"Power to the People?"
The Palmerston North Municipal Electricity Department, 1910 - 1996

A thesis presented in partial fulfilment of the requirements for the degree of Master of Arts in History at Massey University

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Illustrations

Abbreviations

AJHR	Appendices to the Journals of the House of Representatives.
ECNZ	Electricity Corporation of New Zealand (or Electricorp), 1987 onwards.
EPB	Electric Power Board.
EPS	Emergency Precautions Scheme (during WWII).
MED	Municipal Electricity Department.
MESAANZ	Municipal Electricity Supply Authorities Association of New Zealand.
MOEPB	Manawatu-Oroua Electric Power Board.
MP	Member of Parliament.
NA	National Archives.
NZE	Electricity Division, Ministry of Energy, 1978 - 87.
NZED	New Zealand Electricity Department, 1958 - 78.
NZPD	New Zealand Parliamentary Debates.
PNBC	Palmerston North Borough Council (until 31 July 1930).
PNCC	Palmerston North City Council (from 1 August 1930).
PNCCA	Palmerston North City Council Archives.
PNCCR	Palmerston North City Council Records Office.
PNBCM	Palmerston North Borough Council Minutes.
PWC	Public Works Committee, Palmerston North Borough Council.
PWD	Public Works Department (electricity controlled by the Hydro-electric Branch until 1946).
RERC	Rural Electrical Reticulation Council.
SHED	State Hydro-electric Department, 1946 - 58.

Glossary of Electrical Terms

A	Ampere or amps, the unit of electrical current.
AC	Alternating current, replaced DC as the commonest power reticulated, produced by an alternator.
BHP or HP	Brake Horse Power, an imperial measurement unit now known as 'horse power' (replaced in metric scale by watts, 1HP is 754 watts).
DC	Direct current, used as standard until the early twentieth century, produced by a generator.
kV	Kilovolt, 1,000 volts.
kVA	Kilovolt-amp. It indicates the voltage-current rating of an appliance such as a transformer.
kW	Kilowatts, 1,000 watts.
kWh	Kilowatt hour, the unit of electric power use.
Load factor	The relationship between the actual average load on a generating plant or system over a given period (usually a year) and the maximum potentially available, expressed as a percentage.
Power	Capacity to do work (measured in watts or kW).
Suction gas engine	A reciprocating internal-combustion engine that draws fuel gas into its cylinder by suction.
Unit	Unit of energy, one watt-hour.
W	Watt, the unit of power. This is one volt multiplied by one ampere.
V	Volt, the unit of electrical pressure.

(Source for technical definitions:

John E. Martin (ed.), *People, Politics and Power Stations. Electric Power Generation in New Zealand 1880 - 1990* (Wellington, 1991), pp. 298 - 9.

Neil Rennie, *Power to the People. 100 Years of Public Electricity Supply in New Zealand* (Wellington, 1989), p. 4.

Preface

The impetus for this study came from my interest and contacts in the energy sector, allied to a desire to advance local history writing from a mere reporting of events. Therefore, this thesis attempts to place a local Manawatu organisation into a national context to analyse the significance of its activities. The Palmerston North MED was chosen for this study because the records were preserved in the Palmerston North City Council Archives and were thus available for use, and because of my contacts with the organisation. It was stimulating to study an enterprise up to the present day, although this has provided some difficulties with obtaining confidential material at a time when the Council was considering merging it with a power board.

In the course of this thesis many people have provided a great deal of assistance. Firstly, I would like to thank my supervisors, Dr James Watson and Professor Kerry Howe, for their support, guidance and comments. The Massey University History Department provided financial assistance, as did the Massey University Graduate Research Fund and Federation of University Women (Manawatu Branch), without which completion of my work would have been difficult. I also appreciated the general support and interest of individual members of the History Department.

Ian Matheson and Barbara Olsen of the Palmerston North City Council Archives provided access to material relating to the Palmerston North Municipal Electricity Department, assisted with locating pictures, and unfailingly answered my questions. I am grateful that the City has such a resource available for students and historians. The records staff of the Palmerston North City Council also provided access to current records, for which I am appreciative.

I would also like to thank the staff of Electro Power for allowing me to base my researches in their office temporarily, for answering technical questions and explaining photographs, and for displaying interest in my findings. Many of the photographs used come from the Electro Power collection.

Lastly, I could not have completed this thesis without the assistance of Sheryl Morgan, discussions with Jim Lundy, and the moral support of my fellow Masters students. My biggest debt, however, is to the support, technical assistance and enthusiasm of Terry Jones, and for this I thank him.

Introduction

The first New Zealand public supply of electricity was provided in Reefton in 1888, but a similar supply was not available in Palmerston North until 1924. This was the last major urban area to obtain an electricity supply. The central focus of this thesis is to investigate the forces and relationships that influenced the development of that supply through the Municipal Electricity Department.

The Palmerston North MED is not a particularly significant organisation to New Zealand, being one of the smaller supply authorities. However, it is important in the local context, as it provides an example of a council-owned enterprise endeavouring to provide a satisfactory service to customers, while subject to a variety of external influences. Its history has national significance, in that other MEDs felt similar pressures from the Government and neighbouring power boards. It was subject to the same economic influences as other suppliers, and had to operate under the same regulations and supply limitations. On the other hand, some of its experiences appear to have been unique, particularly in relation to the 1935 crisis. No similar incident is recorded in any other supply authority's history.

The time-frame of this work encompasses most of the twentieth century, from around 1910 until the present. It thus considers the effects of such major international and national events as the World Wars and Depression, and other economic crises.

There has been limited academic interest in the study of the electricity industry, with only five history theses written on the subject between 1924 and 1995. There are a similar number of economics theses, and a sprinkling from the disciplines of geography, political science and environmental science.[1]

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[1] Battersby, G. B., 'An Examination of Costs and Tariffs in New Zealand Electricity Supply', Economics, MCom, Canterbury/Auckland, 1946; Cain, C. T. R., 'Some Aspects of Hydro-electric Developments in New Zealand: with Particular Reference to Christchurch', Economics, MCom, Otago, 1936; Clegg, J. E. B., 'Some Aspects of the Supply of Electrical Energy in New Zealand', MCom, Economics, University of New Zealand, 1936; Decker, James Conway, 'Politics and Administration in the New Zealand Electrical Industry', Political Science, PhD, University of Colorado, 1966; Farrell, B. H., 'The Geography of Power Resources in New Zealand', Geography, PhD., Auckland, 1960; Flesher, H. de R., 'Canterbury and Hydro-electric Power', MA, History, University of New

These are of limited assistance in putting this study into the context of the industry. There are a large number of histories of local electricity distributors, particularly electric power boards, but these tend to be narratives, lacking analysis or any context of the time, area or industry. In the context of Manawatu history, this thesis forms part of a very small body of business histories. There are two volumes of *Manarua Memoirs*, the laudatory narrative histories of the Manawatu-Oroua Electric Power Board, and a centennial history of a local trading company.[2] Local Manawatu histories are similarly unhelpful at setting a context. Although there are a number of general histories, they are uncritical and have tended to concentrate on the early colonial period. This thesis differs from earlier works centred on the Manawatu in that it seeks to analyse rather than report local material. Of greater assistance are two recent general studies of the New Zealand electricity industry, which concentrate respectively on electricity supply and distribution.[3] My study modifies Rennie's argument that only the state was large enough to provide the capital for electricity generation. In general, however, it confirms the broad conclusions drawn by Martin and Rennie regarding the influences on electrical development in New Zealand.

Primary sources are also problematical. The National Archives has limited material on electricity distribution, as the Government's main concentration was on generation. There is a small but useful collection on distribution during the war years, when the Government took control 'for the duration'. In Manawatu, the situation is more satisfactory, but the material in the

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Zealand, 1924; Hasman, C., 'The Development of Hydro-electric Resources on the Waikato River, 1900 - 1964', MA, History, Auckland, 1965; Irwin, D. L., 'The Development of Electric Power in New Zealand', Economics, MCom, University of New Zealand, 1935; Greensmith, E. L., 'Hydro-electricity in New Zealand', Economics, MCom, Otago, 1929; Pickering, B. B. M., 'State Policy and Hydro-electricity', History, MA, Otago, 1949; Wood, G. E., 'Some Aspects of the Financing of the Supply of Electricity in New Zealand', History, MPhil research exercise, Massey, 1992; Woolman, D. Y. 'Waipori: an Economic Analysis for Hydro-electricity', Economics, MCom, Otago, 1955.

[2] J. W. Clevely, *Manarua Memoirs. A Short History of the Manawatu-Oroua Electric Power Board, 1920 - 1972* (Palmerston North, 1973); J. S. Devonport, *Manarua Memoirs. Part II. A Short History of the Manawatu-Oroua Electric Power Board, 1973 - 1986* (Palmerston North, 1987); Barraud and Abraham Ltd., *Merchant Memoirs. The Short History of a Manawatu Merchant in a Century of Service, 1882 - 1982* (Palmerston North, 1983).

[3] John E. Martin, (ed.), *People, Politics and Power Stations. Electric Power Generation in New Zealand 1880 - 1990* (Wellington, 1991); Neil Rennie, *Power to the People* (Wellington, 1989).

Palmerston North City Council Archives favours minute books, correspondence and engineering details, rather than financial and customer interests.

The first chapter of this thesis considers the legislative and local background to the formation of the MED, up until the end of World War One. It also looks at the environment that led to the national system of government generation and local government distribution of electricity. Chapter Two covers the building of the local power station, and the provision of electricity to the first consumers, in light of the key influences of this period. The third chapter considers a period where the MED was subject to growing interference, leading up to the infamous episode when the neighbouring power board cut the City's electricity supply. The fourth chapter covers the time when the Council had the least direct control over its enterprise, due to supply shortages and wartime contingencies. Conflict with the neighbouring power board is a major influence in Chapter Five, as is the economic recession of the 1970s. Finally, the influence of the national push to restructure the electricity industry is considered in the sixth chapter. This reflects a complete change of model from that considered ideal by successive governments earlier in the century, and this background will be examined first.

Chapter One
The Struggle for Power - to 1918

Introduction

Palmerston North's first public electricity supply started generating in 1924. However, the point when the machines ran and the lights started burning is actually the end of the story. It took an enormous amount of effort and the conjunction of a variety of influences to build an operational power station. Once a demand for electricity was established, the appropriate organisation to provide power had to be decided. Due largely to the influence of successive governments, there was only a limited chance that a private company could supply Palmerston North with electricity. The Council gradually realised that it was in reality the only surviving contender able to establish a public electricity supply. The gas supplier's agreement and government policies had already held up supply for several years. Dissatisfaction with the gas supplier, and the desire for a tramway to display local progress compelled the Council to act. The Council's consulting engineer, Frederick Black, became a key influence in the development of an electricity supply to Palmerston North. By the end of World War One, a system had developed whereby the Government would undertake large-scale electricity generation, and local bodies or boards would distribute it. As it was apparent that it would be some time before the Government was able to generate and supply as much electricity as was desired, the Palmerston North Borough Council continued its plan to build its own power station.

The Influence of Gas

In comparison with other New Zealand cities, electricity reached Palmerston North late. Within the Manawatu itself, Palmerston North followed Feilding, which had first received a public supply of electricity in 1915, and Rongotea, where the local dairy factory supplied 36 consumers in the evenings and for the ironing on Monday afternoons from 1917.[1] However, the efforts to obtain a public supply of electricity for the city date back to the end of the

[1] Clevely, pp. 4 - 5.

nineteenth century. Between 1885 and 1887 the Borough Councillors considered the merits of electricity, a largely unknown power source, and gas. They decided to allow a private company the right to manufacture coal gas for public supply. A clause in the 1887 agreement with the Palmerston North Gas Company Limited gave it the sole right to supply electric power for all public lighting purposes for twenty-eight years. As the gasworks was profitable, there was no incentive for the company to develop a public electric supply.[2] Palmerston North was not a large city, with a population of only 11,900 in 1911, and it was therefore not likely to be especially profitable for a rival private company to supply electricity to the public.[3] Small hydro-electric or steam plants were commonly installed in towns that lacked gas, such as Taihape and Mangaweka, but Palmerston North had a public gas supply, and the gas agreement limited the chances of either individuals or local government introducing competition.

Part of the desire for electricity may have related to dissatisfaction with gas as an energy source, and with the Gas Company as a supplier. Although their functions overlapped, electricity was regarded as better than gas for lighting and powering appliances. The amount of light available was greater, and it was also cleaner. Electric appliances such as irons, toasters and vacuum cleaners developed quickly, and advertisements for these products stimulated local demand for electricity. There were complaints that the Gas Company's prices were higher than in other cities, but as it held a monopoly, the Council was unable to force a change.

The Influence of Demand

It is unclear how much public demand there was for electricity, and the extent to which this influenced the Council's decisions. Demand may have been stimulated by councillors, rather than the public. Wellington had its first electric lights in 1888, and a certain amount of envy could be expected. The Council acted proactively in 1895, by inviting proposals for electric lighting. The New

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[2] Ian Matheson, 'How Electricity came to Palmerston North', January 1988, Palmerston North City Council Archives (PNCCA), A175/4, Box 14, research file. The Palmerston North Gas Company Limited was generally referred to as 'the Gas Company'.
[3] *New Zealand Official Yearbook*, 1938, p. 70.

Zealand Electrical Syndicate Limited made tentative suggestions, but nothing more was heard of the plans. Public demand may have led to Mayoral candidate G. M. Snelson's election address mention of the 'desirability of harnessing some of the streams in the vicinity of Palmerston North for production of ... motor power [and] ... for lighting the town by electricity'.[4] This bore fruit when the Council formed an Electric Power Committee in May 1901, and sought estimated costs for preparing reports on the likeliest schemes from four engineering firms. At this stage, the Committee favoured Kahuterawa Stream, but it appears that cost prevented the plans being prepared. The Chamber of Commerce acted as a pressure group in 1907. It asked the Government to instruct an engineer to survey the Kahuterawa Stream's potential to supply electric power for town use. The members agreed that the Government 'should get on with [the electric power] scheme, or allow a syndicate to do so'.[5]

A change in demand occurred towards the end of World War One. The completion of Lake Coleridge led to calls for the Government to build a similar hydro-electric plant in the North Island. The Palmerston North Borough Council applied much of this pressure, as it was still not committed to building its own supply. The Mayor, James Nash, met the PWD's Electrical Engineer, Evan Parry, in November 1916, and the Minister of Public Works advised in response that 'he could not yet give any indication that electricity would be available, nor yet which scheme would be selected'.[6] The Palmerston North and Wanganui Chambers of Commerce both held conferences 'on the question of Electricity', which various Councillors attended. In 1917, the Palmerston North Chamber urged 'upon the Government the desirableness of installing Hydro Electric Power at the earliest possible moment, in the general interest of the Dominion'. In response, Prime Minister William Massey stated 'that Government fully realise the importance of the proposal, but it is regretted that nothing can be done to put it into effect before the war is finished'.[7] The Mayor and Councillors toured the Waikaremoana power station site with the Waikaremoana Hydro-Electric League

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[4] *Manawatu Daily Times*, 30 March 1901, p. 4.
[5] *Manawatu Evening Standard*, 12 July 1907, p. 7.
[6] Palmerston North Borough Council Minutes (PNBCM), Council meetings, 1 December 1916, 19 December 1916, PNCCA, PNCC 1/1/1 Vol. 7, Folios 334 and 346.
[7] PNBCM, Council meeting, 6 February 1917, 7 August 1917, PNCCA, PNCC 1/1/1, Vol. 7, Folios 359 and 446. Prime Minister to PNBC, 15 August 1917, PNCCA, PNCC 1/5/7, Box 42.

in March 1918, and the following month the Palmerston North Chamber organised a visit to the Mangahao Stream. In June 1918 the Council helped to fund the newly formed Mangahao Hydro-Electric League, which subsequently pressed the Government through the Industries Committee of the House.[8]

Various private organisations had sought the right to supply electricity or to build electricity generating schemes for Palmerston North. Each anticipated earning a profit from meeting a perceived demand. In 1908, the Empire Electric Power and Lighting Co. of Sydney offered to supply light for 8d per unit and power for 2.5d per unit.[9] The offer lapsed as the Council was unable to overcome its liability under the Gas Company's agreement, and lacked the right to grant permission to erect posts and wires for 40 years. In 1912, the Council received a suggestion from Jens Orten-Böving & Company, London, that a 25 foot weir should be built at the lower end of the Manawatu Gorge. It calculated that this would 'produce sufficient power to Palmerston North for many years to come'. Even if it was enthusiastic, the Council was unable to legally assign water-rights, and therefore was forced merely to 'receive' the letter.[10]

The limitations on the Council's ability to assist a suitable private company to establish a private electricity supply came from legislation that reserved all water-rights for the Government, to protect the State from the perceived problems associated with private monopolies. If the demand for electricity had grown sooner in Palmerston North, public supply by a private developer could have been in place around the turn of the century. By missing this date, Palmerston North had to wait a further two decades.

The Influence of the Government

The first electricity generating stations to supply the public were set up by private limited liability companies in Reefton in 1888 and Wellington in 1889. The

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[8] PNBCM, Council meeting, 19 February 1918, 22 March 1918, 8 April 1918, 4 June 1918, 2 July 1918, 6 August 1918, PNCCA, PNCC 1/1/1, Vol. 8, Folios 28, 48, 53, 78, 92 and 104.
[9] PNBCM, Public Works Committee (PWC), 22 May 1908, PNCCA, PNCC 1/1/2, Vol. 3. *Manawatu Evening Standard*, 5 June 1908, p. 2.
[10] Jens Orten-Boving to PNBC, 4 October 1912, PNCCA, PNCC 1/5/7, Box 42.

City of Dunedin took over development of the Waipori Falls hydro-electric project in 1904, and a variety of small hydro-electric schemes and steam generators were built, such as at Stratford in 1898, Rotorua in 1901, Patea in 1902 and Hawera in 1903. The state's first planned involvement in large-scale generation of electricity for sale came with the commencement of the Lake Coleridge scheme in 1911.[11]

The change from private company involvement to local bodies or government as developers was gradual, and it appears that fostering this was not a stated government policy before the 1890s. Legislation covering the electricity industry grew slowly, and in a rather ad hoc fashion, but it generally displayed governmental interest in economic development and control of natural resources. Early legislation was intended to regulate the electrical industry by controlling erection of lines and by limiting the right to generate electricity using water. The 1865 Electric Telegraph Act was the first legislation relating to the use of electricity in New Zealand. It set the precedent of government provision of an electrical service for the national good. The 1866 Goldfields Act initiated control over water rights, and the 1877 Mining Act, 1882 Public Works Act and 1886 Mining Act set the framework for state control of hydro-electricity by placing the use of water in streams, lakes and rivers under government jurisdiction. Under the 1884 Electric Lines Act, only the Crown or a local body could construct lines for public supply of electricity. Private firms, such as the Gulcher Electric Light and Power Co., which first supplied power to Wellington, had to obtain an Act of Parliament before their schemes could proceed. Cities gained the right to use water power to generate and supply electricity to their citizens under the 1886 Municipal Corporations Act, and the 1894 Tramways Act set the scene for electric trams.

Increasing intervention was a characteristic of the Liberal Government's 'state socialism'.[12] An 1891 amendment to the Mining Act limited local authorities' ability to transfer water rights. There was also strong opposition from government MPs to an Act sought by Wellington's Gulcher Electric Light and

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[11] Rennie, pp. 232 - 233; Martin, pp. 32 - 34, 38. The scheme at Rotorua was run by the Department of Tourism and Health Resorts.
[12] Martin, p. 37.

Power Company in 1891, when the company wanted statutory power to extend its supply of electricity to private consumers. Debate over the 1896 Electrical Motive Power Act clearly shows a division between the Government's wish to reserve rights over 'the forces of Nature' to itself, and the Opposition's desire to protect private property rights and private enterprise. By seeking water-rights to generate electricity at Huka Falls, Auckland speculator J. C. Firth stimulated this Act. Richard Seddon encouraged the use of water-power for gold-mining purposes, but felt that all other water falls should be reserved for the state, and not 'handed over to syndicates'.[13] Seddon's speech reflected his attitude that natural monopolies should be under national control. The Act was an interim measure to constrain or control private electrical developments, while the government assessed the amount of water-power available, and considered an appropriate policy to govern its use. William Downie Stewart unsuccessfully attempted to amend the Act in the Legislative Council to allow Firth rights over the Waikato River from Taupo to Cambridge. Seddon's concern about private enterprise taking control of any river for hydro-electric generation and the risks of private monopolies (and also an apparent distrust of local bodies' judgement) led to a proviso that any local body had to obtain government consent before it could grant the right to generate power.

A few private companies commenced electricity schemes before the Government moved to tighten control even further. The 1903 Water Power Act vested in the Crown the sole right to use water for generating electricity, and effectively excluded private enterprise from public supply. In declaring that 'I think members will admit that it is only right to say that the State - the people - should have within their control the power which is contained within those rivers, falls and lakes', William Hall-Jones, the Minister of Public Works, rather overstated the case. The Bill aroused extensive debate and criticism, as the Government's assumed powers went far beyond its stated intentions, to prevent syndicates and private individuals from securing wide rights for generating electricity.[14] Some MPs expressed a fear that, by taking this step, the Government was effectively limiting electrical development. Public works funding was committed to building railways, and there was little money actually available

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[13] *NZPD*, 96 (1896), pp. 237 - 8, 868 - 70.
[14] *NZPD*, 125 (1903), pp. 785 - 6.

to build hydro-electric schemes at this time. However, the intent of this legislation was to prevent private monopoly, rather than to foster electrical development. Although existing rights were guaranteed under the Act, the Government reserved the right to take over any electricity works or water-rights if this was in the interests of the State, thereby blocking a situation similar to that of the Wellington-Manawatu Railway, where private enterprise owned a key part of the Main Truck railway line. The Water Power Act forced several private enterprises to alter their plans. Among those affected, the Waipori Falls Electric Power Company sold its water-rights and partially built plant to the Dunedin City Corporation in 1904, as it could no longer sell power to the City's consumers. The only view that all MPs appeared to agree on was that water-power and electricity had the potential to be of enormous value to the country for manufacturing, lighting and railways.

