



# Analysis of an Aviation fuel levy 2015



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Ministry of **Transport**

TE MANATŪ WAKA

New Zealand Government

## Analysis of an aviation fuel levy

### Purpose

1. This document summarises the Ministry of Transport’s analysis of the feasibility of introducing an aviation fuel levy in New Zealand. The analysis considers the introduction of an aviation fuel levy to replace some or all of the fees and levies that the Civil Aviation Authority [CAA] charges aviation participants.

### Aircraft Owners and Pilots Association’s (AOPA) proposal for an aviation fuel levy

2. In August 2014, the CAA completed the first stage of consultation on the CAA funding review. AOPA in its submission proposed:

“To introduce an aviation fuel levy covering all domestic [private and commercial] operators that replaces all routine CAA fees and levies”.

3. There were around 50 submissions in support of introducing the aviation fuel levy, mainly from the recreational aviation sector. The commercial aviation sector largely did not engage in this discussion. Those that did raised concerns about the increased cost to them, particularly the agricultural sector.
4. The CAA requested the Ministry to assess AOPA’s proposal.

### Analysis of the impact of an aviation fuel levy on different aviation sectors

5. Initially, we sought to determine the impact of an aviation fuel levy based on the total fuel used by the airline, other commercial and non-commercial aviation sectors. However, because of the inaccuracy of sector-specific aircraft fuel consumption data, the preference was to base the analysis on case studies of aircraft operators.

### Case studies

6. The analysis uses nine hypothetical operators that represent a range of different aviation sectors. The nine operators are summarised in Table 1.

*Table 1 – Summary of aviation operation case studies used in aviation fuel levy analysis*

Operator type	Number of aircraft	Annual domestic hours flown	Annual fuel use [L]
Agricultural	3	958	111,845
Domestic airline	16	24,628	11,124,116
Large domestic freight	16	11,020	21,329,777
Freight – half domestic / half international	12	4909	5,736,890
Skydiving	1	777	149,251
Helicopters and small aeroplanes	4	591	64,522
Jet charter	1	56	41,471
Recreational user [50 hours]	1	50	1,100
Recreational user [200 hours]	1	200	8,000

## Level of aviation fuel levy

7. The analysis considers using an aviation fuel levy to replace all CAA fees and levies (excluding the international passenger safety levy).<sup>1</sup> The necessary levy level, summarised in Table 2, has been calculated by dividing the total aviation fuel use for domestic flights in New Zealand (from Ministry of Business, Innovation and Employment data) by the amount of CAA revenue to be replaced. The amount of CAA revenue to be replaced was calculated using the 'domestic passenger safety levy', 'other levies' and 'aviation regulatory and safety services' values reported in the CAA's 2012/13 and 2013/14 annual reports.

Table 2 – Calculation of level of aviation fuel levy

Volume of aviation fuel used [ML] <sup>2</sup>	Revenue sources to be replaced	Value of revenue to be replaced <sup>3</sup>	Level of aviation fuel levy required to recover revenue
323.00129	All CAA fees and levies (excluding the international passenger levy)	\$25,228,850	7.81c/L

## Treasury guidance

8. The Ministry used Treasury's *Guidelines for Setting Charges in the Public Sector* when considering AOPA's proposal. These guidelines indicate that the goods/services produced by an organisation need to be identified to determine the appropriate basis for charging. Goods/services should be categorised by their economic characteristics.
- ▶ Public goods – the good/service is available to all (and exclusion is difficult). The Crown pays on behalf of all (e.g. the CAA's policy advice).
  - ▶ Private goods – a good/service where there is a direct connection between the good/service and the benefit to the individual. The individual (or organisation) pays for the good/service directly by a fee (e.g. pilot's licence).
  - ▶ Club goods – a good/service provided to a group where there is an indirect connection between the good/service and the benefit to the group. The group pays for the good/service via a levy (e.g. education, safety investigations).
9. Treasury guidelines also require an understanding of who benefits from goods/services and who exacerbates the risks/costs.
10. Beneficiaries are those who benefit from the good/service provided. Passengers and other end users are the most significant beneficiaries of the CAA's core safety activities. Participants such as air transport operators (e.g. Air New Zealand) and aviation services providers (e.g. flight schools) receive significant benefits from a safe and commercially sustainable aviation sector.
11. Risk or cost exacerbators are those that increase risk or create costs for the CAA. These include individuals seeking certification or assessment, and participants who do not comply with the rules.

