CHAPTER 7

QUALITATIVE ANALYSIS AND FINDINGS

This chapter outlines the demographic profile of respondents. Since the purpose of research emphasizes on policy matters through qualitative research design, therefore, the sample population is inclusive of the upper echelon of the power industry and senior experts. The data is treated following the methodology taken by Smith and Firth in 2011 for framework analysis. This includes analysis in three steps. The first step is Data Management (reducing the data), the second step is Descriptive Accounts (theme identification and association building) and while the third and final step is Explanatory Accounts which includes mapping and interpretation of reduced data. In this chapter, researcher has explained the above three steps in detail. The researcher has answered the research questions in the interpretation to research findings. The research questions have been further discussed in the light of relevant studies to address the research objective.

7.1 INTRODUCTION

The conceptualization of the important policy documents of India, United Kingdom and New Zealand has been considered for preparing the Conceptualized framework along with relevant studies. The conceptualization process has helped in the preparation of interview protocol which after validation is used for exhaustive interviews of the respondents in the sample population. The demographic profile of the respondents is presented in the Table 7.1. Responses of interviews have been noted with respondents’ permission manually and electronically which is then inputted into the computer using Atlas.ti software. Then with the help of interview transcripts, quotations are prepared and open codes have been generated from each interview to identify the saturation level (Appendix G, Table 7.2 may be referred). Once the transcripts are prepared the descriptive and explanatory accounts are prepared (Ritchie and Lewis, 2003; Smith and Firth, 2011).

7.2 DEMOGRAPHIC PROFILE OF RESPONDENTS

Saturation is the most important factor to decide sample size in qualitative research (Mason, 2010). The present study includes 9 respondents of senior level. The information on the respondents' demographic profile on – 'experience, expertise, domain, designation and the organization in which the respondent was employed at the time of data collection', is presented in Table 7.1:

Table 7:1 Demographic Profile of Respondent

RESPONDENT PROFILE						
S.No.	Level	Experience	Expertise	Organisation Domain	Designation	Purpose
1	Upper Management	30+ Years	Operations	DISCOM	Director (Operations)	Interviewee
2			Distribution Planning	DISCOM	Executive Engineer	Interviewee
3			Distribution Planning	DISCOM	Superintending Engineer	Interviewee
4			Regulatory Affairs	DISCOM	Consultant	Interviewee
5			Distribution Planning	DISCOM	Executive Director	Validator
6			Commercial	GENCO	ExEn(Commercial)	Interviewee
7			Taiff & Finanice	REGULATORY	Jt Director (Tariff & Finance)	Validator
8			Regulatory Affairs	REGULATORY	Jt Chief (Regulatory Affairs)	Interviewee
9			Operations	TRANSCO	Director (Operations & Projects)	Interviewee

Since this particular research talks about separation of carriage and content from existing distribution companies in India, hence for the purpose of the interview; researcher targets experienced power sector professionals who have 30+ years of experience and had witnessed the separation of State Electricity Boards. The researcher targets professionals majorly from Distribution Companies and Regulatory Commissions whereas the sectorial professionals from Generation Companies, Transmission Companies, and Regulatory Commission are also considered. The respondents had expertise in Operations, Distribution Planning, Regulatory Affairs, Commercial and Tariff and Finance. Table 7.2 shows the number of respondents picked from each of the organization.

Table 7.2 Number of Respondents from Different Organizations

S. No.	Company Profile	No of Respondents
1	Electricity Distribution Company	5
2	Electricity Transmission Company	1
3	Electricity Generation Company	1
4	Electricity Regulatory Commission	2

In total, interaction with 9 members happened. From the 9 respondents, 2 experts were interviewed for protocol validation. On the validated protocol, interviews were conducted until the saturation in data arrives. Researcher experienced saturation while conducting the seventh interview. In the view of above, no further interview is conducted.

7.3 DATA ANALYSIS

Framework Analysis is chosen to underpin the data analysis as justified in Chapter 5. The framework analysis particularly suits for the cross-sectional descriptive data analysis which enables different aspects to be captured under the investigation. Interconnected stage of framework analysis explicitly describes the processes which guide into the systematic analysis of data for the development of descriptive and explanatory accounts (Ritchie and Lewis 2003; Smith and Firth 2011).

7.3.1 DATA MANAGEMENT

Identification of New Codes

Framework Analysis and Introduction of Retail Competition in Indian Power Sector – The research involved 7 industry experts. The participants were interviewed to explore their experiences for the purpose of data collection. Each participant was interviewed once for up to 60 minutes by the researcher. The researcher conducted semi-structured interviews until the saturation in data was reached (Ward et al., 2013). Framework Analysis methodology provided flexibility for analyzing the data during the interviews. Code Book 7.2 "Interview transcripts" in Appendix G may be referred where the researcher analyzes the data after every interview. The code book identifies in-vivo codes and represents emergence of new codes for each interview. Though number of in-vivo codes generated for each interview are approximately similar, new codes are getting reduced for every next interview. The code book 7.2 "Interview transcripts" of Appendix G is analyzed below in Table 7.3 to know the number of new codes emerged out for each interview:

Table 7.3 Emergence of New Codes Interview by Interview

Emergence of New Codes							
Q|R	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**
Q1	7	10	1	0	0	0	0
Q2	12	9	12	12	0	3	0
Q3	7	4	7	3	0	1	0
Q4	6	17	2	0	0	0	0
Q5	4	1	3	4	2	0	0
Q6	6	1	1	2	0	0	0
Q7	8	1	5	3	0	0	0
Q8	10	5	2	3	0	0	0
Q9	5	8	2	0	1	1	0
Q10	4	1	3	0	1	0	0
Q11	5	4	4	0	0	0	0
Q12	3	4	3	0	1	1	0
Q13	3	1	2	0	1	0	0
Q14	3	4	0	0	0	0	0
Q15	5	4	3	5	0	0	0
Q16	10	0	0	0	1	0	0
Q17	5	0	0	0	0	0	0
Q18	6	4	1	0	0	0	0
Q19	11	0	0	0	0	0	0
Q20	5	6	1	0	0	0	0
Q21	5	7	0	0	0	1	0
Q22	5	3	1	0	0	1	0
Q23	9	5	5	1	0	0	0
Q24	10	0	5	0	0	0	0
Q25	5	0	1	0	0	0	0
Q26	9	1	2	1	0	0	0
Q27	4	2	0	0	0	0	0
Q28	3	6	2	0	0	0	0
Q29	7	3	1	4	0	0	0
Q30	4	0	2	1	0	0	0
Q31	6	0	4	0	0	0	0
Q32	4	0	0	0	0	0	0
Q33	7	3	4	4	0	1	0
Q34	11	9	7	0	0	0	0
Q35	15	4	1	0	0	0	0
Q36	12	0	0	0	0	0	0
Q37	8	3	3	0	0	0	0
Q38	3	4	0	0	0	0	0
Q39	3	1	3	1	0	0	0
Q40	9	4	0	0	0	0	0
Q41	3	3	1	3	0	0	0
Q42	6	3	11	0	0	0	0
Q43	7	3	1	0	0	0	0
Q44	3	1	0	0	0	0	0
Q45	5	1	0	0	0	0	0
Q46	7	3	3	1	0	0	0
Q47	4	1	3	1	0	0	0
Q48	9	3	3	4	0	0	0
Q49	6	10	7	0	0	0	0
Q50	7	3	1	1	0	1	0
Total	**321**	**170**	**123**	**54**	**7**	**10**	**0**

The above Table 7.3 depicts that after interviewing the first respondent, 321 codes were generated. These all codes were new in nature. After the second interview, 170 new codes were identified. The researcher observed a clear fall in the emergence of new codes after every next interview as from the third interview, fourth interview, fifth interview and sixth interview – 123, 54, 7 and 10 new codes were generated. After conducting the seventh interview, no new code was identified which depicts the saturation in data gathering. In view of above, the researcher did not conduct any further interview. Since the saturation in data arrived at the seventh interview, the sample size for the interviews becomes 7.

Developing Categories

Through the data management researcher got familiar with the data by reading and reading the interview transcripts. Based on the interview transcripts, a collective transcript is formulated to accomplish the steps suggested by framework analysis. Through the Data management (as performed in the Code Book 7.3 - Appendix G), **1045 in-vivo codes** were identified. The codes were generated by considering each line of the transcript. The codes generated for each interview question were summarized through the 'preliminary thoughts'. These thoughts generated more formal ideas about the codes and respective quotation. The quotation, in-vivo codes and preliminary thoughts advocated in the formation of **50 'initial categories'.**

7.3.2 DESCRIPTIVE ACCOUNTS

The coding book was developed from seven interview transcripts, which appeared in representing a range of experiences. In order to ensure the rigor, generated codes and initial thoughts for each quotation were referred again to form the potential categories. These potential categories were named as 'initial categories'. 50 initial categories were generated by relooking into the codes and preliminary thoughts, code book 7.3 of Appendix G may be referred for the same. As the coding progressed, the initial categories were grouped together to form broader categories. 33 broader categories were generated and named as 'refined categories'. Based on the similarity, the broader categories were consecutively brought together to form 10 initial themes. The code book 7.4 of Appendix G may be referred to refined categories and initial themes.

The data was further summarized and synthesized to find out more abstract concepts in the form of final themes. This helped in reducing material into understandable brief summaries. The summarization and synthetization of diverse coded data were performed through continual refining of categories and themes. Critical thinking about the relationship between codes was the crucial element in the refining process. The data was synthesized until the whole picture emerged out. This was accomplished by continually referring back to the original data and checking meaning across the transcripts. The code book 7.4 of Appendix G shows the data summarisation and synthetization. Data was summarised through clubbing 50 initial categories into 33 refined categories and then creating 10 initial themes. Final step of summarisation includes the creation of abstract concepts i.e. 'final themes'. 6 final themes were emerged through the process of framework analysis which ultimately resulted into the formation of core concept 'Introduction of Retail Competition in India'.

7.3.3 EXPLANATORY ACCOUNTS

In Explanatory accounts, the researcher reflected back both in the original database and in the analytical stages to ensure whether the beliefs and experiences of documents and interviews were presented accurately. Explanatory accounts led into the formation of core concept. Six final themes which were emerged out in descriptive accounts, ultimately resulted into the formation of core concept 'Introduction of Retail Competition in India'. The code book 7.4 of Appendix G may be referred to see the formulation of the core concept.

The explanatory accounts of the framework analysis involved making sense of the various concepts, categories and themes emerged out. This was accomplished through exploring the relationship between core concepts, established literature and theoretical premise related to the introduction of retail competition in Indian Power Sector through the separation of carriage and content. Relationship Diagrams may be referred in Code Book 7.5 of Appendix G. Once the relationships were described and concepts had been identified, typologies were emerged to explain the working of various concepts. The explanation of such typologies and concepts is presented through findings and discussion in later part of this chapter.

7.4 INTERPRETATION OF DATA

The detail of the data reduction during the analysis for the ease of understanding and clarity of presentation are presented separately in the Appendix G, entitled as 'Code Book for Interview Protocol Leading to the Formation of Framework to Introduce Retail Competition in India'. Initially on the exhaustive interview transcripts 50 categories were identified which were refined into 33 broader Categories. Consecutively, these categories were brought together to form 10 initial themes. 6 themes were emerged out finally through framework analysis which ultimately resulted into the formation of core concept 'Introduction of Retail Competition in India'.

The researcher is now presenting the category wise interpretation of the data management following Smith and Firth in 2011 methodology for framework analysis.

INTERPRETATION OF CATEGORY 1: BACKGROUND AND PURPOSE

Indian power sector is highly inefficient and continuously making losses. The economy of the country is getting negatively affected. Earlier reforms did not yield significant results hence there is a need for third generation reforms especially in Power Distribution Sector. Retail competition through the separation of carriage and content from existing distribution business needs to be introduced in the sector. The retail competition shall eliminate monopoly and is expected to remove inefficiencies and potential conflicts of the electricity market. The same shall lead to enhanced cost and operational efficiencies. Cost efficiencies will be achieved as competition reduces input cost. Operational efficiencies will be achieved as companies have fear to lose the market share. Retail competition shall also help to clear the balance sheets of distribution utilities

Presently, Indian Power Sector is governed by the Electricity Act 2003 which does not have sufficient provisions for facilitating the introduction of retail competition. Hence, there is a need for governing regulations. Though Electricity (Amendment) Bill 2014 covers the rules and regulations regarding retail competition in India, it is pending to be enacted. Also, provisions defined by the Bill are not adequate stand-alone. A proper regulatory platform needs to be created in this regard.

Network Business (Carriage) and Supply Business (Content) shall require unbundling for the introduction of retail competition. In such few states where State Electricity Boards are not unbundled yet, two level of unbundling needs to be performed. New bodies to be formed after separation are: i) Network Company ii) Supply Company iii) Intermediary Company. Network company shall be responsible for the distribution of electricity to end consumer through its own network. Supply licensee shall be responsible to provide electricity to end consumer with the help of distribution network. Supply licensees will be more than one. First supply licensee needs to be government owned and shall act as the provider of last resort. He shall supply power to end consumer as time to time nominated by the State Government. Second supply licensee shall be subsequently introduced in the market for ensuring competition. Intermediary Company shall see the power procurement arrangements. For the same purpose, all the existing power purchase agreements and power procurement agreements of distribution companies shall be transferred to Intermediary Company. After the separation, retail supply company may also establish power generation plant for certain capacity. This shall help in securing the power supply for new companies. There shall be no threshold limit in the capacity for setting up a renewable generation plant.

