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Joan M. Dukes
Oregon

August 4, 2010

MEMORANDUM

TO: Council Members

FROM: Terry Morlan

SUBJECT: Briefing from Columbia Colstor, Inc

Joel Sandberg, Energy Manager for Columbia Colstor, Inc., will brief the Council on energy efficiency improvements implemented in their industrial facilities. Columbia Colstor is located in Moses Lake, Washington and is the 10th largest refrigerated warehousing company in the United States.

The company has been progressive in energy management and efficiency improvement. The Council will be briefed on the kinds of actions they have taken, their energy savings, and the effects on the company's energy costs. For additional information on the company you can visit their website at <http://www.colstor.com/>.

Energy Efficiency at Columbia Colstor

By Joel Sandberg, Corporate Engineer

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Intro to Columbia Colstor

- Started in 1983 in Quincy, WA
- Family-owned business
 - 70+ years in cold storage industry
 - 3 generations
- 10th largest in U.S. and 13th largest in world
- Corporate office in Moses Lake, WA

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Public Refrigerated Warehouses

- Leased space for frozen food products
- Customers include Lamb Weston, McCain, Twin city foods, Norpac, Simplot, etc.
- Mostly 0°F freezer storage
 - -20° to +50°F available
 - Blast freezing
- Some co-location
 - e.g., Seafood processor in Woodland, Vegetable processor in Quincy

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Colstor Warehouse Summary

<u>Location</u>	<u>Year</u>	<u>Sq. Ft.</u>	<u>Utility</u>
■ Kennewick	1991/97	525,000	Benton PUD
■ Othello	2000/08	286,000	Avista
■ Quincy	1983/88/90	637,000	Grant PUD
■ Quincy – North	2006	219,000	Grant PUD
■ Wenatchee	1990*	240,000	Chelan PUD
■ Woodland	1993/98	234,000	Cowlitz PUD

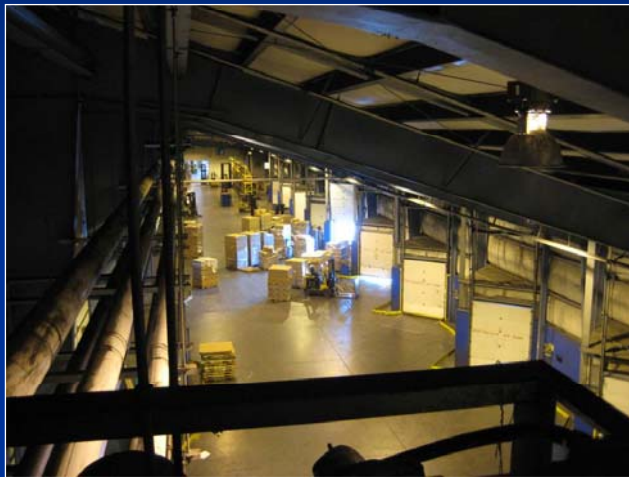
**Wenatchee was purchased in 1990*

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Typical Layout (Woodland, WA)



Warehouse Interior



Shipping Dock



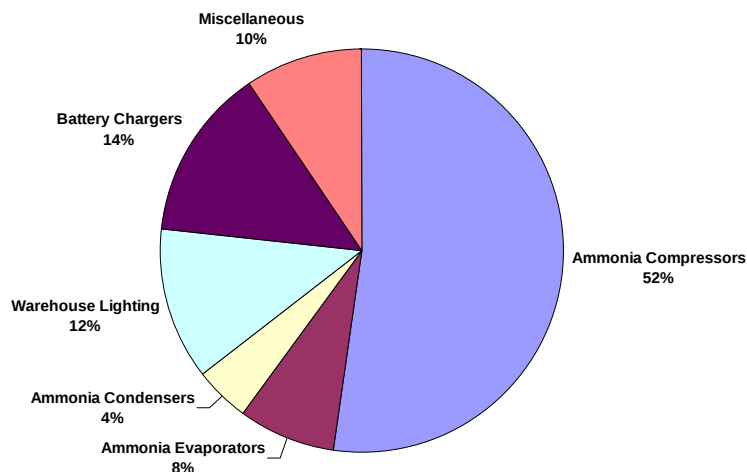
0°F Freezer

Major Energy Users

- Ammonia Refrigeration
- Lighting
 - Warehouse
 - Offices
 - Exterior
- Battery Chargers
- Miscellaneous
 - Offices

