

Chair
Cabinet Economic Development Committee

MAINTAINING AN ELECTRIC LOCOMOTIVE FLEET ON THE NORTH ISLAND MAIN TRUNK

Proposal

1. This paper presents Cabinet with an option to reverse the KiwiRail Board's decision in December 2016 to decommission its fleet of electric locomotives on the North Island Main Trunk (NIMT), and continue to operate both diesel and electric locomotives. This reflects the Government's commitment to reducing emissions from transport and progressing towards a net zero emissions economy by 2050.

Executive summary

2. In December 2016, KiwiRail's Board decided to begin the decommissioning of the fleet of electric locomotives (EF fleet) which currently operate some but not all services between Hamilton and Palmerston North. This followed two years of investigation and consultation by KiwiRail.
3. A phased programme of decommissioning has begun and the oldest of the EF fleet's locomotives are due to be replaced by new diesel locomotives in November 2018. By 31 March 2019, the entire EF fleet will have been removed from service, although the overhead wires and substations will continue to be maintained.
4. The Shareholding Ministers and Minister of Transport have been considering this issue for several months, and have received advice from the Ministry of Transport, KiwiRail, and Treasury.
5. The Government could take action to reverse the decommissioning programme. This option would involve Shareholding Ministers entering into a written agreement with KiwiRail to refurbish the existing EF fleet. The Government would need to make a capital injection to KiwiRail of c. \$35 million to fund this.
6. This paper outlines the merits associated with this, as well as the option of maintaining the status quo. In determining a preferred option, particular consideration should be given to:
 - The commitments made by this Government on climate change and transport
 - The previous advice from officials which agreed with KiwiRail's decision
 - The need for greater certainty regarding the costs and timescales associated with the refurbishing of the electric locomotives
 - The need for any associated costs to be met by the Government
 - The relevant context provided through the Future of Rail project.

Background

7. KiwiRail's fleet of electric locomotives (EF fleet) was purchased in 1986. Of the 22 locomotives originally purchased, 15 remain capable of refurbishment and continuing in operation today. These are powered through overhead cabling which runs between Hamilton (at Te Rapa) and Palmerston North. Currently, a third of rail freight services along this section of the North Island Main Trunk (NIMT) are provided by the EF fleet, with the remaining by diesel locomotives (DL fleet). On the other sections of the NIMT, there is no electrification infrastructure, and diesel locomotives are used.
8. In December 2016, the KiwiRail Board made the decision to replace the EF fleet with new diesel locomotives. The Board agreed that providing a consistent diesel fleet across the whole of the NIMT was the most cost-effective way of providing a reliable rail freight service.
9. The decision was made after two years of external and internal investigation and consultation, and was consistent with KiwiRail's strategy to standardise, simplify and invest. The Board agreed that KiwiRail would continue to maintain and enliven the overhead cabling.
10. A phased decommissioning programme has therefore begun and is due to be completed by 31 March 2019. To date this has involved the redeployment of some staff and investment in new locomotives to standardise the fleet. On 12 October 2018, KiwiRail took delivery of 15 new diesel locomotives, and four of these are due to replace the oldest of the EF fleet from November 2018.

The Government Objectives / Future of Rail

Climate Change

11. The Government has committed to taking decisive action on climate change. This is reflected in the Government Policy Statement on Land Transport 2018 (GPS) that supports initiatives which reduce greenhouse gas emissions from transport, as well as the adverse effects that transport emissions have on the local environment and public health.
12. This priority also links to the wider environmental commitments of the Government, such as achieving the Paris Agreement target of reducing greenhouse gas emissions to 30 percent below 2005 levels by 2030, and its agreement to adopt and make progress towards the goal of a Net Zero Emissions Economy by 2050.

Previous support for electrification

13. The Government has been clear of the need to reduce carbon emissions by substantially investing in alternative transport modes to road transport, and has demonstrated its support for electrification of our railways.