<sup>1</sup> International obligations promote the exemption from all fuel duties of all aircraft engaged in international air transport. This means that the CAA could only charge an aviation fuel levy on fuel used for domestic flights.

<sup>2</sup> The volume of aviation fuel use was calculated from the average of the 2012 and 2013 calendar years. It includes avgas and avtur (jet fuel).

<sup>3</sup> The values for revenue to be replaced were calculated using the average of the values for the 2012/13 and 2013/14 financial years. Earlier years were not included in the calculation as the funding framework that came into force in November 2012 significantly changed these values.

## Criteria to evaluate the proposals

12. The Ministry developed criteria to determine if the operation of the CAA's funding system would be better under the funding system proposed in the current CAA funding review (the CAA's proposed funding system) or an aviation fuel levy. The Ministry used the objectives from the CAA's funding review and from Treasury's guidelines to develop criteria against which this funding proposal is judged.
13. The criteria are described below.
- ▶ Equity: Are the fees and levies targeted to those that benefit from the output (beneficiaries) and/or those whose action gives rise to it (risk/cost exacerbators)? The key question is 'Are the right people being charged?'
  - ▶ Efficiency: Does the funding system encourage decisions on the volume and standard of regulatory services that are an efficient allocation of resources and support the outcomes that government is seeking to provide? The key question is 'Will the fees and levies proposed encourage the right level of CAA regulatory services and support its safety aims?'
  - ▶ Revenue sustainability: 'Is sufficient revenue collected for the CAA to recover its regulatory costs?'
  - ▶ Transaction costs: 'Does it minimise the transaction costs involved with the operation of a fee or levy?' The transaction costs cover the cost of collecting the fee, the costs of the operator processing the payment (records of passengers, activities) and the costs of enforcement (depends on the potential for evasion). In an efficient system, the transaction cost will be very low [1-2 percent of revenue collected] while in an inefficient system the transaction costs can be a significant proportion of the revenue collected. An inefficient system is likely to have a combination of high operator processing costs, a manual collection system, and significant evasion (requiring high levels of enforcement).

## Evaluation

14. This section evaluates an aviation fuel levy compared to the CAA's proposed funding system using the criteria discussed above.

### *Equity*

15. From an equity perspective the ideal is that the right people are charged. That is, the main beneficiaries and risk/cost exacerbators of the CAA's regulatory system.

### Aviation fuel levy

16. The Ministry considers that an aviation fuel levy has three equity issues.

### *Some beneficiaries not charged*

17. An aviation fuel levy would mean several beneficiaries of the aviation system would not be charged if an aviation fuel levy were used to replace all fees and levies.
- ▶ An aviation fuel levy cannot be charged to international operators but only to domestic operators. If the CAA wants to retain revenue from international passengers it would need to retain the international passenger safety levy. Even with an international passenger levy, international freight operators could not be charged unless a change similar to the

operator safety levy [proposed in the CAA funding review] was introduced alongside the aviation fuel levy.

- ▶ Aviation operators who currently pay CAA charges and who do not use fuel would not be charged. This includes:
  - ▶ aerodromes
  - ▶ aviation maintenance, design and manufacturing organisations
  - ▶ Airways Corporation
  - ▶ Aviation Security Service
  - ▶ MetService.

