EXPLANATORY STATEMENT

Carbon Credits (Carbon Farming Initiative) Act 2011

Carbon Credits (Carbon Farming Initiative—High Efficiency Commercial Appliances) Methodology Determination 2015

Background: Emissions Reduction Fund

The *Carbon Credits (Carbon Farming Initiative) Act 2011* (the ***Act***) enables the crediting of greenhouse gas abatement from emissions reduction activities across the economy. Greenhouse gas abatement is achieved either by reducing or avoiding emissions or by removing carbon from the atmosphere and storing it in soil or trees.

In 2014, the Australian Parliament passed the *Carbon Farming Initiative Amendment Act 2014*, which establishes the Emissions Reduction Fund (ERF). The ERF has three elements: crediting emissions reductions, purchasing emissions reductions, and safeguarding emissions reductions.

Emissions reduction activities are undertaken as offsets projects. The process involved in establishing an offsets project is set out in Part 3 of the Act. An offsets project must be covered by, and undertaken in accordance with, a methodology determination.

Subsection 106(1) of the Act empowers the Minister to make, by legislative instrument, a methodology determination. The purpose of a methodology determination is to establish procedures for estimating abatement (emissions reduction and sequestration) from eligible projects and rules for monitoring, record keeping and reporting. These methodologies will help ensure that emissions reductions are genuine—that they are both real and additional to business-as-usual.

In deciding to make a methodology determination the Minister must have regard to the advice of the Emissions Reduction Assurance Committee (ERAC), an independent expert panel established to advise the Minister on proposals for methodology determinations. The Minister must not make or vary a methodology if the ERAC considers it inconsistent with the offsets integrity standards, which are set out in section 133 of the Act. The Minister will also consider any adverse environmental, economic or social impacts likely to arise as a result of projects to which the determination applies.

Offsets projects that are undertaken in accordance with the methodology determination and approved by the Clean Energy Regulator (the Regulator) can generate Australian Carbon Credit Units (ACCUs), representing emissions reductions from the project.

Project proponents can receive funding from the ERF by submitting their projects into a competitive auction run by the Regulator. The Government will enter into contracts with successful proponents, which will guarantee the price and payment for the future delivery of emissions reductions.

Further information on the ERF is available on the Department of the Environment website at: www.environment.gov.au/emissions-reduction-fund.

Background: High efficiency commercial appliances

The *Carbon Credits (Carbon Farming Initiative—High Efficiency Commercial Appliances) Methodology Determination 2015* (the Determination) provides for crediting emissions reductions from projects that install high efficiency commercial appliances in commercial operations, with or without replacing existing appliances. The installation of a new commercial appliance that has a high efficiency level can reduce emissions associated with the generation of electricity that would otherwise be consumed by a less energy efficient appliance.

The types of commercial appliances covered by the Determination are:

- ***Liquid-chilling packages***;
- ***Air conditioners****;*
- ***Close control air conditioners***; and
- ***Refrigerated display cabinets***.

Under the Determination, a ***high efficiency commercial appliances project*** involves one or more ***installations*** of ***equipment units***. Each unit must be registered in accordance with the *Greenhouse and Energy Minimum Standards Act 2012* (the GEMS Act) and meet minimum energy performance levels set out in the Determination and the ***efficiency factor document*** published on the Department's website. The abatement from the project is determined by adding up the abatement from each equipment unit, which is calculated using deemed values and formulas. This approach is used to minimise administrative and compliance requirements for project proponents.

Project proponents who could use this Determination include owners, operators or tenants of commercial and industrial buildings that contain the types of commercial appliances covered by this Determination, and manufacturers or suppliers of these appliances.

The Determination is based on similar methods under the New South Wales Energy Savings Scheme (ESS) and the Victorian Energy Efficiency Target scheme (VEET). In line with advice from stakeholders, the Department has sought to maintain consistency with methods from state energy efficiency schemes. There remain, however, some differences due to overall scheme design and coverage.

Application of the Determination

The Determination sets out the detailed rules for implementing and monitoring offsets projects that reduce greenhouse gas emissions associated with the use of new highly efficient liquid-chilling packages, air conditioners, close control air conditioners and refrigerated display cabinets in commercial operations.

Proponents are encouraged to read the Determination in combination with any applicable regulations, rules, and guidance documents.

The Determination reflects the requirements of the Act's offsets integrity standards and helps to ensure that emissions reductions are real and additional to business-as-usual. The offsets integrity standards require that an eligible project should result in carbon abatement that is unlikely to occur in the ordinary course of events and is eligible carbon abatement under the Act. In summary, the offsets integrity standards also require that:

- amounts are measurable and capable of being verified;

- the methods used are supported by clear and convincing evidence;
- material emissions which are a direct consequence of the project are deducted; and
- estimates, assumptions or projections used in the Determination should be conservative.

Project proponents wishing to implement projects under the Determination, must make an application to the Regulator under section 22 of the Act. They must also meet the general eligibility requirements for an offsets project set out in subsection 27(4), which include compliance with the requirements set out in the Determination, and the additionality requirements in subsection 27(4A) of the Act. The additionality requirements are:

- the newness requirement;
- the regulatory additionality requirement; and
- the government program requirement.

The government program requirement is provided for in the *Carbon Credits (Carbon Farming Initiative) Rule 2015*. Subsection 27(4A) of the Act provides that a methodology determination may specify requirements in lieu of the newness requirement or the regulatory additionality requirement. The Determination does not specify any requirement in lieu of the regulatory additionality requirement, and so the general requirement applies to high efficiency commercial appliances projects. Section 11 of the Determination specifies a requirement in lieu of the newness requirement. This is explained in section 11 of Attachment A to this Explanatory Statement.

Public consultation

The Determination has been developed by the Department of the Environment in collaboration with the Regulator and a technical working group of experts from the built environment and energy efficiency sectors. The technical working group reviewed versions of this Determination prior to the release of an exposure draft Determination for public consultation.

The exposure draft Determination was published on the Department's website for public consultation from 17 March 2015 to 15 April 2015. Details of non-confidential submissions are provided on the Department of the Environment website, www.environment.gov.au.

Determination details

Details of the Determination are at Attachment A. Numbered sections in this Explanatory Statement align with the relevant sections of the Determination. The definition of terms highlighted in ***bold italics*** can be found in the Determination.

