

Sustainability In Action



Canada Malting Co. Limited

Sustainability

Sustainability translates into all of us efficiently using our resources in ethical and responsible manner day in and day out. This is not an add-in, but an integral part of our daily Mission-Values-Policies-Actions; below are several key examples of our focus:

Our Mission:

We operate to benefit our shareholders, customers and our company. Our team will conduct business ethically and responsibly as we strive to have our process, product and service recognized as the best.

Our Values:

- **Integrity:** We want to be a company that can be trusted.
- **Ownership:** Our team has a passion and pride for our business.
- **Accountability:** We hold ourselves accountable for our successes and our mistakes.
- **Customer Focus:** The value we deliver in our products and services defines our point of difference.
- **Objectivity:** We strive to achieve operational excellence through objective measurement of everything we do.
- **Teamwork:** We work together as a team to quickly overcome problems and exploit opportunities

Environmental Policy:

Canada Malting Co. Limited is committed to protect the environment through a policy of continual improvement and sustainable development. Sound environmental stewardship and the reduction of pollution are in the best long-term interest of our shareholders, customers, employees and the communities that we operate within. To fulfill these commitments we shall strive to:

- Communicate this environmental policy to all employees and onsite contractors and to make this policy available to the public upon request.
- Ensure our facilities, operations and activities meet or exceed all applicable environmental laws, regulations and our internal Environmental Management System policies and procedures.
- Document and report environmental non-conformance and/or non-compliance both internally and when appropriate to governmental agencies. The company will act promptly to remedy any environmental non-compliance.
- Review and consider the environmental effects of strategic plans, acquisitions/consolidations and facility construction/remodeling.
- Set clear environmental objectives and provide adequate resources to achieve them.
- Measure both corporate and employee performance in meeting environmental objectives, laws and regulations through a process of management review and periodic external review.
- Have each site manager report monthly to their functional Director on the environmental performance on their site. Each Director in turn shall report the environmental performance of their operations/sites to the upper management group on at least a quarterly basis.

Management Systems:

Canada Malting's cornerstone for our energy and carbon focus is our management systems. Plant management manages energy and emissions on real time basis using our process control system through our Man-Machine-Interface. On a weekly basis this data is summarized and review both at the plant level and in the boardroom by top management.

*** All Sites & Corporate Offices:** *Weekly plant and top management environmental/production targets review of critical data at all sites. Data is compared to weekly budget, weekly forecast, week – prior year. If targets are not achieved, immediate corrective actions are implemented. Successes and failures are shared at multiple weekly focus meetings both at the plant and corporate management levels. Areas monitored include:*

- *Natural gas per MT of production.*
- *Electricity per MT of production.*
- *Carbon Footprint per MT of production.*
- *Water volumes per MT of production.*
- *Wastewater volumes per MT of production.*
- *Production yields.*
- *Moistures levels.*
- *Major breakdowns and PM's*

*** All Sites & Corporate Offices:** *Corporate and personal sustainability MBO's set as part of the annual performance management plan.*

*** All Sites & Corporate Offices:** *Plant & top management's compensation is based in part on successful management of the key MBO's numbers. Failure to achieve targets will result in reduced compensation.*

Biological Heat Recovery:

During our malting process germinating grain is undergoing active respiration. During respiration, the grain is generation a large amount of heat as a by-product of the respiration. We use this biological generated energy to heat our malt houses. At some of our North American sites, this biogenetic heat and our geothermal heat are the only heat source for the malt houses.

- * **All Sites:** *Germination grain generates heat during respiration. We use a portion of this waste heat to heat the incoming germination airflow and reduce natural gas used to heat the germination air.*

Kiln Heat Recovery:

All of our malt houses uses exhaust heat recovery to recover waste heat exiting from the malting kiln. These large roof mounted heat recovery units pre-warms the outside air coming into the malt kilns. We have also directed our waste heat from other equipment in both the malt house and the kiln into these heat recovery units.

- * **All Sites:** *Recover waste heat from the kilning and other equipment such as air compressors and refrigeration equipment back into the kiln's air flows to reduce he natural gas used to dry the malt.*



Synergy Partnerships:

Synergy (from the Greek syn-ergo, συνεργός meaning working together) is the term used to describe a situation where the final outcome of a system is greater than the sum of its parts. At Canada Malting, synergy projects are a major focus. We currently have several projects under development and one project announced:

- * **Calgary:** We are currently working with a large regional power company to site a thermal and electrical energy plant at our site. The goal is to decommission an existing open wastewater pretreatment lagoon and replace it with a compact water reclamation plant. The new power plant will be built on the site of the former wastewater lagoon and use the reclaimed water for cooling purposes. We are also looking for additional methods of recovering waste heat from both the malting and energy plant to further reduce the site carbon footprint.*
- * **All Sites:** We have conducted several studies and have concluded pilot plant water reclaim study. We are currently working with several engineering companies on the final engineering plans for a full scale water reclaim plant to reuse our process water for non-process uses both within our plants and to supply industrial reclaim water to nearby industries. This is a critical project to ensure adequate water for future generations.*

Carbon (CO₂e) Reduction:

At Canada Malting we understand the purchase and use of energy, even the location of our plant can have an impact on our output of CO₂^e emissions. We actively manage our purchases of all our energy and work with local energy providers.

