

Chair  
Cabinet Economic Development Committee

## **LAND TRANSPORT RULE: VEHICLE EXHAUST EMISSIONS 2006**

### **Proposal**

1. The purpose of this paper is to notify the Committee of the intention of the Minister of Transport Safety to make, Land Transport Rule: Vehicle Exhaust Emissions [2006] (the 2006 Rule).

### **Executive summary**

2. In June 2005 Cabinet agreed to the introduction of a visible smoke check at vehicle inspection as an alternative to the previously announced in-service emissions testing [POL MIN (05) 16/20 refers]. Implementing the visible check requires an amendment to the existing Land Transport Rule: Vehicle Exhaust Emissions 2003 (the 2003 Rule). The attached 2006 Rule makes the necessary changes to implement this check. The draft rule was the subject of a formal consultation programme conducted by Land Transport New Zealand and was generally supported. It is intended that the test be introduced from 27 October 2006.
3. Since the 2003 Rule came into effect the Ministry of Transport (MOT) has become aware of difficulties with the implementation date for one of the emission standards, known as Euro 4 for diesel-powered heavy vehicles. If left unchanged, these could cause significant disruption to New Zealand's vehicle importers and purchasers. Accordingly the Rule defers the implementation date for this standard by one year.
4. MOT plans a major public awareness campaign to coincide with the introduction of the visible smoke check. The campaign will make use of radio and billboard advertising and point of sale materials to encourage all vehicle owners to tune their vehicles to reduce emissions, inform them of the introduction of the test and to reduce emissions by car pooling and taking public transport.

### **Background**

5. In 2003 Cabinet agreed to the development of a mandatory emission screening programme for used imported and in-service vehicles, to be implemented in 2006. This was to help reduce the negative effects of vehicle emissions. Implementation was dependent upon the outcome of an evaluation programme. However, the evaluation programme showed that the proposed screening programme would not adequately identify high on-road emitting vehicles. It also showed that the test costs would be much greater than envisaged.

6. Consequently, in June 2005 Cabinet agreed not to proceed with in-service testing as had been proposed, but would introduce a visible smoke check at vehicle inspection as a low cost alternative [POL MIN (05) 16/20 refers]. Cabinet noted that any amendments required would be reported to the Cabinet as part of the Rule amendment process. This paper reports back as required.
7. The June 2005 decision agreed that the visible smoke check would be implemented by an amendment to the Land Transport Vehicle Equipment Rule 2004. However, subsequent legal advice identified that this was not the appropriate Rule to introduce the check. Implementation will therefore be through an amendment to the 2003 Vehicle Exhaust Emissions Rule.

#### *New Zealand Transport Strategy (NZTS) objectives*

8. The Rule will contribute directly to two of the government's five objectives for transport outlined in the NZTS. The Rule will assist with protecting and promoting public health by reducing harmful vehicle emissions through the introduction of New Zealand's first in-service emissions test at vehicle inspection. The Rule will also ensure environmental sustainability through the reduction of vehicle emissions over the longer term. This is achieved by enabling the appropriate infrastructure to be in place to provide the chemical urea to vehicle owners, which is needed to treat exhaust gases in systems being introduced to comply with the new "Euro 4" emissions standard.
9. The New Zealand Vehicle Emissions Programme, of which this Rule is a component, also contributes to the National Energy Efficiency and Conservation Strategy, the Sustainable Development Programme of Action and the Climate Change Programme.
10. The visible smoke check will make a contribution to the implementation of the National Environmental Standards for Air Quality.

#### **Comment**

11. The proposed Rule is part of a series of measures that are being introduced to reduce air pollution resulting from vehicle emissions. These other measures will be reported back separately.
12. The proposed Rule revises and will replace the existing *Land Transport Rule: Vehicle Exhaust Emissions 2003*. The 2003 Rule was the first in New Zealand to address vehicle exhaust emissions. It sets out approved emission standards that vehicles built since 1990 must meet when they are first imported into New Zealand.
13. The 2006 Rule revises the 2003 Rule by proposing two separate changes:
  - The deferment of the emissions standard known as Euro 4 for diesel powered heavy vehicles for one year; and

- The introduction of a visible smoke check at Warrant and Certificate of Fitness inspections (WoF/CoF) and prior to first certification in New Zealand.

