

DRAFT FOR CONSULTATION

Climate Change (Stationary Energy and Industrial Processes) Regulations 2008 (Draft for Consultation)

Governor-General

Order in Council

At Wellington this day of 2008

Present:
in Council

Pursuant to sections 163 and 167 of the Climate Change Response Act 2002, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following regulations.

Contents

		Page
1	Title	4
2	Commencement	4
Part 1		
Preliminary matters		
3	Interpretation	5
4	Fees and charges	6

Consultation draft 1

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

**Part 2
Stationary energy participants**

Importing coal

5	Application of regulations 6 and 7	7
6	Collection of information for purpose of calculating emissions from importing coal	7
7	Method of calculating emissions from importing coal	8

Mining coal

8	Application of regulations 9 and 10	10
9	Collection of information for purpose of calculating emissions from mining coal	10
10	Method of calculating emissions from mining coal	11

Importing natural gas

11	Application of regulations 12 and 13	14
12	Collection of information for purpose of calculating emissions from importing natural gas	15
13	Method of calculating emissions from importing natural gas	15

Mining natural gas

14	Application of regulations 15 and 16	17
15	Collection of information for purpose of calculating emissions from natural gas mined other than for export	17
16	Method of calculating emissions from natural gas mined other than for export	18

Using geothermal fluid

17	Application of regulations 18 and 19	21
18	Collection of information for purpose of calculating emissions from using geothermal fluid	22
19	Method of calculating emissions from using geothermal fluid	22

Combusting used oil, waste oil, used tyres, or waste

20	Application of regulations 21 and 22	23
21	Collection of information for purpose of calculating emissions from combusting used oil, waste oil, used tyres, or waste	23
22	Method of calculating emissions from combusting used oil, waste oil, used tyres, or waste	24

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Refining petroleum

23	Application of regulations 24 and 25	25
24	Collection of information for purpose of calculating emissions from refining petroleum	25
25	Method of calculating emissions from refining petroleum	26

Part 3

Industrial processes participants

Producing iron or steel

26	Application of regulations 27 and 28	27
27	Collection of information for purpose of calculating emissions from producing iron or steel	27
28	Method of calculating emissions from producing iron or steel	28

Producing aluminium

29	Application of regulations 30 and 31	29
30	Collection of information for purpose of calculating emissions from producing aluminium	29
31	Method of calculating emissions from producing aluminium	30

Producing clinker or burnt lime

32	Application of regulations 33 and 34	31
33	Collection of information for purpose of calculating emissions from producing clinker or burnt lime	31
34	Method of calculating emissions from producing clinker or burnt lime	31

Producing glass using soda ash

35	Application of regulations 36 and 37	32
36	Collection of information for purpose of calculating emissions from producing glass	32
37	Method of calculating emissions from producing glass	32

Producing gold

38	Application of regulations 39 and 40	33
39	Collection of information for purpose of calculating emissions from producing gold	33
40	Method of calculating emissions from producing gold	33

Producing cable

41	Application of regulations 42 and 43	33
----	--------------------------------------	----

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

r 1

42	Collection of information for purpose of calculating emissions from producing cable using nitrogen cure process	34
43	Method of calculating emissions from producing cable using nitrogen cure process	34

**Part 4
Opt-in participants**

Purchasing coal

44	Application of regulations 45 and 46	34
45	Collection of information for purpose of calculating emissions: purchasing coal	35
46	Method of calculating emissions in relation to purchasing coal	35

Purchasing natural gas

47	Application of regulations 48 and 49	37
48	Collection of information for purpose of calculating emissions from purchasing natural gas	37
49	Method of calculating emissions: purchasing natural gas	38

Schedule 1

Fees and charges payable to chief executive

41

Schedule 2

Emissions factors for stationary energy

42

Schedule 3

Emissions factors for industrial processes

49

Regulations

1 Title

These regulations are the Climate Change (Stationary Energy and Industrial Processes) Regulations 2008 (Draft for Consultation).

2 Commencement

These regulations come into force on 1 January 2010.

Part 1 Preliminary matters

3 Interpretation

- (1) In these regulations, unless the context otherwise requires,—
- Act** means the Climate Change Response Act 2002
- anode effect** means a process upset condition where an insufficient amount of alumina is dissolved in the electrolyte, causing voltage to be elevated above the normal operating range and resulting in the emission of PFC-containing gases
- calorific value** means the energy content of a fuel on a gross or high heating value basis
- cell-day** means the number of cells operating multiplied by the number of days of operation
- class**,—
- (a) in relation to importing coal, means a class of coal listed in the second column of Table 1 of Schedule 2:
 - (b) in relation to mining coal, means a class of coal listed in the second column of Table 2 of Schedule 2:
 - (c) in relation to importing natural gas, means a class of natural gas listed in the second column of Table 4 of Schedule 2:
 - (d) in relation to mining natural gas and purchasing natural gas, means—
 - (i) natural gas mined at a field listed or described in the second column of Table 5 of Schedule 2; or
 - (ii) coal seam gas:
 - (e) in relation to geothermal fluid, means geothermal fluid extracted from a field listed or described in the second column of Table 6 of Schedule 2:
 - (f) in relation to used oil, waste oil, or organic waste, means a class of any of those things listed in the second column of Part A or D of Table 7 of Schedule 2:
 - (g) in relation to burnt lime, means—
 - (i) burnt lime (other than burnt dolomitic lime); or
 - (ii) burnt dolomitic lime:
 - (h) in relation to limestone, means—
 - (i) limestone (other than dolomitic limestone); or
 - (ii) dolomitic limestone

Crown-owned coal means any coal that is subject to the Crown Minerals Act 1991

cubic metre, in relation to a liquid or gas, means a cubic metre of the liquid or gas measured at 15°C and at 101.325 kPa pressure

customs entry point means the point where goods are entered under section 39 or 49 of the Customs and Excise Act 1996

delivery point means a point at which a miner's gas is taken (or made available to be taken) from a pipeline into another pipeline, another transmission pipeline, a gas consuming facility, or a distribution system

energy content means the gross energy content measured in joules, where a joule is the energy required to heat 1 cubic centimetre of water by 0.239°C, or the energy needed to lift a kilogram 102 millimetres

obligation fuel has the same meaning as in regulation 3 of the Climate Change (Liquid Fossil Fuels) Regulations 2008

point of valuation, in relation to mining coal or natural gas, means the point of valuation for the determination of royalties provided in the permit under which the coal or natural gas is mined

privately-owned coal means any coal that is not subject to the Crown Minerals Act 1991

specification natural gas means natural gas that meets the New Zealand Standard Specification for Reticulated Natural Gas NZS 5442:1999 as amended by NZS 5442:1999A1: Amendment 1

unaccounted-for gas means the quantity of gas, in addition to delivered gas, for which a person is required to pay under the terms and conditions of any relevant transmission agreement.

- (2) In a formula used in these regulations, the symbol Σ means the summation of the calculated amounts that follow the symbol.

4 Fees and charges

- (1) The fees and charges set out in Schedule 1 are payable to the chief executive by the person specified in the schedule as the person by whom the fee or charge is payable.