Discussion

The growth of Indian Economy depends on the power availability and consumption pattern. This reflects that Indian Power Sector is a backbone for Indian Economy (Ghosh, 2012). In India, distribution sector is majorly owned by the State Government (Lal, 2006). The sector is making losses. In order to meet social objectives, the government-owned utilities are sacrificing the sector efficiencies. Hence, the power system in India is continuously delivering unsatisfactory results (Thakura et al. 2006). There is sharp fall in the financial health of State Electricity Boards (Rao, 2002). The loss amount of utilities comes out at Rs. 75,297 Crores in 2010-11, Rs. 102,411 Crores in 2011-12, Rs. 105,070 Crores in 2012-13 which clearly tells that financial losses of utilities are increasing significantly over the years (PFC, 2014). The loss-making power sector has been continuously supported through substantial borrowings from financial institutions. Total debt of sector rose to Rs. 3.5 trillion (~$77 billion) in the year 2011 which is equivalent to 5% of India's GDP (Khurana and Banerjee, 2015). Even after 14 years of reforms initiation; the sector is unable to match the gap between the demand and supply (Thakura et al., 2006). The gap between average revenue realization and the average cost of supply is increasing continuously in Indian Power

Distribution Sector (Kiran et al., 2013). The gap between average revenue and the average cost was 20% in 2011. The main reason for widening the gap is a continuous increment in power purchase cost (Khurana and Banerjee, 2015). Mounting AT&C losses are hampering the viability of power sector (Tripathy and Thaur, 2006). The National average of AT&C losses stands at 25.38% which is quite high (PFC, 2014). AT&C Losses can only be reduced to a certain extent. Their existence from the system cannot be removed fully (Stephenson, 2007). Due to the low performance of the sector, finances of state electricity boards have reached an alarming level. Hence there is an emergency to find a solution (Karmacharya, 2012). The ideal ratio of losses in distribution segment is 3-6%, no developed country has the losses above than 10% (Ramesh et al., 2009). Despite the efforts made for sector reforms, challenges in Indian power sector are increasing continuously (Ghosh, 2012). Reforms and restructuring were practiced but they were unable to introduce competition in distribution sector (Singh, 2010). Hence there is an imperative need to introduce third generation reforms in Indian Power Sector to improve the operational and financial efficiencies (Agrawal et al. 2017). Policy makers are suggesting the implementation of globally practiced retail competition model in Indian power sector for better results in performance. Retail competition is supposed to address the existing inefficiencies of the power sector (SCOE, 2014). For introducing the retail competition, the amendment in current regulations is suggested by the Electricity (Amendment) Bill, 2014. The Bill advocates the separation of existing distribution business into carriage and content business (Agrawal et al, 2017). After the separation, distribution company shall manage the distribution network while the supply company shall manage the electricity supply business. The supply company will be allowed to establish its generation plant with certain threshold limit. A new company namely, the intermediary company shall be formed for succeeding the existing Power Purchase Agreements (SCOE, 2014).

INTERPRETATION OF CATEGORY 2: PRESENT SCENARIO OF DISCOMS

Presently, in many parts of India, Distribution Companies are undertaking electricity distribution through the franchisee. Such companies need to be identified because, in a retail scenario, distribution company will not be able to undertake its operations through associates or franchisees. However, existing distribution franchisees will be allowed till the expiry of their licenses. On the other hand, a subsidiary of distribution company or generation company will not be able to work as a supply licensee. In order to identify existing involvements and non-specific interest of one business into another business, disclosure regulations need to be drafted. Every business which shall be unbundled needs to disclose the particulars as per the mandate of disclosure regulations. Secretary of State; in consultation with both State Electricity Regulatory Commission and Electricity Authority, shall make the format of information disclosure. Such draft shall contain the information about "What needs to be disclosed/ by and to whom the disclosure is made/ when it must be disclosed/ the form of the disclosure/ record access and maintenance/ method to set up threshold". Once the companies will submit the desired information, an audit body shall be nominated by the secretary of state for auditing disclosed information.

After disclosing the information, suggested phases of retail i) Accounting Separation ii) Functional Separation iii) Operational Separation iv) Ownership Separation; needs to be practiced.

Discussion

In India, power distribution companies are authorized to undertake distribution operations through distribution franchisee. The Bhiwandi distribution franchisee was a success story which motivated the other loss driven distribution companies of India to undertake their operations through distribution franchisee. Cities like Agra and Nagpur also adopted the franchisee model to revamp their power sector (Mukerjee, 2013). Such distribution franchisees, which are serving distribution in Indian Power Sector need to be identified as in retail scenario, they will be able to allowed to undertake their operations until the expiry of their licenses. Applications for new distribution franchisee will not be accepted (SCOE, 2014). A compulsory information disclosure needs to be mandated for distribution companies so that identification of such franchisee or associates can be done. In New Zealand also, Electricity (Information Disclosure) Regulations 1994, ensured the identification of involvement of one business into another business. Such identification facilitates in removing the conflict of interest. Based on the disclosed information, the distribution companies shall be unbundled, though prior to that, the disclosed information shall require auditing by third company (Gunn and Sharp, 1999).

INTERPRETATION OF CATEGORY 3: TRANSFER SCHEME

A transfer scheme is needed to divide assets, liabilities, personnel, and proceedings of Distribution Company into Network, Supply and Intermediary Companies. Transfer scheme shall also contain provisions around losses. All the existing recognized regulatory losses which pertain to the DISCOMs presently, shall be allocated to Intermediary Company. The Intermediary Company may further amortize them through Universal Charge or from the support of State Government. On the other hand, unrecognized losses shall be transferred to existing companies and help from State Government may be sought to clear up the balance sheets. All claims of the Distribution company against the State Government and all claims of State Government against the Distribution company; shall stand canceled and extinguished. All the mutual claims shall be considered as a fully and finally settled while the remaining asset and liabilities of the Distribution Company shall stand transferred and vested in the State Government. All the assets shall be valued on the basis of 'Historical Book Value' method for the purpose of this transfer scheme. The existing Power Purchase Agreements of the current Distribution Company may be transferred to the Intermediary Company. The Intermediary Company may allocate those PPAs among various retail supply companies based on their power requirements. A Certain ratio of Power Purchase Agreements may also be shifted into the wholesale market to facilitate the development of the capacity market.

Secretary of State shall nominate an independent consultant to draft the transfer scheme. Such nominated consultant shall submit the draft to Secretary of state within the specified time limit for his approval. Secretary of state, before providing the approval may modify the draft. He may also make the draft of transfer scheme himself if the nominated person does not submit it within stipulated timeline.

Transfer Scheme becomes effective from the 'Effective Date of Transfer'. The effective date for a transfer scheme shall be the date to which immediately before distribution company was managing the role of both network company and supply company. Effective Date of Transfer is generally defined by the transfer scheme. It is the day on which transfer scheme comes into force or such earlier day as the Secretary of State shall direct. Assets, Liabilities, Proceedings and Personnel shall be divided into respective undertakings. These undertakings shall be transferred to and vested in the respective company on and from the effective date of transfer, without any further notice/act or things to be done by State Government or Distribution Company or Network

Company or any other person. After the transfer, transferee shall be accountable for all agreements, bonds, schemes, contracts, deeds, rights and other instruments which pertain to the transferred Undertakings, to which the DISCOM was initially a party, having effect from the effective date of transfer; in same manner as the DISCOM was liable before the effective date of transfer. For the first few months of transfer, the allocation will be provisional and will be treated as fixed after a defined period in transfer scheme. After the separation of carriage and content businesses, the distribution company and supply company shall have the need to apply for a fresh license. State Government may publish certain regulations for the purpose of removing any difficulty arising in the implementation of the transfer scheme.

Discussion

Transfer scheme was firstly used by United Kingdom for the purpose of unbundling power business (EA, 1989). Transfer scheme is mandatory to be formulated by the State Governments for the separation of distribution business into number of separate legal and licensed entities. Distribution and Supply activities will be allocated to the separate entities licensed for this purpose (Simmonds, 2002). The State Government needs to draft the transfer scheme within one year of the enactment of the Electricity (Amendment) Act, 2014 for the purpose of fair allocation of asset, liabilities, and personnel into newly formed entities. Upon transfer, the existing supply functions will be vested in incumbent supply company whereas, the existing power purchase and procurement arrangements shall be vested in the intermediary company. On the other hand, any person engaged in distribution business before the enactment of Electricity (Amendment) Bill, 2014, shall have deemed license to undertake distribution and supply activities till the transfer scheme takes place. Transfer scheme shall also specify the treatment of existing technical and commercial losses. Based on the prevailing conditions, each state shall prepare the transfer scheme individually (SCOE, 2014).

INTERPRETATION OF CATEGORY 4: OPEN ACCESS

Once the distribution business will be bifurcated in carriage and content, the second retail supplier shall be introduced in the market. Market shall be opened up for competition in phases. In the first phase, consumers who have connected load >= 1 MW would be given choice. Though consumers of this segment are allowed for open access, there are certain issues which need attention. Availability of 24x7 power supply, Lack of infrastructure, inappropriate estimation of losses, no incentive for the generator, lack of consumer awareness, cross-subsidy, unavailability of technical support from DISCOMs, absenteeism of emergency support from DISCOMs are the major issues.

In the second phase, market shall be opened up for the consumers who have connected load above than 100 kW. Subsequently, consumers of all categories would be given choice to take the power from any source. Consumers of all categories will be able to switch their existing power supplier if they are not satisfied with the present one. A proper guideline shall be defined for governing the consumer switching. The consumer has to fill the past revenue gaps. The present supplier will be authorized to recover the dues from the consumer who wants to switch. A frequency for the supplier switching will be defined for each category of consumer.

Discussion

A common approach to globally practiced reforms and restructuring includes: 1) Opening up of power markets 2) Unbundling of vertically integrated industry 3) Introduction of Open Access. This approach has a central theme for the restructuring of the market: higher profits for utilities and lower electricity prices for consumers (Huneault, 1999). In India, initiatives taken for restructuring were: incorporation of the availability based tariff, grid code, open access, power trading and the establishment of power exchanges (Shukla et al., 2011). Firstly, Electricity Act 2003 introduced the provisions for Open Access in India (Joseph, 2010). Worldwide open access is taken as a prerequisite to facilitate the switching of the supplier. New Zealand launched the profiling system which enabled the consumers to switch the supplier. Consumer switching may require certain funds. New Zealand established the fund of $15 million over three years to support the consumer switching (ERB, 2015). Before 2008, on an average 14000 consumers per month switched their power supplier. This number increased to 25000 by 2012 (Shen and Yang, 2012). In United Kingdom, opening up of the domestic market (connected load below 100 kW) met with great success. By 2001, 38% power consumers had switched their supplier, one or more times. By the result. Former PES suppliers lost their service area at the rate of 10% per annum (Simmonds, 2002). In USA, open access is allowed in most of the states. Though states who do not have provisions for open access, are moving in the direction of implementing it (Goett et al, 2000).

INTERPRETATION OF CATEGORY 5: CONSUMER

Cross-subsidies need to be eliminated gradually. These can be managed through Year on Year tariff hikes, Universal Charge (UC) fund, limiting subsidies to wheeling charges or direct subsidy from the State Government. Creation of a central consumer database shall help the state government for transferring the subsidies, directly into the account of the consumer. The database to be known as KYC may have following fields: billing address, usage pattern, meter number, bank account details etc. This database will also be useful for the retail supply licensee as they will get the information about consumer mix for the respective area where they want to operate.

Discussion

Power sector reforms in the country were initiated when the sector was suffering from high losses and had issues pertaining to subsidies (Singh, 2006). Recent reforms in India advocated the reduction of cross-subsidies in electricity tariffs. Cross-subsidies in the electricity tariff should be discontinued as they lead to high inefficiency (Chattopadhyay, 2004). Cross-subsidy weakens the finances of utilities, as the expense of giving low cost power to consumers of agriculture and rural category significantly contributes to utility losses. Giving power to agriculture consumers in heavy subsidized rate, badly affects the sector finances as agriculture consumers have 23% share in total consumers in 2011 whereas the share of revenue was only 7% of the total revenue. Some states of India have notified the roadmap to reduce the cross-subsidies but they were not able to achieve the set target. For the commercial viability of sector, cross-subsidies need to be eliminated in a phased manner (Pargal and Banerjee, 2014). Till the time cross-subsidies are removed completely, state governments may directly transfer the subsidized amount into the bank account of the consumer. Creation of central consumer database may provide the required consumer details for the direct transfer of amount (The Hindu, 2017).

INTERPRETATION OF CATEGORY 6: TARIFF REGULATIONS

Tariff shall be regulated for the distribution company while for a supply company, it will be the ceiling for contestable consumer and will be regulated for the non-contestable consumers. A mechanism to determine the tariff shall be formulated. Tariff for the network company may be equivalent to the sum of Network Capital Expenditure, Operation and Maintenance Expenditure and Technical Losses. Tariff for Retail Supply Business can be equivalent to the sum of Capital Assets, Power Purchase Cost, Operation and Maintenance Expenditure, and Losses. Tariff for Intermediary Company can be equivalent to the sum of Costs incurred towards Power Purchase Agreements and Operational Expenditure.

Price control regulations would be there. State Electricity Regulatory Commission in coordination with the Central Electricity Regulatory Commission would be responsible to make them. Price control mechanism will have rules related to control of line function services charges of rural and domestic consumers. The regulations shall specify different fields such as - the amount of charge, amount of a component of a charge, limit of the proportion of the component in the charge, the frequency of the increment of a charge component, control in the increment of the amount an increase in charge, charge component.

