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Lost in transition? Comparing strategies of electricity companies in Delhi

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HIGHLIGHTS

- Energy transition in an emerging cities aims at balancing environmental and social concerns.
- Utilities have distinct transition paths despite similar privatization and regulation framework.
- Utilities paths depend on spatial, social, managerial and corporate considerations.
- Utilities' strategies are shaped by urban challenges rather than by energy policies.

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ABSTRACT

This paper examines the notion of energy transition when implemented by private utilities. In 2000, the Delhi government privatized electricity distribution to three private distribution companies. Most research was concerned with the impact of privatization on energy reliability, tariff settings and regulation issues. This paper looks at two under-researched themes: the expansion of services to poorer neighborhoods and the rollout of clean energy policies. This focus allows to unpack the materiality of socio-technical systems, to analyze how energy infrastructures are being technically deployed on the ground and to identify which social approach is used. To detail the specific practices of each company provides a more nuanced and accurate understanding of the reform. In-depth analysis of the three private utilities show that they interpret the reform mandate differently: they use a varied range of technical tools; they respond differently to social concerns in poorer neighborhoods; and they have distinctive internal management choices and corporate cultures. All these four factors can strengthen or undermine the transition towards increased access and clean energy.

1. Introduction: engaging with the privatization reform

In 2000, the State of Delhi reformed its power sector to reverse a situation plagued by distribution and management inefficiencies, frequent load shedding, thefts, dilapidated infrastructures, indebtedness of the governmental electricity agency and dissatisfaction from the consumers (Thakur et al., 2006). Production, transmission and distribution were unbundled and in 2002 licenses were granted to three private distribution companies (DISCOMs) belonging to two of the largest Indian conglomerates: BSES Rajdhani Power Limited for the South and South-West zone (BRPL) and BSES Yamuna Power Limited for the Central and East zone (BYPL) from Reliance ADAG, and Tata Power Distribution Delhi Limited in the North (TPDDL) from Tata Group (Fig. 1). They all have an exclusive monopoly on their concession zones, i.e. there is neither competition between them nor free choice for the customers. The whole sector is overseen by the Delhi Electricity Regulatory Commission (DERC). The driving aim of the reform was to reduce technical and commercial losses.

From a purely service delivery point of view, electricity distribution has tremendously improved in Delhi: the DISCOMs have expanded service coverage to officially 99% of Delhi (Fig. 2), and drastically reduced distribution losses (Fig. 3). Service quality has also improved by reducing load shedding and meeting increased peak demand.

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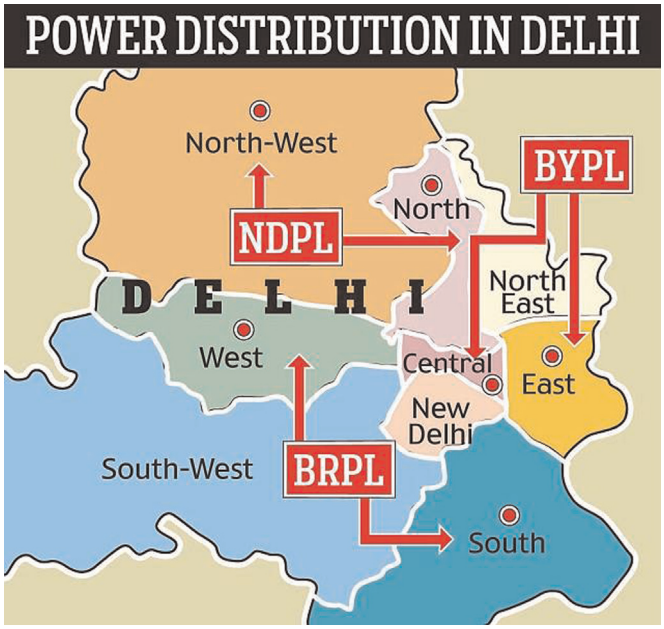

Fig. 1. Concession zones of the DISCOMs (www.bsesdelhi.com) (NDPL (North Delhi Power Limited) changed its name to TPDDL in 2012).

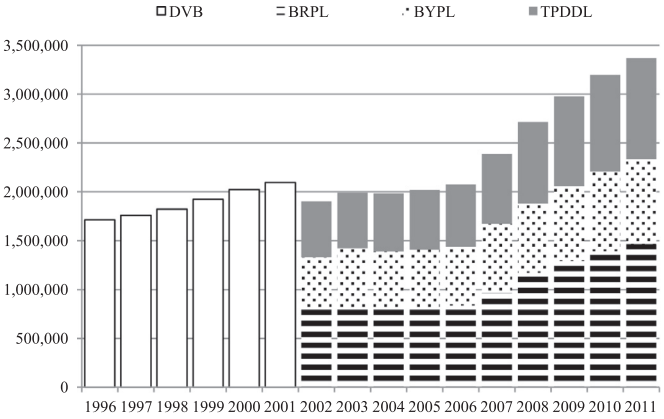

Fig. 2. Number of domestic consumers (L. Criqui based on DISCOMs and DERC annual reports).

