

Discussion Paper: Options for Government Response to an Oil Supply Disruption

This paper provides an outline of, and seeks feedback on, proposed aspects of an oil emergency response strategy for the purpose of assisting with its ongoing development. The measures proposed in this paper are not government policy.

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1. Introduction

Context

- 1.1 The Ministry of Economic Development, in consultation with other agencies and stakeholders, is currently developing an oil emergency response strategy which will detail the policy and operational aspects of managing an emergency disruption of oil supplies should that occur. This document outlines and seeks feedback on the key aspects of such a strategy.
- 1.2 Approximately 75% of consumer demand for oil products in New Zealand is for domestic transport use and another 7% for aviation.¹ The overall objectives of the strategy are to ensure that the effects of an oil supply disruption on New Zealand would be minimised and to ensure that New Zealand is able to effectively meet its obligations as a member of the International Energy Agency (IEA). The strategy will be relevant for both international emergency situations, where the IEA asks member countries to implement emergency measures, and domestic situations where New Zealand responds independently.
- 1.3 However, in the event of a long term disruption, major disaster or pandemic-type event, there may also be a need to activate a civil defence contingency plan, which the Ministry of Civil Defence and Emergency Management are leading the development of over the course of 2006/07. Along with the responsible government departments, the Ministry of Civil Defence and Emergency Management will engage with the petroleum industry and regulatory bodies to develop contingency plans, or modify existing plans, that support the petroleum industry to take coordinated action during an emergency that affects distribution nationally or regionally.
- 1.4 The Guide to the National CDEM Plan which came into effect on 1 July 2006 [Cab Min (06) 11/5 refers], notes the Ministry of Civil Defence and Emergency Management will develop contingency plans to support the CDEM sector to:
 - respond in support of the welfare requirements of critical and vulnerable customers arising from the petroleum distribution interruption;
 - provide logistical and other support to the petroleum and oil industry, if appropriate; and
 - support the contingency arrangements of the commercial sector to lessen social and economic impacts during long-term recovery outages or reduction in services.

¹ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005, p. 44

- 1.5 The civil defence contingency plan will complement and support the oil emergency response strategy. In the event of a local, regional or pandemic type of event the Ministry of Civil Defence and Emergency Management contingency plan would take effect, although measures (including regulatory powers) in the strategy may assist if the situation warranted it.

What will the oil emergency response strategy say and when will it be activated?

- 1.6 The oil emergency response strategy will allocate roles and responsibilities for action in an emergency, outline the measures that are available to respond to an emergency supply disruption, and provide guidance on how to implement them. This will help to ensure that decisions are made quickly in an emergency situation, that the appropriate processes are followed, and that decisions are based on sound information.
- 1.7 The government will only activate the emergency response strategy if the taking of emergency measures is required to either fulfil New Zealand's obligations under the IEA or to deal with an emergency disruption to petroleum supplies in New Zealand. For the latter situation, the government may introduce regulations under the Petroleum Demand Restraint Act (1981) if petroleum products are, or are likely to be, in short supply in New Zealand or within any specified part of New Zealand. The emergency response measures will not be activated where the primary purpose is price management or to assist any particular supplier.

How will the emergency response strategy improve our response to an emergency oil supply disruption?

- 1.8 New Zealand regularly participates in IEA oil emergency response simulation exercises. Through participation in these exercises, the Ministry of Economic Development has developed a process for responding to an emergency oil disruption and guidance on how to implement specific emergency response measures.
- 1.9 The process for responding is now being updated and expanded to take account of new domestic and international research into responding to oil supply disruptions² and recent international experience of responding to oil emergencies³. Furthermore, the updated oil emergency response strategy will take account of the changing range of options available to New Zealand to respond to an oil emergency disruption. In particular, the New Zealand government is currently undertaking a process of tendering for reserve petroleum stocks which will broaden the response options available to New Zealand.

² For example: *Saving Oil in a Hurry*, International Energy Agency, 2005; and *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

³ For example: the UK 2000 "fuel crisis"; and the September 2005 IEA collective action in response to Hurricane Katrina.

What are New Zealand's IEA emergency response obligations?

- 1.10 The IEA was founded in the 1973/1974 oil crisis to coordinate measures in times of oil supply emergencies. The scope of IEA work has since widened to include broader energy issues, but oil security remains the IEA's core activity.
- 1.11 As a member of the IEA, New Zealand may be called upon to participate in the IEA's emergency response procedures. The IEA's emergency response mechanisms were set up under the 1974 Agreement on an International Energy Program (IEP). The IEP Agreement requires IEA countries to hold oil stocks equivalent of at least 90 days of net imports of the previous calendar year and to release oil stocks, restrain demand, switch to other fuels, increase domestic production and, if necessary, share available oil, in the event of an oil supply disruption of 7 per cent or more to the IEA or individual countries.
- 1.12 The IEA also has a complementary set of measures known as Co-ordinated Emergency Response Measures (CERM). These provide a rapid and flexible system of response to actual or imminent oil supply disruptions of any size.

What legislative powers are available to respond to an oil emergency?

- 1.13 If required, emergency powers to respond to a disruption in oil supplies are provided in the Petroleum Demand Restraint Act (1981) and the International Energy Agreement Act (1976).
- 1.14 The Petroleum Demand Restraint Act authorises regulation making for the purpose of restraining demand, reducing consumption, or ensuring the equitable distribution of petroleum products in New Zealand. As noted above, the government may introduce these regulations if petroleum products are or are likely to be in short supply in New Zealand or within any specified part of New Zealand.
- 1.15 The International Energy Agreement Act provides for maintaining reserve supplies. It also provides for ministerial directions and emergency regulations to control the production, acquisition, distribution, supply, or use of petroleum, if it appears that New Zealand's IEA obligations require the taking of emergency measures.

