FORTESCUE METALS GROUP LTD - PUBLIC REPORT 2012

Part 1 - Corporation Details

Controlling Corporation

Insert the name of the Controlling Corporation exactly as it is registered with the EEO Program.

Fortescue Metals Group Limited

Table 1.1 - Major Changes to Corporate Group Structure or Operations

Table 1.1 – Major Changes to Corporate Group Structure or Operations in the last 12 months
Expansion of Fortescue Operations has continued this year with ore production increasing by 50% on route to a target expansion of around 300% expected at the end of the 2012 calendar year. Expansion of the Christmas Creek mine commenced with the aim of doubling the 2010-11 production. The expansion includes the extension of mining operations, a second ore processing facility (OPF), expansion of the powerstation, expanded fuel storage and an airport. Development of the new Solomon mine site commenced during the year with considerable earth works, construction of two new residential villages, a powerstation, an ore processing facility (OPF), kilometres of overland conveyer and an airport. Expansion of Fortescue's rail network continued with the duplication of the existing north-south line and a rail extension to the new Solomon mine site. Herb Elliott Port at Anderson Point in Port Hedland commenced expanding its operations to a third shipping berth and a second train unloading stream to cope with the planned growth in ore throughput.

Declaration

Declaration of accuracy and compliance	
The information included in this report has been reviewed and noted by the board of directors and is to the best of my knowledge, correct and in accordance with the *Energy Efficiency Opportunities Act 2006* and *Energy Efficiency Opportunities Regulations 2006*.	
	Neville Power - Chief Executive Officer
	Date: 29th November 2012

Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

It is compulsory to complete a separate table for each entity* that has been assessed

Name of entity	Chichester Metals Pty Ltd (Cloudbreak and Christmas Creek Mines)

Total energy use in the last financial year	10,474,462[1]	GJ
Total percentage of energy use assessed when assessments were undertaken	100	%

Description of the way in which the entity carried out its assessment

During the financial year 2009-2010, Fortescue Metals Group (Fortescue) commissioned a detailed energy assessment across the Cloudbreak mine, a representative assessment to cover both Cloudbreak and Christmas Creek mines. Together these two mines represent our Chichester Metals Pty Ltd Operations.

The Cloudbreak assessment included detailed analysis of energy consumed by the haul trucks, road trains, surface miners, wheel loaders, bulldozers, excavators, bore field and water movement infrastructure, mine villages, power station generators, the ore processing facility (OPF) and the associated mine conveying systems.

A number of significant energy efficiency opportunities were identified through the assessment process. Involvement in the process by senior representatives of each operational area ensured that informed decisions on these projects have been made in a timely manner. Implementation of some projects has already commenced or been completed. Of the twenty (20) projects selected for detailed analysis (KE4), fourteen (14) were identified for the mine sites.

Fortescue elected to assess all operations within the first assessment year rather than spread the assessments over the 5 –year assessment cycle. This decision was made to enable opportunities identified at an early stage in the company's development to be rolled into future expansions.

Fortescue is continuing its rapid growth strategy, which will result in increases in total energy consumption. Fortescue is aiming to further improve its energy efficiency based on energy per tonne of effective material movements undertaken across operations. The key metric for the mine sites is 'tonnes of material moved per litre of diesel', but a series of subordinate metrics report energy usage against other facets of mining activity.

[1]Total energy used by Fortescue in 2011/12 for the facilities covered by this report in accordance with the Assessment and Reporting Schedule (ARS) (Chichester Metals Pty Ltd -Cloudbreak and Christmas Creek mines and The Pilbara Infrastructure Pty Ltd - Herb Elliott Port and Rowley Marshalling Yards) differs from that reported for these sites under the National Greenhouse and Energy Reporting Act 2007 (NGER). This is due to differences in the way EEO and NGER calculate energy use from power generation.

Table 2.2 - Energy efficiency opportunities identified in the assessment

It is compulsory to complete a separate table for each entity that has been assessed

Status of opportunities identified to an accuracy of better than or equal to ±30%		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – 2 years		2 – 4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Implemented	4	3	3,344	1	2,394			5,738
	Implementation Commenced	1	1	56,356					56,356
	To be Implemented	2	2	29,645					29,645
	Under Investigation	6	5	59,548	1	2,491			62,039
	Not to be Implemented	1	1	5,663					5,663
Outcomes of assessment	Total Identified	14	12	154,556		4,885			159,441

Please note that Corporate Groups **are not required** to report opportunities with a payback greater than 4 years. Reporting this data is voluntary.

Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

It is compulsory to complete a separate table for each entity* that has been assessed

Name of entity	The Pilbara Infrastructure Pty Ltd - Herb Elliott Port

Total energy use in the last financial year	71,228[1]	GJ
Total percentage of energy use assessed when assessments were undertaken	100	%

Description of the way in which the entity carried out its assessment

During the financial year 2009-2010, Fortescue Metals Group (Fortescue) commissioned a detailed energy assessment across the Group members, including Herb Elliott Port.

