

NGER FRAMEWORK GUIDELINES



CIVIL CONTRACTORS
FEDERATION

1. The *National Greenhouse and Energy Reporting Act 2007* (the NGER Act) became law in September 2007. The NGER Act introduces a legal requirement for the reporting and distribution of information about greenhouse gas (GHG) emissions, GHG projects and energy use and production of corporations.

Corporations across all sectors that triggered thresholds first reported GHG emissions and energy for the 2008/09 reporting (financial) year. The NGER framework was originally implemented to support the Emissions Trading Scheme (ETS) which was to be the central pillar of the Government's response to climate change. Although an ETS or equivalent has yet to occur, NGERs is still in place and will continue for the foreseeable future. NGERs emissions and energy data will most likely underpin a future price on carbon.

2. What is this document about?

Many members of the construction sector have legal obligations under the NGER Act. This document has been developed to assist civil contractors in considering and responding to their obligations. Penalties can apply in the case of non-compliance. Through these guidelines, CCF is aiming to help our members understand their reporting responsibilities to the Australian Government and/or the Head Contractor of a project.

Head contractors are often required to report energy and emissions from both their activities, and their subcontractor's activities directly to the government. Subcontractors will often have to provide energy usage data to the Head Contractor so they can meet their NGER obligations to the government.

We have worked closely with the Australian Constructors Association (ACA) and refer members also to their Discussion Paper which was released last year. That document is available to download online at <http://www.constructors.com.au/publications.html>. We have also worked closely with the Department of Climate Change and Energy Efficiency (DCCEE) who are responsible for administering the NGER Act, and Ndevr Pty Ltd (environmental consultants) and have had the benefit of their guidance during the development of this material.

Importantly this is a complex area and although this document is intended as a guide members should seek independent professional advice to ensure they meet any statutory or contractual requirements.

3. How and why does NGER impact on me?

There are thresholds under NGER and in most cases our small and medium contractors will not trigger these thresholds. Many of the larger contractors (often acting as Head Contractors) have to report their emissions and energy directly to the government, as they are likely to have the reporting responsibility and may trigger the decreasing thresholds.

Corporations that report directly to the Government are referred to as 'up-stream NGER reporters' throughout these guidelines. Often, smaller contractors acting as a subcontractor will be required to provide details of their energy usage to the up-stream reporter so they can fulfill their reporting obligations. These smaller contractors are referred to as 'down-stream NGER reporters' throughout the guidelines.

Reporting responsibility is based around the important concept of 'operational control'. The corporation with operational control has a reporting responsibility as soon as it triggers thresholds. Operational control is discussed in more detail at 4.2.

Under the NGER Act GHG emissions and energy consumption and production must be accounted for. GHG emissions and energy consumption come from a variety of sources. The most common sources in the construction sector are from electricity use¹ and the combustion of fossil fuels for equipment – such as diesel, petrol, LPG etc.

When fossil fuels are combusted, energy is consumed and carbon dioxide (CO₂) and other climate warming² gases are released. These are called 'scope 1' GHG emissions. The Australian Government is looking to put a price on carbon to reduce emissions into the atmosphere. To price carbon, GHG emissions need to be measured and accounted for accurately. Energy is closely associated with emissions and for this purpose has also been included under the NGERs framework.

For those members who do not meet thresholds in their own right, the basic data obligation that they will need to provide to the up-stream reporting Head Contractors is the amounts of liquid fuel used at a facility. There are currently 66 different energy commodities covered under the NGERs framework, however only a few of these are usually applicable to the construction sector. See **Appendix A –Reportable Energy Commodities** for more detail.



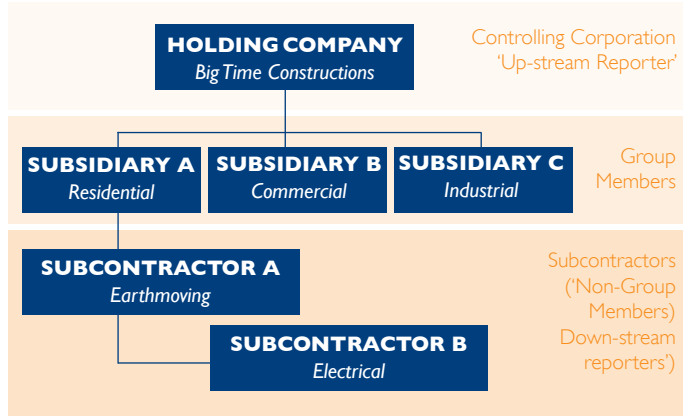
¹ Emissions from electricity are considered scope 2 emissions. For scope 2, the actual emissions occur elsewhere (i.e. a coal fired electricity generator - who reports the actual emissions as scope 1) however they are reported and 'owned' by the end-user of the electricity.

² A large majority of the scientific community believe the climate system is warming and that this is due to increased levels of CO₂ in the atmosphere from the combustion of fossil fuels, deforestation and other man-made activities. For more information go to <http://www.climatechange.gov.au/en/climate-change/myths/science.aspx>

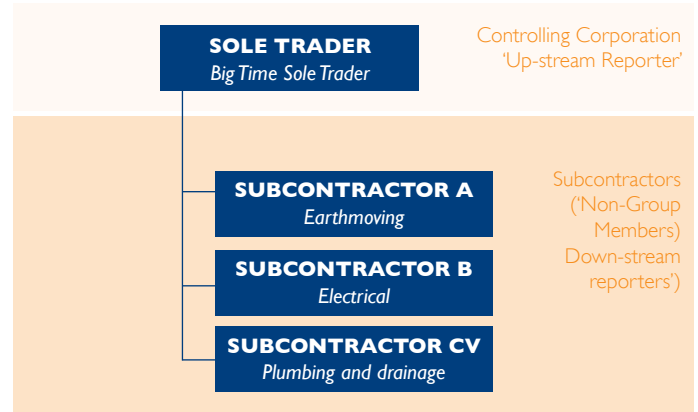
4. Do I need to report? Controlling Corporations and Operational Control and the Facility.

