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# Excise (Volume of LPG – Temperature and Pressure Correction) Determination 2011 (No. 1)

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## Explanatory Statement

### General Outline of Instrument

1. This Explanatory Statement is provided in accordance with section 26 of the *Legislative Instruments Act 2003*.
2. Under section 65 of the *Excise Act 1901* (Excise Act) the CEO may make rules for working out the volume of excisable goods.
3. This instrument is made under section 65 of the Excise Act. It provides rules for working out the volume of Liquefied Petroleum Gas (LPG) that is being delivered for home consumption, and for the purposes of working out the amount of excise duty payable on such fuel.

### Date of effect

4. The determination will have effect from 1 December 2011.

### Effect of this instrument:

5. The determination specifies the methods available for determining the volume of LPG (in litres).
6. The determination also specifies a total figure of aggregated clearances as a factor relevant for determining use of a particular method.
7. Compliance cost impact: An assessment of the compliance cost impact indicates that the impact will be minimal for both implementation and on-going compliance costs. The instrument is routine in nature

### The rules

8. The volume of LPG must be determined using one of the approved methods.

**Method 1** - Determining the volume of LPG in litres by use of a factor based on density.

Where a person has aggregated clearances of transport LPG exceeding 150,000 litres per accounting period and the LPG is delivered into home consumption as a quantity

measured in kilograms and is not measured using volumetric measurement equipment to calculate the amount of excise duty payable, an appropriate conversion factor based on the measured density of the LPG at ambient temperature corrected to 15° Celsius or the conversion factor as stipulated in the Excise Regulations 1925 to convert the weight of LPG in kilograms to a volume of LPG in litres may be used.

**Example 1:** If a quantity of transport LPG delivered into home consumption has been weighed as having 15.682 tonnes, then the volume of the LPG would be determined by applying the conversion factor 1.885 as stipulated in the Excise Regulations 1925 for every kilogram of LPG (unless the person elects to measure the density of the quantity of LPG and apply the specific conversion factor). Application of the Excise Regulation factor 1.885 would result in a volume of 29,561 litres. Excise duty is then calculated on 29,561 litres for a person who has aggregated clearances of transport LPG exceeding 150,000 litres per accounting period

**Method 2** - Determining the volume of LPG in litres at 15° Celsius by use of the equilibrium vapour pressure and a temperature correction factor.

Where a person has aggregated clearances of transport LPG exceeding 150,000 litres per accounting period and the measurement of a quantity of the LPG does not meet the conditions prescribed in Regulation 49AAC (1) of the Excise Regulations 1925 for converting from kilograms to litres, then that person must use the American Petroleum Institute (API) *Manual of Petroleum Measurement Standards, Chapter 11.2.2M – Compressibility Factors for Hydrocarbons: 350-637 kg/m<sup>3</sup> Density (15° C) and -46° C to 60° C Metering Temperature* to correct the volume of LPG metered under operating pressure to the corresponding volume at the equilibrium vapour pressure (bubble point) for the metered temperature followed by use of the American Society for Testing and Materials (ASTM) *Petroleum Measurement Tables for Light Hydrocarbon Liquids – Density Range 0.500 to 0.653 Kg/L at 15° C*, to correct the volume of the LPG to 15° Celsius.

**Example 2:** A quantity of transport LPG is dispensed from an LPG tanker which meters an uncorrected volume of 30,000 litres under a pressure of 3000 kilopascals at a temperature of 27.5° C. During the delivery, the density and equilibrium vapour pressure of the LPG is also measured (at 27.5° C) and shown to be 515 kg/m<sup>3</sup> and 510 kilopascals respectively. To determine the corrected volume of LPG delivered, the metered volume would need to be adjusted by the pressure correction factor 1.0121 (as per the API Petroleum Measurement Compressibility Factor Tables for Hydrocarbons: 350-637 kg/m<sup>3</sup>) to determine the volume at equilibrium vapour pressure and the volume temperature correction factor 0.9675 (as per the ASTM Petroleum Measurement Tables for Light Hydrocarbon Liquids) to determine the volume at 15° C. Application of the relevant factors would result in an adjusted volume of 29,367 litres. Excise duty is then calculated on 29,367 litres for a person who has aggregated clearances of transport LPG exceeding 150,000 litres per accounting period.

**Method 3** – Determining the volume of LPG in litres at ambient temperature and operating pressure for aggregated clearances of transport LPG not exceeding 150,000 litres.