2. Responding to this document

Making a submission

- 2.1 Comments are invited by 10 November 2006 and can be emailed to oilsecurity@med.govt.nz or posted to:

Oil Security
Resources and Networks Branch
Ministry of Economic Development
PO Box 1473
Wellington

- 2.2 All of the proposed policies suggested in this document are in draft form, and we welcome your feedback to assist the Ministry to build on the ideas expressed in this document as it develops an oil emergency response strategy for New Zealand.
- 2.3 Throughout the document, the Ministry poses specific questions (in shaded boxes) to guide feedback. However, we welcome your feedback on any other related issues.

What happens after you have made your submission?

- 2.4 Once submissions have been compiled they will be considered with regard to developing the oil emergency response strategy.
- 2.5 Respondents should note that their comments will be subject to the Official Information Act 1982 (OIA). The OIA requires the information to be made available unless there is a good reason, pursuant to the Act, to withhold the information; and that good reason outweighs the public interest in making the information available. If you object to the release of any material provided in your submission, please specify the material that you wish withheld, and the grounds for withholding. All such requests will be reviewed carefully in considering any request for release of the submission.

3. Overall Framework for Response

3.1 This section summarises the overall framework for response to an oil supply disruption.

	Roles and responsibilities	Emergency response measures	Information from industry	Communications with public and stakeholders
Initial Decision	MED consults with industry and departments to assess need for government response. Advice to Minister of Energy who makes a decision, in consultation with Ministerial colleagues, on whether or not to implement government response.		Industry provides information to MED on size of disruption/supply situation and possibility of industry response/need for government intervention.	
First Steps	MED sets up Senior Officials Coordination Team which then sets up other teams as appropriate. Senior Officials Coordination Team takes the lead in developing and coordinating a plan of action. The Minister of Energy, in consultation with Ministerial colleagues, makes decisions on the basis of this advice.	Analyse full range of response options. Begin implementation of measures. If there is a risk of hoarding, introduce a fixed sales requirement immediately.	Information collection from industry to determine appropriate response.	Communications plan developed to support emergency response. Timely and accurate information conveyed to public.
Next Steps	Senior Officials Coordination Team reviews on an ongoing basis the appropriateness of any measure(s) that are implemented as part of the emergency response, and advises the Minister of Energy on this basis.	Measures adjusted in light of information collection and the changing situation.	Ongoing information collection from industry to assess appropriateness of response and ongoing need for response.	Communications plan reviewed for appropriateness on an ongoing basis. Timely and accurate information conveyed to public throughout the emergency response.
Deactivation	Senior Officials Coordination Team assesses when the emergency response strategy is no longer necessary. The Minister of Energy makes the decision on the basis of this advice.	Measures deactivated.		Minister of Energy to communicate the deactivation of the emergency response measures.

4. Roles and responsibilities to respond to an oil supply disruption

- 4.1 The Ministry of Economic Development proposes that the oil emergency response strategy will outline the roles and responsibilities for: the initial decision on whether government involvement is necessary; subsequent decisions on the emergency measures to implement; and the appropriateness of an ongoing response. This section outlines a possible framework for these roles and responsibilities.

Summary of Roles and Responsibilities



Initial Decision Making Framework

- 4.2 *The oil companies whose operations are affected by the emergency have initial responsibility for responding to an oil supply disruption.* The oil emergency response strategy would only be activated if required to fulfil New Zealand's obligations to the IEA or if petroleum supplies to New Zealand are materially disrupted and government involvement is

necessary to rectify the situation and/or minimise the impact on New Zealand.

- 4.3 The Ministry of Economic Development would consult with the National Emergency Sharing Organisation (NESO), an existing committee of oil industry representatives chaired by the Ministry of Economic Development, to determine whether government involvement is necessary.

Background: NESO

Under the International Energy Agreement, every IEA member is required to have a NESO. It exists to make arrangements for sharing oil supplies between member countries in the event of a severe emergency. New Zealand also uses the NESO committee to assist with invoking lower level or non IEA emergency measures.

- 4.4 The Ministry of Economic Development would then consult with senior officials from other government departments about whether government involvement is necessary. The government departments would include the Ministry of Transport, Energy Efficiency and Conservation Authority, Ministry of Civil Defence and Emergency Management, Department of Prime Minister and Cabinet, Treasury, and the Ministry of Foreign Affairs and Trade, as considered relevant by the Ministry of Economic Development in a given emergency situation.
- 4.5 Following consultation, the Ministry of Economic Development would make a recommendation to the Minister of Energy about whether government involvement is necessary.
- 4.6 The Minister of Energy is responsible for deciding whether to accept or reject the Ministry of Economic Development's assessment and recommendation in consultation with the Prime Minister and the Ministers of Finance, Transport and Foreign Affairs (and if relevant Civil Defence).
- 4.7 If the Minister of Energy agreed with a recommendation for government involvement, the Ministry of Economic Development would convene a Senior Officials Coordination Team to take the lead role in developing and coordinating a plan of action.

Ongoing roles and responsibilities for responding to an oil supply disruption

Senior Officials Coordination Team

- 4.8 The Ministry of Economic Development would convene and lead a Senior Officials Coordination Team. Membership may include senior officials from the Ministry of Transport, Energy Efficiency and Conservation Authority, Ministry of Civil Defence and Emergency Management, Treasury, Department of Prime Minister and Cabinet, and the Ministry of Foreign Affairs and Trade, as considered relevant in a given emergency situation.

4.9 The Senior Officials Coordination Team would:

- take the lead role in developing and coordinating an appropriate plan of action for the length of the oil emergency. This includes deciding upon the Industry/Government and the Communications Teams that need to be set up and confirming the roles and responsibilities of each team;
- provide advice to Ministers on measures to be implemented in consultation with the other teams; and
- coordinate the collection of information on the emerging crisis.

4.10 Ultimately, it is the Minister of Energy, in consultation with the Prime Minister and the Ministers of Finance, Transport and Foreign (and if relevant Civil Defence), who makes the decisions on the emergency response.