The NGER Act requires a body or person to be responsible for reporting emissions or energy. The way it does this is to introduce a concept of a 'controlling corporation' and 'operational control' and the 'facility definition'.

4.1 THE CONTROLLING CORPORATION AND GROUP MEMBERS



SCENARIO 2 ALTERNATIVE CORPORATE STRUCTURE – SOLE TRADER AND SUBCONTRACTORS



A controlling corporation is the head of a corporate group and any subsidiaries are called 'group members'. See 4.1.1 below for simplified scenarios of corporate structures including the relationship of subcontractors as non-group members and acting as 'down-stream reporters'.

4.1.1 EXAMPLES OF A CONTROLLING CORPORATION

SCENARIO 1 TYPICAL LARGER CORPORATE STRUCTURE – SUBSIDIARIES AND SUBCONTRACTORS

As outlined above, the controlling corporation has the reporting obligation. Only a constitutional corporation can be considered a controlling corporation. Government bodies are an example of an enterprise that does not typically fit the description of a constitutional corporation, however most companies that operate in the pursuit of financial gain are³. Controlling corporations are required to register and report and penalties for issues of serious non-compliance would fall upon the controlling corporation and its CEO or equivalent. Subsidiaries (see second level in Scenario 1) will be required to provide energy and emissions data to the controlling corporation so they can meet the legislative requirements, as too will subcontractors where they are under the operational control of a registered NGER corporation (a controlling corporation that triggers thresholds).

³ Corporations that are unsure of their standing as a constitutional corporation should seek specialist legal advice.

4.2 OPERATIONAL CONTROL

The question of whether a member of a controlling corporation's group has 'operational control' over individual facilities is central to determining mandatory reporting obligations.

Obligations under the Act are based on which members have operational control over facilities that meet a facility threshold or that contribute to meeting a corporate-level threshold.

As a number of members often undertake activities as part of a project, joint ventures and alliances, it is very important to seek professional advice on your obligations wherever there exists any doubt around operational control.

The definition of operational control at s11 of the NGER Act is:

(1) A controlling corporation or another member of the corporation's group has operational control over a facility if:

- (a) it has the authority to introduce and implement any or all of the following for the facility:
 - (i) operating policies;
 - (ii) health and safety policies;
 - (iii) environmental policies;

Further to this, if more than one corporation could equally introduce and or implement all three policies, greater emphasis should be placed on operating and environmental policies (s11 (4) of the NGER Act).

Figure 4.2.1 demonstrates the obligations for different participants in construction projects depending on where operational control lies and whether or not thresholds are triggered. Where a corporation triggers thresholds and has operational control of a project, they are required to report.

FIGURE 4.2.1 OBLIGATIONS AND OUTCOMES FOR OPERATIONAL CONTROL - CONSTRUCTION PROJECTS

CONTROLLING CORPORATION	OPERATIONAL CONTROL	TRIGGER THRESHOLDS	OUTCOME
Head Contractor A	Yes	Yes	Report to government (up-stream reporter)
Head Contractor B	Yes	No	Do not report at all
Subcontractor A	No	No	Report to Head Contractor A
Subsidiary A	Yes	Yes*	Report to Head Contractor A
Subcontractor B	No	No	Do not report at for Head Contractor B (because Head Contractor B is below thresholds)
Principal	No	No	Do not report at all

* Subsidiary A might not trigger thresholds alone, however because they are part of Head Contractor A's Group – which triggers thresholds, Subsidiary A needs to report their data.

It is important to note that each project across the economy is different, with different clauses and arrangements that can affect the application of operational control.

Because of this the Regulator has not issued certain rules – such as “in a civil construction project the head earthmoving contractor will have operational control...”, and corporations should look at projects on a case by case basis. That being said, over the last two years of reporting under NGERs, certain ‘standard practices’ have developed within the construction sector based on the way organisations have generally applied operational control. These standard practices are outlined below in Figure 4.2.2 and apply to the Principal, Head Contractor and Subcontractor relationships.



It is important to note the examples at 4.2.2 are for general information only, are not specifically endorsed by the NGER Regulator and are subject to the individual circumstances of each project.

FIGURE 4.2.2 STANDARD PRACTICE FOR NGER REPORTING – TYPICAL LARGE SCALE COMMERCIAL DEVELOPMENT⁴

PARTY	OPERATIONAL CONTROL?	REPORTS?	JUSTIFICATION (from analysis of standard ISO based contracts between the principal, head contractor and subcontractor at a commercial construction project)
Principal	No	No	<p>An analysis of the high level contractual obligations demonstrates the head contractor has responsibility for key policies. Although the principal often has the ability to suspend the project at any stage, and the head contractor must follow a lawful (under the contract) direction from the superintendent, this should not be considered as a veto to operational control, as the vast majority of the operating, OH&S and environmental policies lie with the head contractor. The principal is responsible for paying the head contractor however, this should not be considered under operational control principals because it is a financial transaction, not operational, environmental or OH&S.</p> <p><i>See below – head contractor justification.</i></p>
Head Contractor	Yes	Yes	<p>OH&S policies – under standard contract clauses the ‘head contractor’ is given the authority to discharge the many and varied responsibilities imposed on them under the Occupational Health and Safety Act 2000. The principal contractor has clear authority to introduce and implement OH&S policies across the series of construction activities.</p> <p>Environmental Policies – under standard clauses ‘the (head) contractor’ also has the sole responsibility for complying with environment protection requirements such as disposal of hazardous waste, pollution and contamination and must remedy any residual pollution or contamination that occurs at the site. The contractor is also required to meet any other legislative requirements regarding protection of the environment and must ensure subcontractors do the same.</p> <p>Operational Policies – throughout standard contracts, many and various key operational policies are introduced and implemented by the head contractor, including but not limited to:</p> <ul style="list-style-type: none"> • Design obligation and further documents • Quality plan • Access to site <ul style="list-style-type: none"> - ‘the contractor has exclusive access to the site from...’ - ‘the contractor may exclude access from the site persons who ...’ • Samples and colour schemes • Provision of materials and labour <ul style="list-style-type: none"> - ‘the contractor will provide at its own expense everything necessary for the proper execution and completion of the project...’ • Construction methods • Construction Program <ul style="list-style-type: none"> • Project supervision • Inspections • Jointly needs to meet the requirements of authorities • Survey Issues • Industrial relations management and site agreement • Existing temporary works, site facilities and services • Indemnity by contractor and release of principal <ul style="list-style-type: none"> - The contractor is liable and releases the principal from and indemnifies the principal against all claims, liabilities ...’ • Care of site • Insurance
Subcontractor/s	No	No ⁵	<p>Although the subcontractor may be responsible for implementing some of the operational, OH&S and environmental policies on-site, the head contractor will implement many more and introduce almost all. This is underpinned by typical clauses in head contractor to subcontractor standard contracts such as the ‘subcontractor must comply with the main contractors Policies and Guidelines...’</p> <p><i>See Above – head contractor justification.</i></p>

