large to exert a monopoly on power procurement.

Tariff of the network company shall be based on connected voltage while tariff of the supply company shall be linked to the losses. Application for the second supply licensee shall be invited before the separation of licenses. However, the second licensee shall be introduced after the separation only. The choice to the consumer would be given in phased manner. Consumers who have connected load of 1 MW and above, will be given the opportunity first to choose the supplier. Thereafter consumers of 500 kW to 1 MW segment, 100 kW to 500 kW segment, and below 100 kW segment would be given the freedom to choose their supplier subsequently. Provider of last resort shall have the universal service obligation. Smart metering would be required for the competitive market consumers. Consumer awareness is the key to the success of retail markets.

6.2.1 CONCEPTUAL LENS FOR RETAIL IN ELECTRICITY MARKET

(Based on the Retail Regulations of Indian Power Sector)

The above discussion was based on transcripts, containing 49 + 20 quotations (Appendix A). Through the study of “Fourth Report of Standing Committee on Energy (2014-15) on Electricity (Amendment) Bill, 2014” we got 516 codes and 49 categories while through the study of “FOR Report - Introducing competition in retail electricity supply in India” we developed 178 codes and 20 categories. These categories were combined and refined further by identifying an association. In total, total 69 identified categories were refined into 32 categories. These 32 refined categories developed 13 initial themes which were further minimized to 5 core themes through data reduction (refer Appendix D). These themes and refined categories help in conceptualizing regulations for Indian scenario. Final themes emerged as i) Governing Regulations ii) Separation of Carriage and Content iii) Competition in Market iv) New Responsibilities and Arrangements and iv) Consumer Switching set base for the conceptual lens which is discussed as below:

CONCEPTUAL LENS

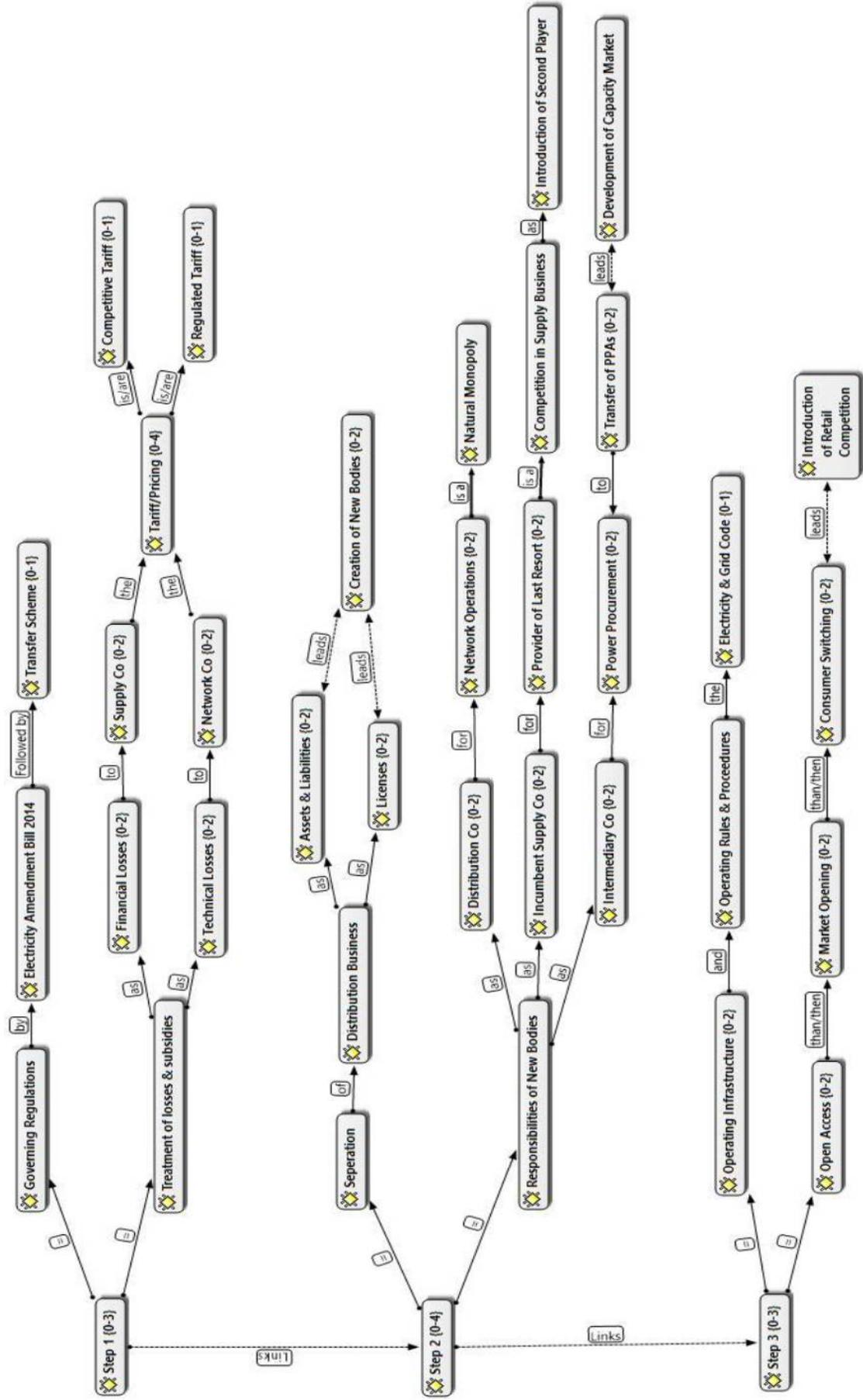


Figure 6.1: Conceptual Lens Based on Indian Retail Regulations

The conceptual framework gives a basic idea about the roadmap to introduce retail competition in India by separating carriage and content. The description of conceptual lens and steps suggested by it to develop retail competition in India are as follows:

Step 1: Governing Regulations

Electricity Amendment Bill 2014: Present regulations of the Indian Power Sector are not sufficient to introduce retail competition. These regulations need to be amended. Presently, Indian power sector is regulated by Electricity Act 2002 which do not have the provision of separation of the distribution business. Hence standing committee on energy came up with Electricity Amendment Bill 2014 to amend the preliminary act. But the bill is still pending in Lok Sabha. Enactment of this bill is necessary in order to provide a regulatory platform for retail introduction.

Transfer Scheme: After the enactment of Electricity Amendment Bill 2014, respective states need to come up with 'Transfer Scheme' as described in section 131(4A) of Electricity Amendment Bill 2014. The scheme shall ensure the fair division of Assets, Liabilities and Proceedings among the newly formed entities. Division and transfer of accounts and present employees shall be done through this scheme only.

Treatment of losses and subsidies: Provision for the treatment of losses and subsidies shall be described in respective regulations. All the commercial losses shall be allocated to supply company while the technical losses shall be allocated to the distribution company. Proper segregation of financial losses into technical and commercial losses shall be done for the same purpose. Cross-subsidies shall be needed to gradually eliminated for the success of the retail competition.

Step 2: Unbundling of Carriage and Content Business

Separation of Distribution Business: After the introduction of proper governing regulations, the distribution business shall be unbundled into carriage business and content business. Newly formed businesses shall have the need to take separate licenses. Assets and Liabilities shall be captured by the new businesses based on the transfer scheme

Assigning responsibilities to new bodies: After the separation, newly formed companies shall be Distribution (Network) Company, Incumbent Supply (Content) Company, and Intermediary Company. The companies shall be responsible for network operation and maintenance, providing electricity to end consumer and for the power procurement arrangements respectively. All the existing power purchase agreements shall be transferred to intermediary company which shall help in developing the capacity market. Network business shall have a natural monopoly while the supply business shall be made competitive by introducing the second player in the market. Incumbent Supply Company shall work as the provider of last resort.

Step 3: Operating Infrastructure and Open Access

Operating Infrastructure: Operating infrastructure of power market shall be strengthened. Operating rules and procedure for the grid and consumer operations shall be fixed simultaneously. Various responsibilities, metering infrastructure, universal service obligation, connection/disconnection, investigation powers shall be defined in the Electricity Code.

Open Access and Market Opening: After the introduction of second supply licensee in the area, facility of open access shall be provided in which consumers will be able to choose their power supplier. The open access shall be provided as per the standard operating rules of different consumer categories. Market shall be opened up for each consumer category in a phased manner. Consumers shall have the freedom to switch the supplier.

The particulars described above shall lead to the introduction of retail competition in India. Consumer satisfaction shall be the key to the success of the retail competition.

6.3 RETAIL IN ELECTRICITY MARKET: LEARNINGS FROM NEW ZEALAND AND UNITED KINGDOM

A report of Harvard University - Electricity Market Restructuring: Reforms of Reforms; William W. Hogan (2001) suggests that power sector reform cases of New Zealand and United Kingdom may be taken as the best international practices. United Kingdom is the first country who introduced the retail competition in its power sector. Since India is a commonwealth country and

most of our acts are influenced by the acts and policies of United Kingdom, it is necessary to do the analysis of various regulatory documents of United Kingdom.

New Zealand was the first Country that mandated forced ownership unbundling. Power industry of the New Zealand completed the unbundling before the mentioned deadline that makes it a success story.

Chapter 3 of this research has also proved that retail markets of United Kingdom and New Zealand are the most competitive retail markets among all countries (as per Global Competitive Metrics for Retail Markets prepared by Sioshansi in 2005). This shows the need to grab the learnings from these retail markets.

6.3.1 RETAIL INTRODUCTION: LEARNINGS FROM NEW ZEALAND

Power Sector of New Zealand is taken as the finest example of reforms and governing structures. Various acts and legislations built the path of restructuring through unbundling, corporatization, privatization, and retail introduction. New Zealand is one of the few countries where full retail competition exists with a competitive wholesale electricity marketplace. Today competitive electricity market of New Zealand is served by 20 retail brands, 29 distributors, 12000 Km of Transmission lines and 13 Generation Companies¹⁵. The below study of New Zealand analyses the chain of various reforms which were experienced by New Zealand:

Early Reforms: Mid 1980s – Year 1990

Data analysis for this period has been performed in Appendix B. Code book 2.2 on New Zealand Reforms (1980-1990) may be referred for the same. This data analysis resulted in 81 Codes and 20 initials categories.

In the mid 1980s, The Ministry of Energy¹⁶ was responsible for both policy advice and regulatory functions as well as for electricity generation and transmission while the distribution and supply

¹⁵ 5 Major and 8 Small Grid Connected Generation Plants

¹⁶ WEF December 1989, The Ministry of Energy was abolished and its roles were transferred to the Energy and Communications Branch of the Ministry of Economic Development.

were the responsibilities of Electricity Supply Authorities [electorally oriented, statutory monopolies]. Political interference was there in various decisions which influenced the pricing and investment decisions. Cross-subsidy was also one of the main problems.

In 1986, Government of New Zealand decided to initiate reform process for its electricity sector. Under the State-Owned Enterprises (SOE) Act, Electricity Corporation of New Zealand (ECNZ) was set up in April 1987. Handling of Generation and Transmission activities was also segregated from the regulatory activities. Generation and Transmission were handed over to ECNZ. Subsequently, Electricity Task Force was constituted. In January 1988, Electricity Amendment Act 1987 came into force. Transpower was created as a subsidiary of ECNZ to look after the transmission network. From then ECNZ solely became a generator.

Task force recommendations came in September 1989, which were focused mainly on ownership separation of Generation and Transmission. Creation of a Wholesale Market, Privatization, and Corporatization of ESAs, Handling of Transmission Network combined by the group of Generators and Distributors were the other main points in recommendations.



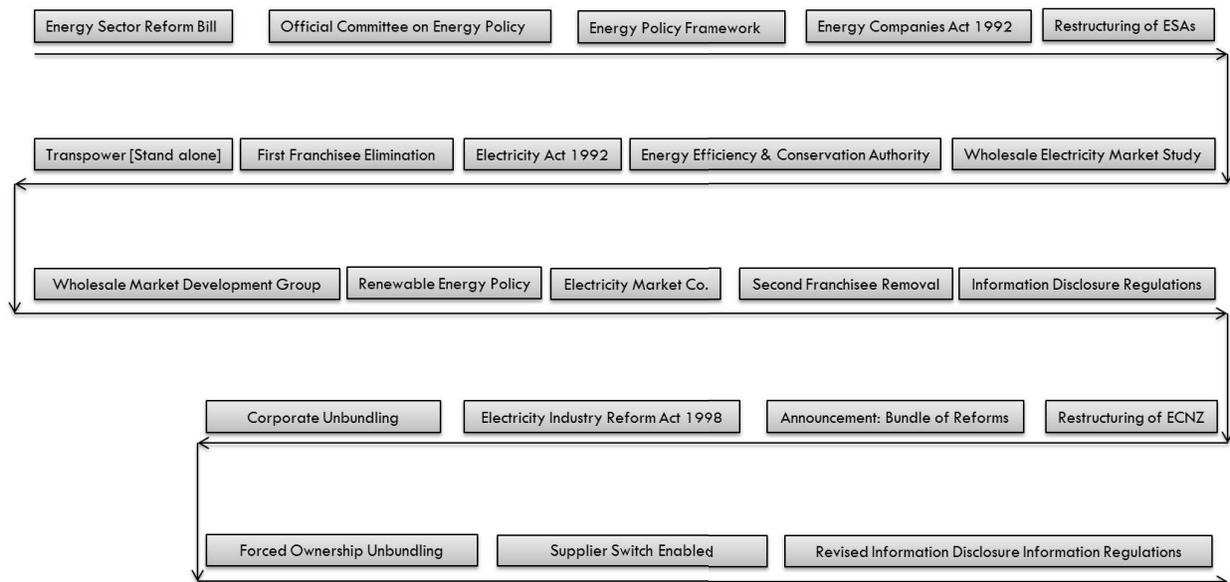
Figure 6.2: Flow of Reforms [Mid 1980s - 1990]

As per the recommendations of Task Force, ESAs were corporatized. Transpower Establishment Board was created to plan the club ownership. Later on the board recommended clubbed ownership of Transpower by a club of both generators and ESAs. Board also suggested the blueprint to segregate Transpower from ECNZ.