For the purpose of subsections 106(4), (4A) and (4B) of the Act, in making this Determination the Minister has had regard to, and agrees with, the advice of the Emissions Reduction Assurance Committee that the Determination complies with the offsets integrity standards and that the proposed Determination should be made. The Minister is satisfied that the carbon abatement used in ascertaining the carbon dioxide equivalent net abatement amount for a project is eligible carbon abatement from the project. The Minister also had regard to whether any adverse environmental, economic or social impacts are likely to arise

from the carrying out of the kind of project to which the Determination applies and other relevant considerations.

A Statement of Compatibility prepared in accordance with the *Human Rights (Parliamentary Scrutiny) Act 2011* is at Attachment B.

Attachment A

Details of the Methodology Determination

Part 1 Preliminary

1 Name

The full name of the Determination is the *Carbon Credits (Carbon Farming Initiative—High Efficiency Commercial Appliances) Methodology Determination 2015.*

2 Commencement

Section 2 provides that the Determination commences on the day after it is registered on the Federal Register of Legislative Instruments.

3 Authority

Section 3 provides that the Determination is made under subsection 106(1) of the Act.

4 Duration

Under subparagraph 122(1)(b)(i) of the Act, a methodology determination remains in force for the period specified in the Determination. The Determination will remain in force for the duration set out in this section unless revoked in accordance with section 123 of the Act or section 42 of the *Legislative Instruments Act 2003*.

Section 4 provides that the Determination will be in force from its commencement (as provided for in section 2) until the day before it would otherwise be repealed under subsection 50(1) of the *Legislative Instruments Act 2003*.

Instruments are repealed under that provision on the first 1 April or 1 October following the tenth anniversary of registration of the Determination on the Federal Register of Legislative Instruments. In accordance with subparagraph 122(1)(b)(i) of the Act, paragraph 4(b) of the Determination sets out the time that the Determination would expire.

If the Determination expires in accordance with section 122 of the Act or is revoked under section 123 of the Act during a crediting period for a project to which the Determination applies, the Determination will continue to apply to the project during the remainder of the crediting period under subsections 125(2) and 127(2) of the Act. Project proponents may apply to the Regulator during a reporting period to have a different methodology determination apply to their projects from the start of that reporting period (see subsection 128(1) of the Act).

Under section 27A of the Act, the Emissions Reduction Assurance Committee may also suspend the processing of applications under a determination if there is reasonable evidence that the methodology determination does not comply with one or more of the offsets integrity standards. This does not impact applications for declaration already received by the Regulator before such a suspension or declared eligible offset projects which apply the Determination.

5 Definitions

Section 5 defines a number of terms used in the Determination.

Generally, where terms are not defined in the Determination but are defined in section 5 of the Act, they have the meaning given by the Act.

Under section 23 of the *Acts Interpretation Act 1901*, words in the Determination in the singular number include the plural and words in the plural number include the singular. Key definitions in section 5 of the Determination include those set out below.

commissioned, for an installed equipment unit, means when it is first used to provide heating or cooling services after it has been established that it operates as intended following the installation.

efficiency factor document is a document published by the Department on its website that contains baseline and high efficiency levels that are applicable to the calculation of abatement for equipment units installed under a project. Detailed information about this document, including the applicable version of the document, is set out in section 16 of the Explanatory Statement.

equipment unit is defined to mean a unit of one of the following categories of equipment:

- a liquid-chilling package;
- an air conditioner;
- a close control air conditioner;
- a refrigerated display cabinet.

The Determination applies only to these four categories of commercial appliances.

GEMS Register has the same meaning as in the *Greenhouse and Energy Minimum Standards Act 2012*.

The GEMS Register is used to ascertain the values for rating and performance when calculating the ***net abatement amount*** of a high efficiency commercial appliances project. For information on the GEMS Register, including the applicable version to use, see sections 10 and 15 of this Explanatory Statement.

fully operational, for an installed equipment unit, means that it is capable of providing the intended heating or cooling function.

high efficiency commercial appliances project is defined in section 7.

The definition in section 7 provides that such a project is one involving the installation of one or more equipment units.

net abatement amount is defined by reference to a high efficiency commercial appliance project for a reporting period to mean the carbon dioxide equivalent net abatement amount for the project in the reporting period for the purposes of paragraph 106(1)(c) of the Act. The term is used throughout the Determination and has been included to assist with readability.

Incorporation by reference of documents

Section 14 of the *Legislative Instruments Act 2003* together with subsection 106(8) of the Act, permit the Determination to make provision in relation to a matter by applying, adopting or incorporating, with or without modification, the provisions of any disallowable legislative

instrument, or any other instrument or writing, as in force or existing either when the Determination takes effect at a particular time, or as in force or existing from time to time.

In this Determination a reference to the *Greenhouse and Energy Minimum Standards Act 2012* (the GEMS Act) or a legislative instrument under this Act (such as a GEMS determination), refers to the GEMS Act or legislative instrument in force from time to time. They are available at: www.comlaw.gov.au.

Where a definition refers to an Australian and New Zealand Standard (AS/NZS), the standard may be accessed through www.saiglobal.com. In applying a definition that references an AS/NZS standard, the version of the standard for which the year is specified in the definition would apply. This ensures that any changes to definitions in updated AS/NZS standards are not automatically applied under the Determination, as this could have unintended consequences on the scope or application of the Determination.

The Determination contains references to other documents as in force from time to time. These are the ***BCA***, the ***Climate Zone Map***, and the ***NGA factors document***.

- The ***BCA*** is the Building Code of Australia, forming part of the National Construction Code, as in force from time to time. The BCA is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and State and Territory Governments. The BCA is available from the ABCB.
- The Climate Zone Map is prepared by the ABCB, and is relied on as in force from time to time in order to define the ***NCC climate zones***. The Climate Zone Map is available from the ABCB.
- The ***NGA factors document*** is published by the Department on its website, as in force from time to time. The use of the NGA factors document is discussed in detail in this explanatory statement as part of the discussion of calculation of the net abatement amount. The document is available at: www.environment.gov.au.

Section 6 of the Determination provides for which version of these documents is relevant in relation to a particular reporting period, and is discussed further below.

