



Westons Cider – Energy Efficiency Plan

Reduction Projects Summary

2025-2030

This document summarises planned energy-efficiency and renewable-energy projects for areas needing improvement and areas with potential for the 2025-2030 period.

The aim is to improve areas identified as exceeding specific energy consumption (SEC) benchmarks. Each area has been assessed using energy inputs in kWh or kWh_th, with output metrics tailored to the respective process.

Annual monitoring of each energy KPI will be carried out alongside the IMS Annual Review. The portfolio of energy-reduction and improvement projects is not fixed and may change year to year -projects may be added or removed in line with company priorities, without materially reducing the agreed targets.

Solar Energy Generation

For solar energy, a 62.8% increase is projected by 2030, reflecting growth in renewable generation capacity. Baseline SEC was 431.40 kWh/kWp.year, projected SEC of 702.36 kWh/kWp.year by 2030.

Key planned activities include:

1. Review the current solar installation and clean/maintain all existing photovoltaic (PV) panels.
2. Have the original contractor repair/replace any faulty panels.
3. Integrate energy audits within the internal audit programme.
4. Increase our solar generation capacity by 2.90x - almost triple the current capacity.

Transport & Distribution

For Transport & Distribution, a SEC reduction of approximately 37.4% is expected by 2030. Baseline SEC was 2.86 kWh/km, projected SEC of 1.79 kWh/km.

Key planned activities include:

1. Implement telematics and route-optimisation software (Samsara) to minimise distance travelled and reduce idling.
2. Introduce driver fuel-efficiency training to optimise driving behaviour and lower energy use per kilometre.
3. Trial the transition of 40% of the distribution-site HGV delivery fleet (ten lorries) from diesel to biogas.

CIP & Hot Water

The CIP & Hot Water area is projected to improve by 23.2% over 2025-2030. Baseline SEC was 1169.10 kWh_th/cycle, projected SEC of 898.12 kWh_th/cycle.

Key planned activities include:

1. Integrate energy audits in the internal audit programme.

2. Introduce a metering spreadsheet to record kWh_th per cycle, with weekly reviews to identify anomalies.
3. Calibrate conductivity and temperature probes, record calibration dates and include this register in the annual energy audit.
4. Redesign cleaning temperatures, step times and chemical concentrations to cut unnecessary heating and shorten cycles without compromising hygiene.
5. Install a heat-recovery system to preheat incoming water.
6. Implement real-time CIP analytics with alarms; when energy per cycle, conductivity, temperature or rinse volume deviates beyond control limits, trigger root-cause investigation and corrective actions.

Wastewater Treatment Plant

The Wastewater Treatment Plant is projected to improve by 19% over the period 2025-2030. Baseline SEC was 0.95 kWh/m³ effluent, projected SEC of 0.77 kWh/m³ effluent.

Key planned activities include:

1. Integrate smart meters with SCADA and Manufacturing Execution System (MES) to detect energy use peaks and anomalies, enabling timely corrective actions.
2. Investigate efficiency of blowers - a major energy consumer.
3. Wastewater Treatment Plant expansion and installation of a biogas-fuelled Combined Heat and Power (CHP) unit. This generation will reduce reliance on the grid by up to 1,752,000 kWh/year, around 36.8% (assuming all CHP output is used on site and excluding minor transformer losses).
4. Evaluate CHP performance six-monthly to ensure optimal utilization of biogas-generated energy.

Filtration & Clarification

A 19.8% improvement is expected in this area over the period 2025-2030. Baseline SEC was 1.21 kWh/hl filtered, with a projected SEC of 0.97 kWh/hl filtered.

Key planned activities include:

1. Integrate energy audits in the internal audit programme.
2. Identify and address inefficiencies, such as no-load running of pumps and compressors, idle auxiliary equipment, and flow set-points that increase energy demand during filtration cycles. Implement repairs and improvements accordingly.
3. Integrate smart meters with SCADA and Manufacturing Execution System (MES) to detect energy use peaks and anomalies, enabling timely corrective actions.
4. Assess pump and motor age and sizing, replacing outdated pumps and oversized motors with appropriately sized, high-efficiency models equipped with variable frequency drives (VFDs) to reduce baseline kWh/hL.
5. Trial emerging low-energy filtration technologies, such as optimised diatomaceous earth (DE) recirculation for potential future integration.

Compressed Air Programme (Fermentation & Tank Farms, Bottling & Canning, Kegging Line)

Each area targets a 7.7% improvement by 2030.

