Appendix AF

Greenhouse Gas Management Plan
Project Manager:  
Gareth Bramston

Name of Client:  
Taroom Coal Proprietary Limited

Name of Project:  
Elimatta

Title of Document:  
Greenhouse Gas Management Plan

Document Version:  
Final

This controlled document is the property of AustralAsian Resource Consultants Pty Ltd and all rights are reserved in respect of it. This document may not be reproduced or disclosed in any manner whatsoever, in whole or in part, without the prior written consent of AustralAsian Resource Consultants Pty Ltd. AustralAsian Resource Consultants Pty Ltd expressly disclaims any responsibility for or liability arising from the use of this document by any third party.

Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions. Information obtained from interviews and contained in the documentation has been assumed to be correct and complete. AustralAsian Resource Consultants Pty Ltd does not accept any liability for misrepresentation of information or for items not visible, accessible, nor able to be inspected at the sites at the time of the site visits.
## TABLE OF CONTENTS

1.0 INTRODUCTION ................................................................. 1
1.1 SCOPE OF DOCUMENT ......................................................... 1

2.0 MAJOR EMISSION SOURCES .................................................. 3
2.1 GREENHOUSE GAS EMISSION ESTIMATION .................................. 3
2.2 GREENHOUSE GAS PRODUCING ACTIVITIES AND EMISSION FACTORS ........... 4
  2.2.1 Direct Emissions ................................................................ 4
    2.2.1.1 Liquid Fuel Emissions .................................................. 4
    2.2.1.2 Explosive Emissions ..................................................... 5
    2.2.1.3 Coal Extraction Emissions ............................................. 5
  2.2.2 Indirect Emissions ............................................................. 5
    2.2.2.1 Electricity Consumption Emissions .................................. 5
  2.2.3 Summary of Emissions ....................................................... 6

3.0 PROPOSED MANAGEMENT OF GREENHOUSE GASES ....................... 9
  3.1 REQUIREMENTS UNDER NATIONAL GREENHOUSE AND ENERGY REPORTING ACT 2007 (CTH) ........................................................................ 9
  3.2 REQUIREMENTS UNDER ENERGY EFFICIENCY OPPORTUNITIES ACT 2006 .......... 9
  3.3 CORPORATE GREENHOUSE GAS GUIDELINES AND STANDARDS .............. 10
  3.4 MANAGEMENT OBJECTIVES ................................................... 11

4.0 ACTION PLAN ........................................................................... 12

5.0 REPORTING AND AUDITING .................................................... 16
  5.1 NATIONAL GREENHOUSE AND ENERGY REPORTING REQUIREMENTS ........... 16
  5.2 ENERGY EFFICIENCY OPPORTUNITIES ACT REPORTING REQUIREMENTS ........ 16

6.0 REFERENCES ............................................................................ 17
LIST OF FIGURES

Figure 1 Regional Project Location ........................................................................................................2

LIST OF TABLES

Table 1 Greenhouse Gas Emission Factors for Liquid Fuel ...............................................................5
Table 2 Greenhouse Gas Emission Factors for Coal Extraction ...........................................................5
Table 3 Greenhouse Gas Emission Factors for the Consumption of Electricity .................................6
Table 4 Annual Greenhouse Gas Emissions for Project Operations .....................................................7
Table 5 Annual Greenhouse Gas Emissions for the West Surat Link ....................................................8
Table 6 Action Plan for Reducing Greenhouse Gas Emissions – Construction Phase ......................12
Table 7 Action Plan for Reducing Greenhouse Gas Emissions – Operation Phase ..........................14
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Percent</td>
</tr>
<tr>
<td>AARC</td>
<td>AustralAsian Resource Consultants Pty Ltd</td>
</tr>
<tr>
<td>ANFO</td>
<td>Ammonium Nitrate/Fuel Oil</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>CO₂-e</td>
<td>Carbon dioxide equivalents</td>
</tr>
<tr>
<td>Cth</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>EEO Act</td>
<td>Energy Efficiency Opportunities Act (Cth)</td>
</tr>
<tr>
<td>GGMP</td>
<td>Greenhouse Gas Management Plan</td>
</tr>
<tr>
<td>GJ</td>
<td>gigajoule</td>
</tr>
<tr>
<td>kL</td>
<td>kilolitres</td>
</tr>
<tr>
<td>km</td>
<td>kilometres</td>
</tr>
<tr>
<td>kt</td>
<td>kilotonnes</td>
</tr>
<tr>
<td>kWh</td>
<td>kilowatt hours</td>
</tr>
<tr>
<td>NGA</td>
<td>National Greenhouse Accounts</td>
</tr>
<tr>
<td>NGER Act</td>
<td>National Greenhouse and Energy Reporting Act 2007 (Cth)</td>
</tr>
<tr>
<td>TJ</td>
<td>terajoules</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