6 References to factors and parameters from external sources

The calculation of the net abatement amount in the Determination includes factors and parameters determined from other sources, e.g. the National Construction Code Climate Zones are referred to when determining the heating and cooling capacity factor for air conditioners.

Section 6 specifies that such factors or parameters should be determined by using the version of the external source that is current at the end of the reporting period, unless the Determination specifies otherwise (see paragraph 6(2)(a)) or it is not possible to define or calculate the factor or parameter by reference to the instrument or writing as in force at the end of the reporting period (see paragraph 6(2)(b)).

It is not expected that paragraph 6(2)(b) will apply under this Determination. However, if paragraph 6(2)(b) does apply, it is expected that project proponents will use the version of legislative instruments in force at the time at which monitoring or other actions were conducted (see section 10 of the *Acts Interpretation Act 1901* and section 13 of the *Legislative Instruments Act 2003* which operate such that references to external documents

which are legislative instruments are to versions of those instruments as in force from time to time).

Subsection 32(3) sets out reporting requirements to be followed when paragraph 6(2)(b) applies.

Part 2 High efficiency commercial appliances project

7 High efficiency commercial appliances project

The effect of paragraphs 27(4)(b) and 106(1)(a) of the Act is that a project must be covered by a methodology determination, and that the methodology determination must specify the kind of offsets project to which it applies.

Section 7 provides that the Determination applies to an offsets project that involves the activity of installing one or more high efficiency liquid-chilling packages, air conditioners, close control air conditioners, or refrigerated display cabinets (referred to as ***equipment units*** in the Determination) to provide heating or cooling services to or in a building, or part of a building that is of a type listed in Schedule 6. Each installation must be reasonably expected to:

- result in lower energy usage than would result if high efficiency equipment units were not used for the relevant heating or cooling; and
- result in eligible carbon abatement.

An installation covered by this Determination does not have to be part of a wider action. It could be:

- replacing an existing equipment unit;
- supplementing an existing system by installing an additional equipment unit; or
- installing an equipment unit to service a new facility or function.

In the Determination such a project is referred to as a ***high efficiency commercial appliances project***.

The additionality of the abatement delivered by projects under this Determination is established by the requirement that all installed equipment units must meet the high efficiency thresholds that are set out in section 10. Equipment units that meet these thresholds are not commonly installed. A typical installation would involve a unit with market average performance. Therefore, this Determination covers installations regardless of whether the unit replaces an existing one, or is a new (greenfield) installation, as long as these thresholds are met. It should also be noted that the calculation of abatement set out in Part 4 is the same for greenfield and non-greenfield installations. This is based on the principle of comparing the project energy consumption to the baseline energy consumption that would have occurred if an equipment unit of average efficiency level were installed, instead of a high efficiency equipment unit.

Part 3 Project requirements

8 Operation of this Part

The effect of paragraph 106(1)(b) of the Act is that a methodology determination must set out requirements that must be met for a project to be an eligible offsets project. Under paragraph 27(4)(c) of the Act, the Regulator must not declare that a project is an eligible offsets project unless the Regulator is satisfied that the project meets these requirements.

Part 3 of the Determination specifies a number of requirements that must be met in order for a project to be an eligible offsets project.

9 Information to be included in application for declaration

Section 22 of the Act provides that a person may apply to the Regulator for the declaration of an offsets project as an eligible offsets project. Section 9 of the Determination requires the following information to be included in the application for a high efficiency commercial appliances project:

- for each installation that has been identified at the time of application:
    - the class of the equipment unit to be installed, using the classes listed in Schedule 2, 3, 4 and 5;
    - the type of building, or part of a building, that will be served by the equipment unit, using the classes listed in Schedule 6; and
    - whether the installation is replacing existing equipment units, supplementing existing equipment units or providing a new service.
- for installations not individually identified at the time of application:
    - the classes of equipment unit expected to be installed, using the classes listed in Schedule 2, 3, 4 and 5; and
    - the type of building, or part of a building, that is expected to be served by the equipment unit, using the classes listed in Schedule 6.

Paragraph 9(1)(b) relating to installations not individually identified at the time of application is intended to allow a project proponent to apply for declaration without having resolved or identified every detail of every installation under the project. Details about the equipment units will need to be provided later in a future offsets report if such an equipment unit is included in a calculation undertaken in accordance with the relevant requirements set out under the legislative rules and Part 4 of the Determination.

10 Equipment unit requirements

This section lists the requirements that each equipment unit installed as part of the project must comply with at the time the equipment unit is commissioned. These are:

- the equipment unit must be new (this is to ensure that new equipment units are installed);
- the model of the equipment unit must be on the GEMS Register (matters relating to the energy consumption of equipment units are recorded on the GEMS Register and are used in calculating the net abatement amount for an equipment unit under Part 4);

- to ensure that installed equipment units have a high efficiency level, the following requirements must be satisfied (these requirements are intended to ensure a step change in efficiency beyond standard market practice):
    - a liquid-chilling package must be of a model whose integrated part load value is equal to or greater than the high efficiency threshold specified for such a model in the ***efficiency factor document***;
    - an air conditioner must be of a model that meets the relevant high efficiency levels in the efficiency factor document. The relevant high efficiency levels will depend on whether the unit can be used for heating, cooling or both, and the NCC climate zone in which it is installed, as outlined in the table below.

Table showing relevant high efficiency levels for air conditioners

	High efficiency level	
	Must be of a model whose annual energy efficiency ratio for cooling on the GEMS Register is equal to or greater than the high efficiency threshold for such a model in the efficiency factor document.	Must be of a model whose annual coefficient of performance for heating on the GEMS Register is equal to or greater than the high efficiency threshold for such a model in the efficiency factor document.
Cooling only	✓	
Heating and cooling + installed in NCC climate zones 1 – 3	✓	
Heating and cooling + installed in NCC climate zones 4 – 8	✓	✓
Heating only		✓

    - a close control air conditioner must be of a model whose ***sensible energy efficiency ratio*** is equal to or greater than the high efficiency threshold specified for such a model in the efficiency factor document;
    - a refrigerated display cabinet must be of a model whose ***efficiency value*** is equal to or lower than the high efficiency threshold specified for such a model in the efficiency factor document. The efficiency value (measured in kWh/day/m^2) for a particular model is established using model product data published on the GEMS Register, by dividing the total energy consumption (in kWh/day) by the display area (in m^2) for that model. Accordingly, the lower the number, the higher the efficiency of the model.
- the equipment unit must provide heating or cooling service to a commercial building or part of a building, that is of a class set out in Schedule 6. This will have the effect of excluding residential installations.