The 1908 Public Works Act showed the Government's intention to initiate power generation. In it the Minister of Public Works gained the right to build hydro-electric power stations and generate and sell electricity. Roderick McKenzie, the Minister of Public Works, announced in 1910 that 'the Government considers that the time has now arrived to take up with vigour the question of developing our abundant water-powers.'[15] Consequently, it passed the 1910 Aid to Waterpower Works Act to provide a fund to allow development of hydro-electric resources. As there was only limited relevant engineering knowledge available in New Zealand, the Government created the position of Electrical Engineer in the Public Works Department, and appointed Evan Parry. Before he arrived in New Zealand, the Government made another decision to foster electrical development. Accepting its inability to provide electricity to mining areas before supplying cities, in 1910 the government allowed the Waihi Gold-Mining Company to build a hydro-electric station at Horahora. The energy was transmitted to Waihi, and the company paid an annual rental relating to the amount of horsepower generated.[16] The Government maintained its policy of mistrusting private enterprise, but, as on other occasions, treated mining as a special case.

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[15] Public Works Statement, *AJHR*, 1910, D - 1, p. viii.
[16] Grant of the Horahora Water-Power Concession to the Waihi Gold-Mining Company, *AJHR*, 1910, C - 11.

The Government stated that its intention in building any scheme was to assist in 'the development of the Dominion ... rather than of yielding a large source of revenue'.[17] Parliamentary uncertainty led it to build Lake Coleridge station as a trial, to see if the income could cover the running costs. There was little debate over the 1915 Lake Coleridge Water Power Act, which established the principle of leaving retail distribution to local authorities, as this was the quickest method to disseminate electricity to potential purchasers. The Government stated its policy in 1910, that the 'best results will ... be obtained by the Government maintaining the position of the wholesale supplier, and only disposing of power to large consumers such as the City Councils ... and to large industrial concerns'.[18]

The 1917 State Supply of Energy Act defined the state's role, and provided for the regulation of the generation, sale and supply of electrical energy by the state. Evan Parry reported in his 1918 statement to Parliament that the public had come to 'accept [that] national organization for [electricity] production and the promotion of national efficiency was a function of a Government'.[19] By this Act, the Government was virtually committed to large-scale generation on a commercial basis, and the policy of nation-wide development of generating capacity commenced. The decision that the Government should only act as electricity wholesaler led to two crucial pieces of legislation. They unfortunately set the scene for a number of urban-rural disputes in the Manawatu, as well as in most other districts in New Zealand. The 1918 Electric Power Boards Act provided for special purpose local authorities to establish distribution systems within set licensed areas. Boards could be set up at the request of twenty-five per cent of the ratepayers in the proposed region. The Act encouraged 'the combination of areas of concentrated population with rural areas ... in order that the town could pay for the country transmission lines while the price of electricity was ... uniform [throughout] ... the supply district'.[20] This Act had a number of amendments, and was consolidated in 1925. The wish of municipal areas to

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[17] Lawrence Birks' report to the Minister of Public Works, *AJHR*, 1910, D - 1, p. 75.
[18] R. W. Holmes' report to the Minister of Public Works, *AJHR*, 1910, D - 1, p. 104.
[19] *AJHR*, 1918, D - 1A, p. 2.
[20] Daphne Y. Woolman, 'Waipori. An Economic Analysis for Hydro-electricity', Economics, MCom, Otago, 1955, p. 15.

continue their long-established generation and distribution networks without being forced into joining or becoming Electric Power Boards was recognised by the 1920 Municipal Corporations Act. This allowed 'municipal authorities the right to build generating stations and distribute electricity to consumers within and outside their boundaries', and, most importantly, it 'also confirmed the practice of transferring profits from the Electricity Department to other accounts could continue'.[21]

A number of conclusions can be drawn from the legislative record. Firstly, the government was always interested in controlling natural resources, and in developing the economy. Under the Liberal Government, legislation reflected a concern that private monopolies might gain control of the state's assets and force it into paying to repurchase its own water-rights. At Waipori, the City of Dunedin had to buy the water-rights that had previously been freely granted to a mining company. Although secondary material reflects a belief that the Government built the large power stations because it was the only organisation large enough to raise the capital, contemporary records do not support this.[22] J. C. Firth had commitments totalling £500,000 to build at Huka Falls, and Horahora was held up by government restrictions, not by lack of capital. Although the estimated cost for the Lake Coleridge project 'was more than one year's public works vote to this date',[23] the figures show such a good rate of return that private capital would have been available from overseas.

Development of a public electricity supply to Palmerston North by private enterprise had been ruled out by the Government, and the Gas Company agreement virtually precluded Council action. However, the Council's desire to improve the lighting at the Palmerston North Opera House led to it becoming directly involved in generating electricity in 1910. The Council's Opera House Committee felt the gas and lime lights were insufficient, so negotiated with the Gas Company with a view to installing electric light. The Borough Engineer calculated that 600 lamps were required, and a gas engine to run the electric

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[21] Rennie, p. 229.
[22] Rennie, p. 93; Kenneth E. Jackson, 'Government and Enterprise: Early Days of Electricity Generation and Supply in New Zealand', *British Review of New Zealand Studies*, 1, July 1988, pp. 103 - 5.
[23] Woolman, p. 12.

plant, which would also light the next door Municipal Hall and the street outside. The Council considered an alternative of building a rubbish destructor to power the lights, and possibly to heat a public swimming bath as well. The estimated cost of £10,000 did not deter the Council, as it expected an operating surplus of £2,044 per annum - but the plan hinged on obtaining the Gas Company's permission to use the surplus power to light the Council's public buildings. This suggestion may have had some bearing on the Gas Company's agreement with the original plan. Contractors installed the gas engine and electric plant in the Opera House by September 1910, and the destructor was not mentioned again.[24] This was not the only electric light plant in Palmerston North. A woollen mill had installed a plant in the 1890s, and in November 1912 Collinson & Cunninghame purchased machinery to supply their premises. However, their wish to supply adjacent neighbours was rejected by the Council, due to the existing agreement with the Gas Company. The Gas Company was also likely to cause difficulty in light of the Council's intense desire to establish an electric tramway system.

The Influence of Trams

Norman Heath and H. P. Taylor approached the Council in 1910, and 'submitted certain proposals for the establishment of a petrol car system of trams in the Borough'.[25] The Council reacted to the proposals with enthusiasm. Wanganui had installed an electric tram system in 1908, and the Council felt that a similar scheme would assist Palmerston North's growth. In December 1910, the Public Works Committee recommended to the Council that a loan proposal for an electric tram scheme be placed before the ratepayers, even though it expected the proposed scheme to lose £4,900 annually.[26] The Council chose to seek further information on alternative schemes. By the following July, the options had widened to three - the original overhead electric car service, for £68,300, an Edison's battery car system for £44,573 or an Albion Motor Bus system for £4,590. At this stage, the Council favoured the Edison system, later installed in Gisborne.[27]

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[24] PNBCM, Opera House Committee, 1 March 1909, 1 July 1909, 20 September 1909, 4 February 1910, 2 September 1910; PWC, 17 March 1910, PNCCA, PNCC 1/1/2, Vol. 3.
[25] PNBCM, PWC, 2 September 1910, PNCCA, PNCC 1/1/2, Vol. 3, Folio 236.
[26] PNBCM, PWC, 2 December 1910, PNCCA, PNCC 1/1/2, Vol. 3, Folio 264.
[27] Rennie, p. 26; PNBCM, PWC, 14 July 1911, PNCCA, PNCC 1/1/2, Vol. 3, Folio 322.

A relationship that was to become significant in the history of Palmerston North's electrical development began at this time. Frederick Black became the Council's Consulting Engineer around the end of 1911, and remained so until 1924. He was a member of the Institute of Electrical Engineers and the Tramways & Light Railways Association, and practised as a consulting engineer in Wellington. Among other projects, he designed the electric tramway and lighting systems of New Plymouth, Wanganui and Napier.[28] Black presented his report on the proposed electric tramway for the Palmerston North Borough Council in January 1912. He suggested suitable routes and outlined the benefits and problems of the overhead tramway system compared to the untested Edison system, and provided costs and expected revenue. His recommendation was a standard overhead system, powered by two 75 kilowatt (kW) diesel engines. Although the Council intended that the electric plant would only run the tramway system, Black recommended that a larger plant size would put both the tramway and the electric plant on a sounder economic footing. 'In towns of the size of Palmerston North, a tramway undertaking when not combined with an electric lighting and power supply business is but the half of an enterprise, and the least profitable half at that', he stated.[29] After vacillating for some months, the Council engaged Black in July 1912 to prepare the preliminary plans, specification and surveys to enable it to secure an authorising order under the Tramways Act.

The Council was still considering the Edison system in July 1913, when the Borough Engineer, Sam Jickell, was sent to Gisborne to inspect their new tramway. His report was probably positive, as the Council requested further information. The local Edison representative, Mr Harris, met the Public Works Committee in April 1914 over the question of guaranteeing the level of running costs.[30] The Australian General Electrical Engineering Company offered in May 1914 to install a tramway system using self-propelled petrol electric cars, but all these plans came to an end with the war. The Tramway Committee reported in

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[28] Ian Matheson, 'Biographical Notes on the City's Electrical Engineers', PNCCA, research file A175/4, Box 14.
[29] Frederick Black, 'Report to the Palmerston North Borough Council on Proposed Electric Tramway Undertaking', 16 January 1912, PNCCA, PNCC 1/10/1, Box 10, Folder 1.
[30] PNBCM, PWC, 10 July 1913, 24 April 1914, PNCCA, PNCC 1/1/2, Vol. 3, Folios 477 and 541.

August 1914 that 'in view of the present disturbance in Europe, it is inadvisable to place any loans before the Ratepayers at present'.[31] Up to the outbreak of war, the Palmerston North Borough Council had made no commitment to install an electric plant, either to run trams or to provide a public supply of electricity.

The desire to install an electric tramway system as well as public demand for electricity led the Council to purchase the Gas Company in 1915. Under the 1887 agreement, the Council had the right to purchase the gasworks at cost price after 28 years by giving one year's notice.[32] Lack of progress in obtaining a public electric supply had forced the Council to start negotiating in 1911. The participants finally signed the agreement in November 1914 and the Council paid £68,610 for the plant, meters, coal, tar, horses, and harnesses in September and October 1915.[33] The Council had become a gas supplier.

Once the Council controlled the public gas supply, it became increasingly concerned with private individuals' actions that could reduce either the profit of the gas works, or the planned electric installation. Councillor Crabb reported in January 1916 that 'he has heard rumours of certain firms who intended to supply tenants with electric light', and was concerned that 'such a procedure would interfere with the public lighting institution'. The Town Clerk wrote to the Public Works Department and Post & Telegraph Department, which advised that the Council could not legally 'prevent persons from generating electricity and lighting their own premises' and also could not refuse permits to people to install electric plant for the sale of electricity to tenants. Councillors felt that this situation was 'detrimental to the interests of the Municipal Gas Works', a consideration that they were not concerned about when the gas supply was in private ownership, and the Council wanted its own plant at the Opera House.[34]

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[31] PNBCM, PWC, 26 April 1914 and 28 May 1914, and Tramway Committee, 4 August 1914, PNCCA, PNCC 1/1/2, Vol. 3, Folios 541, 542, and 549.
[32] Legal Opinion from John Findlay, 10 December 1907, PNCCA, PNCC 1/5/8, Box 1, Folder 5.
[33] PNBCM, Finance Committee, 5 November 1914, 3 September 1915, 1 October 1915; Gas Committee, 24 April 1915, PNCCA, PNCC 1/1/2, Volume 4, Folios 17, 46, 86 and 99.
[34] PNBCM, Council meeting, 20 January 1916, PNCCA, PNCC 1/1/1, Volume 7, Folio 189. Post & Telegraph Department to Town Clerk, 26 January 1916, and PWD to Town Clerk, 27 January 1916, PNCCA, PNCC 1/5/7, Box 42.

Councillors resumed planning for a public tramway in 1915. In May, the Council instructed Frederick Black to draw up plans for an overhead electric tram system and to design an electric power and lighting scheme. He also had to provide estimates for the difference in cost and production of the options of diesel, steam and suction gas engines.[35] The Tram and Electric Light Loan of £86,000 was put to the ratepayers in a poll in June 1916, and was accepted. Of this, £66,000 was for the overhead trams, and the balance was for the electrical system.[36] Even now, the electricity scheme was secondary to the trams - it would help offset the loss from trams and would provide useful public lighting, but would inevitably erode the Council's profits from producing gas. The Council did not intend to reticulate the whole town. Indeed, the agreement with the Consulting Engineer stated that 'the electric light scheme is to be continued as far as the money available will go'. [37]

The Council clearly relied heavily on Frederick Black's expertise at this time, as the Borough Engineer was not an expert in electrical matters. It required Black to make recommendations on the smallest details, as well as to suggest suitable sites for the power station, and later it even asked him to suggest the electrical tariffs. This degree of reliance led almost inevitably to problems when the trust necessary in such relationships, already shaky due to protracted agreement negotiations in 1917, was lost in the early 1920s. Once he had signed the new agreement, Black revised the tramway and electric light plans, and prepared drafts of an Order in Council and a licence for electric lighting. The Town Clerk, J. R. Hardie, published them with a notice to ratepayers in June 1918. As tenders could not be let until the war was over, the scheme was on hold again. Frederick Black advised the Council that the tramway could be started within two years of the peace declaration, and would be finished within four years.[38] Palmerston North's own electrical scheme was in sight, even if the Government did not respond to pressure and provide an electrical supply to the lower North Island.

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[35] PNBCM, Special Council meeting, 4 June 1915, PNCCA, PNCC 1/1/1, Volume 7, Folios 88 - 9.
[36] *New Zealand Gazette*, 72, 29 June 1916, p. 2237; 86, 10 August 1916, p. 2675.
[37] PNBCM, 'Description of Work and Conditions of Appointment of Engineer', PNCCA, PNCC 1/1/2, Vol. 4, Folios 193 - 4.
[38] Black to Town Clerk, PNCCA, PNCC 1/10/1, Box 10, Folder 3.

Conclusion

The first influence on the Council to provide an electricity supply in this period was public demand that was not able to be met by private organisations or by the Government. Demand for a public electricity supply appears to have grown slowly, and may have been as concerned with perceived problems with gas and the monopoly supply as much as with the desirability of the new power source. Potential private developments were thwarted by legislation restricting water-power to government control, thus putting the achievement of an electrical supply for Palmerston North back by some two decades. The desire for trams was a key influence that developed the Council's enthusiasm for becoming directly involved with electricity, and it was necessary to purchase the gasworks before any electrical development was possible. Once the Council owned the gas plant, it was not inclined to rush into creating a competitive power source. The war was also a major influence, limiting both local and State plans to build power stations. Lack of a government commitment to generate electricity for supply to Palmerston North left the Council having to consider building its own generator. If at any time up to around 1917 or 1918 the Government had announced plans to build a local hydro-electric station to supply Palmerston North within a short period, the Council would have cancelled plans for their own plant. Therefore, the Government, both with its restrictive legislation and in its failure to provide the expected generation facility, was the decisive influence in this period on the Council's electricity planning.

Chapter Two
"Let there be light: and there was light"
1919 to 1924

Introduction

The Council's plans to initiate a public electricity supply were influenced by a variety of factors in this period. As it became increasingly clear that a power supply would be available eventually, demand grew. The Council had to plan to meet an initially low level of demand, while being able to increase production rapidly as sales rose. It also had to market its ideas for electricity and trams to ratepayers, so that it would win the various loan polls and thus assure funding for the project. This meant a careful process of developing electricity demand, without raising it so high that ratepayers would be disappointed by the several years' delay between voting in loan polls and actually being connected to the power supply. Government policies continued to be an important influence in this period, both locally in its efforts to create electric power boards, and regionally, by its decision to build Mangahao power station. The establishment of electric power boards in Manawatu led to a degree of urban-rural conflict, exacerbated in the Palmerston North area by legislative limitations. Post-war inflation, Councillors' pro-British ideas and the Council's funding shortages also affected the electricity project. The breakdown of the relationship with Frederick Black had a major influence on the completion of the reticulation scheme, and the Council took over its new station as soon as it supplied the first customers. The Council formed a Municipal Electricity Department to market and run its new enterprise - a public electricity supply had finally reached Palmerston North.

The Influence of Demand

The level of public demand was a major influence in the Council's decision to build a power plant. However, choosing an appropriate size of generator to meet an unknown demand was difficult. Frederick Black's initial plans were for a power station big enough to house two 250 kW generator sets,

with room for a third.[1] The Council understood that it would have to install additional generating plant in a few years, when the demand for the new power had grown. In the meantime, it was too expensive to buy extra capacity that would be idle. Government plans to build a hydro-electric power station at Mangahao, in the hills behind Shannon, had the potential to increase the demand for council power in the short term. Lawrence Birks, the Chief Electrical Engineer of the PWD, asked the Council in June 1919 if it was able to supply electric power to run the air compressors for tunnelling at Mangahao. The suggested demand was over 300 HP for three to four years, which would help immensely in building up the load.[2] If it agreed, the Council would have to change its plan of adding generating capacity as demand grew. It would have to generate as much power for the Government as it expected Palmerston North's demand to grow by in four to five years. After discussion, the Government elected to install its own steam plant, as the likelihood of delays in completing the Council's plant made relying on it too risky. Events justified this concern, as the Council commenced generation only eight months before Mangahao did.

In September 1919, the Council decided that the planned generating plant would be too small even for Palmerston North's immediate needs, and instructed Black to change the plans and tender documents to encompass three 350 BHP engines.[3] The Council needed a new loan poll, as the estimated costs had risen by around 70% since the 1916 loan poll. Ratepayers voted on 24 March 1920 to raise £110,000 to install trams and electricity, but split on the tramway issue with only 46% of the 1572 voters supporting the loan. It appears that electricity reticulation was desired, but it was seen as too late to install trams. A group of ratepayers had formed a Citizens' League to reflect their concerns that the trams were too expensive, and that motor buses would be more appropriate for Palmerston North. Some Councillors were reluctant to abandon the tramway plans completely. Discussions with Frederick Black over a modified tram scheme went on for several months before the Council decided to buy the much cheaper petrol buses. Black drew up new cost estimates for electricity reticulation, without the tramway scheme, and 86% of voters supported

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[1] Town Clerk to Black, 1 September 1919, PNCCA, PNCC 1/5/7, Box 41A.
[2] Black to James Nash, Mayor, 4 June 1919, PNCCA, PNCC 1/5/7, Box 41A.
[3] *Manawatu Evening Standard*, 8 October 1919, p. 5.

a new poll for £100,000 for the Lighting Scheme on 5 May 1920.[4] He rewrote the tender documents without the tram equipment, and in June 1920 the Council let the first equipment contract to Turnbull & Jones for three 450 HP 6 cylinder gas suction engines.[5] There was very little price difference between the machines chosen and the 350 HP plant specified in the tender documents, and expected demand meant the extra capacity would be useful.

Without a contract to supply Mangahao, the Council had to build up local demand for electricity. This proved to be tricky, as delays and the constant changes of the date on which power would be available made it difficult for the Council to sell to gas customers the idea of converting to electricity, and similarly difficult to sign up ratepayers who had their own electric plants. In January 1920, it expected that the power supply would be available in 'about 18 months' time'.[6] Eighteen months later, a number of potential customers were wiring their properties in anticipation of supply, and Frederick Black arranged for W. H. Ware of the Fire Underwriters' Association to inspect these. The first installations seen were for A. Torstonson of North Street, J. Allan of Russell Street and A. Andrews of Featherston Street, but Ware also commented that there were 'a large number of low voltage private plants in Palmerston North'. In January 1922, he confirmed that fifteen private plants would convert to the town supply, and thirteen premises were ready for connection, including Hong Lee's laundry, the Soldiers' Club and the Boys' High Hostel.[7] As the power station delays continued, customers who had wired their premises and installed equipment became impatient. One industrial customer, the Hume Pipe Co., was particularly vocal at only receiving its power supply three months after its new plant was completed and ready to operate.

The Council opened an 'up-to-date showroom' around March 1924. Its manager, Mr Molyneaux, also canvassed for electricity customers for the

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[4] Town Clerk to Black, 25 May 1920, PNCCA, PNCC 1/5/7, Box 41A.
[5] Contract No. 3 for Power Station Equipment, PNCC and Turnbull & Jones, 22 June 1920, PNCCA, PNCC 1/10/1, Box 10, Folder 8.
[6] Black to Town Clerk, 23 January 1920, PNCCA, PNCC 1/5/7, Box 41A.
[7] Ware to Town Clerk, 23 August 1921 and 23 January 1922, PNCCA, PNCC 1/5/7, Box 42.

'Borough Council Electric Light Department'.[8] This was part of the Council's marketing strategy by which it encouraged potential customers to try electricity, firstly for lighting and later for appliances such as irons, toasters and stoves. The Council supported its new enterprise by lending £17,000 to customers to help with installation costs. The showroom was the cause of a complaint from the New Zealand Electrical Traders' Federation, which felt that the Council was providing unfair competition to their members in deciding to sell electrical goods and fittings.[9]

Even with these measures, the Council expected that urban demand would build up slowly initially. Experience in other cities showed many potential customers would not commit themselves to electricity until supply commenced. Consequently, the Council negotiated to sell electricity to the new Manawatu-Oroua Electric Power Board, pending the completion of the Mangahao Hydro-electric station. There were advantages in providing electricity to the Board. The Council expected to make a loss initially as it would incur full wages and other overheads, while generating at much less than full capacity. As the Board would also expect to operate at a loss in its first year, the Council felt that it should pay a share of the Council's loss to reflect the development of its market in advance of the Government electricity supply. The Board agreed with Black's suggested price, and anticipated taking supply from the finished station in December 1923.[10]

Delays meant the station first generated power on 16 March 1924, and the earliest supply to customers was on 1 April. The Manawatu-Oroua Electric Power Board and Hume Pipe Co. received their initial supply on 7 April 1924.[11] Over fifty miles of the Borough's sixty miles of roads had been reticulated when the power station was opened formally on 12 November 1924. The Municipal Electricity Department (MED) had connected 1,586 consumers out of a total of 3,800 dwellings and an unknown number of businesses in the Borough.[12] The Council adopted a two-rate tariff which included various annual charges, and a

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[8] March 1924, PNCCA, PNCC 1/16/2, newspaper clippings, 1904 - 1925, p. 255. A Municipal Electricity Department was established in April or May 1924.
[9] NZ Electrical Traders' Federation to Town Clerk, 12 April 1924, PNCCA, PNCC 1/5/7, Box 42.
[10] Black to Town Clerk, 14 June 1923, PNCCA, PNCC 1/5/7, Box 41A.
[11] Muir to Town Clerk, 26 May 1924, PNCCA, PNCC 1/5/7, Box 42.
[12] *Manawatu Daily Times*, 13 November 1924, p. 5.

basic rate of 3d. per unit for power and light. Except for a few who complained about the size of initial bills, consumers were happy to have electricity available finally. The Council felt sure that its decision to build the plant was vindicated.

