1.3. Energy Efficiency

BATC 6. In order to increase energy efficiency, BAT is to use BAT 6a and an appropriate combination of the common techniques listed in technique b below.

	Technique	Description	Conformance Assessment ('Not Applicable'/ 'Yes'/ 'Will be'/ 'No')	Comments on Conformance
(a)	Energy efficiency plan	An energy efficiency plan, as part of the environmental management system (see BAT 1), entails defining and calculating the specific energy consumption of the activity (or activities), setting key performance indicators on an annual basis (for example for the specific energy consumption) and planning periodic improvement targets and related actions. The plan is adapted to the specificities of the installation.	Yes	The site has ISO 50001:2018 'Energy Management' certification and implements an integrated approach to the site's various management systems, which also includes ISO 14001 'Environmental Management'. An Energy Review is performed annually or in the event of a major change to the site, based on site procedure ENP001 'Energy Review, Baseline Selection and ENPIs' (where EnPIs relates to Energy Performance Indicators. This review includes an assessment of (1) baseline energy data; (2) current and past site energy performance (3) Significant energy users (SEU) performance; (4) List of opportunities. Energy efficiency opportunities identified through SEU reviews, energy audits and by employees or contractors are added to the Energy Opportunities Register. This register is reviewed periodically to move forward projects deemed feasible into the site's Energy Action Plan, as outlined in site procedure ENP004 'Energy Project & Opportunity Management Register'. Energy efficiency improvement targets and related actions (Energy Action Plan - Carbon Neutrality) are recorded on the site's Energy Management System spreadsheet which is then transferred to the Environmental Objectives & Targets in ISO14001 Spreadsheet. Evaluation of the effectiveness of energy efficiency actions is assessed as part of the Management Review, which is performed at least annually. Energy Performance Indicators (EnPIs) have been established using relevant variables that significantly affect energy performance using available data. EnPIs are monitored on an ongoing basis through the weekly SEU report.
(b)	Use of common techniques	Common techniques such as:		
		— burner regulation and control;	Yes	**Existing** New boilers have been installed in 2023, which have burner regulation and control. **Expansion** Not applicable as no new boilers are to be installed.
		— cogeneration;	Not Applicable	Cogeneration is deemed not feasible for the facility as it would increase the site's Scope 1 CO_2 emissions. Electricity input to the site is sourced from renewable emissions.

1.3. Energy Efficiency

BATC 6. In order to increase energy efficiency, BAT is to use BAT 6a and an appropriate combination of the common techniques listed in technique b below.

	Technique	Description	Conformance Assessment ('Not Applicable'/ 'Yes'/ 'Will be'/ 'No')	Comments on Conformance
		— energy-efficient motors;	Existing - Yes; Expansion - Will Be	**Existing** New motors/replacement motors are to be IE3 (site standard). The majority of the existing motors are either IE2 or IE3. The site's Change management process, requires that for any motors > 15 kW, energy efficiency requirements are to be considered in design and procurement stages. **Expansion** New motors are to have a minimum energy efficiency rating of IE3 (site standard).
		— heat recovery with heat exchangers and/or heat pumps (including mechanical vapour compression)	Existing - Yes; Expansion - Will Be	**Existing** Energy efficiency opportunities are identified through SEU reviews, energy audits and by employees or contractors. These are then added to the Energy Opportunities Register. This register is reviewed periodically to move forward projects deemed feasible into the site's Energy Action Plan, as outlined in site procedure ENP004 'Energy Project & Opportunity Management Register'. There is an ongoing project that will use Mechanical Vapour Recompression (MVR) technology to recover heat from the distillation still pots, along with the Wash Columns and Rectifier Columns located in the Garden Still House and the Barry Crocket Still House. There are also plans to implement this MVR Technology for the Column Building Distillation Columns. There are multiple other examples onsite where heat recovery is employed, e.g. in batch brewing, heat is transferred from the strong Wort Cooler to Mashing. **Expansion** All new distillation columns and pot stills will utilise MVR technology. The same process for identifying additional energy efficiency opportunities will apply to the expansion when operational.
		— lighting;	Existing - Yes; Expansion - Will Be	**Existing** There is an ongoing project to replace existing warehouse florescent lighting with more energy efficient LEDs. As the site's existing light fittings fail, they will all be replaced with LED equivalents. Smart lighting controls have been introduced in certain areas, so lighting will turn off if no motion is detected. **Expansion** All exterior lighting on the buildings will have high efficiency LED type luminaires.

