RECEIVED 07 FEB 2014

QIOPTIQ Photonics for Innovation

ISO 14001:2004 – Clause 4.3.3 Objectives & Targets: 2012-2013

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
	SUMMARY ***TO REDUCE ENERGY USAGE WITHIN THE QIOPTIQ SITES.*** ***OBJECTIVES 1,2,3***	*After a recent survey by QEL it was made apparent that Qioptiq can improve its energy efficiency.* *The report has allocated three groups to these savings as follows:* • *No Cost* • *Lower Capex* • *Higher Capex* *Each group of improvements will be allocated an objective.* *Objective 1: No Cost* *Objective 2: Lower Capex* *Objective 3: Higher Capex*	*The assessment was made over the 3 units.* *Glascoed Road* *Unit 2 – QST* *Unit 3 – Melter* *The benefit over the 3 units implementing these energy reduction improvements will vary. Firstly the improvements will need to be verified that they are practicable for our operation.* *When improvements have been decided and implemented we can expect to see financial savings and a reduced carbon foot print.*	*Site Services Manager (Review)* *The Works Engineering (Implementation)* *Environment & COSHH Engineer (Monitoring)*	*Periodic Reviews* ***Each improvement will be documented in the EDR system as an improvement for tracking purposes ***	☐
	SUMMARY ***INSTALLATION OF ECO EQUIPMENT IN WASH ROOMS*** ***OBJECTIVES 4,5***	*Install and trial the new Dyson Eco Blade Hand dryer and Water reducing Sensor taps*	*Will reduce solid waste, and reduce waste consumption.* *01/04/11 – Trials were successful and as the toilets are upgraded and/ or repaired eco-equipment will be used to replace old and dated equipment.*	*Project Engineer (Implementation + Research)* *Environment & COSHH Engineer (Monitoring)*	*Periodic Reviews* ***Each improvement will be documented in the EDR system as an improvement for tracking purposes ***	X Trials completed, eco equipment has been installed.

MONITORING RETURNS N. WALES

	INITIALS	DATE
CHECKED Vs AUTHORISATION	LC	21.3.14
TRACKING	JB	10.2.14.
OK FOR PUBLIC REGISTER		
[illegible]	JB	EDMM

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
1	**OBJECTIVE 1** **No Cost: Improvements made without the need of expenditure.**	No Cost improvements should be implemented as part of a normal maintenance program. The improvements that have been identified by QEL will be reviewed and assessed for practicability.	➢ The potential financial annual savings between the 3 units is £104,245 as per the QEL Report. ➢ The potential CO_2 annual reduction between the 3 units is 566.7 tonnes of CO_2 as per the QEL Report. ➢ The potential Electricity annual saving between the 3 units is 1,064,444 kWh as per the QEL Report.	Site Services Manager (Review) The Works Engineering (Implementation) Environment & COSHH Engineer (Monitoring)	Review the improvements and formulate scope for implementation within:	
	Ref: Table 4.3.1 QEL Report. **# 1** **# 2** **# 3** **# 4** **# 11**	PAS = Potential Annual Saving ➢ Reduce weekend base load from 1,000KW to 800KW. PAS: £43,736 ➢ Clean and maintain heat pump / chiller external coils. PAS: £27,936 (Completed 15/01/12) ➢ Improve manual control on plant and machinery. PAS: £9,212 ➢ Reduce water flow rate through the Lehrs to save 3,780m3 pa. PAS: £5,760 (Completed 15/06/12) ➢ Reduce electricity base load over the Christmas period from 520KW to 200KW. PAS: £6,998.	By implementing these improvements the CO_2 foot print of Qioptiq will be reduced by 524.7 Tonnes per annum at no expenditure – other than company resources. Total Expenditure: £NIL (Company Resources) Total PAS: £93,642 Returns: Immediately	As above.	**Target 2 Years** Survey Report Received 03/10 Review survey 06/10 Expenditure Application for 2011 budget 0 8/10 Plan Implementation 12/10	☐

ISO 14001:2004 – Clause 4.3.3 Objectives & Targets: 2012-2013

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
2	**OBJECTIVE 2** **Lower Capex:** **Improvements made with the need of expenditure.**	Lower Capex measures may be implemented as part of a normal maintenance program. The improvements that have been identified by QEL will be reviewed and assessed for practicability. All improvements that do not exceed the cost of £15,000 have been allocated to the group of Lower Capex.	➢ The potential financial annual savings between the 3 units is £497,959 as per the QEL Report. ➢ The potential CO2 annual reduction between the 3 units is 4,849.5 tonnes of CO2 as per the QEL Report. ➢ The potential Electricity annual saving between the 3 units is 6,166,502 kWh as per the QEL Report.	Site Services Manager (Review) The Works Engineering (Implementation) Environment & COSHH Engineer (Monitoring)	Review the improvements and formulate scope for implementation if feasible within:	
	Ref: Table 4.3.1 QEL Report. **#13** **#15** **#16** **#18**	AC: Assessed Cost PAS = Potential Annual Saving ➢ QST: Reduce weekend base load from 180KW to 80KW. AC: £2,000. PAS: £17,118. ➢ Installed Power Factor Corrector equipment. AC: £9,515. (Completed 15/02/12) PAS: £6,129 (Completed 30/01/11) ➢ Install replacement boiler sequencer and amend control settings on Aquatrol controller. AC: £5,000. PAS: £5,000. ➢ Install more effective boiler controls. AC: £2,000. PAS £3,101 (Completed 15/09/12)	By implementing these improvements the CO2 foot print of Qioptiq will be reduced by 166 Tonnes per annum at the cost (AC) documented. Total (AC) Expenditure: £18,681 Total PAS: £31,348 Returns: 1.7 Years	As above.	Target 3 Years Survey Report Received 03/10 Review survey 06/10 Expenditure Application for 2011 budget 0 8/10 Plan Implementation 12/10	☐