The Influence of the Government

The Government continued to have a great influence on the Palmerston North power enterprise in this period. Its 1919 decision to build a hydro-electric power station at near-by Mangahao pleased the Council. However, it made no actual difference to the Council's plans to build its own plant, as it expected to be able to provide power in Palmerston North some two or more years before the Government. It planned to purchase government electricity to supplement local generation as demand increased in the late 1920s, thereby limiting the continual need to buy extra equipment. The Council knew that there were other advantages to owning a power plant. Because the Government charged for the maximum amount of power used, local generation at peak times directly reduced the cost. It would also act as a back-up, in the event of government power failures.[13]

One government department, Railways, became directly involved in the decision of where to site the power station in Palmerston North. The Council originally expected that the power station would be next to the gasworks, as the plant required gas to generate electricity. However, in 1919 the first change of power station site was suggested, to land owned by the Gas Department at Pascal Street. This was soon affected by heavy local pressure on the Government to move the railway from the centre of town to the northern side, ostensibly to relieve congestion at the railway yards. Frederick Black confirmed in July 1920 that a new site might be needed if a railway siding to move machinery to Pascal Street was not possible. The Council, Palmerston North Chamber of Commerce, Grain Merchant Association and a number of local businessmen met in November 1920 to discuss the proposed deviation, and urge the Prime Minister to take urgent action.[14] Although William Massey promised a

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[13] *Manawatu Evening Standard*, 31 March 1920, p. 5.
[14] PNBCM, Council meeting, 23 November 1920, Deputation to Prime Minister et al., 1 December 1920, PNCCA, PNCC 1/1/1, Vol. 9, Folios 291 and 299.

definite answer by 5 January 1921, the issue proved to be too complex, or perhaps too expensive, for a quick decision. The delays meant that Frederick Black had the difficult task of completing the tender documents and plans without knowing where the power lines were going, and designing a building for an unknown site. A proposed site at Napier Road was mentioned sixteen months later, and in May 1922, Black stated that 'it is essential that the station site be absolutely fixed before the mains contract is issued .... it certainly is high time that the Council received a final decision from the Railway Department'.[15] However, no clear decision was forthcoming until August 1922. Land was taken under the Public Works Act from the railway reserve at Terrace End, and the power station construction commenced. In the event, the railway was not finally moved to the edge of the Borough until the early 1960s. The debacle had cost the Council two years, and the station was now well behind schedule.

The Government had also caused frustration and delays for the Council in its arrangements for local electricity distribution. The 1918 Electric Power Boards Act set the Government's preferred method of encouraging the reticulation of New Zealand. The Council's Electrical Committee had considered the options, conscious that 'lack of vision at this juncture may prove at a later date detrimental to the progress of the Borough and antagonistic to that co-operation between town and country which is essential if the district is to progress as it should'.[16] It also saw that 'it will be cheaper and more convenient to reticulate the Borough and the country surrounding as a unit, and when in time to come the Borough has a large suburban population just outside its boundaries it will tend to less friction and overlapping'.[17] The Council therefore approached the Kairanga County Council, whose territory largely surrounded the city, with a suggestion that the two bodies negotiate for a combined supply. Kairanga agreed, but the legal difficulties proved insurmountable. The Borough Council could supply electricity to its own residents and to residents outside the Borough, but it lacked the ability to enter into an agreement with another local body for joint supply and distribution. The only answer was to set up a power board, but 'the disadvantages of this Act are so patent that we do not think any Local Body will

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[15] Black to Town Clerk, 19 May 1922, PNCCA, PNCC 1/5/7, Box 41A.
[16] Minutes of the Joint Committee of Palmerston North Borough Council and Kairanga County Council, 1 December 1919, PNCCA, PNCC 1/1/6 Vol. 1, Folio 1.
[17] Ibid.

adopt this method, except as a last resource [sic] .... to adopt it would cause endless friction, and no Borough Council would consent to the control of its electric lighting and power ... being in any other hands than the Municipality'.[18] Both Kairanga and the Council approached the Government to pass legislation to allow them to offer a joint power supply.

In the meantime, the Council lodged its applications for an Order in Council and Electric Lines Licence in January 1920.[19] In April, the PWD issued a licence which gave the Borough Council the right to erect lines and supply electricity within its gazetted boundaries for forty-two years.[20] A new licence to cover the whole of the Borough and Kairanga County was sought in August 1920,[21] but the Minister of Public Works, Gordon Coates, disallowed this because government policy favoured power boards for electricity distribution. Attempts to obtain suitable legislation failed, so as a last resort the Borough Council and Kairanga County applied in October 1920 to set up a power board to cover their districts.

Unfortunately this still did not suit the Government's plans. Manawatu appeared to be splitting into too many small areas, each with its own power authority. In addition to the Palmerston North and Kairanga plan, Feilding wanted to join parts of Oroua, Pohangina and Manawatu Counties, but Manawatu preferred to combine with Horowhenua.[22] Gordon Coates advised a deputation of Palmerston North Borough and Kairanga County Councillors that he could not agree to their forming a small power board, as he wanted a board to cover all of Manawatu, with Palmerston North as the headquarters.[23] The Public Works Committee of the Council recommended that the Borough join the proposed larger power board, if its conditions were met.[24] As these included the power board selling power to the Borough at government rates, the Borough having full control of reticulation and supply in its licensed area and the board

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[18] Ibid.
[19] Black to Town Clerk, 12 January 1920, PNCCA, PNCC 1/5/7, Box 41A.
[20] Electric Lines Licence, 12 April 1920, PNCCA, PNCC 10/1/6, Folder 4.
[21] PNBCM, Committee Minutes, 16 August 1920, PNCCA, PNCC 1/1/2 Vol. 8, Folio 99.
[22] Clevely, p. 1; Martin, p. 86.
[23] PNBCM, Deputation to Minister, 23 November 1920, PNCCA, PNCC 1/1/1, Vol. 9, Folio 292.
[24] PNBCM, PWC, 7 December 1920, PNCCA, PNCC 1/1/2, Vol. 8, Folio 127.

only being able to purchase Palmerston North's planned power station if the Borough agreed, agreement was by no means certain. The Mayor, James Nash, raised the conditions with Coates and Lawrence Birks, the Chief Electrical Engineer of the PWD, at a meeting at the railway station later that month. Nash reported that the Minister 'stated that in the event of the Council joining the Power Board he saw no difficulty in arranging for the Council to receive power in bulk at Government rates'.[25] This assurance was to cause enormous difficulties with the Manawatu-Oroua Power Board from 1925 to at least the 1960s, as it inflamed existing urban-rural conflicts.

The Influence of Conflict between Rural and Urban Interests

Satisfied with the Government's assurance, the Borough's representatives agreed with plans to set up a power board, stating that 'the Palmerston North Borough is prepared to join without any hesitation'.[26] The provisional Oroua Power Board, based around Feilding, was less enthusiastic. It did not object to Kairanga and Palmerston North setting up a power board, but it would not agree to them joining Oroua. The Chairman of the meeting, Lawrence Birks, finally achieved some measure of agreement that a large power board should be formed, but the Oroua representatives refused to vote on the issue, and also objected to the forming of a provisional committee.[27] After stormy meetings in April and June 1921, the provisional board came into being, and named itself the Manawatu-Oroua Electric Power Board (MOEPB). Coates decided that Palmerston North would have three representatives, with two each for Manawatu, Oroua and Kairanga Counties, and one each for Feilding Borough, and Pohangina and Kiwitea Counties. The Board was gazetted on 12 December 1921, and after the elections held the following month, James Nash became the Chairman.[28]

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[25] PNBCM, Special Council Meeting, 22 December 1920, PNCCA, PNCC 1/1/1, Vol. 9, Folio 309.
[26] PNBCM, Conference of Delegates, 24 January 1921, PNCCA, PNCC 1/1/1, Vol. 9, Folio 324.
[27] Ibid.
[28] *New Zealand Gazette*, 15 December 1921, copy in PNCCA, A175/4, Box 14, research file; Clevely, p. 2.

The Council had seen the pitfalls of not combining with the surrounding area, but being forced to work with a much larger area that lacked a common interest led to friction. Ultimately, its failure to establish a means of co-operating in running the enterprises led to two Supreme Court injunctions and years of difficult negotiations with the Board. Although the Council 'joined' the Board, it did not ever operate as part of it. The Council hedged its commitment to the MOEPB by insisting on government rates for any future power supply through the Board. Its plans for Borough reticulation were well advanced, and operating as part of the Board would inevitably lead to delays as it assessed the whole region's electrical needs. The power station would be too small, and would probably be scrapped in favour of waiting for government supply. The Council provided a reasonable amount of assistance to the MOEPB, while continuing with its plans to provide the Borough with its own electrical supply. It is probable that the MOEPB was comfortable with this, as the need to reticulate the whole of the Borough as well as the extended rural area would have made its task harder, and much more expensive. The Council assisted by providing its Town Clerk as secretary for the first eighteen months, and by allowing the Board to use Palmerston North's rating income as security for its loans. The MOEPB took advantage of this and rapidly raised £500,000 to commence reticulation.

The Influence of Finance

If funding was an issue for the Board, it was no less crucial for the Council. Post-war inflation had caused the cost of machinery to rise considerably, and the loss of the 1919 loan poll meant that some tenders had to be let before the loans were confirmed. The Council had to increase the budget several times, and it needed an additional £35,000 loan poll to complete the power house in 1924. It passed easily this time. The final amount spent on the scheme was £185,000, a massive increase over the 1920 estimated cost of £100,000 for a smaller reticulated area. There were also difficulties with the Council's cash flow. It was embarrassed that it could not actually pay Black the relatively small amounts it owed him for drawing up plans, and in August 1921 it had to pay him £600 by Council debenture.[29] Due to its financial limitations, the Council was zealous in ensuring that contractors did not exceed the budgeted

[29] Town Clerk to Black, 9 August 1921, PNCCA, PNCC 1/5/7, Box 41A.

cost, even appointing an additional supervisor to check on material used. In part, the high cost of the contracts was due to councillors' insistence on buying British equipment, and tenders using less expensive American switchgear were ruled invalid. As Frederick Black's remuneration was based on a percentage of the contracts, this led to his payments being higher than necessary. However, Black's financial reward was delayed when the contracts could not be let while the site was uncertain.

Influential Relationships

This contributed to the breakdown of the relationship between the Council and its Consulting Engineer. The problems started when Frederick Black was slow in producing drawings and specifications. The Council authorised Black to draw up the final plans in October 1918, but he advised it the following May that the plans were 'not yet completed', due to a shortage of drawing staff. The Railway Department site delays meant that although Black had invested several years' work in the Council's scheme, he could not be paid as as no contracts had been finalised. Then the Council neglected to keep Black up to date regarding the site, and received a strongly worded rebuke from him as to the impossibility of designing works in such circumstances.[30] The Council's concern over costs led to its final disagreement with Frederick Black, and ultimately ended in a court battle with Turnbull & Jones, who were contractors both for the power station and the Borough reticulation. Much of 1923 was taken up with a dispute with Black over the Council appointing a supervisor to check materials used in the building of the power station and installation of the plant. The Council obviously feared that it would be charged for excess materials, and notified Black in June of its decision to employ a supervisor. Black's response was rapid and clearly shows his disappointment. 'It would appear that the Electric Committee of the Council and myself are fated to fail in understanding each other.... it is ... a breach of the spirit of the agreement [between the Council and myself], and one against which I must enter the strongest possible protest'.[31] Frederick Black refused to work with the supervisor, whose position he felt usurped his role. The Borough Solicitor suggested Black agree with this 'very reasonable demand of the Council'

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[30] Black to Town Clerk, 31 August 1922, PNCCA, PNCC 1/5/7, Box 41A.
[31] Black to Town Clerk, 3 July 1923, PNCCA, PNCC 1/5/7, Box 41A.

as the Council now wanted to seek a declaratory judgement from the Supreme Court.[32] As Black's objection was not so much to the appointment as to the manner in which it was made, the way was clear for the Council to force his compliance. The result was a considerable loss of goodwill on both sides.

The Council's relationship with Black was strained again in December 1923. Apparently out of the blue, the Town Clerk wrote that he 'had been instructed by the Electrical Committee to inform you that it is not at all satisfied with the progress of the work under the Contracts relative to the Electric Supply undertaking' and seeking a report from him. Black sounded confused: 'you do not however give me any indication of the nature of the reasons for such dissatisfaction and in the absence of this information I am at a loss to know what it is you wish me to report on'.[33] Part of the Council's frustration related to pressure from customers for a guaranteed power supply. Black advanced a variety of reasons for the delays in completing reticulation and the power station. Items were shipped late from England, there was a shortage of experienced cable jointers, and the insulation on parts of the power station plant needed extended drying after its lengthy time in storage. Turnbull & Jones carried out test runs of the machinery in the middle of March 1924, and Black advised that a limited power supply could commence from early April. Full supply was delayed until the gas holder was completed some five weeks later.[34]

This was of limited consolation to the Council, which was embarrassed by an earlier promise. In November 1923, the Council asked Black to arrange a power supply to Hume Pipe Co.'s new stone crushing plant in Brightwater Terrace, an area that was not to be reticulated in the original plans. Without checking with him, the Council assured the company that power would be available soon after Christmas, then before the end of January, and later that the line would be completed by the end of February. The company was therefore disappointed that on 29 February 1924 there was no sign of the line being erected. Three weeks later the company was informed that electricity was still

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[32] Cooke to Black, 18 August 1923, PNCCA, PNCC 1/5/7, Box 41A.
[33] Town Clerk to Black, 7 December 1923, Black to Town Clerk, 11 December 1923, PNCCA, PNCC 1/5/7, Box 41A.
[34] Black to Town Clerk, 2 February 1924, 10 March 1924, 14 March 1924, 28 March 1924, PNCCA, PNCC 1/5/7, Box 41A.

six weeks away, and its complaint was so pointed that the Council forwarded it to Frederick Black to answer.[35] His response added to the Council's existing grievance with him: 'No promises or undertaking have been given by me to enable the Council to state any time to the Hume Pipe Co. or any other power consumer, as to commencement of a power supply. I have had nothing whatever to do with any arrangements that the Council may have made and I entirely disclaim any responsibility for the Council not being able to carry out undertakings upon which I have not been consulted.'[36] This enraged the Council, and, after consultation with the Borough Solicitor, it terminated his contract from 4 April 1924.[37] Even though the tests were uncompleted, the Council took over the power station from Turnbull & Jones. However, James Muir delayed signing the completion certificates, and refused to authorise payment for changes ordered by Black, but not authorised by him in writing.[38] Inevitably, this dispute ended in Court, with the Council settling its final account with Turnbull & Jones some eighteen months after completion of the reticulation and power house contracts.[39]

Conclusion

A variety of influences affected the Council's wish and ability to provide a public electricity supply. Demand was the original spur, and its growth reinforced the Council's intentions. This was the key influence in the period that made the Council reticulate Palmerston North. Government policies hindered the wish of the Council to work with the surrounding area, and directly contributed to urban-rural conflict by forcing the Council to operate alone. A more pragmatic stance from the Government might have led to a number of small power boards being formed in the short-term, but they would probably have merged later. With its stubbornness, the Government forced the rural and urban split that became the

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[35]Town Clerk to Black, 23 November 1923, PNCCA, PNCC 1/5/7, Box 41A; Hume Pipe Co. to Town Clerk, 29 February 1924, 20 March 1924, PNCCA, PNCC 1/5/7, Box 42.
[36] Black to Town Clerk, 29 March 1924, PNCCA, PNCC 1/5/7, Box 41A.
[37] Cooke to Town Clerk, 3 April 1924, Town Clerk to Black, 4 April 1924, PNCCA, PNCC 1/5/7, Box 41A.
[38] The Council appointed James Muir as its first Borough Electrical Engineer in October 1923.
[39] Settlement calculation to 22 December 1925, PNCCA, PNCC 1/10/1, Box 10, Folder 10; Les Boyles (ed.), *Turnbull & Jones, 1899 - 1984. First in the Industry* (Wellington, 1988), pp. 19, 29.

bane of electricity distribution in New Zealand. Although this factor was important later, in this period the Government's influence merely affected the grouping in which the Council reticulated electricity - it did not reduce the Council's desire to do so. Similarly, financial difficulties and deteriorating relationships with Frederick Black and Turnbull & Jones had a fairly small influence on the Council's determination to succeed at bringing electricity to Palmerston North. They made it more difficult, but did not lead the Council to modify its goal. This determination was important in the next period, when the Council was subject to numerous external threats to the independence of its electricity supply.

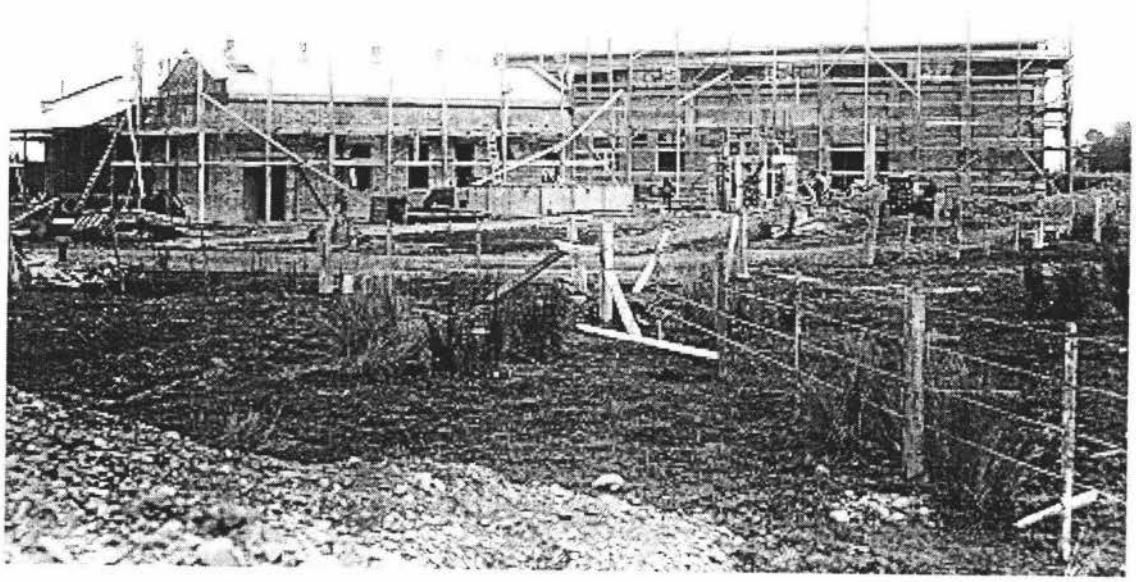

Photo 1. Power Station under construction, (on right), around 1923.

Source, Palmerston North City Council Archives.

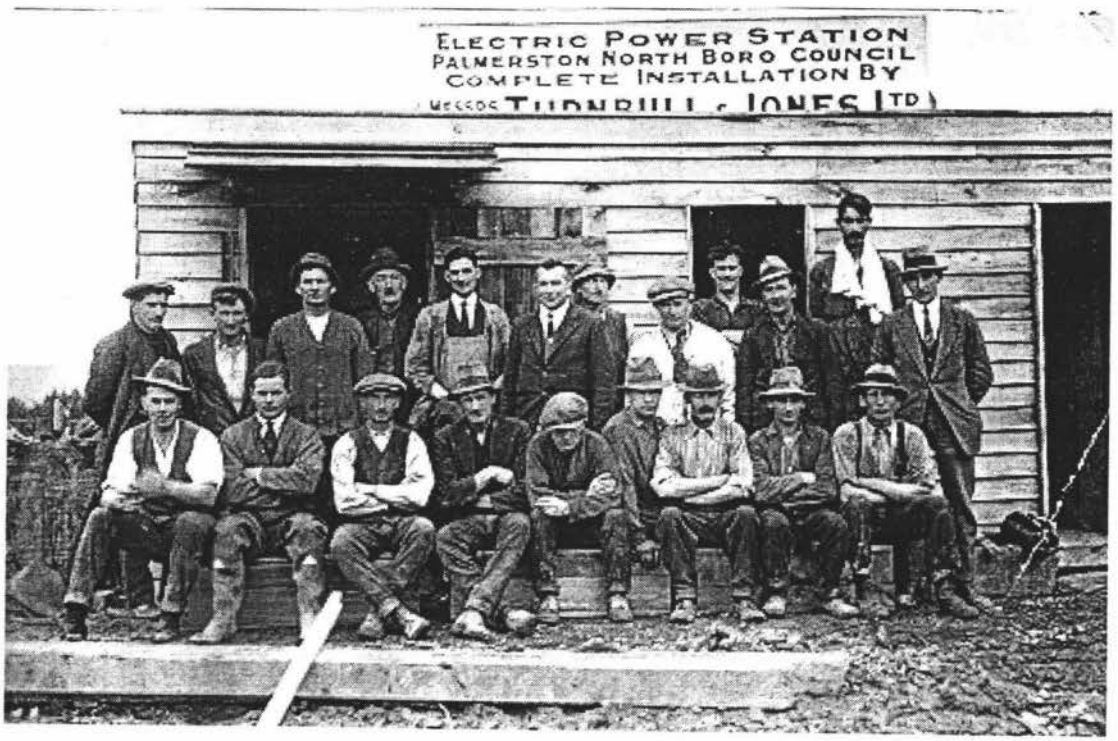

Photo 2. Turnbull and Jones construction team, around 1923. W. S. Cutten, construction engineer and later MED power station engineer, is sixth from the left in the back row.

Source, Palmerston North City Council Archives.

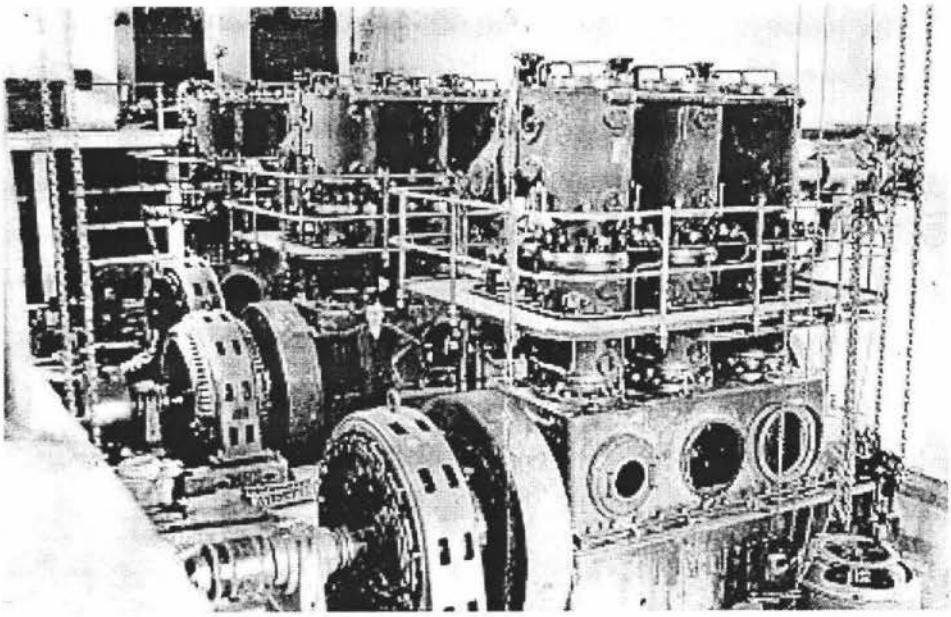

Photo 3. Power Station gas suction engines, around 1924. William W. Coutts, who installed the switchgear, stands between the engines.
Source, Palmerston North City Council Archives.