Reforms: Year 1991 – Year 1999

Data analysis for this period has been performed in Appendix B. Code book 2.3 on New Zealand Reforms (1991-1999) may be referred for the same. This data analysis resulted in 126 Codes and 37 initials categories.

In 1991, Energy Sector Reform Bill¹⁷ came with the focus to corporatize ESAs. In June 1992, Officials Committee on Energy Policy (OCEP) was constituted to advise the government on Energy policy. Energy Policy framework was laid down with the key objective of cost optimization and to pass on the benefit to end consumer. Energy Companies Act 1992 restructured both the ownership and corporatization of ESAs. It was felt that the Generation and Wholesale Segment had been given less attention than retail and distribution hence Private Sector in New Zealand initiated the task of WEMS i.e. Wholesale Electricity Market Study. This study came out with independent review recommendations for further development in the generation and wholesale segment in 1993. Energy Efficiency and Conservation Authority (EECA) was established to promote efficiency measures.



¹⁷ The Bill fragmented later into 5 stand-alone acts, including the Electricity Act 1992 and Energy Companies Act 1992

Figure 6.3: Flow of Reforms [1991-1999]

The first act which talked about the Deregulation and Monopoly of Distribution and its obligation to supply was the **Electricity Act 1992**. The act laid down different provisions for the maintenance of line services for 20 years. As per the result of this act, First franchisee elimination was seen which was for the small consumers (load < 0.5 GWh pa). In 1993, Club Ownership was removed and Transpower was created as a stand-alone Company. In the same year, Government came with Wholesale Electricity Market Development Group, Policy on Renewable Energy and Electricity Market Company¹⁸.

The second stage of elimination of retail and distribution monopoly was seen in 1994 when the removal of Second Franchisee happened. This step allowed the competition to all consumers of electricity. In the same year, Information Disclosure Regulations came into force which required the public disclosure of various described particulars including Financial Statements, Financial Performance, Performance measures, Cost and Revenue, Tariff Methodology and various charges related to line and use of the system.

Restructuring of ECNZ was announced by the Government in 1995 to facilitate the establishment of the Wholesale Electricity market. ECNZ was split into two different companies - Contact Energy and ECNZ. Contact Energy commenced generation in 1996 in competition with ECNZ after taking over some of its power stations. In 1996, New Zealand Electricity Market (NZEM) was established and consequently, Wholesale Electricity Market was commissioned.

In April 1998, Government of New Zealand pronounced bundle of reforms for its Electricity Sector. Ownership separation of Energy Business and Line Business was the main theme of these announcements. Switching arrangements to switch the electricity supplier were also identified. ***Electricity Industry Reform Act 1998***¹⁹ mandated full ownership separation of distribution business from supply business i.e. line business from retail and generation business. The Act

¹⁸ Later names as The Market Place Company

¹⁹ Act revealed in 2010 by Electricity Industry Act 2010

required power companies to carry out provisional corporate unbundling by April 1, 1999 and to segregate the Electricity Supply and Retail Business by December 31, 2003. Although power industry of New Zealand chose to move quickly and completed the ownership separation on April 1, 1999. Subsequently, switching system of electricity retailers was also enabled for the consumers of New Zealand power industry. In 1999, Information Disclosure Regulations were revised although these regulations were revoked after 5 years.

Reforms Year 2000 Onwards

Data analysis for this period has been performed in Appendix B. Code book 2.4 on New Zealand Reforms (2000 Onwards) may be referred for the same. This data analysis resulted in 195 Codes and 40 initials categories.

Most significant reforms in the Power Sector of New Zealand were seen in the period of 1995-2000. Major reforms or announcements happened after 2000 and were to support those reforms only. In June 2000, a report on industry enquiry came out which recommended the particulars on retail, distribution, transmission and wholesale business. The enquiry was set up to ensure that the country should have finest and promising power system. Energy Policy Framework was also revised in order to reach out at higher satisfaction level from a consumer perspective. At the end of the year 2000, Government Policy Statement (GPS)²⁰ was released. GPS mandated the establishment of new electricity governance board. The board was established to develop rules and regulations for the industry.

The Electricity Industry Bill (2000) was legislated in 2001. Previous four acts - the Electricity Industry Reform Act 1998, the Electricity Act 1992, the Ministry of Energy Abolition Act 1989 and the Commerce Act 1986 were amended by this bill. Commerce Commission was given the power to control line business for various pricing decision as well as for revenue management²¹. Appropriate asset valuation methodology also became the function of commerce commission under the umbrella of information disclosure. The government was given power to establish

²⁰ Revised Government Policy Statement was published in later years but this system has been revoked in 2010

²¹ Ministerial influence on control is not involved.

Electricity Governance Board in case negative feedback of already established boards is received. The government also had power to make regulations in case it feels necessary to protect the interest of end consumer. Ownership rules of Generation companies by line companies were relaxed. Now Line Company may have unconstrained ownership in a Generation Company.

Electricity Complaints Commission was established in January 2002. Solution and Assistance processes for consumer grievance were laid down with the proper guideline for code of practice. In July 2002, to get assistance with forward price of contracted electricity; Hedge Index was developed. To make the country power secure, Electricity Commission was established in the year of 2003 which took over the governance of power industry. In line with it, policy on reserve generation was announced by Electricity Commission. Also, a new draft of Government Policy Statement on the New Zealand Electricity Governance was released. In September 2004, fixed component of the tariff was revised to benefit the consumers who have lower consumption of electricity.

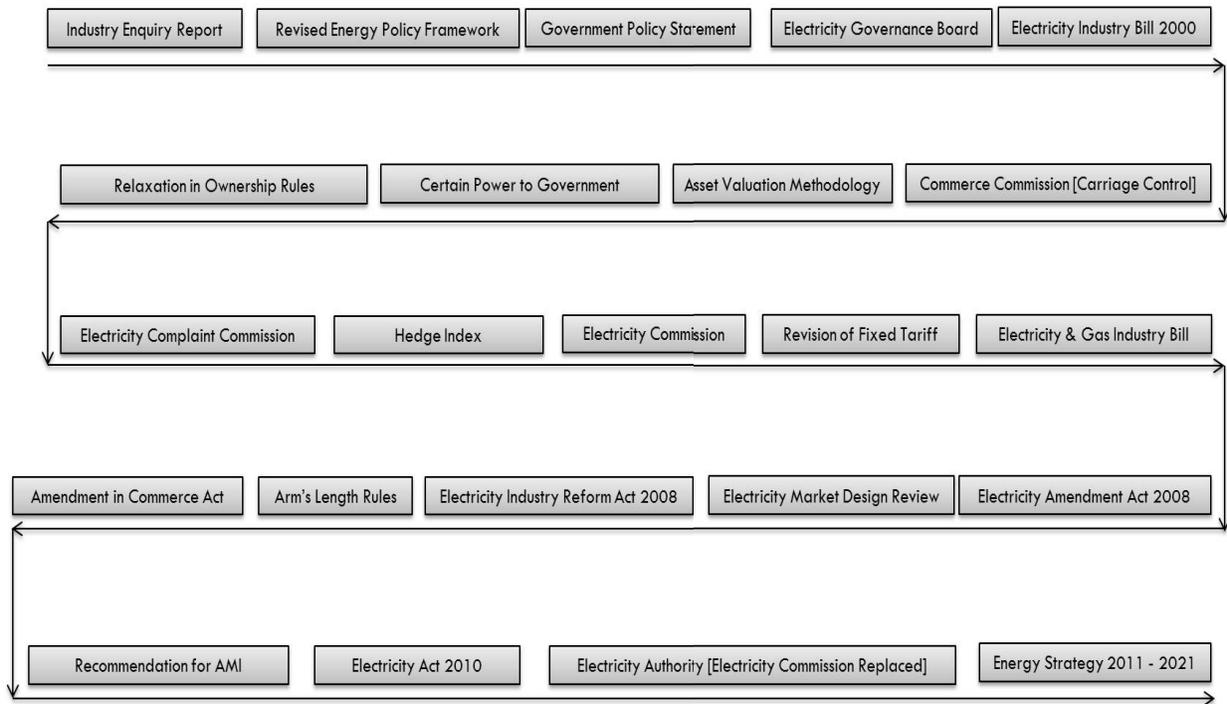


Figure 6.4: Flow of Reforms [2000 Onwards]

In October 2004, Electricity and Gas Industries Bill was enacted. Bill incorporated the provision of the establishment of Electricity Commission. Bill eased down various restrictions which the line business had for the ownership of Generation Company. It also clarified the powers of both Electricity Commission and Commerce Commission on various revenue and price control issues. Subsequently, new Government Policy Statement (GPS) was announced. August 2005 witnessed the Electricity Legislation Amendment Act to make amendments in Electricity Act 1992. The act awarded more powers to the central government in order to optimize cost, timely completion of projects and to protect national interest by considering other measures. In 2006, Government came with updated GPS and Electricity Market Review to identify future work.

Concerns were felt in the New Zealand Power Industry due to non-payment of electricity bills. Electricity retailers were practicing disconnection of supply. As described in above lines, earlier regulations mandated retailers to provide the power for low-end consumers (who uses <8000 KWh pa) on low fixed charge tariff basis. Hence Electricity (Disconnection and Low Fixed Charges) Amendment Act 2008 redefined the definition of low-end consumers. Consumers who use less than 9,000 kWh per year are now the low-end consumers. Although this definition and level of consumption varies as per the area and climate conditions in which the premise is situated. In 2008, government came with New Transmission Pricing methodology, updated GPS on Electricity Governance and Review of Electricity Market Design²².

Electricity Industry Reform Amendment Act 2008 was the next important milestone in the pipeline. Norms for selling of electricity especially from such renewable generation stations where the retailers had shares, were made easier. **Arm length rules were made to lower down the cost of corporate separation.** Ownership separation requirements narrowed down and its necessity became the function of the geographic area. Although ownership separation rules for line and supply business were retained. Definition of renewables was revised and investment in generation permitted through cross-ownership.

Commerce act was also amended in this year to regulate line business in a more controlled manner as earlier there was no capping of prices for suppliers. The act mandated Input methodologies to

²² Carried out by Electricity Commission

be set up by June 2010 for electricity line business. Act also laid down the procedures to provide incentives for the business which improve the efficiency. The concept of consumer-owned line business with the 100% share of the consumer was also introduced in the sector.

Again in 2009, Electricity market review was done and consequently, the government came out with revised GPS and Electricity Governance. In the same year, after receiving complains of higher electricity prices and low competitive activities, Commerce Commission opened up an investigation to identify if any retailer or wholesale body breached the Commerce Act. Although no evidence of guilt was found. Commerce Commission also published a caution note on the possibility of breach. **Advanced Metering Infrastructure (AMI)** recommendations to roll out smart meters in New Zealand came out in 2010 although Electricity Commission conveyed to Ministry that AMI technology is not developed yet in full swing and it may create additional cost with less benefit.

Electricity Act 2010 replaced the Electricity Commission with Electricity Authority. The act allowed back the investment of line business houses into the retail business. Ownership separation rules were retained in this act and Governance Arrangements rules were revised. Consumer switching fund was established. In 2011, Government released the New Zealand Energy Strategy 2011-2021 to set the future direction and path of reforms.

Forced Ownership Separation

New Zealand is the first country in the world which implemented the forced ownership separation to remove monopoly and to have increased competition. To facilitate the same, country came up with the *Electricity Industry Reform Act 1998*. Act prohibited investment of line Business Company in Generation and Retail Businesses.

Data analysis for Electricity Industry Reform Act 1998 has been performed in Appendix B. Code book 2.5 on Electricity Industry Reform Act 1998 may be referred for the same. This data analysis resulted in 334 Codes and 71 initials categories.

Ownership Separation Rules

Ownership separation rules of the EIRA 1998 came into force on June 23, 1998. The purpose was to create effective competition and to pass on the benefits of efficient pricing to end consumer. Part II of EIRA 1998 named as “Separation of lines and supply (Rules and Exemptions)” which defines various structured provisions for ownership separation as below:

- a) Ownership Restrictions - A person who is involved in a line business was restricted to be involved in supply or generation business as per the circumstances. If involved, then in that case ownership separation is required.
- b) Capping Rules - Connected generation cap rules and connected customers selling cap rules for ownership separation are laid down by the act. These are not supposed to be breached.
- c) Relaxation in Capping Rules - Small, encouraged connected renewable generation is not supposed to be counted for capping rules of generation as per above point but to be counted for the threshold of arm’s - length rules as well as of corporate separation.

Arm’s length rules for Corporate separation

- a) Threshold Level - Threshold for the corporate separation of a business is set up at 10 MW. If the line business is involved in more than 10 MW²³ of the connected electricity generation then separation needs to be done.
- b) Rules imposed - A person or group of persons who are involved in a connected electricity business must carry out the line business in a different company.