#### *Cost/risk exacerbators not charged*

18. No direct mechanisms to recover the cost from those who generate risk and/or those that create risk. Treasury guidance includes the advice that those that create cost should be charged directly for that cost by a fee. The proposed aviation fuel levy would remove all fees (e.g. pilot licence, aircraft registration fees) so those that require services from the CAA would not be charged directly. In addition, those that create risk will not be charged any differently from those that do not because an aviation fuel levy is based only on fuel use.

#### *Passengers not directly charged*

19. Passengers, the most significant end-user of many aviation services, will not be directly charged. The current passenger safety levy provides a very direct means of recovering costs for the benefits received by passengers. An aviation fuel levy would be less direct.

#### Proposed CAA funding system:

20. This system does not have the equity issues the aviation fuel levy has. It has levies that cover passengers, airfreight, agricultural and recreational operators. It has fees that directly charge the risk/cost exacerbators. It also introduces new levies to charge commercial operators, in particular international freight operators who are not charged under the current funding system. Finally, the proposed system allows those operators who are found to be non-compliant [during an audit] to be charged extra, consistent with the extra work required by the auditors.
21. The Ministry concludes that the proposed CAA funding system will be more equitable than an aviation fuel levy.

#### *Efficiency*

22. From an efficiency perspective, the ideal is fees and levies that encourage the right level of regulatory effort and support the CAA's safety aims. This would mean the funding system would send price signals to beneficiaries and risk/cost exacerbators that reflect the benefits received, costs incurred and risks created.
23. The CAA's regulatory effort:
- ▶ places high importance on passenger carrying operations; as passengers are the most significant beneficiaries of the core safety activities of the CAA
  - ▶ focuses on risk, thereby targeting risk exacerbators
  - ▶ charges for entry and continuing certification of aviation operators, thereby targeting the cost exacerbators.

## Aviation fuel levy

24. The Ministry considers an aviation fuel levy would have two efficiency issues.

### *No link between the CAA's regulatory effort and aviation fuel levy*

25. An aviation fuel levy replaces all fees so does not directly recognise the CAA's regulatory effort in entry and certification. This is inefficient as there is no direct price signal to the cost exacerbators who want those services. Treasury's guidance is that a specific service provided to an individual user (who receives the benefit of that service) should have a direct fee. The individual receiving the service then knows the price of the service and has the opportunity to feedback on the price and quality of the service provided.

### *An aviation fuel levy does not effectively target passengers and risk exacerbators*

26. To investigate this, the Ministry considered how an aviation fuel levy would affect the nine hypothetical operators described in Table 1.

*Table 3 – Impact of aviation fuel levy on case study aviation operations [per year]*

Operator	Current CAA fees & levies (\$) <sup>4</sup>	Aviation fuel levy (\$)	Proposed CAA system (\$)
Agriculture	2,816	8,735	4,100
Domestic airline	1,620,786	868,793	1,536,400
Large domestic freight	49,854	1,665,855	518,166
Freight – half domestic/half international	49,854	448,051	518,166
Skydiving	3,236	11,656	40,585
Helicopters and small aircraft	4,453	5,039	8,829
Jet charter	4,196	3,238	4,034
Recreational user (50 hours)	336	85	185
Recreational user (200 hours)	370	624	220

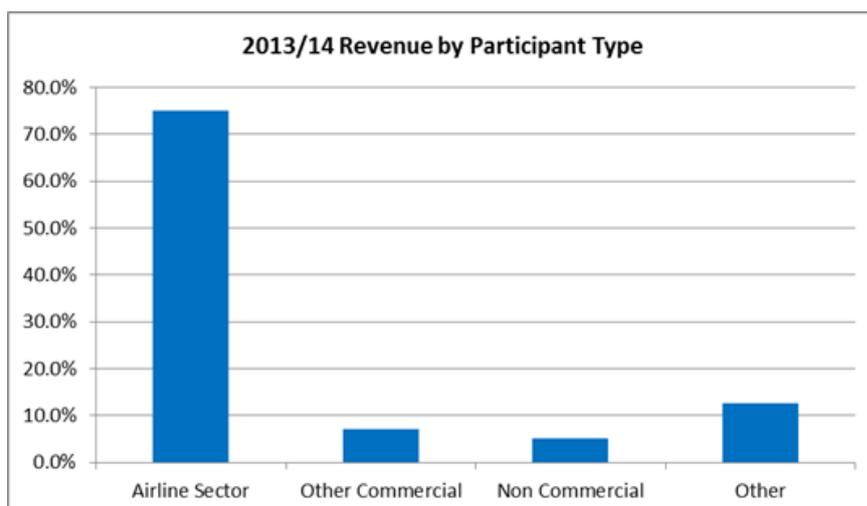
27. Table 3 shows that both the aviation fuel levy and the CAA's proposed funding system result in changed costs for all nine of the case study operators. The largest changes are to the operators: domestic airlines, large freight, agriculture, skydiving and helicopters/small aircraft.