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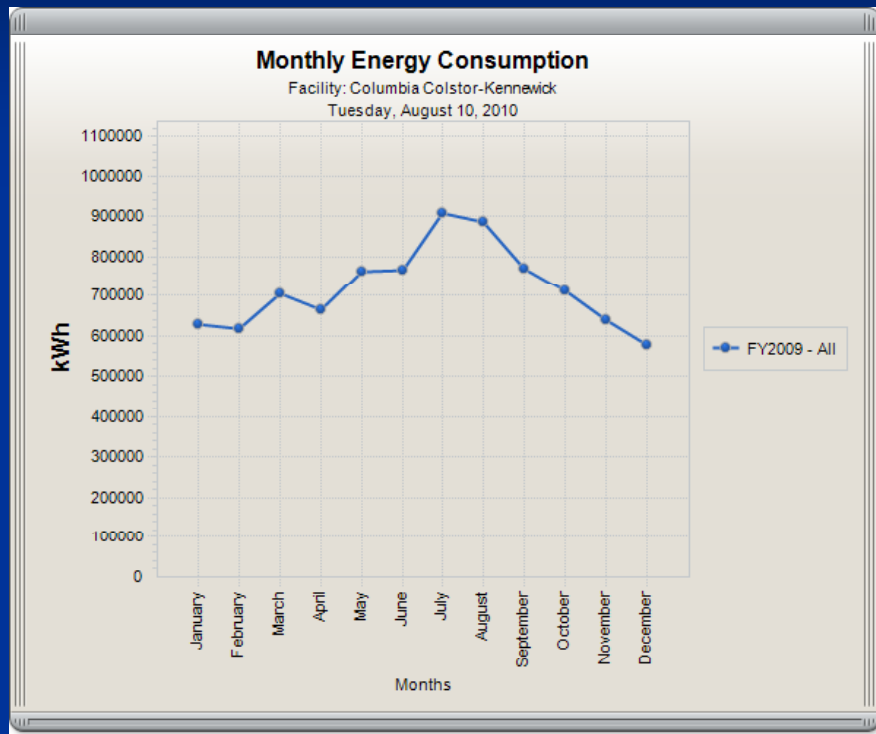
Sample Energy Use Breakdown (Kennewick)



Refrigeration is
Typically 2/3 of
Total Energy Use

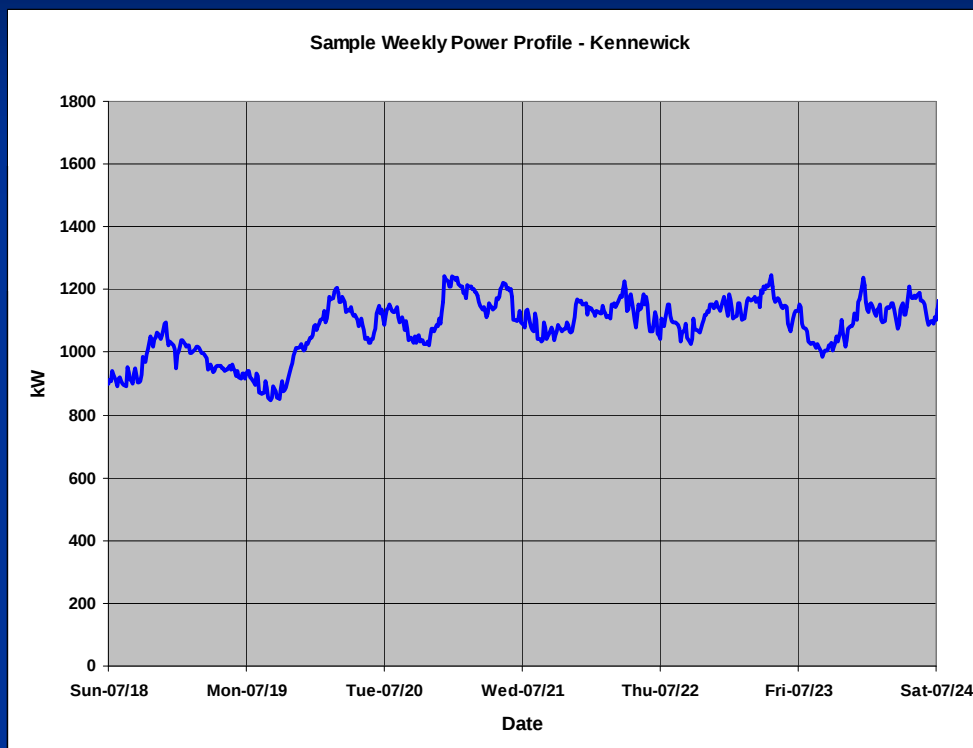
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Sample Annual Energy Profile