Industry/Government Management Team

4.11 The Industry/Government Management team is likely to be in the form of the existing NESO.

4.12 The Industry/Government Management Team would:

- make decisions regarding industry response;
- convey information and provide advice to the Senior Officials Coordination Team through the Ministry of Economic Development on the ongoing oil supply situation; and
- be the forum by which the oil industry is kept informed of government decisions.

Communications Team

4.13 The Communications team would comprise communications managers/senior advisors of the Ministry of Economic Development, the Energy Efficiency and Conservation Authority, the Ministry of Transport, and oil companies, as considered appropriate by the Senior Officials Coordination Team in a given emergency situation.

4.14 The key function of the Communications team would be to develop and implement a communications strategy to support the agreed plan of action.

4.15 Section 10 sets out a broad approach to communications in the event of an oil supply disruption. Given the need for a high degree of flexibility to respond to specific scenarios, this pre-planned communications strategy will necessarily remain a relatively high-level one.

Areas for feedback

This section outlines a possible framework for institutional arrangements. The Ministry of Economic Development welcomes feedback on the proposed framework including:

- the expectation that the oil companies whose operations are affected have initial responsibility for responding to an oil supply disruption;
- the proposed consultation with industry to decide whether government involvement is necessary and the role for industry in the ongoing response;
- the proposed process by which the initial decision for government involvement is made; and
- the proposed teams and their roles in managing the ongoing response to an oil supply disruption.

5. Measures to respond to an emergency oil supply disruption

- 5.1 As discussed in the previous section, the Ministry of Economic Development proposes that the Senior Officials Coordination Team (in consultation with the Industry/Government Management Team) will take the lead role in determining which measures are appropriate to respond in a given situation.
- 5.2 This section sets out the Ministry's proposed general approach of how prescriptive the strategy will be, briefly describes potential measures, and discusses some of the implementation issues and pros and cons of those measures.
- 5.3 The Ministry's view is that the strategy should not provide strict rules prescribing the measures that have to be implemented in response to specific situations. Rather, the strategy should provide information on the range of measures available to respond to an emergency oil supply disruption so that the decision on which measures to implement could be made quickly in light of the information available at the time of the oil supply disruption. In general, however, measures which augment market mechanisms are favoured and government intervention would be commensurate with the scale of disruption.
- 5.4 Note that the potential emergency response measures are not mutually exclusive and may be implemented in conjunction with each other where appropriate.
- 5.5 In principle, there are two broad categories of measures available for the government to respond to an oil supply disruption: measures to improve supply and measures to restrain demand. The diagram below illustrates the range of potential measures.

Summary of potential emergency response measures

Measures to improve supply		
Drawdown of Stocks	Surge Production	Specification Relaxation
Stocks from New Zealand's petroleum reserve offered to the market to prevent stocks "running out".	New Zealand's domestic production increased to prevent stocks "running out". May require regulation or Ministerial direction under the International Energy Agreement Act or the Petroleum Demand Restraint Act.	Petroleum Products Specification Regulations relaxed to improve the supply of petroleum products. Requires amendment to Petroleum Products Specification Regulations by Order in Council.
Measures to restrain demand		
Voluntary Demand Restraint	Mandatory Demand Restraint	Fuel Switching
Appeals made to public, via a public information campaign targeting voluntary savings, to reduce demand. Legislative powers not required.	Government compulsion used to restrain demand, to prevent hoarding, or to distribute a limited amount of fuel. Requires regulation under the International Energy Agreement Act or the Petroleum Demand Restraint Act.	Oil substituted in favour of alternative fuels where possible to prevent stocks "running out". May require regulation under the International Energy Agreement Act or the Petroleum Demand Restraint Act.

Measures to improve supply

Drawdown of Stocks

- 5.6 In an oil supply disruption, New Zealand could respond by releasing stocks from New Zealand's petroleum reserve (from the start of 2007).

Background: New Zealand's oil stocks

As a member of the IEA, New Zealand is required to hold petroleum stocks that meet at least 90 days of the country's net import requirements. Until 2006 New Zealand has relied on indigenous oil production and normal commercial stocks to meet the IEA requirement. However, declining indigenous production and increasing demand has left New Zealand short of the 90 day requirement.

The government has decided that New Zealand will meet its obligation to the IEA by tendering for companies to hold stock on behalf of the Crown. Tenders are expected to be held in late 2006. The reserve stocks will be in addition to normal commercial stocks and will be controlled separately. Criteria for the release of reserve stocks will ensure that the stocks may only be released to meet New Zealand's obligations to the IEA or because there is a reduction or threatened reduction of petroleum supplies in New Zealand. The reserve supplies will not be available where the primary purpose is for price management or for assisting any particular supplier.

Surge Production

- 5.7 In an oil supply disruption, New Zealand could respond by increasing domestic oil production. Options to increase production would be investigated at the time of an oil supply disruption. Consideration should be given to effect that surge production can have on reducing New Zealand's recoverable reserves.

Relaxation of Fuel Specifications

- 5.8 In an oil supply disruption, New Zealand could respond by relaxing specific parameters within the Petroleum Products Specifications Regulations where this would improve the supply of petroleum. The relaxation of specifications has the potential to improve the availability of petroleum supplies in two main ways: through increasing the output at the New Zealand refinery; and through increasing the likelihood of petroleum from offshore being acceptable for sale in New Zealand.
- 5.9 Options to relax fuel specifications would be investigated at the time of an oil supply disruption. The industry/government management team would identify what regulations, if any, may potentially be restricting the production or supply of products in New Zealand. Once potential regulations have been identified, the industry/government management team would ascertain the likely effects (both positive, in terms of increased supply, and adverse, in terms of environmental, health, safety,

and operational effects) of relaxing the relevant regulations and provide advice to the Minister on whether the relaxation of those parameters is appropriate.

