

Energy Efficiency Opportunities

ExxonMobil Australia Pty Ltd (Controlling Corporation)

Report for the period: 1 July 2010 to 30 June 2011

Part 1 – Information on assessments completed to date

ExxonMobil Australia has completed ten Energy Efficiency Opportunities assessments during a five year period starting from financial year 2008. These assessments were conducted utilising ExxonMobil's existing energy management systems - Production Operations Energy Management System (POEMS) and Global Energy Management System (GEMS). Both systems include guidelines for energy assessments and a series of tools and worksheets.

During financial year 2010-2011 ExxonMobil Australia completed the last two assessments as indicated in the "Assessment & Reporting Schedule" updated in April 2009:

- Halibut Platform in Bass Strait
- West Kingfish Platform in Bass Strait

The assessment teams consisted of people from a broad range of experiences and included:

- Process and Mechanical Engineers
- Operations and Maintenance Technicians
- Cross-site Representatives
- Technical Experts from overseas and specialist energy Consultants

The assessments considered the previous two years (24 months) of production data, energy data and associated costs. Energy flow diagrams were developed for each facility that focused on the fuel systems and the electrical generation systems. Once these were developed, assessments of key equipment (heaters, compressors and generators) were completed using the POEMS/GEMS worksheets. Workshops were then held with operators and engineers to further examine the data and brainstorm improvement opportunities.

After the workshops, energy efficiency opportunities were refined, assessed and communicated to the applicable operations management team. Each team reviewed detailed workshops results and made decisions about which opportunities were to be implemented. The results of each assessment are contained in this report.



Energy Efficiency Opportunities

Through this process we consider that the requirements of the Energy Efficiency Opportunities legislation and regulations have been complied with.

Energy Efficiency Opportunities

Table 1.2 – Energy use assessed		
Group member and/or business unit and/or key activity and/or site that has had an assessment completed by the end of this reporting period.	Period over which assessment was undertaken	Energy use per annum in GJ in the current reporting year
Bass Strait Offshore Facilities – Bream A	Feb 2008 – June 2008	866,613
Bass Strait Offshore Facilities - Flounder	July 2008 – December 2008	683,508
Bass Strait Offshore Facilities - West Tuna	Feb 2009 – June 2009	1,050,515
Mobil Altona Refinery	Feb 2009 – June 2009	14,304,100
Long Island Point Facility	Feb 2009 – December 2009	1,995,096
Longford Crude Stabilisation and Gas Plants	July 2009 – December 2009	15,267,508
Bass Strait Offshore Facilities – Tuna	Feb 2010 – June 2010	659,361
Bass Strait Offshore Facilities - Mackerel	Feb 2010 – June 2010	475,449
Bass Strait Offshore Facilities - Halibut	July 2010 – December 2010	528,163
Bass Strait Offshore Facilities – West Kingfish	July 2010 – Feb 2011	787,866
Total energy assessed		36,618,181
Total energy use of the group in the current reporting year		39,061,805
Total energy assessed expressed as a percentage of total current energy use		94%

Notes: Fuel gas volume is converted to an energy value based on NGER Method 1 factors
 Diesel and Aviation Fuel quantities are pro-rata'd across the Bass Strait Offshore Platforms in proportion to their fuel gas usage.

Table 1.3 – Accuracy of energy use data		
Entity	Energy data accuracy (if not within +/-5%)	Reasons for not achieving data accuracy to within ±5%
Mobil Altona Refinery	+/- 7%	Primarily related to nature of the measurement device for Refinery Fuel Gas and limited ability to perform visual inspections of the orifice plate. A project to upgrade to a more accurate measurement device is currently being investigated.

Energy Efficiency Opportunities

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2A - New assessments completed during the reporting period

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities – Halibut

Energy use of the entity during the current reporting period

528,163	GJ
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No energy savings opportunities were identified that could reasonably be expected to approach a 4 year payback and therefore justify further investigation, or that were practical to implement

Table 2.1 – Opportunities assessed to an accuracy less than ±30%						
Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities = West Kingfish

Energy use of the entity during the current reporting period

787,866	GJ
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No energy savings opportunities were identified that could reasonably be expected to approach a 4 year payback and therefore justify further investigation, or that were practical to implement

Table 2.1 – Opportunities assessed to an accuracy less than ±30%						
Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Energy Efficiency Opportunities

Part 2B - Update of assessments undertaken in previous reporting periods

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities - Bream A

Energy use of the entity during the current reporting period

866,613

GJ

Table 2.3 - Opportunities assessed to an accuracy of $\pm 30\%$ or better						
Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	3	75,700	-	-	75,700
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented	3	75,700	-	-	75,700

Further review of the 3 Bream A opportunities revealed that they were not technically feasible or that they were not acceptable from a safety perspective.

For example, whilst the reduction to one generator in service is acceptable for normal operations, it is unable to provide adequate power for the Bream B fire pump or the Bream A booster pump start.

