



Sustainability Programs Applications to Sugar Beet Processing Facilities

**Dean C. DeLorey
Director of Environmental Affairs
The Amalgamated Sugar Company LLC
ASSBT Meeting Albuquerque, NM
March 4, 2011**

Overview

- **Sustainability concepts & programs**
- **Customer questionnaires**
- **Coal utilization**



Sustainability

Definitions

- Capacity to endure (Wikipedia, en.wikipedia.org)
- Maintain human life on the planet (The Natural Step, www.naturalstep.org)
- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (1987 World Commission on Environment and Development).

Sustainability Categories

- **Environmental**
- **Economic**
- **Social**

From: Global Reporting Initiative www.globalreporting.org

Environmental Sustainability

Ideal Goals

- **Eliminate systematic increases in concentrations from the earth's crust**
- **Eliminate increases of concentrations of unnatural compounds**
- **Eliminate physical degradation of nature through overharvesting and depletion**

From: www.naturalstep.org

Environmental Sustainability

Major Areas

- **Energy type and use**
- **Greenhouse gases**
- **Water consumption**
- **Wastewater treatment & discharges**
- **Solid waste**
- **Agricultural programs**
- **Environmental management systems**

Customer Questionnaires

The background of the slide is a deep blue with a fine, pebbled texture. In the bottom right corner, there is a partial view of the Earth, showing continents and clouds in shades of brown, white, and blue.

Customer Questionnaires

Sustainability

- **Several questionnaires completed over the past couple of years**
- **Questions focus on improvements and goals for reducing environmental impacts**
- **Development and implementation of long-term plans**

Improvement Goals

Customer Questionnaires

PARAMETER	% REDUCTION
Energy	0 to > 15
Greenhouse Gases	0 to > 15
Freshwater Consumption	0 to > 25
Water Quality Improvements	0 to > 10
Solids Waste	0 > 60

Air & Water Quality Potential Improvements

Area	Improvement
Energy, Fuels & Greenhouse Gases	Improve energy efficiency Recover waste heat Switch to clean fuels Renewable energy, wind, solar
Water Conservation, Treatment & Reuse	Eliminate use of freshwater Improved treatment Increase facility reuse Land application to crops

Solids & Waste Recycling

Potential Improvements

Area	Improvement
Solids Byproducts	<p>Reduce/eliminate onsite accumulation.</p> <ul style="list-style-type: none">•Dirt – Return to farms•PCC – Soil amendment•Ash – Concrete additive, reburn
Other Wastes	<p>Minimize/eliminate waste to landfills</p> <p>Compostable packaging materials</p> <p>Recycling programs (used oil, fluorescent light bulbs, batteries)</p>

Sustainability Programs

- **Many companies have developed programs to reduce environmental impacts**
- **Environmental performance and measurements included in annual reports**
- **Campbell Soup Company – Corporate Social Responsibility Report**

Campbell Soup Company

Corporate Social Responsibility Report

<u>Economic (\$ million)</u>	2008	2009
Sales	8,000	7,600
Earnings	1,100	1,200
<u>Environmental</u>		
Water Use (Cu. Meter/ton food)	10.33	9.35
Energy (MMBtu/ton food)	3.57	3.60
Greenhouse Gas Emissions (mmt CO ₂)	900,000	880,000
Solid Waste Recycled (%)	64%	84.5%
<u>Social</u>		
Donations (\$ million)	18.4	21.5
Health Care (\$million)	102	101