Discussion

Financial scorecard of distribution utilities is not impressive. Improper tariff mechanism and poor technology management are the main reasons for low score. The average tariff was inadequate to cover even the electricity power purchase cost and hence aggravated in the ill health of DISCOMs (Sharma et al., 2005). For making the situation better, State Electricity Regulatory Commission mandated the annual revision of electricity tariff in line with the provisions of Electricity Act, 2003. Although the state-owned distribution utilities are not revising the tariff annually due to political pressure (Alagh, 2010). As per result, the Indian States are still far behind in implementing the concept of cost-reflective tariffs. In 2007, the average power tariff of Indian Power Distribution Utilities was Rs. 3.06 per unit. In 2014, the electricity tariff rose to Rs. 4.80 per unit. The rise of Rs. 1.74 in per unit cost was significant but it could not make the tariff cost reflective. In view of above, a proper guideline for electricity tariff would be needed in retail scenario (Shukla and

Thampy, 2011). The tariff in the foreseen scenario would be based on market forces, that needs an attention. The case of California should not be repeated in Indian power sector (Rose, 2004).

INTERPRETATION OF CATEGORY 7: THE ELECTRICITY CODE

Distribution Company shall have universal service obligation to connect whereas the Supply Company shall have universal service obligation to disconnect the premise. The responsibility to supply electricity to a consumer can be given to the incumbent retail supply company initially. The responsibility of metering, billing, and collection could be given to supply company or a third party may be appointed for this.

There shall be certain consumer categories for the line charges and supply charges. Consumers may be categorized as - domestic premises of urban areas, and consumers of sparsely populated rural areas. Line charges may deviate on: members of the disadvantaged group (as well as the persons who are), distance from the main center, or on a particular class of consumers. Retail charges may be based on connected load, annual energy consumption, area of supply, or on defined consumer categories. Line charges shall be mentioned in the monthly bill. The consumer shall give the line charges to supply company and supply company is supposed to pay them to line company. Since the supply company shall use the distribution network, accountability is needed to be setup between Network Provider and Supplier. This is because there can be many reasons for the load shedding or power outage. The outage may happen due distribution side issues like line trip, grid security, a fault in transformer or because of capacity constraint. The outage may also happen due to supply side issues like – un cleared past dues with T&D company, or settlement/balancing issue. In such scenario, a consumer may be misguided hence accountability needs to be fixed.

After the introduction of retail supply competition, a two-layered Consumer Grievance Redressal Mechanism needs to be provided as follows: A single common 'Grievance Redressal Forum' for Distribution Company, Retail Supply Company and for Metering company (if any); and Independent Ombudsman. This will provide a single window solution to the consumer grievances.

Discussion

The Electricity (Amendment) Bill, 2014 amends the Section 2 of existing Electricity Act 2003 to insert definitions around 'The Electricity Code' i.e. 'Electricity Distribution Code' and 'Electricity Supply Code'. Section 50 of the Bill mandates the formation of Electricity Distribution Code by the State Electricity Regulatory Commission. The Distribution Code needs to cover rules pertaining to: intervals for metering and billing, universal service obligation to provide connection to the consumer, disconnection for any default, restoration of connection, measures to prevent tampering and theft of electricity, entry and investigation powers of key officials etc. Sector 51 of the Electricity (Amendment) Bill 2014 defines the Electricity Supply Code. The Electricity Supply Code needs to cover rules pertaining to: metering and billing intervals, universal service obligation to provide supply to the consumer, disconnection of supply for any default, restoration of supply and such related matters. On the other hand, the Electricity Grid Code shall be defined to ensure the grid security and grid discipline, as recommended in section 79 (SCOE, 2014).

The above interpretation leads to following findings which the researcher is presenting point wise. These are as follows:

7.5 FINDINGS

The findings of the study on the basis of above interpretation are summarized as follows as per research question (RQ), 'What should be a framework for bifurcation of carriage and content to introduce retail in Indian power sector? ' The findings can be summarised as follows:

Background and Purpose

1. Indian power distribution segment has been making losses due to inefficient operations.
2. AT&C losses, high debt, the inadequate and unreliable supply of power are affecting the sector as well as the economy of the country badly.
3. The absence of competitive forces and monopoly environment are leading to high power prices and consumer dissatisfaction.
4. An urgent action for further reforms is required in this direction to ensure the profitability and robustness of the segment.

5. Separation of carriage and content business from existing distribution segment is required in order to remove monopoly and to introduce retail competition.
6. Full retail competition is the last and logical endpoint stage of restructuring.
7. Retail introduction through the separation of network and supply businesses, guides the inherent market incentives where consumers willingly pay for the service they need.
8. Retail competition gives choice to end consumer wherein the consumer can switch his service provider.
9. Retail competition brings competition in supply segment whereas the network business remains a natural monopoly.

Regulatory Provisions

1. Existing regulations do not have sufficient provisions to facilitate the introduction of retail competition in India.
2. There is a need to enact the Electricity Amendment Bill 2014 with suggestive modifications as given by stakeholders.
3. A transfer scheme shall be drafted by State Government for the purpose of separation of carriage and content business.
4. Transfer scheme shall divide assets, liabilities, personnel, and proceedings of existing Distribution Company into newly formed companies.
5. The Assets, Liabilities, Proceedings and Personnel shall be allocated through the Undertakings defined in the schedules of respective companies
6. An independent consultant nominated by the State Government shall draft the scheme whereas Secretary of state shall act as an approving authority.
7. The transfer scheme shall come into force on Effective Date of Transfer as decided by the Secretary of State.
8. The transfer scheme shall have the provisions for the treatment of existing losses and existing claims of distribution company.
9. The transfer scheme shall also define the provisions related to the treatment of future losses
10. The transfer of Assets, Liabilities, Proceedings and Personnel shall be provisional for initial few months as described in the transfer scheme.

11. Upon separation of carriage and content businesses, the network and supply companies shall apply for the grant of license in the commission within 60 days of effective date of transfer.
12. The Government may publish such provisions which are necessary to remove the difficulties arising in the implementation of the transfer scheme.
13. If a distribution licensee is undertaking the distribution of electricity through franchisee, such distribution franchisee shall be able to undertake distribution till the expiry of their licenses.
14. Disclosure regulations shall be made in order to identify nonspecific interests and involvements of other business.
15. Secretary of State; in consultation with Appropriate Commission and with Electricity Authority shall make the format of information disclosure.
16. A third party shall be nominated for the audit of disclosed information.

Unbundling of Distribution Business

1. To introduce retail competition, unbundling of existing Distribution Companies shall be done. States where SEBs are not unbundled yet, two levels of unbundling shall be performed there.
2. Upon unbundling; Network Company, Incumbent Supply Company and intermediary Company shall be the new bodies in place of existing Distribution Company.
3. Incumbent Supply Company shall be the Government company. Second supply licensee shall be subsequently introduced in the market to ensure level playing field.
4. Network company shall be responsible for the conveyance of electricity to end consumer through its own network.
5. Incumbent supply licensee shall be responsible to provide electricity to end consumer with the help of distribution network.
6. Intermediary Company shall work as a power procurement center and shall succeed the existing power purchase agreements and power procurement agreements of distribution companies.
7. Provider of last resort shall be Government supply company who shall supply power to end consumer in case existing supplier of the consumer is ceased or suspended.

8. The retail supply licensee shall be allowed to establish electricity generation plant for securing power.
9. There shall be certain threshold limit (not for renewables) for the capacity of power generation plant, to be established by the retail supply licensee.

The Electricity Code

1. Preparation of a central database of consumers as KYC shall help into direct transferring of subsidies into consumer's account.
2. Tariff shall be regulated for Distribution Company. While for Supply Company, the tariff will be the ceiling for contestable consumers and will be regulated for the non-contestable consumers.
3. State Electricity Regulatory Commission shall define the price restraint mechanism for the control in relation to the power prices.
4. The Network Company shall have the Universal Service Obligation for "Duty of Connect" whereas supply company shall have the Universal Service Obligation for 'Duty to Supply"
5. Metering, Billing and Collection services shall be provided by supplier or by 3rd company; as the case may be.
6. Line charges and supply charges shall be based on the consumer categories as defined in the act.
7. The consumer shall pay the line charges through electricity supplier only.
8. After the introduction of retail supply competition, a single window, two-layered Consumer Grievance Redressal Mechanism shall be established.

Open Access and Consumer Switching

1. After the transfer of particulars into newly formed companies, second retail supply licensee shall be introduced in the market.
2. Market shall be opened up in phased manner and choice to the consumer will be provided.
3. The consumer shall be able to switch his present supplier if he is not satisfied with his services.
4. There shall be certain pre-conditions for the consumers who want to switch their supplier.

5. Creation of capacity market and gradual elimination of cross-subsidies are the pre-requisites for the success of the retail competition.

Discussion on Findings

The discussion on the summarized findings is presented here as per the Research Objective (RO) - 'To formulate a framework for bifurcation of carriage and content to introduce retail in Indian power sector'.

The power system of India is continuously delivering unsatisfactory results (Thakura et al., 2006). State Electricity Boards in India are loss making and as the cost of power is rising, this rise is further weakening the ability of state electricity boards to pay and contracting for power purchase agreements. The gap between average revenue realization and average cost of supply is increasing continuously in Indian Power Distribution Sector. Finances of state electricity boards have reached to alarming level hence India has emergency to reduce the AT&C losses (Kiran et al., 2013). Government of India initiated the reform and restructuring process to scale up the techno – economic performance of the utilities as they were suffering from serious financial problems (Parameswara et al., 2005). Though more than two decades have been passed since the reforms were initiated, a significant movement for the objectives of lower prices and efficiency gains could not be achieved (Das, 2010).

Encouraging competition, restructuring and unbundling are required measures both to downsize the present operations and to make the system viable (Thakura et al., 2006). Worldwide, Separation of Carriage and content businesses and introduction of retail competition has become a tool for the policymakers to introduce significant competition in power sector. Free competition is promised by opening up of the markets of regional monopolies. Retail competition lowers down the power prices and removes the inefficiencies of the power sector (Yadack et al., 2016). Retail competition through the separation of carriage and content businesses generates larger benefits. Price fall occurs as multiple retail suppliers compete based on the quality, reliability and service. Network business see investment for upgradation as it is responsible for AT&C losses (Pargal, Banerjee 2014). Though our research findings supports the same, it contradicts the view of Pargal and Banerjee (2014) and suggests that distribution companies shall be responsible only for technical losses.

The Standing Committee on Energy (2014-15), after investing the challenges of Indian Power Sector emerged during last decade, gave recommendation to Indian government to amend existing act through Electricity Amendment Bill 2014. Though the bill facilitates the introduction of retail competition in India, its sooner enactment is needed for the separation of carriage and content. Research findings show the importance of disclosure regulations to identify various involvements and interests. Since in India, information disclosure regulations are not the part of act as in EIRA 1998 and EIRAA 2008 of New Zealand; States may issue separate draft of disclosure regulations.

India has seen the unbundling of State Electricity Boards during last decade, where Transfer Scheme played a vital role (MoP, 2017). This time also, the research suggests to draft a transfer scheme for the purpose of separation of carriage and content business. Transfer scheme shall divide assets, liabilities, personnel and proceedings of existing Distribution Company into newly formed companies. Though the Transfer Scheme is the part of Electricity Act 1989 and Utilities Act 2000 of United Kingdom, in India it will be drafted state wise keeping in mind the large number of distribution companies in India. The transfer scheme shall have schedules in the name of newly formed companies wherein all the allocated assets, liabilities, personnel and proceedings shall be defined (Simmonds, 2002).

After the separation through the provisions of Electricity Amendment Bill 2014 and Transfer Scheme of respective state, the Existing Distribution Business shall be unbundled into Network Company, Incumbent Supply Company and Intermediary Company. The second retail supplier shall be subsequently introduced in the market. Roles and responsibilities of newly formed companies are already defined by the Electricity Amendment Bill 2014. Incumbent Supply Company shall be the Government Company and shall also act as a Provider of Last Resort. Distribution Company shall be responsible for network related operations while the Intermediary Company shall do power procurement on the behalf of all suppliers (SCOE, 2014). Likewise, the Gentailer concept of New Zealand power market, retail supply company in India shall also be allowed to establish power generation plant with pre-defined threshold limit (Gunn and Sharp, 1999).

Research suggests the provision of Electricity Code through which various rules and regulations are defined on which power system works. Creation of KYC i.e. central consumer database is one thing through which real time information of consumer can be fetched. Research suggests the direct transfer of subsidies into consumer's bank account through the details recorded in KYC (The Hindu, 2017). Research further drafts various tariff mechanism, loss allocation mechanism and price restraint mechanism. Universal service obligation for both network company and supply company is defined to protect the interest of end consumer (SCOE, 2014).

Findings suggest to open up the market in phases manner. In Phase I, market will be open up for the consumers with connected load >= 1MW. Subsequently, in Phase 2, market will be open up for the consumers with connected load >= 100 kW and in Phase 3, all consumers will be given free hand. In United Kingdom also, we saw the same manner of market opening (Simmonds, 2002). India has already implemented phase 1 of open access but there are some issues which need to be removed (Joseph, 2010). The successful handling of open access issues, the creation of capacity market and elimination of cross-subsidies shall give the choice to consumer wherein a consumer can source his power from any point.

International experiences suggest high switching rates after the opening up of retail market to all consumer. Though the switching rate of non- residential consumers is higher than the residential consumers, non- residential consumers represent 50% – 75% of market share and their switching affects the most (IEA, 2005). In India, it would be interesting to see the switching pattern of consumers and the related effect of competitive forces. The timeline of retail competition in India cannot be predicted as India has higher number of states than United Kingdom New Zealand and hence the timeline may vary state by state.

