

# Security of supply policy: Current context

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“Electricity security of supply is essential to all aspects of our personal and working lives”

Foreword to the Government Policy Statement, October 2004

“One of the problems with security as an objective is the difficulty of quantifying it” “The Energy

Review”, UK Energy Review, 2002

Security of supply is a significant issue for the New Zealand electricity industry. Over recent years, it has also emerged as a key policy concern in many other countries. The Executive Director of the International Energy Agency, Robert Priddle, observed in 2002: “Energy security is back at the top of the agenda”<sup>1</sup>. A leading economic consulting firm, NERA, reiterates that “adequate levels of security of electricity and gas supply are...a significant preoccupation of OECD Governments; indeed most espouse adequate energy security as a major policy objective”<sup>2</sup>.

However, security of supply in electricity is complex. It is a function of many factors – engineering, operational, economic, legal, policy and political – the constraints and incentives of which are rarely well aligned. It involves all components in an electricity system – generation, transmission, distribution, retail and consumption. And it has different implications over different durations, from instantaneous to long term.

While a variety of models is possible, there are two imperatives. One is the technical requirement that production and consumption must be equal at all times. The other is the political and economic expectation that electricity must be delivered in developed countries with a high level of reliability.

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<sup>1</sup> Priddle (2002). The prominence of security as a key issue is reflected in the range of policy reviews carried out in many countries over recent years

<sup>2</sup> NERA (2002)

Until relatively recently, electricity systems in most OECD countries were vertically integrated, near-monopoly, state-owned utilities. Security of supply was seen as a pure 'public good'<sup>3</sup> and therefore a central government responsibility. Additions to generation and transmission capacity were the principal mechanisms for seeking to ensure security. This investment was mainly centrally planned. Brown-outs and rolling blackouts were used to manage excess demand in periods of shortage<sup>4</sup>.

Over the last 15 years, most OECD countries have moved toward electricity markets for generation and retail. The transition from traditional state-owned monopoly utilities to private competitive markets has been a major challenge in most countries that have adopted this policy of liberalisation. In its 2002 report on security of supply, the IEA notes: "Electricity markets do not develop overnight and a sustained government effort is needed during the transition to liberalised markets to monitor reliability, adapt policies and regulations to the needs of open electricity markets and, ultimately, ensure energy security"<sup>5</sup>.

How well security is managed in a market framework depends on a range of critical factors, in particular whether the market's structure provides effective competition, whether prices fully reflect changes in supply and demand, whether prices are properly signalled to consumers, and whether market participants and consumers take responsibility for their exposure to the risks of non-supply.

Security of supply in New Zealand is made more complex by the structural change that is now occurring in price of new generation. As Evans and Quigley observe: "New Zealand may be entering a period which is fundamentally unlike the past in that there is not a plentiful supply of gas, water is scarce, there are additional environmental constraints, and there is even more uncertainty about optimal investment strategies. Pending technological innovation and the sudden discovery of large gas reserves, all the economic and policy signals suggest higher real costs of energy in the future, no matter what the system"<sup>6</sup>.

For many years in New Zealand, the law has been relatively silent on electricity security of supply. Responsibility for managing risks of interruption or non-supply has been governed by contracts between industry parties and consumers.

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<sup>3</sup> A 'public good' is a product or service with two characteristics: (i) consumption of the good by one party does not reduce the amount available for other consumers *and* (ii) once it is provided to one consumer, there is no way that other consumers can be prevented from accessing it.

<sup>4</sup> Joskow (2002)

<sup>5</sup> IEA (2002)

<sup>6</sup> Evans and Quigley (2003)

In 2004, the law in New Zealand was changed, imposing various security obligations on the Commission. It is important to put aside preconceived views and examines the law as it is, not as the Commission, officials or industry parties may assume it to be.

Perceived and actual allocations of responsibility for security of supply are critical elements in influencing whether a market approach to electricity is likely to succeed.

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