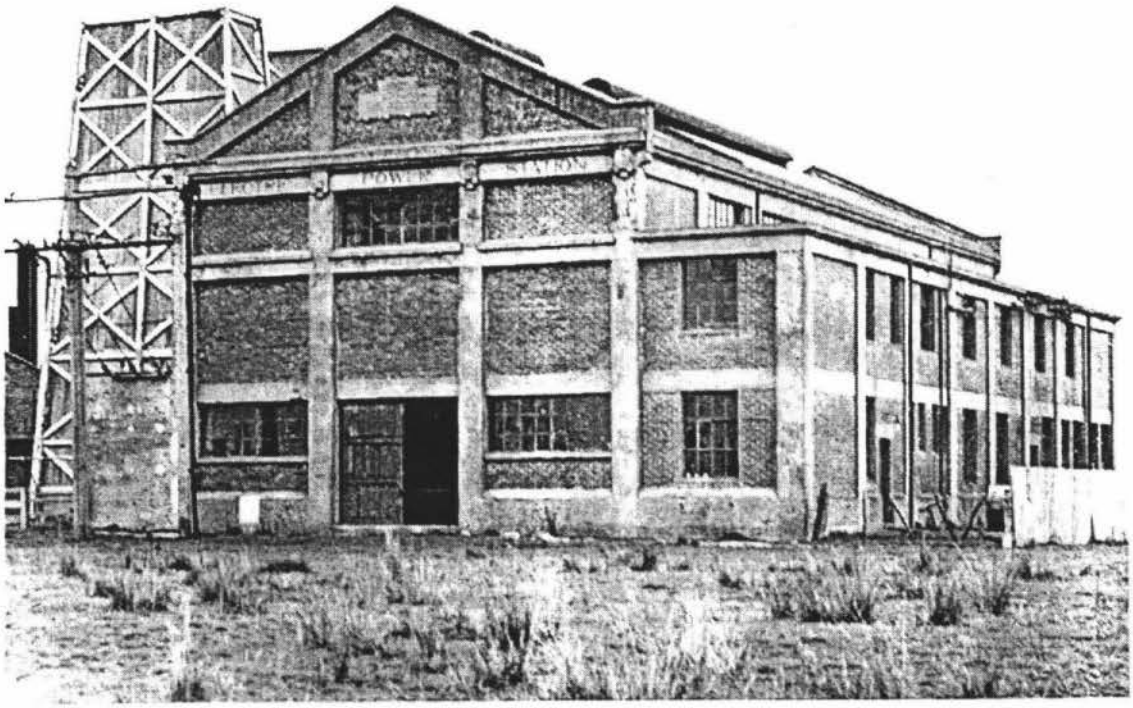

Photo 4. Power Station, showing the cooling towers built for the diesel generators, around 1939. Photograph by K. H. Shea.
Source, Palmerston North City Council Library, BM 10.

Chapter Three
Sparks Fly, 1925 to the War

Introduction

The Council had to fight to maintain its situation in the face of rigorous external pressure in this period. Demand continued to grow locally as more households tried electricity, and nationally demand rose sharply after the Depression. There was a striking increase in urban-rural tension, and demands from the Manawatu-Oroua Consumers' Association aggravated this. Concern for consumers and ratepayers led the Council to Supreme Court action against the imposition of a special rate. It also hardened the Council's response to pressure from the Board and Government to sell or cease using the power station. A gap between government policy and legislation led to government pressure on the Council to conform to its policy on electricity distribution. The Manawatu-Oroua Electric Power Board, motivated by its wish to minimise charges to its consumers, clashed with the Council over contract prices. The national debate between power boards and municipal electricity departments also influenced the Council's response to local issues. Finally, the Council was affected by financial pressure from the increasing gas losses and from the Depression. The Council installed extra generating capacity to give it bargaining room, but in reality it became a price-taker. However, the Council was successful in reaching the war years with its position as an electricity distributor unchanged.

The Influence of Growing Demand

Demand for electricity rose steadily. The Council saw the number of its consumers rise from 1,586 in November 1924 to 2,103 in March 1925, 4,512 in November 1928, 5,496 in June 1931 and 6,354 in March 1938. The initial rush of over 100 new customers per month had settled to over 50 between 1925 and 1931. The Depression does not appear to have reduced this up to 1931, as there were 64 new connections in June 1931 and 41 in November 1931.[1] That

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[1] H. J. Beeche, *Electrical Development in New Zealand* (Wellington, 1950) p. 247; Muir's reports, 1925 - 26, PNCCA, PNCC 10/1/6, Box 2, Folder 10; Muir to Electrical Inspector, 13 December 1928, PNCCA, PNCC 10/2/1; Muir's reports, 1931, PNCCA, PNCC 10/1/6, Box 1.

the number of new connections slowed between 1932 and 1935 was possibly partly due to the Depression, but also because most houses and businesses had already been connected. Much of the increase in customers was due to the popularity of electricity as an energy form. In addition, Palmerston North's population was rising faster than other secondary urban areas in this period, so some of the expansion in customer numbers can be attributed to population growth.[2] There was also an increase in the average amount used, as consumers purchased new appliances and installed extra lights.[3] This rise in demand was a factor in the Council's decision to install extra generating capacity in 1935. Customer numbers increased sharply as war approached.

The same phenomena of rising demand occurred nationally. Mangahao had limited water storage and demand for electricity soon exceeded its capacity. The Government decided to expand its system by building at Waikaremoana and Arapuni. During construction, the Council was often required to run its plant in winter until the power supply again caught up with demand. In order to reduce the Council's peak load, customers were instructed to install change-over switches to allow either lighting or hot water heating, but not both at once.[4] To improve the load factor of supply, hot-water control by pilot-wire was started in mid-1929, so that the power to hot-water cylinders could be turned off in one-quarter of the town at a time.[5] The completion of the Government's new power stations eased the situation during the Depression, but the apparent surplus capacity of 1936 soon became a shortage, especially in the lower North Island, as the economy recovered. By 1938, the maximum load exceeded capacity, and demand continued to grow. The choice and appearance of appliances had improved, as had people's incomes and knowledge of electricity, and energy prices had fallen by over a third in the previous ten years. The Minister of Public Works, Bob Semple, assured supply authorities that the growth in demand would not last, but he had overlooked the 50% increase in consumption in the three

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[2] *New Zealand Official Yearbook*, 1954, p. 37. Population in 1926, 20,107; in 1936, 24,372.

[3] Beeche, p. 248. Average units per consumer: 1928: 1,180; 1933: 1,940; 1938: 2,429.

[4] W. C. Cantlon (inspector) to W. Pegden, 20 June 1928, PNCCA, PNCC 10/2/1.

[5] Hounsell, E. D., 'Palmerston North City Electricity Department', in Hutton, L. B., and Stace, F. N., (eds.), *The Engineering History of Electric Supply in New Zealand*, Vol. 1 (Wellington, 1958). (NB. Pages are unnumbered).

years from 1936, and did not anticipate the rapid growth in industrial needs during World War Two.[6]

The Influence of Conflict between Rural and Urban Interests

Rural-urban conflict also had a great influence on the electricity enterprise in this period. As demand increased and generation grew more efficient, the Council reduced its lighting charges in May 1927. At 6d. per unit, lighting was 2d. per unit cheaper in Palmerston North than in the surrounding area. This led to questioning why the Board sold power to the Council at a rate that allowed it to undersell the Board's prices, and why Palmerston North had three representatives out of twelve on the Manawatu-Oroua Electric Power Board, when the Council used its own generating plant. Correspondence in the press suggests that this apparent rural-urban hostility was especially strong in Feilding. Feilding had wholeheartedly supported the Board by selling the Borough's plant to it in 1924, and thereafter had purchased all of its energy from the Board.[7] Tension was again evident in February 1928, when reduced rainfall at Mangahao led to a shortage of electricity. Both the Board and the Council were asked to reduce demand by at least twenty per cent.[8] Having a stand-by plant made this comparatively easy for the Council, and the plant was even able to supply several thousand units per week to the Power Board. Nevertheless, Board members complained about the number of street lights and hours of usage in Palmerston North compared to Feilding.[9]

The conflict came to a head in 1932. In March, the City's Mayor,[10] A. E. Mansford, alerted his fellow mayors to a call for legislation compelling the amalgamation or absorption of all municipally owned electrical undertakings by the adjoining power boards. The threat came from close to home, as this was sought by the Feilding Borough Council, Manawatu-Oroua Consumers' Association and the Kiwitea, Manawatu, Oroua and Pohangina County Councils.

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[6] Martin, p. 127.
[7] Letter to Editor from P. G. Guy, (future member of MOEPB), 18 May 1927, PNCCA, PNCC 1/5/7, Box 42.
[8] PWD to Town Clerk, 31 January 1928, PNCCA, PNCC 1/5/7, Box 42.
[9] *Manawatu Daily Times*, 14 February 1928, in PNCCA, A175/4, Box 14, research file.
[10] Palmerston North became a city on 1 August 1930.

Gus Mansford was particularly concerned as the Chief Electrical Engineer of the Public Works Department, F. T. M. Kissel, favoured such amalgamations.[11]

The situation worsened during the campaigning for the Board's elections in May 1932. An organisation known as the Manawatu-Oroua Electricity Consumers' Association made the Council's power agreement and lower electricity prices the main election issue. Six sitting members were defeated. Five of the new members were pledged to support the Association's ideas and the sixth 'held views in accordance with those pledged to the association'. Two sitting members were also associated with this group.[12] The new Board members felt that the 1931 agreement between the Board and City was unfair to the country districts, as the City was able to set prices that were lower than in the surrounding area. James Nash, who had been Chairman since the Board's inception, and Joe Hodgens and M. A. Eliott from Palmerston North and Joseph Batchelar of Kairanga County were outvoted when they opposed the country members' plans. The rural-urban split was evident, and was also shown by two other board decisions. The eight country members formed themselves into a litigation committee, with one member stating that 'some other means would have to be found to bring Palmerston North to heel'.[13] The Board decided not to appoint James Nash as its delegate to the Supply Authorities Association's annual conference in September 1933, even though he was the Chairman of that body.[14] Although Nash remained on the MOEPB until his death in 1952, he did not regain the Chairman's position, which was held by various country members of the Manawatu-Oroua Electricity Consumers' Association until 1958.

The urban-rural conflict dominated the new Board's plans to bring the Council's power prices into line with the surrounding districts. Firstly, it attempted to purchase the Keith Street power station, to prevent the Council from generating to reduce its peak load. K. W. Eglinton, the Secretary of the MOEPB, suggested that the Council 'meet a Committee from this Board to discuss the

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[11] Mayor of Palmerston North to other mayors, 9 March 1932, PNCCA, PNCC 1/5/7, Box 42.
[12] *Manawatu Evening Standard*, 13 September 1934, p. 9.
[13] Ibid.
[14] *Manawatu Evening Standard*, 22 August 1933, p. 2. The Council, respecting its former Mayor and current MP, appointed him as one of its two delegates.

question of the purchase of the Council's Electrical Scheme by the Board'. It was disappointed by the Council's response 'that as the present agreement between the Board and the City does not expire until the 31st March 1935, the Council is of the opinion that unless your Board has an offer of an exceptional nature which would warrant the Council terminating the present contract, no good purpose would be served by a Conference between both parties'.[15] The second plan was legislative action, to force the takeover of municipal undertakings, but this did not receive sufficient parliamentary support as government members were not prepared to back it due to their concern for local repercussions. The third plan was differential rating, to force an equalisation of charges.[16]

After reducing the energy tariff for milking machines, the Board anticipated making a loss of £6,700 for the year to 31 March 1934. It therefore set a special rate for Palmerston North ratepayers only, which was expected to raise £3,309 towards covering the expected trading deficit for the year.[17] The Palmerston North City Council applied to the Supreme Court for the special rate to be quashed, as it was 'not a fair, reasonable or honest exercise of the board's powers' and that its 'real purpose is to take from the city money that cannot be obtained by direct means'.[18] As the rateable value of the City was already pledged to guarantee the Board's initial £500,000 loan, many ratepayers felt that this was sufficient support, especially as other local bodies, including Feilding, were not being charged a special rate. The Palmerston North Citizens' Committee held a ratepayers meeting attended by about 300 people, at which one speaker 'deprecated the lack of unity between town and country, a feeling which had been engendered ... not by the country people themselves, but by

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[15] Eglinton (Board Secretary) to Town Clerk, 15 June 1932, Town Clerk to Eglinton, 21 June 1932, copies in James Hardie's statement to the Supreme Court, January 1934, PNCCA, A175/4, Box 14, research file.

[16] *Manawatu Evening Standard*, 12 November 1934, p. 7.

[17] *Manawatu Evening Standard*, 22 August 1933, p. 2; 12 September 1933, p. 6; copy of letter MOEPB to Town Clerk, 15 August 1933 in James Hardie's statement to the Supreme Court, January 1934, PNCCA, A175/4, Box 14, research file.
A general rate over the whole district was expected to contribute a further £3,364.

[18] *Manawatu Evening Standard*, 9 September 1933, p. 8. A 1922 amendment to the Electric Power Boards Act allowed for selective rating due to the special circumstances of the Southland Electric Power Board, which wanted to rate only those areas which would be reticulated in the near future, rather than their whole area which was too big to supply immediately. The amendment was not intended to be used negatively to selectively raise rates from areas which were not being supplied directly.

their representatives on the Power Board'.[19] As one country member of the MOEPB correctly stated, the Supreme Court action 'was going to be a test case concerning the relations of city and urban areas in power board districts'.[20] The Council's lawyers successfully argued for an injunction in September 1934. The judgement given in November 1934 by the Chief Justice, Sir Michael Myers, was that the special rate was not a genuine usage of the Board's powers but an improper attempt to extract money from the ratepayers of Palmerston North. He found that 'the majority of the members of the board did not act reasonably or in good faith, and in the making of the separate rate the powers of the board were both misused and abused'.[21] Similar difficulties between power boards and municipal authorities at Waitara and Tauranga also ended in Court.

The Board's Influence on the Council

Even when the urban-rural conflict did not dominate discussion, the Board had a great deal of influence over the Council's electricity enterprise. The Board wished to negotiate the best possible arrangement to supply bulk electricity to the Council, to allow it to minimise the charges to its own consumers. This meant that lengthy and sometimes hostile consultations took place over setting an appropriate level of charges. The Board swapped from council to government supply when Mangahao started generating electricity in November 1924. In February 1925, the Board urged the Council to buy power through it for their mutual advantage, as government tariffs were structured so that the average price fell when electricity consumption increased. The Board's Engineer, W. A. Waters, suggested that the Council was losing £3,000 per year by generating.[22] The Council debated this figure, and the Board's prices, which James Muir calculated were some 30% to 40% higher than the government standard rates promised by Gordon Coates.[23] In addition, the price disregarded the advantage that the MOEPB would receive from supplying the Borough, as due to the

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[19] *Manawatu Evening Standard*, 9 September 1933, p. 8.
[20] W. McKay, cited in Rennie, p. 106.
[21] *Manawatu Evening Standard*, 13 November 1934, p. 2; 12 November 1934, p. 7; Hounsell.
[22] *Manawatu Evening Standard*, 17 February 1925, p. 7.
[23] The Government standard rates in 1926 were £2.10 per kVA per quarter for the first 200 kVA, £2 per kVA per quarter for the next 4,800 kVA. Beeche, p. 97.

separate peaks, the Board would pay less for the energy it purchased for its own customers.[24]

The Board's response was not unexpected. It claimed that there were costs of around £850 per annum in supplying Palmerston North with power. Although it agreed that there could be profit from the diversity of peak loads, unlike the costs this needed to be experienced before it could be quantified. W. A. Waters, the Board's Engineer, suggested supplying at a tariff which would cover the Board's costs, and only reducing to standard rates after time had shown that the diversity profit was greater than the costs of supplying Palmerston North.[25] As this plan was not likely to be acceptable to the Council, and the MOEPB urgently wanted to supply Palmerston North in order to reduce its own charges, it offered an alternative. This was a three or five year agreement at government standard rates plus £400, to cover the interest and capital charges of the line from Bunnythorpe to Keith Street, and was later reduced to £200. Both offers assumed that the power station would be closed.[26] As the Council's generating capacity was sufficient for approximately two years, it felt no urgency to accept these offers, and therefore continued to negotiate. Power from Mangahao was finally supplied through the MOEPB on 15 August 1925, at standard rates with a £300 annual service charge, and most importantly, the right to continue to generate.[27] It was not until 6 May 1927 that the Council signed the first five-year agreement.[28]

The right to generate was crucial to the Council. As the Board's charges were calculated from the highest amount of electricity used in any thirty minute period in the three months supply term, the Council used its plant to reduce the peaks in demand. The power station was also used to maintain the electric

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[24] J. W. Muir to Town Clerk, 3 March 1925, PNCCA, PNCC 10/1/6, Box 2, Folder 10. The Board could make a diversity load factor profit, and the most expensive initial 200 kVA could be spread between both organisations.
[25] *Manawatu Evening Standard*, 6 April 1925, p. 5.
[26] *Manawatu Evening Standard*, 7 April 1925, p. 3; 12 May 1925, p. 2; 2 June 1925, p. 7; 14 July 1925, p. 9.
[27] Hounsell.
[28] James Hardie's statement to the Supreme Court, January 1934, p. 3, PNCCA, A175/4, Box 14, research file.

supply when the bulk supply failed, which happened frequently.[29] The MOEPB offered to takeover the Council's plant several times. The Board wanted both to provide a back-up for its own supply, and to prevent the Council reducing its peaks and thus the amount it paid to the Board. The first offer, made in May 1926, was that 'this Board to take over the Loans of your Electrical Undertaking and all further liabilities in regard to same, and all Sinking Funds accrued to be transferred to the Board'. The Council was indignant at this ungenerous offer, and chose merely to receive the letter.[30] The 1927 agreement with the MOEPB was re-negotiated in 1931, and allowed a further five year term of government standard rates plus £200 per quarter. The higher service charge was mainly due the necessity of building an extra line from Bunnythorpe to the power station, as demand had increased and the Board's line losses were becoming excessive.[31]

Negotiations for a new five year agreement between MOEPB and the Council commenced almost immediately after the Supreme Court judgement regarding the special rate dispute, as the existing agreement would run out on 30 June 1935. The Board's offer was for supply at government standard rates plus an annual service charge of £4,500. The Council rejected this, and a subsequent modification which included a £2,700 service charge if the generating plant was closed. To force the Council to shut its power station, the Board signed a new agreement with the PWD for bulk supply at standard rates that included a new clause, that the Board could not supply electricity to any organisation which generated power for sale.

The Council served notice two days before the 30 June deadline that it required the Board to sell 'such electricity as the city shall require', at 'a fair and reasonable rate ... determined by an agreement or judicial inquiry'.[32] The Board responded that the power would be cut when the agreement ran out at midnight, but thereafter supply would be available on a quarterly basis at standard rates

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[29] Hounsell. There were six cuts in the first month of government supply, and 14 in November 1925.

[30] MOEPB to Town Clerk, 19 May 1926; Town Clerk to MOEPB, 31 May 1926, cited in James Hardie's statement to the Supreme Court, January 1934, PNCCA, A175/4, Box 14, research file. The 'sinking fund' was capital accumulated and invested in order to repay the loans when they were due.

[31] Clevely, p. 7; Hounsell. Agreement made on 17 February 1931, backdated to April 1930.

[32] *Manawatu Evening Standard*, 1 June 1966, p. 2.

plus £4,500, if the Council agreed to comply with any conditions imposed by the Minister of Public Works. The Council again rejected the terms, contending that it was illegal for the Board to enter into an agreement that limited the Council's statutory rights and duties under its 1920 licence. It would not accept a supply that could be cut at the end of any quarter, and preferred not to bind itself to accept any conditions which the Minister might choose to impose in the future.

The Acting Prime Minister, Sir Alfred Ransom, and the City members of the Power Board assured the City that the power would not be cut.[33] However, under the agreement, the Board would be forced to give six months notice of ceasing supply if the supply continued after midnight on 30 June, so the country members who constituted the contract committee ordered that the power be cut. The switches were left unlocked so that supply could be immediately resumed if the Council chose to accept the terms. Midnight came, and with the City in darkness, the stand-by plant was started, and was running at maximum capacity within a few hours.[34] Another injunction, restraining the Board from withholding power, led to the electricity supply resuming the following afternoon.