⁴Based on content of typical ISO standard contracts – for general information only. Individual contracts and projects may have different circumstances that alter the application of operational control.

⁵Downstream reporter required to provide fuel usage data to the Head contractor with operational control so the Head contractor can report

DCCEE have also prepared a practical tool to help corporations apply and document the principals of operational control. For help determining if your Corporation has operational control please see the Operational Control Score Card at: <http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/~media/publications/greenhouse-report/nger-factsheet-10-operationalscorecard.ashx>

It is also important that operational people and environmental, health and safety (EHS) professionals from the different companies engage in dialogue to help determine operational control. Again, the operational control scorecard is a useful starting point and fulfils the requirement to document these important decisions. It should be noted that corporations cannot ‘contract out’ operational control i.e. include a statement in a contract that one party has operational control when they do not have the greatest authority to introduce and implement operational, environmental and OH&S policies.

4.3 THE FACILITY DEFINITION

The definition of a facility is also central to understanding obligations under the NGER Act. This is because operational control is applied against the facility, and the facility needs to be considered in regards to thresholds.

Generally speaking a facility is an activity or a series of activities under the operational control of one corporation that emits greenhouse gases and consumes or produces energy. Because the facility is an activity or series of activities, not just a site, secondary or 'ancillary' activities that occur on the 'edge' or away from the site sometimes form part of the facility. An example of ancillary activities may be transport activities associated with a construction site. The basic rule for deciding if activities are ancillary and reportable is if they would be considered 'part of the same productive process'.

For example, if the transport of raw materials to and from a construction project (facility) was under the operational control of the head contractor, and was deemed to be part of the same productive process, this activity would be considered ancillary and the diesel and oil etc. consumed by the vehicles would need to be reported against the construction facility.

If the transport of raw materials was not under the operational control of the head contractor and was not part of the same productive process it would not be considered as an ancillary activity and not reportable against the facility. An example of this would be where a concrete truck owned and operated by a concrete manufacturer/distributor delivers materials to a construction site (facility). It is likely the concrete distributor will be in operational control of this activity because they determine routes, vehicle type, driver safety, fuelling of vehicles etc. Although the transport and delivery activity might 'encroach' on the head contractor's construction facility at the point of delivery, it probably does not form a part of the facility. In this scenario the concrete manufacturer/distributor would have to report if they triggered thresholds.

Further, more detailed information on the facility definition is available at the DCCEE website: http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/tools-resources/~/_media/publications/greenhouse-report/nger-factsheet-5-facilities.aspx

5. Small to Medium Contractors - Do I need to report?

Bearing in mind the corporate group (controlling corporation), operational control and the facility definition, CCF believe that most of our small to medium members will not meet reporting thresholds. This is because they will often be subcontracting to large contractors on the bigger projects and that these up-stream reporters will have operational control and therefore reporting responsibility. Small to medium contractors may well have projects where they have operational control as the head or sole contractor; however they will usually be smaller, discrete projects and the emissions and energy from these will be very unlikely to trigger the NGER reporting thresholds.

5.1 WHAT ARE THE NATIONAL GREENHOUSE AND ENERGY REPORTING THRESHOLDS?

Having established the controlling corporation, operational control and the facility definition, corporations need to consider their emissions and energy footprint against the thresholds. A corporation's footprint under NGERs is the sum of emissions and energy from all the facilities under the operational control of the controlling corporation. There are facility level thresholds – which are constant, and corporate level thresholds which decreased over the first three years of reporting.

A corporation is required to report if they trigger **either** facility level thresholds or corporate thresholds. Most construction facilities will be under the facility level threshold of 25 kilotonnes of CO₂-e or 100 terajoules of energy. Large contractors mostly trigger thresholds at the corporate level where the total emissions and energy from their many disparate projects within the year are greater than the corporate thresholds depicted at Figure 5.1.1. Some large contractors will also have commercial property assets and other operations within their corporate group which also contribute to their footprint against NGERs thresholds.

FIGURE 5.1.1 NGER EMISSIONS AND ENERGY THRESHOLDS CORPORATE AND FACILITY

TYPES OF EMISSION SOURCES	AMOUNT – FACILITIES	CORPORATE 2008-9	CORPORATE 2009-10	CORPORATE 2010-11 +
Greenhouse gas emissions (kilotonnes of CO ₂ -e)	25	125	87.5	50
Energy production (terajoules)	100	500	350	200
Energy consumption (terajoules)	100	500	350	200

If any one of these controlling corporation thresholds are met the controlling corporation is required to apply for registration and report all greenhouse gas emissions, energy produced and energy consumed from every facility, regardless of the facility size. If a corporation triggers the facility threshold and not the corporate threshold, they only have to report the facilities above 25 kt and 100 TJ. As mentioned above even large construction projects are usually under the facility level thresholds. Figure 4.2.2 includes some commonly used figures to help explain the thresholds.

⁶Rounded amount based on the AEMO average spot price Victoria 2009/10, \$36.33/MWh.
⁷Rounded amount assuming national average weighted price of \$1.325/litre, w/e 27/06/2010 (AIP) exc. FTCs.