7.6 FRAMEWORK FOR BIFURCATION OF CARRIAGE AND CONTENT TO INTRODUCE RETAIL IN INDIAN POWER SECTOR

The present study develops a framework on the basis of interpretation of data collected by interviewing the Indian Power Sector's upper echelon and industry experts. The exhaustive interviews of the respondents were analyzed by adapting Smith and Firth (2011) methodology for developing the framework. The findings from the interpretation of analyzed data are then discussed in the light of relevant studies leading to the following framework. The proposed framework unbundles the distribution segment into two parts for introducing retail competition in distribution segment of Indian Power Sector. These are introduced in the proposed framework as follows: -

1) Carriage: Carriage is natural monopoly which shall remain in the hands of respective state government. Separation of carriage is necessary in order to remove any conflict of interest. A content business shall use the network provided by the carriage business for distributing power to end consumer.

2) Content: The proposed framework develops competition in content business by introducing multiple players in the market: The multiple retail suppliers will lead freedom to consumers to choose their suppliers. Also, the consumers of all categories will be able to switch the suppliers. The competing environment will make the system efficient which shall give ultimate benefits to all stakeholders.

In view of the above and as per discussion on the findings the present study suggests following steps to introduce retail in Indian Power Sector. These steps are as follows:

STEP 1: REGULATORY PROVISIONS

Enactment of Electricity Amendment Bill 2014

Standing Committee on Energy felt that there is an imperative need of third generation reforms in Indian Power Sector. India has already moved from vertically integrated single buyer model to wholesale competition model. It was felt that retail competition model will increase the competition and consequently will lead to make Indian power sector efficient and sustainable. The government of India accepted the recommendations of Standing Committee and hence Working

Group on Power was formed accordingly for the formulation of Twelfth Five Year Plan which was also supposed to recommend certain changes in the existing act. Further, as per the recommendations of working group, the bill was introduced in Lok Sabha on 19 December, 2014. Although its' enactment is still pending as it was referred by Honorable Speaker to the committee for detailed examination.

The Electricity (Amendment) Bill, 2014 foresees the introduction of retail competition in Indian power sector through the separation of carriage business and content business. The bill consolidates all previous acts and if passed shall be the focal regulatory platform on which all the rules and regulations will be made to separate carriage and content businesses in order to introduce retail competition in India. Points mentioned below present importance of the Bill:

- The Bill consolidates all previous acts i.e. the Indian Electricity Act 1910, the Electricity (Supply) Act 1948, the Electricity Regulatory Commissions Act 1998, and the Electricity Act, 2003.
- Recommendations of the Bill are based upon the suggestions invited from public which include suggestions of all key stakeholders.
- The Bill has been designed with the soul theme to introduce competition in distribution segment through the mechanism of bifurcation of carriage and content.
- The Bill incorporates almost all the new provisions to unbundle distribution sector of India. It defines working regulations of newly created bodies.
- Bill mandates the separation of licenses after separation for both the activities of distribution and supply from existing distribution activity. It amends section 14 of the original act to make effective the mandate of license separation. The bill provisions the introduction of new bodies which shall be introduced in stage 2 of this framework.

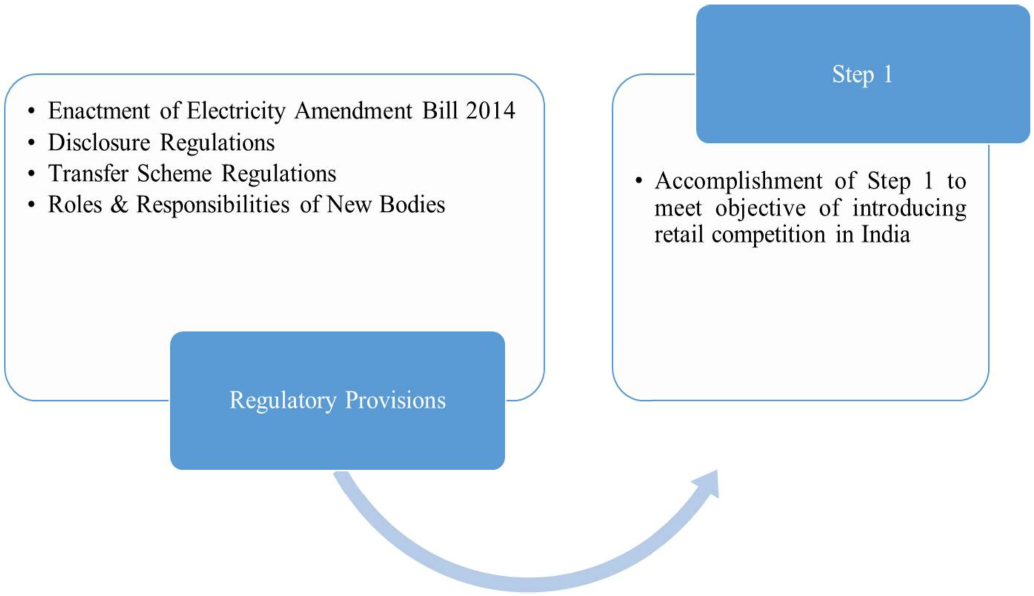

Figure 7.1: Key Stages under Step 1 'Regulatory Provisions'

Disclosure Regulations

Introduction of 'Disclosure Regulations' shall ensure the smooth transition of the industry from present structure to foreseen structure. Disclosure regulations shall identify the interest or involvement of one electricity business into another. The regulations shall also identify an unspecified interest of the involved person in an electricity business.

a) **Identification of involved franchisee through disclosure regulations**: In case if a distribution licensee is undertaking the distribution of electricity in its licensed area through nominated associate or franchisee, such associate or franchisee can only undertake distribution of electricity till the expiration of its license. Such license shall not be renewed as per the provisions of Electricity Amendment Bill 2014. Also if a distribution company or generation company wants to participate in supply activities through their subsidiary company, they shall not be able to do so.

b) **Disclosure regulations for bundled companies**: All the distribution companies and such state electricity boards which shall be needed to unbundle, shall make information disclosure as per the provisions of Act. Such disclosures by DISCOMs and SEBs shall help in identifying the specified or un-specified involvements which need to be removed.

c) **Drafting Authority of information disclosure**: Secretary of State; in consultation with State Electricity Regulatory Commission, Central Electricity Regulatory Commission and the Central Electricity Authority shall make the format of such information disclosure.
d) **Fields to be disclosed in respect of business**: Such disclosure regulations shall provide following fields in respect of businesses: What needs to be disclosed/ by and to whom the disclosure is made/ when it must be disclosed/ the form of the disclosure/ record access and maintenance/ method to set up threshold of involvement, if any.
e) **Auditing authority of disclosed information**: Audit of the disclosed information shall be done for the purpose of cross verification. An Independent Charted Account/Audit Body/Consultant; whomsoever shall be nominated by Secretary of State may do the audit of disclosed information.

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.

Transfer Scheme Regulations

Provision of Transfer Scheme has been mentioned in Section 131 4A and 4B of the Electricity Amendment Bill 2014. As specified in the Section 131 4A, The State Government shall draft a transfer scheme for the transfers of property, functions, and assets in rights, property, and liabilities of distribution licensee to newly formed bodies. Section 131 4B reflects the importance of the effective date of transfer for the transfers made or scheduled under the scheme. Development of transfer scheme is the need of Step 2 of framework development and hence described there in detail.

Roles and Responsibilities of New Bodies

After the separation of existing distribution companies, the roles and responsibilities of new companies shall be as follows:

Distribution Company: As per Section 2 (17A) of Electricity Amendment Bill 2014, after the separation of existing distribution business, the Network Company or so-called distribution company shall be responsible for the conveyance of electricity to end consumer through the use of distribution system within its specified area as defined in Section 2 (2A). Distribution company shall perform its operations in line with Electricity Distribution Code as defined in Section 50.

Incumbent Supply Company: As per Section 2 (35A) of Electricity Amendment Bill 2014, incumbent supply licensee shall be responsible to provide electricity to end consumer with the help of distribution network for their end use. Ownership of Incumbent Supply Company shall remain in the hands of State Government.

Figure 7.2: New Entities after Separation of Carriage and Content Businesses

Supply Company: As per Section 2 (70A) of Electricity Amendment Bill 2014, a person who is authorized under section 14 for the purpose of supplying electricity to end consumer shall be known as supply company. Supply Company shall include Incumbent Supply Company and such other supply companies who are operating parallel in the same area. Supply company shall perform its operations in line with Electricity Supply Code as defined in Section 50.

Intermediary Company: As per Section 2 (35B) of Electricity Amendment Bill 2014, entity which succeeds the existing power purchase agreements and power procurement agreements of respective distribution companies upon separation of existing distribution companies, shall be known as intermediary company. The company shall not require any license for its assigned functions.

Provider of Last Resort: As per Section 2 (70B) of Electricity Amendment Bill 2014, a supply licensee who shall be designated by Appropriate Commission time to time to supply power to consumers in his area of supply if the supply company chosen by consumer, ceases to be a supply company or if his license is suspended for any reason; as the case may be.

STEP 2: UNBUNDLING/SEPARATION OF DISTRIBUTION BUSINESS

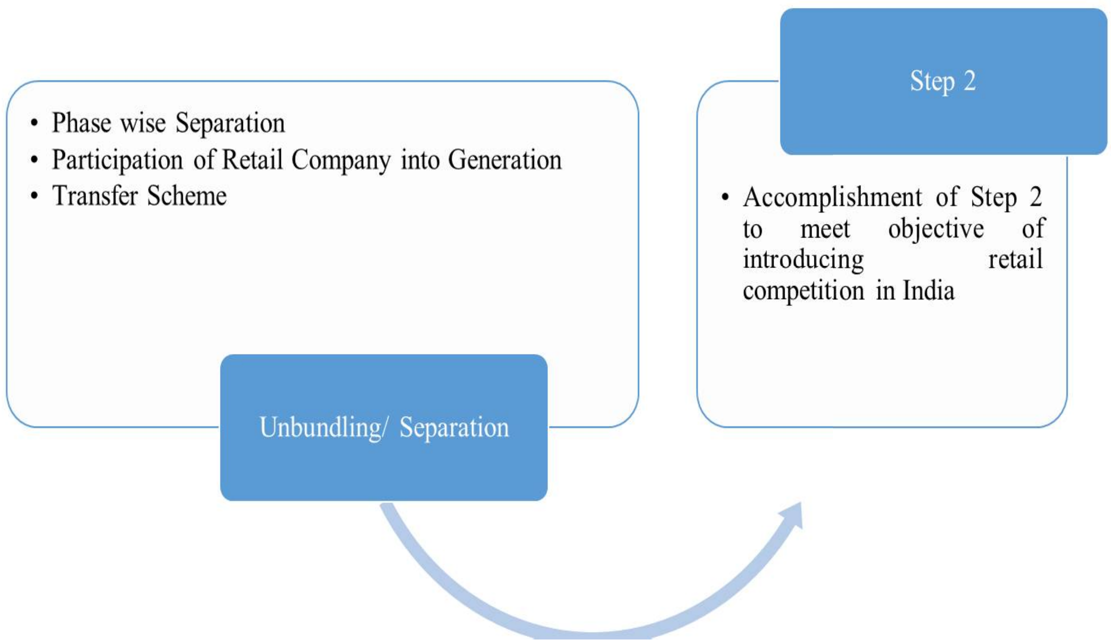

Figure 7.3: Key Stages under Step 2 'Unbundling/Separation of Distribution Business'

Phases of Separation

To remove certain involvements and conflict of interest, unbundling shall be done in Indian Scenario. All the existing power distribution companies shall have the mandate to undertake unbundling to separate carriage and content businesses. State Electricity boards which are not unbundled in separate generation, transmission and distribution companies shall also have need to undertake next level of unbundling. The phase of such unbundling shall be as follows:

Accounting Separation: This form of separation is also known as Administrative Unbundling. In this form of unbundling, financial accounts of Distribution Company or State Electricity Boards shall be divided into functional activities of carriage and content or into generation, transmission, and distribution, as the case may be. This separation of accounts of Distribution Company shall be the mandate as the first step towards full unbundling.

Functional Separation: This form of separation is also known as Management Unbundling. After the accounting separation in this form of unbundling, existing staff or manpower shall be assigned to different functions of utility as per their expertise and experience. Although management of such functions and staff shall be performed by one central holding only.

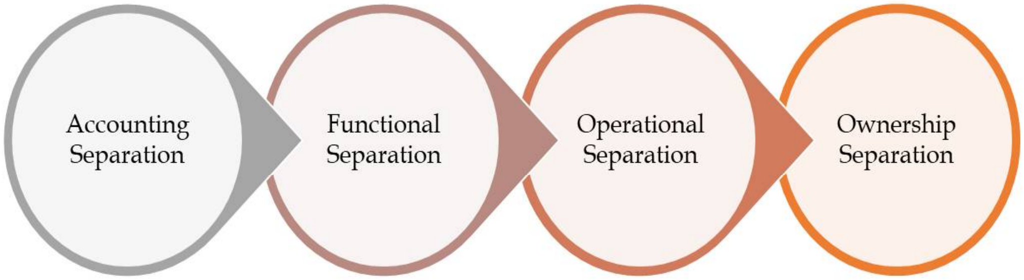

Figure 7.4: Phases of Separation of Carriage and Contents Business

Operational Separation: This form of unbundling is also known as legal unbundling. In this form of separation, separate legal entities of carriage business and content business shall be created which shall be based on the manner of operation they take place. However, the holding company shall remain the same.