AustralAsian Resource Consultants Pty Ltd (AARC) was commissioned by Taroom Coal Pty Ltd (Taroom Coal) to develop a Greenhouse Gas Management Plan (GGMP) for the proposed Elimatta Project (the Project). Taroom Coal is a wholly owned subsidiary of Northern Energy Corporation Limited (NEC), a fully owned entity of New Hope Corporation Limited (New Hope).

The Project Site is located in southern inland Queensland, approximately 30 kilometres (km) west of Wandoan in the northern Surat Basin, Queensland (Figure 1). This region lies approximately 280 km north-west of Toowoomba, and 380 km north-west of Brisbane. Access to the Project Site is via the Yuleba Taroom Road west of the Leichhardt Highway. Current land uses include coal exploration and low intensity cattle and horse grazing. The Project will include a Rail and Services Corridor allowing for construction and operation of the West Surat Link (WSL), a 36 km long rail alignment connecting to the Surat Basin Rail (SBR).

As part of the Australian Government’s comprehensive Climate Change Strategy, the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act) was passed in September 2007 and establishes a mandatory corporate reporting system for greenhouse gas emissions, energy consumption and production.

The Energy Efficiency Opportunities Act 2006 (EEO Act) was passed in April 2006 with the object of improving the identification and evaluation of energy efficiency opportunities by large energy-using businesses and, as a result, to encourage implementation of cost-effective energy efficient opportunities. The Act requires large energy-using businesses to undertake an assessment of their energy efficiency opportunities and to report publicly on the outcomes of that assessment. Taroom Coal will be required to register under the EEO Act as the total annual energy use for the Elimatta Project is estimated to be in excess of 0.5 petajoules, the reporting threshold.

1.1 SCOPE OF DOCUMENT

The scope of this Greenhouse Gas Management Plan is to:

- Provide a summary of the findings of the air quality assessment for the Project in respect to the sources of major greenhouse gas emissions;

- Ensure that through the use of best practice, the total net greenhouse emissions and/or greenhouse gas emissions per unit of product are minimised;

- Outline Project management objectives and targets for greenhouse gas management and abatement initiatives;

- Develop an action programme to meet proposed objectives and targets; and

- Develop a schedule and guidelines for data collection, reporting and independent verification purposes in compliance with the NGER Act.
Figure 1  Regional Project Location
2.0 **MAJOR EMISSION SOURCES**

2.1 **GREENHOUSE GAS EMISSION ESTIMATION**

An assessment of the greenhouse gas emissions associated with the Project was conducted by ASK Consulting Engineers and involved:

- Identification of the likely sources of greenhouse gas emissions;
- Estimation of the likely quantities of greenhouse gases from these sources;
- Nomination of emission factors for the greenhouse sources; and
- Identification of possible emission abatement measures.

The greenhouse gas emissions from the proposed Project have been estimated using the *National Greenhouse Accounts* (NGA) Factors (Department of Climate Change and Energy 2011a). The NGA Factors detail a method for the calculation of an activity's greenhouse gas intensity through the use of emission factors that relate the quantity of fuel or energy consumed to a quantity of carbon dioxide equivalents (CO₂-e) emitted for that activity over a given period of time.