- * **All Sites:** We conduct a formal Scope 1 and Scope 2 CO₂^e inventory looking at our emissions of CO₂, CH₄, N₂O, CFC's, PFC's & SF₆.*
- * **Our Scope 1 and Scope 2 carbon footprint has reduced 9.5% over the last 10 years. Our current carbon footprint is 244kg CO₂/MT Malt produced. We are projecting by 2010 our footprint will be 229kg CO₂e per metric ton of production.***

✱ **Montreal:** A combination of efficient burners and the use of sustainability generated electricity gives this one of the lowest carbon footprints in North America of 148 kg CO₂e per metric ton of production.

✱ **All Sites:** Currently reviewing carbon neutral power supply options at our North American locations.

✱ **All Sites:** Extensive use of FactoryLink MMI to control critical energy, water and other critical input to ensure resource use targets are met on daily basis while meeting our customer's specifications. This saves 39,000 MWh of power and 23,926 metric tonnes of CO₂ per year.



✱ **All Sites:** Monitor carbon footprint per metric ton of production on a weekly basis.

✱ **All Plants:** Factory Link MMI Automated process controls implementation has improved efficiency by assuring equipment runs when needed and alarms of faults. One case allowed for sharper pump runtime Management. Pumps ran only when needed automatically instead of deadheading much of the time previously. 268,800 Kwh saved and 164,908 kg of CO₂ per year.

✱ **All plants:** Have equipped large drying kiln fans with Variable speed Drives on every fan at every plant. In Pocatello for instance, we have six 200 hp Kiln fans. A savings by slowing the fan down to provide just enough air movement as needed has saved power & natural gas = 1,460 Kwh and 895 kg of CO₂ per year.

✱ **All plants:** Replacement air compressors with water ring blowers to improve steep aeration while reducing the electrical energy demands.

Recycling & Waste Reduction:

Canada Malting is process base industry, small changes in inputs and waste reduction can have far reaching effects on our company, employees, customers and our community.

- * All Plants: 95% of our products are shipped in reusable shipping units.***
- * All Plants: Bagged customers have the option of requesting a 100% recyclable bag.***
- * All Plants: Installed new grain cleaning equipment and pelletizers that divert 180,000,000 lbs/Year of waste grain by-products from the landfill and the sewer treatment plants into an animal feed supplement.***
- * All Plants: Weekly review plant and top management review of process inputs.***
- * All Plants: The use of higher yielding barley varieties that allow both our malt houses and our customers brew house to achieve higher process yields that allow both maximizing their inputs efficiencies and reducing required energy use.***
- * Vancouver WA. & Pocatello ID: New barley cleaning lines have been installed that reduce barley breakage and increase production yields.***
- * All Plants: Implemented a program to increase the amount of local regional contracted barley for our plants. This both ensures and high quality barley and reduced transportation costs and carbon footprint.***



Packaging, Distribution & Transportation:

Packaging and movement of our raw materials effect our operations at Canada Malting. We designed our systems to minimize the distances ingredients are shipped to the malting faculties

- * All Plants: Plants were placed in locations to maximize the use of existing grain transportation routes.***
- * All Plants: Development of regional barley growing programs has lead to the successful development of growing areas.***
- * All Plants: Grain transportation is key aspect of our profitability that is monitored daily.***
- * All Plants: Developed and implemented plant procedures to ensure railcars are loaded with the maximum volume of malt to reduce the energy per unit of product shipped.***
- * Calgary: Use of Hi-Cube rail cars to ship malt to reduce the energy per unit of product shipped.***
- * Thunder Bay & Montreal: Water front locations allow the direct loading bulk ocean ships.***

**** Water:***

Water is the lifeblood of the malting industry. Climate change, crop changes and population growth are all challenging water supplies through the West. Barley is great dry land crop for the growers. Currently 15% to 20% come from irrigated sources. We at Canada Malting have been driving changes throughout our system such as:

- * All Plants: Water use per metric ton of malt produced is process measurement that is review daily at the plant level and weekly at the corporate level.***
- * Calgary: We have partnered with the Province of Alberta to conduct a research and pilot study to reclaim malting wastewater for reuse and sale to other industrial customers. In 2007 we ran a pilot Membrane biological reactor (MBR) pilot plant that demonstrated the cost effectiveness of the MBR system. We are currently working with Alberta Environment and MBR equipment providers concerning permitting and policy issues related to the project.***

- * All Plants: The Calgary study has demonstrated the high quality reclaimed water can be produced for reuse in the plants. Using the water for boiler feed and wash water will reduce a plant's water use by 5%. Larger water reductions (35% to 40%) could be made if customers allow reclaimed water use during the 1st fill of the steeping process.**
- * All Plants: Targeting malt quality to meet each customer product specification. Annual savings 1,310,029,207 gallons of water, 1,048,023,366 gallons of wastewater, 5,223,033 MWh of power and 4,450 MT of CO2 emissions per year**