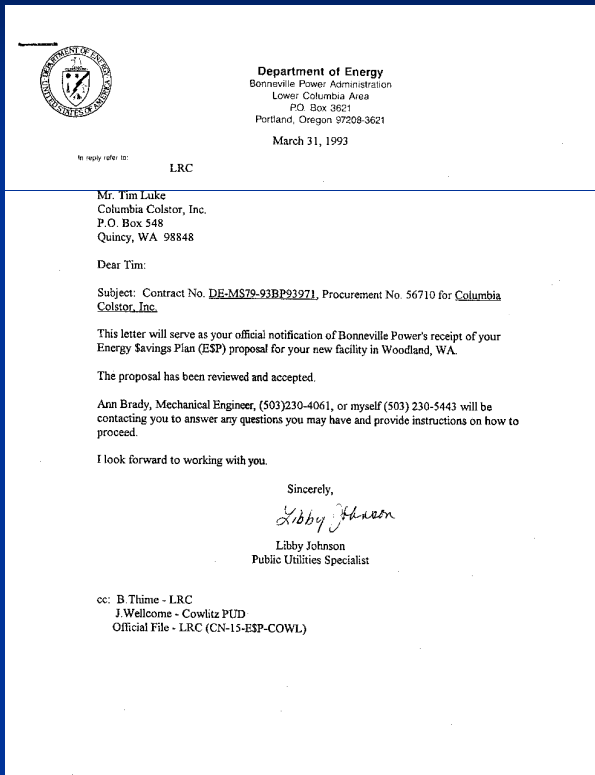
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Sample Weekly Power Profile



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First Exposure to Energy Efficiency



- Woodland was constructed in 1993
- Participated in BPA's Energy Savings Plan through Cowlitz PUD
- New construction upgrades reduced energy use by 50%
- We asked our general, refrigeration, electrical, and controls contractors to work closely with BPA & utility staff

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This First Successful Project...

Cool reception and hot prospects at new plant

□ **Columbia Colstar opens its fourth food-storage plant**

By TED VAN ARSDOL
The Columbian

WOODLAND — Turkeys from Arkansas and Missouri are winding up, temporarily, in the new \$10-million Columbia Colstar Inc. plant on a 25-acre site at the north end of Woodland. Berries, cherries and pears also are stored in giant rooms where temperatures frequently are subzero.

"We are taking products of all kinds, about what you would see in the freezer case of a supermarket," said Manager Dan Kline.

Freezing and storing of vegetables, meat and fruit will continue year-round in the building, which has 150,000 square feet of space — two-thirds refrigerated.

Twenty workers are now employed in the plant at 1625 Down River Drive, and the total may reach 35, said Kline.

Construction was started in March, and Colstar began accepting products in mid-June. The first batches were

strawberries from the Woodland and Gresham areas. The plant is now completed, and scores of invited guests turned out Friday for a ribbon-cutting ceremony, tours and a buffet lunch.

Don McGraw Jr. of Moses Lake, Colstar president who welcomed the visitors, said the railway and highway access at Woodland were important in the decision to build the plant here. He also was pleased that land and power rates were reasonable, and believes Woodland will be a good export location.

This is the fourth plant for the 10-year-old Colstar, the president said. The company's largest facility, covering 735,000 square feet, is at Quincy and the others are at Kennewick and Wenatchee.

McGraw's parents, Don McGraw Sr. and Sandi McGraw, cut the symbolic ribbon Friday at one the produce unloading doors.

"My dad is an investor and a good adviser," McGraw Jr. said.

After the ceremony, groups of visitors were escorted through the facility, which has enclosed and insulated truck and rail docks, 17 truck loading bays and eight rail car spots. The building is computer monitored and has a sprinkler fire

control system.

As a result of energy saving measures in the building, kilowatts used are expected to be cut in half from what would have been the situation without the innovations. Bonneville Power Administration reported this will represent a savings of about four million kilowatts per year.

Chris Milan, a BPA mechanical engineer, said that when Jim Wellcome of Cowlitz County PUD became aware of Colstar plans he arranged a meeting. BPA and Colstar officials "sat down to see how we could improve the electrical efficiency of this plant."

