THE ELECTRICITY COMMISSION OF NEW SOUTH WALES
and its place in the rise of centralised coordination of bulk
electricity generation and transmission 1888 - 2003

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(Signed)

Kenneth David Thornton
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Ken Thornton

Rathmines
January 2015
Editorial Notes

This thesis has been written and formatted in accordance the ‘Chicago’ bibliographic conventions as outlined in Kate L Turabian, *A Manual for Writers of Term Papers, Theses, and Dissertations* (Chicago: University of Chicago Press, 8th edition, 2013). However, the University of Newcastle, School of Humanities, History Department prefers the use the short form of reference for consecutive reference to the same work. The use of ‘ibid’ is not encouraged.

Non-bibliographical conventions such as capitalisation and hyphenation are guided by the Commonwealth of Australia’s *Style Manual for Authors, Editors and Printers* (Canberra: John Wiley & Sons, 6th edition, 2002), and the *Macquarie Encyclopedic Dictionary*, (Sydney: Heritage Publishing. Signature Edition. 2011)
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**Glossary**

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<th>Full Form</th>
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<tbody>
<tr>
<td>AC</td>
<td>Alternating Current</td>
</tr>
<tr>
<td>AAEC</td>
<td>Australian Atomic Energy Commission</td>
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<tr>
<td>AEDP</td>
<td>Accelerated Electricity Development Program</td>
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<tr>
<td>AEMO</td>
<td>Australian Energy Market Operator</td>
</tr>
<tr>
<td>ALP</td>
<td>Australian Labor Party</td>
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<tr>
<td>APESMA</td>
<td>Association of Professional Engineers, Scientists and Managers Australia</td>
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<tr>
<td>APPO</td>
<td>Assistant Power Plant Operator</td>
</tr>
<tr>
<td>BEA</td>
<td>British Electricity Authority</td>
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<tr>
<td>BST</td>
<td>Bulk Supply Tariff</td>
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<tr>
<td>CBD</td>
<td>Central Business District</td>
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<tr>
<td>CEGB</td>
<td>Central Electricity Generating Board</td>
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<tr>
<td>CFMEU</td>
<td>Construction, Forestry, Mining and Energy Union</td>
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<tr>
<td>DC</td>
<td>Direct Current</td>
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<tr>
<td>ECNSW</td>
<td>Electricity Commission of New South Wales</td>
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<tr>
<td>ECNZ</td>
<td>Electricity Corporation of New Zealand</td>
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<tr>
<td>EIS</td>
<td>Environmental Impact Statements</td>
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<tr>
<td>ELEX</td>
<td>Electricity Exchange</td>
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<tr>
<td>ELPSC</td>
<td>Electric Light and Power Supply Corporation</td>
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<tr>
<td>ESAA</td>
<td>Electricity Supply Association of Australia</td>
</tr>
<tr>
<td>ESI</td>
<td>Electricity Supply Industry</td>
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<tr>
<td>ETSA</td>
<td>Electricity Trust of South Australia</td>
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<tr>
<td>GTE</td>
<td>Government Trading Enterprises</td>
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<tr>
<td>HEC</td>
<td>Hydro-Electricity Commission</td>
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<tr>
<td>HED</td>
<td>Hydro-Electricity Department</td>
</tr>
<tr>
<td>HV</td>
<td>High Voltage</td>
</tr>
<tr>
<td>HZ</td>
<td>Hertz (frequency)</td>
</tr>
<tr>
<td>kV</td>
<td>Kilovolt (1000 volts)</td>
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<tr>
<td>KWh</td>
<td>Kilowatt-hour</td>
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<tr>
<td>MW</td>
<td>Megawatt</td>
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<tr>
<td>MWh</td>
<td>Megawatt-hour</td>
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<tr>
<td>NEM</td>
<td>National Electricity Market</td>
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<tr>
<td>NEMMCO</td>
<td>National Electricity Market Management Company</td>
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<tr>
<td>NSW</td>
<td>New South Wales</td>
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<td>NSWGR</td>
<td>NSW Government Railways</td>
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<td>NZED</td>
<td>New Zealand Electricity Division</td>
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<tr>
<td>PF</td>
<td>Pulverised fuel firing</td>
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<tr>
<td>PP</td>
<td>Pacific Power</td>
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<tr>
<td>PPI</td>
<td>Pacific Power International</td>
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<td>PWD</td>
<td>Public Works Department</td>
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<tr>
<td>QEC</td>
<td>Queensland Electricity Commission</td>
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<tr>
<td>SCC</td>
<td>Sydney County Council</td>
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<td>SECV</td>
<td>State Electricity Commission of Victoria</td>
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<tr>
<td>SEM</td>
<td>State Electricity Market</td>
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<tr>
<td>SMC</td>
<td>Sydney Municipal Council</td>
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<tr>
<td>SMH</td>
<td>Sydney Morning Herald</td>
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<tr>
<td>SMHA</td>
<td>Snowy Mountain Hydro-electric Authority</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>SOC</td>
<td>State Owned Corporation</td>
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<tr>
<td>SOE</td>
<td>State Owned Enterprise</td>
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<tr>
<td>SPCC</td>
<td>State Pollution Control Commission</td>
</tr>
<tr>
<td>SRA</td>
<td>State Rail Authority</td>
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<tr>
<td>TEAM</td>
<td>Training Efficiency and Multi-skilling</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
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<td>UNSW</td>
<td>University of New South Wales</td>
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Abstract

Between 1950 and 1995, the Electricity Commission of New South Wales had a virtual monopoly on the generation and transmission of bulk electricity within New South Wales. Created as a single public statewide generation and transmission utility, the Electricity Commission rectified a fragmented generation industry’s failure to resolve the severe power restriction and blackouts following World War Two.

The main theme of this thesis is the transformation of the pre-1950 fragmented New South Wales electricity generation and transmission industry into a coordinated industry in which reliability of supply was paramount. The discussion focuses on the interconnection of high voltage networks, and the rise of coordinated control of the industry from small isolated power stations, through large uncoordinated systems, a statewide coordinated system to the interconnection with similar coordinated interstate systems. As electricity generating and transmission technologies are a major contributor to industrial, commercial and residential prosperity, the interplay between society and technology features in the discussion. While the contributions of a small number of senior public servants and politicians are discussed, this does not diminish the contribution of the thousands of industry employees both past and present.

The study concludes that the Electricity Commission’s ability to remain at the centre of the New South Wales energy industry was based on being able to provide a reliable supply. Political expediency created the organisation in 1950; technology sustained it, and in the mid to late 1990s, despite a history of the provision of a reliable supply, it was political expediency that hastened its demise. The organisation’s status as being Australia’s largest electricity generating utility for much of the second half of the twentieth century did not ensure its continued existence in the liberalised, competitive, national electricity market of the twenty-first.