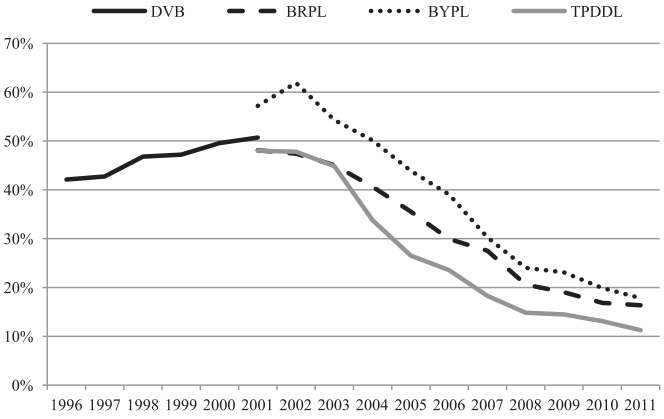

Fig. 3. Aggregate technical and commercial losses (L. Criqui based on DISCOMs and DERC annual reports).

Financing arrangements (Agarwal et al., 2003), tariff setting (Bhide et al., 2010) and the regulation structure (Dubash and Rao, 2008) have already been widely debated from an institutional, political economy and governance point of view. These studies have analyzed the realignment of institutions and the tensions between the various stakeholders following the reform. Based on these but adopting a complementary approach, this paper examines the wider notion of energy transition in the sense of shifting towards a more sustainable system combining universal access and low-carbon sources (Bridge et al., 2013: 333), with a focus on the less researched environmental and social issues. As conventional as the reform may appear (Wamukonya, 2003), energy transition, as a sociotechnical and environmental reconfiguration of service delivery (Hodson and Marvin, 2012), is deeply socio-political. Indeed, the geography and territoriality of energy transition need to be unpacked to estimate its actual success, including the way '*social and political power are organized and exercised over space*' (Bridge et al., 2013: 333). To analyze urban energy systems in that perspective moves beyond the privatization debates, and transcends the fault line between social and technical issues (Rutherford and Coutard, 2014).

In Delhi, since the three DISCOMs follow uniform regulatory orders and similar targets to improve service delivery, existing analyses of the reform have not considered spatial variations. Nevertheless, differences emerge in the way utilities deal with their socio-political context and engage on a sustainable transition path. Indeed, debates and tensions arise differently within each zone, and are managed specifically by and within each company. Comparing the DISCOMs' approaches in tackling environmental and social challenges reveals concomitant but different ways of interpreting and engaging with energy transition. In planned Northern cities, a shift to more demand-oriented and environmentally friendly service provision has been observed (Marvin and Guy, 1997). But in emerging cities, environmental issues overlap with the challenge of providing access to basic services (Jaglin and Verdeil, 2013) and the observation of the DISCOMs' logics of action on the ground sheds light on the articulation of these two dimensions.

The DISCOMs' shift towards new forms of service delivery is analyzed through this two-fold prism: on the one hand, new policies for renewable energy and energy efficiency imply that the DISCOMs distribute a certain amount of electricity produced from renewable energy and develop demand side management programs (Section 3). On the other hand, the DISCOMs also have to extend service coverage towards informal settlements which presents technical and commercial challenges (Section 4). The fifth section proposes an analytical framework to understand why and how the three DISCOMs follow different transition paths: their strategies are examined with a common grid to weigh up the various factors behind policy choices. We argue that it is by analyzing the spatial, social, political and corporate components of utilities, their networks and clients, that the coexistence of diverging interpretations of an initially uniform reform can be understood. This paper thus shows how utilities are embedded, confronted and deal with the diversity of stakes in cities. The last section concludes by replacing these energy transition practices within larger urban challenges of Delhi as an emerging city.

2. Methodology: looking at a socio-technical transition

This paper abides by the call for geographical, social and political analyses of energy transition. The embeddedness of network reconfiguration in the urban fabric is tackled as a whole, but sociotechnical systems are also unpacked to analyze precisely how infrastructures are being rolled out on the ground. Moreover, this paper does not consider the DISCOMs – and their corporate strategies – as 'pre-given' neutral actors (Marvin and Guy, 1997) and makes a case for studying utilities as critical 'transition actors' (Hodson and Marvin, 2012).