They had to coordinate with several contractors on the plans, and completed their decision on needed equipment by January.

The plant contains what Milan calls state-of-the-art equipment and controls.

BPA spent \$800,000 on this work through its utility customer, Cowlitz County PUD, as part of its energy-savings program for Pacific Northwest industries. According to BPA, spending money on conservation is cheaper than paying for new sources of energy.

Columbia
8/23/93

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Led to Many More...

Vol. 10, No. 12 — NOVEMBER 1993

Colstor warms up to the New Bonneville

by Perry Graber

Take a look. Make the hard decisions. List as with it. Can costs and become more market driven—now?

Some of Bonneville's customers say BPA should not get involved with this philosophy in cold.

The Lower Columbia Area is heating the message. In some ways, its industrial conservation specialists are already working with a business like BPA.

Take, for example, the case of Columbia Colstor Inc., a multi-unit agricultural based in Quincy, Wash., which operates facilities in Quincy, Vancouver and Everett, Wash. On Aug. 28 Colstor opened a new 150,000-sq-ft, 14,000-sq-ft plant in Woodland, Wash., for growing and packing of vegetables, meat and fruit. The company worked with its local utility and BPA to incorporate energy efficiency measures in the new building. In working with the Lower Columbia Area staff, Colstor has seen the BPA of efficiency—and it likes what it sees.

Through the Energy Savings Plan program, BPA encourages businesses that exchange amounts of electricity to reduce their loads by installing efficiency measures in existing, expanding or new facilities. Therefore, the program is designed to acquire the energy savings. The program allows BPA to take advantage of the enormous energy savings potential that exists in the industrial sector.

Bonnie Thorne, a public utilities specialist and program manager, says the program was that potential in a way that gives the maximum benefit for the BPA back.

Through BPA's focus on industrial conservation, however, one specific conservation measure was a need that is both frequent and proven, she says.

Energy savings in Colstor's new facility include a computerized energy management system, adjustable lighting, high efficiency equipment and condenser and fan-cooling coils on ventilation flow of cold air from refrigerated tunnels.

Colstor estimated 21 million above original construction and design costs up front. BPA agreed to pay approximately \$300,000 through its utility customer. Columbia County Public Utility District of Longview, Wash., to acquire almost half its energy equivalent of the energy savings. Colstor would be electric bill in half through the deal.

"We're going to save several million dollars per year," says Tim Luke, the project manager for Colstor. "That's a lot of what the facility was designed to save originally. That's a big deal."

Colstor executives were nervous.

"We were a little apprehensive at first because of experience with BPA on other Colstor projects in this plant," says Luke. "You expect BPA and prevent contractors in general to be real hard on them. But we were on a real work for the project and BPA was going to get in the way."

So we said "We want to do this, but it has got to be on time as business deal. Therefore the thing because a lot of people need to review the contract. We can't make a year to get paid—we have contractors to pay."

Columbia Colstor's project manager, Tim Luke, found that working with BPA on a new cold-storage plant with a price of cash, etc. full.

There is some risk in participating, however. Colstor executives must carry a substantial amount of equipment with the measures and energy savings are verified. That could mean some on-site construction or expansion projects on tight land. But BPA limits the benefits for the project.

Don McGraw, Colstor's president, says BPA has helped the company survive competition in a low-cost market with others.

"With BPA's help we were able to build a energy efficient plant that we had originally planned to build. That's energy saving will help us compete in the food processing market and help make sure we have the long run."

"Tim," Luke adds, "we consider BPA a business partner, not another government agency."

Perry Graber is a public affairs specialist in the Columbia Area office.

Transition team story (to be continued)

BPA's Spokane offices move



Grant County PUD Commissioner Carl Barr (center) presents an award to Columbia Colstor President Don McGraw for energy savings efforts at the Quincy plant. Working on the project for the past two years were: Tim Luke, Colstor corporate engineer (far right); Rod Norstrom, Grant County PUD energy services engineer (far left); and Tony Koch, BPA engineer (second from left). Grant PUD photo.

Grant County Energy Partnership Saves \$\$\$ for Cold Storage Plant

A partnering effort to save energy at a large refrigeration plant in Quincy, Wash., is paying huge dividends for the plant's owner, Columbia Colstor, Inc.

The two-year energy efficiency project between Grant County PUD, BPA and Colstor produced verified energy savings of 4,030,800 kilowatt hours per year—enough energy to serve more than 160 homes in Grant County. Recently BPA presented an incentive check of \$303,851 to Colstor which covered 76 percent of the direct project costs. Columbia Colstor's investment in the project will take 4.4 years to payback.