Measures to restrain demand

- 5.10 New Zealand may implement measures to restrain demand in response to an oil supply disruption. Note that the demand restraint measures considered here are in addition to the reduction in fuel use that may occur in an emergency due to likely higher oil prices.
- 5.11 The Ministry favours an approach that first introduces measures that encourage voluntary restraint, moving to mandatory requirements only if the severity of the situation requires it. The main exception to this rule is that an immediate requirement for minimum sales could be introduced if there was a risk of panic buying causing a supply disruption to escalate into physical shortages.

Voluntary Demand Restraint

- 5.12 In the voluntary phase of a restraint programme appeals would be made to the public, via a public information campaign targeting voluntary savings, to reduce demand. The Energy Efficiency and Conservation Authority would take the lead in overseeing the communications campaign to encourage voluntary restraint.
- 5.13 Section 6 contains information, from a study of New Zealand's available demand restraint measures⁴, on voluntary demand restraint measures that could be encouraged by the information campaign.

Mandatory Demand Restraint

- 5.14 If it was necessary to move into a mandatory phase of demand restraint, government compulsion could be used to restrain fuel demand. Legislative power to restrain demand is available under the Petroleum Demand Restraint Act (1981) and the International Energy Agreement Act (1976).
- 5.15 If the decision were made to implement any mandatory measures, government would also need to consider security and enforcement implications.
- 5.16 As noted above, the government could introduce a fixed sales requirement if there was a risk of hoarding behaviour. Under this measure, all individual fuel sales would be restricted to a specified fixed quantity (by sales or volume). The purpose of a fixed sales requirement is to prevent a supply disruption from escalating into physical shortages by ensuring against frequent topping-up of fuel tanks. Section 7 contains further information on a fixed sales requirement.

⁴ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

- 5.17 The government could also introduce regulations to reduce the open road speed limit, for example to 80km/h or 90km/h, in response to an oil supply disruption. It is estimated that vehicles are approximately 11 percent more fuel efficient at 90km/h than at 100km/h⁵. The costs of temporarily reducing the open road speed limit would be significant, and this may rule out speed limit reductions as an option. Section 8 contains further information on a speed limit reduction.
- 5.18 In extreme circumstances, the government could introduce petrol rationing in response to an oil supply disruption. The purpose of a rationing scheme would be to prevent petroleum products from running out and/or to distribute a limited supply of fuel. Rationing would only be considered if there was a real threat of widespread physical shortages and a fixed sales requirement was considered insufficient to manage this threat. Section 9 contains further information on rationing.
- 5.19 Car-less days (a policy banning the use of a vehicle on a specific day of the week) could be introduced to ration petrol consumption. However, the Ministry does not favour car-less days as a method of rationing. Previous experience with car-less days in New Zealand had limited success. Furthermore, the Ministry considers that other measures are likely to be more successful and cost-effective.

Fuel Switching

- 5.20 Fuel switching refers to the capability to switch from oil to an alternative fuel within a short time frame. Examples of fuel switching include switching a dual fired power station to run on its non-oil fuel (not currently an option in New Zealand), and replacing conventional fuels, such as petrol and diesel, with biofuels. Options for fuel switching would be investigated at the time of an oil supply disruption.

Areas for feedback

This section makes a proposal for the general approach of how prescriptive the strategy could be, briefly describes potential measures, and discusses some of the implementation issues and pros and cons of those measures. The Ministry of Economic Development welcomes feedback on:

- the proposed approach for the emergency response strategy to outline measures but not provide strict rules prescribing the measures that would have to be implemented in response to specific situations;
- implementation issues associated with the various measures; and
- costs and benefits of the various measures, including how might they impact upon your business.

⁵ *Saving Oil in a Hurry*, International Energy Agency, 2005.

6. Voluntary Demand Restraint

6.1 This section contains information on potential voluntary demand restraint measures from a study of New Zealand's available demand restraint options⁶. In the voluntary phase of a restraint programme, appeals would be made to the public, via an advertising campaign targeting voluntary savings, to reduce demand.

Carpooling

Component	Comment
	Carpooling or ride-sharing policies designed to increase vehicle occupancy and thereby reduce the number of vehicle kilometres travelled (VKT). Policy would be directed at commuters with the types of policies dependent on the nature and extent of the supply emergency. Specific approaches could range between:
Description	Encouragement/exhortation to carpool by way of publicity campaigns based on the need to save fuel (increasing fuel prices in themselves could induce commuters to take up more car pooling) Creating carpool only lanes on motorways/sharing with bus only lanes to provide commuters with the benefit of faster trip times. An extra inducement would be to offer benefits such as free or subsidised parking spaces
Legislation required	None for voluntary response, although there may be a requirement for some change to the Transport Services Licensing Act 1989 that currently requires licensing of transport services. Some car pooling schemes will fall under this and will not be authorised currently. Regulations covering road use/use of park and ride areas and ability to subsidise designated commercial parking operators for loss of income
Time to implement	Based on the need to carefully design each programme specific legislative requirements would set up on an "as needed" basis. However time would be required to convert motorway signage and lanes although this could also be done before hand.
Investment Required	Minimal investment for public information campaigns; prepared road signage/lane marking; partial and full subsidy of eg parking , with highest cost for direct subsidy
Central/local Govt	Both would need to be involved. Central government would need to coordinate the publicity campaign plus establishment of car lanes (if appropriate) on State Highways. Local government would need to be involved in assigning car pool lanes on local roads.
Information Communication	Comprehensive information campaign (all media advertising combined with Internet based information sharing to match rides with commuters, eg using www.carpoolnz.org or www.carshare.co.nz)
Perverse Outcomes	Potential incentives to encourage commuters away from public transport alternatives, undermining public transport Potential for greater distances to be travelled picking up car-poolers
Expected Costs	Part of total communications plan budget. Additional costs for signage and local publicity of car-pool lanes
Expected Benefits	1.2% saving in aggregate oil demand
Time to achieve benefits	Will require some time for individuals to associate with others to achieve car pooling. Is likely to take 2-3 weeks to achieve targeted reductions.
Effectiveness over short/long term	Effectiveness likely to increase gradually as behavioural responses adjust to persuasion/exhortation to more valuable financial incentives
Effectiveness for severity of disruption	Probably best if used for specific events rather than always encouraged. Success may depend on altruism of commuters to respond to crisis, although crisis itself may increase price which will add to response