- (2) The fees and charges are inclusive of any goods and services tax payable under the Goods and Services Tax Act 1985.
- (3) A fee or charge that is payable annually must be paid by 30 January in the year in which it is due.
- (4) If a fee or charge is payable at an hourly rate and carrying out the function concerned takes less than an hour or is completed during an hour, then 25% of the fee or charge is payable for every 15 minutes or part of 15 minutes of that hour.

Part 2

Stationary energy participants

Importing coal

5 Application of regulations 6 and 7

A person must comply with regulations 6 and 7 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of importing coal.

6 Collection of information for purpose of calculating emissions from importing coal

- (1) The following information must be collected in relation to each class of coal imported in the year:
 - (a) the total number of tonnes of each class of coal imported by the person, as recorded at the customs entry point; and
 - (b) the calorific value of each class of the coal referred to in paragraph (a); and
 - (c) the total number of tonnes of each class of coal exported by the person, as recorded at the customs entry point; and
 - (d) the calorific value of each class of coal referred to in paragraph (c).
- (2) If the person includes a stockpile adjustment in relation to a class of coal under regulation 7(2) then, the following information must be collected:
 - (a) the total number of tonnes of any stockpile of the class of the imported coal owned by the person as at 1 January in the year; and

- (b) the calorific value of any stockpile referred to in paragraph (a); and
- (c) the total number of tonnes of any stockpile of the class of the imported coal owned by the person as at 31 December in the year; and
- (d) the calorific value of any stockpile referred to in paragraph (c).

7 Method of calculating emissions from importing coal

- (1) Emissions in relation to each class of coal imported by the person in the year must be calculated in accordance with the following formula:

$$E = ((A \times CV) - (B \times CV) - (C \times CV)) \times EF$$

where—

- A is the total number of tonnes of the class of coal imported by the person in the year, as recorded under regulation 6(1)(a)
- B is—
- (a) the figure calculated under subclause (2), if the person includes a stockpile adjustment for the class of coal; or
 - (b) S_{closing} for the previous year, if the person does not include a stockpile adjustment, but a stockpile adjustment was included when emissions from importing the class of coal were calculated and reported in the previous emissions return submitted for the activity; or
 - (c) zero, if the person does not include a stockpile adjustment for the class of coal and—
 - (i) it is the person's first emission return for the activity; or
 - (ii) a stockpile adjustment was not included when emissions from importing the class of coal were calculated and reported in the previous emissions return submitted for the activity

- C is the total number of tonnes of the class of coal exported by the person in the year as recorded under regulation 6(1)(c)
- CV is—
- (a) the weighted average calorific value of the class of coal, as recorded under the relevant paragraph in regulation 6(1) and (2); or
 - (b) in relation to a stockpile adjustment calculated under subclause (2), the weighted average of the calorific value of the stockpile at 1 January and 31 December; or
 - (c) where a person does not include a stockpile adjustment in the current year, but a stockpile adjustment was included in the previous year, the weighted average calorific value of the stockpile at 31 December
- E is the total emissions for the class of coal in tonnes
- EF is the emissions factor for the class of coal from Table 1 in Schedule 2.
- (2) For the purposes of subclause (1), a stockpile adjustment (if included) must be calculated as follows:
- $$B = S_{\text{closing}} - S_{\text{opening}}$$
- where—
- S_{closing} the total number of tonnes of the stockpile of the class of imported coal at 31 December recorded under regulation 6(2)(c)
- S_{opening} is—
- (a) for the year beginning 1 January 2010, zero; or
 - (b) for any other year, the total number of tonnes of the stockpile of the class of imported coal at 1 January recorded under regulation 6(2)(a).
- (3) An emissions return submitted by a person required to comply with this regulation must record the person's total emissions from the activity of importing coal in the relevant year, calculated by adding together the emissions for each class of coal imported calculated under subclause (1).

- (4) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Mining coal

8 Application of regulations 9 and 10

A person must comply with regulations 9 and 10 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of mining coal where the volume of coal mined exceeds 2 000 tonnes in a year.

9 Collection of information for purpose of calculating emissions from mining coal

- (1) The following information must be collected in relation to each class of coal mined in the year:
- (a) the total number of tonnes of each class of Crown-owned coal mined in the year by the person, as recorded at the point of valuation; and
 - (b) the calorific value of each class of coal referred to in paragraph (a); and
 - (c) the total number of tonnes of each class of ready-for-sale privately-owned coal mined in the year by the person; and
 - (d) the calorific value of each class of coal referred to in paragraph (c); and
 - (e) the total number of tonnes of each class of coal exported in the year by the person as recorded at the customs entry point; and
 - (f) the calorific value of each class of coal referred to in paragraph (e); and
 - (g) the total number of tonnes of each class of mined coal sold in the year to a person who is a participant under Part 4 of Schedule 4 of the Act; and
 - (h) the calorific value of each class of coal referred to in paragraph (g); and
 - (i) the total number of tonnes of each class of mined coal combusted in the year by the person that is not recorded under paragraph (a) or (c); and

- (j) the calorific value of each class of coal referred to in paragraph (i); and
 - (k) the total number of tonnes of each class of mined coal gifted or otherwise provided gratuitously to any person, including an employee, that are not recorded under paragraph (a) or (c); and
 - (l) the calorific value of each class of coal referred to in paragraph (k).
- (2) The following information must be collected in relation to coal mined in a year:
- (a) the total number of tonnes of coal mined from an underground mine in the year at each of the depths specified in Table 3 of Schedule 2; and
 - (b) the total number of tonnes of coal mined from a surface mine in the year at each of the overburden depths specified in Table 3 of Schedule 2; and
 - (c) the total number of tonnes of methane flared or combusted for energy in the year.
- (3) If the person includes a stockpile adjustment in relation to a class of coal under regulation 10(2), then the following information must be collected:
- (a) the total number of tonnes of any stockpile of the class of the mined coal owned by the person as at 1 January in the year; and
 - (b) the calorific value of the stockpile referred to in paragraph (a); and
 - (c) the total number of tonnes of any stockpile of the class of mined coal owned by the person as at 31 December in the year; and
 - (d) the calorific value of the stockpile referred to in paragraph (c).

10 Method of calculating emissions from mining coal

- (1) Emissions in relation to each class of coal mined by the person in each year must be calculated in accordance with the following formula:

$$E = ((A \times CV) + (A1 \times CV) - (B \times CV) + (F \times CV) + (G \times CV) - (C \times CV) - (D \times CV)) \times EF_1$$

where—

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Part 2 r 10

- A is the total number of tonnes of Crown-owned coal of the class mined by the person in the year, as recorded under regulation 9(1)(a)
- A1 is the total number of tonnes of ready-for-sale privately-owned coal of the class mined by the person in the year, as recorded under regulation 9(1)(c)
- B is—
- (a) the figure calculated under subclause (2), if the person includes a stockpile adjustment for the class of coal; or
 - (b) S_{closing} for the previous year, if the person does not include a stockpile adjustment but a stockpile adjustment was included when emissions from mining the class of coal were calculated and reported in the previous emissions return submitted for the activity; or
 - (c) zero, if the person does not include a stockpile adjustment for the class of coal and—
 - (i) it is the person's first emission return for the activity; or
 - (ii) a stockpile adjustment for the class of coal was not included when emissions from mining coal were calculated and reported in the previous emissions return submitted for the activity
- C is the total number of tonnes of the class of coal exported by the person in the year, as recorded under regulation 9(1)(e)
- CV is—
- (a) the weighted average calorific value of the class of coal, as recorded under the relevant paragraph in regulation 9(1) and (2); or
 - (b) in relation to a stockpile adjustment calculated under subclause (2), the weighted average of the calorific value of the stockpile at 1 January and 31 December; or
 - (c) where a person does not include a stockpile adjustment in the current year, but a stockpile adjustment was included in the previous year, then

