2 February 2005

Oil Security Report Comments
Resources and Networks Branch
Ministry of Economic Development
PO Box 1473
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Attention: Mike Lear

New Zealand Business Roundtable Comments on the *Oil Security* report prepared for the Ministry of Economic Development by Covec and Hale & Twomey Limited

Introduction

We are writing in response to the invitation to submit comments on the Oil Security report that was prepared by Covec and Hale and Twomey ('the Report') and released on 14 December 2004.

We agree that the government faces an international relationship problem. The inventories of oil in New Zealand are estimated to be around 500,000 tonnes short of the amount required to achieve the 90-day target set by the International Energy Agency (IEA), of which New Zealand is a member.

As we see it, the options the government faces for addressing this problem include:

(1) adopting measures to increase domestic inventories by the amount of the shortfall;

(2) adopting other measures to increase oil security in New Zealand that satisfy the IEA;[1]

(3) securing the IEA's agreement to the *status quo*, perhaps on the basis that the 90-day target is arbitrary, it is a means to an end (adequate security) rather than an end in itself, country differences need to be acknowledged, particularly in respect of the importance of oil on the water, and current inventory levels in New Zealand (perhaps taking into account on-site inventories by users) conform with the IEA's real goal of adequate oil security for member countries; and

[1] For example, New Zealand might negotiate storage arrangements with the Australian government.

(4) withdrawing from membership of the IEA.[2]

We commend the Ministry of Economic Development (MED) for commissioning an analysis of whether users would be willing to pay for greater domestic inventories, independently of the IEA requirement, but are prevented from doing so by certain obstacles. That is just one step, and a potentially useful one, toward the analysis of the above options.

What does the Report recommend?

Much of the Report is devoted to making a case that oil users would be prepared to fund an extra 197,000 tonnes of crude oil in storage and an additional 16,000 tonnes of refined products for security purposes.[3] It envisages that the government would mandate this supply, and impose the costs on industry. It estimates that the capital cost of complying could be of the order of $200 million.[4] It considers the annualised cost could be of the order of $106 per tonne, implying an overall annual cost of the order of $23 million.[5]

The Report considers that the benefits would exceed the costs by more than 2:1. The vast majority of the benefits are due to presumed irrationalities in the system that it assumes would be used to ration available supplies in the event of a shortage arising from a one-year-in-40 international supply crisis that required demand to be rationed by 11 percent for 183 days. None of the other rationales considered in the Report for stockpiling in the interests of users is material compared to this factor.[6]

The Report does not recommend what action the government should take in respect of the balance of the IEA requirement (ie around 300,000 tonnes). However, it does express "some sympathy with the idea of allocating the cost to industry rather than the general taxpayer".[7]

Comments on the cost-benefit assessment

Our main conclusions on the cost-benefit assessment relating to the willingness of users to pay the industry for additional security are that:

- the estimated benefits are so exaggerated as to be not remotely credible; it is more plausible that they are close to zero;
- at the same time the costs may be materially understated;[8] and
- even if there were positive net benefits, which is extremely implausible, the Report has not made a case that the government should mandate extra inventories. For example, it has failed to consider relevant alternatives, such as private responses, or to assess the likely costs of government action.

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2 These options are not mutually exclusive nor exhaustive.

3 The Report put this estimate at 227,000 tonnes, but on questioning it our consultant was advised by Covec in personal correspondence on 27 January that this is an error and the estimate has been reduced to 190,000 tonnes.

4 The Report, Table 39, with crude storage costs scaled down from 227,000 tonnes.

5 The Report, Table 31, 10 percent discount rate case.

6 We wish to express our appreciation to Covec for its cooperation in providing our consultant with a copy of its model and in responding openly to questions.

7 Report, section 5.2, p 99.

8 An industry source has indicated to our consultant that the assumptions about the cost of capital and the amortisation period look unrealistic (eg given the risk of asset stranding), as do the assumptions about land availability, storage construction times and, importantly, storage management costs.

Readers of the report should be aware that there would be no material benefits from the proposed additional inventories if the industry rationed demand by price during the contemplated one-year-in-40 shortage. Even if the industry did not do this voluntarily, the government could force it to.[9] Expressed differently, the proposed inventories do not produce any material benefits in terms of increased security. Instead they are proposed as a device for preventing what the authors assume would be wildly irrational rationing by the authorities in the event of a crisis (see below). Even so, the logic seems dubious. If the authorities can be expected to deal with a shortage with such gross inefficiency without stockpiles, what would stop them from releasing oil from stockpiles equally incompetently? The Report does not explain why the stockpile would really protect oil users from such incompetence.