The new diesel engines were installed alongside the existing gas-suction gas machines, and both were operating in July 1936. This may have accelerated the discussions, as a new agreement was reached between the Board and Council the following October. The relationship between the MOEPB and Council settled to the usual level of co-operation, between negotiations, with the Council thanking the Board in June 1939 for its reducing the charge for the extra part of the winter peak due to the lighting used during Show Week.[35]

The Government's Influence on the Council

The Government played an important role in the Council's disagreements with the Board. Although Gordon Coates had promised Palmerston North supply at government standard rates, a government policy evolved that favoured electricity distribution through power boards. Therefore the Government would

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[33] *New Zealand Electrical Journal*, 10 July 1935, p. 28.
[34] Former staff member's letter to editor, *Manawatu Evening Standard*, 14 June 1966, p. 2.
[35] Town Clerk to MOEPB, 27 June 1939, PNCCA, PNCC 1/5/7, Box 42.

neither supply the Council directly, nor insist that the Board supplied Palmerston North at standard rates. Also, when the Mangahao power station was new, the Government wished to encourage sale of the surplus electricity. Consequently, it would not initially allow Palmerston North a deal similar to Timaru's, involving payment for the back-up station.[36] This Government had to modify this policy when the government supply proved to be unreliable due to technical problems and lack of water storage. The PWD arranged in early November 1925 for the Council's power station to become an official government stand-by plant,[37] and it was reported in May 1926 that the power station 'engines have worked during the last six months an average of one hour fourteen minutes in the day'.[38]

As Mangahao had limited storage and demand for electricity had exceeded its capacity, the Government decided to expand its Waikaremoana stations. During construction, the Council was often required to run its plant in winter until the power supply again caught up with demand. This led to a complicated situation where the units generated were paid for twice. The Council paid all its generating costs, and also paid the MOEPB for the peak in demand in each quarter, as the agreement did not change with the Government's direction to maximise generation. The PWD paid the Council to generate more than they would have generated to cut the peak, and the customer paid for power used. James Muir, the City Electrical Engineer, demonstrated that in three weeks in July and August 1928, the power station generated 218,154 units, of which the Council would have generated 53,248 to reduce its peak. Therefore, the PWD paid the Council £687.2.2 for the balance.[39]

Much of the difficulty the Council had with various governments related to a gap between legislation and government policy. Although policy favoured power board distribution, the Government, due to its MPs' varied local interests, did not introduce legislation to enforce this. It was reduced to sometimes heavy-handed interference in local matters to support power boards. Shortly before the contract ran out, the Government intervened directly to close down Palmerston

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[36] By providing a back-up station similar to Palmerston North's, Timaru received power directly from the Government at standard rates less ten per cent.
[37] PWD, 3 November 1925, PNCCA, PNCC 1/5/7, Box 42.
[38] *Manawatu Evening Standard*, 29 May 1926, pp. 2 - 3.
[39] Muir to PWD, 7 September 1928, PNCCA, PNCC 10/2/1.

North's power station in an attempt to put national policy ahead of local interests. With the completion of several hydro-electric power stations, there was now surplus capacity, and the Government was keen to see a full return on the capital invested. At the time, F. T. M. Kissel claimed that Palmerston North had for years deliberately used its stand-by plant at the expense of the PWD, 'costing us probably £5,000 a year'.[40] The PWD's new agreement with the MOEPB for bulk supply at standard rates therefore included a new clause, that the Board could not 'without the prior consent of the Minister supply current to any person, company or corporate body which was at the same time generating its own current for use outside of the building being used for generation'.[41] Undoubtedly the Board agreed with this provision, as it gave them the power to force the Council to shut the Keith Street power station. The Council attempted again to obtain a direct bulk supply, but Kissel's response was 'you know quite well that it is a settled Government policy to supply through power boards. It has been amply demonstrated that the business of power supply can best be done in this way.'[42]

A final contract was concluded in March 1937. The Government consented to pay the Council £1,500 annually to maintain its power station as a stand-by plant and to pay for all units generated at the Department's request. The Council agreed to pay standard rates plus 5% and a service charge for interest and depreciation on the Bunnythorpe supply lines.[43]

The main reason the PWD and MOEPB lost the argument in the mid-1930s was that the Government's policy of preferring to supply through power boards was not supported by legislation. Palmerston North took full advantage of the Municipal Corporations Act 1920 and the fact that the law allowed the

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[40] Kissel's meeting with the Council, 28 June 1935, reported in *Manawatu Evening Standard*, 1 June 1966, p. 2. J. C. Decker, 'Politics and Administration in the New Zealand Electrical Industry', Political Science, PhD, University of Colorado, 1966, p. 149, suggests that cutting the peak was practised because of the Department's charging method, where the three month peak was paid for rather than the units used. Rather ironically, peak lopping came to be recognised later as being in the national interest because it reduced the national requirement for peak capacity.

[41] *New Zealand Electrical Journal*, 10 July 1935, p. 28.

[42] Meeting 28 June 1935, reported in *Manawatu Evening Standard*, 1 June 1966, p. 2.

[43] Hounsell; Rennie, p. 106. Clevely, p. 8, indicates that the 1937 agreement lasted until 1952.

Council to supply electricity within its licensed area for forty-two years. The Government, due to its MPs' local concerns, did not introduce legislation enforcing its policy. In this case, the urban-rural split and parochial-national conflict of interest prevented the Government from streamlining the electrical distribution system.[44]

The Influence of the National Debate

Palmerston North was not the only city MED involved in struggles between power boards and municipal electricity departments. Nationally there was tension between the two types of supply authorities, and between their two national organisations, the Electric Power Boards' Association and the Municipal Electrical Supply Authorities' Association.[45] The Council appreciated that acceptance of the Board's offered price and terms could influence discussions in other centres over bulk prices or the right to generate. This was a factor in the Council's decision to install extra generating capacity in 1935. The Council did not want to accept terms that would prejudice similar negotiations elsewhere, and 'it was freely intimated that the new plant was being ordered as a safeguard to their interests and indirectly those of other Municipal Authorities, rather than as an independent generating unit'.[46] However, the Council anticipated prolonged negotiations and wished to maximise its freedom to manoeuvre, therefore it ordered sufficient equipment to allow it to meet Palmerston North's current electricity demand in the short-term. The Council had previously been quick to warn other MEDs of the threatened legislation compelling the amalgamation of all municipal electrical undertakings with the adjoining power boards.

The Influence of Council's Concern for its Consumers and Ratepayers

The Council intended to offer the best service possible to its consumers, at the lowest possible price. It did not see the provision of electricity as a profit-making enterprise - rather, that the costs should be covered and sufficient extra be retained to allow reticulation to be expanded. Once the power station

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[44] Rennie, p. 103.
[45] Rennie, p. 223. The tension of separate organisations was not resolved until 1985.
[46] *New Zealand Electrical Journal*, 10 July 1935, p. 28.

reached full production, the Council was able to reduce electricity prices. Increased average demand and the acquisition of government supply also led to tariff changes, and the average revenue from the sale of a unit of electricity fell over time.[47] The desire to minimise prices led to the Council's insistence on retaining the right to generate, as cutting the peaks directly affected the amount that had to be paid to the Board, and therefore the amount consumers had to pay. It also led to the Council's stubbornness when negotiating new agreements with the Board. The Council had only agreed to allow its territory to be part of the power board area in return for a promise of government standard rates, and it was determined not to pay more than that for bulk supply.

The Council's concern for its consumers and ratepayers was also influenced by financial considerations. The Council refused to sell the power station to the Board in 1926, but it may have given a different answer if the gas plant had been part of the deal. The gas enterprise was falling £6,000 short each year in funding its interest and loan repayments, and disposing of the electricity undertaking would leave the Council to find £10,399 each year to pay its gas loans. To protect ratepayers and gas consumers, the two undertakings were combined under one manager from 1929 until December 1938, with their joint income used to pay their joint loans.[48] The Gas Department's revenue had fallen from £54,269 in 1924 to £33,670 in 1933,[49] it was regularly losing money, and was therefore subsidised by the Electricity Department. Selling its only profitable enterprise did not suit the Council in 1926, nor in 1932, when the Board tried again.

One basic difficulty in operating a power utility is the obligation to sell on credit to all customers, and although the Council operated a discount for prompt payers, the increase in customers and their lowered income during the Depression inevitably led to debt collection problems. Few letters from customers survive, which perhaps indicates their relative lack of importance to the organisation, but one from Mrs J. Johnson of Matipo Street, whose husband was a labourer, indicates some customers' difficulties. The Town Clerk, J. R.

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[47] Beeche, p. 247. 1928: 2.04 d per unit, 1933: 1.21, 1938: 1.015, 1943: 0.766.
[48] Hounsell; Clevely, p. 7.
[49] *Manawatu Evening Standard*, 9 September 1933, p. 8.

Hardie, wrote that unless the £3.16.4 owed was paid, the electricity would be disconnected from 22 October 1931. Her response that 'I am sorry I cannot pay my Light Bill as you now [sic] that my husband is only doing 2 days a week and it takes what money I get to keep my family of 10 on' may have been successful, but it is unlikely that the Council could be lenient to everyone.[50]

Conclusion

The Council faced rigorous external pressure in this period, which was particularly evident in the interplay of the Government and Board. Together, these influences seriously affected the Council's independence as an electricity distributor in this period, but the Government-Board collusion in support of government policy acted to harden the Council's resolve. The growth of urban-rural conflict ironically probably proved helpful to the Council, as the extremes of behaviour exhibited by the Board, both over the rating issue and the 1935 power cut, served to force the Government and Supreme Court to support the Council against these forms of tyranny. Concern for consumers and financial considerations encouraged the Council to be obdurate when negotiating with the Board, but otherwise had a limited impact on its electricity enterprise. Considering the national effects of its agreements probably only had a slight influence on the Council, as its first priority was to local interests, but this may have made it more persistent in reaching acceptable solutions. Overall, the Government and Board had the greatest effect on the Council in this period, but in the face of this pressure, it proved quite successful at maintaining its interests. It remained as a separate electricity distributor, supplying the residents of the City directly. The outbreak of war in September 1939 relieved any remaining urban-rural tension, and signalled a new challenge for supply authorities - that of providing a quality electrical service for consumers while following government instructions to reduce consumption in the national interest.

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[50] Town Clerk to Johnson, date unclear, 1931, Johnson to Town Clerk, undated, PNCCA, PNCC 1/5/7, Box 42.

Chapter Four
Supply and Demand - 1939 to 1958

Introduction

Just as the Council relaxed after its litigious decade, both new and familiar influences affected its control of the electricity undertaking. Unexpected power shortages occurred, and were exacerbated by wartime contingencies. The Government's influence increased as policies were altered to suit the circumstances of the war and supply deficiencies. The Council's MED also faced technical difficulties with its ageing distribution system, a problem made worse by wartime restrictions. On a positive note, the key relationship with the MOEPB, which had been so difficult in the early 1930s, settled into a more co-operative pattern as both organisations faced similar external challenges.

The Influence of Growing Demand

Palmerston North's demand for electricity surpassed the local generating capacity soon after the new diesel machines were installed in July 1936. The number of units sold continued to increase, from 12.6 million in 1936, 20 million in 1940 and nearly 30 million units in 1945. Restrictions to save power kept the growth rate down for the next ten years, but sales topped 40 million units in 1952, 51 million in 1955 and reached 64 million units in 1958.[1] Although the units sold increased by 508% between 1936 and 1958, the demand would certainly have been far higher if electricity had been available unrestricted.

The population of Palmerston North rose by 130% between 1939 and 1951, and customer numbers rose by 143%.[2] The number of consumers grew from 6,800 in 1939 to 7,600 in 1945 and 12,500 in 1958.[3] This rise of 184% over twenty years was not as sharp as the increase in the number of units sold, because the amount of power used annually by each customer rose steadily. Consumers moved from using electricity primarily for lighting to operating a

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[1] *Statement of Accounts*, 1961, p. 48, in PNCCA, A175/4, Box 14, research file.
[2] Ibid.; *New Zealand Official Yearbook*, 1938, p. 70, 1954, p. 37.
[3] *Statement of Accounts,* 1961, p. 48.

range of appliances. It appears that small appliances such as irons, radios and electric kettles were initially the most popular. Electric water-heaters, stoves, radiators and vacuum cleaners followed, and refrigerators and washing machines were installed in wealthier homes. In addition, consumers' gas fittings were ageing, and many sought to replace these with electric appliances. Frequently, suppliers assisted these purchases by favourable hire-purchase terms, discounts and offers of free installation.[4]

The building of state housing areas in Palmerston North also led to an increase in demand. Areas in Terrace End and at the Ross Estate were reticulated in 1941 and 1943, and the Savage Crescent development had some 150 houses completed during the war.[5] As limitations due to power shortages tightened in 1944, the Council protested at having to connect the new state housing areas when it felt that its power allocation was insufficient. Kissel's response, that 'seeing that there is no surplus capacity it remains quite properly the responsibility of existing consumers to curtail their own consumption',[6] was unhelpful but honest, as part of the reason for the national shortage was clearly the increase in consumers' individual power use.

The war itself also led to an increase in the demand for power. Government plans to expand the national electricity supply were delayed or abandoned. Although the Government was able to increase the amount of power generated by completing some smaller projects, demand continued to outstrip supply.[7] This progressively limited the amount of electricity available to the public, as national demand increased and supply was diverted to industrial purposes. It is also likely that war work led to some increases in demand in Palmerston North. In addition, the less stringent lighting restrictions applicable to an inland city may have made Palmerston North's demand grow faster than that of most other cities. Military usage also increased, as the Showgrounds were

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[4] G. B. Battersby, 'An Examination of Costs and Tariffs in New Zealand Electricity Supply', Economics, MCom, Canterbury/Auckland, 1946, pp . 18, 20.

[5] Electric ranges were installed in Savage Crescent, and possibly in the other state houses.

[6] Town Clerk to Kissel, 25 October 1944, Kissel to Town Clerk, 31 October 1944, PNCCA, PNCC 1/5/7, Box 42.

[7] *New Zealand Official Yearbook*, 1944, p. 583, shows Karapiro, Kaitawa and Highbank in progress, and Lake Tekapo construction as temporarily suspended.

used as a military camp. Even during the war years, Palmerston North's population increased by 8.2%. This was more than matched by a 15% increase in consumers, and a 74% rise in consumption. The national annual average rate of growth in demand was estimated at 5.2% between 1941 and 1947. Palmerston North's rate was over one-third higher, at an average of 7% per year between 1941 and 1946.[8]

The Influence of War

World War Two caused other problems in national and local electricity supply. The major effects of the war on electricity supply in Palmerston North were shortages in materials and manpower, and an exacerbation of the existing electricity deficit. It also led to changes in operating procedures to enhance security, reduce lighting and cover emergencies.

The Electricity Controller's first concern when war broke out was to ensure security. F. T. M. Kissel asked each supply authority what precautions it was taking against sabotage at its electricity generating stations and substations, and the PWD undertook a similar survey of its equipment. Kissel introduced floodlights at Tuai, daylight patrols armed with pick handles at Mangahao, and fences and guards at the crucial Melling and Khandallah substations.[9] He also reviewed the PWD workforce, and although the Dalmatians employed on construction at Waikaremoana were considered to be reliable, 'a carpenter ... who has been a member of the Irish Republican Army and boasts of the number of Englishmen he has shot' was of concern to the authorities. Because of the relative ease of obtaining gelignite from the site, Kissel ordered that the workman should be 'transferred to some other job where he will have less scope for his inclinations than exists at Tuai'.[10]

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[8] *New Zealand Official Yearbook*, 1940, 1946; *Statement of Accounts*, 1961, Martin, p. 128.

[9] A. C. Owen (District Electrical Engineer, PWD, Palmerston North), to Kissel, 14 September 1939; National Archives (NA), AADO 570/9n 6/PN/30, PWD PN, 1939 - 42, Vital Points Protection.

[10] Owen to Kissel, 7 September 1939; Kissel to the District Engineer, PWD, Napier, 8 September 1939, NA, AADO 570/9n 6/PN/30, PWD PN, 1939 - 42, Vital Points Protection.

Kissel gradually established clear priorities for security. Key installations were divided into 'vital points' such as power stations, which were protected by the Army with the costs covered by the Government, and 'protected points'. These included substations, such as Bunnythorpe, and were protected by the Police, or by guards supervised by the Police, with the costs borne by either the PWD, power boards or MEDs. Power station guards were increased during 1941, and in March 1942, Kissel advised Owen that the 'time has now come to put in place air raid precautions'.[11] The Mangahao Station Manager requested a lookout armed with an anti-aircraft gun, for the top of the surge chamber, and Kissel arranged for the Army Camouflage Unit to paint the penstocks to make them less visible from the sea. Bunnythorpe and similar substations were also camouflaged, and the PWD dispersed stores and oil so that spares were available to repair air raid damage, and to reduce the fire risk. A PWD review indicated that the Palmerston North power house equipment was adequately protected from splinters and blast damage, but the Main Street substation was a decided fire risk - the 'fire hazard is bad under any conditions of emergency or otherwise', partly due to the large amount of oil stored there.[12]

Although he considered the risk of sabotage was very small, Kissel recommended to the Palmerston North City Council that it have a man on shift at the power house during the night hours. As the station was usually closed from 11pm to 7am, this led to the appointment of an extra watchman in early October 1939. The watch appears to have been discontinued later, as the local Inspector of Police, Henry Scott, determined in February 1941 that a night-watchman was required again. The Council instructed Muir to employ another watchkeeper, and to discuss with the Police whether arms were needed. This night-watchman lasted until the Police decided the risk was reduced, and the Council dispensed with the position in August 1943.[13]

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[11] Kissel to Owen, 6 March 1942, NA, AADO 570/9n 6/PN/30, PWD PN, 1939 - 42, Vital Points Protection.

[12] Bloodworth to Kissel, 12 May 1942, and to Niven, 15 May 1942, NA, AADO 570/8n 6/PN/14, PNCC, 1939 - 42, Vital Points Protection.

[13] Kissel to Muir, 19 September 1939, NA, AADO 570/8n 6/PN/14, PNCC 1939 - 42, Vital Points Protection; Muir to W. L. Cutten, 10 October 1939, PNCCA, PNCC 10/1/6, Box 2, Folder 10. Scott to Town Clerk, 11 February 1941, Town Clerk to Muir, 26 March 1941, Town Clerk to Niven, 25 August 1943, PNCCA, PNCC 1/5/7, Box 42.

The war led to extensive lighting restrictions. Kissel, as the Dominion Lighting Controller, was responsible for overseeing the blackout. The intention of the regulations was to screen the towns from enemy raiders at sea, rather than from aircraft attacks. Street lighting and vehicle headlights were reduced in Palmerston North, but not as much as in coastal cities. W. A. Waters, the Lighting Controller for Manawatu and Foxton, commented that it was fortunate that Palmerston North was inland, as 'the sky glow from this town is probably the best in New Zealand for its size'.[14] He ordered the new floodlights at the Mt Stewart Memorial and the streetlights at Tangimoana extinguished. Foxton's lights were reduced in power, and shielded from the sea.

Outside lights were banned in Palmerston North, and the use of black-out blinds on windows was made compulsory. Shop windows were darkened, and other visible lighting was prohibited. David Niven,[15] the Palmerston North Lighting Controller, attempted in March 1942 to prosecute four shopkeepers who breached the blackout. However, the judge refused to penalise the defendants as he felt that the military authorities were the biggest offenders. Kissel eased lighting restrictions for inland towns in July 1942, then partially suspended them from December 1942, when the risk of enemy attacks appeared to be greatly reduced. Businesses could light their shop windows again, but non-essential lighting for advertising, floodlighting or under-veranda lighting remained prohibited, to save electricity.

The MED experienced an increasingly serious shortage of staff, due to the number of men called up for military service. In 1942 Niven was instructed to lodge appeals against the calling-up of linesman or electricians, but P. Ferguson, the Fourth Engineer at the power house, was released for military service in February 1943.[16] Ultimately, the shortage grew until the Palmerston North City Council had to use army labour to lay new cables in 1943.[17]

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[14] Waters to Kissel, 26 February 1941, Kissel to local controllers, 31 July 1942, *Manawatu Daily Times*, 27 February 1941, NA, AADO 571/11f 1/MOE, Manawatu, 1941 - 42, Reduced Lighting.

[15] James Muir, the City Electrical Engineer, died suddenly in September 1941, and was replaced by his deputy, David Niven.

[16] Town Clerk to Niven, 23 February 1943 and 29 June 1943, PNCCA, PNCC 1/5/7, Box 42. Over twenty out of the MOEPB's staff of seventy were serving in the military. Due to the manpower shortage it was difficult to find even temporary replacements. Clevely, p. 9.

[17] Hounsell.

Materials for maintaining and extending lines were in short supply. This was partly due to the war itself, as when the ship carrying copper cable to increase the capacity of the Bunnythorpe line was sunk by enemy action.[18] The Government suffered a similar situation when plant ordered in Belgium to extend Arapuni was captured by German forces. The other reasons for supply restrictions were the limited amount of sterling available, and shipping capacity. The Electricity Controller had to approve overseas purchases, ostensibly to conserve sterling funds, but also to limit unnecessary work. Without his support, import licences and Ministry of Supply essentiality certificates would not have been granted for the house service meters ordered by the Council in 1943. Although hardwood for power poles was still available in Australia, shipping difficulties and import restrictions made them unobtainable. Along with a number of other supply authorities, the MED was forced to manufacture concrete poles from late 1943. Even when the materials were available, the MED had to apply for permission to build any lines longer than 10 chains. In common with all supply authorities, Palmerston North had to report monthly on the level of its stock of cable, poles and other electrical supplies, so that surpluses in one area could meet needs in other districts.

The Influence of Government Policies

Governmental influence on power supply authorities was felt in a number of ways during this era. The war exacerbated the already awkward supply situation, but strong government control largely contained the difficulties. The Supply Control Emergency Regulations 1939 and the Electricity Emergency Regulations 1939 were passed the day after war was declared. These created the post of Minister of Supply, and established a number of controllers of vital goods, from timber, sugar, and vehicles to electricity. As Electricity Controller, F. T. M. Kissel had the power to 'promote, organize and control the supply of electric power, and ... control other industries and trades so far as they may affect the supply of electric power'.[19]

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[18] Town Clerk to Kissel, 15 July 1941, PNCCA, PNCC 1/5/7, Box 42.
[19] *Electricity Emergency Regulations 1939*, Serial no. 1939/146, by Order in Council, 4 September 1939. NA, AADO, 606 1b, Booklets and Memoranda, 1939-43.

The pre-war power supply shortage could not be relieved by building extra plant, as it was impossible to obtain machinery during the war. The Government extended daylight saving to save power, and asked supply authorities to minimise their power usage. The MOEPB, and therefore Palmerston North City Council, was limited over the winter of 1941 to only 7.5% more than their demand in the same week of the previous year.[20] Street lighting was reduced by twenty per cent. The size of hot water heaters was restricted in April 1941, and their use was reduced to just over twenty hours daily the following July.