*Deferment of the emission standard Euro 4*

14. The deferment to the implementation date for Euro 4 diesel powered heavy vehicles will address a range of concerns that have become apparent since the 2003 Rule was developed.
15. The 2003 Rule sets out a table of emission standards new vehicles must be built to before they can be certified for use in New Zealand. Standards of increasing stringency are introduced for new vehicles according to an agreed timetable roughly in line with when they are required in overseas jurisdictions. For each year, the Rule provides a range of broadly equivalent standards from the four jurisdictions from which our vehicles are sourced: Japan, Europe (Euro standards), Australia (Australian Design Rules (ADR)) and the United States of America (USA). Note: ADR emissions standards are identical to Euro standards.
16. Under the 2003 Rule, from 1 January 2007 diesel powered heavy vehicles (those with gross vehicle mass over 3500kg) built to Euro and equivalent ADR standards must comply with the Euro 4 (or ADR 80/81) emission standard. It requires compliance with the Euro 4 standard for new-model diesel heavy vehicles after 1 January 2007 and existing-model diesel heavy vehicles after 1 January 2008<sup>1</sup>.

**Euro 4 implementation dates**

Europe		Australia (ADR80/81)		New Zealand (Current)		New Zealand (Proposed)	
New vehicle models	Existing vehicle models	New vehicle models	Existing vehicle models	New vehicle models	Existing vehicle models	New vehicle models	Existing vehicle models
Oct 06	Oct 08	Jan 07	Jan 08	Jan 07	Jan 08	Jan 08	Jan 09

17. Although the 2003 Rule requires new vehicles to meet increasingly stringent emissions standards, used vehicles (mainly imported from Japan) are only required to have been built to the emission standard applicable at the time of manufacture. Thus, a vehicle made in 1996 only needs to have been built to the standard relevant for 1996. Approximately 60% of diesel-powered heavy vehicle imports are used vehicles and those imported in 2005 had an average age of 10.3 years. Japan had relatively weak emission standards for diesel-powered heavy vehicles in comparison with the US or Europe until 2002. These older vehicles are therefore likely to emit a much higher level of pollutants. Even a small rise in the import of these older vehicles as a result of increased costs or supply disruption for new vehicles would have a much greater effect on fleet-wide emissions than

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<sup>1</sup> New-model vehicles are defined as vehicles that have a date of manufacture occurring in the same calendar year as that in which the particular model of the vehicle was first manufactured. Existing models are those models that were already in production when the Rule came into effect.

the proposed one year deferment in the introduction of Euro 4 for new vehicles. Cabinet has requested the MOT to investigate setting minimum emission standards for used vehicles and to report back on this in September 2006 [CBC Min (05) 20/11 refers].

