Australian Capital Territory

Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2011

Disallowable Instrument DI2011- 257

made under the

Climate Change and Greenhouse Gas Reductions Act 2010 s 11 (Measuring greenhouse gas emissions – determination)

1   Name of instrument

This instrument is the *Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2011*.

2   Commencement

This instrument commences on the day after it is notified.

3   Determination of method for measuring greenhouse gas emissions

I determine the method for measuring the amount of greenhouse gas emissions in the ACT for the year (the *annual emissions amount*) as set out in the schedule attached to this instrument.

Simon Corbell MLA
Minister for the Environment and Sustainable Development

23 September 2011

1. Objects of the determination

This determination sets out the method for the measurement of greenhouse gas emissions arising from sources, and attributable to activities located within, the geographic boundary of the Australian Capital Territory (ACT).

2. Application of the determination

The method determined in this instrument must be used to measure the amount of greenhouse gas emissions in the ACT for the year (the annual emissions amount) in the annual report prepared by the independent entity as required under section 12 of the Act.

3. Emissions covered

The emissions covered by this determination are:

- Scope 1 emissions from:
    - fuel combustion
    - fugitive emissions from fuels
    - industrial processes
    - agriculture
    - land use, land use change and forestry, and
    - waste.

- Scope 2 emissions from the consumption of electricity.
- Scope 3 emissions from electricity transmission and distribution losses.

The annual data on these emissions will be obtained from the National Greenhouse Accounts except for the following:

- indirect electricity
- natural gas consumption
- wood fuel combustion, and
- road transport.

4. Method

The method for calculating the emissions for which annual data will not be obtained from the National Greenhouse Accounts will be made using the following equations:

Equation 1: Stationary energy combustion emissions – indirect electricity

$$EIE = \frac{((DL \times TL) \times QE - GP) \times EFE}{1000}$$

Where:

EIE is emissions from electricity consumption expressed in tonnes of CO_2-e

DL is the distribution loss factor for ActewAGL Distribution for the relevant financial year

TL is the transmission loss factor for electricity supplied to the ACT for the relevant financial year

QE is the consumption of purchased electricity expressed in kW hours

GP is the consumption of purchased GreenPower expressed in kW hours

EFE is the emissions factor for scope 2 electricity consumption for NSW/ACT in kilograms of CO_2-e emissions per kilowatt hour.

Equation 2: Stationary energy combustion emissions – natural gas

$$ENG = \frac{QNG \times \sum_j EFNG_j}{1000}$$

Where:

ENG is emissions from natural gas consumption expressed in tonnes of CO_2-e

QNG is the consumption of purchased natural gas less consumption by ACTION Buses expressed in megajoules

$EFNG_j$ is the emissions factor for natural gas combustion for greenhouse gas type $j = CO_2$, CH_4 and N_2O in kilograms of CO_2-e per gigajoule

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Equation 3: Stationary energy combustion emissions – wood fuel

$$EWF = \sum_i \frac{QWF \times ECWF \times UWF_i \times \sum_j EFWF_{ij}}{1000}$$

Where:

EWF is emissions from wood fuel consumption expressed in tonnes of CO_2-e

QWF is the consumption of dry wood expressed in tonnes

$ECWF$ is the energy content factor for dry wood expressed in gigajoules per tonne

UWF_i is the share of wood fuel consumption used in activity type i = heating and stoves

$EFWF_{ij}$ is the emissions factor for activity type i for greenhouse gas type j = CH_4 and N_2O in kilograms of CO_2-e per gigajoule

Equation 4: Transport fuel emissions – road transport

$$ERT = \sum_i \frac{QRT_i \times ECRT_i \times \sum_j EFRT_{ij}}{1000}$$

Where:

ERT is emissions from road transport vehicles expressed in tonnes of CO_2-e

QRT_i is the quantity of transport fuel type i = petrol, diesel, and LPG sold measured in kilolitres and CNG consumed by ACTION Buses expressed in cubic metres.

$ECRT_i$ is the energy content factor for transport fuel type i expressed in gigajoules per kilolitre or gigajoules per cubic metre

$EFRT_{ij}$ is the emissions factor for transport fuel type i for greenhouse gas type j = CO_2, CH_4 and N_2O in kilograms of CO_2-e emissions per gigajoule

This is Schedule to the Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2011

5. Annual report about greenhouse gas emissions and targets

The annual report prepared by the independent entity as required under section 12 of the Act must include the information as calculated in the following table:

Greenhouse Gas Source and Sink Categories			Total (CO_2-e) Gg (kilo tonnes)
Total ACT emissions and removals			1+2+3+4+5
1 Energy			A+B
	A Fuel combustion activities		a+b+c+d
		Electricity	a[1]
		Natural gas	b[2]
		Transport fuels	c[3]
		Fuel wood	d[4]
	B Fugitive emissions from fuels		e
		Natural gas leakage	e[5]
2 Industrial processes			f+g
		Consumption of Halocarbons and F_6	f[5]
		Other	g[5]
3 Agriculture			h+i
		Enteric fermentation	h[5]
		Agricultural soils	i[5]
4 Land use change and forestry			j
		Afforestation and deforestation	j[5]
5 Waste			k+i
		Solid waste disposal on land	k[5]
		Wastewater handling	i[5]
Total emissions including net CO_2 from LULUCF			1+2+3+4+5
Total emissions excluding net CO_2 from LULUCF			1+2+3+5

[1] EIE given by equation 1

[2] ENG given by equation 3

[3] ERT given by equation 5

[4] EWF given by equation 4

[5] Data from the Australian Greenhouse Emissions Information System (Department of Climate Change and Energy Efficiency)