Ownership Separation: This form of unbundling is also known as full or **divestiture** unbundling. In this form of separation, the existing function of distribution business shall be divested to remove the possibilities of any type of discrimination, conflict, and interest. In this form, distinct legal bodies or carriage business, content business or as defined in the act shall be created with separate management groups.

One supply licensee shall be there in the market once the full ownership unbundling of distribution companies shall be performed. To enable full competition in the supply side, another supply licensee shall be introduced in the market. Once there will be more than one supplier, consumers shall be given the choice to choose their supplier or to switch the existing one.

Participation of Retail Company into Generation

A retail supply company shall be allowed to establish a generation plant, to secure the power availability for its purpose of serving customer and meet their all-time demand of electricity. Threshold limit to establish such generation shall be set up for the conventional power plant which shall be decided the by state regulatory commission based on the power requirements of the state or connected consumers. Although no threshold limit shall be there for establishing a renewable energy generation plant. Vice – versa cannot be performed in this case. Generation company shall not be allowed to participate in the retail activities.

The Transfer Scheme

As per the provisions of Electricity Amendment Bill (Section 131 4A, 4B) State Government shall be responsible to draft the transfer scheme for the transfers of property, functions, and assets in rights, property, and liabilities of distribution licensee to newly formed bodies which shall be effective from the effective date of transfer.

Need of transfer scheme in separation: A transfer scheme shall be needed to divide assets, liabilities, personnel, and proceedings of Distribution Company into newly formed Network Company, Supply Company and Intermediary Company.

Mechanism to allocate assets and liabilities: Allocation of assets, liabilities, personnel, and proceedings shall be based on the undertakings mentioned in the respective schedule which shall be definite for the Network Company, Supply Company and Intermediary Company. All the assets, liabilities, personnel and proceedings of existing distribution companies shall be divided and transferred under these undertakings only.

Responsible authority to draft the transfer scheme: An independent consultant nominated by the State Government shall be the responsible authority to draft the transfer scheme for the purpose of separation of existing distribution business into carriage business and content business.

Approving Authority for the transfer scheme: Secretary of State is the approving authority of transfer scheme. Before approving the scheme, he may also modify the scheme as he thinks appropriate. Although if the drafter shall be unable to submit the scheme within specified period, Secretary of State may himself make a scheme. Existing distribution company is supposed to assist Secretary of State in terms of providing necessary information. The Secretary shall ensure that the transfer scheme should not perform against in the public interest.

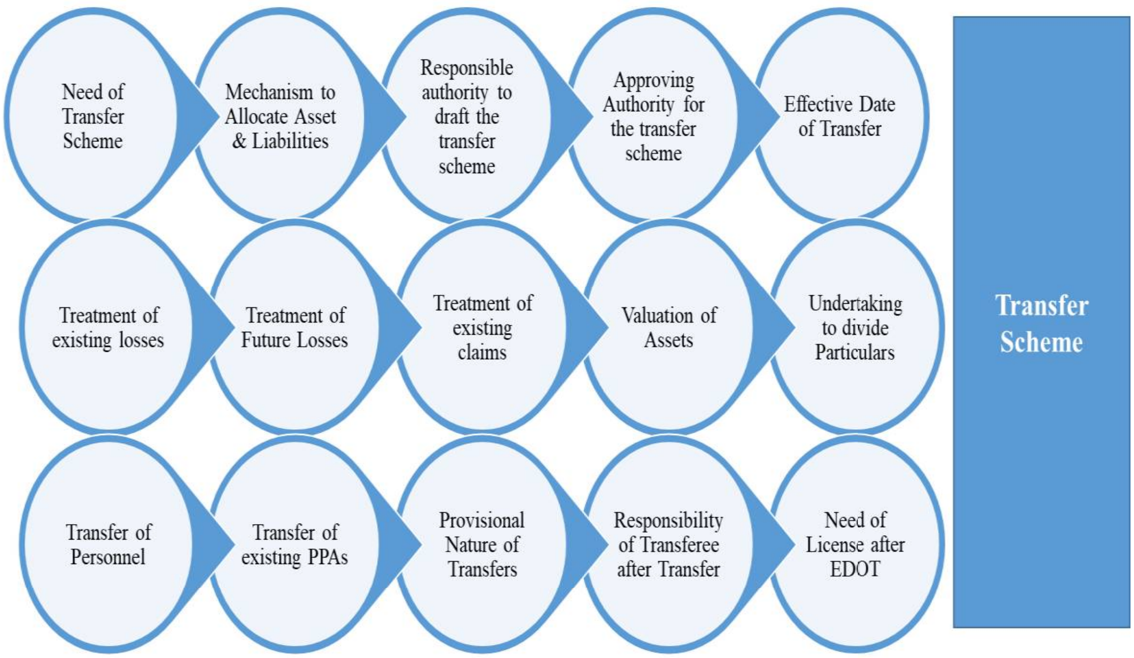

Figure 7.5: Key Elements of the Transfer Scheme

Effective date of transfer in regard to transfer scheme: The effective date for a transfer scheme shall be –

- The date to which immediately before distribution company was managing the role of both network company and supply company, or

- The date which is allocated by the transfer scheme, or
- The day on which transfer scheme comes into force, or
- Such earlier day as the Secretary of State shall direct as per the provisions of the scheme.

Methodology to treat existing recognized/unrecognized losses: All the existing recognized regulatory assets which pertain to the DISCOMs presently shall be allocated to Intermediary Company. Intermediary Company shall further amortize them through Universal Charge or from the support of State Government. On the other hand, unrecognized losses may be transferred to existing companies and help from State Government shall be sought to clear up the balance sheets.

Methodology to treat Future losses: Since all the technical and hooking losses shall be related to physical network, they shall be allocated to the network company while the commercial losses shall be allocated to Retail Company as they shall be related to the supply and collection functions.

Managing existing claims of DISCOMs and State Government: All claims of the Distribution companies against the State Government and all claims of State Government against the Distribution company; shall stand canceled and extinguished from the effective date of transfer. All the mutual claims shall be considered as fully and finally settled while the remaining asset and liabilities of the Distribution Company shall be stand transferred and vested in the State Government.

Valuation of assets under transfer scheme: Valuation of assets for the transfer scheme shall be done on the basis of Historical Book Value method – the value at which assets are carried on the balance sheet. Although the revenue potential of new separated units of from existing Distribution Business shall be kept in consideration while doing such valuation.

Undertaking to divide the particulars: The Assets, Liabilities, Proceedings and Personnel which are part of respective Undertakings and as described in respective schedule, shall stand transfer to and vest in the respective company on and from the effective date of transfer, without any further notice/act or things to be done by State Government or DISCOM or Network Co or any other person. However, Terms and Conditions of the scheme needs to be followed.

Transfer of Personnel: Personnel shall be divided under the respective undertaking and as described in the respective schedule of Transfer Scheme. 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.

Transferring existing Power Purchase Agreements: The existing Power Purchase Agreements of the existing distribution companies shall be transferred to the Intermediary Company. The Intermediary Company shall allocate those PPAs among various retail supply companies based on their power requirements. A certain ratio of Power Purchase Agreements may also be shifted into the wholesale market to facilitate the development of a capacity market that shall be based upon the ground conditions of respective state.

Provisionality of transfer under the scheme: In regard with the transfer of assets, liabilities, and rights of existing distribution companies to newly formed companies - the provisional period shall be 1 month while for the case of human resource - it shall be near about 6 months. Newly formed bodies shall have right to make proper recommendations in the provisional period as defined in transfer scheme.

Responsibilities of transferee after transfer: Transferee shall be accountable for all agreements, bonds, schemes, contracts, deeds, rights and other instruments which pertain to the transferred undertakings to which the DISCOM was initially a party, having effect from the effective date of transfer; in the same manner as the DISCOM was liable before the effective date of transfer.

License need to undertake the distribution and supply: Separated Companies shall be needed to apply for the license in the appropriate commission within 60 days of effective date of transfer to undertake the distribution and supply business in the respective area of operation under Section 14 of the Electricity Amendment Bill 2014.

Provision to remove any difficulty under transfer scheme: The Government by order may publish such provisions in official gazette which are consistent with the provisions of the act and are necessary to remove the difficulties felt in the implementation of transfer scheme in the respective state.

Through the transfer scheme, fixed assets before meter shall be majorly allocated to network company while the fixed assets beyond meter shall be majorly allocated to supply company. Liabilities related to Power purchase shall be transferred to the intermediary company. The intermediary company may further allocate and divide the same into retail supply companies while the liabilities related to contractors' payment shall be allocated and divided into network company and retail supply company. States which have multiple distribution companies, the intermediary company can either be established for the whole state or for the respective distribution company only.

Once approved, the transfer scheme shall be published in the official gazette. States of India or Distribution Companies of respective states as the case may be, who take the lead in the implementation of transfer scheme, shall be authorized for incentives as defined in the transfer scheme for this purpose.

STEP 3: THE ELECTRICITY CODE

The electricity code shall set out various responsibilities and duties for various bodies or participants of the electricity industry to ensure proper, smooth and efficient operations. In line with the same, following fields shall be defined by The Electricity Code:

Central Consumer Database [KYC]

A central database of consumers under KYC shall be created going forward which shall have following details pertaining to consumers: the billing address, usage pattern, meter number, bank account details and any other information that shall be required for this purpose. Network Company may be given this task to create KYC. This database will be useful for the retail supply licensees as they will get the information about consumer mix for the respective area where they want to operate. KYC shall also be useful for transferring subsidies directly into the consumer's account.

Tariff Regulations

Distribution Company shall have regulated tariff mechanism. While Supply Company shall have ceiling on the tariff for contestable consumer and shall have regulated tariff for the non-contestable consumer. The tariff for Network Company, Retail Supply Company and Intermediary Company shall be based on following mechanism:

- Tariff for Network Company = Network Capital Expenditure + Operation and Maintenance Expenditure + Technical Losses,
- Tariff for Retail Supply Company = Capital Asset Expenditure +Power Purchase cost + Operation and Maintenance Expenditure+ Losses,
- Tariff for Intermediary Company = Costs incurred towards PPAs + Operational Expenditure

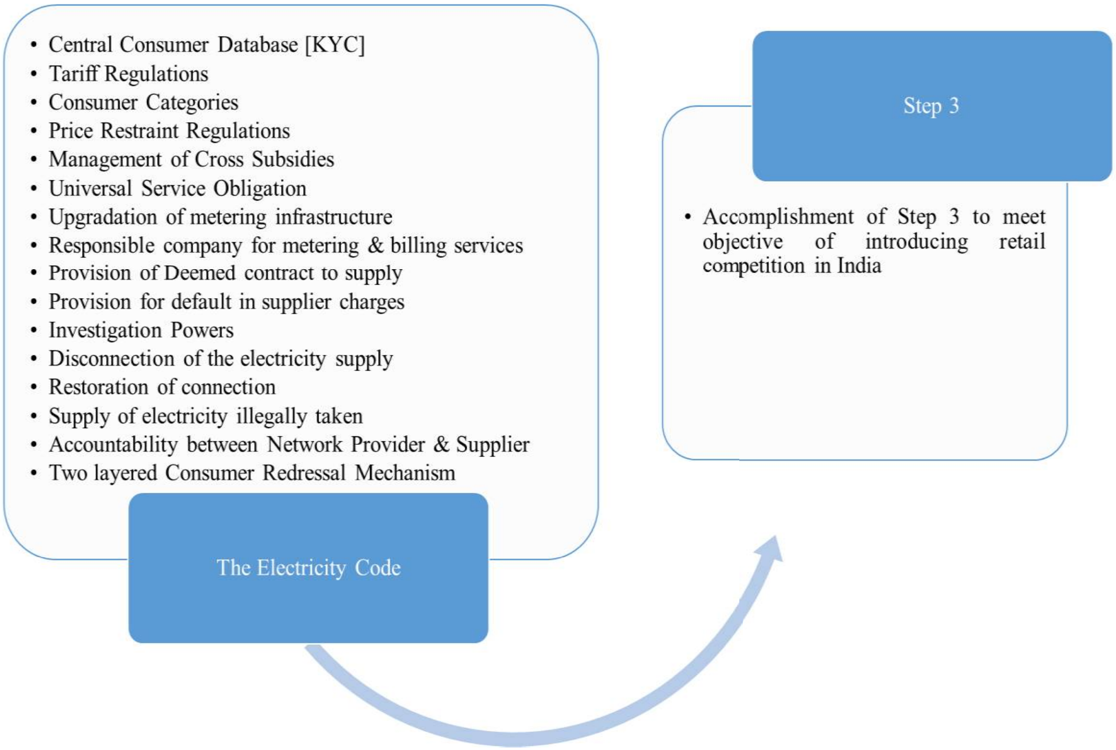

Figure 7.6: Key Stages under Step 3 'The Electricity Code'

Consumer Categories

Consumer Category for to determine tariff/price shall be based on following particulars:

- Domestic premises of urban areas/or industrial premises of urban area
- Consumers of sparsely populated rural areas and consumers of populated areas
- Members of the disadvantaged group and persons who are not

While Consumers categories in particular to determine the Line and Supply Charges shall be as follows:

- Line charges: For line charges, the category of consumers shall be: Distance from the main center or any other method as the case may be. Although pre-defined consumer categories shall be the major factor to determine line charges.
- Supply charges: For supply charges, the category of consumers shall be based on: connected load, annual energy consumption, or on area of supply as the case may be. Although pre-defined consumer categories shall be the major factor to determine supply charges.

Line Charge shall not be paid directly by an end-consumer to an electricity distributor. Consumer shall pay the same via an electricity retailer.