The applicable efficiency factor document referred to in this section is determined in accordance with the requirements set out in subsections 16(5) and (6).

11 Requirement in lieu of newness requirement

Transitional provisions in the Act allowed prospective proponents who gave notice of their intentions before the date of Proclamation of that Act to have the newness of their projects assessed as at the time of their notice, provided that they made the section 22 application before 1 July 2015. The effect of this section is to extend this deadline to 1 July 2016 for this Determination.

Part 4 Net abatement amount

Division 1 Preliminary

12 Operation of this Part

Paragraph 106(1)(c) of the Act provides that a methodology determination must specify how to calculate the carbon dioxide equivalent (CO_2-e) net abatement amount for a high efficiency commercial appliances project in relation to a reporting period. Part 4 sets out this calculation.

13 Overview of gases accounted for in abatement calculations

Section 13 provides a summary of the emissions sources that are assessed in the Determination in order to determine the net abatement amount. The emissions sources which need to be taken into account when calculating abatement for the project are set out in the following table:

Greenhouse gases and emissions sources

Item	Relevant emissions calculation	Emissions source	Greenhouse gas
1	Baseline emissions Project emissions	Electricity consumption	Carbon dioxide (CO_2) Methane (CH_4) Nitrous oxide (N_2O)

14 Equipment units to be used in calculations

Section 14 sets out the equipment units that are to be used in calculations under Part 4.

Subsection 14(1) allows a project proponent to choose not to include a particular installation of an equipment unit in the calculations for a reporting period. For example, if the proponent is not confident that an installed equipment was fully operational. Subsection 14(1) also requires that an equipment unit must be excluded from a calculation for a period if the unit, or part of it, is modified, dismantled or made inoperative in a way that has an effect, that is not minor or trivial, on the abatement for the equipment unit. For example, if a unit is decommissioned and removed from a building that is demolished or completely refitted, or a control component is broken so that the unit is permanently running on full load, this would have an effect that is not minor or trivial and accordingly the unit must be excluded from the calculations. However, this provision is not triggered by minor issues, such as when a light in a refrigerated display cabinet is not working, or one of the status indicator light diodes is broken, which would only have a minor or negligible impact on the calculation of abatement.

Excluded equipment units are not to be included in abatement calculations, either in the baseline or project energy consumption calculations.

15 Data to be used in calculations

When calculating the net abatement amount, the project proponent is required, for each installed equipment unit included in the calculations under Part 4, to record the model identifier of the unit used to identify the product in the GEMS Register and to use data on the

GEMS Register as the time the unit is commissioned. GEMS is a well established and understood national framework to regulate energy efficiency and labelling standards for appliances, including the equipment units covered by this Determination. The requirement to use data on the GEMS Register ensures certainty and accuracy of the data used in the calculations, and minimises administrative and compliance requirements for proponents. The GEMS Register can be accessed from the Energy Rating E3 website at: www.energyrating.gov.au.

16 Efficiency factor document

Section 16 sets out that a reference to the efficiency factor document is a reference to a document on the Department's website (www.environment.gov.au) that contains the following factors for use in calculations:

- baseline efficiency integrated part load values and high efficiency thresholds for liquid-chilling packages;
- baseline annual energy efficiency ratios for cooling and annual coefficients of performance for heating, and high efficiency thresholds for air conditioners;
- baseline integrated part load values and high efficiency thresholds for close control air conditioners; and
- baseline efficiency values and high efficiency thresholds for refrigerated display cabinets.

The baseline factor for a class of products will be determined by the Department using the average of the corresponding factors for those products on the GEMS Register for which the data is publicly available (see section 15 of this Explanatory Statement for further information about the GEMS Register). The baseline factors are used as a proxy for the average energy efficiency level of products in a class. Regardless of whether the installed unit is replacing an old unit or not, these levels are used to calculate the baseline energy consumption that would have occurred if an equipment unit of average efficiency level were installed, instead of a high efficiency equipment unit. This approach is used, rather than a sales weighted average, as sales data is not readily available due to commercial sensitivities associated with companies sharing their data. Industry experts were engaged to review the approach taken in the Determination. The experts drew from sales data available on the New Zealand market, limited sales data on the Australian market, trends in uptake of high efficiency products in European markets, efficiency levels of product ranges of key market players, and qualitative information collected from industry. The review concluded that the baseline levels produced under the approach used in the Determination would be a good proxy for the actual market average or would skew toward the high efficiency end, and therefore abatement calculations under the Determination would produce conservative results.

The high efficiency threshold for a class of products will be determined by the Department using the median of the corresponding factors for those products that are performing better than the level represented by the baseline factor for that class. In other words, the high efficiency threshold will capture the top performing 50 per cent of products that are more efficient than the corresponding baseline energy efficiency level. Effectively, only installations of equipment units within the top quartile (i.e. top 25 per cent) of energy

performance are credited under the Determination. This is a conservative approach to ensure that only the most efficient appliances on the market can generate eligible abatement.

It should be noted that the same baseline energy efficiency levels and high efficiency thresholds apply to both greenfield and non-greenfield installations in calculating the abatement in Part 4.

Subsection 16(5) sets out that, for a provision of the Determination that relates to an installed equipment unit, the default applicable efficiency factor document is the one in force at the time the installation of the equipment unit was completed.

Subsection 16(6) provides that a proponent may choose to apply an earlier version of the efficiency factor document, i.e. the version in force at the time of committing to the purchase of the equipment unit. This only applies if the installed equipment unit was the subject of a contract or purchase order that specified that an equipment unit of that model was to be delivered to the location of the installation. Furthermore, the contract or purchase order must be entered into and dated before the newer version of the efficiency factor document was published. In this case, the proponent may choose to apply the version of the efficiency factor document that was in force on the day the contract or purchase order was entered into.