FIGURE 5.1.2 FACILITY LEVEL THRESHOLDS IN COMMON TERMS

EMISSIONS/ ENERGY SOURCE	AMOUNT	FACILITY THRESHOLD TRIGGERED	APPROX COST
Electricity	24 000 MWh	Facility: greenhouse gas emissions (carbon dioxide equivalent – CO ₂ -e)	\$744 000 ⁶
Automotive diesel	2 590 000 litres	Facility: energy consumption	\$3 432 000 ⁷
Bitumen	2 300 tonnes	Energy consumption	NA

As can be seen from this example, a contractor would have to be using 2.59 million litres of diesel per year to meet the automotive diesel component. In dollar terms of diesel at \$1.325 per litre that would be a fuel bill per year of \$3.432 million per year. One of these 'quantities' or 'costs' alone would likely trigger a threshold. Any corporation approaching the figures mentioned above should seek further advice, as facilities will likely have a mix of emissions and energy sources.

Figure 5.1.3 below demonstrates the corporate thresholds against some estimated common terms.

FIGURE 5.1.3 CORPORATE THRESHOLDS

EMISSIONS/ ENERGY SOURCE	AMOUNT	CORPORATE THRESHOLD TRIGGERED (09/10)	APPROX. COST ⁸
Electricity	71,720 MWh	Emissions	\$2,606,000 ⁹
Diesel	9.06 ML	Energy consumption	\$12,004,000 ¹⁰
Bitumen	8,100 tonnes	Energy consumption	NA

In terms of electricity usage members will often consume electricity from the grid, but may use generators to power a site hut and other equipment. Generators produce electricity. Energy produced in the form of electricity is only considered against thresholds (100 or 500 TJ) and reportable when the generator is above 0.5MW in capacity and produces more than 100,000 kWh during the year. Gen-sets of this size producing over 100,000 kWh are uncommon at construction sites, and the portable gen-sets used by most small to medium contractors are well below these thresholds.

5.2 ENERGY AND THRESHOLDS

Constructors need to be particularly aware of the energy consumed thresholds as this is often the first triggered. For example diesel has a high energy value, and the energy threshold of 100TJ will be triggered before the 25 ktCO₂-e. (2.59 Million litres of diesel = 100 TJ) but only 6.99 ktCO₂-e).

Under the NGER Act, laying of bitumen is considered as energy consumed. Bitumen has a high energy content, and around 2,300 tonnes or 8,100 tonnes will trigger¹¹ the facility and corporate thresholds respectively.

DCCEE have developed a tool to help corporations gain a preliminary picture of their emissions and energy footprints against thresholds.

The NGER calculator is available at:

<https://www.oscar.gov.au/Deh.Oscar.Extension.Web/Content/NgerThresholdCalculator/Default.aspx>

⁸ Large users are likely to gain lower rates than those used to calculate the above amounts. These figures are a guide only and should not solely be relied upon to determine threshold triggers.

⁹ Rounded amount based on the AEMO average spot price Victoria 2009/10, \$36.33/MWh.

¹⁰ Rounded amount assuming national average weighted price of \$1.325/litre, w/e 27/06/2010 (AIP) – excluding Fuel Tax Credit (FTCs).

¹¹ Bitumen is currently being considered by DCCEE for a higher reporting threshold, however any threshold will not be in place until at least the 2011/12 reporting year.

6. How to Register

When thresholds are triggered a corporation is required to register under the NGER Act. Applications for registration are prepared online and signed by the CEO. If thresholds are likely to be exceeded in the financial year the controlling corporation must register by 31 August directly after the financial year when any thresholds are triggered.

Further information on registration can be found at:

<http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/register.aspx>

7. Obligations for Down-stream Reporters

As mentioned earlier, most small to medium contractors will be down-stream reporters, they will be required to provide the energy and emissions data to the larger head contractors (up-stream reporters). Under the NGER Act up-stream reporters cannot force subcontractors to provide them the usage data however they can provide it directly to the Greenhouse and Energy Data Officer (GEDO) if they so choose¹². The GEDO can demand energy and emissions data from 'an other person' (i.e. a down-stream reporter not registered) under s19 of the NGER Act, and may apply civil penalties where this demand is not met.

Increasingly up-stream reporters are including the requirement for small to medium subcontractors to provide the energy data they need to fulfil their NGER obligations into standard contracts. Down-stream reporters who fail to monitor, manage and provide usage data to up-stream reporters may be at a commercial disadvantage going forward. **Appendix B – Typical Downstream Reporter Data Capture Sheet** is a standard form developed by the Australian Constructors Association (ACA) that up-stream reporters are using to capture subcontractor data.

Down-stream reporters should also keep invoices associated with the data they provide to up-stream reporters for a minimum of seven years. If an up-stream reporter is audited, the NGER auditor may ask them to provide evidence of the fuel use etc. associated with down-stream (subcontractor) activities. This requirement is similar to the conditions in place with the Australian Tax Office (ATO) and Fuel Tax Credits.

¹² Companies might choose to do this if they believe the energy data is commercially sensitive and do not want the head contractor to have access to these figures. Corporations that chose to do this must meet the administrative requirements put in place by the GEDO, and are required to report in the manner and form prescribed by the GEDO.

7.1 LIQUID FUELS

The most common fuel usage in our industry is diesel so for a number of contractors the key data they will provide is their diesel usage. This should not be a complex or onerous obligation as contractors are already required to keep details of fuel acquisition and use to claim Fuel Tax Credits under Taxation legislation.

What will be different in this case is that contractors will need to be able to allocate fuel usage to particular projects (facilities). This is because up-stream reporters usually have to report energy and emissions per facility. The CCF has worked very closely on establishing some methodologies with the ATO for fuel tax purposes which take account of the fact that a number of contractors work on a number of projects at the one time.

Those methodologies provide a good basis for supporting any reporting obligations which might be required under contractual or other obligations.