Telecommuting

Component	Comment
Description	In an emergency telecommuting can be encouraged as a way to avoid journeys and save fuel. While there are employer issues such as management of employees who telecommute some of these concerns might be set aside in an emergency situation. Telecommuting is only feasible for the proportion of the population whose work allows such a change. NZ has some experience of increase in telecommuting during the Auckland Power Crisis in 1998.
Legislation required	None
Time to implement	Public Information Campaign – could be available in advance.
Investment Required	Will be more effective if there is greater access to computers and broadband services at

⁶ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

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Component	Comment
	homes.
Central/local Govt	Both to encourage
Information Communication	Need Public Information Campaign. May also to have prior discussions with employer groups to see how they might assist in a campaign and what issues are important for them.
Perverse Outcomes	Data shows that telecommuters normally increase other travel offsetting the benefits of the work trip saving. This effect has been built into the savings assumption although we would expect it to be low in an emergency situation compared to normal telecommuting.
Expected Costs	Cost of Public Information Campaign. ⁷
Expected Benefits	0.4% saving in aggregate oil demand
Time to achieve benefits	It would take some time for people to organise their work so they could telecommute. We would expect that it would be two weeks at least before the full benefits would be achieved.
Effectiveness over short/long term	Telecommuting is likely to be more effective in the short term as over the long-term issues over management of employees is likely to become more significant. We would expect the benefits to start reducing after one month although there could be some long-term benefits from some employers/employees permanently changing work structures.
Effectiveness for severity of disruption	Telecommuting should be effective for any severity of disruption.

Tyre Pressure

Component	Comment
Description	Vehicles are more fuel efficient when their tyres are at optimal pressure. Optimal pressure reduces rolling resistance. Studies have found that on average the tyres of vehicle fleets are under pressure by on average about 3 PSI. A campaign to encourage people to have the correct pressure will save fuel.
Legislation required	None
Time to implement	Public information Campaign – could be available in advance.
Investment Required	None
Central/local Govt	Own vehicles
Information Communication	Need Public Information Campaign. May also need to have preparations in place with petroleum retailers because of the expected upsurge in use of tyre filling facilities.
Perverse Outcomes	People fill their tanks because they visit service stations
Expected Costs	Cost of Public Information Campaign
Expected Benefits	1.4% saving in aggregate oil demand
Time to achieve benefits	The public information campaign will take time to build up and not everyone will be able to adjust their tyre pressure immediately. We assume that the savings build up to the full amount over the two weeks following the campaign introduction.
Effectiveness over short/long term	This would be expected to be more effective over the short term although once tyres are inflated correctly the benefit should remain for a reasonable period. Over the longer term the campaign may need to be reprised to continue the emphasis.
Effectiveness for severity of disruption	As the consumer gets a benefit this campaign should be applicable for any sort of disruption event.

Compressed/flexible Work Week

Component	Comment
Description	Compressed or flexible work weeks are designed to reduced the number of trips per week or avoid travel in peak times reducing congestion (both vehicle and public transport). Compressed work weeks have the most benefit in an emergency situation as actual trips are saved. Generally the 4/40 (working normal 40 hours per week in four days rather than five) is the most popular of the compressed work week options.
Legislation required	None (but a policy of encouraging employers to be flexible is needed)
Time to implement	Public Information Campaign – coordination with employers and employer groups.
Investment Required	None
Central/local Govt	To act as examples
Information Communication	Need Public Information Campaign. May also need to have prior discussions with employer groups to see how they might assist in a campaign and what issues are important for them.
Perverse Outcomes	Data shows that no-work travel increases on the off work day partially offsetting the benefits. This effect has been built into the savings assumption although one would expect it to be low in an emergency situation as opposed to normal compressed weeks.
Expected Costs	Cost of Public Information Campaign
Expected Benefits	0.2% saving in aggregate oil demand
Time to achieve benefits	It would take some time for employers and employees to organise the work so compressed weeks were an option. We would expect that it would be two weeks before the full benefits would be achieved.
Effectiveness over short/long term	A compressed working week is likely to be more effective in the short term as, over the long-term, work organisation and structure are likely to become more significant issues. We

⁷ There may also be costs to businesses in establishing the necessary systems for telecommuting and potentially also a loss in productivity.

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Component	Comment
	would expect the benefits to start reducing after two months although there could be some long-term benefits from some employers/employees permanently changing work structures.
Effectiveness for severity of disruption	Reduced working weeks should be effective for any severity of disruption although there will be better employer buy in for international events rather than local.

Encouragement to use more fuel efficient car

Component	Comment
Description	New Zealand has a high proportion of households with more than one car. This creates an opportunity to save fuel by encouraging households to use the more fuel efficient car more frequently or for the longer journeys.
Legislation required	None
Time to implement	Public information campaign – could be available in advance.
Investment Required	None
Central/local Govt	None
Information Communication	Need Public Information Campaign.
Perverse Outcomes	None
Expected Costs	Cost of Public Information Campaign
Expected Benefits	0.43% saving in aggregate oil demand
Time to achieve benefits	We would estimate the PIC to have effect over the following x weeks so by x weeks after the campaign began the full savings would be occurring.
Effectiveness over short/long term	This measure will be more effective over the short term as over the longer term people would be expected to return to their normal behaviour and use of vehicles.
Effectiveness for severity of disruption	The measure will be most effective when there is public support for measures although it should be applicable to all disruptions.