the CV is the weighted average calorific value of the stockpile at 31 December

- D is the total number of tonnes of the class of coal sold to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, as recorded under regulation 9(1)(g)
- E is the total emissions for the class of coal in tonnes
- EF₁ the emissions factor for the class of coal from Table 2 in Schedule 2
- F is the total number of tonnes of the class of coal combusted by the person in the year, as recorded under regulation 9(1)(i)
- G is the total number of tonnes of the class of coal gifted or otherwise provided gratuitously to any person, as recorded under regulation 9(1)(k).
- (2) For the purposes of subclause (1) a stockpile adjustment (if included) must be calculated as follows:

$$B = S_{\text{closing}} - S_{\text{opening}}$$

where—

S_{closing} is the total number of tonnes of the stockpile of the mined coal at 31 December recorded under regulation 9(3)(c)

S_{opening} is—

- (a) for the year beginning 1 January 2010, zero; or
- (b) for any other year, the total number of tonnes of the stockpile of the mined coal at 1 January recorded under regulation 9(3)(a).

- (3) An emissions return submitted by a person required to comply with this regulation must record the person's total emissions from the activity of mining coal in the relevant year, calculated by adding together the emissions for each class of coal mined and associated emissions from the mining process, calculated as follows:

$$TE = \sum E + \sum (H \times EF_2) + \sum (I \times EF_3) - (J \times EF_4)$$

where—

E is the emissions for each class of coal mined in the year, as calculated under subclause (1)

- EF₂ is the emissions factor for fugitive coal seam gas in relation to coal mined from an underground mine at the relevant depth specified in Part A of Table 3 of Schedule 2
- EF₃ is the emissions factor for fugitive coal seam gas in relation to coal mined from a surface mine at the relevant overburden depth specified in Part A of Table 3 of Schedule 2
- EF₄ is the emissions factor for flaring or venting specified in Part B of Table 3 of Schedule 2
- H is the total number of tonnes of coal, mined from an underground mine in the year at each of the depths specified in Table 3 of Schedule 2, as recorded under regulation 9(2)(a)
- I is the total number of tonnes of coal mined from a surface mine in the year at each of the overburden depths specified in Table 3 of Schedule 2, as recorded under regulation 9(2)(b)
- J is the total number of tonnes of methane flared or combusted for energy in the year, as recorded under regulation 9(2)(c)
- TE is the total emissions for the activity of mining coal for the year in tonnes.
- (4) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Importing natural gas

11 Application of regulations 12 and 13

A person must comply with regulations 12 and 13 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect the activity in Part 3 of Schedule 3 of the Act of importing natural gas where the volume of natural gas imported exceeds 10 000 litres in a year.

12 Collection of information for purpose of calculating emissions from importing natural gas

- (1) The following information must be collected in relation to each class of natural gas imported in the year:
 - (a) total number of cubic metres of each class of natural gas imported by the person, as recorded at the customs entry point; and
 - (b) the calorific value of each class of natural gas referred to in paragraph (a); and
 - (c) the total number of cubic metres of each class of natural gas exported by the person, as recorded at the customs entry point; and
 - (d) the calorific value of each class of natural gas referred to in paragraph (c).
- (2) The person must collect information showing the total gigajoules of each class of imported natural gas held in a storage facility as at 31 December in the year.
- (3) If the person includes a storage adjustment under regulation 13(1), then the following information must be collected:
 - (a) the total number of gigajoules of any imported natural gas of the class injected into a gas storage facility by the person in the year; and
 - (b) the total number of gigajoules of any imported natural gas of the class extracted from a gas storage facility by the person in the year.

13 Method of calculating emissions from importing natural gas

- (1) Emissions in relation to each class of natural gas imported by the person in each year must be calculated in accordance with the following formula:

$$E = ((A \times CV) - (C \times CV) - B) \times EF$$

where—

A is the total number of cubic metres of natural gas of the class imported by the person in the year, as recorded under regulation 12(1)(a)

B is,—

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Part 2 r 13

- (a) if the person elects to include a storage adjustment for the class of imported natural gas for the year, the figure calculated under subclause (2); or
 - (b) if the person elects not to include a storage adjustment for the class of imported natural gas for the year but a storage adjustment for that class was included when emissions from importing natural gas were calculated and reported in the previous emissions return submitted for the activity, the total number of gigajoules of the class of imported natural gas held by the person in a storage facility, as at 31 December in the previous year; or
 - (c) zero, if the person does not include a storage adjustment for the class of imported natural gas and—
 - (i) it is the person's first emissions return for the activity; or
 - (ii) a storage adjustment was not included when emissions from importing natural gas of that class were calculated and reported in the previous emissions return submitted for the activity
- C is the total number of cubic metres of natural gas of the class exported by the person in the year, as recorded under regulation 12(1)(c)
- CV is the weighted average calorific value of the natural gas of the class as recorded under the relevant paragraphs in regulation 12(1)
- E is the emissions for the class of natural gas in tonnes
- EF is the emissions factor for the class of natural gas from Table 4 in Schedule 2.
- (2) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of importing natural gas in the relevant year, calculated by adding together the emissions for each class of natural gas imported calculated under subclause (1).

- (3) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Mining natural gas

14 Application of regulations 15 and 16

A person must comply with regulations 15 and 16 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of mining natural gas other than for export.

15 Collection of information for purpose of calculating emissions from natural gas mined other than for export

- (1) The following information must be collected in relation to each class of natural gas mined in the year:
- (a) the total number of gigajoules of natural gas mined by the person in the year, as recorded at the point of valuation; and
 - (b) the total number of gigajoules of natural gas flared before the point of valuation by the person in the year; and
 - (c) the total number of gigajoules of natural gas vented to the atmosphere before the point of valuation by the person in the year; and
 - (d) the total number of gigajoules of natural gas (other than commercial propane, commercial butane, or liquid petroleum gas) exported by the person in the year as recorded at the customs entry point; and
 - (e) the total number of gigajoules of specification natural gas delivered by the person in the year, at a delivery point, to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act; and
 - (f) the total number of gigajoules of unaccounted-for specification natural gas allocated to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year in relation to the natural gas of the class delivered to the participant; and
 - (g) the total number of gigajoules of processed natural gas of the class delivered by the person in the year, at a

- delivery point, to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act; and
- (h) the total number of gigajoules of unaccounted-for processed natural gas allocated to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, in relation to the natural gas of the class delivered to the participant.
- (2) The following information must be collected in relation to natural gas mined in the year:
- (a) the total number of gigajoules of commercial propane exported by the person in the year, as recorded at the customs entry point; and
- (b) the total number of gigajoules of commercial butane exported by the person in the year, as recorded at the customs entry point; and
- (c) the total number of gigajoules of liquid petroleum gas exported by the person in the year, as recorded at the customs entry point.
- (3) Information about the total number of gigajoules of mined natural gas held in a storage facility as at 31 December in each year must be collected.
- (4) If the person includes a storage adjustment under regulation 16(2), then the following information must be collected:
- (a) the total number of gigajoules of any mined natural gas injected into a gas storage facility by the person in the year; and
- (b) the total number of gigajoules of any mined natural gas extracted from a gas storage facility by the person in the year.