28. Figure 1 illustrates the current distribution of the CAA's expenditure and revenue across the different aviation sectors. The airline sector currently provides the majority of the CAA's revenue, reflecting the benefit received from each passenger as a result of the CAA's safety oversight. The 'other commercial' sector (commercial operations excluding the airline sector) currently pays fees for surveillance and a number of other functions. However, the revenue sourced from this sector does not meet the costs of oversight of the sector.

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<sup>4</sup> These costs include participation and passenger levies, register maintenance fee and surveillance charges. The recreational user's costs also include the medical application certification fee for a class 2 medical certificate for a pilot over 40 years of age [\$313 for two years].

Figure 1 – CAA revenue by aviation sector under current funding system



29. *Airlines and freight:* An aviation fuel levy would substantially decrease the costs to the domestic airline while substantially increasing costs to the large domestic freight operator. The proposed CAA funding system would marginally reduce the costs to the domestic airline, while also increasing costs to the freight operator. However, for the aviation fuel levy the costs for the freight operator are three times those of the CAA’s proposed funding system.
30. The Ministry is concerned that an aviation fuel levy substantially reduces the costs to airlines, given passengers are a key beneficiary of the CAA’s regulatory efforts.<sup>5</sup> The Ministry agrees that the freight industry needs to pay more. However, the CAA advises that the increases proposed by the aviation fuel levy are in excess of the regulatory effort required in the freight sector.
31. *Agriculture, skydiving and helicopters/small aircraft:* Both the aviation fuel levy and the proposed CAA funding system increase costs for operators in agriculture, skydiving and helicopters/small aircraft. The proposed CAA funding system increases the levy more for sky diving and helicopters/small aeroplanes and less for agriculture than an aviation fuel levy.
32. The Ministry believes that having higher relative costs for sky diving followed by helicopters/small aircraft and agriculture makes sense given the probability and consequence of accidents/incidents in these sectors. The Ministry concludes that the proposed CAA funding system reflects much better the level of regulatory effort and therefore will be more efficient than an aviation fuel levy.
33. Overall, the Ministry concludes that the proposed CAA funding system will be more efficient than an aviation fuel levy.