Greenhouse gas emission estimates were calculated based on the following:

- Operational data (mine plans, proposed equipment fleet and operational hours); and

The emission factors are activity-specific and are categorised as being direct or indirect depending on whether they occur within or outside of an organisation’s boundary.

Direct emissions (or Scope 1) may include:

- Generation of energy, heat, steam and electricity, including carbon dioxide and products of incomplete combustion (methane and nitrous oxide);
- Manufacturing processes which produce emissions (for example, cement, aluminium and ammonia production);
- Transportation of materials, products, waste and people (for example, use of vehicles owned and operated by the reporting organisation);
- Fugitive emissions: intentional or unintentional GHG releases (such as methane emissions from coal mines, natural gas leaks from joints and seals); and
- On-site waste management, such as emissions from landfill sites.

Indirect emissions include the emissions associated with the generation and consumption of purchased electricity (Scope 2).
A second category of indirect emissions is termed Scope 3. These emissions include greenhouse gas emissions other than due to electricity generation that are related to an organisation’s activities but that are produced by another organisation. For example, the greenhouse gas emissions which are associated with the transportation of energy to the Project site and materials off site.

The status and relevance of Scope 3 emissions to this type of study is currently being evaluated and debated. It has been commonly seen as an optional component in this type of study. Since Scope 3 emissions are not able to be directly influenced by Taroom Coal, they have not been quantified for this report.

During Project construction and operation, measurement of greenhouse gas emissions will be conducted in accordance with the methodology proposed in the National Greenhouse and Energy Reporting (Measurement) Determination 2008.

2.2 GREENHOUSE GAS PRODUCING ACTIVITIES AND EMISSION FACTORS

The major activities at the Project that are likely to produce greenhouse gas emissions are:

Direct emissions:

- Consumption of diesel in mobile and back-up generators during the construction and operational phase of the Project (including the Rail and Services Corridor);
- Consumption of diesel by vehicles, locomotives and mining equipment at the mine site and the Rail and Services Corridor;
- Combustion of Ammonium Nitrate Fuel Oil (ANFO) for blasting; and
- Coal seam gas emissions;

Indirect emissions:

- Emissions from purchased electricity used by the Project during both construction and production phases. An application has been made with Ergon Energy to provide a grid supply to the Project.

2.2.1 Direct Emissions

2.2.1.1 Liquid Fuel Emissions

Diesel fuel will be used by mining equipment during construction and operations. Light vehicles, pumps and lighting, as well as locomotives for transport of product coal, will also consume diesel. Estimates of annual diesel use by the mining plant/equipment are 70,598 kilolitres (kL) for activities undertaken on the MLA areas and 5,767.5 kL by the WSL operation.

Table 1 summarises the greenhouse gas emission factors used to quantify greenhouse gas emissions from the consumption of liquid fuel.
Table 1  Greenhouse Gas Emission Factors for Liquid Fuel

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Energy Content (GJ/kL)</th>
<th>Scope 1 Emission Factor (kg CO$_2$-e/gigajoule (GJ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel (stationary)</td>
<td>38.6</td>
<td>69.2</td>
</tr>
<tr>
<td>Diesel (mobile)</td>
<td>38.6</td>
<td>69.2</td>
</tr>
<tr>
<td>Petroleum based oils (other than petroleum based oil used as fuel)</td>
<td>38.8</td>
<td>27.9</td>
</tr>
<tr>
<td>Petroleum based greases</td>
<td>38.8</td>
<td>27.9</td>
</tr>
<tr>
<td>Gasoline (other than for use as fuel in an aircraft)</td>
<td>34.2</td>
<td>66.7</td>
</tr>
</tbody>
</table>

2.2.1.2  Explosive Emissions

The combustion of fossil fuels within explosives proposed to be used in the mining process will result in emissions of greenhouse gases. As the explosives are manufactured onsite, emission factors are based on the consumption of material to make Ammonium Nitrate/Fuel Oil (ANFO) and Emulsion blast products. Emission factors are based on the fuel oil content of ANFO and are taken as stationary emissions from Table 1. Quantities of fuel oil in the manufacturing process are based on a 5.7% proportion of fuel oil. The annual consumption of fuel oil to make ANFO would be 150.2 kL.