16 Method of calculating emissions from natural gas mined other than for export

- (1) Emissions in relation to each class of natural gas mined by the person in the year must be calculated in accordance with the following formula:

$$E = ((A \times EF_1) + (C \times EF_2) + (D \times EF_3)) - ((F \times EF_4) + (G \times EF_4) + (H \times EF_4) + (I \times EF_5) + (J \times EF_5))$$

where—

-
- A is the total number of gigajoules of natural gas mined by the person in the year, as recorded under regulation 15(1)(a)
- C is the total number of gigajoules of natural gas flared before the point of valuation by the person in the year, as recorded under regulation 15(1)(b)
- D is the total number of gigajoules of natural gas vented to atmosphere before the point of valuation by the person in the year, as recorded under regulation 15(1)(c)
- E is the emissions for the class of natural gas mined in the year
- EF₁ is the emissions factor for unprocessed natural gas of the class as specified in Part A of Table 5 in Schedule 2
- EF₂ is the emissions factor for flaring for the class of natural gas as specified in Part B of Table 5 in Schedule 2
- EF₃ is the emissions factor for venting for the class of natural gas as specified in Part C of Table 5 in Schedule 2
- EF₄ is the emissions factor for specification natural gas as specified in Part F of Table 5 in Schedule 2
- EF₅ is the emissions factor for processed natural gas of the class as specified in Part D of Table 5 in Schedule 2
- F is the total number of gigajoules of natural gas of the class (other than commercial propane, commercial butane, or liquid petroleum gas) exported from New Zealand by the person in the year, as recorded under regulation 15(1)(d)
- G is the total number of gigajoules of specification natural gas of the class delivered at a delivery point to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, as recorded under regulation 15(1)(e)
- H is the total number of gigajoules of unaccounted-for specification natural gas allocated to a person who is participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, as recorded under regulation 15(1)(f)
- I is the total number of gigajoules of processed natural gas of the class delivered at a delivery point to a person

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Part 2 r 16

who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, as recorded under regulation 15(1)(g)

J is the total number of gigajoules of unaccounted-for processed natural gas allocated to a person who is a participant in respect of an activity in Part 4 of Schedule 4 of the Act in the year, as recorded under regulation 15(1)(h).

- (2) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of mining natural gas in the relevant year calculated as follows:

$$TE = (\sum E) - B - \sum (K \times EF_6)$$

where—

B is—

- (a) if the person elects to include a storage adjustment for natural gas for the year, the figure calculated as follows:

$$B = (D \times EF_5) - (F \times EF_7)$$

where—

D is the total number of gigajoules of mined natural gas injected by the person into a gas storage facility in the year, as recorded under regulation 15(4)(a)

EF₅ is the emissions factor for specification natural gas as specified in Part F of Table 5 in Schedule 2

EF₇ is the emissions factor for all other gas fields as specified in Part D of Table 5 in Schedule 2

F is the total gigajoules of mined natural gas extracted by the person from a gas storage facility in the year, as recorded under regulation 15(4)(b); or

- (b) if the person elects not to include a storage adjustment for the natural gas for the year, but a storage adjustment was included when emissions from mining natural gas were calculated and re-

- ported in the previous emissions return submitted for the activity, the total number of gigajoules of mined natural gas held by the person in a storage facility as at 31 December in the previous year; or
- (c) zero, if the person does not include a storage adjustment for the mined natural gas and—
- (i) it is the person's first emissions return for the activity; or
 - (ii) a storage adjustment was not included when emissions from mining natural gas were calculated and reported in the previous emissions return submitted for the activity
- E is the emissions for each class of natural gas mined in the year calculated under subclause (1)
- EF₆ is the emissions factor for commercial propane, commercial butane, or liquid petroleum gas, as applicable, as specified in Part E of Table 5 in Schedule 2
- K is the total number of gigajoules of each of the following exported by the person in the year, as recorded under section 15(2):
- (a) commercial propane;
 - (b) commercial butane;
 - (c) liquid petroleum gas
- TE is the total emissions for the activity of mining natural gas for the year in tonnes.
- (3) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Using geothermal fluid

17 Application of regulations 18 and 19

A person must comply with regulations 18 and 19 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of using geothermal fluid for the purpose of generating electricity or industrial heat.

18 Collection of information for purpose of calculating emissions from using geothermal fluid

The following information must be collected in relation to each class of geothermal fluid used in the year for the purpose of generating electricity or industrial heat:

- (a) the total number of tonnes of geothermal fluid extracted by the person during the year, as measured at the well head; and
- (b) the total number of tonnes of geothermal steam separated (including any non-condensable gases) by the person during the year, as measured at the steam off-take pipes at the well-head separator; and
- (c) the total number of tonnes of geothermal liquid re-injected by the person during the year, into a geothermal field.

19 Method of calculating emissions from using geothermal fluid

- (1) Emissions in relation to each class of geothermal fluid used for the purpose of generating electricity or industrial heat by the person in the year, must be calculated in accordance with the following formula:

$$E = A \times EF$$

where—

- A is the number of tonnes of geothermal steam separated by the person during the year, as recorded under regulation 18(b)
- E is the total emissions in tonnes for the class of geothermal fluid used
- EF is the emissions factor for the class of geothermal fluid from Table 6 in Schedule 2.

- (2) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of using geothermal fluid for the purpose of generating electricity or industrial heat in the relevant year, calculated by adding together the emissions for each class of geothermal fluid used, as calculated under subclause (1).

- (3) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

*Combusting used oil, waste oil, used tyres, or
waste*

20 Application of regulations 21 and 22

A person must comply with regulations 21 and 22 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of combusting used oil, waste oil, used tyres, or waste for the purpose of generating electricity or industrial heat.

21 Collection of information for purpose of calculating emissions from combusting used oil, waste oil, used tyres, or waste

The following information must be collected in relation to used oil, waste oil, used tyres, or waste combusted in the year:

- (a) the total number of tonnes of each class of used oil combusted by the person in the year; and
- (b) the total number of tonnes of obligation fuel component of each class of used oil combusted by the person in the year; and
- (c) the total number of tonnes of each class of waste oil combusted by the person in the year; and
- (d) the total number of tonnes of obligation fuel component of each class of waste oil combusted by the person in the year; and
- (e) the total number of tonnes of used tyres combusted by the person in the year; and
- (f) the total biomass component of the used tyres combusted by the person in the year; and
- (g) the total number of tonnes of non-organic waste combusted by the person in the year; and
- (h) the total number of tonnes of each class of organic waste combusted by the person in the year.