Where a person does not have aggregated clearances of transport LPG exceeding 150,000 litres per accounting period and does not have a requirement on their permission issued under section 61C of the Excise Act to correct to 15° Celsius and equilibrium vapour pressure on all their LPG clearances they may either correct the

volume of fuel using either Method 1 or 2 or use the measured volume of fuel at ambient temperature and operating pressure (Method 3).

**Example 3:** Following on from Example 2, if a person's aggregated clearances of transport LPG are less than 150,000 litres per accounting period, and that person delivers transport LPG into home consumption using uncorrected volumetric measuring equipment, that person may either apply Method 2 and correct the volume of fuel to 15° Celsius and equilibrium vapour pressure (i.e. 29,367 litres) or use the uncorrected measured volume of fuel at ambient temperature and operating pressure (i.e. 30,000 litres). If the uncorrected measured volume is used, excise duty is then calculated on 30,000 litres for a person who has aggregated clearances of transport LPG not exceeding 150,000 litres per accounting period.

9. When determining the volume of aggregated clearances of transport LPG a person must use one Method for the duration of an accounting period, as stipulated in Regulation 49AAC (2) of the Excise Regulations 1925 unless authorised in writing by the CEO to do otherwise .

**Example 4:** A company has a licensed LPG refinery with aggregated clearances of transport LPG exceeding 150,000 litres per accounting period.

The company supplies LPG to wholesale customers who collect the product from the LPG refinery ('wholesale sales'). In these circumstances, the LPG supplied is measured in tonnes by weighbridge measurement and is not measured using temperature and pressure corrected volumetric measurement equipment. Thus for 'wholesale sales' the company must continue to measure in kilograms as per Method 1 for the duration of the accounting period.

The company also separately delivers LPG from the refinery using their own tankers ('tanker deliveries to customers'). In these circumstances, measurement occurs in litres when delivered to clients.

As the company has aggregated clearances of transport LPG exceeding 150,000 litres and are not measuring in kilograms the company must use Method 2 for 'tanker deliveries to customers' and continue to use Method 2 for 'tanker deliveries to customers' for the duration of the accounting period.

Alternatively, if the company wishes to change measurement units they must obtain permission from the Commissioner of Taxation, or wait until the end of the accounting period.

Aggregated clearances means the volume of LPG delivered for home consumption by you in an accounting period of 12 months from all excise licensed establishment/s based on historical data or the volume of LPG reasonably expected to be delivered for home consumption by you in an accounting period if no historical data is available.

10. The period adopted for the calculation of aggregated clearances is the accounting period adopted for income tax purposes as provided in section 18 of the *Income Tax Assessment Act 1936*.
11. LPG means:
  - (a) liquid propane; or
  - (b) a liquid mixture of propane and butane; or
  - (c) a liquid mixture of propane and other hydrocarbons that consists mainly of propane; or

- (d) a liquid mixture of propane, butane and other hydrocarbons that consists mainly of propane and butane

## Consultation

12. Consultation on the determination took place with major industry representatives during discussions of the exposure draft legislation for the taxation of Alternative Fuels and since that time through direct contact with affected entities. None of the industry consultation drew any comments that would indicate the proposals in the draft determination should not proceed.
13. Consultation was undertaken with the Revenue Analysis Branch and no monetary, financial or revenue impacts resulting from or associated with the volume of LPG legislative instrument were identified.
14. The Treasury have been consulted and do not have any issue with the determination.

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**James O'Halloran**  
**Deputy Commissioner of Taxation**  
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*Related Rulings/Determinations:*

*Previous Rulings/Determinations:*

*Subject references:*

Excise  
Excisable goods  
Excise Duty

*Legislative references:*

*Excise Act 1901* section 65  
*Excise Tariff Act 1921* The Schedule  
*Legislative Instruments Act 2003* section 26  
*Income Tax Assessment Act 1936* section 18

*Case references:*

*Other references:*

American Society for Testing and Materials (ASTM) *Petroleum Measurement Tables for Light Hydrocarbon Liquids – Density Range 0.500 to 0.653 Kg/L at 15° C*,

American Petroleum Institute (API) *Manual of Petroleum Measurement Standards, Chapter 11.2.2M – Compressibility Factors for Hydrocarbons: 350-637 Kg/m<sup>3</sup> Density (15° C) and -46° C to 60° C Metering Temperature*

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