NVES numerical precision and calculations

Guidance note

About this document

This guidance note covers the numerical precision for inputs for the Interim Emissions Value (IEV) and Final Emissions Value (FEV) calculations used in administering the New Vehicle Efficiency Standard (NVES). It also provides worked examples demonstrating how to apply the calculations.

Why specify numerical precision?

The NVES Regulator determines a regulated entity's IEV and FEV as required under the *New Vehicle Efficiency Standard Act 2024* (NVES Act). Although sections 18, 19 and 21 of the NVES Act provide formulas and a detailed explanation of calculation inputs for the FEV, IEV and emissions target, this document provides clarification on precision.

Specifying the numerical precision associated with these calculations helps to:

- provide transparency over IEV and FEV results determined by the NVES Regulator
- encourage consistent calculations between the NVES Regulator, regulated entities, and other parties (for example, to prevent use of different significant figures and rounding methods).

What are the IEV and FEV calculation inputs?

The IEV is a measure of how a regulated entity has performed against its emissions targets for a given year. The emissions number (measured in gCO_2/km) of each covered vehicle is compared to the vehicle's emissions target, which is calculated using **Equation 1**. The IEV is the sum of these differences, as shown in **Equation 2**.

The FEV is issued 2 years after the IEV for a given year and is calculated by subtracting the number of units extinguished to reduce their FEV from the entity's IEV, as shown at **Equation 3.**

Equation 1.

$$ET_i = HL + MAF(DM - RM)$$

Where HL = Headline limit for covered vehicle, *i*

MAF = Mass adjustment factor for covered vehicle, *i*

DM = Designated MIRO for covered vehicle, *i*

RM = Reference MIRO for covered vehicle, *i*

Equation 2.

$$IEV = \sum_i (E_i - ET_i)$$

Where E = Emissions Number for covered vehicle, *i*

ET is calculated based on Equation 1

Equation 3.

$$FEV = IEV - U$$

Where IEV is calculated based on Equation 2

U = Units extinguished for the purpose of reducing an FEV

The numerical inputs to these equations are summarised in **Tables 1** and **2** respectively. The numerical precision of each input is summarised in **Table 3**.

Table 1: Numerical inputs to the IEV calculations

Input	Depends on	
Emissions Number	Carbon dioxide (CO_2) emissions[1]	
Emissions Target	Headline limit (HL)[2]	Mass in Running Order (MIRO)[1]
	Mass adjustment factor (MAF)[2]	Rated Towing Capacity (RTC)[1]
	Designated MIRO (DM)[2]	Reference MIRO (RM)[2]

Table 2: Numerical inputs to the FEV calculations

Input	Depends on	
Interim Emissions Value	Emissions Number[2]	Emissions Target[2]
Units extinguished for the purposes of reducing a person's FEV[2]		

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[1] *As entered on the Register of Approved Vehicles (RAV).*
[2] *As defined in the NVES Act.*

Table 3: Numerical precision for IEV and FEV calculation inputs

Numeric field	Numerical precision		
Carbon dioxide (CO_2) emissions – g/km	Rounded to the nearest whole number[3]		
Mass in Running Order (MIRO) – kg	Rounded to the nearest whole number[3]		
Rated Towing Capacity – kg	Rounded to the nearest whole number[3]		
Emissions number (E)	Rounded to the nearest whole number[3]		
Emissions target (ET)	4 decimal places[4]		
Headline limit (HL)	**Year**	**Type 1 vehicles**	**Type 2 vehicles**
	2025	141	210
	2026	117	180
	2027	92	150
	2028	68	122
	2029	58	110
Mass adjustment factor (MAF)[5]	**Type 1 vehicles (2025)**: 0.0663		
	Type 2 vehicles (2025): 0.0324		
Designated MIRO (DM)[4]	**Type 1 vehicles (2025)**		
	1500 if MIRO <= 1500kg		
	As for MIRO, if 1500<MIRO<2200kg		
	2200 if MIRO >=2200kg		
	Type 2 vehicles (2025)		
	1500 if MIRO <= 1500kg		
	As for MIRO, if 1500<MIRO<2400kg		
	2400 if MIRO >=2400kg		
Reference MIRO (RM)[4]	**Type 1 vehicles (2025)**: 1723kg		
	Type 2 vehicles (2025): 2155kg		
Interim Emissions Value (IEV)	Rounded to the nearest whole number[1][2]		
Units extinguished for the purposes of reducing a person's FEV (U)	Absolute value of a whole number		
Final Emissions Value (FEV)	Whole number		

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[1] *As entered on the Register of Approved Vehicles (RAV).*

[2] *As defined in the NVES Act.*

[3] *With rounding up if the first decimal place is 5 or more, and rounding down if the first decimal place is 4 or less.*

[4] *Rounding occurs just once for each IEV calculation, on summation of each vehicle emissions value for a regulated entity in a year, where this value is the difference between a covered vehicle's emissions number and its emissions target.*

[5] *MAF, DM and RM parameters specified in the NVES Act for 2025. Parameters for 2026 and beyond may differ from the values listed in this document, if a Ministerial Determination is made under the Act in the future to update these parameters.*

Worked examples

Interim emissions value (IEV) calculation

Regulated entity X (entity X) only supplies one vehicle model to the Australian market: the model A.

In 2025 (1 July to 31 December), entity X entered 1,000 of these vehicles on the RAV.

The emissions number (E) of model A is 150 gCO_2/km.

Model A is a small SUV in the MA vehicle category, so it is classified as an NVES Type 1 vehicle. Its MIRO is 1,750 kg.

In accordance with Section 21 of the NVES Act, the emissions target (ET) of model A is:

ET = HL + MAF (DM – RM)

= 141 + 0.0663 (1750 – 1723)

= 141 + 1.7901

= 142.7901 (retain four decimal places)

Since entity X entered this vehicle 1,000 times in the year, its IEV is:

IEV = $\sum_I$ (E$_i$ – ET$_i$)

*= (150 – 142.7901) * 1000*

= 7209.9

= 7210 (round to whole number)

Final emissions value (FEV) calculation

Entity X has an IEV of 7,210 for the 2025 performance period. The entity uses 7,210 units to bring their FEV down before the compliance deadline.

Entity X's FEV is:

FEV = IEV – U

= 7,210 – 7,210`

= 0

More information

For more information, please visit the NVES Regulator website or contact us via email at NVESRegulator@infrastructure.gov.au.

Data entered on the RAV is subject to validation rules. Refer to the Guide to the Register of Approved Vehicles for further guidance relating to RAV entries and validation rules.