22 Method of calculating emissions from combusting used oil, waste oil, used tyres, or waste

- (1) Emissions in relation to each class of used oil, waste oil, or organic waste combusted by the person in the year, must be calculated in accordance with whichever of the following formulae is appropriate:

$$E_1 = (A - B) \times EF_1$$

$$E_2 = I \times EF_2$$

where—

A is the total number of tonnes of the class of used or waste oil combusted by the person in the year, as recorded under regulation 21(a) and (c)

B is the total number of tonnes of the obligation fuel component of the used or waste oil of the class combusted by the person in the year, as recorded under regulation 21(b) and (d)

E_1 is the emissions for the class of used or waste oil combusted in the year

E_2 is the emissions for the class of organic waste combusted in the year

EF_1 is the emissions factor for the class of used oil or waste oil as specified in Part A of Table 7 in Schedule 3

EF_2 is the emissions factor for the class of organic waste as specified in Part D of Table 7 in Schedule 2

I is the total number of tonnes of the class of organic waste, as recorded under regulation 21(h).

- (2) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of combusting used oil, waste oil, used tyres, or waste for the purpose of generating electricity or industrial heat in the relevant year calculated as follows:

$$TE = \sum E_1 + \sum E_2 + ((F - G) \times EF_2) + (H \times EF_4)$$

where—

E_1 is the emissions for each class of used or waste oil combusted in the year, as calculated under subclause (1)

E_2 is the emissions for each class of organic waste combusted in the year, as calculated under subclause (1)

- EF₄ is the emissions factor for non-organic waste as specified in Part C of Table 7 in Schedule 2
- F is the total number of tonnes of used tyres combusted by the person in the year, as recorded under regulation 21(e)
- G is the total biomass component of the used tyres combusted by the person in the year, as recorded under regulation 21(f)
- H is the total number of tonnes of non-organic waste combusted by the person in the year, as recorded under regulation 21(g)
- TE is the total emissions in tonnes for the activity of combusting used oil, waste oil, used tyres, or waste for the purpose of generating electricity or industrial heat for the year.
- (3) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Refining petroleum

23 Application of regulations 24 and 25

A person must comply with regulations 24 and 25 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in Part 3 of Schedule 3 of the Act of refining petroleum where the refining involves the use of intermediate crude oil products for energy or feedstock purposes.

24 Collection of information for purpose of calculating emissions from refining petroleum

The following information must be collected in relation to intermediate crude oil products used for energy or feedstock purposes in petroleum refining in the year:

- (a) the total number of tonnes of asphalt used for combustion by the person in the year; and
- (b) the total number of tonnes of fuel oil used for combustion by the person in the year; and

- (c) the total number of tonnes of refinery gas used for combustion or hydrogen manufacture by the person in the year; and
- (d) the total number of tonnes of other intermediate crude oil used for combustion or hydrogen manufacture by the person in the year.

25 Method of calculating emissions from refining petroleum

- (1) Emissions in relation to intermediate crude oil products used for energy or feedstock purposes in petroleum refining by the person in the year must be calculated in accordance with the following formula:

$$E = (A \times EF) + (B \times EF) + (C \times EF) + (D \times EF)$$

where—

- A is the total number of tonnes of asphalt used for combustion by the person in the year, as recorded under regulation 24(a)
 - B is the total number of tonnes of fuel oil used for combustion by the person in the year, as recorded under regulation 24(b)
 - C is the total number of tonnes of refinery gas used for combustion or hydrogen manufacture by the person in the year, as recorded under regulation 24(c)
 - D is the total number of tonnes of other intermediate crude oil used for combustion or hydrogen manufacture by the person in the year, as recorded under regulation 24(d)
 - E is the emissions in tonnes from the activity of refining petroleum
 - EF is the relevant emissions factor as specified in Table 8 of Schedule 2.
- (2) If a person required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Part 3

Industrial processes participants

Producing iron or steel

26 Application of regulations 27 and 28

A person must comply with regulations 27 and 28 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing iron or steel.

27 Collection of information for purpose of calculating emissions from producing iron or steel

The following information must be collected in relation to iron or steel produced:

- (a) the total number of tonnes of each type of reducing agent (for example, general industrial coke or coal) used by the person in the year; and
- (b) the carbon content of each type of reducing agent used by the person in the year; and
- (c) the total number of tonnes of iron ore used by the person in the year; and
- (d) the carbon content of iron ore used by the person in the year; and
- (e) the total number of tonnes of iron sand used by the person in the year; and
- (f) the carbon content of iron sand used by the person in the year; and
- (g) the total number of tonnes of each class of limestone used by the person in the year; and
- (h) the total number of tonnes of each type of carbon input used by the person in the year (for example, coal or carbon electrodes); and
- (i) the carbon content of each type of carbon input used by the person in the year.

28 Method of calculating emissions from producing iron or steel

- (1) Emissions in relation to iron or steel produced by the person in the year, must be calculated in accordance with the following formula:

$$E = [\sum(A \times B) + (C \times D) + (F \times G)] \times EF_1 + \sum(H \times EF_2) + \sum(I \times J) \times EF_3$$

where—

- A is the total number of tonnes of each type of reducing agent used by the person in the year, as recorded under regulation 27(a)
- B is the carbon content of the relevant type of reducing agent used by the person in the year, as recorded under regulation 27(b)
- C is the total number of tonnes of iron ore used by the person in the year, as recorded under regulation 27(c)
- D is the carbon content of iron ore used by the person in the year, as recorded under regulation 27(d)
- E is the emissions from the activity of producing iron or steel
- EF₁ is the emissions factor for the reducing agents as specified in Table 1 in Schedule 3
- EF₂ is the emissions factor for the class of limestone used as specified in Table 1 in Schedule 3
- EF₃ is the emissions factor for the carbon input as specified in Table 1 in Schedule 3
- F is the total number of tonnes of iron sand used by the person in the year, as recorded under regulation 27(e)
- G is the carbon content of iron sand used by the person in the year, as recorded under regulation 27(f)
- H is the total number of tonnes of the class of limestone used by the person in the year, as recorded under regulation 27(g)
- I is the total number of tonnes of each type of carbon input used by the person in the year, as recorded under regulation 27(h)

- J is the carbon content of the relevant type of carbon input used by the person in the year, as recorded under regulation 27(i).
- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Producing aluminium

29 Application of regulations 30 and 31

A person must comply with regulations 30 and 31 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing aluminium, resulting in the consumption of anodes or the production of anode effects.

30 Collection of information for purpose of calculating emissions from producing aluminium

The following information must be collected in relation to aluminium produced:

- (a) the total number of tonnes of carbon in baked anodes used by the person in the year; and
- (b) the total number of tonnes of carbon in pitch volatiles used by the person in the year; and
- (c) the total number of tonnes of carbon in packing material (for example, coal) used by the person in the year; and
- (d) the total number of tonnes of hot metal aluminium produced by the person in the year; and
- (e) the anode effect minutes per cell-day, as calculated under the Aluminium Sector Greenhouse Gas Protocol (Addendum to the WRI/WBCSD Greenhouse Gas Protocol) produced by the International Aluminium Institute (October 2006); and
- (f) the slope factor for C_2F_6 and for CF_4 , as calculated under the Aluminium Sector Greenhouse Gas Protocol (Addendum to the WRI/WBCSD Greenhouse Gas Protocol) produced by the International Aluminium Institute (October 2006).