To get its estimated benefits, the Report assumes that the authorities will ration the shortfall in such a way that half the time they would be as likely to deny a litre of regular petrol to someone to whom it was worth $23 as to allocate it to someone to whom it was worth only $1.10.[10] On average on these occasions they would deny it to people who would have been prepared to pay $12 for it. So the Report assumes that storing a litre of fuel for 40 years would, on one occasion during this period, provide someone with $12 worth of value half the time. That, in essence, is why the Report calculates that stockpiling pays.

In our view, the Report's rationing assumption is absurd. When people have to cut back their consumption of petrol by, say, 11 percent, they will cut back on their least valuable uses of petrol first. There seems to be no necessity for a rationing system to be so inefficient that anyone should have to forgo a use for petrol that would be worth more than, say, $5 or $6 a litre when the market clearing price would be in the $3.50-$4.00 range.

The diagram in the Annex illustrates an inefficient rationing scheme where, at its worst, some people cannot get access to regular grade petrol when they would be prepared to pay $5.26 a litre, while others get petrol whose use value to them is only $2.91 a litre, an inefficiency of $2.36 (rounded). On average under this scheme the inefficiency is $1.18 a litre. The estimated annualised cost of this inefficiency is a mere $2 million, representing a benefit of around 20 cents for each $1 of the Report's estimate of the cost of holding the proposed inventory of regular grade petrol. By the same argument, the costs of holding the proposed additional stocks of premium grade petrol and diesel would also greatly exceed any benefits.

It would make no sense for the industry to hold additional stocks for such a negative return, and no government would be doing users any favours by forcing such costs on it. Should users really be concerned about the prospect of seriously inefficient non-price rationing of fuel in an emergency, many – such as farmers, transport firms and those running car fleets – could increase their own 'in-house' reserves. We have heard anecdotal information that in fact the trend is for users to reduce such reserves rather than to increase them.

In any case, should the authors of the report really think that they could stockpile oil and sell it at perhaps $12 a litre at times of stress, then presumably they and others would do so. Such voluntary actions by private speculators or by users would naturally obviate the need for government action. None of the (implausible)

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[9] The price for regular grade petrol might be in the $3.50-$4.00 range per litre during this 183-day period.

[10] The Report appears to be in error in using the $1.10 figure. Under scenario 4, the correct figure would appear to be of the order of $1.73.

arguments about market failure in the Report would stop someone from stockpiling petrol worth $1.10 a litre today with the expectation of being able to sell it later for $12 a litre. The fact that the Report recommends mandatory action suggests that its authors do not really see the proposed stockpiles as being worth investing in themselves, or in the interests of those holding the extra reserves, or of end users.

Another alternative to the proposed course of action would be for the government to impose a more efficient rationing scheme in the event of an otherwise ineptly managed crisis. For example, it could impose carless days, or put a temporary surtax on petrol, so as to ration demand by price. Such an action would produce virtually all the hoped-for benefits, while avoiding the proposed storage costs of $23 million a year.

(We note that the Report suggests there would be other benefits from the recommended additional stocks. We explained in a submission to Covec (attached) on the draft Report why we did not think any of them were convincing. Since none is material in the cost-benefit calculations there is no need to revisit those issues here.)

To explain why, in our view, the Report's conclusions from its cost-benefit assessment have no merit does not necessarily dispose of the case for government mandating of additional reserves, given the IEA requirement. We now turn to the issue of assessing the likely costs of such government action.

The issue of government-mandated reserves

It seems unlikely that the government would be considering mandating extra inventories but for the problem of the IEA 90-day requirement. If so, this is the real issue.

Such action would be costly in many ways that are additional to the enormous 'deadweight' costs of holding an extra 500,000 tonnes of reserves. It would further politicise the industry and generate ongoing regulatory difficulties. It would invite rent-seeking and cross-subsidies. There would be disputes about boundary and allocation problems, and issues of valuation and compensation. The issue of user charges for regulatory costs would arise and cause difficulties. Bureaucrats would be concerned that the mandated reserves might be leading users and suppliers to reduce non-mandated reserves. That would lead to pressures to mandate all reserves.

The greater politicisation of the industry and the regulatory uncertainties and difficulties could impair dynamic efficiency by raising the cost of capital to the industry.

These costs would be unlikely to fall evenly on the industry. While the Report supposes that the oil industry could pass on all costs "if it is competitive", it does not explain how a firm that incurs greater costs than other firms could charge more for the same product in order to recoup them. There is therefore a possibility that the need for compensation would vary between firms if unintended adverse effects on the future cost of capital to the industry were to be avoided.

