



BPA 2007 Utilities Workshop: Industrial Case Studies

“Partnering for Continuous Energy Improvement”

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IEA Projects in Gray Harbor County

Ocean Spray Cranberries Inc.,
Markham, WA

Grays Harbor Paper LP
Hoquiam, WA



Partners

- Ocean Spray Management & Employees
- Grays Harbor Paper Mgmt. & Employees
- Grays Harbor PUD
- Bonneville Power Administration
- Northwest Energy Efficiency Alliance
- Industrial Efficiency Alliance



Ocean Spray Cranberries Inc.

Markham, WA Facility:

	<u>2006</u>	<u>2008</u>
■ Fruit Processed (MM lbs)	37	50
■ Avg. Elect. Load (MW)	1.2	2.0
■ Average Steam (kpph)	8	18
■ Products: Juice Conc., Can Sauce, (SDC)		

Ocean Spray - Assessment Activities

Mass & Energy Balances:

- Product Flow
- Thermal Balance
- Water Balance
- Electrical Balance



Ocean Spray - Assessment Activities

Electrical Balances:

- Unit operations
- Chart Utility Meter Data (GHPUD)
- Single line diagram
- Motor Control Centers (measurements & Data Logging by BPA)

Ocean Spray - Assessment Results

Electrical Balances

- Refrigeration
- Compressed air
- Product processing lines
- Water supply
- Waste water treatment
- Boilers
- Work area requirements (lighting etc)

Continuous Energy Improvement

Energy Management Policy & Plan

- Monitor energy use (KPI)
- Appoint “Energy Champions”
- Employee awareness training
- Identify and implement projects
- Measure improvement
- Maintain awareness and identification of opportunities



Ocean Spray – Potential Projects

Opportunities:

- Optimize refrigeration
- Boiler controls (fan savings)
- Reduce compressed air usage
- Reduce water use (reuse, reduce pumping, reduce elec. at WWTP)
- Reduce thermal requirements through capture and reuse.

Grays Harbor Paper LP

Hoquiam, WA

	<u>2006</u>	<u>2008</u>
■ Uncoated papers (TPD)	500	500
■ PC Recycle grades (TPD)	90	450
■ Avg. elect. load (MW)	12.1	11.2
■ Avg. generation (MW)	5.6	12.5

Grays Harbor Paper - Activities

- Utility and TSP program (2002 – 2005)
- IEA conducted Envinta One 2 Five assessment. (2006)
- Established management commitment and partnering agreement with IEA, BPA, PUD
- Assign “Energy Champion”
- Organize Energy Management Program

GHP – Energy Mgmt. Program

- Develop Company Energy Management POLICY
- Develop an energy management PLAN
- Roll-out energy policy and plan to ALL employees
- Organize for success



GHP – Energy Mgmt. Policy (highlights)

- Consider energy in all aspects of business
- Integrate energy management with business goals and other policies (sustainability, safety)
- Implement and use Key Performance Indicators to set goals and drive improvements
- Assign leader and area energy champions

(continued)

GHP – Energy Mgmt. Policy (highlights)

(continued)

- Provide employees with training and education
- Maximize “green power” production
- Communicate items in energy mgmt. plan
- Conduct annual reporting and evaluation



GHP – Reducing Energy Users

- Replace compressed air use
- Improve pumping systems
- Reduce water usage
- Steam savings = more electrical generation
- More efficient use of lighting
- Monitor energy use for excursions from normal



GHP – Energy Reduction

- Refiner projects

- Motors 1,500,000 kWh/yr (2004)
- Internals 1,420,000 kWh/yr (2006)

- Pumping

- Consolidate WW 630,000 kWh/yr (2003)
- VFD 113,000 kWh/yr (2006)
- Identified w/PSAT 1,560,000 kWh/yr (2007)

GHP – Energy Reduction

(Continued)

- Vacuum System

- PM#1 218,000 kWh/yr (2007)
- PM#2 – TSP Scheduled

- Lighting

- Past 2 years 53,000 kWh/yr ('05-'06)
- Next 2 years 400,000 kWh/yr ('07-'08)

Conclusions

- Industrial customers need help to get started
- Partners provide resource options
 - IEA: upfront (Envinta One-2-Five) and area (compressed air, motors) assessments
 - Utilities: Use data and incentive programs
 - BPA – Field measurements and TSP programs
- Customers must provide commitment to Continuous Energy Improvement!

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