

Tilting at windmills

Simon Carlaw

Business is spooked by huge question marks over energy supply. And at last, so are the politicians – and for good reason.

For business, energy has to be accessible, affordable and secure. Right now it is none of these.

In an atmosphere of increasing uncertainty, there are five certainties:

1. We do have energy resources – New Zealand is richly endowed. But we can't access them, so supply is a problem.
2. There's no real strategy, or at least no strategy that business believes in, to address the supply problem.
3. The obstacles that are in the way of unlocking supply are self-inflicted and surmountable.
4. Businesses know future prices will be higher - and can at least plan for that. What they can't plan for is extreme price volatility.
5. The RMA is a barrier to progress.

It's remarkable that we should find ourselves with roadblocks in the way of all our energy resources. For hydro, it's transmission constraints, the RMA and 'problems with the market'. For gas, it's largely historic Maui-related issues now constraining exploration. For coal, it's the RMA again and the Kyoto Protocol. For wind and solar power, it's the cost and undeveloped state of the necessary technology.

Meanwhile overall demand continues to grow somewhere between 2% and 5% annually. An extra 150MW of power, the peak appetite of a city the size of Nelson or Napier, is needed every year. It means we need a generating station the size of Otahuhu B commissioned every two and a half years.

The situation is prompting all sorts of demands, for example for a cap on spot prices. For businesses bearing the burden of outrageously high prices this is an understandable response. A cap on prices would, however, compound the problem further – it would both mask and exacerbate the underlying problem of underinvestment in new generation capacity, as happened with the Californian energy crisis of 2001. And it would be plain dumb to return to national planning as in the old days of the Electricity Corporation and the Ministry of Works.

We need a strategy that allows market forces to operate and lets competition provide sustainable value for consumers, along with a transition plan to help alternative power sources become part of the picture. The situation demands a broad strategy that gives short term, affordable access to our resources and the reassurance of a functioning energy market to serve our needs into the future.

The current position - 'a little bit of wind, little bit of solar and a little bit of improved efficiency' - is a brave statement of faith in as yet minor energy sources and energy conservation. It is not a strategy. Efficiency targets, so-called Kyoto 'opportunities' and subsidies to windmills are not a complete strategy and while wind and solar power will undoubtedly be useful in the future, there's no transition plan to take us there.

A proper strategy would take into account all existing and new fuel sources both on-shore and offshore, and would have timelines for access. It would be broad enough to encompass technologies that are in sight but not yet with us, and focused enough to address immediate, medium and long-term energy needs.

Such a strategy would hopefully be the result of wide debate that examines all possibilities, with no 'no-go' issues that can't be considered because they seem unpalatable or are outside current government policy.

Such a strategy would have to address:

Oil and gas – where are the big rigs?

Our oil and gas potential is not being tapped - why isn't more exploration happening? The answer lies in a raft of economic and policy constraints.

Canadian public policy organisation the Fraser Institute, in its *investment attractiveness index* that ranks countries on policy issues impacting on geological exploration (tax, regulations, protected areas, labour issues, infrastructure etc) on a 100-point scorecard, this year ranked NZ, with 22 points, in the bottom five of all countries.

'Protected areas' in the Fraser Institute's parlance, could include the potential for the Government's proposed policy on the oceans domain to restrict exploration of gas reserves in our surrounding waters. With the fourth largest exclusive economic zone in the world, it will be important to ensure that the draft Oceans Policy gives full consideration to the energy issue and fuel requirements, and that the Marine Reserves Bill, currently before select committee, doesn't 'ring fence' off potential multi-million dollar opportunities afforded by our gas hydrate reserves.

Other impediments may include the terms and conditions for exploration. Shell Exploration says New Zealand has to keep its rules aligned with those in countries like the US if it wants to compete globally and encourage frontier oil and gas investment: the time to decide whether or not to drill should be extended and the size of exploration blocks should be enlarged.

But the biggest issue for exploration companies is price: they say price for Taranaki gas has to be closer to the global norm in order for exploration companies to make the commitment to invest in New Zealand. The cheap price for Maui gas has inhibited exploration - under current prices there's little incentive to search for new gas to replace the Maui source. Licence holders are just sitting on extraction rights as a result.

Part of the problem is a lack of incentive to extract in the absence of a large enough, accessible customer. For example the whole of the South Island is considered too small a customer to bother extracting gas from a big resource off the coast of Canterbury. The Maui operation worked because Methanex was a big enough customer, but Methanex's possible departure will underline the issue of the lack of customers to prospective exploration companies.

Preussag Energie, another player in the Taranaki Basin, says there are not enough mid-sized exploration companies getting involved - there are about 50 companies prospecting, but most are small, and activity is capital-constrained.