Moreover, if the mandatory stockpiling did raise costs uniformly, industry opposition to the impost might be muted since domestic price effects would be more certain and no firm might face the risk of losing market share. In such a situation, MED would need to focus its public policy assessment less on the issue of whether the industry

agreed that additional stockpiling is in the interests of its customers and more on the issue of whether consumers are really willing to incur the higher costs.

Why was there no regulatory analysis in the Report?

The Report does not conduct a regulatory analysis of its own proposals. For example, it does not consider the likelihood that the recommended mandated increase in inventory levels could:

- impair security by undermining incentives to invest in facilities in New Zealand and incentives to self-provide for security;
- fail to achieve its objective by undermining incentives to maintain existing inventories; or
- exacerbate regulatory creep in an effort to reduce the unintended adverse consequences of the distortions that would be created.

We are seriously concerned that MED would commission a report from consultants who would recommend government regulation on the proposed scale without any consideration of the costs and benefits of those regulations. MED is largely responsible for the quality of regulatory analysis in the public sector and it needs to lead by example.

It appears to us that the Report has failed to consider the costs and benefits of its proposed regulations because it has bought into what economists call the "Nirvana Fallacy".[11] This is the fallacy of rejecting the outcomes from voluntary arrangements on the grounds that they fall short of some ideal, only to embrace a mandated arrangement that would fail the same test. The fallacy is not noticed because the test is not imposed. Economists have been aware of this fallacy for over 30 years, but the problem persists. It is serious and widespread, as *The Economist* has observed:

> The biggest economic-policy mistake of the past 50 years, in rich and poor countries alike, has been and still is to expect too much of government. Statism has always found all the support it needs among mainstream economists. They are unfailingly quick to point out various species of market failure: they are usually much slower to ask whether the supposed remedy of government intervention might not, in practice, be worse.[12]

In our view, the MED should be vigilant in detecting and resisting this source of error. What is required is a competent regulatory analysis that ensures that all relevant alternatives are identified and assesses their costs and benefits against each other rather than against some imaginary and unattainable ideal. The Regulatory Impact Statement requirement would be a useful tool for guarding against the Nirvana Fallacy if official agencies were obliged to produce competent assessments that met the requirement.

Where a regulatory analysis is inconclusive (which we suggest is obviously not the case in this instance) the question that arises is what presumption should prevail in order to determine the matter. In the English tradition the presumption is that the individual is innocent until proven guilty. This implies that there should be a

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11 Harold Demsetz, 'Information and Efficiency: Another Viewpoint', *Journal of Law and Economics*, April 1969.

12 'The puzzling failure of economics', *The Economist*, August 23, 1997, P 13. See also David Friedman, 'Private and Political Markets Both Fail: A Cautionary Tale About Government Intervention', New Zealand Business Roundtable, 2004 (copy attached).

presumption in favour of preserving individual liberty unless the case for state coercion overcomes the burden of proof. Individuals differ in the goals they wish to pursue and in their assessments of costs and benefits. A presumption in favour of freedom of contract and exchange in conjunction with secure, well-defined property rights caters for diverse preferences compared to 'one-size-fits-all' prescriptive regulation. In short, we suggest that MED should adopt, as a rebuttable presumption, the position that:

> … welfare will be maximised when individual citizens, who know best their own talents and their own desires, are free to exercise those talents, and pursue those desires, through voluntary exchanges.[13]

Where this burden of proof is met and the state uses its coercive powers to tax or take private property for the benefit of citizens, the constitutional principles that should apply are the principles of consent to taxation and compensation for regulatory takings.[14]

Who should pay?

These principles of consent and compensation are relevant to the issue of who should fund any inventories that the government might choose to mandate. If the government is imposing a regulatory taking for the general public good, taxpayer funding of the costs is indicated. This would be subject to the consent of taxpayers, otherwise the taking should not proceed. This principle tests the willingness to pay of the general public against the cost of the mandated arrangement.

Any proposal that the oil firms should pay (at least in respect of the first 213,000 tonnes) should be interpreted as a proposal that oil users would be prepared to meet this cost if polled. That should be put to the test. Any proposition that the extra inventories would have to be mandatory is in itself strong evidence that such a policy is not in the interests of end users.

The Report suggests that the issue of who should pay for meeting this requirement depends on whether New Zealand needs to be a member of the IEA.[15] This does not appear to be either an efficiency argument or an equity argument.[16] From an efficiency perspective, this approach does not get to the heart of the issues of relative valuations, consent and compensation. It ignores the need to consider whether those who want to retain membership would pay more in total to secure this outcome than those who would pay to avoid the costs of continuing membership.