2.2.1.3  Coal Extraction Emissions

Open-pit coal extraction releases gaseous emissions. In addition, energy production is based on the energy potential of the product coal. The maximum production of black coal at the Project will be 8.2 Mt per annum. Emission factors associated with production of black coal are shown in Table 2.

Table 2  Greenhouse Gas Emission Factors for Coal Extraction

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Energy Content (GJ/kL)</th>
<th>Scope 1 Emission Factor (kg CO$_2$-e/GJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Coal</td>
<td>27.0</td>
<td>0.017</td>
</tr>
</tbody>
</table>

2.2.2  Indirect Emissions

2.2.2.1  Electricity Consumption Emissions

The consumption of electricity, purchased from the grid, will occur in order to power the Project. The consumption of purchased electricity for the Project has been calculated to total 75,000,000 kilowatt hours (kWh). Major Project components comprising this power demand include the CHPP (and associated facilities) and the workers accommodation camp during both construction and operation phases. Table 3 shows the emission factors associated with the consumption of purchased electricity.
Table 3  Greenhouse Gas Emission Factors for the Consumption of Electricity

<table>
<thead>
<tr>
<th>State, Territory or Grid Description</th>
<th>Scope 2 Emission Factor (kg CO\textsubscript{2}-e/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensland</td>
<td>0.89</td>
</tr>
</tbody>
</table>

### 2.2.3 Summary of Emissions

The emission factors outlined in Sections 2.2.1 and 2.2.2 have been used to estimate the annual greenhouse gas emissions for the Project during both construction and production phases.

The Project MLA areas are estimated to consume maximum energy of 1780.6 TJ per annum. Energy production, as a result of the extraction of the coal resource, is estimated to be 226,800 TJ. The proposed WSL is estimated to consume a maximum energy of 264 TJ per annum (during construction phase) and 222.6 TJ per annum during operation.

The Project MLA areas are expected to generate maximum emissions of 314.1 kt CO\textsubscript{2}-e per annum. This figure represents a contribution of approximately 0.173% to the reported Queensland greenhouse gas emissions in 2007 (Department of Climate Change and Energy Efficiency 2010) and less than 0.06% of Australia’s reported greenhouse gas emissions in 2008 (Department of Climate Change and Energy Efficiency 2011b). Table 4 summarises the Project’s emissions expressed as kilo-tonnes (kt) of CO\textsubscript{2}-e and energy expressed as terajoules (TJ).

Construction of the Rail and Services Corridor is expected to generate annual maximum emissions of 19.388 kt CO\textsubscript{2}-e during the construction phase. Railway construction represents 0.005% of the total greenhouse gas emissions from all corporations required to report emissions under the NGER Act in 2010-2011 (Clean Energy Regulator 2012).

Greenhouse gas emissions resulting from operation of the WSL rail is expected to total 15.572 kt CO\textsubscript{2}-e per annum. This represents approximately 0.0035% of the total greenhouse gas emissions from all corporations required to report emissions under the NGER Act in 2011-2012 (Clean Energy Regulator 2012). Table 5 summarises the emissions generated by construction and operation of the West Surat Link, expressed as kt CO\textsubscript{2}-e.