Agreement rules for Use of system for connected generation \geq 5 MW

Use of the system is the collection of fair terms on which services by line business are given in accordance with the sales to which contract relates to that financial year. This provision applies to the company whose threshold level for connected generation is set up at 5 MW and if the company sells more than 5 GW of Electricity in a financial year. Director of the such type of company or business must come up with use of system agreement. The use of system agreement must be followed by each stakeholder and must be published on the website for the public disclosure.

²³ As determined by Name Plates

Ownership Separation Rules for trust like entities

If the overlap of membership is there in trust like entities then ownership separation becomes necessary. If person X is involved in business X and person Y is involved in Business Y and either or both Person X and Y are trust like entities²⁴ and reverse overlap²⁵ of Person X or Y exists in Business X or Y then in that case ownership unbundling is mandatory. Local overlap is also defined and prohibited under this provision.

Arm's Length Rules

Arm's length rules mean the objective and rules set out in Schedule I of EIRA 1998. These rules were setup with the objective to ensure the functioning of electricity business in New Zealand at arm's length. Important arm's length rules are described as below:

- 1) Both Business X and Business Y and their parents have duties to meet arm's length objectives.
- 2) Business X and its parent²⁶ should not enter into such transactions in which Business Y or its' parent is interested.
- 3) If a director or manager is performing the duty for Business X then he or she must not prefer the interest of Business Y over the interest of Business X.
- 4) Business X and Business Y both have duties to not to discriminate in the favor of each other while providing services or benefits.
- 5) If a director or manager is performing the duty for Business X and if the dual capacity of overlap exists between Business X and Business Y then the benefits must be transferred to the right ultimate owners of Business X only.
- 6) Any manager or director of the parent of one business should not prefer the interest of other business while performing the duty.
- 7) There should be at least one independent director in each business.
- 8) Director of one business can be the director of another business but he or she should not manage another business in any form.

²⁴ Entity which owns or controls an electricity company.

²⁵ Reverse overlap exists if person Y exceeds the overlap threshold with person X and vice versa.

²⁶ Any person involved in the business is termed as a Parent.

9) Separate management rules are laid down which applies if Business X is involved in more than 30 MW of connected generation. In such case, a person of Business X must not be the manager or associate of Business Y.

10) Director or Manager of Business X cannot be placed under certain obligations even if Business Y wishes for the same. Although common parent of both businesses may place them under such obligations but it should not affect the arm's length rule.

11) Information disclosure to another business is restricted²⁷. One Business or its parent must not disclose the information to another business or to the parent of another business.

12) A record of transactions which are taking place between two businesses or between one business and its parent should be registered for records.

Amendment in Certain Rules

The ownership separation rules and Arm Length Rules were later on amended by **Electricity Industry Reform Amendment Act 2008**. Through the EIRAA 2008, norms for selling of electricity especially from such renewable generation stations where the retailers had shares, were made easier. **Arm length rules were made to lower down the cost of corporate separation.** Ownership separation requirements narrowed down and its necessity became the function of the geographic area. Although ownership separation rules for line and supply business were retained. Definition of renewables was revised and investment in generation permitted through cross-ownership.

Data analysis for Electricity Industry Reform Amendment Act 2008 has been performed in Appendix B. Code book 2.6 on Electricity Industry Reform Amendment Act 2008 may be referred for the same. This data analysis resulted in 321 Codes and 55 initials categories.

The act allowed the same person to be the director of both line and supply company although it required at least one independent director between both businesses. The act also allowed the same person to be the director of both businesses however a threshold limit of 30 MW is decided for the same. Investment in all forms of renewable energy was allowed by line company to encourage the consistent development of renewable energy in the country.

²⁷ Disclosure of restricted information may give material advantage to the competitor.

Learning form New Zealand Experience

Ownership separation is the most difficult form of unbundling. Despite this fact, New Zealand government mandated this form of unbundling in order to separate the line business and energy business. The government decided to do it in phases with prescribed timeline. Power companies did an excellent job in this direction and completed the task of ownership separation within the timeline of corporate separation. The Electricity Industry Reform Act 1998 established various procedures and regulations for the unbundling. Arm's length rules were set out. Later on, this Act was repealed by Electricity Industry Act 2010. Strict separation rules were revised and relaxed by the new act. The threshold level for separation between generation and distribution was raised and distributors were allowed back to invest in the retail business.

In New Zealand, Ownership of utilities is largely there in public hands and if we talk about the institutional framework, no specific electricity regulator has been appointed there. But the strong approach and firm decisions which were taken by the government time to time, make the reform experience delightful. Countries like India who are looking forward to introduce retail competition and supplier choose in their power sector, may study the detailed reform experience of New Zealand. The world is looking towards the potential benefits of ownership unbundling and taking lessons to have the power sector which leads to higher quality of service, healthy competition, and lower cost.

6.3.2 RETAIL INTRODUCTION: LEARNINGS FROM UNITED KINGDOM

United Kingdom is one of the first country who introduced retail competition in their power sector and announced choice for the end consumer. To grab experience of United Kingdom, this segment analyses throughout reform experience of United Kingdom power sector. Familiarisation of reform chronology and significant reform steps is undertaken with the document of Centre for the Study of Regulated Industries. Subsequently Electricity Act 1989 and especially the amended act Utilities Act 2000 is discussed to get the familiarisation of reform and restructuring regulations which helped in ownership unbundling of supply and distribution businesses:

Era of Pre Privatization

Data analysis for this period has been performed in Appendix C. Code book 3.2 on Era of Pre Privatization may be referred for the same. This data analysis resulted in 106 Codes and 14 initials categories.

In this era, power utilities in the United Kingdom were vertically integrated. During 1940s, there were 560 electricity suppliers in the United Kingdom. Amongst them, approximately one-third suppliers were from the side of private players. In 1947, the Electricity Act 1947 came into force and with the establishment of British Electricity Authority (BEA). The Electricity Act 1947 nationalized and reorganized the electricity industry of UK. British Electricity Authority which was a public corporation, made responsible to make policies and to manage financial schemes, transmission, and generation. By further restructuring, 14 area boards (12 in E&W, 2 in South Scotland) were created which were responsible for both the distribution and retail in the respective regions. Thereafter, a South of Scotland Electricity Board (SSEB) was created through Electricity Reorganization (Scotland) Act 1954. SSEB was made responsible for all function of power i.e. Generation, Distribution and Transmission. In the meantime, Central Electricity Authority (CEA) replaced the British Electricity Authority (BEA).

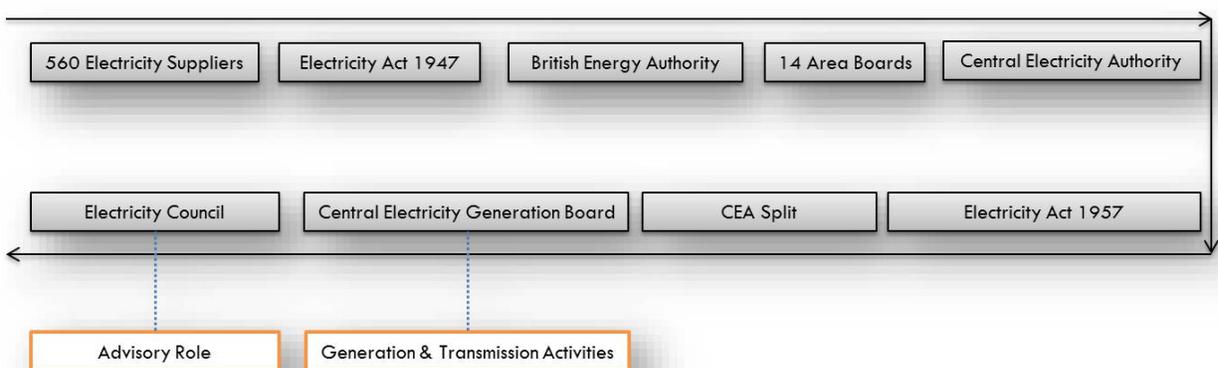


Figure 6.5: Flow of Reforms [Era of Pre Privatization]

Further, Electricity Act 1957 was introduced in the country with the objective of fresh reforms. In line with the Electricity Act 1957, Central Electricity Authority was segregated into the Electricity Council (EC) and the Central Electricity Generating Board (CEGB). Central Electricity Generating Board owned and operated all the generating stations and transmission system of England and Wales. Central Electricity Generating Board was also made responsible to plan new generation, to identify and to install new transmission capacity and to provide bulk supply of power to all area boards. Thus, Central Electricity Generating Board had the monopoly in generation and transmission. The Electricity Council (EC) played the advisory role with the duty to coordinate with the industry and government.

Era of Privatization

Data analysis for this period has been performed in Appendix C. Code book 3.3 on Era of Privatization may be referred for the same. This data analysis resulted in 863 Codes and 96 initials categories.

Next cycle of power sector reforms in United Kingdom started in 1989 with the introduction of Electricity Act 1989. The Electricity Act 1989 laid down the next phase of reforms and restructuring in United Kingdom. Various changes in the ownership of power utilities to have competitive market were initiated. The Electricity Act 1989 had the provision to introduce an independent regulatory body. As per the result of this act, a new industry structure was introduced in March 1990. Central Electricity Generating Board was split into three generation companies and one Transmission Company. Area boards were replaced by Regional Electricity Companies (RECs) and consequently authorized supply and distribution areas were defined for those RECs. National Grid Company which was responsible for the transmission, was jointly owned by the Regional Electricity Companies. Electricity Council was abolished and Electricity Pool to facilitate the Electricity Trading was established. An independent regulatory system also came into force with the support of Office of Electricity Regulation. The regulatory system²⁸ was chaired by the director general of electricity supply.

²⁸ System was to regulate the newly privatized industry.

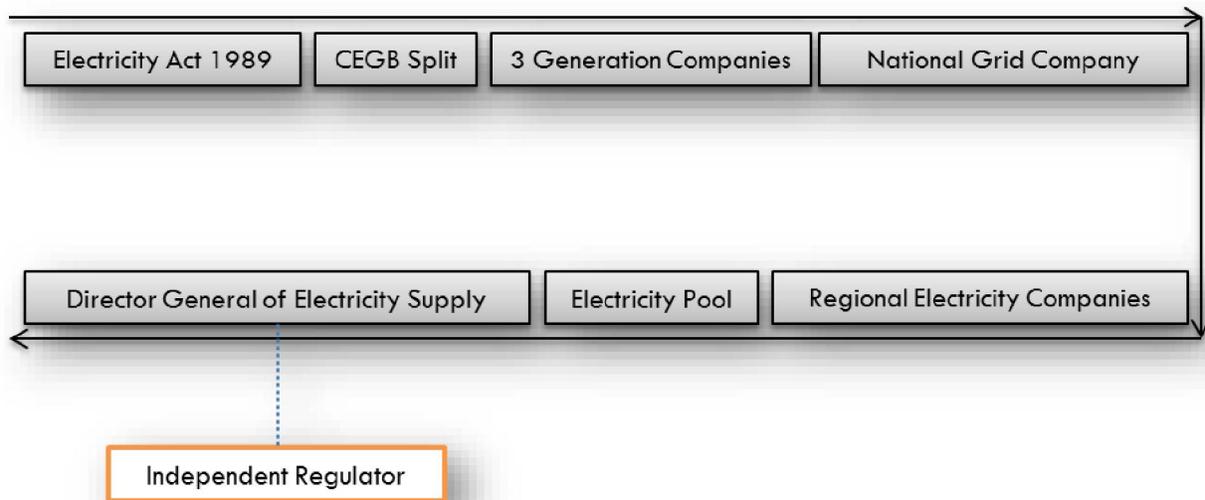


Figure 6.6: Flow of Reforms [Era of Privatization]

These reforms unbundled the vertically integrated structure of the power sector of United Kingdom, however, distribution and supply both remained as the combined function of Regional Electricity Companies. These Regional Electricity Companies were allowed to do limited investment in Generation which was up to 15% of the sales volume of the respective company.

Power Generation

In 1990, 6 electricity generation companies had the highest ration in the production of electricity in Great Britain. During 1990 – 1991, all the power generation companies (not nuclear power bodies²⁹) and Regional Electricity Companies (RECs) were sold through the public flotation on the stock exchange.

In 1996, Government came up with a holding company which was named as the “British Energy”. Scottish Nuclear and Nuclear Electric were made the wholly owned subsidiaries of the British Energy. However, operations and processes of Scottish Nuclear and Nuclear Electric were continued to be separate as before.

²⁹ Nuclear Bodies remained in the public ownership at that time.

All the introduced Combined Cycle Gas Turbine Power Plants³⁰ were supported by the regional electricity companies (RECs). CCGTs were the joint ventures of Regional Electricity Companies and at the same time, RECs had long-term power purchase agreements with them. RECs were prohibited to meet only 15% of the supply-demand through CCGTs. However, one REC, Eastern Group³¹ gets the relaxation in the said limit to 100%.

At this point of time, entry of new players in the generation segment was also seen. Players like Enron, Entergy, NRG, AES, and Edison Mission Energy made their entry. Enforced Divestment³² in some already established generation companies happened which opened up a new door for competition as the same action created opportunities to change in ownership.