In particular smaller contractors should give thought to the use of job sheets which record the following:

- the time a particular piece of plant is on a particular site
- the amount of fuel that such equipment consumes on an hourly basis
- whether the fuel is used for transport or non-transport¹³ activities; and
- the type of fuel that is consumed.

For further information about the taxation methodologies see www.ato.gov.au

CCF has prepared a Liquid Fuel Consumption Calculator, available at www.civilcontractors.com, which is a spread sheet to estimate the GHG emissions, energy consumed and produced from each facility to controlling corporation. Corporations need to know their usage of fuels and energy commodities and enter these amounts into the calculator. Usage is usually included on invoices from suppliers and retailers of fuel, electricity, gas etc. and corporations will often need to examine their accounts payable systems and invoices to collate all the required information.

¹³Under NGERs only road-registered vehicles are considered as transport.

A full list of the reportable energy commodities and fuel types is at **Appendix A –Reportable Energy Commodities**. In general, the key sources reportable in the construction sector include:

- Diesel (listed as Diesel oil at Appendix A)
- Petrol (Gasoline at Appendix A)
- LPG (liquid petroleum gas at Appendix A)
- Electricity
- Bitumen
- Biodiesel (as a component of B20)
- Ethanol (as a component of E10 petrol)
- Petroleum based oils (engine oil, other lubricating oil)
- Petroleum based greases

To learn more about the reporting of liquid fuels under NGER, please refer to the *CCF Liquid Fuels Fact Sheet 2011*, which is available on the CCF National website at www.civilcontractors.com.

7.2 OILS AND GREASES

Contractors may also have to report petroleum based oils and greases. These are the products commonly used for lubrication purposes. All oils and greases used for lubrication purposes are reportable under the NGER legislation. As a contractor you should keep records of the quantity of petroleum based oils and greases consumed. Actuals should be reported to up-stream corporations where possible, however if it is not possible to capture actual usage of oils and greases downstream reporters are encouraged to estimate these, rather than exclude altogether. These sources are often incidental, and a reporter can use their own methods to estimate – see '**Incidental reporting**' for more detail.

An example of an estimation technique for oils and greases for an earthmoving contractor might be: **(hours on site/hours per year) x (sump capacity x oil change per year) e.g.: (30/1500) x (15 x 5) = 1.5 litres reported to up-stream reporter A for equipment type B at facility C.**

7.3 NON ENERGY PRODUCTS WHICH ARE NOT COMBUSTED - ASPHALT AND BITUMEN

Bitumen is commonly used in road construction as an ingredient in asphalt. The NGERs legislation considers bitumen as a "fuel consumed without combustion" at the point it is aggregated as asphalt or sprayed. For facilities (and this could include a road construction) the threshold requires it to be greater than 2,300 tonnes of bitumen use in any reporting year. The corporate threshold for energy consumption is triggered at around 8,100 tonnes.

7.4 CEMENT

Cement is commonly used in civil construction. The cement manufacture has a large emissions and energy footprint, however this will be reported by the manufacturer who has operational control of this production facility – not the end user. Contractors using liquid fuels to power small scale equipment such as screeders etc. will need to report this as non-transport gasoline. This is dealt with in some detail in the ACA discussion paper at 3.7.

7.5 WASTE

Solid waste disposal is often part of earthmoving works. If the waste is disposed of off-site (i.e. municipal tip) any emissions occurring from the break-down of waste are reportable by the corporation with operational control of the waste facility, not the corporation that produces the waste. Where waste is disposed of on-site - for example in a cut and fill operation - it may be necessary to record the information if the landfill emits more than 10,000 tonnes of CO₂-e during the year. The corporations with operational control will be required to report emissions from solid waste under NGERs. This is likely to be rare in the construction sector as usually only commercial scale waste facilities have this size footprint. If the onsite landfill is under operational control of the up-stream reporter (for example the developer/head contractor) you will not be required to report the emissions from the landfill, but may be required to provide information on the solid waste entering the site to that corporation.

Emissions often occur from the break-down of liquid waste from small, medium sewerage plants that may be on-site. This is also a complex area, usually managed by up-stream reporters. Some of the data they may require to estimate emissions from liquid waste include the population serviced, the equipment type and the amount of waste transferred off-site.

Please refer to Chapter 5 of the NGER (Measurement) Determination 2008 for further information on Waste. DCCEE has also developed waste calculators to assist reporters at: <http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/tools-resources/calculators.aspx>. Corporations undertaking solid and liquid waste activities should seek professional advice as this is a complex area of calculation and estimation of emissions.

7.6 ENERGY CONSUMPTION

The NGER Act provides not only for the measurement of emissions, but also energy consumed and produced. Energy production thresholds are very unlikely to be triggered by small to medium contractors. Energy consumption is intrinsically linked to emissions measurement and reporting. All energy commodities and fuel sources have an energy value which needs to be reported. This is usually not of concern to down-stream reporters however as energy is automatically calculated from fuel usage data – usually via default energy values described in Schedule 1 of the NGER (Measurement) Determination 2008. The energy thresholds are discussed earlier at 5.2 **Energy and Thresholds**

7.7 INCIDENTAL REPORTING

Incidental greenhouse gas emissions and energy are small sources of greenhouse gas emissions or energy at a facility. Special provision for incidental reporting has been made in recognition that monitoring and measuring very small amounts of greenhouse gas emissions, energy production or energy consumption within a facility may be difficult and prohibitively costly for corporations.

The thresholds for sources to be considered 'incidental' they must fall within the following thresholds and percentage amounts set out in sub-regulations 4.27 (5), (6) and (7) of the NGER regulations.

FIGURE 7.7.1 INCIDENTAL REPORTING THRESHOLDS

EMISSION AND ENERGY FROM INDIVIDUAL SOURCE	EMISSIONS CO ₂ -E	ENERGY CONSUMED	ENERGY PRODUCED
Actual amount from an individual source	3 kt	15 TJ	15TJ
Percentage of facility totals from an individual source	0.50%	0.50%	0.50%
Actual amount from sources that can be aggregated	12kt	60TJ	60TJ
Percentage of facility totals that can be aggregated	2%	2%	2%

However as a contractor you are required to provide data to the controlling corporation with operational control of the facility you are working on. The responsibility to determine if incidental emissions are to be reported falls on the controlling corporation with operational control of the facility – the up-stream reporter.