To ensure that the emissions of greenhouse gases are minimised, management objectives have been outlined (Section 3.4) and an Action Plan developed (Section 4.0) to identify the most effective way to meet the objectives.
### Table 4  Annual Greenhouse Gas Emissions for Project Operations

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Type</th>
<th>Quantity</th>
<th>Scope 1</th>
<th>Scope 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Year</td>
<td>Liquid Fuel</td>
<td>Diesel – Mobile (kL)</td>
<td>38,968</td>
<td>247.3</td>
<td>66.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANFO Diesel – Stationary (kL)</td>
<td>150.2</td>
<td>1510.6</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Consumption (TJ)</td>
<td>1510.6</td>
<td>226,800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purchased Electricity</td>
<td>Qld (kWh)</td>
<td>75,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coal</td>
<td>ROM (Mt)</td>
<td>8.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Production (TJ)</td>
<td>226,800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Emissions</td>
<td>CO₂-e (kt)</td>
<td></td>
<td>314.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy</td>
<td>Consumption (TJ)</td>
<td></td>
<td>1,780.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Production (TJ)</td>
<td></td>
<td>226,800</td>
<td></td>
</tr>
</tbody>
</table>

* Initial calculations based on ROM production rate of 8.4 Mtpa. This has since been reduced to 8.2 Mtpa of ROM and emissions may be considered conservative.
Table 5  Annual Greenhouse Gas Emissions for the West Surat Link

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Type</th>
<th>Quantity (KL)</th>
<th>Energy Cons (TJ)</th>
<th>Scope 1 (kt CO₂-e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Liquid Fuel</td>
<td>Diesel – Mobile Fleet (kL)</td>
<td>6,840</td>
<td>264</td>
<td>19.388</td>
</tr>
<tr>
<td>Operation</td>
<td>Liquid Fuel</td>
<td>Diesel – Mobile (kL)</td>
<td>5,767.5</td>
<td>222.6</td>
<td>15.572</td>
</tr>
</tbody>
</table>
3.0 PROPOSED MANAGEMENT OF GREENHOUSE GASES

3.1 REQUIREMENTS UNDER NATIONAL GREENHOUSE AND ENERGY REPORTING ACT 2007 (CTH)

There will be a legislative requirement for the Project to report under the NGER Act. The NGER Act was passed on 29 September 2007 and establishes a national framework for Australian corporations to report greenhouse gas emissions, reductions, removals and offsets, and energy consumption and production as of 1 July 2008.

The following subordinate legislation has been made (or is proposed to be made) under the NGER Act:

- The National Greenhouse and Energy Reporting Regulations 2008;
- The National Greenhouse and Energy Reporting (Measurement) Determination 2008
- The National Greenhouse and Energy Reporting (Audit) Determination 2009; and

The NGER Act and associated subordinate legislation aims to:

- Provide robust data to underpin the environmental financial integrity of any potential national emissions trading scheme in Australia;
- Reduce the number of greenhouse and energy reports required across State, Territory and Australian Government programmes; and
- Provide corporate level information to the public on greenhouse and energy performance of Australian corporations.

Under the NGER Act corporations are required to register and report if they emit greenhouse gases, produce energy or consume energy at or above the specified thresholds as follows:

- They control facilities that emit 25 kt or more of greenhouse gas, or produce/consume 100 TJ or more of energy; or
- Their corporate group emits 50 kt or more of greenhouse gas, or produces/consumes 200 TJ or more of energy.

As an individual facility, the Elimatta Project will exceed these thresholds and will need to report under the NGER Act. The act dictates the manner in which reporting needs to be undertaken. New Hope, as the parent company, is a registered corporation under the NGER Act and the Elimatta Project, as a facility, will contribute to their corporate group emissions.

3.2 REQUIREMENTS UNDER ENERGY EFFICIENCY OPPORTUNITIES ACT 2006

The Commonwealth EEO Act came into effect on 1 July 2006 and encourages large energy-using businesses to improve their identification and evaluation of energy efficiency opportunities and, as a
result, to encourage the implementation of cost effective energy efficient opportunities. The following subordinate legislation has been made under the EEO Act:

- *Energy Efficiency Opportunities Amendment Act 2007*; and
- *Energy Efficiency Opportunities Regulations 2006*.