Power Transmission

Power Transmission is the natural monopoly. In United Kingdom, National Grid Company (NGC) is the owner and operator of Transmission System. To maintain and develop an efficient and economical transmission network is the statutory duty of NGC. The National Grid Company was initially jointly owned by the Regional Electricity Companies. Later on, in December 1995, it was also floated on the national stock exchange as an autonomous company. NGC is regulated under the provisions of Grid Code and the Electricity Act 1989. Technical aspects are governed by the Grid code while the regulatory aspects are governed by the Electricity Act 1989.

Power Supply

Supply industry chooses to open up the “supplier choose” for consumers in three phases. In April 1990, consumers with the connected load of 1 MW and above were given freedom to choose the supplier. From April 1994 onwards, suppliers choose was opened up for the consumers with connected load of 100 KW and above and from September 1998 onwards, all consumer groups were given freedom to choose their supplier.

³⁰ CCGTs were the First independent power projects of UK.

³¹ Now TXU Europe

³² Later the divestment had become the voluntary one.

“Suppliers choose” introduced competition in the segment. During 1999-2000; 80% of the consumers who had load 1 MW and above, choose to take power from the competitive market (Supplier other than the local PES). 67% consumers in the segment of 100 KW – 1 MW also choose to take power from such suppliers which were not the local PES. In lower segment of consumers (load<100 KW), 38% power consumers switched their suppliers. This supplier switch happened either one or more time. By this phenomenon of competition, PESs lost nearly 30% of their consumers in the respective area.

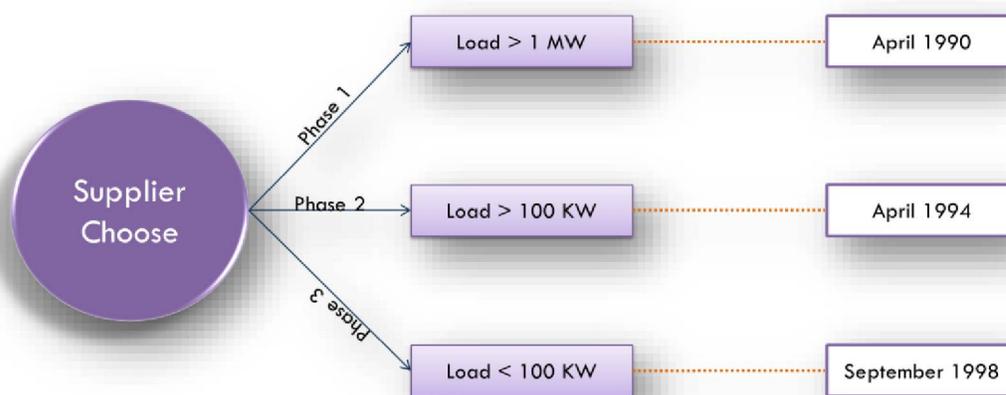


Figure 6.7: Introduction of Supplier Choice

Initially, number of licensed suppliers got increased in an area. But later on the business of PES suppliers was acquired by major suppliers and hence such mergers and acquisition reduced the quantity to seven suppliers. On the other hand, Investment from the side of generation companies into supply side was also seen in the segment as many generation houses expanded their business to supply-side companies by investing in them.

Power Distribution

By the Utilities Act 2000, the power distribution business had been separated out from the power supply business. Distributors in United Kingdom now hold the separate license to distribute the electricity. To connect a consumer and to maintain the connection is under the constitutional duty of a distributor. PES distribution companies have the regional monopoly in United Kingdom. As per the guidelines of Office of Gas and Electricity Market, potentially competitive activities like metering and billing are being separated out from the work of traditional distribution companies.

Metering and Billing

Services related to the meter involve meter operation and meter provision. Metering services in United Kingdom are provided by meter operators while the services related to the metering point administration are supposed to be provided by distribution company. The area of metering services is not the monopoly and any authorized company may provide meter related services in line with the provisions of Electricity Act 1989. For half hour meter points, metering services are fully competitive as there are enough service providers which include third parties and ex PES distribution companies also. For non-half hour meter points, only ex PES distribution companies provide their services.

Ex PES distributors are the default metering service, providers. They have obligation to provide their services whenever they get request from the supplier. They also have obligation to define the statement of charges for metering services. Such charges should be published to ensure the competition in the sector.

The supplier has the freedom to choose the company to provide metering services under the agent commission scheme. Whereas, the metering company needs to provide its services for the particulars related to the data collection, data aggregation, and meter operation.

Regulatory Reforms

United Kingdom got its first powerful act “Utilities Act 2000” for the most needed regulatory reforms on March 28, 2000. By the effect of this act, regulatory board of Gas and Electricity Markets Authority was constituted to replace the individual regulator Director General of Electricity Supply. Regulatory Offices of gas and electricity sector were merged to become the OFGEM i.e. Office of Gas and Electricity Markets. Energy watch was established as an independent consumer council to replace existing consumer committees. Secretary of state and regulatory authorities were awarded new powers.

In the supply side regulations; the act abolished public electricity suppliers and introduced the concept of a single license. A mandate to separate PES power supply and distribution business was provisioned with the requirement to take separate license for distribution. These provisions provided new directions to redefine the ownership structure of power industry in United Kingdom.

New Electricity Trading Arrangement (NETA) was established by this act to replace already operationalized electricity pool. The purpose was to eliminate manipulation of pool prices and to have updated mechanics in price setting. NETA was introduced to solve a number of existing problems and to remove hurdles which were identified during last decade.

UTILITIES ACT 2000

The Utilities Act 2000 was enacted on March 28, 2000. The act amended the legislation pertaining to the gas and electricity industry. Provisions which impacted the sector most are being described here.

Provision Related to the New Regulatory Arrangements

Data analysis for the new regulatory arrangements has been performed in Appendix C. Code book 3.4 on Regulatory Arrangements of Utility Act 2000 may be referred for the same. This data analysis resulted in 91 Codes and 15 initials categories.

Gas and Electricity Market Authority [GEMA] was established to carry out the functions of Director General of Electricity Supply as well as of Director General of Gas Supply. Act abolished the offices of Director General of Electricity Supply and Director General of Gas Supply. A body corporate **Gas and Electricity Consumer Council** was also established to perform the task as defined in the act.

As per the act, before the commencement of a financial year, the authority and the council both are required to publish “Forward Work Programme” to give the description of planned future projects. On the other hand, annual reports as defined in the act are also needs to be submitted both by the authority and by the competition commission.

Protection of consumer interest is the principal objective of both the authority and the secretary of state. The interest of end consumer must be protected by the promotion of competition amongst different players in Generation, Transmission, Distribution and Supply segment. These bodies

should also have the regard of persons who are either belong to disable, pensionable age or low-income group or resides in the rural area.

The council has the work to gather the consumer-related information which affects the consumer in regard to electricity services. Also, the information can be related to the view or experience of consumer for the particulars related to the power industry. The council may form committees to get the information and advice for the matter related to the consumer concern. Consumers may also get the information from the council; if they need any. Council also has the duty to publish the statistical information as per the provision of this act. Council has the power to investigate the consumer complain related matters. If the Authority asks to supply any information, council has the duty to submit it within the specified time frame or as the case may be, the council may submit the notice with the reason to not to supply the asked information.

Provisions Related to the Licenses

Data analysis for the license provisions has been performed in Appendix C. Code book 3.5 on License Provisions of Utility Act 2000 may be referred for the same. This data analysis resulted in 272 Codes and 42 initials categories.

Utilities Act 2000 defines both the distribution and supply. Distribution means the distribution system which conveys the power to any premise through the network of low voltage lines and electric substation. Supply means the supply of electricity with the use of distribution system to such premise which is not used by the license holder.

A license is required to generate, to transmit, to distribute and to supply the electricity. Same person cannot have licenses for both supply and distribution of electricity. Both distribution licensee and supply licensee can authorize a holder to distribute or supply the electricity respectively as per the area defined in the contract. The distribution or supply area can be redefined by the authority in consultation with the respective holder.

A part or the whole of license is transferable by the holder of the license as per the terms specified in the act. The transfer must have the approval of the authority. The transfer may include assignment, assignation or any other form of transfer as specified.

The distributor has a duty to connect the requested premise from distribution system within the specified time whenever he gets the connection request either from the consumer or from an authorized supplier. The distributor must maintain and develop the power distribution system in an efficient and economical manner.

The authority in coordination with Secretary of State may prescribe standard of performance regulations pertaining to the work of power distribution. If a distributor fails to fulfill the prescribed standard, then he needs to fill compensation for the same.

The Electricity Code

Data analysis for the electricity codes has been performed in Appendix C. Code book 3.6 on The Electricity Code of Utility Act 2000 may be referred for the same. This data analysis resulted in 159 Codes and 17 initials categories.

The supplier is not supposed to charge any amount whenever he alters the position of a meter or replaces the specially adapted meter, in case such work relates to the disabled person. The supplier has the power to install a prepaid meter or to disconnect the electricity connection in case consumer does not pay the due billing amount in the specified time period. The supplier is supposed to have a deemed contract to supply the power with the occupier of premise wherever he supplies the electricity. In such cases, where electricity is supplied illegally, the distributor is authorized to recover the value against the amount of supplied electricity. If any premise has been disconnected, then before restoring the connection, consent of the supplier or distributor as the case may be, is required. Both distributor and supplier have the power to disconnect the electricity connection. Also they both i.e. distributor and supplier may enter into any premise for the purpose of investigation of particulars. The supplier has the power to install or reinstall the meter at the consumer premise and to manage the same. However, a prior notice of two working days must be

given from supplier's side before removing or installing a meter. Removal/Installation of a meter is the duty of supplier while connecting/disconnecting of the premise is the duty of electricity distributor.

The supplier is supposed to give power through an appropriate electricity meter only. Provision of service through a pre-paid meter is also there but such pre-paid meter can only be used by the supplier to recover the amount which pertains to his services only.

Separation of Electricity Supply and Distribution

Data analysis for the Separation of electricity supply and distribution has been performed in Appendix C. Code book 3.7 on Separation of Supply and Distribution Businesses may be referred for the same. This data analysis resulted in 68 Codes and 7 initials categories.

Before going further, we need to understand the term “associate”. A company is taken as an associate of the supplier if the supplier or the company is a wholly owned subsidiary of a company or a supplier as the case may be. Both supplier and the company can also be the wholly owned subsidiary of another company.

This part applies to such license holder who had licenses both for the supply of electricity and distribution of electricity before passing of this act. By the provisions of the act, such type of licenses needs to be granted to different persons. Licenses for supply and distribution may be separated amongst 2 associates nominated by the holder or one license can be given to associate and the other one may be kept by the same holder only, as the case may be.

Before the enactment of this act, if any holder of supply license generates or transmits electricity with the valid license, such license will have the effect if it was granted to the associate nominated by the supplier.

Provision of Transfer Scheme

Data analysis for the transfer scheme has been performed in Appendix C. Code book 3.8 on Transfer Scheme may be referred for the same. This data analysis resulted in 142 Codes and 19 initials categories.

Under the transfer scheme, secretary of state will direct the supply licensee to make a nomination to divide assets, liabilities and rights between the licensee and the associate. In such cases where licenses are to be divided amongst the 2 associates, 2 nomination need to be done for the stated division as above. The transfer scheme should be carried out by the respective supplier as per the direction of the secretary of state.

A transfer scheme must define all the assets, liabilities and rights which are supposed to be assigned to nominated associate. The transfer scheme and its particulars may be defined through questions, referring, undertaking and in other appropriate ways. Division of these assets, liabilities, and rights shall be enforceable amongst such persons to whom the supplier nominates. Obligation to have a written agreement between such persons must be there. Incidental, consequential and supplemental provision should be made as the supplier thinks appropriate.

All the transactions and transfers should be happened in pre-stated order. A nominated person or the nominated associate must be considered equivalent to the supplier in law. The transactions and transfers are also enforceable by the civil proceedings for any remedy or relief; in case it feels necessary.

A transfer scheme must have the approval of the secretary of state. Before approving it, secretary of state may make the appropriate modifications to ensure that the transfer scheme is aligned with the law. A transfer scheme is drafted keeping in mind the interest of the public as the same should not be violated. The supplier needs to assist the Secretary of State for all the information required regarding the drafted transfer scheme.

The effective date of transfer from which transfer is supposed to take place needs to be defined by the transfer scheme or it may be the day for which the supplier is entitled as per the act. Secretary of the state may also direct the effective date for the purpose of this transfer scheme. Any asset,

liability or the right which is retained by the supplier is believed to be shifted to the supplier under the transfer scheme only.

Shares issued in line with any transfer scheme should be of nominal value. They may be allocated or issued under the specified terms in the act. Issued shares are supposed to be fully paid and must fulfill the provision of Companies Act 1985.

If any statutory account is set up by the transferee in line with the provisions of Companies Act 1985, then the supplier needs to assign an amount or a value against the assets and liabilities to define the corresponding statements for that account. In such cases, where no value is assigned or the value seems to be inappropriate; such value under the transfer scheme may be produced on the basis of the last year's accounting records of the supplier.

On the other hand, the account which represents the accumulated profits of the transferee may include an amount or the proportion of any profit which is retained and realized by the supplier. The said amount may also be defined to realize under the drafted transfer scheme.

If the existing supply licensee has made the transfer scheme as per the date specified by the directions of the secretary of state then the secretary of state will formulate another scheme to provide effect to the existing license of the supplier to supply the electricity. Earlier³³ granted generation and transmission licenses will also have the effect if the associates were nominated by the supplier for the purpose of having license for either generation or transmission. In such case, where transfer scheme of a supplier does not take place, the described particulars and actions will not have any effect.