The Port assessment focused on the conveyor systems and mechanics that service the train unloader, stockpile management and ship loader, accounting for more than 80% of the energy consumption at the Port. The Port relied on the representative assessment from Cloudbreak for the heavy machinery used on the site.

A number of significant energy efficiency opportunities were identified through the assessment process. Involvement in the process by senior representatives of each operational area ensured that informed decisions on these projects have been made in a timely manner. Of the twenty (20) projects selected for detailed analysis across Fortescue, four (4) are associated with the Port operation.

Fortescue elected to assess all operations within the first assessment year rather than spread the assessments over the 5 –year assessment cycle. This decision was made to enable opportunities identified at an early stage in the company's development to be rolled into future expansions.

Fortescue is continuing its rapid growth strategy, which will result in increases in total energy consumption. Fortescue is aiming to further improve its energy efficiency based on energy per tonne of effective material movements undertaken across operations. The Port's specific metric is the measure of tonnes of ore loaded per gigajoule of energy consumed.

[1]Total energy used by Fortescue in 2011/12 for the facilities covered by this report in accordance with the Assessment and Reporting Schedule (ARS) (Chichester Metals Pty Ltd -Cloudbreak and Christmas Creek mines and The Pilbara Infrastructure Pty Ltd - Herb Elliott Port and Rowley Marshalling Yards) differs from that reported for these sites under the National Greenhouse and Energy Reporting Act 2007 (NGER). This is due to differences in the way EEO and NGER calculate energy use from power generation.

Table 2.2 - Energy efficiency opportunities identified in the assessment

It is compulsory to complete a separate table for each entity that has been assessed

Status of opportunities identified to an accuracy of better than or equal to ±30%		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – 2 years		2 – 4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Implemented								0
	Implementation Commenced								0
	To be Implemented	1	1	1,613					1,613
	Under Investigation	3			3	10,325			10,325
	Not to be Implemented								
Outcomes of assessment	Total Identified	4	3	1,613	3	10,325			11,938

Please note that Corporate Groups **are not required** to report opportunities with a payback greater than 4 years. Reporting this data is voluntary.

Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

It is compulsory to complete a separate table for each entity* that has been assessed

Name of entity	The Pilbara Infrastructure Pty Ltd - Rowley Marshalling Yard

Total energy use in the last financial year	1,709,333[1]	GJ
Total percentage of energy use assessed when assessments were undertaken	100	%

Description of the way in which the entity carried out its assessment

During the financial year 2009-2010, Fortescue Metals Group (Fortescue) commissioned a detailed energy assessment across the group members, including the Rowley Marshalling Yards.

The Rowley assessment focused on the locomotive fleet which represents over 90% of the energy consumption at Rowley.

A number of significant energy efficiency opportunities were identified through the assessment process. Involvement in the process by senior representatives of each operational area ensured that informed decisions on these projects have been made in a timely manner. Of the twenty (20) projects selected for detailed analysis across Fortescue, two (2) are associated with the Rowley operation.

Fortescue elected to assess all operations within the first assessment year rather than spread the assessments over the 5 –year assessment cycle. This decision was made to enable opportunities identified at an early stage in the company's development to be rolled into future expansions.

Fortescue is continuing its rapid growth strategy, which will result in increases in total energy consumption. Fortescue is aiming to further improve its energy efficiency based on energy per tonne of effective material movements undertaken across operations. The rail operation's specific metric is the measure of tonnes of ore railed per gigajoule of energy consumed.

[1]Total energy used by Fortescue in 2011/12 for the facilities covered by this report in accordance with the Assessment and Reporting Schedule (ARS) (Chichester Metals Pty Ltd -Cloudbreak and Christmas Creek mines and The Pilbara Infrastructure Pty Ltd - Herb Elliott Port and Rowley Marshalling Yards) differs from that reported for these sites under the National Greenhouse and Energy Reporting Act 2007 (NGER). This is due to differences in the way EEO and NGER calculate energy use from power generation.

Table 2.2 - Energy efficiency opportunities identified in the assessment

It is compulsory to complete a separate table for each entity that has been assessed

Status of opportunities identified to an accuracy of better than or equal to ±30%		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – 2 years		2 – 4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Implemented	1			1	9534			9,534
	Implementation Commenced								0
	To be Implemented								0
	Under Investigation	1	1	15,440					15,440
	Not to be Implemented								0
Outcomes of assessment	Total Identified	2	1	15,440	1	9534			24,974

Please note that Corporate Groups **are not required** to report opportunities with a payback greater than 4 years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

Corporate Groups are required to provide at least 3 examples of significant opportunities for improving the energy efficiency of the group that have been identified in assessments.