Price Restraint Regulations

Central Electricity Regulatory Commission and State Electricity Regulatory Commission shall be responsible to make regulations for the price restraint or price control in relation with the network charges. The regulations shall be dependent on following consumer categories:

a. Domestic Consumers
b. Rural Consumers or consumers of sparsely populated areas

The price restraint regulations shall be applicable on:

a. The electricity distributor or particular category of electricity distributors

b. The individual areas or classes of areas; defined by distance from main centre/geographic location/sparsity of local population

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 a regulatory body.

Management of Cross-Subsidies

It shall be necessary to manage the cross-subsidies and eliminate them gradually for the success of retail competition in India. Cross-subsidies shall be managed through:

- Year on Year tariff hikes
- Universal Charge (UC) fund
- Limiting subsidies to wheeling charges

Although until the full elimination of subsidies, the consumer shall be charged with full price and the state government then shall transfer the subsidy amount into the account of the consumer. The transfer shall be based on the KYC details which was created for that that consumer.

Universal Service Obligation

'Duty to Connect' – the responsibility to connect a consumer to the network would be given to Distribution Company. 'Duty to Supply' – the responsibility to supply electricity to a consumer would be given to the incumbent retail supply company initially. Both Distribution and Supplier need to provide connection and supply to the consumer within the specified time limit.

Upgradation of Metering Infrastructure

Prepaid meter shall be installed in place of existing meters. Automated metering infrastructure shall be the focus and hence the whole system shall be gradually converted in the automatic system to fetch out the real-time accurate information. Automatic meters shall be able to do the real-time calculation and accounting for the power recorded in all 96 blocks available in day.

Responsible Company for Metering and Billing Services

Either the supply company or a third party; whomsoever is appointed by the appropriate commission may provide the metering services. The same company who is nominated for metering services, shall be responsible to provide the billing and collection services until the automatic meters get installed.

Provision of Deemed Contract to Supply

If 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 have been made. The terms and conditions shall include various metering codes like the time of first-meter reading, ceased supply time, placing of meter etc. The same shall be published in official Gazette and online 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 requisite time period then the supplier may:

- Disconnect the premise
- 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.

Investigation Powers

Any officer authorized by the electricity distributor or electricity supplier may at all reasonable times shall be authorized to take entry into premises 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 the entry for disconnecting the network/supply in case of default although a prior notice of 7 working days will be 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 shall be made by the electricity supplier or electricity distributor as the case may be. The meter removed for this purpose 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 to connect; if the earlier 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 from supply company or from the consumer.

Accountability between Network Provider and Supplier

Accountability shall be set up between Network Provider and Supplier for certain purposes as the power outage or load shedding may have reasons related to either of both distribution network and supply functions. Some of the distribution issues are like: tripping off line, grid security, transformer fault, capacity constraint while supply side issues are: uncleared past dues with T&D company, settlement/balancing issues etc. To prevent the interest of consumers in such scenario, accountability between network and supplier needs to be fixed.

Two Layered Consumer Redressal Mechanism

After the introduction of retail supply competition, to protect the rights and interest of consumers, a two-layered Consumer Redressal Mechanism shall be provided as follows

- A single window Common Grievance Redressal forum for Distribution Company, Retail Supply Company or for Metering company (if any);
- Or Independent ombudsman

Consumers who shall not be satisfied with the solution provided by Common Grievance Redressal forum may go to next level of the supporting mechanism that is to the Independent Ombudsman.

STEP 4: OPEN ACCESS AND CONSUMER SWITCHING

Phases of Open Access

Phase-wise introduction of open access shall be there once the subsequent supplier shall has been introduced in the market. Market shall be opened for all category of consumers in following phases:

- Phase 1: Connected Load >= 1MW
- Phase 2: Connected Load >= 100 kW
- Phase 3: Connected Load <= 100 kW

In phase 1, Consumer who has connected load greater than or equal to 1 MW shall be able to choose their supplier. In phase 2 of market opening, Consumer who has connected load greater than or equal to 100 kW shall be able to choose their supplier while in phase 3, market shall be opened up for all consumers. Introduction of these phases shall have certain time gaps, which shall be based on the ground conditions of respective state. After opening up of the market, consumers of the respective category; based on the connected load; shall be able to switch the supplier available in his area to supply.

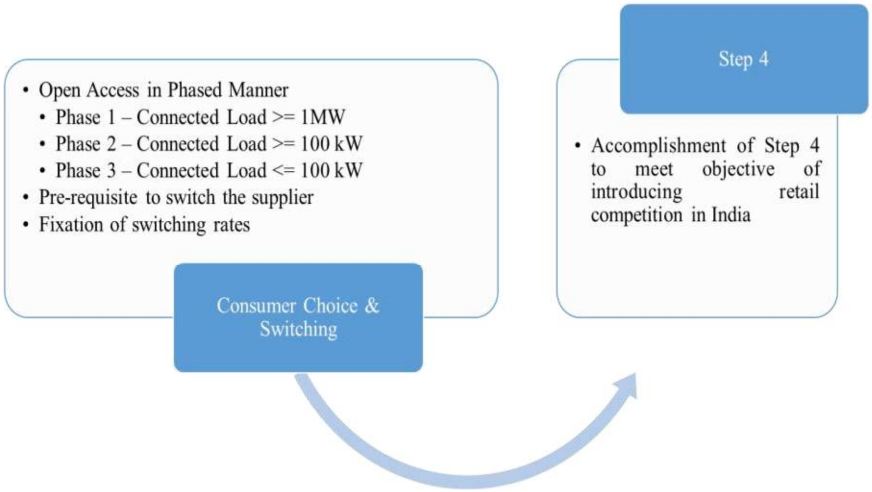

Figure 7.7: Key Stages under Step 4 'Open Access and Consumer Switching'

Pre-requisite to Switch the Supplier

There shall be certain pre-conditions which will be mandatory for switching the supplier by the consumer. A consumer shall be allowed to switch the supplier if he shall fulfill the mandates fixed by following categories: Recovery of past revenue gaps/recovery of dues/security deposits /regulatory assets and such other standard costs. These conditions shall be based on the respective consumer categories.

Fixation of Switching Rates

Frequency to switch the supplier by the consumer shall be fixed as high switching rates may lead to difficulties for retail supply companies in managing their demand forecasting and power procurement. The consumer shall be allowed to switch the supplier of certain dates/anytime during the year/or after the lock-in time with the present supplier; whatever shall be applicable.

Although before granting open access to consumer, certain preconditions like availability of adequate electricity, grid availability, cross-subsidy charges and some others as the case may be, shall be taken into consideration.

Once the open access will in full swing, the consumers shall be able to source their electricity from any place of their choice. They will be able to purchase power from generation company, trading licensee, wholesale marketplace or any supplier of electricity who operates in the same area. The consumer will have the option to switch his supplier if he is not satisfied with the service of the present supplier. This scenario shall remove the existing monopoly in distribution sector and shall be known as retail competition in power sector. Suppliers shall improve their quality as they will have fear to lose the market. Full competition in the electricity shall be seen which shall subsequently result into increase in efficiency and quality.

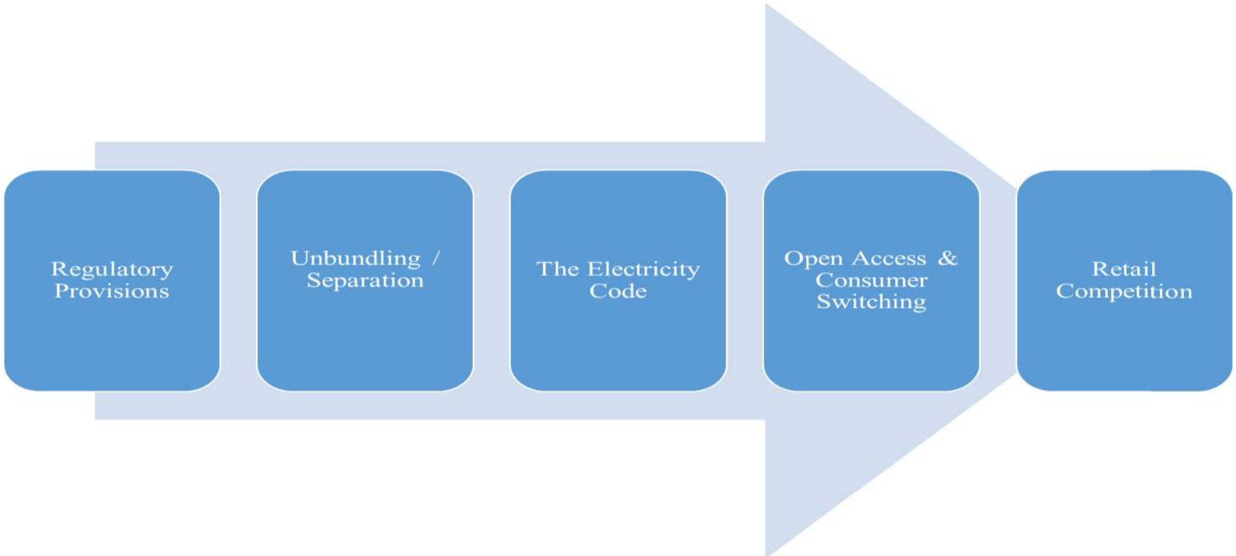

Figure 7.8: Framework for Bifurcation of Carriage and Content to Introduce Retail in Indian Power Sector

7.7 DRAFT OF TRANSFER SCHEME

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TRANSFER SCHEME

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1. Short title, Extent and Commencement

1. Electricity Amendment Bill 2014 is pending in Loksabha to be enacted to separate carriage and content.
2. State Power Sector Reforms Act, 2016 may be passed before the respective State Power Sector Reforms Transfer Scheme.

3. State Government may make the Transfer Scheme for providing and giving effect to the transfer of assets, properties, liabilities, obligations, proceedings, and personnel of Distribution companies into Network Company, Incumbent Supply Company and Intermediary Company.
4. Transfer Scheme shall extend to the whole of the State and also to such Assets, Liabilities, Proceedings, and Personnel of the Distribution Company outside the State; if any.
5. An independent consultant may be appointed or nominated to ensure the fair division of particulars under the scheme.
6. DISCOM shall provide all such information and other assistance as may be required to the drafter of transfer scheme and also to the nominated person for the fair division of particulars.
7. Transfer scheme by the order of Governor of State should be approved by the Secretary of State and the Secretary of State may modify such scheme before the approval.
8. Incentives may be authorized to the States/Discoms who take the lead in Separation.
9. Transfer Scheme shall come into force from the date of its publication in the Official Gazette.

2. Definitions

1. Act: Act means the Electricity Amendment Bill 2014 or State Power Sector Reforms Act, 2014; as the case may be.
2. Asset: Means dykes, dams, reservoirs, intake and outlet structures of water conductor systems, tunnels, generating stations and associated plants, transmission and distribution systems, machinery equipment, lands, offices, buildings, stores, offices, furniture and fixtures, guest houses and residential quarters and related installations, vehicles, other movable and immovable assets, cash at bank, cash in hand, book debts, investments, tangible and intangible assets, corporeal or incorporeal, benefits, consents, licenses, registrations, authorities, patents, liberties, powers and trademarks of every kind, nature and description whatsoever, easements, privileges, advantages, easements, benefits and approvals, deeds, contracts, bonds, agreements, schemes and other related miscellaneous agreements, instruments and interest.

3. Distribution Company: A licensee authorized to operate and maintain a distribution system for the purpose of supplying electricity to the consumers in the respective area of supply; before the Effective Date of Transfer.
4. Effective Date of Transfer: The effective date for a transfer scheme, all property, rights, and liabilities— (a) to which immediately before distribution company was managing the role of both network company and supply company or, (b) which is allocated by the transfer scheme, "effective date", in relation to a transfer scheme, is the day on which transfer scheme comes into force or such earlier day as the Secretary of State shall direct for by the consent of Governor.
5. Incumbent Supply Company: ISL the body to which the supply functions and undertakings (other than those vested in the intermediary company) are vested under the section 131 [4A] of principal act.
6. Intermediary Company: Intermediary Company refers to such entity which succeeds the existing power purchase agreements as well as the procurement arrangements of respective distribution licensee from the effective date of transfer.
7. Liabilities: All Liabilities such as debts, obligations, duties, related outgoings includes statutory liabilities, Government levies which include the contingent liabilities which may have arisen before the effective date of transfer.
8. Network Company: Network Company which conveys the electricity through the network of Distribution Company.
9. Proceedings: includes suits, complaints, appeals, applications, petitions, arbitration or conciliatory of all nature, whether criminal or civil and if "Distribution" Company is one of the involved parties.
10. Provider of Last Resort: means the supply licensee who is designated by the State Commission as per provisions of the Act.

11. Regulatory Assets: Regulatory assets (recognized losses) are the revenue gap of utilities which are recognized by the state electricity regulatory commissions but which could not be passed onto consumers in the form of a tariff hike and are therefore to be amortized in due course of time.

Regulatory assets = (b)SERC approves revenue requirement of utility - (c) Revenue of utility at existing tariff -(d) Revenue allowed to be recovered via tariff hike

12. Schedule: means all the schedules appended to the Transfer Scheme.
13. Supply Licensee: Supply licensee is a person who is authorized under section 14 to supply electricity to consumers and includes, incumbent supply licensee.
14. Transferee: "Transferee" means Network Company or Incumbent Supply Company or Intermediary Company, in whom the respective undertaking is vested.
15. Undertakings: Means the blocks of assets and liabilities of respective distribution company which is defined under the respective clause of undertakings of concerned Network Company/Supply Co/Intermediary company for the purpose of fair division.
16. Unrecognized Losses: Unrecognized financial losses are the revenue gap created because of disallowance of certain costs of the utilities by the regulatory commissions due to reasons like failure to meet performance targets by the utilities and imprudent expenditures. Unrecognized losses = (a)Utility submits its revenue requirement to SERC - (b)SERC approves revenue requirement of utility.