Further, secretary of the state is responsible to make a scheme after the enactment of this act which will define the particulars of the treatment of existing licenses. Standard conditions of the licenses should be defined and at the same time secretary of the state may do the necessary amendments. These amendments may also include the amendments in the terms of revocation and exemption of license. The scheme made by the Secretary of state may have the transitional provisions and other

³³ Before Utilities Act 2000

such provisions which depend on the category of cases. After making the scheme, an authoritative text is supposed to be published by the office of Secretary of the state.

Deemed Contract to Supply

Data analysis for the Deemed contract to Supply has been performed in Appendix C. Code book 3.9 on Provisions for Deemed Contract to Supply may be referred for the same. This data analysis resulted in 104 Codes and 11 initials categories.

Areas, where the public electricity supplier is supplying the power before the commencement date, in such cases successor of the supplier, is believed to have deemed contract for those areas to supply the electricity just after the commencement date. Terms and conditions of the supply and contract may be submitted by the earlier supplier. Secretary of state may also direct the supplier to make the scheme to describe such terms and conditions. Different provisions as per the category of cases and nature of place may be drafted. The draft of terms and conditions must have approval of the authority and the authority may modify it before granting the approval.

If supplier finds it difficult to submit the draft of the scheme to authority within the specified timeline or if the authority does not find the submitted scheme suitable; in such case, the scheme may be drafted by the Authority itself. Supplier needs is supposed to assist the authority with all desired information. Before the commencement date, such scheme shall be published in London and Edinburgh Gazettes to get operationalize on the publication date.

Learning from United Kingdom Experience

In many OECD countries, retail competition and unbundling of supply from distribution inspired the process of reforms. Countries like Germany, Norway, Finland, Sweden, New Zealand, Australia, and USA opened up their electricity market to all class of consumers. United Kingdom also opted the same in phased manner and gave the freedom to end consumer to choose its' supplier. In United Kingdom, reforms had been mainly linked to privatization and unbundling. United Kingdom replaced the Electricity Pool with New Electricity Trading Arrangements and it

made the participation in trading of the electricity voluntary. By the Utilities Act 2000, the country made the separation of supply from distribution mandatory and hence United Kingdom entered into next generation of power sector reforms.

Reform is a process of continuation and it happens in the form of a chain. Uncertainty and risk always remain there for certain works but it is necessary to face it to go further. Today, many developing countries like India are having serious problems in their power sector. Their power sector is facing with huge technical and commercial losses, low efficiency, low customer satisfaction, frequent power cuts and high burden of debt on power sector utilities. Such countries may adopt the UK model of restructuring to make their power sector effective one.

6.3.3 CONCEPTUAL LENS FOR RETAIL IN ELECTRICITY MARKET

(Based on the Retail Regulations of New Zealand and United Kingdom Power Sector)

During the study of New Zealand and United Kingdom retail experiences, codes and related categories were developed in respective code books, attempting into summarizing the data. Key phrases from the respective quotations were taken and “in-vivo” codes were developed. For each quotation, the researcher wrote down his own thought (known as memo). Based on the codes and memos, initial categories were developed for each quotation. Following is the overview of developed codes and categories for the study undertaken on retail experiences of New Zealand and United Kingdom:

Table 6.1 Codes and Categories Generated for New Zealand

| New Zealand | | | | | |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| | Code Book |
| Particulars | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 |
| Initial Categories | 20 | 37 | 40 | 71 | 55 |
| Open codes | 81 | 126 | 195 | 334 | 321 |

Table 6.2 Codes and Categories Generated for United Kingdom

| United Kingdom | | | | | | | | |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Particulars | Code Book 3.2 | Code Book 3.3 | Code Book 3.4 | Code Book 3.5 | Code Book 3.6 | Code Book 3.7 | Code Book 3.8 | Code Book 3.9 |
| Initial Categories | 14 | 96 | 15 | 42 | 17 | 7 | 19 | 11 |
| Open codes | 106 | 863 | 91 | 272 | 159 | 68 | 142 | 104 |

In total, 223 initial categories and 1057 codes were developed for New Zealand and 221 initial categories 1805 codes were developed for United Kingdom.

Refining Categories leading into formation of conceptual lens

The matrix of codes and categories was developed from various policy documents of New Zealand and United Kingdom, which appeared in representing a range of reform experiences in both countries. The identified initial categories processed further and grouped into broader categories (refer Appendix D). Initial themes were identified on the basis of refined categories. These initial themes then clubbed together to identify final themes

Through the process performed in Code Book 4.2 and Code Book 4.3 of Appendix B, following analysis is obtained in order to get refined categories and final themes for the reform experience of New Zealand United Kingdom.

Table 6.3: Summarization of Study Undertaken for New Zealand

| Particulars | Code Book 2.2 | Code Book 2.3 | Code Book 2.4 | Code Book 2.5 | Code Book 2.6 |
|------------------|---------------|---------------|---------------|---------------|---------------|
| Total Categories | 223 | | | | |
| Refined Category | 56 | | | | |
| Initial Themes | 26 | | | | |
| Final Themes | 11 | | | | |
| Core Concept | 1 | | | | |

Table 6.4: Summarization of Study Undertaken for United Kingdom

| Particulars | Code Book 3.2 | Code Book 3.3 | Code Book 3.4 | Code Book 3.5 | Code Book 3.6 | Code Book 3.7 | Code Book 3.8 | Code Book 3.9 |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Total Categories | 221 | | | | | | | |
| Refined Category | 55 | | | | | | | |
| Initial Themes | 18 | | | | | | | |
| Final Themes | 8 | | | | | | | |
| Core Concept | 1 | | | | | | | |

In total, 444 initial categories, 111 refined categories were identified from the reform experience of New Zealand and United Kingdom Power Sector which were further summarized into 44 initial themes and 19 final themes. The developed final themes were analyzed and put together to develop a refined conceptual lens to reach the core concept which is aligned with the objective of the research.

CONCEPTUAL LENS

The conceptual lens designed below has been adapted from the reform experience of New Zealand and United Kingdom Power Sector. Suggested steps and related sub-steps are designed on the basis of identified codes, refined categories and final themes developed for both the countries. Three major steps are suggested by the conceptual lens to introduce retail competition in power sector are shown in Figure 6.8 as below:

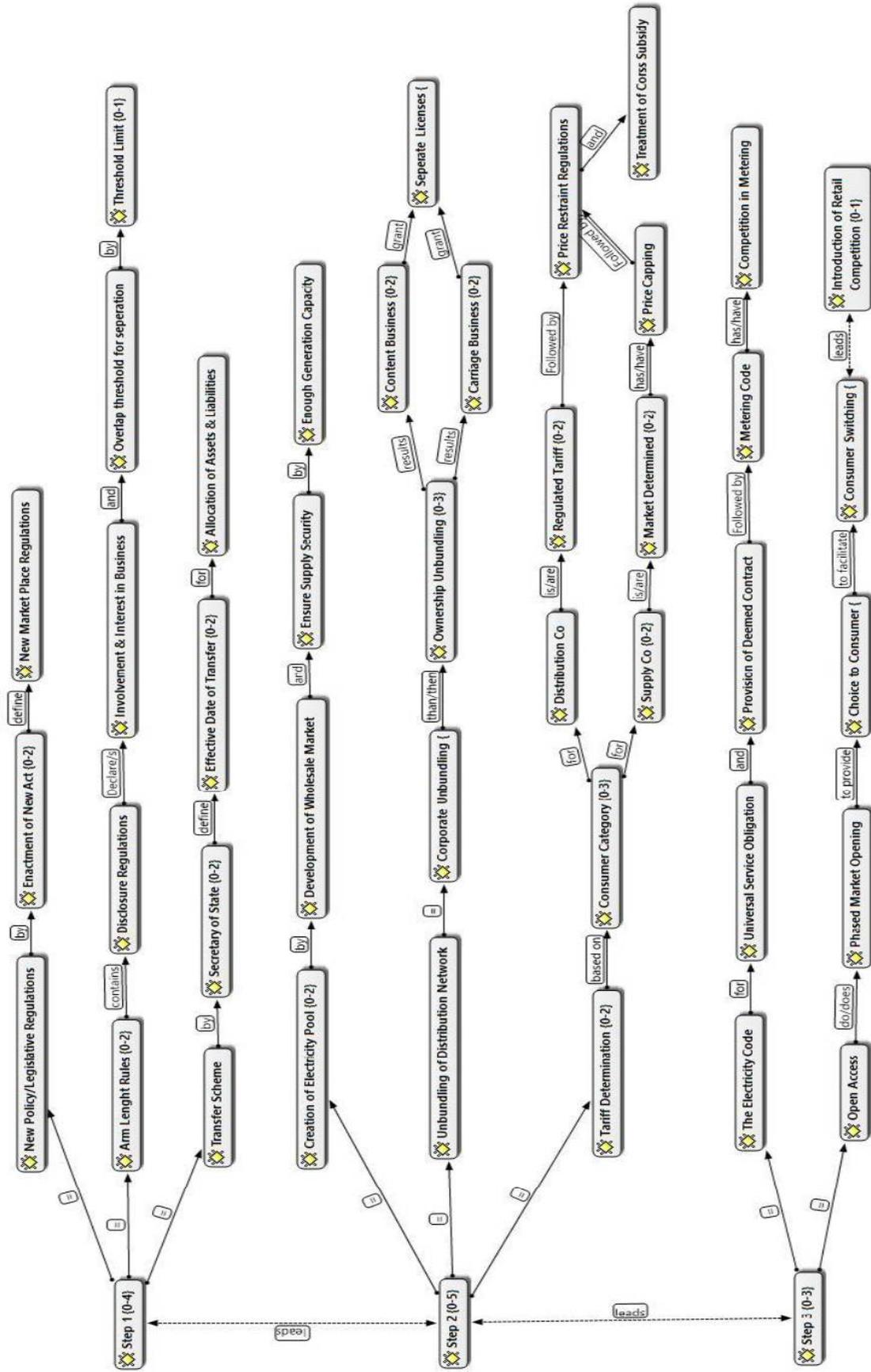


Figure 6.8: Conceptual Lens based on Global (UK and NZ) Retail Regulations

Explanation of steps suggested by the conceptual lens to introduce retail competition in a country through the unbundling of carriage and content businesses is as follows:

Step 1: Legislative Reforms

Enactment of new Acts; New Zealand and United Kingdom introduced new acts in order to facilitate the separation of carriage and content business in their power sector. Electricity Industry Reform Act 1998, Electricity Industry Reform Amendment Act 2008 in New Zealand and Electricity Act 1989, Utility Act 2000 in United Kingdom ensured the successful introduction of retail competition in their power industry. The same reflects the need for a new regulatory act to facilitate the retail competition in India.

Arm length rules: Arm length rules are certain regulations which identify involvement of one business into another business. New Zealand introduced arm length rules which set some disclosure mandates and overlap threshold to facilitate the separation. Various relationships, involvement, dealings, and transactions between businesses are defined in Arm Length Rules. In New Zealand, it is the part of Act but in India, it needs to be drafted separately.

Transfer scheme: Transfer scheme is adopted from the Electricity Act 1989 of UK. Transfer scheme defines the assets, liabilities, and proceeding which needs to be allocated among newly formed companies for the purpose of separation. In United Kingdom, it is part of the Act but in India, it needs to be drafted separately to make the transfer effective.

Step 2: Unbundling of Distribution Business with the Creation of Capacity Market

Creation of electricity pool: In United Kingdom, The Electricity Act 1989 did establish electricity pool as a wholesale market. New Electricity Trading Arrangement was introduced in 2001 to replace the pool as a wholesale market. Subsequently, three new power exchanges were developed. In New Zealand, the Wholesale Electricity Market Study was commenced in 1992 to establish the market in 1996. In India, the full development of wholesale marketplace is also necessary with the simultaneous development of generation capacity to secure the power supply for retail companies.

Unbundling of distribution network: Unbundling of Distribution network was done in United Kingdom and New Zealand. Firstly, corporate unbundling was done followed by the ownership unbundling to separate carriage and content business. Both businesses were made separate

licensable activities. In India, the same needs to be followed whereas the rules for corporate unbundling and ownership unbundling shall be different.

Tariff Determination: Tariff shall be different for the distribution company and supply company. The distribution tariff shall be regulated tariff and whereas supply tariff shall be decided by market competition although capping shall be there. The consumer shall pay line charges to supplier only and supplier shall settle this with the distributor. Tariff of electricity shall vary on the various consumer categories. Consumer category can be based on the rural/urban consumer, distance from the main center, income group; as the case may be. Price restraint regulations shall be there. Cross-subsidies need to be managed in the effective way for the success of the retail competition.

Step 3: The Electricity Code and Open Access

The electricity code: Licensing provisions, universal service obligation, connection/disconnection of the premise, the standard of performance, investigation powers, enforcement, taxation and penalty rules shall be described by the electricity code. The code also set the metering code and will make the provisions if the metering activity can become competitive in nature. The code shall power the deemed contract of the supplier of electricity with the occupier/owner of the premise.

Open Access: In New Zealand, franchisee removal was completed in 1994 to open up the market for all consumers. In United Kingdom, market was open up completely in 1999 to give freedom to all consumers to choose their supplier. The market opening was done in phased manner in both countries. In India, this concept of open access shall be needed to introduce for all consumers so that they shall have the freedom to choose their supplier. This freedom shall give the choice to consumer whereas they can switch the supplier if they want to.