The EEO Act and associated subordinate legislation aims to:

- Improved identification and uptake of cost-effective energy efficiency opportunities;
- Improved productivity and reduced greenhouse gas emissions; and
- Greater scrutiny of energy use by large energy consumers.

There will be a legislative requirement for the Elimatta Project to report under the EEO Act. Under the EEO Act corporations are required to register if they use more than 0.5 petajoules of energy per year. New Hope, as the parent company, exceeds these thresholds and is a registered corporation under the EEO Act. As such, New Hope is required to:

- Undertake detailed energy assessments;
- Assess at least 80% of total energy use;
- Identify opportunities to improve efficiency in energy use; and
- Report the outcomes of such assessments publicly.

The programme operates on a five-year cycle, so it is likely that the Elimatta Project will be assessed several times during its lifetime.

### 3.3 CORPORATE GREENHOUSE GAS GUIDELINES AND STANDARDS

Taroom Coal is yet to develop greenhouse gas corporate guidelines and standards under which projects, such as Elimatta, will be operated.

It is proposed that a series of corporate guidelines be developed to provide guidance for accounting and reporting energy use and greenhouse gas emissions. Comprehensively developed guidelines also aid in identifying areas where energy efficiencies can be improved and where greenhouse gas production can be reduced.

Such guidelines and standards should be applicable to all phases of development of a Project, including exploration, design, construction, operation, rehabilitation and closure. Key elements of the standards should consider the following:

- Identifying current and future sources of greenhouse gas emissions and the factors that control the level of emissions;
- Facilities that will be sources of greenhouse gas emissions shall be designed, constructed and operated with appropriate controls in order to comply with applicable laws and regulations, meet voluntary commitments and achieve relevant greenhouse gas emission reduction targets;
Greenhouse gas related risks and opportunities for the Project shall be identified and assessed;

Energy saving and greenhouse gas emission abatement considerations shall be supported by lead indicators, milestones and targets;

Greenhouse gas emission issues shall be included in commercial considerations and business plans;

Projects with total energy consumption above 100,000 gigajoules per annum and/or with total greenhouse gas emissions above 25,000 t CO\textsubscript{2}-e per annum shall develop, implement and maintain a documented Energy and Greenhouse Gas Management Plan;

A planned maintenance schedule shall be developed to ensure the ongoing optimum performance of plant and equipment;

Appropriate measures shall be in place for metering or estimating energy use, energy production and greenhouse gas emissions; and

Monitoring and inspection/audit programmes shall be developed and implemented to verify that plant and equipment are operating properly.

### 3.4 MANAGEMENT OBJECTIVES

Taroom Coal is committed to effectively managing greenhouse gas emissions associated with the Elimatta Project. As the Elimatta Project is still in the design phase, Taroom Coal proposes to incorporate a number of features into the Project to reduce the greenhouse gas emissions from the outset of the Project. This GGMP will ensure that opportunities to reduce the Project’s emissions further during operations will also be pursued.

The specific management objectives for this GGMP include the following:

- To design and construct the Project, where practicable, utilising best practice technologies to reduce energy consumption and subsequent greenhouse gas emissions;
- To improve operations, where practicable, by implementing best practice technologies to reduce energy consumption and subsequent greenhouse gas emissions;
- To regularly measure, monitor, audit and review the effectiveness of greenhouse gas emission reduction strategies;
- To undertake reporting responsibilities under the NGER Act; and
- To undertake responsibilities as required by the EEO.
4.0 ACTION PLAN

The extent to which the GGMP achieves the management objectives outlined in Section 3.4 will be measured by the performance targets and indicators presented in Table 6 for the construction phase of the Project and Table 7 for the operation phase of the Project. Activities outlined in the action plan will only be undertaken if economically feasible.

As the GGMP is a continual improvement and abatement programme, it is intended that the Action Plan will form a dynamic document which is subject to ongoing adjustment taking into consideration the outcomes of the annual Greenhouse Gas audits, and review into best practice methods for reducing emissions.