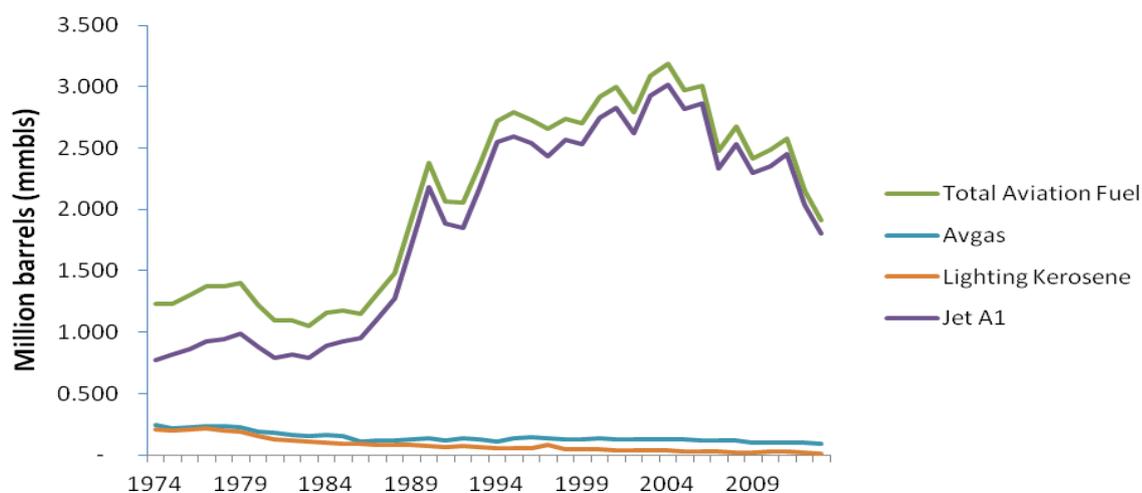
### ***Revenue sustainability***

#### Aviation fuel levy

34. An aviation fuel levy would be less sustainable than the current CAA fees and levies because of the general trend of declining fuel consumption [see Figure 2].

<sup>5</sup> The broader question of the revenue collected from each sector compared to the expenditure is considered as part of the funding review.

Figure 2 – Domestic aviation fuel consumption



35. The chart shows total fuel use has been reducing since 2004. CAA data indicates that this reduction in fuel use is occurring at the same time that total hours flown have increased slightly. This suggests that increasing aircraft fuel efficiency (through the introduction of more fuel-efficient aircraft into New Zealand’s fleet) is contributing to a decrease in total fuel use.
36. Under an aviation fuel levy, declining fuel use by aircraft would lead to a decrease in CAA funding with no decrease in the amount of regulatory effort required by the CAA. This declining fuel use would require regular increases to the level of aviation fuel levy to maintain funding levels.

Proposed CAA funding system

37. Is more sustainable as it relies on passenger numbers and operators’ activities and not fuel use.
38. The Ministry concludes that the proposed CAA funding system is more sustainable than an aviation fuel levy.

**Transaction costs**

Aviation fuel levy

39. An aviation fuel levy collected at the port/refinery and paid by operators at the pump; operators have no additional processing costs and collection costs are low. It also has low potential for evasion. If it operates as well as the current fuel excise duty the transaction costs could be as low as 1-3 percent of revenue.

Proposed CAA funding system

40. The proposed funding system is a mix of passenger, operator levies and fees.
41. The collection costs for fees are higher than levies because a fee often requires the CAA to calculate the hours of work for each individual. The collection costs for levies are low.
42. Operator processing costs are higher depending on the work the operator has to do to prepare payment. A passenger levy requires airlines to keep records of the number of passengers that travel. The operator safety levy requires operators to keep records of the level of activity [e.g. hours flown]. In considering these processing costs, we need to allow for information that would already be available because of normal business practices.

43. Fees are based on information known to the CAA e.g. pilot licences, aircraft and hours audited. The potential of evasion from fees is therefore limited. Evasion is more possible from passenger and activity levies as it relies on information supplied by the operators/participants. However, the CAA audits operators and can check this information.
44. Overall, the transaction costs of the proposed CAA funding system are likely to be higher than that for an aviation fuel levy [maybe up to 3 -7 percent of revenue]. This is a rough estimate based on the information above.

### **Conclusion**

45. The Ministry’s conclusion is that the introduction of a full aviation fuel levy would not improve the operation of the CAA’s funding system. While an aviation fuel levy would have lower transaction costs, the Ministry considers that this alone does not outweigh the significant equity, efficiency and revenue sustainability issues associated with an aviation fuel levy.