The particulars described above shall lead to the introduction of retail competition in India. Consumer satisfaction shall be the key to the success of the retail competition.

6.4 CONCEPTUALIZED FRAMEWORK

Conceptualised framework for the study has been built on the Vygotsky (1934, 1986) theory of conceptualization. The theory suggested three main classifications of pre-conceptual thoughts i) formation of syncretic groups, ii) grouping according to complexes, and iii) creation of potential

concepts. This classification bore similarity with open, axial, and selective coding of thoughts respectively, suggested by Strauss and Corbin in 1998. Hence the syncretic groups, complexes and potential concepts were formed with the open coding, axial coding and selective coding respectively.

An initial protocol has been made firstly to develop the transcript on which the coding operations can be applied. Through the coding operations conceptualized framework is developed and described in detail.

Development of Protocol

Based on the developed conceptual lenses as shown in Figure 6.1 and Figure 6.8, a protocol to develop the conceptualized framework has been formulated. The protocol is presented in Table 8.2 of Appendix H. This initial protocol consists 69 questions bifurcate into 11 categories. Each question developed under the protocol has a unique scope which is defined against the same question.

Development of Transcript

Each question, as shown above, is picked one by one and relevant answers were searched based on the scope defined in available policy documents. To address every question in a proper manner, the research picked out answers to each question from following documents:

1. Electricity Industry Reform Act 1998, New Zealand
2. Electricity Industry Reform Amendment Act 2008, New Zealand
3. Electricity in New Zealand, Electricity Authority
4. Chronology of New Zealand Electricity Reform, Energy Markets Policy; Energy and Resources Branch
5. Electricity Market Regulatory Reform and Competition – Case Study of the New Zealand Electricity Market, New Zealand Institute of Economic Research
6. Electricity Act 1989, United Kingdom
7. Utilities Act 2000, United Kingdom
8. UK Power Sector Market Reform – The case for Action, E3G

9. Regulation of the UK Electricity Industry, CRI and University of Bath

10. UK Energy Policy 1980 – 2010 – A history and lessons to be learnt, Parliamentary Group of Energy Studies

Findings of relevant text against each question in available policy document are exceeded as shown in Table 5.2 of Appendix E. Significant findings were put together to obtain a transcript. The transcript is processed further as per the approach suggested by Vygotsky (1934/1986) and Strauss and Corbin, 1998. The Appendix E may be referred for the process adopted for developing Syncretic Groups and Open Coding (code book 5.2), Complexes and Axial Coding (code book 5.3), and Potential Concepts and Selective Coding (code book 5.4).

Through the coding exercise, initially 1123 codes and 69 initial categories were developed which were processed further to summarize and synthesize the range and diversity of the data. Through axial coding association between the codes and categories was identified which resulted in the summarizing of 69 categories into 37 refined categories. Subsequently, through selective coding 10 initial themes were identified which were further clubbed into 6 final themes, leading to the core concept of introducing retail competition through the separation of carriage and content business in existing distribution business.

THE CONCEPTUALISED FRAMEWORK

The conceptualized framework to introduce retail competition in India through the separation of carriage and content is described as below:

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India needs third generation reforms as discussed in previous chapters. Introduction of retail competition by separating existing distribution business into carriage business and content business is supposed to bring healthy competition in India. The reform shall be beneficial for the final consumer as they will receive perks from the foreseen competition in the market. Based on the document analysis and international experiences, the conceptualized framework to introduce retail competition in India may be as follows:

STEP 1: REGULATORY PROVISIONS

Presence of appropriate regulations is a pre-requisite of any reform. A country usually introduces a new act to amend earlier acts so that the new act can be the backbone to provide enough regulatory support to introduce reforms. Usually, an industry further introduces new policies and frameworks in line with the provisions of the act to ensure smooth restructuring.

The document analysis predicts that following rules and regulations need to be introduced in the industry before taking up the second step to introduce retail competition in India:

Arm Length Rules

Objective of Arm Length rules to ensure that the electricity business and connected system operate at arm length. Arm length rules include transactions, dealing, and relationships without limiting the initial meaning of the term. Such transactions, dealing and relationships do not include the elements which are usually omitted by parties in their respective positions. Such transactions, dealing and relationships also do not neglect elements which are usually included by parties in their respective positions and subject to certain conditions. Following are the arm length rules:

1. Duty to ensure arm's-length objective is met – Business A and Business B and their parents would ensure and take all needful steps to confirm that the arm length objective is met.
2. Arm's-length test – Business A or its parent will not be able to enter into the transaction for which Business B is interested. The same shall be true for the Business B also.
3. Duty to not prefer the interest of another business – The director of Business A shall always prefer the interest of Business A over the interest of Business B.
4. Duty to not discriminate for another business – Business A shall not discriminate for Business B or related suppliers or consumers in providing benefits or services.
5. Duty to concentrate on the interest of ultimate owners – Director of Business A shall act in the interest of members of Business A and shall not subordinate the interest of members of Business B.
6. One independent director – There shall be at least one independent director of Business A. That director shall not be related to Business B in any respect.

7. Separate Management – A certain threshold level shall be decided for the participation level of one business into another. If the threshold level is crossed then manager of Business A cannot be the manager of Business B.
8. Record Management – Every business must keep a record of all the transactions between Business and Business B. Nature and date of the transaction is the required fields.

(Meaning of Parent – Every person who is involved in the Business shall be known as the parent)

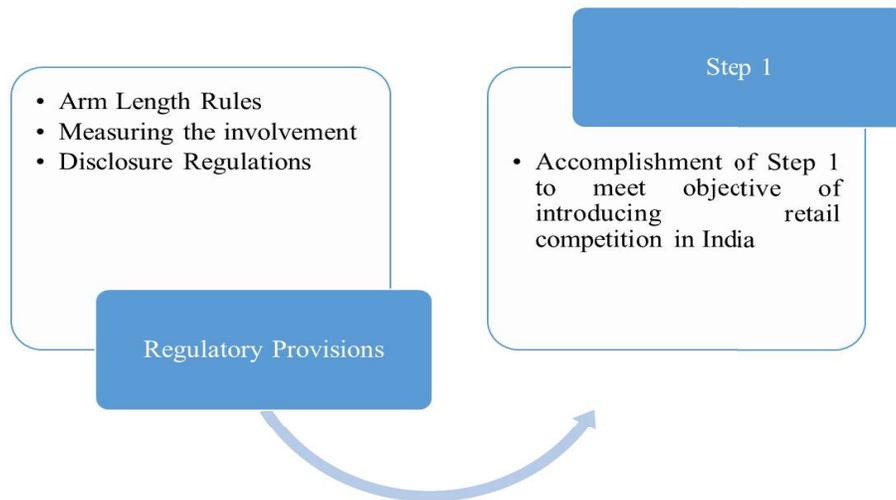


Figure 6.9: Key Stages under Step 1 ‘Regulatory Provisions’

Measuring the Involvement

A person shall be involved in network business if he operates or owns any asset in connection with the network business; involved in generation business if he or operates or owns any asset in connection with the generation plant; involved in supply business if he sells electricity to end consumer; all activities either by own or through another’s behalf. Person shall also be taken as an involved person if he pursues a material influence over any business and exceeds the specified threshold limit.

Involvement shall be measured through the capping rules provisioned for Connected Generation and Connected Selling. Threshold limit for the involvement of one business into another business shall be set based on which the corporate separation and ownership separation will be made.

Involvement will also identify the material influence and common associates of one business into another as per the provision of Arm Length Rules.

Disclosure Regulations

Disclosure Regulations: Appropriate commission on the order of Governor General, make following regulations making powers:

- 1) Declaration of business class or interest or involvement to be disregarded or on which act does not apply for the specified conditions
- 2) Declaration of business class or interest or involvement not to be disregarded henceforth or on which henceforth act applies for the specified conditions
- 3) Declaration of person/class of person or type of overlap or unspecified interested needs to be exempted
- 4) Declaration of disclosures to identify involvements
- 5) Declaration of such measures which are necessary for the purpose of retail introduction

As per the provisions of regulation-making powers, every person shall be needed to disclose the following particulars under the disclosure regulations:

- 1) An interest or involvement in an electricity business
- 2) An unspecified interest in the involved person in an electricity business

Such disclosure regulations shall provide following fields in respect of businesses:

- 1) by and to whom the disclosure is made:
- 2) what needs to be disclosed:
- 3) when it must be disclosed:
- 4) the form of disclosure:
- 5) the maintenance of files of notices or registers of involvements
- 6) exemptions from the requirements of the regulations
- 7) a method of ascertaining percentages for the purpose of the 10% and 20% thresholds:
- 8) the consequences of any failure to make disclosure in accordance with the regulations:

Disclosures shall also be needed to make in respect of the power supplied to connected consumers in the respective area. All people who sell the electricity to consumer need to provide following information to appropriate commission at the end of financial year:

- 1) Calculation of qualifying generation for the financial year
- 2) electricity sold to the connected consumer in the financial year
- 3) Certificate of statement describing quantity of electricity sold against the limit set for that financial year

The format of information disclosure shall be set by the Commission. The disclosed information needs to be audited by the independent body preferably a chartered accountant. The disclosure statements shall be made available for public hence they shall be published online by the respective business or company who is disclosing the information.

STEP 2: TRANSFER SCHEME

Secretary of State shall draft the one or more schemes for the transfer and allocation of assets, liabilities, and rights among newly formed companies after the unbundling of the distribution company. The transfer scheme shall also provide the undertakings to allocate personnel employed in the distribution business. All the assets, liabilities and rights shall be stand transferred on the appointed day by the transfer scheme.

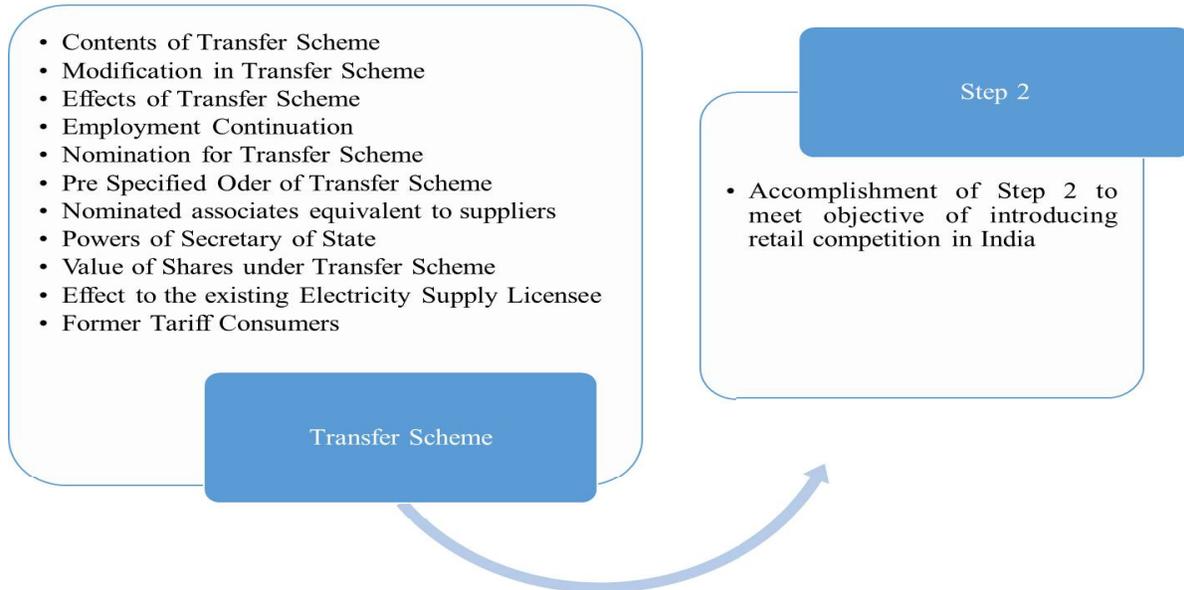


Figure 6.10: Key Stages under Step 2 'Transfer Scheme'

Contents of Transfer Scheme – The rights, property, and liabilities which can be transferred through the scheme and will not be otherwise capable of being assigned or transferred. The transfer may include the consequential, transitional, incidental and supplementary provisions as the Secretary of State thinks appropriate.

Modification in Transfer Scheme – If transfer scheme needs to be modified after the appointed day and both the transferee and transferor are agreed in writing then modified scheme shall come into force again which will contain all the agreed modification

Effect of transfers – All the transfers made for the allocation of rights, property and liabilities shall be in effect from the effective date of transfer. The effective day of transfer shall be defined by the secretary of state or by the provisions of the secretary of state.

Employment continuation of employees – All the employees shall be transferred based on their experience and domain of expertise. Employment of such employees shall be continued with newly formed companies upon the effective day of transfer.

Nomination for the transfer scheme – Secretary of State shall make a nomination to make the transfer scheme for the purpose of division of rights, property and liabilities between the nominated associate and himself. If a license holder has two associates, then two persons shall be nominated by the secretary of state to make the scheme.

Pre-specified order of transfer Scheme – All the transactions or transfers scheduled under the transfer scheme shall be made in pre-specified order only. The transfers made by the scheme shall be enforceable by the law.

Nominated associates equivalent to supplier – The nominated associates by the transfer scheme shall be equivalent to the supplier and shall be treated same in the law also.