14. Prior to the 2017 election, the governing parties expressed their desire for KiwiRail to retain an electrified service between Hamilton and Palmerston North and work on an evidence-based plan to progressively electrify other key parts of the network.

Future of Rail

15. A decision by Cabinet based on this paper will not affect the work underway through the Future of Rail project. It does not have any immediate impact on any potential decisions around electrifying other parts of the rail network.
16. The outcomes of the Future of Rail project will define the purpose of rail in a multi modal transport system. The project is being led by the Ministry of Transport, working closely with KiwiRail, The Treasury and the New Zealand Transport Authority. The project will determine the appropriate structure, capital requirements and funding mechanisms for the rail sector, including KiwiRail, to reflect that purpose
17. In September 2018, the Ministry of Transport delivered a briefing to Ministers and attended a discussion with them on the Future of Rail. The briefing and discussion focussed on a set of investment scenarios over a ten year period, and a proposed new planning and funding framework for rail. The scenarios set out how rail investment can better align with the Government's wider priorities, including its commitment to reduce emissions from transport.

Previous advice received

18. Since the Board's decision in December 2016, and following the change of government in 2017, KiwiRail has been engaging with Government Ministers on the issue of electrification.
19. In April 2018 KiwiRail briefed the Minister of Transport and Shareholding Ministers, updating them on the decommissioning plan and reiterated that the existing EF fleet cannot safely operate on the NIMT beyond 31 March 2019.
20. Further advice was also received from the Ministry of Transport (May 2018) and the Treasury (June 2018). This acknowledged that electric freight rail services emit less CO₂ than diesel freight rail services but that ongoing investment in the existing fleet would represent poor value for money relative to the likely emissions savings. However, that advice must be placed in the context of the Government's target to achieve a net zero emissions economy by 2050.
21. Both the Treasury and the Ministry of Transport advised that moving to an 'all diesel' fleet in the short term would deliver a more consistent and reliable service than that which currently exists. This could encourage mode shift, potentially delivering a net environmental benefit across the entire transport network. However, moving towards an all diesel fleet would run counter to our aspirations for further electrification of the rail network.

The Government's powers and the options available

22. As a State Owned Enterprise (SOE), KiwiRail is required to operate as a successful business. It aims to be as profitable and efficient as comparable businesses that are not owned by the Crown, in addition to exhibiting a sense of social responsibility.
23. Shareholding Ministers are nevertheless empowered through section 7 of the SOE Act 1986 (the Act) to request KiwiRail to undertake non-commercial services. This mechanism can be used for the Government to agree for KiwiRail to make investments or decisions which would otherwise not have been made on purely commercial grounds. Government is responsible for providing the necessary capital injection to KiwiRail to cover the costs of these services.
24. Notwithstanding the Government's financial support for passenger rail services, the powers available under section 7 of the Act have not previously been used in respect of KiwiRail.
25. Two options are described below alongside the associated costs. The first involves retaining the status quo and the second involves taking action under section 7 of the Act to enable the refurbishing of the existing EF fleet.
26. This paper does not propose the option of KiwiRail purchasing new replacement electric locomotives. Any new class of electric or dual-mode locomotive would need to be bespoke, given the specific characteristics of New Zealand's rail network. There are considerable technical risks associated with commissioning a bespoke design, as well as a longer procurement lead-in time. KiwiRail also estimate that a new class of bespoke electric locomotives would cost approximately \$6 million - \$8 million per locomotive, meaning that replacing the existing 15 electric locomotives could cost approximately \$90 million - \$120 million.