3. Transfer of Assets etc. to the State Government –

(1) All claims of the Distribution companies against the State Government and all claims of State Government against the Distribution company; shall stand canceled and extinguished. All the mutual claims shall be considered as a fully and finally settled while the remaining asset and liabilities of the Distribution Company shall stand transferred and vested in the State Government.

Provided that the valuation of assets for this transfer scheme is being done on the basis of Historical Book Value method where the present approaches are – a) Historical book value of assets – the value at which the assets are carried on the balance sheet b) Market value of assets – the price at which the utility can sell its assets.

(2) The above subsection does not have an effect on liabilities, obligations, responsibilities, and rights in respect of the Human Resource/Personnel and related provisions of wages, salary,

gratuity, provident fund, pension, retirement benefits, compensation and retirement benefits as the same needs to deal with the respective provision of the scheme.

4. Classification of Assets etc. into Undertakings –

(1) The Assets and Liabilities which are vested in the State Government by the effect of rule 3 and such other Assets and Liabilities which are considered appropriate by State Government but excludes which are specified under rule 4(3) shall stand classified into:

(a) Network Co Undertaking as set out under Schedule – A,
(b) Supply Co Undertaking as set out under Schedule – B,
(c) Intermediary Co Undertaking as set out under Schedules – C.

Provided that the existing Power Purchase Agreements of the current Discoms may be transferred to the Intermediary Company. The Intermediary Company may allocate those PPAs among various retail supply companies based on their power requirements.

Presently, the major generation capacity of generators is tied up with the DISCOMs through long-term power purchase agreements. Hence it will be difficult for new retail Supply Company to procure the power from the market. The Intermediary Company may allocate those PPAs among various retail supply companies based on their power requirements or it may match the entire demand of incumbent retail supply company and then may allocate remaining agreements to new supply companies in the proportion of their power requirements. A Certain ratio of Power Purchase Agreements may also be shifted into the wholesale market to facilitate the development of the capacity market.

Provided also that if multiple discoms exist in a state, there are two strategies for the formation of intermediary company – a common intermediary company for the whole state; or separate Discom wise intermediary companies.

Provide also that the Ownership of Intermediary Company also needs attention. The IC may be owned by Government or private players; as the case be. States where all DISCOMs are in private hands – formation of new Government-owned IC may be required rather than the segregation from current discom.

Provided also that the Intermediary Company would have the responsibility to settle the payment between Generation Co and Retail Supply Cos and would act like a clearing house.

(2) If assets defined under the rule 4(1) are subject to arrangements or security documents in favor of third party for a financial assistance or the obligation availed by DISCOM and the liabilities in reference of thereof are needs to be classified under different undertakings. State government may do apportionment of such liabilities secured by such rights, assets, and properties among the different undertakings while security shall be applicable for only the apportioned liability.

(3) The liabilities specified under Schedule - D shall not form a share of the liabilities classified as Network Co, Supply Co, Intermediary Company Undertakings under Schedules – A to C but shall form share of residuary liabilities which shall be retained by the State Government.

4) Norms for Allocation:

A) Allocation of assets: Fixed assets before the energy meter may be allocated to the Network Co while the fixed assets beyond energy meter may be given to the retail supply companies.

B) Allocation of liabilities: Liabilities which is related to power purchase matters may be transferred to Intermediary Company. The intermediary company may further get the same reimbursed through Retail Supply Companies. While the Liabilities which are related to the Payment of Contractor – shall be allocated to the Network and Retail Supply Cos.

5. Transfer of Assets, Liabilities, etc. by the State Government -

(1) The Assets and Liabilities which are part of Network Undertakings and as described in Schedule- A, shall stand transfer to and vest in Network Co on and from the effective date of transfer, without any further notice/act or things to be done by State Government or DISCOM or Network Co or any other person. However, Terms and Conditions of the scheme needs to be followed.

(2) The Assets and Liabilities which are part of Incumbent Supply Co Undertakings and as described in Schedule- B, shall stand transfer to and vest in Supply Co on and from the effective date of transfer, without any further notice/act or things to be done by State Government or DISCOM or Supply Co or any other person. However, Terms and Conditions of the scheme needs to be followed.

(3) The Assets and Liabilities which are part of Intermediary Co Undertakings and as described in Schedule- C, shall stand transfer to and vest in Intermediary Co on and from the effective date of transfer, without any further notice/act or things to be done by State Government or DISCOM or Network Co or any other person. However, Terms and Conditions of the scheme needs to be followed.

(4) On the transfer and vesting of Assets and Liabilities under 5(1) to Network Co or under 5(2) to Supply Co or under 5(3) to Intermediary Company; the Transferee shall be accountable for all agreements, bonds, schemes, contracts, deeds, rights and other instruments which pertain to the transferred Undertakings, to which the DISCOM was initially a party, having effect from the effective date of transfer; in same manner as the DISCOM was liable before the effective date of transfer. The same shall be implemented in full force and have effect against or in the favor of Transferee and may be enforced as fully and effectively; as if the Transferee was a party thereto instead of the DISCOM.

(5) As consideration of the transfer and vesting of Assets and Liabilities to Network Co or Supply Co or Intermediary Company, as mentioned in rules 5(1), 5(2), 5(3) and 5(4) and also in Schedules – A to C; as the case may be, the State Government shall issue shares or/and instruments as described in Schedules – A to C respectively.

6. Transfer of Personnel –

(1) The transfer of Human Resource under this scheme shall be based on the terms and conditions defined in the Act.

(2) Subject to rule 6(1), the human resource on the effective date of transfer, shall stand transferred in view of their experience and skill set as under:

(a) The resource classified in Schedule-F (Part I) shall stand transferred and permanently absorbed in Network Co; (b) The resource classified in Schedule-F (Part II) shall stand transferred and permanently absorbed in Supply Co; (c) The resource classified in Schedule-F (Part III) shall stand transferred and permanently absorbed in Intermediary Co;

Provided that the Human Resource as specified in Notifications listed in the Schedule – G, shall stand transferred and permanently absorbed in Network Co, Supply Co and Intermediary Co, as the case may be, as per the scheduled notifications.

(3) Upon transfer and subject to the rules and regulations of the Act and other such provisions of this Transfer Scheme, the Human Resource shall form a part of the services of Network Co or Supply Co or the Intermediary Company, as the case may be, but their scale of pay, intense seniority and rank as existing in the DISCOM on the effective date of transfer shall be retained.

(4) Notwithstanding the provisional nature of transfer of Human Resource to Network Co, Supply Co and the Intermediary Co as per rule 7(1), the resource shall discharge the functions and duties which may be assigned from time to time by Network Co or Supply Co or the Intermediary Company, as the case may be, and Network Co, Supply Co and the Intermediary Co shall have the power to exercise all disciplinary and administrative control over such transferred human resource transferred as per the Scheme.

7. Classifications and Transfer of Assets and Liabilities Provisional in the First Instance -

(1) The transfer and classification of Undertakings under rule 4 is provisional and deemed to be final after the expiration of 18 months from effective date of transfer unless otherwise a change is ordered by the order of State Government.

(2) within the period of 18 months from effective date of the transfer, State Government may delete, add, modify, vary or amend or change in terms and conditions of transfer for the items included or for towards their values. The clause is in respect to the transfer related to such interests, properties, liabilities, rights which forms the part of undertaking in respect to one transferee or to another or to State Government as per such terms and conditions and in such manner as the State Government find appropriate. Upon the finalization of orders, the respective schedule needs to be amended accordingly.

(3) Upon the expiry of 18 months from the effective date of transfer and by the direction of State Government, transfer of liabilities, rights, interests, properties, and Undertakings made as per the scheme shall be considered as final.

(4) The rule 9 is not applicable for the transfer of Human Resources and related matters.

8. The Transfer of the Personnel to be Provisional in the First Instance –

(1) All transfer of Human Resource from the DISCOM to the Network Co, Supply Co and the Intermediary Company under rule 6 is provisional for the duration of six months and after this duration, the transfer shall be deemed as final, unless any order conceded by State Government under the rule 8(3).

(2) Within fifteen days of the effective date of transfer, State Government shall constitute a committee to accept representations from Human Resource. The committee will consider representations which are accepted based on the organizational requirements, suitability of personnel, need of the transferees and other such relevant factors. Recommendations shall be made to State Government keeping in the consistency of the objectives of Act.

(3) (a) Within the period of six months from effective date of the transfer, State Government may delete, add, modify, vary or amend or change in terms and conditions of transfer of human resource to the transferee as the State Government find appropriate. Upon the finalization of orders, the respective schedule needs to be amended accordingly.

3 (b) The transfer and absorption of human resource to the transferee, in line with the modified Schedules, shall be final and shall be effective as if it was made on the day of effective date of transfer.

Going forward, post the implementation of transfer scheme, finalization of organizational and human resource policies of the separated companies – defining the Human Resource policies, shall be drafted and shall be taken into practice.

9. Rights and Powers of the Transferees (Apply for the License Again) -

(1) Network company shall apply for the grant of license in the commission within 60 days of effective date of transfer to undertake the distribution business in the respective area under Section 14 of the Act. Till the grant of license and from effective date of transfer, the Network company shall be entitled to exercise all rights and powers of earlier DISCOM under the Electricity Amendment Act, 2014 (Central Act No. 191 of 2014), and undertake the business of Distribution of electricity in the area, in same manner as the DISCOM was entitled to exercise prior to effective date of transfer.

(2) Incumbent Supply Co shall apply for the grant of license in the commission within 60 days of effective date of transfer to undertake the supply business in the respective area under Section 14 of the Act. Till the grant of license and from effective date of transfer, the Supply company shall be entitled to exercise all rights and powers of earlier DISCOM under the Electricity Amendment Act, 2014 (Central Act No. 191 of 2014), and undertake the business of Supply of electricity in the area, in same manner as the DISCOM was entitled to exercise prior to effective date of transfer.

(3) Responsibilities of network company shall include: Distribution System Operations, Distribution Market Operations, Distribution Planning Operations, Network Operations while the Responsibilities of supply company shall include: Demand Side Management, Power Procurement, Power Trading and related activities, Demand Forecasting, Metering and Billing, Revenue Collection, Consumer care etc.

Provide that the losses which are technical in nature (including hooking losses) shall be allocated to Network Company while the losses which are commercial in nature may be allocated to the retail supply company.

10. Decision of State Government is Final -

(1) For any issue, difference, dispute or doubt arise in regard to the transfer of particulars under the scheme, the decision of State Government shall be binding and final for all parties; subject to the rules defined in the Act.

(2) The State Government may publish the scheme in an official gazette. The Government by order may also publish such provisions which are consistent with the provision of the act and are necessary to remove the difficulties coming in the implementation of the transfer scheme.

By the order of the Governor
Secretary (Power)

SCHEDULE -'A' – PART I

(See Rule 4(1)(c))

NETWORK COMPANY UNDERTAKING: STATE DISCOM

The Network Co Undertaking of State DISCOM shall comprise generally all the Assets, Liabilities and proceedings which belong to the DISCOM and concerns about the distribution of electricity in the area as defined in Part I of Schedule E, consists of:

I. NETWORK ASSETS:

All LT (Single phase 2 wire/Three phase 5 wire), 11 kV, 33 kV lines (with underground cables, Aerial Bunched cables and Overhead Lines) and sub stations with various kind of supports – different sizes of conductors, step down/step up transformers, protective and metering devices, breakers, control rooms, lands [includes right of way], testing laboratories, roads, buildings, owned or leased diesel generating sets [Exclude fixtures, fittings, installations] and also includes any of above asset which is under construction on effective date of transfer.

II. GENERAL ASSETS:

(a) Following assets, in case they primarily or exclusively pertain to the mentioned distribution system, projects or properties or distribution system related activities, equipment and special tools, earth movers, material handling equipment, bulldozers, cranes, concrete mixtures, heavy and light vehicles, trailers, fixtures, furniture, air conditioners, office equipment, refrigerators, Signal systems and computers, spares, raw materials, consumables, roads, lands, civil works and related installations; staff quarters, buildings, properties and structures, rest houses, and their associate buildings, dispensaries, schools, testing equipment and laboratories, training centers, works in progress, workshops, asset sent for the purpose of repairing, scraps and obsolete.

(b) The following in case they are used/occupied predominantly for the activities of Network Undertaking of State Discom on the effective date of transfer: Buildings of all old power houses which excludes the unutilized vacant lands/ surroundings owned by DISCOMs.

(c) The establishment of the office, buildings, and lands, which are not covered elsewhere in the schedule and predominantly used or occupied for the activities of Network Co Undertaking of State Discom on the Effective Date of Transfer.

III. MISCELLANEOUS:

1. Arrangements, interest, agreements and contracts to the extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
2. Unsecured and Secured loans to the extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
3. Cash and bank balance to the extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
4. Other Current Assets to the extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
5. Other Provisions and Current Liabilities to the extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
6. Contingent liabilities to such extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
7. State Government share capital to the extent which is required to match the assets and liabilities as referred in above Paras I and II.
8. Other liabilities to such extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
9. Proceedings to such extent by which they are associated or related to the network activities or to the assets or undertakings referred in Paras I and II above.
10. In consideration of the transfer as mentioned in above, State government shall issue N number of shares with the face value of Rs. 10/- each in the name of Network Company.