Powers of Secretary of State – Secretary of State is the approving authority of transfer scheme. Before approving the scheme, he may also modify the scheme as he thinks appropriate. The Secretary shall ensure that the transfer scheme should not perform against in the public interest. The supplier is supposed to assist Secretary of State in terms of providing necessary information.

Value of shares under transfer scheme – Shares issues to associate or to the supplier under the transfer scheme shall be of nominal value as specified in the scheme. Shares shall be issued on the terms and conditions prescribed by the scheme. The issued shares shall be considered as fully paid in line with the Companies Act.

Effect to the Existing electricity supply licenses

1. Existing means existing license “license immediately before the passing of act”
2. The provision applies to a holder of existing supply license who shall make the transfer scheme.
3. Secretary of state shall make a scheme to provide an effect to the existing license of the supplier.
4. While making the scheme the secretary of state shall keep regards of the provisions defined under supplier’s transfer scheme.
5. In case the transfer scheme of supplier does not take effect, a scheme for existing supply licenses shall also have no effect.
6. The scheme shall also provide an effect to each license to which it relates and shall have effect as specified in the scheme as below:

- A distribution license and a supply license which was granted to the holder of existing licensee
 - A distribution license and a supply license which was granted to the owner of existing licensee itself.
7. The secretary of state may also make scheme if the certain licenses are incorporated in each generation license and transmission license.

Former Tariff Consumers

1. The clause applies if immediately before the commencement date, the supplier was supplying electricity to tariff consumers.
2. In such condition, supplier's supply successor shall have deemed contract with same consumers or occupier of the premises to supply the electricity from that day.
3. The supplier shall make a scheme to determine terms and conditions which needs to be incorporated into such contracts.
4. The contract conditions shall have such incidental, transitional, supplemental and consequential provisions as the supplier thinks appropriate.
5. In such case, where supplier fails to submit the scheme in time, the authority shall not approve the delayed scheme and will himself make a scheme.
6. It shall be the duty of supplier to assist the authority with all such information which shall be required for the purpose of making a scheme.

The transfer scheme shall be the base of separation of carriage and content as it will mandate the separation of accounts, employees, and licenses. It will give effect to provisions and certain conditions which are pre-requisite to introduce retail competition.

STEP 3: SEPARATION OF CARRIAGE AND CONTENT BUSINESS

Corporate Separation

To carry out the corporate separation, an involvement in the connected electricity business shall be identified. A person shall be known as involved person if he pursues 10 MW or more of connected generation.

Arm Length Rule of corporate separation –

1. A person who carries connected electricity business and also carries the line business or supply business must do the line business in a different company which does not undertake the business of generation or supply.
2. A person who is involved in any of the connected business must ensure that he should follow the arm length rules set for that business.

Corporate separation shall be first step for every business who shall go for the ownership separation as per the rules defined.

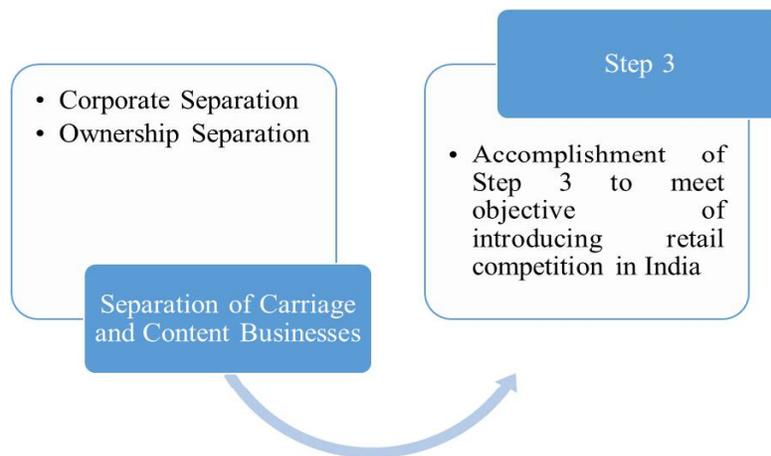


Figure 6.11: Key Stages under Step 3 ‘Separation of Carriage and Content Businesses’

Ownership Separation

Ownership restrictions set out as per the provisions of act prevent a business to be involved both in line and supply or generation, in certain conditions. Connected consumers selling cap and connected generation cap shall be decided for ownership unbundling and it shall be a contravention of the rules if an involved person breaches either of cap limit. The capping on the connected generation and connected consumers selling may be described as below:

1) Connected Generation Capping

A business breach the connected generation caps if:

1. Anyone of the connected generation plants has the installed capacity greater than of 5 MW

2. Total connected generation plant's installed capacity exceeds 50 MW or 20% of average maximum demand

Although the following generation capacity shall not be counted for the above purpose:

1. Any form of connected renewable generation. Although connected renewable generation shall be counted for the corporate separation, not for ownership separation.
2. Generation plant established after the separation to secure supply as per the conditions of provisions of the act.

2) Connected customers selling cap rule

1. A business breach the selling cap if he is involved in selling and sells more power in his area than the qualifying generation.
2. The qualifying generation of the person is: Connected generation (counted for capping) + connected generation in which business has involvement.

STEP 4: THE ELECTRICITY CODE

Price Restraint Regulations

Governor-General shall make an order in council, to make regulations for the price restraint or price control in relation to the network charges. The regulations shall be dependent on following consumer categories:

1. Domestic Consumers
2. Rural Consumers or consumers of sparsely populated areas

The price restraint regulations shall be applicable on:

1. The electricity distributor or particular category of electricity distributors
2. The individual areas or classes of areas; defined by distance from main center/geographic location/sparsity of local population

These regulations shall not be applicable to the charges related to power grid or for new line function services (shall be described in T&C only while offering)

Line Charges Through Retailer

Despite the truth, that the line charges are not directly payable by the end consumer to the power distributor but it shall be payable via electricity supplier; price restraint regulations shall be imposed online charges equally.

Price restraint regulations may specify the manner in which charges of network services to rural consumers or to domestic consumers shall be restrained. The price restraint regulations shall specify:

- 1) Control in relation to network charges for rural consumers or domestic consumers
 - a) Amount of charge
 - b) Amount of a component of charge
 - c) Proportion that a component can bear total charge or partial charge
- 2) Control in frequency for which the charge or a component of charge can be increased
- 3) Control in amount of increase in charge or in any component of charge

The price restraint regulations shall be operated lawfully in respect of network services and shall be effective from the date of commencement as specified by the regulatory body.

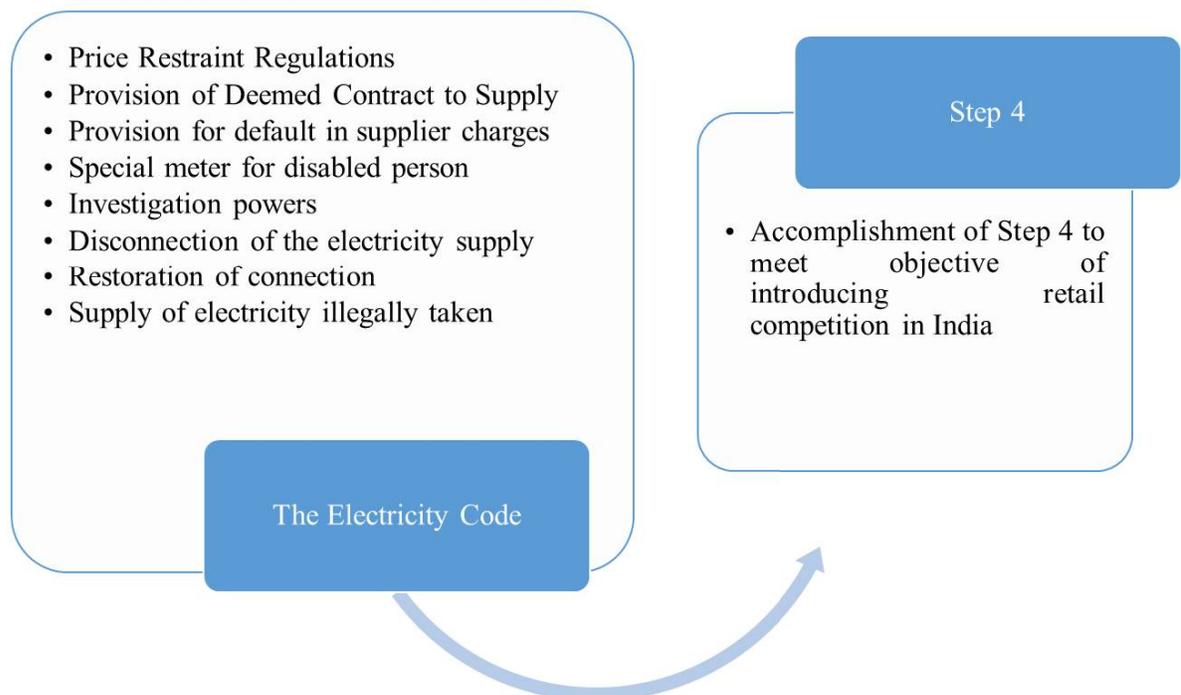


Figure 6.12: Key Stages under Step 4 'The Electricity Code'

Provision of Deemed Contract to Supply

In an electricity supplier provides power to any premise, the supplier shall be having deemed contract of supply with the occupier of the premise for the purpose of supplying electricity. The supply of electricity should be conveyed by the electricity distributor of that area.

Every supplier shall make a scheme which shall determine the terms and conditions to be incorporated in contracts which is deemed to had been made. The terms and conditions shall include various metering codes like the time of first-meter reading, ceased supply time, placing of a meter etc. The same shall be published to make available to consumers.

Provision for Default in Supplier Charges

If the consumer gets fail in regard to pay all the charges due to the supplier in the requisite period then the supplier may:

- 1) Disconnect the premise
- 2) Install a pre-payment meter

The supplier can also recover the expenses made in doing so from the consumer only. Though above exercise cannot be exercised if the due amount is in dispute. Supplier shall give a seven-day prior working notice to the occupier of premise before doing so.

A pre-payment meter shall be installed by an authorized person and that will not be used for recovering any amount other than the pre-payment of an amount for the access of electricity.

Special Meter for Disabled Person

The authorized person, as per the provisions of act and to meet the need of disabled person shall alter the position of electricity meter. The person shall replace such meter with the specially adapted meter. The authorized person shall not charge any amount for this.

Investigation Powers

Any officer authorized by the electricity distributor or electricity supplier may at all reasonable time take entry into premised for the purpose of inspecting power line/taking meter reading/removing or re-installing the meter as the case may be. An officer shall also be authorized

to take entry for disconnecting the network/supply in case of default. A prior notice of 7 working days is needed for the purpose of disconnection.

Disconnection of the Electricity Supply

If a person intentionally or by accountable negligence damages the electric line or associated equipment provided by electricity distributor or electricity meter installed by electricity supplier, the disconnection was made by the electricity supplier or electricity distributor as the case may be. The meter removed shall be stored safely until the authority gives approval for its disposal.

Restoration of Connection

If any premise has been disconnected by electricity distributor or supplier, no person shall without taking consent of distributor or supplier; as the case may be, restore the connection. If a connection is restored, may be disconnected by electricity distributor to whom network is used for connection; if the disconnection was made by the supplier.

Supply of Electricity Illegally Taken

The electricity supply which is taken illegally and was conveyed by the distribution system, the distribution company shall be authorized to recover the amount of such illegal supplied electricity.

Consumer Choice and Switching

Presently provision for open access is there for the consumer which has connected load of greater than 1 MW. For the success of retail competition, the open access needs to be provided in a phased manner. Following shall be the phases of the full market opening:

- Phase 1 – Open Access: Connected Load > 1MW
- Phase 2 – Open Access: Connected Load > 100 kW
- Phase 3 – Open Access: Connected Load < 100 kW

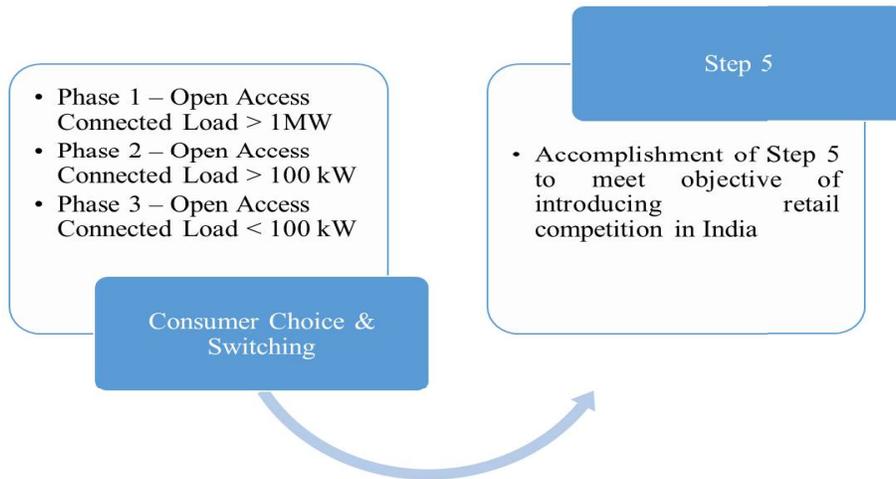


Figure 6.13: Key Stages under Step 5 “Consumer Choice and Switching”

In phase 1, Consumer who has connected load greater than 1 MW shall be able to choose their supplier. In phase 2 of market opening, Consumer who has connected load greater than 100 kW shall be able to choose their supplier while phase 3, market shall be opened up for all consumers. In this foreseen scenario, consumers shall be able to choose their suppliers. The consumers shall be able to switch the supplier based on the provisions and switching rate decided by the appropriate commission.