Timely peaks in the hydro-lake levels and power-saving measures meant that the Government avoided widespread cuts in power supply for an unexpectedly long time. The use of electric radiators at peak hours was restricted in 1942, and later the manufacture of electric appliances was limited.[21] Deepening the blackout also saved power in early 1942, but as power demand grew, Kissel had to consider further rationing. In early 1942, David Niven advised the PWD that as fuel for the standby plant could not be guaranteed, rationing would have to be done through control of water heating. More drastically, he could selectively turn off power to large parts of the City. The water heating load was 1368 kVA, and shedding this completely would reduce power use by 23.7%. If more was needed, cutting the supply to three of the seven feeders would bring the reduction to 46.9% without interfering with the supply to factories engaged on war work, or the Public Hospital, waterworks or sewer pumps. Niven also had to consider plans for supplying vital places with electricity, should the state and council systems be damaged, and he therefore arranged for a local butter-box factory to supply the hospital in emergencies.[22]

The electricity supply situation worsened in 1943, as there was a water shortage in the South Island, followed by a breakdown at Arapuni. From May, the use of radiators in commercial premises was prohibited between 4pm and 6pm. Street lighting hours were reduced in June, with the shutoff brought back

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[20] Kissel to Muir, 16 May 1941, PNCCA, PNCC 1/5/7, Box 42.
[21] Martin, p. 128.
[22] Niven to Kissel, 27 March 1942, NA, AADO 570/8n 6/PN/14, PNCC 1939 - 42, Vital Points Protection.

from midnight to 11pm. The Council limited new connections where there was an alternative source of heat or light, but were forced to connect a variety of lights for the Home Guard and for medical dressing stations. The Government extended its restrictions in radio broadcasting hours, and cuts between 8.15am and 8.45am and from 11am to noon saved 5.5% nationally. Kissel also considered controlling the sale of electric jugs and kettles, and appealed to the public to conserve electricity. Thermostats had to be fitted to water heaters, and meters connected where the supply was currently unmetered.[23]

The Council and MOEPB met in July 1944 and agreed that 'having made all possible reductions in the use of electricity for street lighting display, community lighting and water heating, ... no further restriction can be imposed'.[24] They suggested that one method of reduction would be further curtailing hours of broadcasting. The Government, however, forced a change in the tariff structure in 1945, in an attempt to encourage a national reduction in electricity consumption. The existing rates in Palmerston North of 4d. per unit for light and half a penny per unit for heat were replaced by a complicated tariff relating to the number of rooms in the house. This was a step towards charging for heat and light at the same rate on one meter, and would also reduce the chronic problem of customers using lights plugged into heat points to save money. The Price Tribunal agreed to a new tariff for water heating to reduce water heating consumption by twenty per cent. Although Niven and the City Treasurer, J. P. McDavitt, felt that this target would not be achieved, and that the new tariff was not 'at all a fair basis of assessment', they reluctantly complied with the Government's direction.[25] A change in government regulations in 1950 saw the introduction of a one-meter tariff, where all power except water-heating was charged at the same rate.[26]

Although the wartime shortfall in electricity supply was partly due to war work and industrial priorities, the fuel, water and generating capacity shortages meant that no instant cure was possible once peace was established. The

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[23] Kissel to Power Shortage Advisory Committee, 22 June 1944, PNCCA, PNCC 1/5/7, Box 42.
[24] Town Clerk to Kissel, 25 July 1944, PNCCA, PNCC 1/5/7, Box 42.
[25] Niven and McDavitt to Town Clerk, 3 February 1945, PNCCA, PNCC 1/5/7, Box 42.
[26] Hounsell.

restrictions had to continue, as Kissel 'foresaw massive power cuts as the only alternative to a breakdown of the system'.[27] Extra lighting was not even available for the peace celebrations. The war was over, but extensive redevelopment of the national electricity distribution system was required to meet consumers' demands. Cuts became even more widespread after the war, and continued until the power supply finally caught up with demand in 1958.

Commercial radiators were again restricted between 4 and 6pm in the winter of 1946, but running the power station enabled the Council to avoid more serious restrictions. However, a drought in the autumn of 1947 caused a cut of 20% in power allocations to the North Island. Entire sections of Palmerston North took it in turn to be without power. The hospital, which had a small auxiliary plant, complained of cuts from 6 to 7pm on week days, but was more fortunate than the Wanganui Public Hospital, where power was cut for nearly four hours daily.[28] In June, Niven undertook an unannounced tour of businesses to check that the late afternoon radiator ban was being observed. He discovered that only one per cent were complying, and threatened to disconnect the supply to the rest. The use of the standby plant to alleviate the restrictions in 1946 and 1947 made the 15% reduction in 1948 seem much worse, as the station's capacity was not sufficient to cover this cut as well. The Council introduced a number of measures to spread the conservation efforts across both domestic and commercial customers. In one week in April 1948, these ranged from a complete ban on commercial radiators during business hours, to cutting domestic hot water heaters completely during the week.[29] The Council did not allow coal or gas ranges or hot water systems to be replaced with electricity until well into the 1950s. Even though the supply situation had substantially improved with the completion of a number of new power stations, the winter of 1956 saw cuts in Palmerston North in shop window lighting, water heating and radiator use.

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[27] Martin, p. 129.

[28] Engineer, Wanganui-Rangitikei EPB to Niven, 29 April 1947; Hospital Board to Town Clerk, 7 May 1947, PNCCA, PNCC, 1/5/7, Box 42. Wanganui Public Hospital's supply was maintained by its coal powered boiler steam plant.

[29] *Manawatu Daily Times*, 20 April 1948, p. 5, in PNCCA, PNCC 1/16/2 Volume 1, 1935 - 51 newspaper clippings, p. 135. In mild weather, the following cuts were planned: radiators prohibited 8am to 6pm, domestic hot water heating cut by 50%, domestic customers cut on Saturday and Sunday afternoons, shop lighting reduced 25%, reduced streetlights on moonlit nights, factories to close 30 minutes early, shops to close at 5pm, other cuts if necessary.

An additional policy intended to alleviate power shortages was the Government's support for gas production. Electricity shortages reduced the number of customers switching from gas, but wartime restrictions in labour and coal, and limited maintenance meant that gas supplies were also rationed or cut. The Government attempted to stabilise the gas supply by paying a subsidy from 1943 to 1950, and from 1951 into the 1960s. Mergers of gas and electric supply enterprises were encouraged under the 1956 Electricity and Gas Co-ordination Act, as the Government believed that most of the 34 surviving gas 'undertakings were essential in the national interest' to limit electricity demand.[30] This move followed actions taken in Palmerston North, where the Palmerston North City Gasworks and Electricity Empowerment Act came into force on 1 April 1951. Although A. M. P. Hall's confidential report suggested three reasons for the local merger, the main one was that a merger would 'make it very difficult for the Government or Power Board to take the Electricity Department over from us', a scenario which he considered possible from statements made by members of the State Hydro-electric Department.[31] It had the secondary advantage of enabling the gas losses to be more easily offset against electricity surpluses. However, it was not a full merger, as the two enterprises continued to be run separately.

The Influence of Technical Difficulties

The MED was further influenced in this period by technical problems. The reticulation system was twenty years old at the end of the war, and lack of maintenance and increased demand had left it in poor condition. The Council made seven successful applications to the Electricity Controller for permission to buy equipment and undertake work during the war, including five for additional cable and transformers to overcome problems due to equipment running well over its capacity, and causing extensive voltage drops.[32] The feeders from

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[30] *New Zealand Official Yearbook,* 1964, p. 583, 1954, pp. 627 - 8. Rex Monigatti, *Energy on the Move. A Short History of the Hutt Valley Electric Power and Gas Board, 1922 - 72* (Wellington, 1972), pp. 26 - 27. The Petone and Lower Hutt Gas Board merged with the Hutt Valley Electric Power Board in 1957, in response to the Government's wishes.

[31] Hall (City Treasurer), to Town Clerk, 10 October 1949, PNCCA, A175/4, Box 14, research file.

[32] Permit applications of various dates, NA, AADO 570/59f 9/PN/14, PNCC, 1939 - 44, Permits.

Bunnythorpe to the City had become too small to carry the load without voltage drops and excessive line losses. The loss of the copper wire at sea delayed the completion of the new feeder until August 1941. In the meantime, the Council sought Kissel's permission to run the power station, and his help in obtaining fuel. Later in the war, Niven successfully experimented with using an alternator from the gas plant as a synchronous condenser, to avert the increasing low voltage problems. By 1945, the supply problems were such that the Council was operating its plant much more frequently. Voltage problems had also forced a decision to change the distribution system from 3 kV to 11 kV, and the change-over commenced in 1942.

Despite a number of wage increases for MED staff in 1943, they were tired of working under difficult circumstances by the end of the war. The most heartfelt plea was from the 'complaints' men, who were employed to repair service faults. Although initially employed in the late 1930s to be on call one week in three to cover after-hours problems, a shortage of staff left the remaining men, Pillinger and Byles, taking a fortnight each in turn. They sought overtime wages to compensate, as they had to repair an increasing number of faults caused by ageing lines that could not be maintained due to lack of materials.[33] A storm on 15 April 1947 emphasised the poor condition of the system, as extensive damage was caused, and the rest of the decade and the next were used in upgrading cables, switchgear, substations and streetlights.

Peace with the Board

An influence that was especially important in the early 1930s, and again in the 1960s, was in abeyance in this era, as town and country tensions were less prevalent. This may be related to the political dominance of the cities under the first Labour Government. Within a few years, the Council and MOEPB had negotiated a new and more co-operative relationship. They experienced similar problems during the war, with shortages of electricity, materials, motor vehicles, petrol and manpower. Although the Council had difficulty obtaining adequate coal and diesel supplies for the power station, it was used in June 1940 when the Government supply failed at Bunnythorpe. The Board expressed its appreciation

[33] E. Pillinger and C. K. Byles to Town Clerk, 9 April 1945, PNCCA, PNCC 1/5/7, Box 42.

that the City fed power to the country rather than using all of the supply itself.[34] Although there was a fear that the Board and the Government could conspire to takeover the electricity enterprise, this was averted by local legislation in 1951. The tension caused by negotiating new supply contracts was largely absent, as one contract held for most of this era. The negotiations in the early 1950s, although protracted, were much more amicable than those in 1935.[35]

Conclusions

The main influences on the Council in this era were the supply shortages and the war, and the government policies that resulted from them. The MED could do little to control these influences, but their effects were mitigated by strong local organisation and thoughtful use of the power station asset. Technical problems had some influence during wartime, but increased capital spending in the 1950s solved these difficulties. Urban-rural tensions were relatively unimportant in this period, as the Council co-operated with the Board for the national good. However, conflict flared up again in the 1960s, as the issue of on-cost charges became an important part of the negotiations with the MOEPB.

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[34] MOEPB to Town Clerk, 11 June 1940, PNCCA, PNCC 1/5/7, Box 42.
[35] Hounsell.

Chapter Five

Power Plays - 1959 to 1984

Introduction

The difficulties of the war years, and especially the supply restrictions, gave way to a period that initially offered greater stability to electricity distributors. Growing demand required the Council to expand the size of its reticulation system, but satisfying demand through building power stations was left to the Government. A resurgence of urban-rural conflict was a particularly important influence in the 1960s, caused partly by the City's growth outside the MED's boundaries, and partly by the rising on-cost charges. The conflict led to actions as varied as considering business mergers and proposing local legislation to expand the MED's business. The Government was also a key influence, both in its increasing desire to restructure the electricity industry to encourage efficiency, and in its response to economic problems and local issues. Financial limitations affected the MED's performance, particularly in the 1970s. Environmental considerations first had an impact on the Council in this period, and led to a new emphasis on putting lines underground for aesthetic, safety and engineering reasons. The financial and social costs of undergrounding lines were not given much weight in the original decision. Overall, it was a period of conflict, marked by a growing awareness that changes to the structure of the electricity supply industry were necessary.

The Influence of Growing Demand

Individual demand continued to expand, and a greater proportion of households were connected. Over 99.5 per cent of the New Zealand's homes used electricity in 1964.[1] Palmerston North experienced rapid population growth, and as each customer's consumption continued to rise, total demand increased. Over 75 per cent of power was sold to domestic customers in 1961, at an average of 5,580 units each.[2] The national electricity supply had finally caught

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[1] Municipal Electricity Supply Authorities, *Nationalisation of the Distribution of Electricity?* (Wellington, 1964), Contention 9. (NB. Pages are unnumbered).

[2] New Zealand Electricity Department, *Annual Statistics in Relation to Electric Power Development and Operation* (Wellington, 1961), p. 8.

up with demand as the Government finished its major hydro-electric schemes, and there was some suggestion that the country had excess capacity. Although vulnerable to drought due to the concentration on water-power plant, New Zealand's next power crisis was related to the fuel shortages and oil shock of the early 1970s.[3] Increasing demand, particularly in the new areas of the City outside the MED's boundary, led to an increase in tension between the MED and the neighbouring Manawatu-Oroua Electric Power Board.

The Influence of Conflict between Rural and Urban Interests

Boundary debates were stimulated by Palmerston North's extensive growth since the 1920 license was issued. In particular, the relocation of the railway to the north had encouraged industrial development in the Board's area. In 1966, the Council formally requested evolutionary boundaries that expanded with the City, arguing that extending its electrical boundaries would strengthen territorial local government. The Council stressed the desirability of common servicing of the whole of the city, and the advantages in attracting industry if the area operated under only one authority. In particular, it feared that potential industrial developers would 'dodge a divided City' and not relocate in the area of 'a Power Board with a majority of country representatives'.[4] In 1959, the Council noted that one difficulty in attracting industry to Palmerston North was the Board's tariff structure. This reflected the rural nature of its existing load, and made what the Council considered to be insufficient allowance for the difference in industrial demands, particularly with its fixed charge for welding capacity and its rates for commercial and industrial lighting.[5] Dynamic boundaries would allow the Council to recruit new industry to the City by promising a generally cheaper Council electricity supply.

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[3] *Evening Standard*, 1 August 1973, p. 1; Martin pp. 141 - 142. The shortage was initially caused by a dry summer, but traditional methods of meeting demand by using oil-fired thermal generation proved too expensive. Cuts were made to water and storage heating hours in Palmerston North.

[4] 'Palmerston North Electrical Supply Empowering Bill 1966, Submissions to the Local Bills Committee', August 1966, p. 8, PNCCA, A175/4, Box 14, research file, and PNCC 1/5/5, file 81/2/2/1.

[5] 'Submissions of the Palmerston North City Council to the Commission of Inquiry into the Distribution of Electricity in New Zealand, 1959', (the Stanton Commission), PNCCA, PNCC 1/5/5, file 81/2/3/1, p. TP1.

Urban-rural tension was exacerbated by philosophical differences between the Council and Board over the on-cost charges.[6] The Palmerston North Electrical Supply Empowering Bill 1966 also sought a direct government supply, to overcome this vexed question. The quarterly payment was said by the Board to be a subsidy to assist with rural reticulation. However, this had been completed in 1957, so the Board changed its justification of the charge to a subsidy to fund the reduction of domestic tariffs to the City's level. The Council rejected any increase in the on-cost charge, stating that no subsidy was required as the Board was in a strong financial position compared to the City. The rural area was fully reticulated, and even if it was not, funding should be sought from the Rural Electrical Reticulation Council (RERC), not from Palmerston North City. The Board's load and load factor were better than that of the City. The Council was able to point to the Board's large new building, paid for out of revenue reserves, its substantially higher average wages, and its policy of taking only short-term loans, to indicate the Board's financial strength. Conversely, the City was in financial difficulties in 1966, as the gas losses had risen to over £46,000 annually. As well as flatly refusing to pay a larger on-cost, the Council lobbied for a direct government supply to avoid it.

The Board's Influence on the Council

One suggested solution to the differences between the two organisations was considered in 1963 and 1964. The Board proposed that they should operate as a joint enterprise, and some months were spent in discussion before a deadlock was reached. Stumbling blocks were the gas losses, and the very different tariff structures. The Council had a high level of cross-subsidisation in favour of its domestic customers, whereas the Board's charges favoured its major commercial users. The Board denied that power was sold to its largest commercial customers under cost price, although the figures presented clearly

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[6] The on-cost charge had risen from the 1920s level of £300 (plus charges to cover line costs and losses), to a simple 5% loading on energy charges (plus expenses) in the 1930s. Between 1937 and 1953 the average payment per annum was £2,464, which increased to an average of £15,105 annually between 1953 and 1958. This large increase was due to joint efforts by all similarly affected power boards. The Council negotiated an annual flat rate of £22,000 plus costs in 1959, but in 1964, with demand still rising, the Board sought to return to a more profitable percentage calculation. Based on the estimated demand for the five years from 1964, the charge would be an average of £32,923 annually, plus an annual service charge of £2,750 at the 1958/63 rate.

indicate this.[7] The Council pointed out that the Board could easily reduce its domestic tariffs to the City's level by increasing commercial charges, but the Board was reluctant to do this as it would have removed any possible justification for the on-cost charge. The Council was equally intransigent, refusing to alter its tariffs to the Board's levels, as this would result in a much larger profit at the expense of the City's consumers.[8] In any event, agreeing to increase the City's charges to subsidise the Board's could have become an on-going process. The MOEPB was considering amalgamation with the Tararua and Dannevirke power boards, which had even higher domestic charges than its own. The City would not agree to increasing its domestic charges to reduce prices for an ever-widening area.[9]

This was only one of the many mergers proposed in this period. The 1959 Stanton Commission recommended numerous amalgamations to improve electricity supply efficiency, and the Board adopted the idea with enthusiasm. The proposed joint enterprise was an early attempt, but its lack of success due to urban-rural conflicts did not prevent more wide-ranging mergers being suggested. Amalgamation between the MOEPB and Council MED was suggested by the Board in 1966. Trevor de Cleene, a member of both the Council's Electricity Committee and the Board, proposed amalgamation to obviate the need for the 1966 Bill, of which he was the instigator. He advised the Board that amalgamation was preferable to nationalisation of the energy distribution industry,[10] but the Council chose to continue with its Bill to clarify the issues of on-cost and boundaries. A proposal in 1969 that the Manawatu-Oroua and Horowhenua power boards should amalgamate, and take over the Palmerston North electricity distribution system, had Councillors telling ratepayers that this would result in a ten per cent rate increase.[11] Similar fears

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[7] The consumers included two freezing works, Ohakea and Linton Bases, and Massey University.

[8] R. Claude Hands (City Electrical Engineer) to PNCC Electricity Committee, 1 February 1963 and 10 April 1964, PNCCA, PNCC 10/1/6, Box 1, Folder 3. *Manawatu Evening Standard*, 21 April 1964, p. 6; 23 June 1964, p. 11.

[9] Hands to Electricity Committee, 25 February 1964, PNCCA, PNCC 10/1/6, Box 1, Folder 3.

[10] *Manawatu Standard*, 19 April 1966, p. 7.

[11] Councillor Trevor de Cleene (Chairman of Electrical Committee), *Evening Standard*, 14 July 1969, p. 1; W. R. B. Thompson, *Electrical Supply Authorities (Manawhenua Region) Report, February 1970*, (Levin, 1970) pp. 33, 41, 43 and 52. The rates increase related to gas losses and payments for Council power and street lighting.

were raised in 1971, when the Electricity Distribution Commission was expected to favour suitable amalgamations to promote efficiency.[12]

The Board tried again in 1976, but release of its ideas on this 'touchy subject' to the press before discussion with the Council made agreement unlikely. In any event, the Council was inclined to reject merger proposals from any source as it believed that its ratepayers would not benefit. Because of the low domestic tariffs in the City, ratepayers who were electricity customers could not expect to pay the same or less after an amalgamation. In addition, the Council and therefore other ratepayers would also potentially suffer. Running the electricity enterprise subsidised a large proportion of the City's administration and operation costs, aided cash flow and covered street lighting costs and the gas losses. Losing the enterprise would also directly affect the employment of numerous Council staff, who were therefore unlikely to recommend such an action. The response that 'City Council sources were adamant that there was no show of the power board's advances being consummated by any kind of marriage of interests' was only what the Board should have expected.[13] The Board's role as an irritant was probably actually of some use to the Council and Council staff, as it made ratepayers defensive about their power enterprise, and unwilling to lose the benefit of cheap domestic tariffs and reduced rates. Suggestions of mergers, amalgamations or joint operations continued to come from the Board into the 1990s. However, this defensive attitude could make a successful merger more difficult.

The Government's Influence on the Council

Changing government policy remained an important influence on the organisation in this period. The Government began the period by establishing a Commission of Inquiry into the Distribution of Electricity in 1959. It was to consider the 'organisation and efficiency' of electrical distribution, the 'nature and number' and 'powers and functions' of the 83 supply authorities and the

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[12] *Tribune*, 23 March 1969, p. 1; *Evening Standard*, 28 July 1971, p. 2.
[13] *Evening Standard*, 16 November 1976, pp. 1 and 3.

desirability of legislation to encourage more uniform tariffs.[14] It produced a comprehensive report which singled out municipal supply authorities, like that in Palmerston North, as creating 'the outstanding difficulty'. The Commission saw it as 'impossible to envisage a sound national policy for electrical supply if these bodies remained as entrenched enclaves of advantage', able to offset their profits against other Council expenditure. It saw them as obtaining a national advantage from the use of cheap electricity, but disregarding a national responsibility. To improve efficiency, the Commission suggested consolidating the country into 26 power supply areas, each under power board control.[15] This would ensure greater assistance from urban areas to the cost of rural supply, better load diversity, more economical operations and more equitable tariff structures. However, except for the setting up of an Electricity Distribution Commission in the late 1960s, the Commission's recommendations were not generally implemented. Its main recommendation, that the distribution systems, assets and liabilities of the territorial authorities be transferred to power boards was 'considered by Government to be too revolutionary'.[16] Government policy was opposed to piecemeal action, but the amount of anticipated opposition meant that the Government could not expect the legislation to pass easily. Although it reflected the growing feeling that some form of national restructuring was required, the Commission's plans did not promote a consensus on how to achieve it.

The desire to expand a municipality's boundaries as the urban area grew was not limited to Palmerston North, but the Government's policy on the boundary issue was clear. The Minister of Electricity stated that 'I am opposed to the principle of any action by central Government which derogates from the authority of local Government ... and it is far from my thoughts to impose any change in the pattern of local Government without the consent of those concerned.'[17] He therefore sought a compromise involving compensation

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[14] *Report of the Commission of Inquiry into the Distribution of Electricity*, (Wellington, 1959), p. 5. It was known as the Stanton Commission after its head, the Hon. Sir Joseph Stanton, a retired Supreme Court Judge.
[15] Ibid., pp. 20 - 21, 24.
[16] *Nationalisation of the Distribution of Electricity?*, Contention 26.
[17] T. P. Shand (Minister of Electricity), to the Electrical Supply Authorities Association, 24 August 1964, PNCCA, PNCC 10/1/6, Box 1, Folder 3.

between supply authorities, or in some cases where changes would be in the national interest, government compensation. Lack of progress or agreement between the City and Board led to the Palmerston North Electrical Supply Empowering Bill 1966, but as it was not the Government's policy to force boundary changes, the Bill was not promoted. The Bill also sought a direct government supply of electricity, due to the problem of on-cost charges. As this was also not in line with government policy, and may have set an awkward precedent, it was not approved. The Bill was held in abeyance for several years pending a decision by the Electricity Distribution Commission, and in the end it lapsed.