The default approach set out in subsection 16(5) allows installations with a short lead time between purchase and installation to use one single reference point, i.e. the point of installation, to determine both the version of the efficiency factor document to be used and the time from which the abatement calculation starts. This will simplify compliance and administration processes for proponents. The alternative approach set out in subsection 16(6) allows installations with a long lead time (such as those involving large chillers that are made to order) to use the point of committing to the purchase of the equipment, to determine the version of the efficiency factor document to be used. This will ensure that a proponent would not be unfairly disadvantaged where the eligibility of an equipment unit changes due to a change in the efficiency factor document between committing to the purchase of a unit and its installation.

Subsections 16(7) and 16(8) require the Department to publish the efficiency factor document within three months of the commencement of the Determination and to consider revising the document at 12 month (or shorter) intervals while taking into account the views of the Emissions Reduction Assurance Committee. This will ensure that the factors are updated to reflect changes of products on the GEMS Registry, which will help to maintain the integrity of the abatement calculations.

Subsection 16(9) requires that the Department, when publishing a revised version of the efficiency factor document, must express a commencement date of the revised version that is at least 60 days after its publication on the Department's website. This will provide sufficient warning for proponents to plan and implement affected installations.

Division 2 Method for calculating net abatement amount

17 Summary

This section summarises the method for calculating the net abatement amount.

The net abatement amount for a project for a reporting period is the sum of the abatement during the reporting period resulting from the installation of each equipment unit.

The abatement of an equipment unit is the baseline emissions (i.e. the emissions associated with the electricity that would have been used to operate an equipment unit that is of average energy efficiency) minus the project emissions in relation to the equipment unit (i.e. the emissions associated with the electricity that is used to operate the installed equipment unit). This applies to the installation of a new equipment unit both where it replaces an existing unit and where there was not an equipment unit previously.

18 Net abatement amount (*A*)

The net abatement amount is worked out using equation 2.

Equation 2 provides that the net abatement amount (***A***) is equal to the sum of the abatement for each equipment unit of the project for a reporting period ($\boldsymbol{A_i}$).

The abatement for each equipment unit that is a liquid-chilling package, air conditioner or close control air conditioner ($\boldsymbol{A_i}$) is worked out using equation 3.The abatement for each equipment unit that is a refrigerated display cabinet ($\boldsymbol{A_i}$) is worked out using equation 14.

19 Abatement for liquid-chilling package, air conditioner or close control air conditioner (A_i)

Equation 3 sets out how to calculate the abatement for an equipment unit that is a liquid-chilling package, air conditioner or close control air conditioner ($\boldsymbol{A_i}$ in equation 2).

$\boldsymbol{A_i}$, for each liquid-chilling package, is worked out by:

- determining the baseline energy consumption (that is deemed would have occurred during the reporting period had there been no project) calculated using equation 4 ($\boldsymbol{E_{B,i}}$) and taking away from that result the project energy consumption of that liquid-chilling package calculated using equation 5 ($\boldsymbol{E_{P,i}}$); and

- multiplying that result by the relevant factor for the source of the electricity powering the liquid-chilling package ($\boldsymbol{EF_{elec,i}}$). The relevant factor depends on whether the package is connected to an electricity grid or some other source and is found in the NGA Factors document in force on the declaration day or determined in accordance with subparagraph 19(1)(b)(i) of the definition of $\boldsymbol{EF_{elec,i}}$ based on information provided by the supplier of the electricity. Should the NGA Factors document be used as the source, the relevant factor to be used in the project will remain the same from the date the project was declared an eligible offsets project.

$\boldsymbol{A_i}$, for each air conditioner, is worked out by:

- determining the baseline energy consumption (that is deemed would have occurred during the reporting period had there been no project) calculated using equation 6 ($\boldsymbol{E_{B,i}}$), and taking away from that result the project energy consumption of the air conditioner calculated using equation 9 ($\boldsymbol{E_{P,i}}$); and

- multiplying that result by the relevant factor for the source of the electricity powering the air conditioner ($\boldsymbol{EF_{elec,i}}$). Again, the relevant factor depends on whether the air conditioner is connected to an electricity grid or some other source and is found in the NGA Factors document in force on the declaration day or determined in accordance

with subparagraph 19(1)(b)(i) of the definition of $\boldsymbol{EF_{elec,i}}$ based on information provided by the supplier of the electricity. Should the NGA Factors document be used as the source, the relevant factor to be used in the project will remain the same from the date the project was declared an eligible offsets project.

$\boldsymbol{A_i}$, for each close control air conditioner, is worked out by:

- determining the baseline energy consumption (that is deemed would have occurred during the reporting period had there been no project) calculated using equation 12 ($\mathbf{E_{B,i}}$), and taking away from that result the project energy consumption of the close control air conditioner calculated using equation 13 ($\boldsymbol{E_{P,i}}$); and

- multiplying that result by the relevant factor for the source of the electricity powering the close control air conditioner ($\boldsymbol{EF_{elec,i}}$). Again, the relevant factor depends on whether the air conditioner is connected to an electricity grid or some other source and is found in the NGA Factors document in force on the declaration day or determined in accordance with subparagraph 19(1)(b)(i) of the definition of $\boldsymbol{EF_{elec,i}}$ based on information provided by the supplier of the electricity. Should the NGA Factors document be used as the source, the relevant factor to be used in the project will remain the same from the date the project was declared an eligible offsets project.

The estimation of the baseline energy consumption assumes that a market average item of equipment of the same rating class (for example, the same net sensible cooling capacity range for a close control air conditioner) would have been installed if the high-efficiency equipment unit had not been installed.

In equation 3, the difference between $\boldsymbol{E_{B,i}}$ and $\boldsymbol{E_{P,i}}$ in MWh is multiplied by $\boldsymbol{EF_{elec,i}}$ in kg CO_2-e per kWh to give an emissions value in tonnes CO_2-e. It should be noted that a parameter in kilograms CO_2-e per kWh has the same value in tonnes CO_2-e per MWh. Hence the resultant unit of tonnes CO_2-e for $\boldsymbol{A_i}$ is correct.

20 Baseline energy consumption for a liquid-chilling package ($E_{B,i}$)

Equation 4 sets out how to calculate the baseline energy consumption for each liquid-chilling package ($\boldsymbol{E_{B,i}}$ in equation 3).