### **Partial aviation fuel levy**

46. The Ministry also considered the effect of a partial aviation fuel levy to replace some of the CAA’s current fees and levies. Some of the weaknesses of a full aviation fuel levy are minimised or removed if the aviation fuel levy does not replace all fees and levies. The Ministry considered the feasibility of an aviation fuel levy that only replaced:
- ▶ the domestic passenger safety levy and participation levy
  - ▶ the participation levy only.
47. The main benefit of using an aviation fuel levy to recover only the domestic passenger and/or participation levies is that it retains the direct fees used in the current funding system. This supports the Treasury’s guidance for direct charges and means that operators who do not use fuel will be covered.

### **Using an aviation fuel levy to replace the participation levy and domestic passenger safety levy**

48. This option would see a fuel levy replace about 52 percent of the CAA’s current funding [approximately \$18 million per year]. The distribution of the CAA’s funding sources under this option is shown in Table 4.

*Table 4 – CAA funding sources with a partial fuel levy – replacing domestic passenger safety levy and participation levy*

	Partial aviation fuel levy (domestic passenger safety levy and participation levy replaced)	Current CAA funding
Aviation fuel levy	52%	0%
Passenger safety levy	18%	68%
Participation levy	0%	2%
ANZA levy	2%	2%
Operator safety levy	0%	0%
Fees	18%	18%
Crown funding	10%	10%

49. This method would still have efficiency concerns in that an aviation fuel levy would reduce costs for airlines and increase costs for some non-airline commercial customers [as detailed in paragraphs 22-33]. It would also retain some revenue sustainability concerns [paragraphs 34-38].
50. In addition, as fees for services such as pilot licensing are retained, transaction costs will be higher than with an aviation fuel levy that replaces all CAA fees and levies.

*Using an aviation fuel levy to replace only the participation levy*

51. This option would mean a fuel levy would replace only 2 percent of the CAA’s current funding [approximately \$500,000 per year]. The distribution of the CAA’s funding sources under this option is shown in Table 5 below.

*Table 5 – CAA funding sources with a partial fuel levy – replacing participation levy*

	Partial aviation fuel levy (participation levy replaced)	Current CAA funding
Aviation fuel levy	2%	0%
Passenger safety levy	68%	68%
Participation levy	0%	2%
ANZA levy	2%	2%
Operator safety levy	0%	0%
Fees	18%	18%
Crown funding	10%	10%

52. This option removes some of the efficiency and equity concerns about a fuel levy. It would retain the concern about the increase in costs to non-airline commercial operators [as detailed in paragraphs 22-33]. The key questions for this option relate to the fact that the amount collected is relatively small and there is a need to charge some participants and not others. This means the key focus is the transaction costs, especially for collection and enforcement costs.

53. The answers to these questions depend on the method of collecting the aviation fuel levy. The Ministry considered two methods of replacing the participation levy with an aviation fuel levy.

*Replace the participation levy with a levy on all aviation fuel used for domestic flights (collected at the port/refinery, paid at the pump)*

54. To avoid double charging domestic airline flights [i.e. for an aviation fuel levy and passenger safety charge] it would be necessary to separate the fuel used by non-airline flights from other fuel supplies so the levy could be applied. This would be more difficult and costly to administer the collection of the levy. It would also increase opportunities for evading the aviation fuel levy and therefore require more enforcement. The transaction costs are expected to be higher than a full aviation fuel levy.

*The CAA collects an aviation fuel levy based on operators submitting evidence of fuel consumption*

55. This is enabled by section 42A of the Civil Aviation Act 1990. This system was used in New Zealand from 1993 to 1995. The transaction cost would be high compared to being collected at the port/refinery, given the need for operators to submit returns and the need for CAA to audit operators’ returns to reduce evasion. Given improved technology, the transaction costs could be reduced [e.g. electronic submission].
56. In summary, the Ministry is concerned about the transaction costs and risk of evasion of using an aviation fuel levy to replace the participation levy only.

## *Conclusion*

57. The Ministry's conclusion is that the introduction of a partial aviation fuel levy would not improve the operation of the CAA's funding system. A partial aviation fuel levy would have less equity and efficiency concerns than a full aviation fuel levy. However, it would have higher transaction costs and more potential for evasion with associated enforcement costs.