Area	Baseline SEC (kWh/Nm ³ .year)	Projected SEC (2030) (kWh/Nm ³ .year)
Fermentation & Tank Farms	0.10	0.092
Bottling & Canning	0.13	0.12
Kegging Line	0.13	0.12

Key planned activities across all three areas:

1. Integrate energy audits in the internal audit programme, reviewing kWh/Nm³ performance, pressure profiles, and leak rates, and implementing corrective actions based on findings.
2. Integrate smart meters with SCADA and Manufacturing Execution System (MES) to detect energy use peaks and anomalies, enabling timely corrective actions.
3. Acquisition of imaging equipment to identify non-audible compressed-air leaks at points of use.
4. Deliver annual training on good energy management and imaging-equipment for the Engineering team to monitor compressed-air leaks.
5. Optimise compressor sequencing and control logic to match real production demand, avoiding simultaneous operation of multiple units at part load.

Canning Line (Thermal Energy)

A 9.2% improvement is projected for this area over 2025-2030. Baseline SEC was 30.73 kWh_{th}/1,000 cans, with a projected SEC of 27.91 kWh_{th}/1,000 cans.

Key planned activities include:

1. Embed energy audits within the internal audit programme, reviewing pasteuriser performance, over-pasteurisation and heat-recovery opportunities.
2. Install metering (steam/thermal oil and temperature sensors) and integrate with SCADA and Manufacturing Execution System (MES) for real-time monitoring and optimisation of thermal use.
3. Optimise pasteuriser temperature and Pasteurisation Unit (PU) control to prevent overheating and excessive retention times.
4. Evaluate replacing or upgrading pasteurisers to high-efficiency units or feasible alternatives (flash pasteurisation).

Offices (Building Intensity)

A 5.9% improvement is expected in this area over the period 2025-2030. Baseline SEC was 108.71 kWh/m², with a projected SEC of 102.33 kWh/m².

Key planned activities include:

1. Embed energy audits in the internal audit **programme**; target out-of-hours loads (lighting, HVAC, plug loads).
2. Provide annual staff training and awareness on energy good practice.
3. Deploy smart meters integrated with SCADA and Manufacturing Execution System (MES) for anomaly detection.
4. Run comfort surveys to balance efficiency and wellbeing.

5. Optimise HVAC scheduling and temperature setpoints (typ. 20-21°C heating; 24-26°C cooling) for working and out-of-hours periods.
6. Replace/retrofit inefficient office equipment (HVAC, lighting, appliances) with high-efficiency models (Energy Star or equivalent).

Offices (Thermal Energy Intensity)

A 15% improvement is expected in this area over the period 2025-2030. Baseline SEC was 367.59 kWh_{th}/m², with a projected SEC of 312.21 kWh_{th}/m².

Key planned activities include:

1. Phase down kerosene boiler and rely on air-source heat pumps already in place in the old offices.
2. Survey and rectify building-fabric losses, distribution losses and control issues.
3. Provide annual staff training and awareness on energy-smart heating.
4. Calibrate thermostats and sensors; set clear temperature and scheduling policies.
5. Install a smart BMS to match heating to occupancy and demand, avoiding heating during unoccupied periods.

Scrumpy House

A 19.8% improvement is expected in this area over the period 2025-2030. Baseline SEC was 319.44 kWh/m², with a projected SEC of 256.21 kWh/m² by 2030.

Key planned activities include:

1. Include this area in the site's annual energy audit.
2. Identify and implement operational quick wins, such as improvements to building fabric, replacement of damaged fridge door seals, upgrading outdated appliances, installing tap aerators, and insulating hot water pipework.
3. Develop shutdown checklists for ovens, fryers, grills, dishwashers, lighting, and HVAC systems.
4. Introduce a 5-minute weekly energy walk-round for staff, to spot issues such as doors left open and unnecessary appliances left on or plugged in.
5. Set HVAC temperature setpoints and schedules:
 - Front of House (FOH) heating: 20-21°C
 - Back of House (BOH) heating: 18-19°C
 - Cooling: ≥ 24°C
 - Enable night/setback modes outside operating hours.

Shop

It is projected that a 13.7% improvement will be achieved in this area over the 2025-2030 period. Baseline SEC was 105.41 kWh/m², with a projected SEC of 90.91 kWh/m².

Key planned activities include:

1. Include this area in the site's annual energy audit.
2. Identify operational quick wins (e.g. building fabric, lighting upgrade).
3. Create shutdown checklists for chargers, mini fridges, kettles, microwaves.
4. Introduce a 5-minute weekly energy walk-round for staff, to spot issues such as doors left open and unnecessary appliances left on or plugged in.
5. Add daylight dimming at shopfront and passive infrared sensors in other areas.