Drop Some Unnecessary Trips

Component	Comment
Description	Many trips that are made, particularly for recreational purposes, are discretionary and could be dropped altogether, eg weekend outings.
Legislation required	None
Time to implement	Public information campaign – could be available in advance.
Investment Required	None
Central/local Govt	Local government could provide more local entertainment to discourage long trips
Information Communication	Need Public Information Campaign.
Perverse Outcomes	None
Expected Costs	Cost of Public Information Campaign
Expected Benefits	2.2% saving in aggregate oil demand
Time to achieve benefits	Benefits could be achieved relatively quickly in response to Public Information Campaign
Effectiveness over short/long term	Could be effective over short term, but long term people would be unwilling to continue to displace trips.
Effectiveness for severity of disruption	The measure will be most effective when there is public support for measures although it should be applicable to all disruptions. Many people doing this could be reinforcing, eg people would recreate together locally.

Areas for feedback

This section contains information on potential voluntary demand restraint measures from a study of New Zealand's available demand restraint options⁸. The Ministry of Economic Development welcomes feedback on the measures presented in this section

⁸ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

7. Fixed Sales Requirement

7.1 This section outlines initial thinking with regards to a fixed sales requirement. The material presented here is 'high level', and will be further developed by the Ministry of Economic Development following consultation.

Description

7.2 If there is a risk of fuel hoarding or panic buying, government could introduce regulations under the Petroleum Demand Restraint Act (1981) or the International Energy Agreement Act (1976) to restrict all individual fuel sales to a specified fixed quantity (by sales or volume). For example, all sales would have to be for exactly 25 litres of fuel. The purchaser would be required to pre-pay for the specified quantity of fuel regardless of whether or not there was room for that amount in their tank.

Purpose

7.3 The purpose of a fixed sales requirement is to prevent a supply disruption from escalating into physical shortages by ensuring against frequent topping-up of fuel tanks. It may also ensure a more equitable fuel supply to consumers during a supply disruption.

7.4 A fixed sales requirement would almost certainly be introduced as an interim measure if the government planned to implement rationing. A rationing scheme would need to be advertised in advance and would take time to roll-out, necessitating the use of a fixed sales requirement to prevent customers hoarding prior to the rationing scheme being introduced.

Further implementation details

7.5 A fixed sales requirement would need to be implemented very rapidly with no pre-warning to the public (advance notice would create incentives for customers to fill-up quickly before the scheme entered into force). At the time of implementation, the government would announce the scheme via TV, radio, and the press. The government would also provide the oil companies with signs to be displayed at all forecourts. Forecourts may be required to shut for a specified period of time (e.g. 1 hour) to receive instructions, erect signage, brief staff, and take any other measures necessary to implement the scheme. The posters and other government communication with the public would make it clear that this is a government imposed regulation – not an individual company restriction.

STEP 1: oil companies receive notification of plans to implement a minimum sales requirement and additional information on how to implement the scheme including government posters. Oil companies to deliver information to all retail sites under their jurisdiction.

STEP 2: The government announces the introduction of a minimum sales requirement to the public and all forecourts close briefly to erect signage and prepare.

- 7.6 It is likely that a fixed sales requirement would include a complete ban on sales of fuel in containers. This is to prevent customers filling up containers and then using that fuel to top up their vehicle tanks. A ban on sales in containers would also prevent potential hazards due to people hoarding fuel in unsuitable containers. Motorcycles and sales of LPG could be exempt from the requirement and there could be a different (or no) fixed sales requirement for heavy goods vehicles.
- 7.7 The decision on how to implement the requirement at each forecourt would be up to the companies. For example, it could involve controlling sales from the shop or having a forecourt attendant manage each pump (which may require restricting the number of pumps in operation).
- 7.8 The following table, from a study of New Zealand's available demand restraint options⁹, summarises the implementation issues and costs and benefits of a fixed sales requirement.

Fixed Sales Requirement

Component	Comment
Description	Sales of fuel are limited to a specified minimum, For example, all sales would have to be at least 25 litres. In practice this means that the purchaser is charged for 25 litres worth if the purchase is for less than this amount.
Legislation required	Can be undertaken under the Petroleum Demand Restraint Act 1981 but requires a regulation to be drafted
Time to implement	Clear instructions would need to be provided to all filling stations. Warning of this as a possibility should be provided as early as possible so that it can be implemented very quickly. If required, this measure will need to be introduced very rapidly.
Investment Required	Minor. Need for instructions and publicity material
Central/local Govt	Central government need to make a call on the need for minimum sales restrictions
Information Communication	Publicity requirement via media and at filling stations. Clear instructions required for filling station attendants
Expected Costs	Minimal costs for publicity material
Expected Benefits	Avoidance of rapid problem escalation. Immediate filling of tanks could total as much as 10 days of consumption.
Time to achieve benefits	Benefits are immediate
Effectiveness over short/long term	Will obtain benefits throughout the programme
Effectiveness for severity of disruption	Prevents a disruption escalating in severity.

Comment

- 7.9 A fixed sales requirement is expected to be a cost-effective means of preventing an oil supply disruption from escalating into physical shortages.
- 7.10 It is estimated that panic purchasing of tanks could total as much as 10 days consumption¹⁰. A fixed sales requirement would also ensure more equitable distribution of fuel in an oil supply disruption. The most

⁹ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

¹⁰ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

significant cost is expected to be the cost of publicising the regulation. There may also be additional security costs surrounding the implementation and enforcement of any minimum sales requirement.

Areas for feedback

This section outlines initial thinking with regards to a fixed sales requirement. The Ministry of Economic Development welcomes feedback on any implementation issues, costs, and benefits, of a fixed sales requirement.

8. Speed Limit Reduction

8.1 This section outlines initial thinking with regards to a speed limit reduction. The material presented here is 'high level' and will be further developed by the Ministry of Economic Development following consultation.

Description

8.2 The government could introduce regulations to reduce the open road speed limit, for example to 80km/h or 90km/hr, to reduce demand for petroleum in an oil supply disruption.

Purpose

8.3 The rationale for reducing the open road speed limit is that vehicles are more fuel efficient at the lower speed (by about 11 percent for 90km/hr versus 100km/hr¹¹).