Down-stream reporters should provide actual usage amounts as evidenced by invoices rather than estimates wherever possible.

8. Civil penalties for non-compliance

The Act contains substantial penalties. Penalty Units are defined under the Crimes Act as \$110 per penalty unit. Penalties as contractors you should be aware of include civil penalties for:

- Failing to provide information to the GEDO (the regulator) on or before a date specified by the GEDO – for an individual 400 penalty units (\$44,000) and for a corporation 2000 penalty units (\$220,000);
- Failure to keep records as required under Section 22 (2) of the Act, a fine of \$22,000 or for a corporation \$110,000; and
- Other penalties for not meeting obligations and requirements within a particular time or period of \$1100¹⁴ per day.

The GEDO has made it clear that in the early stages of NGER reporting the Regulator will take a facilitative role in encouraging compliant reporting. Corporations acting in good faith (making appropriate efforts to report accurately and continually improve) are unlikely to have penalties applied for less serious issues of non-compliance. It is likely however that when a carbon price is implemented, the Regulator will take a harder line on compliance. The DCCEE compliance and enforcement policy can be found at:

<http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/~media/publications/greenhouse-report/nger-education-compliance-enforcement-policy.pdf>

¹⁴Under section 12,19,20 & 73 an act or thing is required to be done within particular period, or before particular time and a person fails to comply with that requirement, the person is liable for a civil penalty for each day the person fails to comply section 30. Failure to meet a requirements under section 12,19 or 20, 100 penalty points per day, failure to meet requirements under section 73, 10 penalty units per day.

9. Practical Examples of NGER Obligations at a Site

Appendix C – Case Study contains a case study worked up from a typical scenario. The case study is hypothetical and for demonstration purposes only.

10. Further materials

A range of material is available to assist in interpretation and in meeting reporting obligations. These are listed in **Appendix D**.

11. Specialist Advice

The specialist environmental services of Ndevr Pty Ltd have been utilised to develop this document. Members seeking further, specific advice should contact:

Matt Drum

Senior Consultant - Environment

RABQSA Environmental Auditor (#112782)

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MELBOURNE - SYDNEY - BRISBANE - NEW ZEALAND



APPENDIX A –REPORTABLE ENERGY COMMODITIES

ITEM	FUELS AND OTHER ENERGY COMMODITIES
Solid fossil fuels and coal based products	
1	Black coal (other than that used to produce coke)
2	Brown coal
3	Coking coal
4	Brown coal briquettes
5	Coke oven coke
6	Coal tar
7	Solid fossil fuels other than those mentioned in items 1 to 5
Fuels derived from recycled materials	
8	Industrial materials and tyres that are derived from fossil fuels, if recycled and combusted to produce heat or electricity
9	Non biomass municipal materials, if recycled and combusted to produce heat or electricity
Primary solid biomass fuels	
10	Dry wood
11	Green and air dried wood
12	Sulphite lyes
13	Bagasse
14	Biomass municipal and industrial materials, if recycled and combusted to produce heat or electricity
15	Charcoal
16	Primary solid biomass fuels other than those mentioned in items 10 to 15
Gaseous fossil fuels	
17	Natural gas if distributed in a pipeline
18	Coal seam methane that is captured for combustion
19	Coal mine waste gas that is captured for combustion
20	Compressed natural gas
21	Unprocessed natural gas
22	Ethane
23	Coke oven gas
24	Blast furnace gas
25	Town gas
26	Liquefied natural gas
27	Gaseous fossil fuels other than those mentioned in items 17 to 26
Biogas captured for combustion	
28	Landfill biogas that is captured for combustion
29	Sludge biogas that is captured for combustion
30	A biogas that is captured for combustion, other than those mentioned in items 28 to 29
Petroleum based oils and petroleum based greases	
31	Petroleum based oils (other than petroleum based oils used as fuel)
32	Petroleum based greases
Petroleum based products other than petroleum based oils and petroleum based greases	
33	Crude oil including crude oil condensates
34	Other natural gas liquids
35	Gasoline (other than for use as fuel in an aircraft)
36	Gasoline for use as fuel in an aircraft
37	Kerosene (other than for use as fuel in an aircraft)

APPENDIX A CONT...

ITEM	FUELS AND OTHER ENERGY COMMODITIES
38	Kerosene for use as fuel in an aircraft
39	Heating oil
40	Diesel oil
41	Fuel oil
42	Liquefied aromatic hydrocarbons
43	Solvents if mineral turpentine or white spirits
44	Liquefied petroleum gas
45	Naphtha
46	Petroleum coke
47	Refinery gas and liquids
48	Refinery coke
49	Bitumen
50	Waxes
51	Petroleum based products other than: <ul style="list-style-type: none"> (a) petroleum based oils and petroleum based greases mentioned in items 31 to 32 (b) petroleum based products mentioned in items 33 to 50
Biofuels	
52	Biodiesel
53	Ethanol for use as a fuel in an internal combustion engine
54	Biofuels other than those mentioned in items 52 to 53
Petrochemical feedstock	
55	Carbon black if used as a petrochemical feedstock
56	Ethylene if used as a petrochemical feedstock
57	Petrochemical feedstock other than those mentioned in items 55 to 56
Energy commodities	
58	Sulphur
59	Solar energy for electricity generation
60	Wind energy for electricity generation
61	Water energy for electricity generation
62	Geothermal energy for electricity generation
63	Uranium
64	Hydrogen
65	Electricity
66	Energy commodities other than those mentioned in items 58 to 65 and in the form of steam, compressed air or waste gas acquired either to produce heat or for another purpose