There have been recent calls for government incentives to encourage more exploration. This would not be a good idea. The scale of investment required is huge, and the outcome uncertain; the prospect of a 'sovereign yachts' type outcome on a larger scale would be unwelcome. This may however be an area where a public-private partnership for prospecting off Taranaki and in other high potential areas, could be considered.

The petroleum elements of a robust energy strategy should consider short-term options to help keep Methanex in New Zealand, medium term attention to the negative issues identified by the Fraser Institute – tax, regulations, protected areas, labour issues, infrastructure - and longer term, possible consideration of public-private partnerships for exploration.

Unleashing the coal solution

Generous endowments of coal in both the North and South Island make it a likely short-term solution to looming shortages and a stopgap for the transition period before alternative sources can augment the total energy pool.

Coal reserves are capable of being tapped at reasonably short notice if a '2003 dry' eventuates although this would require a significant rethink of some Government positions.

Kyoto Protocol issues – another self-inflicted burden - need to be addressed. Burning coal to make electricity creates more carbon dioxide than making electricity from gas, and so would increase our liability under the Protocol. It will be important to ensure that the carbon tax regime prompted by the Protocol is structured so that coal-fired electricity generation is not excessively penalised.

There are other wide-ranging ideas relating to Kyoto and coal. A recent suggestion that merits consideration is for the Government to forego some of the dividends from its SOE generators and require them to jointly build a coal-fired station to provide backup for dry years.

Another more radical suggestion is that of tradeable 'climate stability bonds' redeemable upon reaching agreed levels of climate stability, as a more pertinent approach to climate change than the blunt instrument of the Kyoto Protocol.

Electricity – make the market work

Disincentives to invest mean new hydro generation plants are not being built in New Zealand - Meridian's decision to invest in Australian hydro projects and Contact's interest in doing the same suggest that better returns on capital are available elsewhere.

The Energy Minister's recent threat to generators to 'make the market work or the political process will take it off you' and the Prime Minister's recent suggestion that she was considering significant unspecified change for the sector, deliver some fundamental messages about the environment for energy investment in New Zealand.

But hydro's significant issues are RMA issues, as shown by Contact's expensive payouts to gain re-consents for its Clutha operation, and the expected raft of objections to Meridian's Project Aqua. No new hydro plant has been built for ten years now.

The time has come for action. Business needs a streamlined environmental approval process for projects of national significance.

These are the background problems lurking behind the 2001 energy crisis and the present danger signals. The characteristics are the same: a growing number of commercial and industrial customers are facing wildly volatile and crippling high spot prices, the result of not being able to gain forward cover. Nor can they plan adequately for the future, since they have no certainty of either energy supply or cost.

Meanwhile, domestic consumers have the certainty of 'permanent' monthly contracts at fixed, affordable prices. Price signals do not get through to this part of the market at all.

New Zealand's transmission system is contributing to the volatility and extreme levels of the price spikes suffered by business consumers. The formula used to price the risk of energy shortfalls and to register throughput at transmission nodes is throwing up extreme prices. Relatively minor issues with supply cause spot prices to rise dramatically, far beyond the actual risk of shortage. Like the more general issue of transmission constraints, it was an issue in 2001 and it is an issue again now. Both need serious investigation. Transpower's statement of corporate intent needs revisiting to ensure that it takes responsibility for fixing transmission constraints in the national grid, and to clarify who should pay for investment in and upgrades of the national grid system.

The investigation into the 2001 crisis prompted a wide range of suggestions from many parties, including the need address transmission problems and calls for more fundamental structural change, including calls to separate generation from retailing functions and reduce the level of state involvement in the sector.

Four of the large players – Meridian, Genesis, Mighty River Power and Contact Energy – are both generators and retailers of power – ‘gentailers’. This vertical integration among the dominant players is one reason advanced for the absence of hedge contracts. The argument says ‘gentailers’, by selling what are in effect hedge contracts to domestic consumers (agreeing to supply electricity at a fixed price on a continuous monthly basis), are thereby able to sell power at a steady price independently of the risky spot market which may at times price electricity below the cost of production. So vertical integration gives them a kind of internal hedging and removes a large part of the need to write hedge contracts for business customers.

There have been many calls for generators to be forced to divest themselves of their retail functions in order to create better incentives for hedge contracts to be offered. Separation of generation and retailing would be a major structural change - as significant as the Bradford reform process itself - that would worsen the issue of lack of investment: having a retail base makes it easier for generators to raise the finance to build new stations. Moreover vertical integration is an acceptable practice in other markets, and issues relating to vertical integration and lack of hedging should be capable of remedy under competition law.

The other call for major structural change – reducing the level of state involvement in the sector – is also connected to the issue of lack of hedging. During the 2001 power shortage, On Energy - a retailer, not a generator - found it could not buy power on the spot market at a rate that would allow it to compete against the ‘gentailers’ in the retail market. The winter shortage caused spot prices to peak the way they are at present and On Energy did not have forward cover to protect itself. On Energy did the commercially correct thing, and passed on the increase in wholesale price to its retail (household) customers. None of the ‘gentailers’ followed suit. Many On Energy customers migrated to the SOEs Meridian and Genesis, and On Energy went out of business. Critics say those SOEs used the profits made from the high spot market to cross-subsidise their retail operation in order to take On Energy’s customers away.