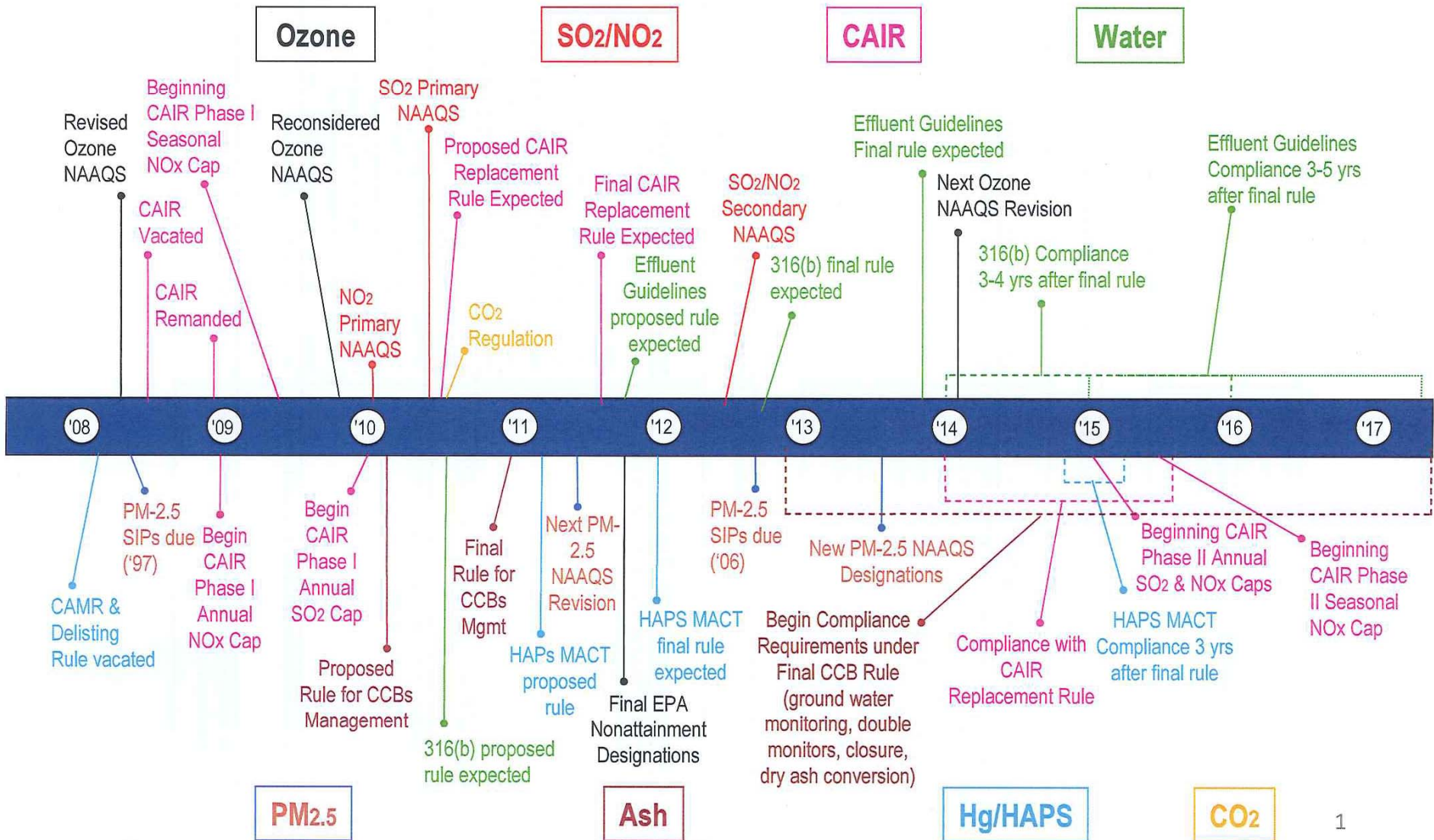


Coal Utilization Sustainability

Coal Utilization

- Over the past several years, both federal (EPA) and state environmental regulations have become significantly more to utilize coal
- Coal generated power plants are subject to 35 new air quality, water quality and solids management regulations

Environmental Regulatory Timeline for Coal Units



Coal Utilization

- **Cumulative impact of these regulations can be overwhelming**
- **Coal burning could be effectively regulated out of business for both power plants and industry**

Portland General Electric Power Plant

Boardman, Oregon

- 600 MW power plant located in eastern Oregon
- Compliance with air quality regulations require \$500 million in capital expenditures (SO₂ & NO_x controls)
- The power plant is choosing to shutdown in 2020. However, over the next 9 years the plant will be required to install over \$80 million in improvements.

Environmental Regulations vs. Economic Sustainability

- **Many other federal (EPA) and state environmental regulations have become significantly more stringent**
- **Many of these regulations are affecting the “Economic Sustainability” and long-term viability of many US manufacturing companies**

Environmental Regulations vs. Economic Sustainability (Cont.)

- **Congress has begun to scrutinize these regulations and impacts to the manufacturers including greenhouse gas regulations**
 - **Assessing Regulatory Impediments to Job Creation: Preliminary Staff Report (U.S. House of Representative Darrell Issa – CA, Feb 2011)**
 - **EPA's Anti-Industrial Policy: Threatening Jobs and America's Manufacturing Base (U.S. Senate, September 2010)**

Conclusions

- **Sustainability programs and reporting are voluntary**
- **Many customers are requesting sustainability information focusing on environmental impacts**
- **It's critical that sugar beet processors report sustainability in economic, environmental and social performance terms**

The background is a deep blue with a fine, pebbled texture. In the bottom right corner, a portion of the Earth is visible, showing white clouds, blue oceans, and brownish landmasses.

Questions?