18. In addition to concerns over the dates that Euro 4 will be implemented in Europe, several other issues make the deferment of the introduction of the Euro 4 standard desirable.
19. Vehicle manufacturers have needed to solve a range of technical issues in order for vehicles to meet Euro 4 and the other equivalent standards. In part, these technical issues delayed formal confirmation of the standard by the European Community. The EU did not confirm until October 2005 the dates from which European diesel powered heavy vehicles must comply with Euro 4.
20. In Europe, new models must comply from October 2006, although existing models already in production before October 2006 do not have to comply until October 2008. The 1 January 2008 implementation of Euro 4 for existing models in the 2003 Rule would therefore mean New Zealand importers were required to move to introduce the Euro 4 standard for existing model vehicles ahead of their European suppliers. This may create difficulties for the New Zealand importers that source vehicles directly from Europe. About 20% of current annual new vehicle imports (~1,000) vehicles are imported directly from Europe.
21. For new models of heavy vehicles, there is generally a time lag of six to twelve months from a model being available in Europe or Australia and its availability in New Zealand. The motor industry advises this is because New Zealand imports relatively few heavy vehicles. Because of New Zealand's unique Road User Charges regime and heavy vehicle weight limits, we have different vehicle requirements than Europe and Australia. Vehicles are therefore ordered specifically and are subject to supply delays and shipping times.
22. In 2005 approximately 4300 new diesel powered heavy vehicles entered the country, imported from a range of countries. Most imports were specified as having been built to the Euro emission standards although the majority were actually built in Japan. As noted, the 2003 Rule also recognises broadly comparable standards from other regimes that these vehicles could have been certified to. As the more stringent standards had not yet been formally adopted in their respective regimes when the 2003 Rule was developed, the acceptable US and Japanese standards in the 2003 Rule for 2007 and 2008 are less stringent than Euro 4. Compliance with Euro 4 is expected to add \$5000 – \$7000 to the cost of vehicles, regardless of size or the technology used to reduce emissions, over previous models. This implies that manufacturers that could continue to supply vehicles, or could re-certify their vehicles as having been built to US or Japanese standards, would have a price advantage over those that could only supply "new-model" vehicles from Europe built to the Euro 4 standard.
23. In order to achieve the Euro 4 standard a number of manufacturers, mainly from Europe, have opted for the use of a technology, known as selective catalyst

reduction (SCR)<sup>2</sup> to reduce emissions from diesel powered heavy vehicles that requires the supply of urea manufactured to a specific technical standard. An alternative technology, known as exhaust gas recirculation (EGR) does not require urea. It is not known which of these competing technologies will be used in coming years as they have different advantages and disadvantages. It is likely that manufacturers will need to use a combination of both EGR and SCR to meet future emission standards (such as Euro 5).

24. Largely because there are not yet any Euro 4 vehicles in New Zealand that require it, our transport industry has not established a urea supply and distribution infrastructure. It is likely that urea will need to be made available throughout New Zealand before SCR vehicles can be widely used. It is expected the New Zealand transport industry will begin installation of the necessary urea supply and distribution equipment in late 2006.

#### *Introduction of a visible smoke check*

25. The 2006 Rule will also introduce a visible smoke check at inspection. This will build on existing measures to control motor vehicle emissions and will contribute to the implementation of the National Environmental Standards for Air Quality.
26. Currently, the only operational requirement relating to smoky vehicles is in the Land Transport (Road User) Rule 2004, which requires that a driver must not operate a motor vehicle that emits a continuous stream of smoke for ten seconds or more (often referred to as the “ten-second rule”). This is enforced by the police, and approximately 300 infringement notices are issued each year. As noted, it had been thought that the visible check would be implemented through an amendment to the 2004 Vehicle Equipment Rule. However, subsequent advice was that this was not possible and it would be necessary amend the 2003 Vehicle Exhaust Rule to implement a test.
27. The 2006 Rule will therefore reinforce the existing ten second rule by adding a test to the vehicle inspection regime, both in-service and at the time of entry, rather than re-create the test as had previously been considered. The 2006 Rule will provide the first controls on vehicle emissions relating to actual performance that can be enforced at inspection.
28. The June 2005 decision also requested the MOT to investigate “improvements in the effectiveness of the visible smoke inspections” [POL MIN (05) 16/20 refers]. Because the test carried out at WoF/CoF will not be under load (i.e. the vehicle will not be moving) when many vehicles will exhibit the maximum amount of visible smoke, it was considered appropriate to make the in-service test five seconds in length. The testing procedures were adapted from those in use in the United Kingdom. The on road and in-service tests are therefore not the same and will be enforced separately.

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<sup>2</sup> a small amount of urea is injected into the exhaust system of the vehicle. The urea reacts with the exhaust gases and causes the harmful nitrogen oxides (NO<sub>x</sub>) to be converted into nitrogen (N) and water (H<sub>2</sub>O) in the catalytic converter. The reactions require a very pure form of urea, delivered at precise concentrations to work effectively.