Statutory Powers

8.4 The Petroleum Demand Restraint Act (1981) makes provisions for the Governor-General to impose measures for the purpose of restraining the demand for, or reducing the consumption of, petroleum products in New Zealand or for the purpose of ensuring the equitable distribution in New Zealand of petroleum products that are, or are likely to be in short supply in New Zealand or within any specified part of New Zealand. The Act also states that no regulation made under it can be held invalid because it is inconsistent with the Land Transport Act 1998.

8.5 Similarly, the International Energy Agreement Act (1976) authorises the making of regulations in order to fulfil New Zealand's obligations under the International Energy Agreement. This Act provides for regulations to be made to regulate the use of petroleum for the purpose of carrying out such obligations as New Zealand may have, under the International Energy Agreement to restrain demand for, or reduce consumption of, petroleum in New Zealand. The Act also states that no regulation made under the Act shall be held invalid because it is, or authorises any act or omission which is, repugnant to, or inconsistent with, any Act.

8.6 Therefore, the government could introduce regulations under the Petroleum Demand Restraint Act or the International Energy Agreement Act (rather than under the Land Transport Act 1998) to regulate the use of petroleum by reducing the open road speed limit.

¹¹ *Saving Oil in a Hurry*, International Energy Agency, 2005.

Further implementation details

8.7 The following table, from a study of New Zealand's available demand restraint options¹², summarises the implementation issues and costs and benefits of a speed limit reduction.

Speed Limits

Component	Comment
Description	Reduce the open road speed limit to 90 km/hr. Vehicles are more fuel efficient at the lower speed (by about 11% for 90 km/hr vs 100km/hr) ¹³
Legislation required	See section on statutory powers above.
Time to implement	Could be implemented very quickly if legislation in place (< 1 week) although it would take some time to change road signage which would mean enforcement would not be possible.
Investment Required	Investment would be required to change all road signage (and back after the event) along with increases in enforcement requirement (more speed cameras). There will also be some costs recalibrating equipment.
Central/local Govt Information	Central Govt. decision. Police enforcement role.
Communication	Need an information campaign to get some impact immediately. However enforcement would need to wait until road signage is in place which is likely to take longer.
Perverse Outcomes	May cause some disgruntlement if it just results in more income in fines. May need to 'recycle' any excess income in some way.
Expected Costs	The costs will be reasonably significant given the volume of road signage that would have to be changed. That may rule out this option as a mandatory measure unless it is for a reasonable period (3 months +). A partial benefit might be obtained in the short term from encouragement to reduce speed without the associated enforcement.
Expected Benefits	1.4% saving in aggregate oil demand
Time to achieve benefits	Likely to be phased in as initial savings would only be from voluntary speed reductions. We would estimate it would take a month before signage could be changed and enforcement could begin which would mean full savings would not be obtained until then.
Effectiveness over short/long term	Only effective over a longer term as it is not cost effective in the short term. Overseas experience has demonstrated continued enforcement is necessary to maintain benefits over the longer term. We expect partial benefits could be obtained from a voluntary campaign in the short term.
Effectiveness for severity of disruption	As there could be some public backlash would be most effective for an external disruption event.

Comment

8.8 A reduced speed limit is likely to be phased in, as initial savings would only be from voluntary speed reductions. It is estimated that 1.4 percent could be saved in aggregate oil demand once the new limits are able to be enforced¹⁴.

8.9 Significant expenditure would be required to change all road signage (and back after the event) along with increases in enforcement (for example, more speed cameras). There would also be some costs of recalibrating equipment.

8.10 The significance of the costs relative to the estimated benefits may rule out speed limit reductions as an option unless the supply disruption is expected to last for a reasonable period (e.g. 3 months plus).

Areas for feedback

¹² *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

¹³ *Saving Oil in a Hurry*, International Energy Agency, 2005.

¹⁴ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

This section outlines initial thinking with regards to a speed limit reduction. The Ministry of Economic Development welcomes feedback on any implementation issues, costs, and benefits, of a speed limit reduction.

9. Rationing

9.1 This section outlines initial thinking with regards to a rationing scheme. The material presented here is ‘high level’ and will be further developed by the Ministry of Economic Development following consultation.

Description

9.2 If, during an oil supply disruption, there is a real risk of petroleum supplies running out, a regulation could be entered into force under the Petroleum Demand Restraint Act (1981) or International Energy Agreement Act (1976) to ration petroleum products. Rationing would only be considered where there is a real threat of widespread and sustained physical shortages and a fixed sales requirement is considered insufficient to manage this threat.

Purpose

9.3 The purpose of a rationing scheme would be to prevent petroleum products from running out and/or to distribute a limited supply of fuel.

Further implementation details

9.4 The choice of rationing approach would differ depending on the expected severity and duration of supply disruption. Options include simple maximum and/or minimum sales limits, allocation to priority uses only, and tradable rationing. For further information on potential rationing schemes, please refer to the report: “Oil Demand Restraint Options for New Zealand”, which is available on the Ministry’s website at www.med.govt.nz.

9.5 The Ministry does not favour car-less days as a method of rationing fuel consumption. Previous experience with car-less days in New Zealand had limited success. Furthermore, the Ministry considers that other measures are likely to be more successful and cost-effective.

9.6 The following table, from a study of New Zealand’s available demand restraint options¹⁵, summarises implementation issues, costs, and benefits of a rationing scheme.

Rationing	
Component	Comment
Description	Reduced volumes of petrol and diesel are made available for sale. Quantities are allocated via: a priority list and registration system or through a simple reduced maximum quantity made available. An alternative method provides individuals with a tradable right to obtain fuel.
Legislation required	Can be undertaken under the Petroleum Demand Restraint Act 1981 but requires a regulation to be drafted
Time to implement	A simple allocation (maximum sale for each visit) would require little time to establish. Priority list categories should be established in advance. Some time (2 weeks) will be required for individuals to register as being eligible and for establishment of registration centres. Trading approaches are likely to take longer to establish, requiring public education, printing and distribution of coupons and ensuring that adequate trading platforms

¹⁵ *Oil Demand Restraint Options for New Zealand*, Covec and Hale & Twomey, June 2005.