But the Commerce Commission has ruled that the SOEs who took On Energy’s market share did not abuse their market power. It said On Energy had had the opportunity to buy forward cover at reasonable rates and had chosen not to, and On Energy’s problems resulted from its own decision not to hedge, rather than from the SOEs’ actions.

So this issue alone would not of itself justify calls for the state to get out of electricity. There are related issues though. The Crown, with its ability to tax, has deeper pockets than any private competitor, and with non-commercial as well as commercial imperatives, can be an unpredictable competitor. Certainly the SOE gentailers, on the face of it, acted in an unpredictable way in not increasing retail prices in response to increased wholesale prices. Competing against the Crown would not be a situation of choice for many companies.

The undignified spectacle of disputes between energy SOEs, like the tussle between Genesis and Solid Energy over coal prices, or between Transpower and Meridian over who should pay for upgrading the Cook Strait cable, adds grist to the mill. Private companies have shareholders breathing down their necks pressuring them to

resolve disputes quickly, but with diffuse taxpayer ownership of SOEs, there's arguably less pressure to finish disputes quickly, and taxpayer dollars drain away while the talking goes on.

It would be a reasonable expectation that over time the Crown would divest itself of several assets in the electricity industry, certainly in the generator/retailer areas. This would be a major structural change with significant impact on the market, and such major upheaval is not immediately warranted in this sector that has been so recently reformed. Letting the system settle down for a bit while fixing the immediate problems would be a sensible precursor to such major change.

The immediate problem – lack of forward cover being offered by 'gentailers' – could be more pertinently addressed by a fairly light-handed hedge restriction: requiring 'gentailers' that take a forward contract from their own generator to offer a proportion of the amount hedged at the same price onto the hedge market. Such a rule could conceivably have a time limit - perhaps being used only until there is a threshold change such as the privatisation of state energy assets – to prevent it becoming something that skews the free operation of the market in the longer term.

Using the power of demand management

All the above are supply-related issues. There are also significant 'demand' issues. First, the disparity between the business consumers who receive price signals (in a very direct and brutal way) and the domestic consumers who do not receive price signals directly at all. It means demand management is severely inhibited among domestic consumers.

Getting the demand side working must be a major priority for the Government. Of all the ways in which the state could conceivably intervene in the electricity market – and Business NZ considers that generally speaking the Government should not intervene further in any significant way - this is one intervention that would be beneficial. The stable, fixed price at which domestic consumers buy their power must contain a healthy profit margin for all 'gentailers' (despite the complicated and varying terms and conditions offered by different companies, the end prices are broadly similar). Much of that margin could be returned to the pockets of consumers if they had time of use meters that allowed for unused power to be sold back to the retailer. But the meters are expensive – a few hundred dollars each – and it would take a long time before there was the critical mass of consumers with such meters to begin the buyback system.

The intervention in question: shareholding ministers could instruct SOE 'gentailers' to operate a dual pricing system, offering a cheaper price to consumers who had meters, to provide incentives to purchase them. This would help household consumers unlock substantial ongoing savings resulting from demand management, while making the wider market, not just business consumers, more responsive to energy supply issues as an aid to conservation.

In combination with the hedge restriction mentioned above, this incentivising action would go a long way towards reversing the 'lack of hedge' problems currently experienced in the electricity market.

The capacity also exists for enhanced demand management among business consumers. EECA estimates that the demand response potential (ability to shed load) of the 300 largest industrial sites in New Zealand is around 400MW – the equivalent to the capacity of a large new gas-fired power station, or to nearly three years' worth of normal growth in demand. Thousands of commercial and industrial consumers already have time of use meters that allow for demand management. A 'demand exchange platform' that allows consumers to sell back power has been tested by EECA and is already being used by Meridian customers. A web-based product that shows big volume energy use at the time it's happening also exists - largely all that's required for a general demand exchange to be set up is the institution of market rules to govern it. This requires an effective governance regime.

Next month's vote on the proposed Electricity Governance Board may result in a stalemate. In that case it will be important that any replacement entity be representative of key stakeholders including consumers, and capable of effective action. The composition and rules of the new governing body should meet the tests laid down in the Regulatory Impact Statement process. Once a governance regime is under way, rules for demand management can be agreed and we can move towards a new system that unlocks the power of demand management.

Business and the economy have run out of patience with the complicated, litigious web that is the current energy market. There are effective solutions without returning to 'Beehive knows best'. It is high time to get moving.

Simon Carlaw is Chief Executive, Business NZ