Columbia Colstor operates one of the nation's largest cold storage warehouses in Grant County where local food processing industries store fruit and vegetables in the facility's 150,000 sq. ft. building with 14.2 million cubic feet of cold storage space. The company also supplies refrigeration for six large freeze tunnels in an adjoining food processing facility.

"Good analysis up front was the key to the project's success," said Colstor Corporate Engineer Tim Luke. "We have a big and complicated refrigeration system. Everyone here at the plant worked together on this. And we appreciated the time spent on engineering support from Grant PUD and BPA. The work was done to a high standard."

The Columbia Colstor energy saving approaches were developed by Cascade Engineering of Portland with assistance from Columbia Colstor personnel, BPA and Grant County PUD engineers. ■

Summary of projects

Since 1993:

- Spent over \$4 million on energy efficiency upgrades.
- Annual cost savings is \$800,000/yr for all projects.
- Cumulative cost savings is nearly \$10 million for all projects.
- Cumulative annual energy savings is in excess of 23,000,000 kWh/yr.
- We have received Utility incentives in excess of \$2.5 million.

Colstor's Current Strategy

■ Retrofits for Efficiency

■ Lighting Upgrades

■ HID → Fluorescent → Motion Sensing → LED → ?

■ Refrigeration Upgrades

■ Controls

■ Variable Frequency Drives

■ Door Upgrades

■ New Construction & Expansions

■ Energy Management

■ Tune-Ups

■ Tracking of Facility Energy Performance

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Energy Management

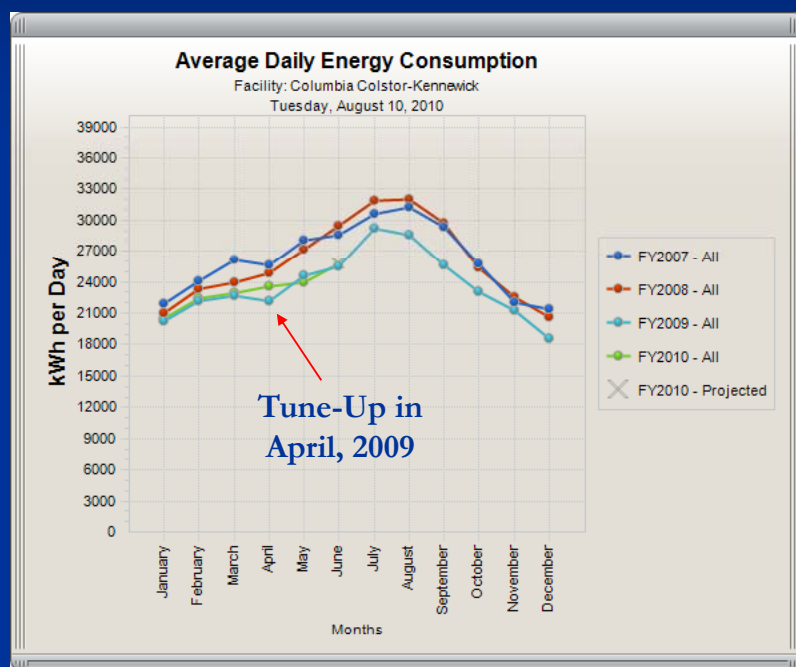
■ Facility Tune-Ups

■ Piloted in
Kennewick

■ FY2009 was 9%
lower than FY2008

■ Tracking Energy Performance

■ Currently
participating in
BPA's Energy
Smart Industrial
Track & Tune
offering



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Facility Tune-Ups

- We understand that functional does not mean efficient
- Needed help from experts to identify low and no-cost opportunities
- Supported by Colstor's President
- Tracking of hourly & monthly energy use
 - Watching for improvement or backsliding
 - Focus is continuous improvement



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Efficiency at our Corporate Office

- Built in 2003 to “LEED Certification” building standards.



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Our Policy Regarding Efficiency

- Typically will consider efficiency when simple payback is < 5 years
 - Capital is tight in current economy
- Efficiency is given special consideration
- We realize new construction or expansion is a one-time opportunity
- We collaborate with key vendors and contractors for comprehensive solutions
- Regional utility energy efficiency programs are critical to our success

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Questions

- Thank-you!
- Questions or Feedback
 - Joel Sandberg, Corporate Engineer
 - jsandberg@colstor.com

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