When the market shall be opened up for all consumers, suppliers shall perform better in fear to lose the market share. Consumer interest shall be protected by market forces. Degree of competition will be high. Price drops and increase in efficiency and quality shall be seen in the power industry of India.

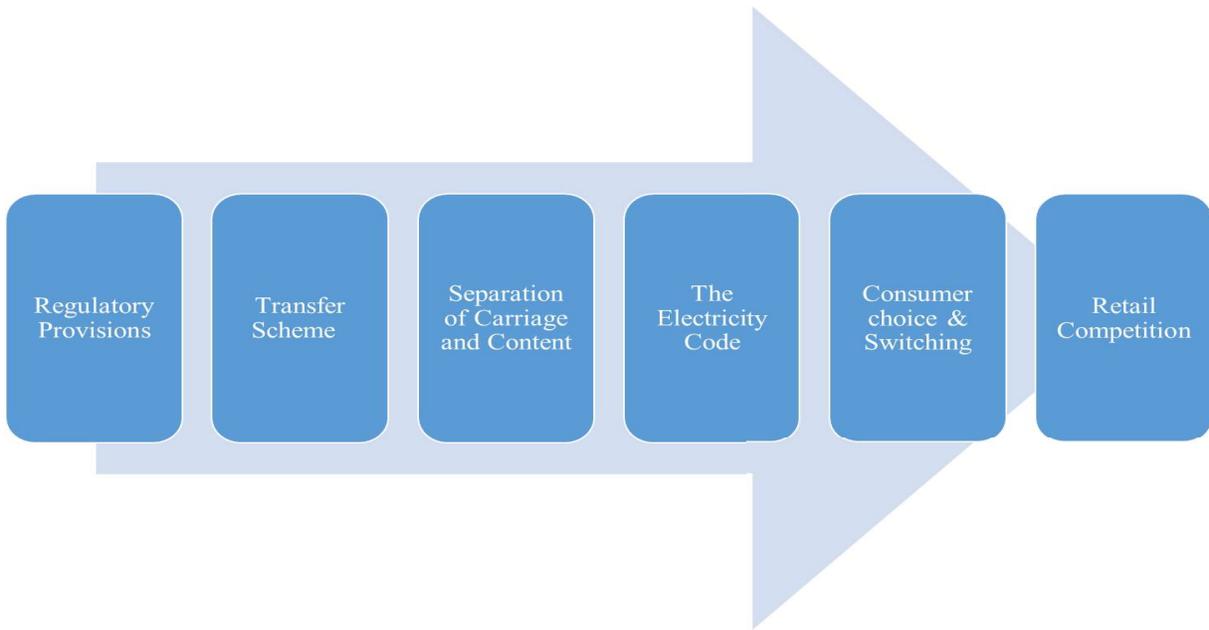


Figure 6.14: Conceptualized Framework to Introduce Retail Competition in India

6.5 INTERVIEW PROTOCOL

For this research, qualitative interviews are being used as a tool for capturing the data. Open-ended questions have been used for conducting semi-structured interviews (as justified in Chapter 5). In semi-structured interviews, interviewer helps the respondent to drag into the area of research. This helps in the gathering of more detailed information having a higher degree of depth. Interview protocol for this particular research is developed on the initial protocol which was further modified and validated through the advice of industry experts. Appendix F may be referred for the process of protocol formation. Questions of protocol and discussion around them are given as below:

INTERVIEW PROTOCOL

Category I Background and Purpose

Discussion: Crafting of the protocol is the most important stage. An interview protocol has two main components: i) how the interviewer introduces and establishes himself and ii) Questions to be asked on the subject matter. Hence to perform the first component, basic questions around the performance of Indian Power Sector are drafted. The interviewer wants to grab the need for third generation reforms in India through the introductory question which subsequently leads to the discussion around various measures which can be adapted to make the distribution segment financially viable. As the research witnessed through the conceptualized framework that introduction of the retail competition is the significant measure, the same needs to be verified in Indian condition also. It is also advisable to know about the expectations from the introduction of retail competition in Indian scenario – what type of problems it will be able to address for Indian power sector and whether existing regulations are sufficient to introduce retail competition in India or there is a need of some alteration.

After setting up the introductory question which picturizes the need of retail competition in India, we need to address the role of unbundling in introducing retail. Conceptualized framework of this study describes that corporate separation and ownership separation of businesses involved both in line and supply or generation is necessary for retails. Since in Indian conditions, generation companies are already separated a few years ago, our questions should be focused on distribution business. Though the researcher expects that retail companies will be allowed to undertake generation activities, there will be certain threshold limit as per the suggestions made by the conceptual lens. Roles and responsibilities of new companies need to be defined clearly. This discussion leads in the formulation of below questions:

- 1) Why do you feel that time has come for initiating third generation reforms in India?
- 2) According to you, what measures needs to be taken to make the distribution system viable?

- 3) Among all the stated measures, which is the most significant measure in the Indian context?
- 4) What are the expectations from the introduction of retail supply competition?
- 5) Do you feel the current regulations are adequate enough for introduction of retail in Indian distribution sector? If yes/no, why you feel so?
- 6) What type of business will require the unbundling to introduce retail?
- 7) What shall be the roles and responsibilities of new bodies created after restructuring?
- 8) Can retail company carry out the generation (if yes/no), what should be the threshold limit?

Category II: Present Scenario of DISCOMs

Discussion: In the conceptualized framework, the researcher observed to need of identifying involvement between businesses. The conceptualized framework suggests that involvement of one business into another needs to be identified and measured to know the business which are undertaking operations through different bodies i.e. through associates or franchisees. For identifying such involvements and interest in another company, which may be separated, disclosure regulations need to be drafted. As per the steps suggested by the conceptualized framework, an obligation should be there for each business to disclose their particulars. For the same, fields of disclosure regulation needs to be defined. These field can be fixed by making a standard format of information disclosure. Companies should disclose the information as per mentioned fields. The disclosed information of companies needs to be audited by the certain body to check whether the disclosed information is accurate or not. After identifying the involvement between businesses, there is a need to suggest the phases for the introduction of retail competition. The conceptualized framework suggested the need to enact the transfer scheme and other governing regulations followed by corporate separation and ownership separation. On setting of second supply licensee and the opening of choice to the consumer are subsequent phases. Hence there is a need for drafting the question to validate such phases which may facilitate the retail introduction in India. This discussion leads to the formation of below questions:

- 9) Why have we needed to identify such businesses which are doing business with associates or subsidiaries or franchisees?
- 10) Some disclosures need to be made by the businesses before carrying out the separation. Which type of business will have obligation to disclose the particulars?
- 11) What particulars should be described by disclosure regulations?
- 12) What are such disclosure regulations supposed to provide in respect of businesses?
- 13) Who is supposed to make the format of such information disclosure?
- 14) Should there be an audit of disclosed information? Who should be appointed to undertake the audit?
- 15) What are suggested phases to facilitate the retail introduction in India?

Category III: Transfer Scheme

Discussion: As per the conceptualized framework, a transfer scheme needs to be drafted for the allocation of assets, liabilities, and rights among newly formed companies after the unbundling of the distribution company. A body will be made responsible to draft the transfer scheme. State Government or Secretary of State may approve the scheme. While drafting the transfer scheme, treatment of existing losses and method for the valuation of assets needs to be defined. Allocation of assets, liabilities, rights, and employees shall be done through the undertakings. The allocation will be effective from the effective date of transfer. Mechanism to allocate assets and liabilities and Power Purchase Agreements also needs attention. The transfer will be made initially for certain period, duration of such period also needs to be identified. Since the distribution company will be bifurcated into two companies, hence license provisions for new companies may also be covered. Conceptualized framework indicated that future technical losses will belong to network company while the commercial losses will belong to the supply company, the same needs to be validated from the interview. Responsibilities of transferee after the effective date of transfer needs to be defined. As per conceptualized framework, there should be a provision for removing any difficulty which arises after the implementation of the transfer scheme.

- 16) What is the requirement to carry out the transfer scheme?
- 17) Who is responsible to draft the transfer scheme?
- 18) Who approves the draft of transfer scheme?
- 19) What will be the mechanism to treat existing losses?
- 20) How will Effective Date of Transfer be defined?
- 21) What will be the treatment of existing claims, if any?
- 22) What will be the mechanism to do the valuation of assets?
- 23) What is the need to define undertaking?
- 24) What will be the mechanism to manage existing Power Purchase Agreements?
- 25) What will be the mechanism to allocate assets and liabilities?
- 26) What will be the responsibilities of transferee after Effective Date of Transfer?
- 27) How shall the transfer of Personnel be managed?
- 28) What should be the provisional period in the transfer?
- 29) What will be the mechanism for bifurcated parties to apply for a license?
- 30) How will the future losses be managed?
- 31) Who will remove any difficulty in regard to transfer scheme, if arises?

Category IV: Open Access

Discussion: Success of retail market depends on the opening up of supply market for retail consumers. The phases of opening up of the market need to be identified. Opening up of the market enables choice to the consumer if the presence of more than one supplier is there in the market. Presently, India has the provision of open access, which gives freedom to consumers who have connected load of 1 MW and above to take power from any source. The same freedom needs to be given to all type of consumers. Before that, the existing issues of open access need to be addressed. As per the conceptualized framework, in retail scenario consumers will be able to switch their supplier if they are not satisfied with the service of the present supplier. Hence mechanism to switch the supplier needs to be identified. There should be proper guideline defining switching rules and frequency of switching. Following questions may capture the data for open access in Indian Scenario:

- 32) What needs to be done to open up the market for all consumers?
- 33) How opening up the market give the choice of supplier to the consumer?
- 34) There are some issues in Open Access. How will these issues be managed?
- 35) What should be the mechanism for Supplier switch?
- 36) What should be frequency and regulation to switch the supplier?

Category V: Consumer

Discussion: Conceptual lenses developed in this chapter suggested that the gradual elimination of subsidies is necessary for enabling competition in the retail market. Hence from the interview protocol, the researcher wants to address the foreseen management of cross-subsidies in the Indian scenario. While discussing the protocol with the industry experts, they showed the need of preparing a consumer database for the direct transfer of subsidies hence a question around consumer database is also formulated. Below questions are formulated to address this discussion:

- 37) How can the preparation of consumer database or KYC help the utilities?
- 38) How will Cross Subsidies be managed?

Category VI: Tariff Regulations

Discussion: As defined in the conceptual lens, there is a need for drafting tariff regulations. Tariff rules for distribution business and supply business needs to be enlisted. Mechanism and formulas for deriving the tariff may be illustrated. The researcher also needs to cover various rules and regulations around price restraint. Such regulations shall be drafted by the authorized body. Authorized may approve the price control in relation to the network charges and supply charges as per the various categories of consumers. Below questions address the same discussion:

- 39) What should be the regulations for tariff?
- 40) What should be the mechanism to determine tariff?

- 41) Should there be any regulation on price restraint? Who will be responsible to make them?
- 42) What particulars can be defined in price restraint?

Category VII: The Electricity Code

Discussion: As defined in the conceptual lens, universal service obligation shall be there for providing connection to the consumer on request. Rules and regulations for connecting and disconnecting the premise need to be laid down. Conceptual lens recommends that metering, billing, and collection may either be done by a third company or retail supply company may also do this. Consumer categories for both line charges and supply charges need to be defined. A consumer shall pay the line charges to supply company, not directly to a line company. Accountability measures of supply company for using the network of distribution company also require attention. On the other hand, for handling consumer grievances, a single window redressal mechanism is recommended. Below questions addresses these observations:

- 43) Who will have universal service obligation to connect or/disconnect the premise?
- 44) Who should be responsible to provide metering services?
- 45) Who should provide the billing and collection services?
- 46) How should many consumer categories be there for line charges?
- 47) On what ground consumer categories can be defined for retail charges?
- 48) What will be the route to pay the line charges by the consumer?
- 49) Supply Licensees will use the distribution system. Will there be any accountability for them towards distribution system?
- 50) What should be the mechanism to provide the Consumer Interface/Consumer Grievance Redressal Mechanism (Single window)

6.6 SUMMARY

1. The concept of conceptual framework is rooted in Vygotsky's Sociocultural Theory of 1934 and 1986. The theory guided to develop a conceptual framework.
2. The conceptualized framework is developed with the support of conceptual lenses. Two conceptual lenses were drafted: i) Conceptual lens on Indian Retail Regulations ii) Conceptual lens on Global Retail Regulations
3. On the basis of conceptual lenses, a protocol to find out specific answers in relevant documents was formed. Findings of the protocol are processed through 0 i) Syncretic Groups and Open Codes ii) Complexes and Axial Codes iii) Potential Concepts and Selective Codes. which resulted in the conceptualized framework to introduce retail competition in India.
4. The conceptualized framework is then described in detail. Each and every step is picturized for better understanding.
5. Based on the understanding developed by the conceptualized framework, interview protocol was drafted. Before finalization, this draft was discussed with the industry experts and PhD guides for necessary modifications. It consists 50 questions bifurcated into 7 categories.
6. The next chapter presents the Qualitative Analysis and Findings, based on the interviews.