In developing the greenhouse gas reduction actions for the accommodation camp and offices, reference has been made to the Improving Sustainable Housing in Queensland – Discussion Paper (Housing Industry Association 2008).

Table 6 Action Plan for Reducing Greenhouse Gas Emissions – Construction Phase

<table>
<thead>
<tr>
<th>Overriding Objective</th>
<th>Actions to Achieve Objective</th>
<th>Indicators to Measure Progress</th>
<th>Target</th>
<th>Audit Process/ Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>To design and construct the Project, where practicable, utilising best practice technologies to reduce energy consumption and subsequent greenhouse gas emissions.</td>
<td>Timers/motion sensors to be installed on all air-conditioning units at the accommodation camp</td>
<td>Percentage of air-conditioners with timers/motion sensors installed</td>
<td>95% of all air-conditioners</td>
<td>On completion of construction of the accommodation camp and office buildings</td>
</tr>
<tr>
<td></td>
<td>Photovoltaic and motion sensors on outdoor lighting (i.e. will only operate in low light conditions and when someone walks past) around offices and the accommodation camp</td>
<td>Percentage of outdoor lights with photovoltaic and motion sensors</td>
<td>70% of all outdoor lighting (excluding permanent lighting required to conduct safe operations)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ceiling fans installed in common areas of the accommodation camp to reduce reliance on air-conditioning</td>
<td>Percentage of common areas with ceiling fans</td>
<td>70% of all common areas</td>
<td></td>
</tr>
<tr>
<td>Overriding Objective</td>
<td>Actions to Achieve Objective</td>
<td>Indicators to Measure Progress</td>
<td>Target</td>
<td>Audit Process/Timeframe</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------</td>
<td>--------------------------------</td>
<td>--------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>Install only energy efficient light bulbs in the accommodation camp and offices</td>
<td>Percentage of light bulbs that are energy efficient</td>
<td>100% of all light bulbs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install 3 star/AAA rated shower roses and tap wear at the accommodation camp and all offices/ablutions.</td>
<td>Percentage of shower roses and tap wear that is 3 star/AAA rated</td>
<td>At least 95% of all tap wear or shower roses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install 3 star rated duel flush toilets at the accommodation camp and all offices/ablutions.</td>
<td>Percentage of toilets that are duel flush 3 star rated</td>
<td>At least 95% of all toilets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accommodation camp buildings insulated with a R rating of at least 2 in the walls and 2.5 in ceilings</td>
<td>Percentage of accommodation buildings insulated to R rating standard</td>
<td>At least 80% of all buildings</td>
<td></td>
</tr>
<tr>
<td>Overriding Objective</td>
<td>Actions to Achieve Objective</td>
<td>Indicators to Measure Progress</td>
<td>Target</td>
<td>Audit Process/Timeframe</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>To improve operations, where practicable, by implementing best practice technologies to reduce energy consumption and subsequent greenhouse gas emissions</td>
<td>Reusing water from the tailings system as process water to limit pumping from a water distribution pipeline network</td>
<td>Percentage of water recycled from the TSF</td>
<td>50% of annual process plant water supply to be sourced from tailings decant, where conditions permit</td>
<td>By the end of the first year of operations.</td>
</tr>
<tr>
<td></td>
<td>Recycle treated grey water from the accommodation camp for sub-irrigation of gardens</td>
<td>Percentage of grey water used for sub-irrigation</td>
<td>At least 70% of all grey water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For each major processing or mining activity that produces greenhouse gases, a target greenhouse gas intensity should be identified at the end of the first year of operations</td>
<td>Greenhouse gas intensities calculated and targets set</td>
<td>Targets set for all major processing and mining activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of efficient engines in loading and hauling equipment to reduce greenhouse gas emissions</td>
<td>Percentage of load and haul equipment using efficient engines</td>
<td>Load and haul equipment fleet using the most suitable, energy efficient engines - 50% in first full year of operations, ramping up to 90% by the fourth full year of operations</td>
<td></td>
</tr>
<tr>
<td>Overriding Objective</td>
<td>Actions to Achieve Objective</td>
<td>Indicators to Measure Progress</td>
<td>Target</td>
<td>Audit Process/Timeframe</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>To regularly measure, monitor, audit and review the effectiveness of greenhouse gas emission reduction strategies.</td>
<td>Annual public reporting of greenhouse gas emissions in the company’s Annual Sustainability Report</td>
<td>Annual reports complete</td>
<td>Annual reports complete</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Energy audit conducted within first two years of Project operation.</td>
<td>Energy audit report</td>
<td>One energy audit completed every two years</td>
<td>Within first two years of operations</td>
</tr>
<tr>
<td></td>
<td>Review this GGMP annually during the operating phase of the Project to identify improvements for greenhouse gas mitigation and reduction strategies.</td>
<td>New GGMP developed annually</td>
<td>New GGMP developed annually</td>
<td>Annually</td>
</tr>
<tr>
<td>To undertake reporting responsibilities under the NGER Act</td>
<td>Annual report submitted using the Online System for Comprehensive Activity Reporting (OSCAR).</td>
<td>Annual report submitted</td>
<td>Annual report submitted</td>
<td>Annually</td>
</tr>
</tbody>
</table>
| To undertake responsibilities as required under the EEO Act                       | • Undertake detailed energy assessments  
• Identify opportunities to improve efficiency in energy use | • Prepare and submit an assessment and reporting schedule  
• Complete first assessments  
• Results of assessments reported to the public | • Prepare and submit an assessment and reporting schedule  
• Complete first assessments  
• Results of assessments reported to the public | Assessment and reporting schedule - 18 months after trigger year  
Complete first assessments – 24 months after trigger year.  
Publically report – 30 months after trigger year |
5.0 REPORTING AND AUDITING