SCHEDULE -'A' – PART II

(See Rule 4(1)(c))

Aggregate of Assets and Liabilities to be vested in Network Company

ASSETS	LIABILITIES
LONG TERM ASSETS	LONG TERM LOANS
Gross Fixed Assets	SLR Bonds
Accumulated depreciation	Infrastructure (Tax Free) Bonds
Net Fixed Assets	Taxable Bonds
Capital Expenditure in progress	Loans from IDBI/SIDBI
Investments	Loans from Life Insurance Corporation
TOTAL LONG TERM ASSETS	Loans from Power Finance Corporation
	Loans from Rural Electrification Corporation
CURRENT ASSETS	Loans from Commercial Banks
Cash and Bank Balances	Loans from State Industrial Development Corporation
Gross Stock	TOTAL LONG TERM LOANS
less Provision for Unserviceable Stores	
Provision for Doubtful debt	
Net Receivables	CURRENT LIABILITIES
Gross Receivables for Sale of Electricity	Accounts Payable
Provision for Unbilled revenue	Payable to Generators
Other Receivables	Deposits from Consumers
TOTAL CURRENT ASSETS	Overdue Principal and Interest on Commercial Loans
TOTAL ASSETS	Working Capital Borrowings from PFC
	Working Capital Borrowings from HUDCO
NET WORTH	Working Capital Borrowings from Commercial Banks
Share Capital	TOTAL CURRENT LIABILITIES
TOTAL NET WORTH	TOTAL LIABILITIES

SCHEDULE -‘B’ – PART I

(See Rule 4(1)(a))

SUPPLY COMPANY UNDERTAKING: STATE DISCOM

The Supply Co Undertaking of State DISCOM shall comprise generally of all the Assets, Liabilities and proceedings belonging to the DISCOM concerning the Supply of electricity in the area of supply as listed in Part II of Schedule E, consisting of:

I. SUPPLY ASSETS:

All protective and metering devices and control rooms, energy injection and mapping assets, buildings, lands, roads, testing laboratories, diesel generating sets, conventional and non-conventional generating units, service connections, installations at supplier’s point, signal and lightening systems owned by or leased to the Distribution Company but excluding fixtures, fittings, and installations owned by local authorities or private persons, including any of the described assets under creation as on effective date of transfer..

II. GENERAL ASSETS:

(a) Following assets, in case they primarily or exclusively pertain to the mentioned supply system, projects or properties or supply system related activities, equipment and special tools, earth movers, material handling equipment, bulldozers, cranes, concrete mixtures, heavy and light vehicles, trailers, fixtures, furniture, air conditioners, office equipment, refrigerators, Signal systems and computers, spares, raw materials, consumables, roads, lands, civil works and related installations; staff quarters, buildings, properties and structures, rest houses, and their associate buildings, dispensaries, schools, testing equipment and laboratories, training centers, works in progress, workshops, asset sent for the purpose of repairing, scraps and obsolete.

(b) The following in case they are used/occupied predominantly for the activities of Supply Undertaking of State Discom on the effective date of transfer: Buildings of all old power houses which excludes the unutilized vacant lands/ surroundings owned by DISCOMs.

(c) The establishment of office, buildings, and lands, which are not covered elsewhere in the schedule and predominantly used or occupied for the activities of Supply Co Undertaking of State Discom on the Effective Date of Transfer.

III. MISCELLANEOUS:

1) Arrangements, interest, agreements and contracts to the extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
2) Unsecured and Secured loans to the extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
3) Cash and bank balance to the extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
4) Recognition of payables for the purchase of Electricity from Generation Co or Intermediary Co to the extent for which it is acceptable by norms of Working Capital.

5) Other Current Assets to the extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
6) Other Provisions and Current Liabilities to the extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
7) Contingent liabilities to such extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
8) State Government share capital to the extent which is required to match the assets and liabilities as referred in above Paras I and II.
9) Other liabilities to such extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
10) Proceedings to such extent by which they are associated or related to the supply activities or to the assets or undertakings referred in Paras I and II above.
11) In consideration of the transfer as mentioned in above, State government shall issue N number of shares with the face value of Rs. 10/- each in the name of Supply Company.

SCHEDULE -'B' – PART II

(See Rule 4(1)(b))

Aggregate of Assets and Liabilities to be vested in Supply Company

ASSETS	LIABILITIES
LONG TERM ASSETS	LONG TERM LOANS
Gross Fixed Assets	SLR Bonds
Accumulated depreciation	Infrastructure (Tax Free) Bonds
Net Fixed Assets	Taxable Bonds
Capital Expenditure in progress	Loans from IDBI/SIDBI
Investments	Loans from Life Insurance Corporation
TOTAL LONG TERM ASSETS	Loans from Power Finance Corporation
	Loans from Rural Electrification Corporation
CURRENT ASSETS	Loans from Commercial Banks
Cash and Bank Balances	Loans from State Industrial Development Corporation
Gross Stock	TOTAL LONG TERM LOANS
less Provision for Unserviceable Stores	
Provision for Doubtful debt	
Net Receivables	CURRENT LIABILITIES
Gross Receivables for Sale of Electricity	Accounts Payable
Provision for Unbilled revenue	Payable to Generators
Other Receivables	Deposits from Consumers
TOTAL CURRENT ASSETS	Overdue Principal and Interest on Commercial Loans
TOTAL ASSETS	Working Capital Borrowings from PFC
	Working Capital Borrowings from HUDCO
NET WORTH	Working Capital Borrowings from Commercial Banks
Share Capital	TOTAL CURRENT LIABILITIES
TOTAL NET WORTH	TOTAL LIABILITIES

SCHEDULE -'C' – PART I

(See Rule 4(1)(c))

INTERMEDIARY COMPANY UNDERTAKING: STATE DISCOM

The Intermediary Co Undertaking of State DISCOM shall comprise generally of all the Assets, Liabilities and proceedings belonging to the DISCOM concerning the purchase of electricity in the area of supply as listed in Part III of Schedule E, consisting of:

I. IC ASSETS:

All protective and metering devices and control rooms, energy injection and mapping assets, buildings, lands, roads, testing laboratories, diesel generating sets, conventional and non-conventional generating units, service connections, installations in supplier's premise, signal and lightening systems owned by or leased to the Distribution Company but excluding fixtures, fittings, and installations owned by local authorities or private persons, including any of the described assets under creation as on effective date of transfer.

II. GENERAL ASSETS:

(a) (a) Following assets, in case they primarily or exclusively pertain to the mentioned IC system, projects or properties or power purchase and supply system related activities, equipment and special tools, earth movers, material handling equipment, bulldozers, cranes, concrete mixtures, heavy and light vehicles, trailers, fixtures, furniture, air conditioners, office equipment, refrigerators, Signal systems and computers, spares, raw materials, consumables, roads, lands, civil works and related installations; staff quarters, buildings, properties and structures, rest houses, and their associate buildings, dispensaries, schools, testing equipment and laboratories, training centers, works in progress, workshops, asset sent for the purpose of repairing, scraps and obsolete.

(b) The following in case they are used/occupied predominantly for the activities of Intermediary Company Undertaking of State Discom on the effective date of transfer: Buildings of all old power houses which excludes the unutilized vacant lands/ surroundings owned by DISCOMs.

(c) The establishment of office, buildings, and lands, which are not covered elsewhere in the schedule and predominantly used or occupied for the activities of Intermediary Company Co Undertaking of State Discom on the Effective Date of Transfer.

III. MISCELLANEOUS:

1) Arrangements, interest, agreements and contracts to the extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
2) Unsecured and Secured loans to the extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
3) Cash and bank balance to the extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
4) Recognition of payables for the purchase of Electricity from Generation Co or Power Exchanges to the extent for which it is acceptable by norms of Working Capital.
5) Other Current Assets to the extent by which they are associated or related with the Intermediary Co or to the assets or undertakings referred in Paras I and II above.

6) Other Provisions and Current Liabilities to the extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
7) Contingent liabilities to such extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
8) State Government share capital to the extent which is required to match the assets and liabilities as referred in above Paras I and II.
9) Other liabilities to such extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
10) Proceedings to such extent by which they are associated or related to the Intermediary Co activities or to the assets or undertakings referred in Paras I and II above.
11) In consideration of the transfer as mentioned in above, State government shall issue N number of shares with the face value of Rs. 10/- each in the name of Intermediary Company.

SCHEDULE -'C' – PART II

(See Rule 4(1)(c))

Aggregate of Assets and Liabilities to be vested in Intermediary Company

ASSETS	LIABILITIES
LONG TERM ASSETS	LONG TERM LOANS
Gross Fixed Assets	SLR Bonds
Accumulated depreciation	Infrastructure (Tax-Free) Bonds
Net Fixed Assets	Taxable Bonds
Capital Expenditure in progress	Loans from IDBI/SIDBI
Investments	Loans from Life Insurance Corporation
TOTAL LONG TERM ASSETS	Loans from Power Finance Corporation
	Loans from Rural Electrification Corporation
CURRENT ASSETS	Loans from Commercial Banks
Cash and Bank Balances	Loans from State Industrial Development Corporation
Gross Stock	TOTAL LONG TERM LOANS
less Provision for Unserviceable Stores	
Provision for Doubtful debt	
Net Receivables	CURRENT LIABILITIES
Gross Receivables for Sale of Electricity	Accounts Payable
Provision for Unbilled revenue	Payable to Generators
Other Receivables	Deposits from Consumers
TOTAL CURRENT ASSETS	Overdue Principal and Interest on Commercial Loans
TOTAL ASSETS	Working Capital Borrowings from PFC
	Working Capital Borrowings from HUDCO
NET WORTH	Working Capital Borrowings from Commercial Banks
Share Capital	TOTAL CURRENT LIABILITIES
TOTAL NET WORTH	TOTAL LIABILITIES

SCHEDULE "D"

See Rule 4(3)

Retained Liabilities

ITEM/s	Rs.
Retained Liability	---------

SCHEDULE E

See Rule 2 (b), (g), (h)

PART -I

AREA OF DISTRIBUTION OF THE NETWORK COMPANY

The STATE NETWORK CO shall have the area of supply as the following existing O&M Circles of the Board

(a) Circle 1 (b) Circle 3

(c) Circle 2
(d) Circle 4
(e) Circle 5
(f) Circle 6

PART -II

AREA OF SUPPLY OF THE INCUMBENT SUPPLY COMPANY

The STATE NETWORK CO shall have the area of supply as the following existing O&M Circles of the Board

(a) Circle 1
(b) Circle 2
(c) Circle 3
(d) Circle 4
(e) Circle 5
(f) Circle 6

PART -III

SUPPLY COMPANIES FOR THE POWER PROCUREMENT ARRANGEMENT

The STATE NETWORK CO shall have the area of supply as the following existing O&M Circles of the Board

(a) ISL
(b) SL 2
(c) SL 3
(d) SL 4

SCHEDULE F

See Rule 6 (2) (a)

PART I

ARRANGEMENTS FOR THE TRANSFER OF PERSONNEL TO THE NETWROK CO UNDERTAKING

Personnel belonging to the units of the Board along with its subordinate offices will stand transferred
to Network Co on the effective date of transfer as shown in the list below.

1. Official Name 1
2. Official Name 2
3. Official Name 1
4. Official Name 2
5. Official Name 1
6. Official Name 2

PART II

ARRANGEMENTS FOR THE TRANSFER OF PERSONNEL TO THE INCUMBENT SUPPLY UNDERTAKING

Personnel belonging to the units of the Board along with its subordinate offices will stand transferred

to Incumbent Supply Co on the effective date of transfer as shown in the list below.

1. Official Name 1	4. Official Name 2
2. Official Name 2	5. Official Name 1
3. Official Name 1	6. Official Name 2

PART III

ARRANGEMENTS FOR THE TRANSFER OF PERSONNEL TO THE INTERMEDIARY COMPANY UNDERTAKING

Personnel belonging to the units of the Board along with its subordinate offices will stand transferred to the Intermediary Company on the effective date of transfer as shown in the list below.

1. Official Name 1	4. Official Name 2
2. Official Name 2	5. Official Name 1
3. Official Name 1	6. Official Name 2

SCHEDULE G

See Rule 6 (2) (a)

Latest Orders/Notifications on Human Resource Transfer	
1. Notification No. 1	3. Notification No. 3
2. Notification No. 2	4. Notification No. 4

7.8 SUMMARY

1. The conceptualization process has helped in the preparation of interview protocol which after validation is used for exhaustive interviews of the respondents in the sample population.
2. Saturation is the most important factor to decide sample size in qualitative research (Mason, 2010). The present study includes 9 respondents of senior level.
3. Quotations on interview transcripts are prepared and open codes have been generated from each interview to identify the saturation level.
4. Interconnected stages of framework analysis explicitly guided into the systematic analysis of data for the development of descriptive and explanatory accounts.
5. Initially on the exhaustive interview transcripts, 50 categories were identified which were refined into 33 broader Categories. Consecutively, these categories were brought together to form 10 initial themes. 6 themes were emerged out finally through framework analysis which ultimately resulted into the formation of core concept 'Introduction of Retail Competition in India'.
6. The category wise interpretation of the data is presented. The findings of the study are summarized as per research question (RQ). The discussion on the summarized findings is presented as per the Research Objective (RO). The researcher based on this has proposed a framework for the separation of carriage and content to introduce retail in Indian Power Sector.
7. The proposed framework includes following steps: Regulatory Provisions, Unbundling/Separation of Distribution Business, The Electricity Code, Open Access and Consumer Switching.
8. The researcher has also presented a draft of transfer scheme for the fair allocation of asset, liabilities and personnel.