31 Method of calculating emissions from producing aluminium

- (1) Emissions in relation to aluminium produced by the person in the year, must be calculated in accordance with the following formula:

$$E = [(A + B + C) \times EF] + [G \times D \times ((F \times H) + (I \times J))]$$

where—

- A is the total number of tonnes of carbon in baked anodes used by the person in the year, as recorded under regulation 30(a)
- B is the total number of tonnes of carbon in pitch volatiles used by the person in the year, as recorded under regulation 30(b)
- C is the total number of tonnes of carbon in packing material used by the person in the year, as recorded under regulation 30(c)
- D is the total number of tonnes of hot metal reduction in the year, as recorded under regulation 30(d)
- E is the emissions in tonnes of carbon dioxide from the production of aluminium
- EF is the emissions factor for aluminium production as specified in Table 2 in Schedule 3
- F is the slope factor for C₂F₆, as recorded under regulation 30(f)
- G is the anode effect minutes per cell-day, as recorded under regulation 30(e)
- H is 9 200 (the global warming potential for C₂F₆)
- I is the slope factor for CF₄, as recorded under regulation 30(f)
- J is 6 500 (the global warming potential for CF₄).
- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Producing clinker or burnt lime

32 Application of regulations 33 and 34

A person must comply with regulations 33 and 34 if the person in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing clinker or burnt lime, resulting in calcination of limestone, or calcium carbonates.

33 Collection of information for purpose of calculating emissions from producing clinker or burnt lime

The following information must be collected in relation to clinker and each class of burnt lime produced:

- (a) the total number of tonnes of cement clinker produced by the person in the year; and
- (b) the total number of tonnes of each class of burnt lime produced by the person in the year.

34 Method of calculating emissions from producing clinker or burnt lime

- (1) Emissions in relation to clinker and each class of burnt lime produced by the person in the year must be calculated in accordance with the following formula:

$$E = (A \times EF_1) + \sum(B \times EF_2)$$

where—

- A is the total number of tonnes of cement clinker produced by the person in the year, as recorded under regulation 33(a)
- B is the total number of tonnes of each class of burnt lime produced by the person in the year, as recorded under regulation 33(b)
- E is the emissions in tonnes from the production of clinker or burnt lime
- EF₁ is the emissions factor for clinker production as specified in Table 3 in Schedule 3
- EF₂ is the emissions factor for the class of burnt lime production as specified in Table 3 in Schedule 3.

- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Producing glass using soda ash

35 Application of regulations 36 and 37

A person must comply with regulations 36 and 37 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing glass using soda ash.

36 Collection of information for purpose of calculating emissions from producing glass

The following information must be collected in relation to the glass produced:

- (a) the total number of tonnes of soda ash used by the person in the year; and
- (b) the total number of tonnes of each class of limestone used by the person in the year.

37 Method of calculating emissions from producing glass

- (1) Emissions in relation to the glass produced by the person in the year, must be calculated in accordance with the following formula:

$$E = (A \times EF_1) + \sum(B \times EF_2)$$

where—

- A is the total number of tonnes of soda ash used by the person in the year, as recorded under regulation 36(a)
- B is the total number of tonnes of each class of limestone used by the person in the year, as recorded under regulation 36(b)
- E is the emissions in tonnes from the production of glass
- EF₁ is the emissions factor for soda ash as specified in Table 4 in Schedule 3
- EF₂ is the emissions factor for the class of limestone used as specified in Table 4 in Schedule 3.

- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Producing gold

38 Application of regulations 39 and 40

A person must comply with regulations 39 and 40 if the person, in any year, is a participant under section 54(1)(a) of the Act in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing gold.

39 Collection of information for purpose of calculating emissions from producing gold

Information about the total number of tonnes of each class of limestone used by the person in the year must be collected in relation to gold produced.

40 Method of calculating emissions from producing gold

- (1) Emissions in relation to the gold produced by the person in the year must be calculated in accordance with the following formula:

$$E = \sum(A \times EF)$$

where—

A is the total number of tonnes of each class of limestone used by the person in the year, as recorded under regulation 39

E is the emissions in tonnes from the production of gold

EF is the emissions factor for the class of limestone used as specified in Table 5 in Schedule 3.

- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Producing cable

41 Application of regulations 42 and 43

A person must comply with regulations 42 and 43 if the person, in any year, is a participant under section 54(1)(a) of the Act

in respect of the activity in subpart 1 of Part 4 of Schedule 3 of the Act of producing cables using a nitrogen cure process.

42 Collection of information for purpose of calculating emissions from producing cable using nitrogen cure process

Information about the total number of tonnes of nitrogen used by the person in the year must be collected.

43 Method of calculating emissions from producing cable using nitrogen cure process

- (1) Emissions in relation to cable produced by the person in the year must be calculated in accordance with the following formula:

$$E = A \times EF$$

where—

A is the total number of tonnes of nitrogen used by the person in the year, as recorded under regulation 42

E is the emissions in tonnes from the production of cable

EF is the emissions factor for the class of nitrogen used as specified in Table 6 in Schedule 3.

- (2) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

**Part 4
Opt-in participants**

Purchasing coal

44 Application of regulations 45 and 46

A person must comply with regulations 45 and 46 if the person, in any year, is a participant under section 54(1)(b) of the Act in respect of the activity in Part 4 of Schedule 4 of the Act of purchasing coal (**opt-in coal**) from 1 or more participants who mine coal where the total coal purchased exceeds 250 000 tonnes per year.

45 Collection of information for purpose of calculating emissions: purchasing coal

- (1) The following information must be collected in relation to each class of opt-in coal purchased in the year from a person to whom regulations 9 and 10 apply:
 - (a) the total number of tonnes of opt-in coal received from the person, in the year; and
 - (b) the calorific value of the coal referred to in paragraph (a); and
 - (c) the total number of tonnes of opt-in coal exported, as recorded at the customs entry point, in the year; and
 - (d) the calorific value of the coal referred to in paragraph (c).
- (2) If the person elects to include a stockpile adjustment for the class of coal under regulation 46(2), then the person must also collect the following information:
 - (a) the total number of tonnes of any stockpile of the class of opt-in coal owned by the person as at 1 January in the year; and
 - (b) the calorific value of any stockpile of the class of opt-in coal referred to in paragraph (a); and
 - (c) the total number of tonnes of any stockpile of the class of opt-in coal owned by the person as at 31 December in the year; and
 - (d) the calorific value of any stockpile of the class of opt-in coal referred to in paragraph (c).