$\boldsymbol{E_{B,i}}$ is worked out by:

- dividing the cooling capacity power for the model of the liquid-chilling package as recorded on the GEMS Register ($\boldsymbol{P_{CC,i}}$) by the integrated part load value relevant to that model as specified in the efficiency factor document ($\boldsymbol{IPLV_{B,i}}$); and
- multiplying that result by:
    - 24 (conversion from number of days to number of hours);
    - the number of full days in the reporting period, after the liquid-chilling package was commissioned;
    - the vacancy adjustment factor of 0.9, which takes account of the possibility that the installed unit is out of operation or the use of the premises that it serves is suspended, for reasons other than normal usage pattern, e.g. vacancy between tenancies or shutdown due to unplanned maintenance;

- the capacity factor 0.171; and
- 10^{-3} (conversion from kWh to MWh).

The capacity factor 0.171, which does not have a unit, was developed based on the relevant load profiles used in the *2008 Decision RIS: MEPS and Alternative Strategies for Chillers, Equipment Energy Efficiency Committee of the Ministerial Council on Energy*. While more recent data does not exist, the capacity factor was derived from annual operating hours which are not expected to change significantly over time. The data from this document was based on normal use of equipment, which included downtime due to planned maintenance and holidays, but not shutdown due to non-business-as-usual reasons, e.g. vacancy between tenancies or following a natural disaster. Accordingly the factor of 0.9 is also applied to the energy consumption calculations to reflect unscheduled or unexpected shutdown of the installed units. This factor was developed based on national average vacancy rates for the types of buildings that are covered by this Determination.

21 Project energy consumption for a liquid-chilling package ($E_{P,i}$)

Equation 5 sets out how to calculate the project energy consumption for each liquid-chilling package ($\boldsymbol{E_{P,i}}$ in equation 3).

This equation is the same as equation 4 except that the $\boldsymbol{IPLV_{B,i}}$ has been replaced with $\boldsymbol{IPLV_{P,i}}$ which is the IPLV for the model of the liquid-chilling package that is on the GEMS Register.

22 Baseline energy consumption for an air conditioner ($E_{B,i}$)

Equation 6 sets out how to calculate the baseline energy consumption for each air conditioner ($\boldsymbol{E_{B,i}}$ in equation 3).

$\boldsymbol{E_{B,i}}$ is worked out by adding the cooling baseline energy consumption calculated in equation 7, with the heating baseline energy consumption calculated in equation 8.

For an air conditioner that can only be used for cooling, the heating baseline energy consumption is equal to zero.

For an air conditioner that can only be used for heating, the cooling baseline energy consumption is equal to zero.

23 Baseline cooling energy consumption for an air conditioner ($C_{B,i}$)

Equation 7 sets out how to calculate the baseline cooling energy consumption for each air conditioner ($\boldsymbol{C_{B,i}}$ in equation 6).

$\boldsymbol{C_{B,i}}$ is worked out by:

- dividing the total cooling capacity power on the GEMS Register for that model by the baseline energy efficiency ratio specified in the efficiency factor document; and
- multiplying that result by:
  - 24 (conversion from number of days to number of hours);
  - the number of full days in the reporting period, after the air conditioner was commissioned;

- the vacancy adjustment factor of 0.9, which takes account of the possibility that the installed unit is out of operation or the use of the premises that it serves is suspended, for reasons other than normal usage pattern, e.g. vacancy between tenancies or shutdown due to unplanned maintenance;
- the cooling capacity factor for the appropriate climate zone specified in Schedule 1; and
- 10^{-3} (conversion from kWh to MWh).

24 Baseline heating energy consumption for an air conditioner ($H_{B,i}$)

Equation 8 sets out how to calculate the baseline heating energy consumption for each air conditioner ($\boldsymbol{H_{B,i}}$ in equation 6).

This equation is the same as equation 7 except that the total cooling capacity has been replaced with the total heating capacity for the model of the air conditioner that is on the GEMS Register, which is divided by the annual coefficient of performance for heating as specified in the efficiency factor document.

25 Project energy consumption for an air conditioner ($E_{P,i}$)

Equation 9 sets out how to calculate the project energy consumption for each air conditioner ($\boldsymbol{E_{P,i}}$ in equation 3).

Equation 9 is the same as equation 6 except using project heating and cooling consumption instead of the corresponding baseline values.

For an air conditioner that can only be used for heating, the project cooling energy consumption is equal to zero.

For an air conditioner that can only be used for cooling, the project heating energy consumption is equal to zero.

This Determination accounts for both the heating and cooling components of an air conditioner, depending on the climate zone the air conditioner is installed in. In contrast, some state-based schemes may only consider one of the heating or cooling components. For example, under the Victorian Energy Efficiency Target scheme, only the heating component of an air conditioner is considered. Section 21(2)(d) of the Legislative Rule provides that activities receiving incentive under state-based schemes are not allowed to participate in the ERF. This means although the calculations in the Determination treat abatement achieved by the heating and cooling components of an air conditioner separately, a project that is being credited for energy or emissions savings under a state-based scheme for the heating component of an air conditioner, is not eligible to claim for abatement for the cooling component under this Determination, and vice versa.

26 Project cooling energy consumption for an air conditioner ($C_{P,i}$)

Equation 10 sets out how to calculate project cooling energy consumption for each air conditioner ($\boldsymbol{C_{p,i}}$ in equation 9).

Equation 10 is the same as equation 7, except that the baseline annual energy efficiency ratio has been replaced with the ratio for the air conditioner on the GEMS Register.

27 Project heating energy consumption for an air conditioner ($H_{P,i}$)

Equation 11 sets out how to calculate project heating energy consumption for each air conditioner ($\boldsymbol{H_{p,i}}$ in equation 9).

Equation 11 is the same as equation 8, except that the baseline annual coefficient of performance for heating has been replaced with the coefficient for the air conditioner on the GEMS Register.

28 Baseline energy consumption for a close control air conditioner ($E_{B,i}$)

Equation 12 sets out how to calculate the baseline energy consumption for each close control air conditioner ($\boldsymbol{E_{B,i}}$ in equation 3).