29. Successful models for stationary vehicle smoke checks are in use in other countries, including the United Kingdom and several American states. The proposed visible smoke check is based on these existing models. Emphasis has been placed on developing inspection guidelines and information to ensure that a subjective visible smoke test is applied consistently throughout the country.
30. It is known from overseas testing regime, that there is a correlation between vehicles emitting visible smoke and those with gross emissions of harmful pollutants. Therefore, although the proposed check is subjective, it is reasonable to assume that any vehicles that are failed for showing clearly visible smoke will, in fact, be high emitters of harmful pollutants and should be repaired. It is noted that the absence of visible smoke emissions does not mean there will be no harmful pollutants emitted, as many harmful pollutants are invisible. However, the visible check is a meaningful first step in reducing vehicle emissions.
31. A modern vehicle operating normally should not emit any visible tailpipe smoke. If a vehicle smokes when fully warmed up, this usually indicates that the engine is in need of repair. However, the design of a small number of vehicles, especially some older ones and two stroke engines means that they will produce a low level of visible smoke in use, under short-term acceleration, during gear changes, or under load. The 2006 Rule makes provisions for these vehicles. The intention is to target vehicles emitting excessive smoke because of significant engine damage or wear and not because of original design.
32. By targeting these very visible emissions the 2006 Rule will also help to convey the message that excessive vehicle emissions are not acceptable. It will raise the awareness of motor vehicle owners of the need to monitor their vehicle's emissions performance and raise the profile of reasonable and regular maintenance as a means of ensuring their vehicle continues to operate effectively.

*Public awareness campaign to accompany the rule*

33. The MOT has selected Clemenger BBDO to provide a campaign to support the introduction of the visible smoke check and to increase awareness on reducing emissions. The campaign commenced 1 August 2006 and will continue until June 2007. The campaign will target motorists while they are in their cars. It employs radio, billboards and ambient media and point of sale materials. The campaign has a maximum budget of \$575,000 (excluding GST).
34. The objectives of the advertising campaign are to inform the public of the introduction of the test, to inform them of the health impacts caused by harmful exhaust emissions from motor vehicles and encourage the public toward behaviours that reduce harmful exhaust emissions from motor vehicles. In particular it will encourage all motorists to tune their vehicles, car pool and take public transport to reduce emissions.
35. The MOT is also entering into a partnership with the Motor Trade Association (MTA) to produce and disseminate the point of sale materials through their members. A memorandum of understanding defining the partnership has been signed. Because the MTA represents most agencies involved in vehicle testing,

their cooperation is important in ensuring testers are aware of the tests and can successfully implement them.

36. Public relations activities are also planned for the Rule and will include media relations, credible third party spokespersons and Ministerial activities. These activities are expected to generate significant unpaid media publicity both at the time the rule is signed and again around the time of the introduction of the test. This is expected to improve public awareness.

## Consultation

37. I am satisfied that Land Transport New Zealand has publicly notified and consulted on behalf of the Minister of Transport in accordance with section 161 (2) of the Land Transport Act 1998. The public consultation draft of the Rule was made available to approximately 770 industry and other groups and individuals who had registered their interest in the Rule. The release of the public consultation draft was advertised by *Te Karere National News* and the *New Zealand Gazette*. The draft Rule and associated material was made available on the Land Transport New Zealand website. Copies of the consultation draft were also made available to overseas libraries and transport organisations.
38. Land Transport New Zealand, which issued the draft rule for comment, received 104 submissions which the MOT summarised and analysed. Submissions were received from the inspection and repair industry, central and local government agencies, classic/vintage car clubs, other organisations including various equipment suppliers and a wide range of transport groups, community groups, environment groups and the general public.
39. The draft Rule was refined and redrafted, taking account the submissions received. A copy of the Submissions analysis is attached as Annex 3. The main points raised in submissions were:
  - 39.1 Most members of the motor industry were strongly supportive of the delay in implementing Euro 4 as they were concerned about the potential additional costs and concerned with the supply of urea needed to ensure these vehicles work properly. However, submissions from central and local government and private citizens opposed the delay, arguing that New Zealand should not delay introduction of emission standards due to air quality concerns especially in Auckland. Many argued that New Zealand had sufficient supplies of urea, although they did not address quality or supply issues. No changes were made to the draft Rule regarding the deferments of Euro 4 as a result of the submissions.
  - 39.2 There was general support for the visible smoke check, although many submitters made their support conditional that the test was a first step. Submitters agreed that smoky vehicles were likely to be in poor repair and therefore high emitters and should be required to be repaired.
  - 39.3 Some submissions, notably that from Auckland Regional Council (ARC) and some other regional councils and community groups did not support the introduction. This was because they did not think it was stringent