Description of Opportunity No 1	**Voluntary Information**	
Road design - Removal of one stop per cycle per truck The assessment identified an opportunity to review the haul road design to enable trucks to achieve and maintain an optimal trip speed. It was noted a considerable fuel saving would result if the road design could allow the removal of stop signs, where this does not compromise safety. The truck manufacturers were asked to do modelling for a fully loaded truck to accelerate from stationary for 100 metres and to advise the final speed at this distance. They were also asked to model the same truck operating at this same final speed, but using this same speed for a distance of 1,000 metres, so that the steady state fuel consumption can be calculated. In this way the fuel saving as a result of the truck not having to stop is the difference between the two scenarios. Evaluation of this opportunity revealed that for each stop removed from the load cycle, estimated saving of 361 kL per annum for Caterpillar 777 haul trucks could be achieved and 407 kL per annum for the Terex 3700 AC haul trucks. This project is reported as 'to be implemented' and estimated savings are based on the removal of one stop-sign intersection. However, with careful consideration of traffic safety, FMG will continue to look for opportunities to remove stop signs.	Equipment Type	Caterpillar 777 and Terex 3700 AC Haul trucks
	Business Response	Status: "To be Implemented" In November 2012 Cloudbreak mine site will change from 'WA Road Rules' to 'Hierarchy Rules' and with that change a number of 'stop' signs will be removed from haul roads
	Energy saved (GJ)	Caterpillar 777 Haul trucks – estimated 13,935 GJ per annum Terex 3700AC Haul trucks – estimated 15,710GJ per annum
	Greenhouse gas abated (CO2-e)	Caterpillar 777 Haul trucks – 968 tonnes of CO2e per annum Terex 3700AC Haul trucks – 1092 tonnes of CO2e per annum
	$s saved	Caterpillar 777 Haul trucks – $303,240 per annum Terex 3700AC Haul trucks – $341,880 per annum
	Payback period	Immediate

Description of Opportunity No 2	**Voluntary Information**	
Replace throttled pumps and gen-sets to improve efficiency A review of dewatering bores on site revealed that many of the pumps are throttled as a means of decreasing water flow to meet the abstraction capability of the bore. Detailed analysis of the dewatering pump	Equipment Type	Field Generators
	Business Response	Status: "Implementation has Commenced". New variable speed generators likely to be tested in late 2012.

performance showed that highly throttled pumps use significantly more diesel per megalitre of water pumped than pumps with little or no throttling. The assessment identified two methods for improving the energy efficiency of these dewatering pumps: 1. Replace some pumps with smaller pumps; and/or 2. Convert the gen-sets to a variable speed alternator. Pumps are progressively being swapped to more appropriate sizes where possible and opportunities to optimise the bore field are ongoing. It is currently estimated that this opportunity would ultimately reduce diesel consumption by 730 kL per annum.	Energy saved (GJ)	56,356 GJ
	Greenhouse gas abated (CO2-e)	3,917 tonnes of CO2e
	$s saved	$1,226,400 per annum
	Payback period	Less than one month of full implementation

Description of Opportunity No 3	**Voluntary Information**	
<u>Installation of auto start/stop on locomotives to reduce idle times</u> Each locomotive engine logs lifetime data for a number of parameters, including throttle position and idle time. Although the idle fuel consumption rate is fairly low, the data showed that the engines remain idling for up to 74% of the time, resulting in approximately 7% of lifetime fuel consumption associated with idling. While some idle time will always be necessary for the locomotives to maintain battery charge and brake pressures, it was clear that it could be reduced. Analysis showed that up to 675 kL of diesel may be saved annually by reducing idle time and the installation of GE's proprietary loco Automatic Engine Stop Start (AESS) system on each of the 15 locomotives was a primary tool to achieve at least some of that reduction. The AESS system has been installed on the locomotives and immediately 23% of the time spent at 'idle' was removed. Whilst there is no direct means of measuring all of the fuel savings associated with reducing idle time, the AESS software allows us to record the hours that AESS shuts down the engine. This information enables the calculation of diesel savings for this opportunity.	Equipment Type	GE dash 9 Locomotives
	Business Response	Status: "Implemented"
	Energy saved (GJ)	9,534GJ
	Greenhouse gas abated (CO2-e)	666 tonnes of CO2e
	$s saved	$142,800 per annum
	Payback period	Less than 4 years

Please note that the "Description of the Opportunity" above should include information on the specific nature and type of opportunity as well as information on the type of equipment and/or process involved.

Part 3 – Transition to Second Cycle

This table should only be completed by 2005-06 trigger-year corporations transitioning to the second cycle.

In December 2011 many corporations reported energy efficiency opportunities that were still under investigation as at 30 June 2011. This report should advise what your business response to these opportunities has been – implemented or not to be implemented. If you intend to further investigate these opportunities, they should be reported in the future Public Reports as opportunities identified in the second cycle.

Status of opportunities identified to an accuracy of better than or equal to ±30%		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – 2 years		2 – 4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
As reported in December 2011	Under Investigation								
Business Response as at 30 June 2012	Implemented								
	Not to be Implemented								
	To be evaluated/reported in the second cycle								