$\boldsymbol{E_{B,i}}$ is worked out by:

- dividing the net sensible cooling capacity power for the model of the close control air conditioner as recorded on the GEMS Register ($\boldsymbol{P_{CC,i}}$) by the baseline sensible energy efficiency ratio specified for that model in the efficiency factor document ($\boldsymbol{EERS_{B,i}}$); and
- multiplying that result by:
    - 24 (conversion from number of days to number of hours);
    - the number of full days in the reporting period, after the close control air conditioner was commissioned;
    - the vacancy adjustment factor of 0.9, which takes account of the possibility that the installed unit is out of operation or the use of the premises that it serves is suspended, for reasons other than normal usage pattern, e.g. vacancy between tenancies or shutdown due to unplanned maintenance;
    - the capacity factor 0.65; and
    - 10^{-3} (conversion from kWh to MWh).

The capacity factor 0.65, which does not have an unit, was developed based on the data used in the *2008 Decision RIS: MEPS and Alternative Strategies for Close Control Air Conditioning Units, Equipment Energy Efficiency Committee of the Ministerial Council on Energy*. While more recent data does not exist, the capacity factor was derived from annual operating hours which are not expected to change significantly over time. The data from this document was based on normal use of equipment, which included downtime due to planned maintenance and holidays, but not shutdown due to non-business-as-usual reasons, e.g. vacancy between tenancies or following a natural disaster. Accordingly the factor of 0.9 is also applied to the energy consumption calculations to reflect unscheduled or unexpected

shutdown of installed units. This factor was developed based on national average vacancy rates for the types of buildings that are covered by this Determination.

29 Project energy consumption for close control air conditioner ($E_{P,i}$)

Equation 13 sets out how to calculate the project energy consumption for each close control air conditioner ($\boldsymbol{E_{P,i}}$ in equation 3).

This equation is the same as equation 12 except that the baseline sensible energy efficiency ratio has been replaced with the ratio for the model of the close control air conditioner on the GEMS Register.

30 Abatement for a refrigerated display cabinet (A_i)

Equation 14 sets out how to calculate the abatement for an equipment unit that is a refrigerated display cabinet ($\boldsymbol{A_i}$ in equation 2).

$\boldsymbol{A_i}$ is worked out by:

- multiplying the baseline efficiency for the model of the refrigerated display cabinet specified in the efficiency factor document by the total display area of that model of cabinet on the GEMS Register; and
- taking away from that result the daily total energy consumption of the cabinet for that model on the GEMS Register; and
- multiplying that result by:
    - the number of full days in the reporting period, after the refrigerated display cabinet was commissioned;
    - the vacancy adjustment factor of 0.9, which takes account of the possibility that the installed unit is out of operation or the use of the premises that it serves is suspended, for reasons other than normal usage pattern, e.g. vacancy between tenancies or shutdown due to unplanned maintenance;
    - the relevant factor for the source of the electricity powering the refrigerated display cabinet ($\boldsymbol{EF_{elec,i}}$), which has the same meaning as in equation 3; and
    - 10^{-3} (conversion from kg CO_2-e to tonnes CO_2-e).

Part 5 Reporting, notification and record-keeping requirements

Subsection 106(3) of the Act provides that a methodology determination may subject the project proponent of an eligible offsets project to specified reporting, notification, record-keeping and monitoring requirements.

Under Parts 17 and 21 of the Act, a failure to comply with these requirements may constitute a breach of a civil penalty provision, and a financial penalty may be payable.

Reporting periods

The Act and subordinate legislation provide for flexible reporting periods generally between six months and two years in duration (with monthly reporting available if abatement in a reporting period meets or exceeds 2000 tonnes of carbon dioxide equivalent).

Audit requirements

The Act provides for a risk-based approach to auditing emissions reductions. Subsections 13(1) and 76(4) of the Act provide for legislative rules to be made by the Minister, specifying the level of assurance, and the frequency and scope of the audit report that must be provided with project reports for different types of projects. These can be found in the *Carbon Credits (Carbon Farming Initiative) Rule 2015.*

Reporting, notification and record-keeping requirements

In addition to the requirements in the Determination, the Act and the *Carbon Credits (Carbon Farming Initiative) Rule 2015* specify other reporting, notification, record-keeping, and monitoring requirements that apply to all ERF projects.

Division 1 Offsets report requirements

31 Operation of this Division

Under paragraph 106(3)(a) of the Act, a methodology determination may set out requirements to include specified information in each offsets report. Division 1 sets out information that must be included in an offsets report about a high efficiency commercial appliances project.

32 Information that must be included in an offsets report

Further to requirements under the Act and subordinate legislation, section 32 sets out specific additional information that must be included in each offsets report for a high efficiency commercial appliances project for a reporting period.

Subsection 32(1) provides that each offsets report must, for each equipment unit included in the calculation of the net abatement amount, include its location, model number, serial number, the class of equipment unit as per Schedules 2 to 5 and whether it was included in the most recent previous offsets report; or is an old installation that was excluded from the previous report; or is a new installation that has not been included in a previous report. This information must be provided in a manner and form approved by the Regulator.

Where an equipment unit was included in the calculations for an earlier reporting period, but is not included in the calculations for the current reporting period, subsection 32(2) requires the offsets report for the current period to specify:

- the reason for the exclusion; and
- whether the exclusion is intended to be temporary or permanent.

This information allows for easy comparison of an offsets report, including the net abatement amount, with a previous or future report.

Subsection 32(3) specifies additional reporting requirements that apply if it is not possible to define or calculate a factor or parameter by reference to external sources as in force at the end of the reporting period. This information allows the Regulator to assess whether the use of another version of the external sources by the proponent in calculating the abatement is appropriate and justified.

Division 2 Notification requirements

33 Operation of this Division

Under paragraph 106(3)(b) of the Act, a methodology determination may set out requirements to notify the Regulator of matters relating to an eligible offsets project. Division 2 sets out requirements to notify the Regulator of certain matters relating to a high efficiency commercial appliances project that is an eligible offsets project.

34 Notification requirements

This section requires the project proponent to notify the Regulator of any safety or product performance issues that have been identified with equipment units installed or proposed to be installed in relation to the project. The notification of safety issues must occur as soon as practicable after the proponent becomes aware of the issue, while the notification of product performance issues must occur within 30 days after the proponent becomes aware of the issue. Only product performance issues that involve a product recall notice being issued, or that affect more than 5 per cent of the installations of the project or 50 installations must be notified.