1.3. Energy Efficiency

BATC 6. **In order to increase energy efficiency, BAT is to use BAT 6a and an appropriate combination of the common techniques listed in technique b below.**

	Technique	Description	Conformance Assessment ('Not Applicable'/ 'Yes'/ 'Will be'/ 'No')	Comments on Conformance
		— minimising blowdown from the boiler;	Yes	**Existing** New boilers have been installed in July 2023, with increased efficiencies. Boiler RO water is used as the feedwater, which will result in reduced boiler blowdown. **Expansion** Not applicable as no new boilers being installed.
		— optimising steam distribution systems;	Existing - Yes; Expansion - Will Be	**Existing** Optimising of steam distribution systems is part of the standard design process. e.g. properly sized, supported and insulated lines, condensate drainage. New steam distribution systems are being installed for the mechanical vapour recompression systems. **Expansion** Steam lines will be insulated; Isolation valves will be provided where required for start-up/shutdown operations & building isolations; Condensate will be recovered and appropriate trapping and expansion loops will be provided.
		— preheating feed water (including the use of economisers);	Existing - Yes; Expansion - Will Be	**Existing** - The site's new main steam boilers include economisers. - The ongoing Mechanical Vapour Recompression (MVR) project utilises the heat of condensation from the product vapour in the still/distillation column to generate low pressure steams, which is then pressurised using mechanical vapour recompressions blowers and used in the reboiler of the still/distillation column. **Expansion** - Use of MVR technology in the expansion, will similarly involve the generation of steam for use in the reboiler of the stills and distillation columns. - Preheating is used in the Brewing (batch / continuous) and distillation processes.

1.3. Energy Efficiency

BATC 6. **In order to increase energy efficiency, BAT is to use BAT 6a and an appropriate combination of the common techniques listed in technique b below.**

	Technique	Description	Conformance Assessment ('Not Applicable'/ 'Yes'/ 'Will be'/ 'No')	Comments on Conformance
		— process control systems;	Existing - Yes; Expansion - Will Be	**Existing** The process control system at IDL uses technology developed for a wide range of process industries. Key variable such as level and pressure in storage vessels, flow in transfer lines and temperature in condensers are measured and recorded electronically. This data is routed to the operator console by means of Programmable Logic Controllers (PLCs) or the Distributed Control System (DCS). **Expansion** The expansion will similarly have process control systems in place.
		— reducing compressed air system leaks;	Existing - Yes; Expansion - Will Be	**Existing** A monitoring programme is in place for reducing Compressed Air leaks. **Expansion** Monitoring programme will encompass the expansion.
		— reducing heat losses by insulation;	Existing - Yes; Expansion - Will Be	**Existing** Use of insulation for reducing heat loss is standard approach across the site. **Expansion** Similarly, the use of insulation for reducing heat loss will be a standard approach for the expansion. For example, PM Group have prepared the following related specification for the expansion 'Specification for Insulation of Piping and Equipment', PM Group Doc. No. IE0313231-42-SP-0055.
		— variable speed drives;	Existing - Yes; Expansion - Will Be	**Existing** The site's standard approach is to use variable speed drives where possible. **Expansion** Similarly, variable speed drives will be used where possible in the expansion.
		— multiple-effect evaporation	Yes	**Existing** A multiple effect falling film evaporator is used to produce syrup in the feeds recovery building. **Expansion** Not applicable as the existing evaporator will be used.

1.3. Energy Efficiency

BATC 6. In order to increase energy efficiency, BAT is to use BAT 6a and an appropriate combination of the common techniques listed in technique b below.

	Technique	Description	Conformance Assessment ('Not Applicable'/ 'Yes'/ 'Will be'/ 'No')	Comments on Conformance
		— use of solar energy.	Not Applicable	Significant quantities of solar energy are not directly used onsite.

Note	Comment
Further sector-specific techniques to increase energy efficiency are given in Sections 2 to 13 of these BAT conclusions.	Noted