Option A – Do Nothing

27. Should the Government decide not to intervene, KiwiRail would continue to decommission the EF fleet by 31 March 2019. From November this year, diesel locomotives will begin to replace pairs of the worst conditioned electric locomotives. This will continue until all 15 electric locomotives are replaced with diesel locomotives by 31 March 2019.
28. The following reasons have been given for decommissioning the electric locomotives and running diesel locomotives across the NIMT:
 - **Increasing efficiency and reliability** – should the EF fleet be decommissioned by March 2019, the consistent use of diesel locomotives on the NIMT would avoid the requirement for two locomotive changes to be made per journey between Auckland and Wellington. This would be consistent with KiwiRail's intention to standardise its fleet. Currently, whilst efficient changes are possible, each locomotive change increases risks to reliability and safety.
 - **Supporting mode shift** – given the emphasis placed on efficiency and reliability by the freight sector, a consistent set of locomotives could increase

the attractiveness of rail for providers and purchasers of freight. In turn, this would support mode shift away from roads.

29. The existing overhead cabling and supporting infrastructure would continue to be maintained by KiwiRail, in line with the Board's decision in December 2016. KiwiRail estimates the cost of doing to this to be approximately \$2.2 million per annum.
30. Prior to the KiwiRail Board deciding to decommission the EFs, 18 staff were employed to maintain and operate the fleet. Following the decision to decommission the fleet, a number of staff have left or been redeployed into other areas of the business, although no redundancies have eventuated.
31. Should the Government support this option, no further action is required. Previous Budget appropriations have already been committed to fund the decommissioning of the EF fleet and purchasing of new diesel locomotives. Therefore, if the Government decides to continue with the status quo, no further capital injection would be needed for KiwiRail to continue with its decommissioning plan.
32. As part of KiwiRail's future business planning, opportunities to drive efficiencies and lower its carbon footprint are also constantly being explored. KiwiRail's ability to deliver wider benefits beyond transport will be informed by the final recommendations of the Future of Rail review in late November 2018.

Option B – Reverse KiwiRail's decision, restore electric locomotive services

33. Should the Government decide to make a more immediate commitment to electrification, Shareholding Ministers could enter into an agreement with KiwiRail to revert to the level of service on the EF fleet that was in place prior to the KiwiRail Board's decision. This would see approximately one third of all rail freight services between Hamilton and Palmerston North provided by electric locomotives.
34. This option would involve Shareholding Ministers entering into a written agreement with KiwiRail to refurbish the existing EF fleet under section 7 of the Act.
35. Until all the EF fleet are refurbished and back in operation, the share of services provide by electric locomotives would reduce, and potentially be nil for periods. Once refurbished, the life expectancy of the existing fleet could be extended by around 10 years.
36. If the fleet was refurbished or replaced, the number of employees needed would need to return to 18. Between four and eight additional members of staff would also be required to refurbish the fleet at KiwiRail's Hutt Workshop.
37. The associated costs identified by KiwiRail as being necessary to repair, refurbish and maintain the EF fleet would need to be met by the Government. A commitment would therefore need to be made to providing a capital injection of c. \$35 million, spread over 3 to 4 years.
38. Approximately \$15 million of the costs of this option are associated with the refurbishment of the electric control systems. Given the nature of the EF fleet, a

bespoke system would need to be designed, tested and installed. Neither KiwiRail nor its potential supplier, being the original manufacturer, can provide a guarantee that the refurbishment of the EF fleet would be successful. Notwithstanding future advice on possible costs, due to the age of the EF fleet and its current state of repair, no guarantees can be given by KiwiRail that further capital injections from the Crown would not be necessary in order to maintain the locomotives.

39. Cabinet may choose to support this decision for a number of reasons:

- **Emissions** – reverting to the original level of service of the EF fleet between Hamilton and Palmerston North would avoid increasing carbon dioxide (CO₂) emissions from rail. The Treasury estimates that an ‘all diesel’ service would increase emissions by 18,110 tonnes of CO₂ pa. This increase would be avoided.
- **Meeting the governing parties’ commitment** – this decision would be consistent with pledges made in respect of electrification and the Government’s commitment to taking decisive action on climate change and emissions from transport.