Component	Comment
Investment Required	Publicity campaign, printing of coupons exist.
Central/local Govt	Central government will need to establish rules, including priority lists. Local government would be required to register companies/individuals under a priority use scheme
Information Communication	Public information/education campaign, which can be pre-prepared
Expected Costs	Costs of lost trips, which will be higher if there is inefficient rationing (no trading). Administrative costs (priority users, coupon distribution)
Expected Benefits	Rationing can be used to achieve any targeted level of fuel use or to distribute any limited supply level.
Time to achieve benefits	Benefits will be limited by the time taken to establish a rationing scheme. Vehicles will start with some fuel already but this is unlikely to take long to draw down
Effectiveness over short/long term	More effective over the long term
Effectiveness for severity of disruption	A necessary component for severe disruptions

Comment

9.7 As stated above, rationing would only be considered where there is a real threat of widespread and sustained physical shortages and a fixed sales requirement is considered insufficient to manage this threat. Specific benefits would depend on the choice of rationing scheme, but generally rationing can be used to achieve any targeted level of fuel use or to distribute any limited supply level (for example, to emergency services and utilities only). Benefits would be limited by the time taken to establish a rationing scheme.

9.8 Costs would also depend on the choice of rationing scheme. There would be significant administrative costs associated with setting up and running a rationing scheme. For example, administrative costs could include: coupon printing and distribution; publicity and information provision; and costs of increased petrol station security. There is also a cost of lost trips to consumers who would otherwise choose to consume more fuel than their allocation. This cost would be higher if the rations could not be traded.

Areas for feedback

This section outlines initial thinking with regards to a rationing scheme. The Ministry of Economic Development welcomes feedback on any implementation issues, costs, and benefits, of a rationing scheme.

10. Communications during an oil supply disruption

- 10.1 This section outlines the high-level objectives and broad approach to communications in the event of an oil supply disruption.
- 10.2 There are a number of possible measures to respond to an emergency oil supply disruption, as set out in section 5 of this document. Regardless of the response, timely and accurate communication will be important throughout an oil supply disruption to ensure that all stakeholders have accurate information on the situation and understand what the government is doing to manage it. However, measures focusing on restraining demand will necessarily require more intensive communication to the public because they rely on changing behaviour to be successful.
- 10.3 Therefore, this section differentiates between communications if demand restraint is part of the emergency response, and communications if demand restraint is not part of the emergency response.

Emergency Response not including demand restraint measures

- 10.4 The objectives of communication during the emergency response would be to:
- build an accurate understanding about the size and nature of the oil supply disruption, its likely implications, and the government's response to it; and
 - to reassure the public that there is a plan in place to manage the situation, and to discourage panic buying or hoarding.
- 10.5 To achieve these objectives, the overall approach would be to provide timely, accurate information to the media, local authorities, and other key stakeholders about the situation, any changes, and the government's response.

Emergency response including demand restraint measures

Voluntary demand restraint measures

- 10.6 The objectives of communications during implementation of voluntary reduction measures would be:
- to encourage oil users to make voluntary savings; and
 - to reassure the public that there is a plan in place to manage the situation, and to discourage panic buying or hoarding.
- 10.7 To achieve these objectives, the overall approach is likely to include:
- running an integrated advertising and public relations campaign to encourage the public to reduce their fuel consumption, and give them specific information on how to do this. The Energy Efficiency and Conservation Authority would be responsible for overseeing this campaign;

- identifying key spokespeople, and working closely with media, oil companies, local authorities, and other key stakeholders to make sure that information flows to the public are accurate and consistent;
- building awareness and understanding of the oil emergency response strategy, especially the likely government responses if the situation should worsen; and
- giving timely updates on the situation, and as early a warning as possible of any need to move to mandatory measures.

Mandatory demand restraint measures

10.8 The objectives of communications during implementation of mandatory measures would be:

- to continue to encourage oil users to reduce fuel consumption as far possible;
- to build awareness and understanding of the measures taken by the government to restrain fuel demand; and
- to reassure the public that there is a plan to manage the situation in place, and to minimise public anxiety.

10.9 To achieve these objectives, the overall approach is likely to include:

- focusing on explaining the rationale for the move to mandatory measures, and giving clear information on the implications for the public;
- undertaking specific public information “drives” on each new measure, to ensure that the public are fully informed on what it involves, and what it requires from them;
- continuing communications on ways to save fuel and reduce car use;
- continuing to provide the media with accurate, up-to-date information on the situation via specific spokespeople; and
- continuing to work closely with key stakeholders, including local authorities, to ensure accurate and coordinated information flows to the public.

Areas for feedback

This section outlines the high-level objectives and broad approach to communications in the event of an oil supply disruption. The Ministry of Economic Development welcomes feedback on this broad approach.

11. Review and deactivation of response measures

- 11.1 A key part of the government's response to an oil supply disruption would be to regularly review the emergency response to ensure that it is appropriate and that it takes account of new information as required.
- 11.2 In particular, the Senior Officials Coordination Team would review on an ongoing basis the appropriateness of any measure(s) implemented as part of the emergency response, and advise the Minister of Energy on that basis. A measure would only remain in place in order to fulfil New Zealand's obligations to the IEA or if petroleum products are, or are likely to be, in short supply in New Zealand.
- 11.3 Once the Senior Officials Coordination Team deemed that a measure was no longer necessary, the Minister could make an advance announcement of the removal of that measure and in what manner this would occur.
- 11.4 Similarly, on advice from the Senior Officials Coordination Team, the Minister could announce in advance the deactivation of the entire emergency response, including an explanation of the deactivation process.

Areas for feedback

This section proposes a process of reviewing and deactivating the emergency response to an oil supply disruption. The Ministry of Economic Development welcomes feedback on the proposed process and institutional arrangements for review and deactivation of a specific emergency response.