APPENDIX B - NGER DATA CAPTURE SUBCONTRACTOR FORM

NGER Data Capture Subcontractor Form							COMPANY LOGO
PLEASE USE ACTUAL INVOICED AMOUNTS WHERE POSSIBLE. IF NOT PLEASE DESCRIBE THE METHOD USED TO ESTIMATE OR APPORTION ENERGY USE.							
Subcontractor Name				Subcontractor Reference (where applicable)	Purchase order #	Identifier	
Subcontractor Address							
Facility (site) name and address							
ENERGY TYPE	ACTUAL**	ESTIMATE ***	Units	ENERGY TYPE	ACTUAL**	ESTIMATE ***	Units
Electricity (only if metered) Non-renewable (from grid) Renewable (eg Wind, Solar, Geothermal)			kWh (kilowatt hours)	Electricity Generated (Include generators with a capacity ≥0.5MW or 500kVa and producing >100,000 kWh) per year			kWh (kilowatt hours)
Fuel/Lubricants/Solvents/Refrigerants							
Diesel stationary*			kL (kilolitres = litres/1000)	Ethanol Blends (eg E10)			kL
Diesel transport			kL	Oil (engine oil)			L (litres)
Unleaded Petrol Stationary			kL	Oil (non-combusted – hydraulic, gear oil etc)			L (litres)
Unleaded Petrol Transport			kL	Grease			kg (kilograms) or Litres
Biodiesel (eg B5, B20 – include name here) _____			kL (kilolitres)	Explosives			
Jet A1 (AVTUR)			kL (kilolitres)	Diesel Component only			L (litres)
LPG			Kg or kL	Refrigerants and Insulants			
CNG			cubic metres	HFC-23 (CHF3)			kg
Natural Gas			cubic metres	HFC-152a (C2H4F2, CH3CHF2)			kg
Bulk Solvents (eg Thinners, WD40, RP7, etc)			L (litres)	HFC-134a (C2H2F4, CH2FCF3)			kg
OTHER (As specified within the NGER measurement determination)				SF6			kg
* road registered vehicles are considered 'transport' – everything else (including non-road registered vehicles) is considered 'stationary'				**if amounts from invoiced data please attach copies.			
***if amounts estimated, please describe the method used – methods must be consistent with the NGER (Measurement) Determination 2008:					Subcontractor SIGNATURE/DATE:		
					By signing the representative authorises that information is accurate and comprehensive.		

APPENDIX C CASE STUDY: UPGRADE OF A POWER FACILITY

Gen Co operates a major electricity generator in regional Australia. Gen Co and the owner of the plant Large Co are substantially upgrading the facility. As part of the upgrade substantial earthwork and road construction is required. Major Constructor Co is engaged as the head contractor to project manage and complete all the construction work.

Large Co (principal) and Major Construction Co (head contractor) have discussed the operations, the project specifics, policies and contracts and it is clear that operational control lies with Major Construction Co. As an additional assurance exercise, and to document the decision, the principal and the head contractor completed an operational control scorecard.

Major Constructor Co call for tenders for construction of the 50 kilometres of road to be built. The new access road will need to be sealed and long wearing as large haulage trucks will make frequent trips to the power plant. Indeed as part of the planning approvals for the refurbishment the local council has set down a number of conditions for the specifications for the road.

Major Co break the 50 kilometre road into two parcels of 25 kilometres each, mainly because the road will traverse two very different sites and terrain. Jeff Co are specialist road constructors particularly in dealing with marshland over which the new road will need to be constructed. They have worked previously on a number of projects with Major Constructor and are familiar with the reporting requirements and general contractual conditions of such projects. Indeed Major Constructor has required Jeff Co to provide diesel usage as well as energy consumption in the past. They have a form which is routinely given to the subcontractors to submit with their progress payment requests. Major Co also as part of their contract supply the site hut and site generators.

For this work two excavators are brought from another project to work only on this site. Jeff Co refuels these excavators on site from a mobile tanker which Jeff Co leave there for the duration of the project. The diesel usage is a very significant cost as due to tight project timelines the excavators are operating constantly in shifts. When the excavators are fuelled, operators record this in a fuel log which is then uploaded weekly into Jeff Co's database. The Excavators also have on board GPS which also monitors fuel usage but this is mainly for the purposes of engine performance rather than fuel usage recording.

During the work it becomes clear that another excavator is required. As another road project Jeff Co is working on is very close by Jeff Co drive the excavator to Major Co's site. It has been refuelled from a regular tanker delivery from the other site which it will travel back to at day's end. Jeff Co know they need to keep a track of the fuel usage between the two sites and ask the driver to complete a manual log of how many hours he is on each site. Whilst this isn't the best solution (compared to measuring actuals at each site like the other excavators) it is a work around until this Excavator is fitted with a new GPS system. The tanker which travels to this site is part of a commercial arrangement and the tanker company provides a docket recording the fuel delivery as well as a monthly invoice.

All three excavators are regularly serviced dependent on their hours of operation. At month's end Jeff Co collate their diesel usage in litres for the two excavators and provide that data to up-stream reporter Major Co. For the third excavator Jeff Co calculate the hours the excavator was on Major Project's site and using the methodology they use for fuel tax credits work out an averaging of fuel usage per hour based on the manufacturers specifications. They submit this as well, noting that the usage was estimated¹⁵, rather than based on invoice data, and describe the method used. Major Co require this information because as up-stream reporters they are required to identify how the usage was calculated. Jeff Co will also need to describe if the fuel was used for stationary purposes or transport. The excavators are not road-registered, therefore the fuel use is considered to be for stationary energy purposes¹⁶.

Jeff Co also has two road-registered 4WD vehicles for on-site purposes including escort vehicles. Petrol is purchased via fuel cards and Jeff Co receives monthly invoices from the supplier. Jeff Co also run a small gen-set to power their site-hut. The diesel supplier fills this as required and provides Jeff Co an itemised invoice. There is no on-site use off electricity from the grid.

The lubricant and grease use is much more difficult. The excavators are greased every day on site by the operators. Jeff Co knows that over a month the business which has about 12 machines across various sites would use 144 cartridges of grease with each cartridge being 455 grams

On a daily basis the excavators are using minimal lubricants. The main lubricant use occurs on their regular servicing which is done on an 'hours of operation basis eg 500 hours, 2000 hours. A major 2000 hour service on a typical excavator would consist of approximately 250 litres of hydraulic oil and 30 litres of gearbox oil and 8 litres of engine oil.