ISO 14001:2004 – Clause 4.3.3 Objectives & Targets: 2012-2013

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
3	**OBJECTIVE 3** **Higher Capex:** **Improvements made with the need of expenditure.**	Higher Capex measures may be implemented as part of a normal maintenance program. The improvements that have been identified by QEL will be reviewed and assessed for practicability. All improvements that exceed the cost of £15,000 have been allocated to the group of Higher Capex.	➢ The potential financial annual savings between the 3 units is £66,362 as per the QEL Report. ➢ The potential CO2 annual reduction between the 3 units is 390.3 tonnes of CO2 as per the QEL Report. ➢ The potential Electricity annual saving between the 3 units is 1,216,235 kWh as per the QEL Report.	Site Services Manager (Review) The Works Engineering (Implementation) Environment & COSHH Engineer (Monitoring)	Review the improvements and formulate scope for implementation if feasible within:	
	Ref: Table 4.3.1 QEL Report. **#23** **#24** **#25**	AC: Assessed Cost PAS = Potential Annual Saving ➢ Replace existing air handling systems. AC: £100,000. PAS £47,708. (Survey Completed 01/2013) ➢ Install (BEMS) Building Energy Management System. AC: £50,000. PAS: £28,541. ➢ Install new main boiler control / boiler system. AC £40,000. PAS: £21,709. ➢ Install new boiler in the CASE building. (Completed 15/12/2012) ➢ Install LED lighting (Survey Completed 01/2013)	By implementing these improvements the CO2 foot print of Qioptiq will be reduced by 749.5 Tonnes per annum at the cost (AC) documented. Total (AC) Expenditure: £190,000 Total PAS: £97,958 Returns: 2 Years	As above.	**Target 5 Years** Survey Report Received 03/10 Review survey 06/10 Expenditure Application for 2011 budget 0 8/10 Plan Implementation 12/10	☐

ISO 14001:2004 – Clause 4.3.3 Objectives & Targets: 2012-2013

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
4	**OBJECTIVE 4** **Installation of Eco Dyson Blade hand dryer.**	To install Eco Dyson Blade hand dryers to replace the current in use paper hand towels. A trial period will be done after an initial installation of 2 hand dryers to ensure that they dryers are practicable for our operation. If trial is successful – when wash rooms are upgraded which will depend on financial allowance (Capex/Budget), the Dyson Hand Dryer will be installed.	Analysis of the cost of the dryers against the paper towels shows that these dryers will pay for themselves within 12 months. Drying time is 10 seconds. Reduction of solid waste going to landfill. Indirect saving on cleaning hours (bins will no longer be required in wash rooms). Returns: 1 Year	Project Engineer (Implementation + Research) Environment & COSHH Engineer (Monitoring) Site Services Manager (Management)	Trial should be underway within: **Target 1 Year** Research and cost analysis by 06/10. Trial Installation of hand dyers by 09/10.	X 2 Installed in Assembly. Machine shop facility due to be refurbished which includes taps and dryers
5	**OBJECTIVE 5** **Installation of Eco Taps.**	To install Eco Taps throughout the wash rooms. A trial period will be carried out after the machine shop has these taps installed. This will ensure that the taps and the associated water reducing sensors are practicable for our operations. If this trial is successful – when wash rooms are upgraded which will depend on financial allowance (Capex/Budget), the Eco taps will be installed replacing the conventional taps.	Sensors connected to the taps greatly reduce the use of water by / up to 70%.	Project Engineer (Implementation + Research) Environment & COSHH Engineer (Monitoring) Site Services Manager (Management)	Trial should be underway within: **Target 1 Year** Research and cost analysis by 06/10. Trial Installation of hand dryers by 03/11.	X 2 Installed in Assembly. Machine shop facility due to be refurbished which includes taps and dryers

QIOPTIQ Photonics for Innovation

REFERENCE	DETAILS	OBJECTIVE	BENEFITS	RESPONSIBILITY	PERIOD / COMPLIANCE	COMPLETE
6	OBJECTIVE 6	To ensure a visible commitment to the prevention of pollution by carrying out External Site Audits (MEPIs)	No capital expenditure required. Monthly site Inspections will detect signs of water/land/waste issues at an early stage.	Site Services Manager/Environmental & COSHH Engineer	Ongoing checks on a monthly basis	Up to date.
7	OBJECTIVE 7	To ensure all legal requirements applicable to the Company are complied with.	No capital expenditure required. Quarterly legislation checks to be carried out by Environmental/COSHH Engineer and compliance checks carried out during internal audits.	Environmental/COSHH Engineer	Ongoing checks	Up to date.