5.1 NATIONAL GREENHOUSE AND ENERGY REPORTING REQUIREMENTS

It is a legislative requirement under the NGER Act that a corporation register and report annual greenhouse emissions if reporting thresholds are exceeded. Reporting and record keeping should be conducted in accordance with the *National Greenhouse and Energy Reporting Guidelines* (2008).

New Hope is a registered corporation under the Act and is, in accordance with the Act, providing a report to the Greenhouse and Energy Data Officer relating to the greenhouse gas emissions, energy production, and energy consumption of its corporate group during each financial year. Once operational, the Elimatta Project will contribute to New Hope’s corporate group emissions.

This annual report must fulfil the requirements set out in the *National Greenhouse and Energy Reporting Regulations 2008* (Cth) and report on the quantity of each greenhouse gas emitted during the reporting year. Reports can also be submitted relating to greenhouse gas abatement and reduction projects undertaken as part of the Elimatta Project, if the Project meets the requirements set out in the NGER Act.

Data and information pertaining to the accurate completion of the annual report must be retained for a period of 7 years from the end of the year in which the activities have taken place. These records must allow for the Greenhouse and Energy Data Officer to ascertain whether obligations under the Act have been fulfilled.

5.2 ENERGY EFFICIENCY OPPORTUNITIES ACT REPORTING REQUIREMENTS

New Hope will be required to continue to assess their energy use and report publicly on the results of the assessment under the EEO Act; this report will incorporate contributions from the Elimatta Project once operational. The programme operates on a five-year cycle and allows for participants to be responsible for decisions associated with energy efficiency opportunities.

The assessment framework involves corporations looking at multiple factors influencing energy use, including management and policy.

There are five steps that corporations using more than 0.5 petajoules of energy per year must follow that occur within the five year cycle. These steps are:

1. Determine whether the corporation has to participate in Energy Efficiency Opportunities;
2. Register with the Department of Resources, Energy and Tourism;
3. Prepare and submit an assessment and reporting schedule;
4. Conduct assessments; and
REFERENCES