The Report does express "some sympathy with the idea of allocating costs to the industry rather than the general taxpayer" on the grounds that price signals would be improved.[17] However, such propositions about price signals simply beg the questions of the optimal allocation of property rights and relative valuations. People who have a property right should be free to exercise it. The central valuation issue may be whether those who want New Zealand's IEA membership to continue if all else fails would willingly meet the costs of continuing with membership.

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13 Penelope Brook Cowen, *Neo-liberalism*, in *New Zealand Politics in Transition*, edited by Raymond Miller, Oxford University Press, 1997, pp 342-343,.

14 The Legislation Advisory Committee's Guidelines identify some appropriate constitutional presumptions.

15 The Report, Section 5.2 p 98.

16 From an equity perspective, those who pay are not necessarily those who bear the burden.

17 The Report, Section 5.2 p 99.

Conclusions

We suggest that MED should draw the following conclusions from the Report:

- the oil industry is operating on sound commercial lines;
- there is no credible case that oil users wish to pay more to induce the oil companies to hold greater reserves on their behalf (indeed there is anecdotal evidence that users are reducing their own inventories);
- its cost-benefit case for the industry to hold greater inventories is not credible. It is not even an oil security issue, merely a pricing issue. The Report proposes higher inventories as a solution to a hypothetical rationing problem taken to an absurd extreme;
- any case for government action should consist of a proper regulatory or expenditure analysis that establishes that the presumed problem really exists, moves from symptoms to causes, identifies all relevant alternatives, assesses the likely costs and benefits of the proposed course of action, and addresses the issues of consent and compensation. If the problem were ever observed to exist, it could be dealt with by governments without recourse to any oil inventories;
- in particular, the issue of who should pay for the cost of mandated reserves requires a principled analysis of the issues of consent to taxation and compensation for regulatory takings; and
- MED now needs to subject issues (2)-(4) above (page 1) to rigorous analysis before advising the government on the best course of action in the public interest. There should be consultation with outside parties on this analysis.

In respect of the penultimate bullet point above, we would emphasise the need for MED to focus on end user willingness to pay. Acquiescence by any part of industry in a mandatory scheme may simply reflect a view that consumers will largely bear the burden.

We would appreciate the opportunity to discuss this submission with MED.