The Government had a great deal of influence on pricing in this period. Its initial move was to step into the on-cost debate during the 1960s, responding to the Municipal Electricity Supply Authorities Association of New Zealand's (MESAANZ) statements that the uneven implementation of such charges was unfair. Some 18 municipalities received their bulk supply through power boards, but not all boards sought an on-cost payment. In comparison to Palmerston North's paying £22,000 annually and facing demands of over £35,000, Timaru and Nelson paid little extra. Section 2(1) of the Electricity Amendment Act 1966 was passed to rectify this inequitable situation, and provided for actual costs to be charged, rather than set percentages of energy sales.[18] The effect in Palmerston North was to allow progressive reductions in on-cost payments, until in 1973 charges made by the MOEPB were based on actual costs.

The Influence of Finance

After decades of holding bulk prices for electricity at relatively stable rates, government power prices started to rise in this period. The relatively simple bulk supply tariff of the 1920s had encouraged escalating demand for government power as the set rate per kilowatt (of maximum demand per quarter) fell as the peaks rose. Enormous amounts of capital were required to expand the generating system, therefore the tariff had to change to increase revenue for

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[18] *Nationalisation of the Distribution of Electricity?*, Contentions 13, 14 and 15; Hall to MESAANZ, 21 April 1966 and MESAANZ draft letter to Shand, April 1966, PNCCA, PNCC 1/5/5, file 81/2.

capital funding. A flat charge per kilowatt was introduced in 1957 as a move towards a two-part tariff charging for both energy and demand. Various levies were added to the bulk tariff as a contribution to capital needs, and it was altered in 1967 to include an energy charge and an annual peak demand charge. Inflation, capital shortages, and the effect of the oil crisis on generation costs saw regular price increases in the next few years. The biggest changes came when inflation levels were at their highest, and the bulk tariff increased by 60 per cent in 1976, 40 per cent the next year, and 60 per cent in 1979. Subsequent rises were below the inflation rate, and the price of electricity in real terms fell over the period.[19] Pricing philosophies changed in the 1980s. The Government was concerned that demand could not continue to be met infinitely, and energy conservation was promoted. Prices rose and the tariff structure changed again in 1984, in an attempt to reflect the real costs involved in production and to provide a return on investment. Corporate restructuring had begun to influence prices.[20]

The Council was not able to be proactive in its financial crises in the 1970s, as the main constraint on its actions in recovering increased charges was the Government. A government-imposed price freeze prevented implementation of a planned tariff rise in April 1972, and government policy limited further retail increases. Although the Council made a case for increasing prices by 10% in June 1973, the maximum allowable rise was 5% then and a similar amount in April 1975. Even so, the MED's budget showed an expected loss of $71,000 for 1977. The Government allowed further rises in 1977, 1978 and 1979, but in each case the Council had budgeted for more. The effects on the MED of insufficient revenue grew. Its eroding profit margin affected long-term planning, staff numbers, maintenance and capital expenditure. The undergrounding programme was cut. However, the consumers gained from the situation as the real cost of electricity fell. In particular, domestic consumers benefited as the Council ignored its Engineer's recommendations and attempted to alleviate the

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[19] From November 1967 to December 1977, local power prices increased by 126%, while bulk prices rose 156%, the Consumer's Price Index 170% and Nominal Weekly Wage Index 220%. D. R. Layton to PNCC Energy Committee, 5 December 1977, PNCCA, PNCC 1/5/5, file 81/6.

[20] Martin, pp. 287 - 288.

effects on domestic customers by increasing other tariffs by greater amounts.[21]

The Influence of Changing Perceptions of the Environment

Environmental considerations were first seen as influences in this period. Once gas-powered vehicles became available, the Council's fleet was converted. It also decided that new power lines should be placed underground from the 1960s, and adopted a policy of systematically replacing overhead lines in 1970, following a national tendency.[22] The trend was pioneered by Napier after the 1931 earthquake and became increasingly noticeable from the 1960s. In 1951, the Council considered improving the general appearance of the City by eliminating all power and telegraph poles, but apart from considerations of cost, technological developments were not sufficiently advanced to allow widespread undergrounding of the reticulation system.[23] Existing types of underground cables were difficult to handle and lay, and ageing cables could lead to more faults which were expensive and time-consuming to repair. Only the development of new technology in the form of plastic insulated cables made undergrounding more practical. The Council stated in 1964 that underground reticulation was 'most desirable' for new subdivisions. However, as new developments were generally on the edge of the City in the 1960s, this policy had little impact on the MED. The reasons for undergrounding were varied, but included aesthetics, safety, avoiding storm damage, and being 'in keeping with modern trends'.[24] Increased cost was the main drawback, both in the cables and in more expensive street light fittings, but the Council also had to consider increased difficulty in locating and repairing faults. On the other hand, undergrounding existing reticulation could reduce system losses, a factor which became increasingly important as support for energy conservation grew in the 1970s.

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[21] This may have been government policy too. It stipulated that the benefit in the reduction of bulk prices in 1958 'should be confined to domestic customers'. Stanton Commission Report, p. 16.

[22] Ron G. McInnes (City Electrical Engineer) report 'Undergrounding of Overhead Areas', published in unknown journal, 1982/3, pp 37 - 40, PNCCA, A175/4, Box 14, research file.

[23] Town Clerk to Fire Board, 30 October 1951, PNCCA, PNCC 1/5/3, Box 2, Electricity File E/3 1951-2. Some of the City's 1923 lines from the power station were laid underground in bitumen trenches, however they suffered from faults almost immediately due to contractors using less bitumen than specified, and to excessive stretching of the cable.

[24] *Evening Standard*, 28 July 1964, p. 9.

The main aesthetic consideration was the visual impact of poles and lines, and especially the pole-mounted transformers. As consumer demand increased, lines needed to be increased in capacity, and a greater number of substations were required, cluttering the city-scape. With undergrounding, transformers were less visible, hidden in maintenance-free brick or block substations on the berms. In addition, removing lines made the City's trees more visible, and they no longer needed to be regularly trimmed to keep them out of the overhead lines. Publicity material stressed that both customers and ratepayers benefited from the improved environment. Indeed, good publicity resulted in greater consumer awareness and requests for particular streets to be converted earlier than planned, which the MED was able to meet in cases where a financial contribution was made.

At the Council's request and cost, the MOEPB built a new 33 kV supply line from Linton in 1985. Its construction was overhead in the Board's area from Linton to the Manawatu River, then underground to cross the river, and it remained underground through the City to its destination in Pascal Street. Although crossing the river in this way was expected to cost an additional $100,000, the benefits were thought to outweigh the expense. As a bonus, undergrounding avoided a proposed weir construction.[25]

The Influence of Safety Issues

Another key reason behind the undergrounding programme was safety. Much of the overhead system was in poor condition due to its age, and to reduced maintenance during spending cuts in the 1970s. It was necessary to replace parts of the ageing overhead system to prevent it falling on consumers and ratepayers. Many of the existing pole structures for substations were on corners and thus were vulnerable to motor vehicles. Despite some increased chance of vandalism with substations at ground level, the damage caused by vehicles hitting transformers was reduced. Public safety was increased as underground lines are less prone to earthquake or storm damage. Palmerston North is subject to strong winds, which led to numerous faults, especially where

[25] *Evening Standard*, 25 June 1985, p. 3; 23 October 1985, p. 1.

trees interfered with overhead lines. The risk to staff in repairing pole faults during a storm was accordingly reduced with undergrounding. Finally, the Council took the opportunity to shift house meters outside. This improved efficiency in meter reading and billing, as readers no longer required regular access to the house.

Security of power supply became increasingly important. Consumers have come to expect a continuous supply of electricity, which has required supply authorities to design systems that often include duplications to provide security. The main supply lines from Bunnythorpe to Terrace End had been increased in capacity in 1966 and 1967, and an additional line was built from Bunnythorpe to Gillespies Line to feed the south-western part of the City in 1969. As demand continued to grow, a further bulk supply line was required in the 1980s. There was no restriction in the amount of power available from Bunnythorpe, but a 33 kV line was built from Linton to provide an alternative source for greater security. The decision not to replace the ageing power station building in 1985 was another reason for opting for an alternative source, to provide the security that the power station no longer could. In addition, the line would be shorter, and therefore cheaper.

The Influence of the Engineers

With the adoption of an undergrounding programme, the Council's electricity enterprise moved into a period when reliability in engineering outweighed innovation. Electrical engineers 'drove' supply authorities in novel directions until the 1950s, but original solutions were gradually replaced with gold-plated reticulation systems from the 1960s. This was partly due to the influence of British or State Hydro-electric engineers who moved into supply authority positions.[26] In addition, in the 1960s, most supply authorities had few financial constraints, and in Palmerston North the revenue was available to fund the decision to underground the reticulation system. Government price controls severely limited surplus revenue in the 1970s, but the undergrounding programme was substantially increased as soon as revenue and loan funds

[26] *Current*, 1:4, October 1991, pp. 23 - 4. E. D. Hounsell, formerly of the State Hydro-electric Department, became engineers' assistant in the Palmerston North MED in 1954.

became available again. The City Electrical Engineer noted that it was fortunate that his predecessor's policies 'provided for a "proper" job', and that there were few delays in obtaining consumers' consent as the full cost was borne by the MED. Only for back sections was a consumer contribution sought.[27]

A further reason for undergrounding was the expectation of organisational benefits. After the financial constraints of the 1970s, the MED's development was stagnating. Staff morale was low, and management had gone through a difficult period of tariffs falling behind costs. Equipment and the reticulation system was ageing. In revitalising the existing undergrounding policy, there was the opportunity to revitalise the organisation. Extra staff were required, and there was the chance of interesting engineering tasks. In 1979, 'Council were convinced of the need and advantages of a rejuvenated undergrounding programme' by the City Electrical Engineer, and the rate of progress was doubled over the next three years.[28]

The decision to replace sections of the overhead line due to its age or lack of capacity was reasonable, but safety would not have been severely compromised by the installation of new overhead lines, and by continuing routinely to control tree growth. In making the decision to fully underground the system, the Engineer was allowing engineering and aesthetic reasons to overcome financial considerations, as the decision was economically unsustainable. Undergrounding is expensive, and a brand-new, safe and modern overhead reticulation system that would last 40 years would have cost between one-third and one-half of the amount.[29] Another consideration with the underground system relates to its value. Although it costs a great deal, it can be argued that it is worth only as much as the cheapest overhead system that could carry out the same job. When it comes to corporatisation and contemplating sale of the assets, the reticulation system is not worth the amount paid for it. The decision to cross the river underground is similarly questionable on economic or

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[27] McInnes, p. 38.
[28] McInnes, p. 37.
[29] *Evening Standard*, 1972 to 1982. By 1982, 25% of the MED's area had been undergrounded. It had spent hundreds of thousands of dollars from revenue in the 1970s, with only one loan for $110,000 in 1976. It spent $748,000 in 1980, and over one million dollars annually from 1981, a level that would have to continue until after 2000 in order to complete the area.

safety grounds. Of the numerous 33 kV lines crossing the Manawatu River; none has sustained storm or earthquake damage nor fallen over from any other reason. This is an example of a combination of engineering 'gold plating', and environmental considerations.

In addition, there is a social cost. The Council is an elected body, whose electrical objective is 'to provide and maintain an efficient and satisfactory supply of electricity to the Department's consumers at a reasonable cost'.[30] However, this cost could have been substantially lower over the years, but for the Council's decision to allow the electricity consumers to cover the cost of providing and running the City's street lights, to subsidise the cost of electricity used in Council buildings, to divert profits to support the gas enterprise, and finally to underground the reticulation system. In each of these cases, electricity consumers (and especially commercial and industrial consumers) were forced to subsidise the costs of ratepayers outside the MED's licensed area. That there appears to have been little dissension from consumers probably relates to the fact that even after paying these costs, electricity prices remained lower in the City than in the neighbouring MOEPB area.

Conclusion

The relative peace and prosperity of running an electricity enterprise in the early 1960s gave way to a period of neighbourhood struggles and financial pitfalls, and a national acceptance that some form of restructuring was desirable. This period saw a rapid increase in demand, which was met by the completion of government power stations. Conflict between rural and urban interests peaked in the 1960s, and was the major influence on the Council at this time. However, government intervention over on-cost charges acted to reduce this negative influence. The main characteristics of the 1970s were financial difficulties and a sense of a loss of control, as inflation and government policies restricted the Council's options. The changing conditions of the 1980s were reflected in the decision to step up the undergrounding programme. In one sense, this was a period of economically unsustainable decisions, made for environmental, safety

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[30] 'Electricity Policy Statement', objectives and policies prepared for inclusion in the 1978 District Scheme, PNCCA, PNCC 1/5/5, file 78/0/5.

or engineering purposes, at the expense of customer priorities. On the other hand, consumers were paying less for their power in real terms, and benefited from the improved appearance of the City. By 1984, the Council was operating in a business environment that was very different from that of 1959, and under the new Labour Government, it could only look forward to even greater changes in the next decade. With an area of only 19 square kilometres, the MED was one of the smaller power authorities remaining in 1982, but thirteen other distributors had even smaller areas. In sales, the Palmerston North MED was a fairly large enterprise. However, inefficiency and the duplications resulting from having multiple organisations was one reason for the call to restructure the electrical distribution system, which was answered by the Labour Government. The next period reflected the growth of a consensus that corporatisation was the means to achieve efficiency in electricity distribution.

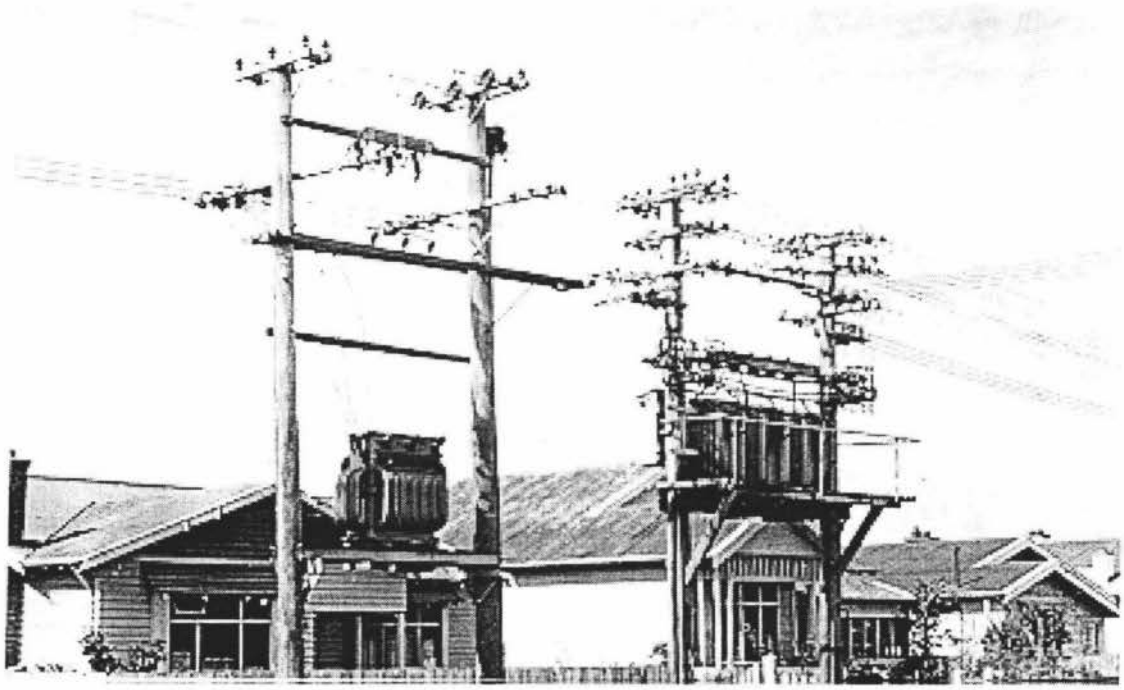

Photo 5. Replacing original transformer on the right with a modern 200 kVA transformer on the left, around 1956.
Source, Electro Power collection.

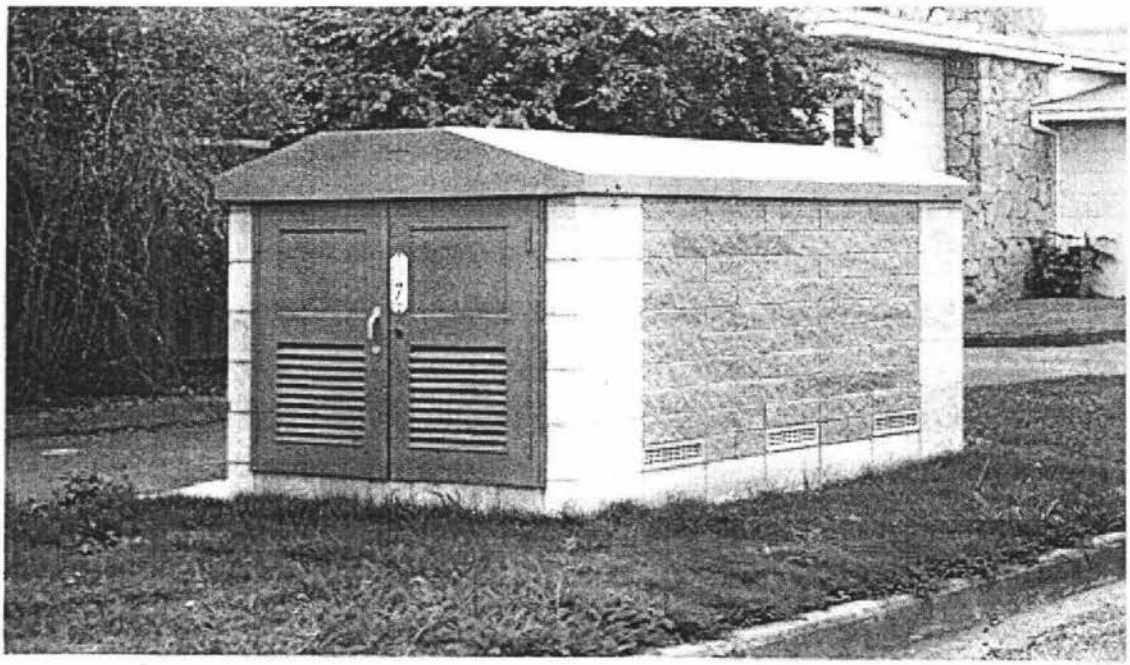

Photo 6. Ground transformer, built as part of the undergrounding process.
Source, Electro Power collection.

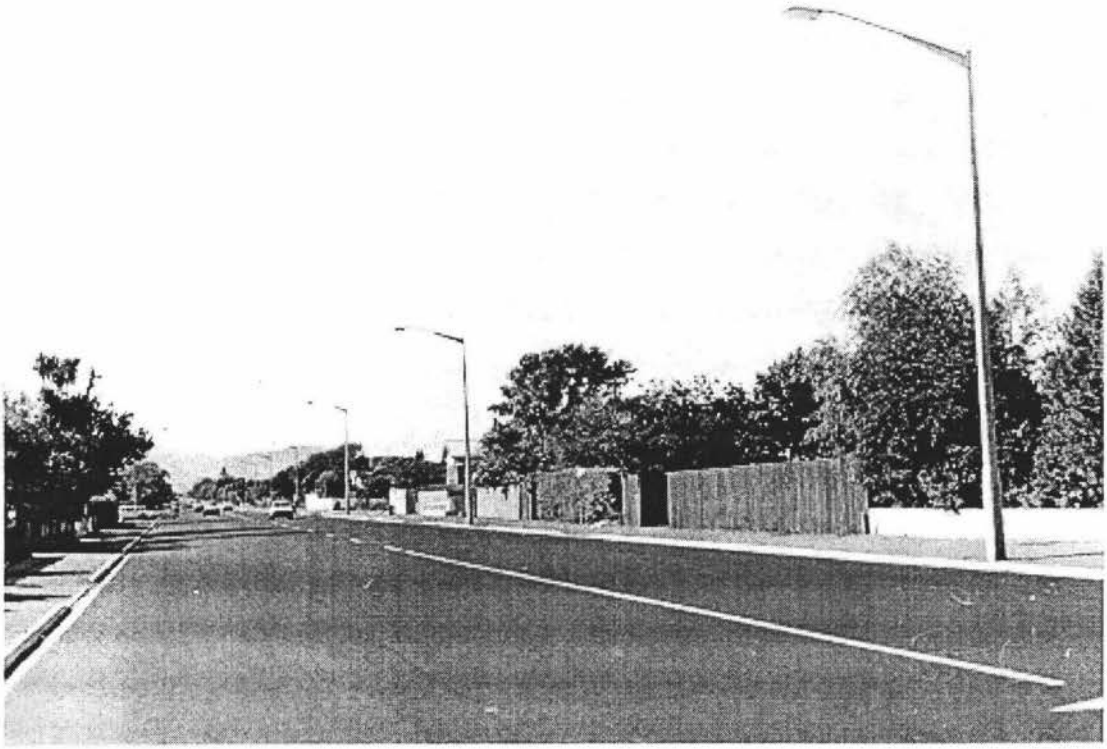

Photo 7. Featherston Street, Palmerston North, photographed in April 1982, after the lines were put underground.
Source, Electro Power collection.

Chapter Six
Current Issues - 1985 to 1996

Introduction

This period was dominated nationally by a significant amount of structural reform of the economy. A radical reorientation in policy towards privatisation replaced substantial economic intervention by the government. Part of this change was a drive towards corporatisation of the energy sector which concentrated initially on a national level and later affected the local scene. Although the efforts of the Government had more effect on most power boards than on the Palmerston North City Council's MED, reacting to government policies led to a number of obvious local changes. The Council had to determine the ownership of its electricity undertaking, and defend the resulting decision that it should be the owner. It had to form energy companies for electricity and gas, and consider their futures. In addition, changing consumer expectations influenced development. Structural reforms brought the prospect of competition for customers, and meant that for the first time since the 1920s, promotion of electricity as a product and the MED as seller was required. Marketing strategies were also affected by the growth in energy efficiency. Repeated merger suggestions from the MOEPB influenced the Council by forcing it to consider future ownership options. The MED experienced more overt change in this period than in its entire history. On the other hand, it remained in council ownership in the immediate period after corporatisation, and continued to distribute electricity to its customers and to have a role in the community.

The Influence of Government Policies

The idea of restructuring the energy sector in the 1980s and 1990s came partly out of the recession and oil crisis of the early 1970s, as well as from the Stanton Commission. The shortage of power and resulting fall in the annual growth rate of electricity consumption led to a new emphasis on energy conservation. Capital restrictions meant that a number of planned power station projects were delayed or abandoned, and government planners accepted that it was not possible to continue to build stations to meet an ever-growing demand.