Division 3 Record-keeping requirements

35 Operation of this Division

Under paragraph 106(3)(c) of the Act, a methodology determination may set out record-keeping requirements for an eligible offsets project. This section provides that Division 3 sets out record-keeping requirements for a high efficiency commercial appliances project that is an eligible offsets project.

36 Record-keeping requirements

Section 36 sets out that the proponent must keep a record of the date each equipment unit was commissioned, including evidence of the commissioning date such as an air balance report. If a unit, or part of it, is dismantled or made inoperative so that it is required to be excluded

from the calculations in Part 4, the proponent must also keep record of the date that this occurs. A record of the contract or purchase order for an installed equipment unit must also be kept if the proponent chose to use subsection 16(6) to apply an earlier version of the efficiency factor document for the unit.

In addition to the above record-keeping requirements, there are general requirements under the Act and legislative rules that apply to all ERF projects. Proponents are required to keep evidence of their compliance with project requirements and that calculations are done correctly according to the methodology.

Part 6 Dividing a high efficiency commercial appliances project

37 Division or project for reporting purposes

This section provides that for the purpose of submitting an offsets report to the Regulator pursuant to subsection 77A(2) of the Act, a project may be divided into parts only if each part would qualify as a high efficiency commercial appliances project.

This section includes a requirement that, if a proponent chooses to divide a project for the purpose of submitting offsets reports, any divided part needs to have met a minimum of 2,000 tonnes of abatement in the reporting period before the division.

This requirement has been included given the possibility that – without this limitation – a project could be divided into a large number of very small parts, imposing a significant administrative burden on the Regulator and the proponent. For example, in a project involving the installation of 200 air conditioners in fast food restaurants, a proponent could submit 200 offsets reports covering a six month reporting period, with each report calculating 10 tonnes of emissions reductions.

This risk is more acute under this Determination which involves multiple installations of equipment, compared to other determinations which support single projects (e.g. landfill gas capture), or a much smaller number of individual installations (e.g. commercial buildings energy efficiency upgrades). These types of projects could not be divided into a large number of separate parts for reporting purposes.

It is important to note that if a high efficiency commercial appliances project is not divided for the purpose of submitting offsets reports, the 2,000 tonne threshold would not apply: i.e. if a project delivered 800 tonnes of abatement during a reporting period, it could still submit that offsets report in line with reporting requirements under the Act.

Section 37(c) further requires that all installations that service areas or buildings with the same physical address must be included in the same part. This is intended to avoid complications where multiple installations of the same appliance at the same physical address would be difficult to differentiate for reporting and verification purposes.

Schedule 1- Air conditioner capacity factors

This schedule contains the cooling and heating capacity factors that are used for calculating baseline and project energy consumption for air conditioners, as set out in sections 23, 24, 26 and 27. These factors were developed using relevant data collected for the report *Cold Hard Facts – The Refrigeration and Air Conditioning Industry in Australia Report, Energy Strategies*. The data from this report was based on normal use of equipment, which included downtime due to planned maintenance and holidays, but not shutdown due to non-business-as-usual reasons, e.g. vacancy between tenancies or follows a natural disaster. Accordingly the factor of 0.9 is applied to the energy consumption calculations to reflect unscheduled or unexpected shutdown of installed units. A copy of the report is available on the Department of the Environment website: www.environment.gov.au. This factor was developed based on national average vacancy rates for the types of buildings that are covered by this Determination.

Schedule 2 – Classification of liquid-chilling packages

This schedule contains the classes for liquid-chilling packages that are covered by this Determination. These classes should be referred to when providing information in the project application, as set out in Part 3. These classes align with the way that MEPS are specified for liquid-chilling packages under GEMS.

Schedule 3 – Classification of air conditioners

This schedule contains the classes for air conditioners that are covered by this Determination. These classes should be referred to when providing information in the project application, as set out in Part 3. These classes align with the way that MEPS are specified for air conditioners under GEMS.

Schedule 4 – Classification of close control air conditioners

This schedule contains the classes for close control air conditioners that are covered by this Determination. These classes should be referred to when providing information in the project application, as set out in Part 3. These classes align with the way that MEPS are specified for close control air conditioners under GEMS.

Schedule 5 – Classification of refrigerated display cabinets

This schedule contains the classes for refrigerated display cabinets that are covered by this Determination. These classes should be referred to when providing information in the project application, as set out in Part 3. These classes align with the way that MEPS are specified for refrigerated display cabinets under GEMS.

Schedule 6 – Types of buildings and parts of buildings

This schedule contains the building types to which installed equipment units must provide their heating or cooling service for units to be included in a project. These types should be referred to when providing information in the project application, as set out in Part 3. These types largely align with the Building Code of Australia building classes. Building classes 1, 2

(except common areas) and 4 are not included in the list to ensure that residential installations are excluded from this Determination. Residential installations have different operating parameters from commercial installations and are not covered by the scope of this Determination.

Statement of Compatibility with Human Rights

Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011

Carbon Credits (Carbon Farming Initiative— High Efficiency Commercial Appliances) Methodology Determination 2015

This Legislative Instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

Overview of the Legislative Instrument

The *Carbon Credits (Carbon Farming Initiative—High Efficiency Commercial Appliances) Methodology Determination 2015* (the Determination) sets out the detailed rules for implementing offsets projects that avoid greenhouse gas emissions by installing high efficiency appliances in commercial operations, with or without replacing existing appliances. The types of appliances covered by the Determination are liquid-chilling packages, air conditioners, close control air conditioners and refrigerated display cabinets.

Project proponents wishing to implement the Determination must make an application to the Clean Energy Regulator (the Regulator) and meet the eligibility requirements set out under the Determination. Offsets projects that are approved by the Regulator can generate Australian Carbon Credit Units, representing emissions reductions from the project.

Project proponents can receive funding from the Emissions Reduction Fund by submitting their projects into a competitive auction run by the Regulator. The Government will enter into contracts with successful proponents, which will guarantee the price and payment for the future delivery of emissions reductions.

Human rights implications

This Legislative Instrument does not engage any of the applicable rights or freedoms.

Conclusion

This Legislative Instrument is compatible with human rights as it does not raise any human rights issues.

Greg Hunt, Minister for the Environment