Yours sincerely

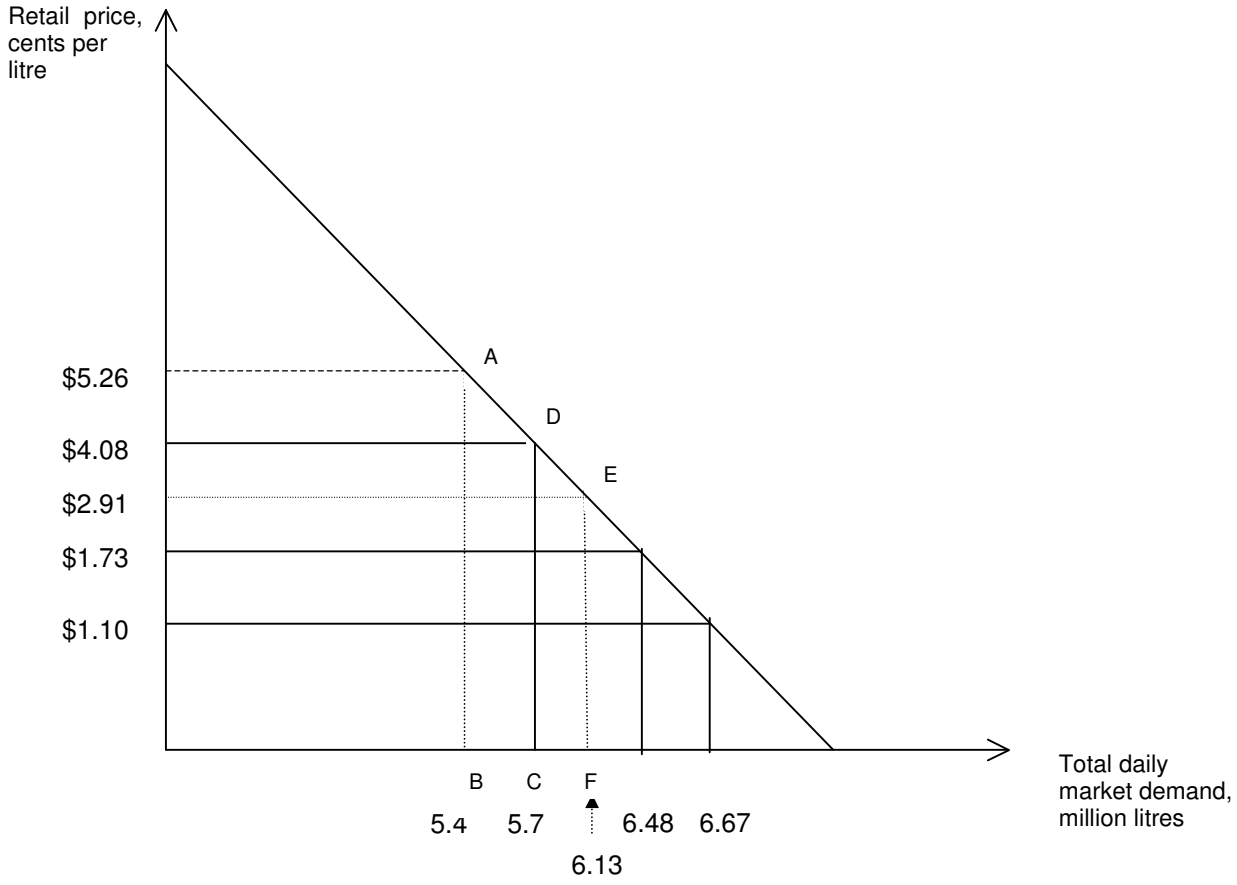
R L Kerr
EXECUTIVE DIRECTOR

ANNEX

An illustrative example of why the costs of non-price rationing in the event of a 183-day international oil supply crisis could be small

The following chart illustrates the case of an international oil supply crisis that sees the domestic price for a litre of regular grade petrol rise from $1.10 to $1.73, but this increase does not suffice to limit demand to the internationally available supplies of 5.77 million litres per day.[18]

Figure: Demand for Regular Grade Petrol



If the shortfall of 0.71 million litres a day is rationed efficiently, each and every user will derive a use value of $4.08 from the last litre consumed.

However, if only half the shortfall is rationed efficiently (as the Report postulates), some people are going to have to 'climb back' up their demand curves (from the $4.08 point), while the privileged ones can consume below this point.

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[18] This calculation assumes an 11 percent shortfall on demand of 6.48 million. The market clearing price of $4.08 is higher than the market clearing price of $3.56 underlying the Report because the Report assumes that demand only has to be cut by 11 percent from the 6.67 million litre level. The calculations in this Annex are overstated relative to the Report in this respect.

Assuming that each group uses what it has efficiently, but that no trades are permitted between the groups, the losing group might forgo a benefit of $5.26 from the last litre that is transferred to the privileged group. But that litre is only worth $2.91 to the privileged group. So the lost consumer surplus on that marginal litre is $2.36 (rounded).

Now consider the average loss rather than the marginal loss. Assume further than each group would consume half the total consumption of 5.77 million litres a day but for the inefficiency.

The group that loses out because of inefficient rationing would have paid area ABCD for the 0.355 million litres a day it missed out on. This is estimated to be $1.67 million. The group that gets more than it should would have paid area CDEF. This is estimated to be $1.25 million.

The net loss from rationing 0.355 million litres a day inefficiently would be $0.42 million, or $1.18 per litre. If it happened one year in forty and lasted for 183 days, the expected annual loss would be of the order of $2.0 million (0.42*183/40).

Such a hypothetical benefit might scarcely cover the costs of the bureaucracy alone that would be needed to administer the regulatory scheme being proposed by the Report. It is not remotely justifiable given the 'deadweight costs' of the order of $20 million a year from stockpiling almost 200,000 tonnes of fuel, even if only at a cost of $106 per tonne.

What about the alternative argument that there would be a profit to be made from holding inventory in order to supply it in a crisis to domestic users at the efficient market clearing price of $4.08 a litre, rather than import petrol at the world crisis price of $1.73 a litre? There would be a gain of $2.34 a litre (rounded) on the world price. Since this happens one year in 40, the expected annual gain would be 6 cents a litre.

Each of the following two points suffices to reject this argument for holding inventory:

- the Report (optimistically) estimates annualised inventory holding costs at around 8 cents a litre, so this would not be profitable even at the Report's estimated cost;
- it would be far better to achieve the anticipated gain without incurring *any* inventory costs. This might be done by maintaining a long position in oil futures in order to profit when the world price rose from $1.10 a litre to $1.73 a litre. Oil users could do this for themselves if they thought it worthwhile.