46 Method of calculating emissions in relation to purchasing coal

- (1) Emissions in relation to each class of opt-in coal purchased from a person who is required to comply with regulations 9 and 10 the year, must be calculated in accordance with the following formula:

$$E = ((A \times CV) - (B \times CV) - (C \times CV)) \times EF$$

where—

- A is the total number of tonnes of opt-in coal of the class received from a miner of coal, as recorded under regulation 45(1)(a)

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Part 4 r 46

- B is—
- (a) the figure calculated under subclause (2), if the person includes a stockpile adjustment; or
 - (b) zero, if the person does not include a stockpile adjustment; or
 - (c) S_{closing} from the previous year, if the person used a stockpile adjustment in the previous year but does not include a stockpile adjustment for the current year
- C is the total number of tonnes of opt-in coal of the class exported from New Zealand by the person in the year, as recorded under regulation 45(1)(c)
- CV is the weighted average calorific value of the opt-in coal as recorded under the relevant paragraph in regulation 45(1) and (2)
- E is the emissions in tonnes from the class of coal
- EF is the emissions factor for the class of coal as specified in Table 2 in Schedule 2.
- (2) For the purposes of subclause (1), a stockpile adjustment (if included) for a class of coal must be, calculated as follows:
- $$B = S_{\text{closing}} - S_{\text{opening}}$$
- where—
- S_{closing} is the total number of tonnes of the stockpile of the class of opt-in coal as at 31 December recorded under regulation 45(2)(c)
- S_{opening} is,—
- (a) for the year beginning 1 January 2010, zero; or
 - (b) for any other year, the total number of tonnes of the stockpile of the class of opt-in coal as at 1 January recorded under regulation 45(2)(a).
- (3) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of purchasing coal in the relevant year, calculated by adding together the emissions for each class of coal purchased calculated under subclause (1).
- (4) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.

Purchasing natural gas

47 Application of regulations 48 and 49

A person must comply with regulations 48 and 49 if the person, in any year, is a participant under section 54(1)(b) of the Act in respect of the activity in Part 4 of Schedule 4 of the Act of purchasing natural gas (**opt-in natural gas**) from 1 or more participants who mine natural gas where the total natural gas purchased exceeds 2 petajoules per year.

48 Collection of information for purpose of calculating emissions from purchasing natural gas

- (1) The following information must be collected in relation to each class of opt-in natural gas purchased in the year from a person to which regulations 15 and 16 apply:
 - (a) the total number of gigajoules of processed natural gas of the class received by the person at a delivery point in the year from a person required to comply with regulations 15 and 16; and
 - (b) the total number of gigajoules of unaccounted-for processed natural gas of the class allocated in the year, in respect of the opt-in natural gas of the class, to the person; and
 - (c) the total number of gigajoules of natural gas of the class exported from New Zealand by the person, as recorded at the customs entry point.
- (2) Information must be collected in relation to the total number of gigajoules of—
 - (a) specification natural gas received by the person at a delivery point in the year from a person required to comply with regulations 15 and 16; and
 - (b) unaccounted-for specification natural gas allocated in the year, in respect of the opt-in natural gas of the class, to the person; and
 - (c) specification natural gas purchased from a person required to comply with regulations 15 and 16 and held in a storage facility at 31 December in the year.
- (3) In addition, if the person elects to include a storage adjustment under regulation 49(2), then the person must also collect the following information:

- (a) the total number of gigajoules of any opt-in specification natural gas injected in the year into a gas storage facility by the person; and
- (b) the total number of gigajoules of any opt-in natural gas extracted in the year from a gas storage facility by the person.

49 Method of calculating emissions: purchasing natural gas

- (1) Emissions in relation to each class of natural gas purchased in the year by the person from a person who is required to comply with regulations 15 and 16 must be calculated in accordance with the following formula:

$$E = (D + F) \times EF_5$$

where—

D is the total number of gigajoules of processed natural gas of the class received in the year by the person at the delivery point from a miner of natural gas, as recorded under regulation 48(1)(a)

E is the emissions in tonnes from the class of natural gas

F is the total number of gigajoules of unaccounted-for processed natural gas of the class allocated in the year, in respect of opt-in natural gas, to the person, as recorded under regulation 48(1)(b)

EF₅ is the emissions factor for processed natural gas as specified in Part D of Table 5 in Schedule 2.

- (2) An emissions return submitted by a person who is required to comply with this regulation must record the person's total emissions from the activity of purchasing natural gas in the relevant year calculated as follows:

$$TE = \sum E + ((A + B) \times EF_4) - J$$

where—

A is the total number of gigajoules of specification natural gas received by the person in the year at a delivery point from a miner of natural gas, as recorded under regulation 48(2)(a)

B is the total number of gigajoules of unaccounted-for specification natural gas allocated in the year, in respect

of opt-in natural gas, to the participant, as recorded under regulation 48(2)(b)

E is the emissions for each class of processed natural gas purchased by the person in the year, as calculated under subclause (1)

EF₄ is the emissions factor for specification natural gas as specified in Part F of Table 5 in Schedule 2

J is—

(a) if the person elects to include a storage adjustment for opt-in natural gas for the year, the figure calculated as follows:

$$J = (C \times EF_4) - (H \times EF_7)$$

where—

C is the total number of gigajoules of the opt-in specification natural gas injected in the year by the person into a gas storage facility, as recorded under regulation 48(3)(a)

EF₄ is the emissions factor for specification natural gas as specified in Part F of Table 5 in Schedule 2

EF₇ is the emissions factor for all other fields as specified in Part D of Table 5 in Schedule 2

H is the total number of gigajoules of opt-in natural gas extracted in the year from a gas storage facility by the person, as recorded under regulations 48(3)(b); or

(b) if the person elects not to include a storage adjustment for opt-in natural gas for the year but a storage adjustment was included when emissions from purchasing natural gas were calculated and reported in the previous emissions return submitted for the activity, the total number of gigajoules of opt-in natural gas held in the previous year by the person in a storage facility at 31 December; or

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Part 4 r 49

- (c) zero, if the person does not include a storage adjustment for opt-in natural gas and—
 - (i) it is the person's first emissions return for the activity; or
 - (ii) a storage adjustment was not included when emissions from purchasing natural gas were calculated and reported in the previous emissions return submitted for the activity

TE is the total emissions for the activity of purchasing natural gas from 1 or more participants who mine natural gas where the total natural gas purchased exceeds 2 petajoules per year.

- (3) If a person who is required to comply with this regulation is required to submit an emissions return for a period other than a year, this regulation applies with any necessary modifications.
-

Schedule 1

r 4

**Fees and charges payable to chief
executive**

**Matter in relation to
which fee or charge
payable**

Fee or charge payable

Fee or charge payable by

Pending.

Pending.

Pending.

Schedule 2

r 3, 7, 9, 10, 13, 16, 19, 22,
25, 46, 49

Emissions factors for stationary energy

Table 1

Emissions source category	Importing coal	Emissions factor tCO₂-e/TJ
Coal	Class	
	Lignite	107.915
	Sub-bituminous	93.615
	Bituminous	93.336
	Coking	94.516
	Anthracite	94.546

Table 2

Emissions source category	Mining coal	Emissions factor tCO₂-e/TJ
Coal	Class	
	Lignite	94.177
	Sub-bituminous	89.891
	Bituminous	87.539
	Anthracite	94.546

Table 3

Fugitive coal seam gas

Part A—Underground and surface

Emissions source category	Depth at which mined	Emissions factor tCO₂-e/t
Fugitive emissions	Underground (including post-mining)—	
	depth of 200 metres or less	0.1759
	depth of more than 200 metres but less than 400 metres	0.2884
	depth of 400 metres or more	0.3869