40. The following matters should be considered by Cabinet:

- **Diesel locomotives** – the new diesel locomotives that would have replaced the electric locomotives would instead be distributed to the wider KiwiRail fleet (the current diesel fleet averages approximately 36 years old). This would help modernise the diesel fleet, improving reliability and performance.
- **Timescales** – Electric locomotives would return to service once refurbished. The refurbishment of the entire fleet would take approximately 3-4 years. Given the lead in time, an ‘all diesel’ service pattern may be necessary for a short period in the interim. KiwiRail would work to reduce the length of this period as much as it could, to avoid a disruption to the electric locomotive service, with a small number of electric locomotives continuing to operate after 31 March 2019. This, however, cannot be guaranteed by KiwiRail.
- **Long-term implications** – In isolation of a wider commitment to the further electrification of the NIMT and Golden Triangle, the benefits of this investment would not extend beyond the 10 year life expectancy of the EF fleet.
- **Financial impacts** – This option would require KiwiRail to maintain the ability to service an ageing electric locomotive fleet, which would increase both immediate and on-going operational costs. Providing a capital injection to KiwiRail of this nature could be considered as additional to the preferred Investment Scenarios currently being considered through the Future of Rail review. Any decision by Ministers would need to be reflected in decisions associated with Budget 19.

41. Further work is necessary by the Ministry of Transport, the Treasury and KiwiRail (working with potential suppliers) to determine a more accurate set of costs for the repair and maintenance of the fleet, as well as the timescales.

42. We will report back to Cabinet prior to any formal agreement being made between KiwiRail and Shareholding Ministers, or any financial commitment, including final financial recommendations.

Consultation

43. KiwiRail has been involved in the preparation of this paper.

Financial implications

44. The funding required to maintain the operation of the electric locomotive fleet will be sought from the Between Budget Contingency. This is reflected in the financial recommendations below.

Human Rights, gender implications and disability perspective

45. There are no human rights, gender or disability issues or implications associated with this paper.

Legislative implications

46. It should be noted that the powers available under section 7 of the Act have not previously been used in respect of KiwiRail.

Regulatory Impact Analysis

47. A Regulatory Impact Analysis is not required.

Publicity

48. Should Cabinet be minded to support Option B, an announcement would be made shortly.

Recommendations

49. The Ministers recommend that the Committee:

1. Agree to:

either Option A – the Government does not intervene in KiwiRail's decommissioning of their EF fleet by 31 March 2019

or Option B – reverse KiwiRail's decision to decommission their EF fleet, utilising the powers of Shareholding Ministers through section 7 of the SOE Act 1986

2. If Option B is agreed:

- a. **approve** the following changes to appropriations to allow KiwiRail to maintain the operation of the electric locomotive fleet with a corresponding impact on debt:

Vote Transport Minister of Transport	\$m – increase/(decrease)				
	2018/19	2019/20	2020/21	2021/22	2022/23 & Outyears
Non-departmental Capital Expenditure Rail - KiwiRail Holdings Limited	8.500	13.000	9.500	4.000	-

- b. **agree** that the proposed changes to appropriations for 2018/19 above be included in the 2018 Supplementary Estimates and that, in the interim, the increase be met from Imprest Supply;
- c. **agree** that the expenses incurred under recommendation 2(a) above be a charge against the between-Budget capital contingency, established as part of Budget 2018;
- d. **agree** that the Minister of Transport and the Minister of Finance can jointly reprofile the funding, if required, to align with expenditure requirements for the project.
3. **Note** that further funding for KiwiRail is expected to be considered through future Budgets following the Future of Rail Review
4. **Agree** that the Ministry of Transport, with KiwiRail, will report back regarding details of costs and timeframes associated with Cabinet's preferred option
5. **Note** the requirement for any associated costs to be met by the Government
6. **Note** this paper will be released following Cabinet agreement.

Rt Hon Winston Peters
**Minister for State Owned
Enterprises**

Hon Grant Robertson
Minister of Finance

Hon Phil Twyford
Minister of Transport