¹⁵This example would likely meet a criteria BBB for measuring quality, rather than criteria A/AAA.

¹⁶Division 2.4.6 of the NGER (Measurement) Determination 2008 includes more detail on measurement criteria, Part 2.4 covers the combustion of liquid fuels.

Jeff Co make an estimation that one quarter (3 of 12 machines) of their total monthly oil and grease consumed occurs at the Major Co road construction site. Jeff's Co's completed data form for the head contractor follows:

NGER Data Capture Subcontractor Form							COMPANY LOGO
PLEASE USE ACTUAL INVOICED AMOUNTS WHERE POSSIBLE. IF NOT PLEASE DESCRIBE THE METHOD USED TO ESTIMATE OR APPORTION ENERGY USE.							
Subcontractor Name	Jeff Co.			Subcontractor Reference (where applicable)	Purchase order #	Identifier	
Subcontractor Address							
Facility (site) name and address	Gen Co Facility (Major Construction Co. head contractor)						
ENERGY TYPE	ACTUAL**	ESTIMATE ***	Units	ENERGY TYPE	ACTUAL**	ESTIMATE ***	Units
Electricity (only if metered) Non-renewable (from grid) Renewable (eg Wind, Solar, Geothermal)			kWh (kilowatt hours)	Electricity Generated (Include generators with a capacity ≥0.5MW or 500kVa and producing >100,000 kWh) per year			kWh (kilowatt hours)
Fuel/Lubricants/Solvents/Refrigerants							
Diesel stationary*	5.565	0.965	kL (kilolitres = litres/1000)	Ethanol Blends (eg E10)			kL
Diesel transport			kL	Oil (engine oil)		80	L (litres)
Unleaded Petrol Stationary	0.250		kL	Oil (non-combusted – hydraulic, gear oil etc)		35	L (litres)
Unleaded Petrol Transport	2.015		kL	Grease		16	kg (kilograms) or Litres
Biodiesel (eg B5, B20 – include name here) _____			kL (kilolitres)	Explosives			
Jet A1 (AVTUR)			kL (kilolitres)	Diesel Component only			L (litres)
LPG			Kg or kL	Refrigerants and Insulants			
CNG			cubic metres	HFC-23 (CHF3)			kg
Natural Gas			cubic metres	HFC-152a (C2H4F2, CH3CHF2)			kg
Bulk Solvents (eg Thinners, WD40, RP7, etc)			L (litres)	HFC-134a (C2H2F4, CH2FCF3)			kg
OTHER (As specified within the NGER measurement determination)				SF6			kg
* road registered vehicles are considered 'transport' – everything else (including non-road registered vehicles) is considered 'stationary'				**if amounts from invoiced data please attach copies.			
***if amounts estimated, please describe the method used – methods must be consistent with the NGER (Measurement) Determination 2008:					Subcontractor SIGNATURE/DATE: By signing the representative authorises that information is accurate and comprehensive.		
OFFICE USE:	Job number:			Date Entered:			

APPENDIX D FURTHER INFORMATION TO ASSIST IN INTERPRETATION AND MEETING REPORTING OBLIGATIONS

NGERS CALCULATOR AND USERS GUIDE

This calculator provides a spread sheet to estimate the GHG emissions, energy consumed and produced from each facility to control.

<https://www.oscar.gov.au/Deh.Oscar.Extension.Web/Content/NgerThresholdCalculator/Default.aspx>

REFERENCE MATERIAL

Legislation

National Greenhouse and Energy Reporting Act 2007

[http://www.comlaw.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/BFB7E20B021CEEBCA25764F007C0D9F/\\$file/NatGreenhouseEneReport2007.pdf](http://www.comlaw.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/BFB7E20B021CEEBCA25764F007C0D9F/$file/NatGreenhouseEneReport2007.pdf)

National Greenhouse and Energy Reporting Regulations 2008

[http://www.comlaw.gov.au/ComLaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/5E4937C42F369EE5CA25757500027E3B/\\$file/NatGreenhouseEnergyReporting2008.pdf](http://www.comlaw.gov.au/ComLaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/5E4937C42F369EE5CA25757500027E3B/$file/NatGreenhouseEnergyReporting2008.pdf)

National Greenhouse and Energy Reporting (Measurement) Determination 2008

[http://www.comlaw.gov.au/ComLaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/FE8DD729F657D780CA2575F6000B4E62/\\$file/NatGreenhseEngyRepMeasDet2008.pdf](http://www.comlaw.gov.au/ComLaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/FE8DD729F657D780CA2575F6000B4E62/$file/NatGreenhseEngyRepMeasDet2008.pdf)

Guidelines

National Greenhouse and Energy Reporting Act 2007 - Guidelines

Overview and Home page of NGER Scheme

<http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting.aspx>

National Greenhouse and Energy Reporting (NGERS) Reporting Guidelines - information on how to interpret the act and regulations, including registration and reporting obligations.

<http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/~media/publications/greenhouse-report/nger-reporting-guidelines.ashx>

National Greenhouse and Energy Reporting (Measurement) Technical Guidelines - technical information on fuel sources and activity data; and how to calculate an estimate of emissions and energy at the facility level.

<http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/~media/publications/greenhouse-report/nger-measurement-technical-2009.ashx>

OTHER KEY DOCUMENTS

Information on the Online System for Comprehensive Activity Reporting (OSCAR) tool.

<http://www.climatechange.gov.au/government/initiatives/oscar.aspx>

Reporting Guidance - National Greenhouse and Energy Reporting (Measurement) Amendment Determination 2009

<http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/progress/~media/publications/greenhouse-report/nger-determination-2009.ashx>

General overview of business obligation regarding carbon and energy

<http://www.climatechange.gov.au/business.aspx>



For further assistance,
contact your CCF Branch.



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