enough and wished to see the introduction of measured tests as had previously been announced. These submitters criticised the test because it does not identify invisible emissions. They argued that some other tool would be required to identify these vehicles. The ARC argued that the test would not achieve sufficient reductions in harmful pollutants to allow it to comply with the National Environmental Standards for Air Quality (NES AQ). The MOT accepts the test will not identify invisible emissions and, on its own, will not be sufficient to ensure that the ARC will meet its obligations under the NES AQ. It is working on other policy options to address these concerns. The MOT will report to Cabinet separately on these.

- 39.4 Only one or two submitters opposed the idea of a test of any kind, expressing concerns over possible costs to vehicle owners.
  - 39.5 There was general agreement the test should be five seconds. Some submitters argued that any smoke should fail a vehicle. A few submitters argued that the test should be 10 seconds, to match the on road test, but as the two tests are different this is not seen as important and the five second figure was retained.
  - 39.6 Owners of “classic” and “vintage” cars were concerned that they not be required to meet standards that their vehicles could not meet due to their age or original design. The wording of the rule has been revised to make allowance for the vehicle’s original design. The issues raised by these groups will also be addressed in the inspection requirements and motoring groups have been consulted as part of the process of developing these.
  - 39.7 Most submissions from the transport sector and interested groups focussed on the wording of the proposed test to ensure that it was workable and could be consistently applied in practice. The draft Rule has been modified as a result of the consultation to clarify the issues raised. In particular the wording of the test has been altered to make it clear that vehicle engines must be at normal operating temperatures when being tested. Land Transport New Zealand is also working with the agencies that undertake testing to develop pictorial guidance for both the public and testers. This type of guidance was requested by many.
40. Land Transport New Zealand has also undertaken consultation with testing bodies and interested consumer and vehicle owner groups on the wording of the Vehicle Inspection Requirements Manual that is supplied to all testing stations. These will ensure the inspection requirements for the visible smoke check are practical and will not unduly penalise owners of well maintained “classic” cars.

41. The following government departments and agencies were consulted on this paper and concur with its content: Ministry of Economic Development, Energy Efficiency and Conservation Authority, Ministry for the Environment, Ministry of Foreign Affairs and Trade, Ministry of Health, Land Transport New Zealand, NZ Police, Ministry of Social Development, Transit New Zealand and Treasury. Local Government New Zealand and the Department of Prime Minister and Cabinet have been informed of its contents.

### **Financial implications**

42. There are no financial implications for this rule.

### **Human Rights and Treaty compliance**

43. The Rule complies with the Human Rights Act 1993, the New Zealand Bill of Rights Act 1990, the Privacy Act 1993, the principles of the Treaty of Waitangi and international standards and obligations.

### **Legislative implications**

44. After this paper has been noted by Cabinet, the Minister for Transport Safety intends to sign the Rule. Following this, the rule will be notified in the Gazette. The Rule will come into force on 27 October 2006 which will be approximately three months after it has been signed. The delay will allow testing agencies time to become familiar with the new test requirements and make any changes to work flow that may be required. It will also allow time for the awareness raising elements of the publicity campaign to be underway.

### **Regulatory impact and business compliance cost statement**

45. Although Cabinet agreed to the introduction of a visible smoke check in June 2005 a regulatory impact and business compliance cost statement was not produced at that time. Accordingly one is attached as Annex 1.
46. The deferment of the introduction of Euro 4 will pose no additional business compliance costs.
47. The visible smoke check will have relatively small compliance costs. Costs to the vehicle inspection industry are expected to be very small, especially in comparison with the previously agreed in-service emissions testing programme. Costs will include a need for a few minutes training viewing sample images to ensure consistency during testing, possible workflow reorganisation and a minor one off costs associated with form design when the test is added to the inspection for the first time. Businesses that have vehicles that fail the test will face costs either to repair or replace the vehicle and may face disruption through loss of access to a vehicle, but these costs cannot be accurately estimated. It is likely that vehicles failing the visible test at WoF/CoF would be committing an offence under the "10 second Rule" when driven on the road.