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities - Flounder

Energy use of the entity during the current reporting period

683,508

GJ

Table 2.3 – Opportunities assessed to an accuracy of ±30% or better						
Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1	28			28
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented	1	28			28

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities – West Tuna

Energy use of the entity during the current reporting period

1,050,515	GJ
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Table 2.3 – Opportunities assessed to an accuracy of ±30% or better

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2	36,028	0	0	36,028
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented	1	36,000			36,000
	Not to be Implemented	1	28			28

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Mobil Altona Refinery

Energy use of the entity during the current reporting period

14,304,100	GJ

Table 2.3 – Opportunities assessed to an accuracy of $\pm 30\%$ or better

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	12	190,474	80,340	208,217	479,031
Business Response*	Under Investigation	1	3,945	0	0	3,945
	To be Implemented	4	27,832	0	0	27,832
	Implementation Commenced	6	101,421	80,340	0	181,761
	Implemented	0	57,277	0	170,411	227,688
	Not to be Implemented	1	0	0	37,806	37,806

Table 2.4 - Opportunities assessed to an accuracy of less than $\pm 30\%$

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment	Total Identified	19	445,139	87,511	175,650	708,299
Business Response*	Under Investigation	11	51,665	38,090	175,650	265,405
	To be Implemented	0	0	0	0	0
	Implementation Commenced	1	128,693	0	0	128,693
	Implemented	4	135,268	0	0	135,268
	Not to be Implemented	3	129,512	49,421	0	178,933



Brands of ExxonMobil



Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Long Island Point Facility

Energy use of the entity during the current reporting period

1,995,096	GJ
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Table 2.3 – Opportunities assessed to an accuracy of $\pm 30\%$ or better

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	2	3,200			3,200
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented	2	3,200			3,200
	Not to be Implemented					

Table 2.4 – Opportunities assessed to an accuracy less than $\pm 30\%$

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	6	11,000	109,800	93,000	213,800
Business Response*	Under Investigation	5	11,000	78,800	93,000	182,800
	To be Implemented	1		31,000		31,000
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Longford Crude Stabilisation and Gas Plants

Energy use of the entity during the current reporting period

15,267,508	GJ
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Table 2.1 – Opportunities assessed to an accuracy less than ±30%

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1	7600			7600
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced	1	7600			7600
	Implemented					
	Not to be Implemented					

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities – Tuna

Energy use of the entity during the current reporting period	1,050,515	GJ
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Table 2.1 – Opportunities assessed to an accuracy less than ±30%						
Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1		370		370
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented	1		370		370

Energy Efficiency Opportunities

Name of Group member or business unit or key activity or site: Bass Strait Offshore Facilities – Mackere!

Energy use of the entity during the current reporting period

475,449	GJ
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No energy savings opportunities were identified that could reasonably be expected to approach a 4 year payback and therefore justify further investigation, or that were practical to implement

Table 2.1 – Opportunities assessed to an accuracy less than ±30%						
Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Energy Efficiency Opportunities

Details of Significant Opportunities

Bass Strait Offshore Facilities – West Tuna

The high pressure crude oil pumps on the pipelines from West Tuna to Longford that were used to boost the oil pressure were turned off after a successful trial was conducted in July 2009.

Energy savings were reassessed to be net 36,000GJ fuel gas per annum.

Altona Refinery

Modify B1103 Convection Section to improve heater efficiency by reducing stack temperature.

This was a major project that involved replacing the convection section of one of the crude charge furnaces to increase tube surface area. Implementation of this project was completed during the recent refinery shutdown in October 2011. The project justification was based on energy and other incentives, and the initial evaluation estimates energy savings in the vicinity of 170,000 GJ of fuel gas per annum.

Energy Efficiency Opportunities

Contextual Information

ExxonMobil Australia is taking action to mitigate greenhouse gas emissions today. Our actions include regularly assessing and, where practicable, improving energy efficiency at our sites and accurately measuring and stewarding our performance. Affiliated companies in other countries are also involved in the development of advanced energy technologies with the potential to significantly reduce future emissions.

ExxonMobil Australia benefits from the use of ExxonMobil's global systems and processes including the Global Energy Management System (GEMS) and Production Operations Energy Management System (POEMS). These systems help in the sharing of global best practices in energy management throughout ExxonMobil and have been used to identify opportunities to improve energy efficiency at affiliate refineries and chemical plants around the world by 15 to 20%; most of these opportunities have already been implemented.

Work on operational and facility improvements, targeted research and development of energy saving technologies and implementation of technical innovations in ExxonMobil projects around the world is ongoing.

In Australia we have been progressively reducing our energy consumption and greenhouse gas emissions. Since 1990, using a continuous process of engineering reviews, our upstream operations have reduced greenhouse gas emissions by nearly 28%. In particular, engineering and operations reviews at our major facility, the Longford Gas Plants, have reduced emissions by more than 50% or 1 million tonnes per annum since 1990. In our downstream business we have also reduced emissions from our Altona refinery by around 40% since 2001.

Declaration

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*.

 19 Dec 2011

J.R. Dashwood, Chairman

ExxonMobil Australia Pty Ltd

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