Under the Electricity Amendment Act No. 1 1976, one of the New Zealand Electricity Department's (NZED) goals became 'to reduce the growth of demand by promoting measures to achieve greater economy and efficiency in electricity usage'.[1] Off-peak storage heating and home insulation were promoted, and energy conservation became part of the NZED's Energy Plans. To emphasise this, the Department became the New Zealand Electricity Division of the Ministry of Energy (NZE) in 1978, and stated then that the 'efficient use of energy and conservation of resources are at least as important as increasing energy supplies'.[2]

At the same time, a concern arose that the electricity industry still required redevelopment. Although the Stanton Commission had concentrated on reforming local distribution, the initial emphasis in the early 1980s was put on changing the Government's role in electricity supply. It appeared that NZE was not operating efficiently. Its history showed it continually trying to keep up with demand until it was so successful that demand had to be created through the 'Think Big' projects to use the excess power. Planners identified a short-term surplus of generating capacity in the late 1970s, but expected that incentives for energy-intensive industries would lead to a shortage of power from 1985. Resources had been squandered as the old Department had designed, and in some cases started to build, numerous stations which were subsequently cancelled. There was also an element of contradiction in encouraging energy conservation while creating employment through construction projects. The 1984 Labour Government built on previous ideas and introduced restructuring, directing NZE towards corporate accountability and exposure to market forces. There was a new, commercially oriented approach, as the government sought to improve the electricity industry's efficiency. NZE was renamed, and became a state-owned enterprise, Electricorp (ECNZ), from 1 April 1987. A year later, it was broken into independent trading units for production, transmission, marketing and power projects. Each had to act commercially, but in accord with ministry and government policy. However, future plans did not necessarily include continued government ownership of any or all of these assets.

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[1] Martin, p. 143.
[2] D. R. Layton to PNCC Energy Committee, 25 July 1978, PNCCR file 81/2/5, Part 1.

Restructuring of the local distribution system followed national corporatisation, but at a much slower pace. The Labour Government's policy remained to 'improve industry efficiency for the ultimate benefit of the nation and energy users', but also to send consumers 'clear pricing signals to prevent wastage and misuse of electricity as an energy resource'.[3] There were also a number of government policies that predated restructuring but which had to be built into the overall programme. These included stopping the transfer of energy profits from MEDs to other local body activities, encouraging prices that reflected supply costs and ending cross-subsidisation between groups of consumers. In addition, ownership issues were addressed as part of the restructuring process. There were a large number of organisations involved, some of which were owned by local government, and others apparently not owned by anyone. A change of government in 1990 saw a slight policy change, from corporatisation to privatisation, but negative public and electricity supply authority responses saw this revert to corporatisation when the energy sector reform legislation was passed in 1992.

The National Government stated in 1979 that 'energy distribution by a regional, local, or ad hoc authority should be on the basis of providing a utility service and not involve the transfer of surpluses to non-energy activities'.[4] As power boards were required not to make profits, unexpected surpluses were likely to be spent on buildings, plant and gold-plated systems. The issue was even more relevant for MEDs, where surpluses could be and frequently were transferred to cover council expenditure on lighting, water pumping, public transport or unrelated expenses. Consequently, this policy was not greeted with enthusiasm by councils, as rates or charges would have to rise to meet the shortfall if it was adopted. The Palmerston North City Council adopted this policy only under government pressure. From the 1986 - 7 financial year, the Council paid full retail tariffs for its own use of electricity. The next year, it accepted that the ratepayer, rather than the electricity consumer, should meet the full cost of street lighting. A change that allowed consumers to benefit from the interest on

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[3] Electricity Distribution Reform Unit, *Report on the Future Ownership of Electricity Supply Authorities* (Wellington, 1991), p. 1; Supply Authorities Action Group newsletter, 17 February 1988, PNCCR file 81/2/5, Part 4.

[4] Hon. W. F. Birch, *Energy Strategy* (Wellington, 1979), quoted in Appendix A of report to Council, 7 August 1981, PNCCR file 81/2/5, Part 1.

fund balances held by the Council came two years later. Altogether, these changes 'cost' the PNCC between $700,000 and one million dollars annually. They were benefits to consumers of a government policy that predated restructuring and corporatisation.

Similarly, the 1979 policy stated that 'the cost to the consumer of electricity ... should reflect the true purchase, production, and distribution costs'.[5] This was extended in 1981 when it was declared that 'it is crucially important that electricity retail tariffs are closely related to the form of distributors' cost without cross-subsidisation between various sizes and classes of consumers. A clear cost-related pricing structure must be developed.'[6] Generally, there was a cross-subsidy from business to domestic consumers, and from urban to rural consumers. The domestic price in Palmerston North was particularly low, and the domestic rates of other suppliers were almost always less than commercial or industrial tariffs. The Government encouraged a reduction in the differential, as the reasons that had caused it (where large commercial customers drew greater amounts of power at peak times of the day) no longer existed. Economic analysis suggests that the cost of supplying multiple customers with small amounts of electricity is higher than supplying a large industrial consumer, therefore the differential appears to have been applied backwards.[7] The development of lower domestic prices reflected both an allowance for accepting controlled hot water heating, but also the influence of elected boards and councils setting price structures. Government policies favoured phasing out the differential over the 1980s and 1990s, and charging cost related prices. At times this encouragement has been somewhat forceful, as the Ministry of Energy threatened to supply energy directly to major users unless their current supplier charged tariffs that were related to the Bulk Supply Tariff.[8] Palmerston North's first major tariff rise of the period came in 1985, and introduced features that became common. A supply charge was initiated, and the domestic rate increase

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[5] Ibid.

[6] Under-Secretary for Energy at the 1981 AGM of the Territorial Energy Authorities Association of NZ, quoted in Appendix A of report to Council, 7 August 1981, PNCCR file 81/2/5, Part 1.

[7] G. R. Hawke, 'Economic Decisions and Political Ossification', in *The Feel of Truth. Essays in New Zealand and Pacific History*, (ed.) Peter Munz (Wellington, 1969), p. 222.

[8] J. G. Culy, E. G. Read and B. D. Wright, *The Evolution of New Zealand's Electricity Supply Structure* (Wellington, 1995), p. 25.

was larger than that of the commercial and industrial users.[9] Again, this policy of non-subsidisation appears to have predated the restructuring of the energy industry.

Initial official reports suggested in 1989 that ratepayers were the beneficial owners of MEDs, and possibly owned power boards as well. Due to the original role ratepayers had in petitioning for the formation of power boards, and the risk they took of having special rates levied, the Government supported ratepayers' rights over those of consumers. Communities generally did not agree, and favoured consumers before ratepayers. It was evident that there was no 'right' answer, and that any decision would be hotly contested, especially if it involved the Government taking over community assets. In Palmerston North, the Council was very clear that it was the owner of its MED. It responded promptly to an apparent threat in the 1991 report of the Electricity Distribution Reform Unit that the government would force it to sell the MED to private investors.[10] It also perceived the pitfalls of accepting ratepayer ownership, as a large proportion of the ratepayers were not consumers, being customers of the neighbouring MOEPB. In addition, emphasising Council rather than ratepayer ownership would leave the Council freer to make decisions regarding the future of its MED.

There was an equal amount of debate over the most appropriate form of ownership of the reformed electricity suppliers. Options ranged from consumers, electors, ratepayers, trust beneficiaries, local authorities, private investors or the Crown. The Government's Electricity Distribution Reform Unit ultimately favoured ownership by private investors, with possibly a portion of the shares held by the Crown initially to enforce a sell-down of shares to private investors. Locally, and throughout New Zealand, reactions to the proposed sale to private investors were not favourable.[11] A proposed share giveaway received slightly more acceptance, but did not gain widespread approval. Share sales were perceived in local communities to involve 'paying again for the assets they have already paid for'.[12] For power boards, one difficulty related to past cross-

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[9] *Evening Standard*, 26 February 1985, p. 1; 1 April 1985, p. 1.
[10] PNCC Council minutes, 22 April 1991; *Evening Standard*, 18 April 1991.
[11] Culy, p. 29 - 30.
[12] Ibid., p. 29.

subsidisation, and finding a solution that the community would accept as 'fair'. Profits, and therefore assets, had in reality been built up by commercial and industrial consumers, as domestic consumers had generally received electricity at preferential prices. However, excluding domestic customers (voters) from any share giveaway would be extremely unpopular. Ultimately, there was more than one solution. Power boards consulted their communities, and devised a variety of options ranging from community trusts to shares given to consumers or local authorities. In general, MEDs remained initially in Council ownership, but a number were sold or amalgamated with other suppliers. The only result that all electricity suppliers had in common was the requirement to be formed into an energy company before 1 April 1993, under the Energy Companies Act 1992. The introduction of a competitive wholesale electricity market in October 1996 signals that reform is continuing, and the associated higher risks mean that fewer but larger suppliers can be expected in the future.

Local Restructuring

The pressure to restructure was felt locally in Palmerston North from around 1985. Initial reactions were to restructure before being forced to, in an attempt to obtain a more favourable outcome than that anticipated under government reform. Widespread amalgamations had been suggested, such as between the Wellington MED, Hutt Valley Electric Power and Gas Board, Horowhenua EPB, MOEPB and the Palmerston North MED. This was sufficient to encourage the Council to attempt to manage any potential change, rather than passively accept the Government's plans. The MOEPB approached the Council in October 1985 to again suggest a merger. Concerned that other scenarios could be worse, the Council agreed to informal talks. By June 1986, discussions centred on the possibility of forming a Manawatu Energy Authority to distribute both gas and electricity.

A number of difficulties were raised, particularly relating to the impact on the Council of losing its electricity undertaking. As the level of subsidisation between electricity and other council expenses was still high, it was estimated that a merger would cost the Council between two and five hundred thousand dollars annually. This figure was made up of the cost of paying full price for

electricity for council buildings and pumps, street lighting, office expenses and staff costs. A further difficulty related to the reluctance of senior council staff to recommend such a merger, which would directly affect their chances of promotion and their incomes, as the Higher Salary Commission would note that the Council had fewer staff and a lower turnover. As such, it was inappropriate to have affected staff preparing the reports and making recommendations. Perhaps the more perceptive councillors appreciated this as, contrary to the City Treasurer's report, the City Council agreed to a merger in November 1987, on the basis that there would be distinct advantages for the region's energy consumers. The two organisations planned to form a company to run the energy business. It is ironic, however, that because the restructuring process for electricity distribution was not settled, legislative difficulties meant that the Minister of Energy could not give permission for exactly the type of merger that the programme was intended to encourage.[13]

As the restructuring process continued, the path became increasingly unclear. It appears that little was actually accomplished between the corporatisation of Electricorp in 1987, and the passing of the various segments of the Energy Sector Reform Bill in 1992. Local government reform also clouded the issue, as the Council was unsure of its own final form. Waiting for permission to merge the electricity businesses became intolerable for the Council, as it could no longer tell whether the advantage of an early merger remained. Some months after agreeing to amalgamate, the Council changed its mind and advised the Board in July 1988 that it felt that it was better to wait until the plans for local restructuring became clearer. The merger was off. However, the MOEPB continued to have an influence, as its merger or sale suggestions in 1991, 1994 and 1996 forced the Council to consider issues such as ownership, control and the future. The Council as owner has suggested the Board consider new opportunities and alliances, and this has led to the latest proposed merger with CentralPower which is under discussion in December 1996.[14]

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[13] Amalgamation Studies, September and November 1986; Heads of Agreement, 10 June 1987; City Treasurer's reports, 16 June 1987 and 2 October 1987, PNCCR File 81/2/5 Parts 3 & 4, PNCCA, PNCC 10/1/6, Box 2, Folder 9.

[14] Manawatu-Oroua EPB merged with Tararua EPB in May 1989, and became CentralPower under corporatisation in 1992.

Under the proposed Energy Companies Bill, the Council had to separate its gas and electricity undertakings (which had merged their accounts in 1950) and form competing energy companies. The intention was to separate ownership issues from management, and provide incentives to improve economic efficiency and management performance. Corporatisation proved to be a painfully slow process, as again the Council found itself acting ahead of government pressure. Ministerial permission was given for the gas department to become a company, ProGas Systems Ltd, on 1 January 1992, but a similar process for electricity was hampered as the legislation allowing corporatisation was not yet in place. The Council was ready months before the Energy Companies Act 1992 came into effect on 1 July 1992. After obtaining valuations, finance and taxation advice, Electro Power Ltd purchased the Council's electricity interests on 1 January 1993. The new company had freedom to trade as a commercial entity, as its principal objective was to operate as a successful business. Importantly, there was no statutory requirement to take account of social responsibility issues. In the event of a proposed sale of the shareholding in Electro Power, the Articles of Association provide for a binding citizen's referendum and public consultation. It is unclear that the same applies to any proposed merger, as there is a limitation where the equity remains in the Council's ownership.

The Council accrued a number of financial advantages from corporatisation. The company paid some $25 million to the Council, funded by a bank loan of $12.5 and the Council's share purchase price of $12.5. This had the advantage of enabling the Council to draw out half of the capital that was tied up in the business, and it was also delighted with the taxation advantages. By borrowing to purchase shares in the new companies, the Council was able to deduct the interest on the loans against the taxable dividend income. This was worth between $1.4 and $1.7 million annually, compared to the previous ownership structure.

The advantages of the corporatisation process outweighed the problems. The Council retained 100% ownership, but gained taxation and cash-flow advantages from corporatisation. A degree of control was retained, but the relationship was less close. Under the Energy Companies Act, only two of the

Directors could be members or employees of the Council. Other Directors were appointed for their professional expertise and commercial knowledge. However, there were some problems. Much of the former business protection, such as franchise areas, was lost under national restructuring. The Government requirement to cover all except energy expenses through the supply charge was difficult for customers to understand or accept when their bills increased. Corporatisation caused staffing reforms, as the company structure changed to suit its new environment, and employees whose duties could be undertaken more economically by contractors were made redundant. The regulatory function of electrical inspection could not be passed by the Council to the company before the 1992 Electricity Act, and as restructuring freed this area, staff numbers fell.[15] Finally, long-standing policies such as undergrounding were reviewed. Never economically sustainable, the programme could only continue if the Council agreed to pay, either directly or by way of a reduced dividend. As the older, unsafe lines had already been replaced, Electro Power's objective of running a profitable business was not compatible with replacing overhead lines purely for aesthetic reasons.

The Influence of Consumers

Consumers had a greater influence on the MED in this period than in previous years. A change in consumers' expectations and attitudes towards electricity became apparent. Formerly regarded 'as an almost magical, labour saving energy source in the luxury class', by 1985 R. G. McInnes, the City Electrical Engineer, felt electricity was 'seen as an essential life preserving commodity in the same category as air and water'. Therefore, like air and water, consumers had come to believe that 'it must be instantly available ... [and] 100% reliable ... [and] as an essential commodity it should be supplied free or nearly so'.[16] Supply interruptions and the numerous price rises of the previous decade had tested customers' tolerance, and led to a situation where consumers' demands were increasing as their willingness to pay for the service decreased.

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[15] Regulation in the electrical industry is now 'light-handed', and electricity supply authorities are no longer required to inspect all installations.
[16] R. G. McInnes, to PNCC Energy Committee, 25 May 1989, PNCCR file 81/42, Part 1.

Government reforms encouraged another change. In the Government's view, electricity was a commodity, not a public good. As a public good, it had been seen as appropriate at the beginning of the century to protect the public's interests by national and local government assuming control of production and distribution to avoid the perceived risks of monopolies. However, this had necessarily set up another form of monopoly, where electricity consumers had no choice as to supplier or price. As restructuring required an element of competition to encourage economic achievement and efficiencies, it was essential to view electricity as a commodity that could be purchased from any supplier, and distributed by the owner of the local power line network. It therefore did not need a special organisation, or protection, in selling this particular commodity to customers. Free-market policies allied with 'light-handed' government regulation has replaced government ownership as the technique for managing a monopoly industry.

To cope with these changes, R. G. McInnes established in 1988 a new policy whereby emphasis was to change from the MED being 'an engineering based organisation to a marketing based organisation'.[17] There are three aspects to energy marketing - choice of energy, choice of supplier, and marketing policies. Marketing had not been particularly important to the MED while consumers had no real alternative source of electricity. However, other types of energy took up the challenge. Increasingly, industry had chosen to use gas or other fuels instead of electricity, and the 1980s saw a fall in average household electricity consumption. The Council was accustomed to seeing the relationship between gas and electricity as complementary, not competitive, and was therefore late to recognise that competition was eroding electricity's share of the market. It became necessary to use marketing to persuade customers to use electricity, rather than other fuels.

Secondly, government restructuring opened up the possibility for individual consumers to purchase their energy from another supply company. As part of the 'light-handed' regulation of the energy sector, franchise areas for electricity suppliers would not be guaranteed from 1994, and the distributor's obligation to supply was removed. To allow competitive energy pricing, electricity

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[17] Ibid.

accounts were divided into two portions, energy and distribution charges. Consumers are able to seek the lowest energy price available, and pay the line charge to the network owner. In practice, as the pricing margins are small, only larger customers could expect to benefit from this competition. Suppliers appear unlikely to compete to attract domestic customers from their opposition. However, competition has forced suppliers to employ clever marketing to encourage larger consumers to purchase the energy component from them, and overall, organisations have become more oriented towards meeting customers' needs.

The third aspect of energy marketing involves emphasising energy efficiency. Unlike other commodities, the thrust of advertising is not to encourage customers to buy more, but to use it as wisely as possible. Although the Council accepted the need to market electricity, it was concerned to not stimulate 'wasteful or inefficient use'. Marketing plans had to demonstrate 'the unique advantages and benefits of electricity ... [as] a product that provides excellent value for money'.[18] The MED displayed this policy when it gave each commercial customer an energy efficient lightbulb, promoted electricity saving methods and ran low energy use cooking classes for domestic consumers.

Although the major influence of this period, restructuring, was designed to open up the energy sector and promote competition, it is debatable to what extent this has succeeded. Domestic consumers might feel that they have seen little apparent change, other than price rises. Although charges may have risen faster without the efficiencies gained from corporatisation, no comparison with non-corporatised suppliers is possible. There is little competition between suppliers for domestic customers, and phasing out cross-subsidisation has led to sometimes substantial increases in their electricity accounts. Many commercial and industrial consumers have not taken advantage of the opportunity to purchase energy from other suppliers, as the margins are often small. Some of the problems of the past also continued to haunt the new energy companies. Electro Power remained unable to freely negotiate a direct supply of electricity, as CentralPower retained ownership of the 33kV feeder lines and meters, and

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[18] Ibid.

the split of Electricorp meant that negotiations involved several corporations. An agreement was not reached until 1995.

Conclusion

The beginning of this period saw the start of significant structural reform of the economy. This affected the energy sector nationally, by forcing a consideration of appropriate returns on investment and future planning. Locally, emphasis was placed on efficiency, and in developing strategies for treating energy as any other commodity, under minimal regulation. In this process, the Council was probably more affected than the MED initially, as it had to clearly separate ratepayers' expenses from those of MED consumers. The corporatisation process was difficult and stressful for Council staff, and expensive. Inevitably, the Council's influence reduced when Electro Power Ltd took control. It remained the owner, but decision making by the independent Board took a greater account of commercial issues than in the past. Consumers began to have some influence on the new company, as the communication was direct, no longer filtered through the Council. The MOEPB's influence had also been important, as its merger or sale suggestions in 1985, 1991, 1994 and 1996 forced the Council to consider ownership issues, leading to an possible merger in December 1996.

Conclusion

The purpose of this thesis was to investigate the forces and relationships that influenced the development of the Palmerston North MED.

Among the variety of influences that affected this enterprise, several international events slowed progress, or changed the direction of the MED's development. The First World War delayed the project, and the Second led to awkward supply limitations. Inflation shortly after the First World War and in the 1970s saw costs escalate, and in both cases the Council was unable to control these effects. Recessions in the 1930s and 1980s affected consumers' ability to purchase energy, whereas 'boom times' in the 1950s and 1960s caused demand to rise quickly.

Within New Zealand, the Government appears to have been the greatest influence on the Council MED. Legislation precluding private enterprise forced the Council to form its own energy business. Government bulk supply enabled the MED to grow, as demand soon surpassed local generating capacity. On the other hand, the Government's insistence on promoting power boards, on restricting bulk supply to being through the Manawatu-Oroua Electric Power Board, and on preventing dynamic boundaries limited the MED's development opportunities. On-going government attempts to reconfigure the electricity distribution sector to promote greater efficiencies of scale and to shift the balance of charges from commercial to domestic consumers were finally successful in the late 1980s and 1990s. This saw the MED undertake structural and pricing changes in line with the new legislation.

The influence of the neighbouring Manawatu-Oroua Electric Power Board was also important in the MED's development. Conflict prevented the formation of a large power board working co-operatively for the good of all Manawatu consumers, and led to difficulties in the 1930s and 1960s over on-cost charges and terms for bulk supply. It also hindered talks on joint ventures or amalgamations, and therefore apparently restricted development.

A variety of lesser influences also affected the MED's development at various times. Gas, a rival fuel, delayed electricity supply in the early years, but was of assistance in alleviating the severe shortages of the 1940s and 1950s. Its financial impact on the electricity enterprise was to restrict profits and inflate prices until natural gas emerged in the 1970s. The impact of difficult relationships between the Council and its contractors, Frederick Black and Turnbull & Jones, was to encourage it to rely in the future on its own employees. The MED was essentially an inward-looking organisation, self-sufficient and unwilling to take external advice except from similar MEDs. Among other effects, this predisposed the Council to reject proposed amalgamations or suggested discussions with the Manawatu-Oroua Electric Power Board. In later years, environmentalism, combined with safety issues and engineers' tendency to gold-plated systems, led to a decision progressively to underground the City's reticulation system. The Council continues to support this policy in the present merger negotiations, and the continuation of the undergrounding programme is a feature of the draft merger agreement of 1996.

Consumers also exerted an influence on the MED, initially by continually increasing demands for electricity, and latterly by seeking better service at lower prices at a time when government policies on reducing cross-subsidies and reflecting actual supply costs saw prices rise steadily. Although the MED's advertising slogan until recent years has been 'power to the people', external influences have severely limited its ability to meet customer demands.

The MED has survived over seventy fairly turbulent years, subject to a combination of influences that at times created difficulties. It has grown from a fledgling business supplying 1,500 customers to a corporatised company serving 18,500. In its new guise as Electro Power, it faces an uncertain future, with mergers and the eventual loss of public ownership and control the likeliest outcomes.

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Photo 8. A more recent view of the Power Station, 1970s or 1980s.

Source, Electro Power collection.