48. Based on the information provided in the two attached RISs and the BCCS, the Regulatory Impact Analysis Unit considers that the disclosure of information is adequate, and the level of analysis is appropriate given the likely impacts of the proposal.

## **Publicity**

49. As noted in paragraph 33, a public awareness campaign that commenced 1 August 2006 accompanies the Rule.
50. A copy of the draft Press Release, that will be released by Hon Judith Tizard to announce the signing of the Rule is attached as Annex 2.

## **Recommendations**

51. It is recommended that the Committee:
- 1) **note** that as the Minister for Transport Safety intends to make the Land Transport Rule: Vehicle Exhaust Emissions [2006];
  - 2) **note** that the Land Transport Rule: Vehicle Exhaust Emissions [2006] is included in the approved Land Transport Rules programme for 2005/2006 [EDC Min (05) 13/6 refers];
  - 3) **note** that the Land Transport Rule: Vehicle Exhaust Emissions [2006] meets the statutory criteria and consultation requirements prescribed for making ordinary rules under the Land Transport Act 1998;
  - 4) **note** that the visible smoke check is planned to be introduced from 27 October 2006;
  - 5) **note** that no policy direction is sought from the Committee;
  - 6) **agree** that the attached Regulatory Impact Statement and Compliance Cost Statement be published on the Ministry's Website at the time of the policy's release; and
  - 7) **agree** to the release of the draft press release by Hon. Judith Tizard at the time the Rule is signed.

Hon Harry Duynhoven  
**Minister for Transport Safety**

Hon Judith Tizard  
**Associate Minister of Transport**

## Consultation on Cabinet and Cabinet Committee Submissions

### Certification by Department

**Departments consulted:** The attached submission has implications for the following departments whose views have been sought and are accurately reflected in the submission:

The Ministry of Economic Development, Energy Efficiency and Conservation Authority, Ministry for the Environment, Ministry of Foreign Affairs and Trade, Ministry of Health, Land Transport New Zealand, NZ Police, Ministry of Social Development, Transit New Zealand and Treasury.

**Departments informed:** In addition, the following departments have an interest in the submission and have been informed:

Local Government New Zealand and the Department of Prime Minister and Cabinet.

**Others consulted:** Other interested groups have been consulted as follows:

770 organisations and individuals were sent copies of the draft rule or were notified that it was available on Land Transport New Zealand's website. 104 submissions were received.

Signature	<b>Name, Title, Department</b> Iain M <sup>c</sup> Glinchy, Principal Adviser Technology and Fuels, Ministry of Transport	Date  / /
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### Certification by Minister

Ministers should be prepared to update and amplify the advice below when the submission is discussed at Cabinet/Cabinet committee. The attached submission:

Consultation at Ministerial level	<input type="checkbox"/> did not need consultation with other Ministers <input type="checkbox"/> has been the subject of consultation with the Minister of Finance <i>[required for all submissions seeking new funding]</i> <input type="checkbox"/> has been the subject of consultation with the following Minister(s) ..... .....	
Consultation with Government MPs	<input type="checkbox"/> does not need consultation with the government caucuses <input type="checkbox"/> <b>has been or will be</b> <i>[specify which]</i> the subject of consultation with the following government caucuses: <input type="checkbox"/> Labour caucus <input type="checkbox"/> Progressive Coalition caucus	
Consultation at Parliamentary level	<input type="checkbox"/> does not need consultation at parliamentary level <input type="checkbox"/> <b>has been or will be</b> <i>[specify which]</i> the subject of consultation with the following other parties represented in Parliament:	
Signature	Portfolio	Date  / /