Table 3—*continued*
Part A—*continued*

Emissions source category	Depth at which mined	Emissions factor tCO₂-e/t
Fugitive emissions	Surface (including post-mining)— overburden depth of 25 metres or less	0.0056
	overburden depth of more than 25 metres but less than 50 metres	0.0183
	overburden depth of 50 metres or more	0.0295

Part B—Flaring and venting

Emissions source category		Emissions factor tCO₂-e/t
Fugitive emissions	Difference between flaring and venting (ie the reduction in GWP)	17.885

Table 4
Importing natural gas

Emissions source category	Class	Emissions factor tCO₂-e/GJ
Natural gas	Commercial propane	0.05950065
	Commercial butane	0.06129165
	LPG (P60:B40)	0.06029665
	Liquefied natural gas	0.05232350

Table 5
Mining natural gas

Part A—Unprocessed gas

Emissions source category	Unprocessed gas by field and coal seam gas	Emissions factor tCO₂-e/GJ
Natural gas	Maui	0.07332606
	Kapuni	0.09217489

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Table 5—*continued*
Part A—*continued*

Emissions source category	Unprocessed gas by field and coal seam gas	Emissions factor tCO ₂ -e/GJ
	Kapuni (low temperature separation)	0.09217489
	McKee	0.07332606
	Kaimiro	0.07332606
	Waihapa/TAWN	0.07332606
	Mangahewa	0.07332606
	Turangi	0.07332606
	Pohokura	0.07332606
	Ngatoro	0.07332606
	Rimu/Kauri	0.07332606
	All other natural gas fields (not coal seam gas)	0.07332606
	Coal seam gas	0.07332606

Part B—Flaring

Emissions source category	Flaring by field and coal seam gas	Emissions factor tCO ₂ -e/GJ
Natural gas	Maui	0.07332606
	Kapuni	0.09217489
	Kapuni (low temperature separation)	0.09217489
	McKee	0.07332606
	Kaimiro	0.07332606
	Waihapa/TAWN	0.07332606
	Mangahewa	0.07332606
	Turangi	0.07332606
	Pohokura	0.07332606
	Ngatoro	0.07332606
	Rimu/Kauri	0.07332606
	All other natural gas fields (not coal seam gas)	0.07332606
	Coal seam gas	0.07332606

Table 5—*continued*

Part C—Venting

Emissions source category	Venting by field and coal seam gas	Emissions factor tCO₂-e/GJ
Natural gas	Maui	0.29397787
	Kapuni	0.22353253
	Kapuni (low temperature separation)	0.22353253
	McKee	0.29397787
	Kaimiro	0.29397787
	Waihapa/TAWN	0.29397787
	Mangahewa	0.29397787
	Turangi	0.29397787
	Pohokura	0.29397787
	Ngatoro	0.29397787
	Rimu/Kauri	0.29397787
	All other natural gas fields (not coal seam gas)	0.29397787
	Coal seam gas	0.32130922

Part D—Processed gas

Emissions source category	Processed gas by field and coal seam gas	Emissions factor tCO₂-e/GJ
Natural gas	Maui	0.05202500
	Kapuni	0.05304985
	Kapuni (low temperature separation)	0.08379535
	McKee	0.05414435
	Kaimiro	0.06498985
	Waihapa/TAWN	0.05429460
	Mangahewa	0.05215435
	Turangi	0.05547765
	Pohokura	0.05496025
	Ngatoro	0.05291553
Rimu/Kauri	0.05354735	

Table 5—*continued*
Part D—*continued*

Emissions source category	Processed gas by field and coal seam gas	Emissions factor tCO₂-e/GJ
	All other natural gas fields (not coal seam gas)	0.05874480
	Coal seam gas	0.07332606

Part E—Liquified petroleum gas

Emissions source category	Class	Emissions factor tCO₂-e/GJ
Liquified petroleum gas (LPG)	Commercial propane	0.05950065
	Commercial butane	0.06129165
	LPG (P60:B40)	0.06029665

Part F—Specification gas

Emissions source category	Specification gas	Emissions factor tCO₂-e/GJ
Natural gas	Specification gas (national average 2007)	0.05340436

Table 6
Geothermal fluid

Emissions source category	Field	Emissions factor tCO₂-e/t
Geothermal	Wairakei	0.00547
	Mokai	0.00644
	Ohaaki	0.04187
	Poihipi	0.00432
	Rotokawa	0.01942
	Ngawha	0.09552
	Kawerau	0.10240
	Tarawera	0.11655
	All other fields	0.04767

Table 7
Combusting used oil, waste oil, used tyres,
and waste

Part A—Used oil and waste oil

Emissions source category	Class	Emissions factor tCO₂-e/t
Used oil and waste oil	Non-organic used or waste oil	3.0182
	Organic used and waste oil	0.0228
	Blended organic or non-organic used or waste oil	3.0182

Part B—Used tyres

Emissions source category	Emissions factor tCO₂-e/t
Used tyres	1.4461

Part C—Non-organic waste

Emissions source category	Emissions factor tCO₂-e/t
Non-organic waste other than non-organic used or waste oil, or used tyres	1.2266

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Schedule 2

Table 7—*continued*

Part D—Organic waste

Emissions source category	Class	Emissions factor tCO₂-e/t
Organic waste (excludes CO ₂)	Organic waste, other than biogas or wood	0.0228
	Biogas	0.0368
	Wood	0.0152

**Table 8
Refining petroleum**

Emissions source category	Intermediate crude oil product	Emissions factor ktCO₂-e/t
Refining crude oil	Refinery gas	5.5345
	Fuel oil	3.0223
	Asphalt	3.1229
	Other intermediate crude oil	3.1507

Schedule 3 rr 28, 31, 34, 36, 40, 43
Emissions factors for industrial processes

Table 1
Producing iron or steel

Emissions source category	Emissions factor tCO₂-e/t
Reducing agents	3.67
Limestone	0.44
Dolomitic limestone (dolomite)	0.48
Carbon input	3.67

Table 2
Producing Aluminium

Emissions source category	Emissions factor tCO₂-e/t
Aluminium production	3.67

Table 3
Producing clinker or burnt lime

Emissions source category	Emissions factor tCO₂-e/t
Production of clinker	0.54
Production of burnt lime	0.79
Production of burnt dolomitic lime	0.91

Table 4
Producing glass

Emissions source category	Emissions factor tCO₂-e/t
Soda ash	0.42
Limestone	0.44
Dolomitic limestone (dolomite)	0.48

**Climate Change (Stationary Energy and
Industrial Processes) Regulations 2008
(Draft for Consultation)**

Explanatory note

**Table 5
Producing gold**

Emissions source category	Emissions factor tCO₂-e/t
Limestone	0.44
Dolomitic limestone	0.48

**Table 6
Producing cable**

Emissions source category	Emissions factor tCO₂-e/t
Producing cable using nitrogen cure process	486.7

Clerk of the Executive Council.

Explanatory note

This note is not part of the regulations, but is intended to indicate their general effect.

These regulations, which come into force on 1 January 2010, set out the requirements for the collection of information and the calculation of emissions under section 62 of the Climate Change Response Act 2002 in relation to stationary energy and industrial processes.

Issued under the authority of the Acts and Regulations Publication Act 1989.

Date of notification in *Gazette*:

These regulations are administered by the Ministry for the Environment.
