

**RESEARCH PROJECT: Green Manufacturing and Sustainability at Frito Lay**

***COURSE:***

Foundations of Supply Chain

***OBJECTIVES:***

Research and create an infographic depicting green manufacturing and sustainability goals at Frito Lay and how they are impacting Frito Lay’s supply chain.

***TN STATE CTE STANDARDS:***

**Supply Chain Functions - #7**

*Research the following terms as related to supply chains: lean, green, and sustainable. Define and describe each term and give examples of ways they are implemented in a supply chain.*

***ESSENTIAL QUESTIONS:***

* What is green manufacturing?
* What do we mean by corporate sustainability?
* Why should companies invest in the long-term?
* What are some challenges that companies might face by following a sustainability ethos?
* Why is your generation so conscientious when it comes to environmental issues?

***DUE DATE:* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***GRADE*:**

Project will be graded using the “Project without Presentation Rubric” and will be worth **100 points.**

***PRE-PROJECT ACTIVITIES:***

1. Answer the Essential Questions and discuss with class. At the end of the research project, we will go back and compare your pre-project answers to your researched answers.
2. Watch the video “*What is Corporate Sustainability?”* at <https://www.youtube.com/watch?v=ltBUjzuncQ4> – answer the questions provided during the video
3. Read the “*Background Info on Frito-Lay”* and watch the video “*Green Manufacturing and Sustainability at Frito Lay”* (<https://www.youtube.com/watch?v=7jzxdi6KoQg>)

***PROJECT ACTIVITIES:***

1. Go to the Frito Lay website at <https://www.fritolay.com/about-frito-lay/sustainability>
2. Research additional information on their current sustainability efforts.
3. Prepare an infographic on Frito Lay’s green and sustainable manufacturing goals. Include specific products that provide examples of their efforts (ex. Sun Chips are made using solar energy).

**Background Info: Frito-Lay**

Frito-Lay, the multi-billion-dollar snack food giant, requires vast amounts of water, electricity, natural gas, and fuel to produce its 41 well-known brands. In keeping with growing environmental concerns, Frito-Lay has initiated ambitious plans to produce environmentally friendly snacks. But even environmentally friendly snacks require resources. Recognizing the environmental impact, the firm is an aggressive “green manufacturer,” with major initiatives in resource reduction and sustainability.

For instance, the company’s energy management program includes a variety of elements designed to engage employees in reducing energy consumption. These elements include scorecards and customized action plans that empower employees and recognize their achievements.

At Frito-Lay’s factory in Casa Grande, Arizona, more than 500,000 pounds of potatoes arrive every day to be washed, sliced, fried, seasoned, and portioned into bags of Lay’s and Ruffles chips. The process consumes enormous amounts of energy and creates vast amounts of wastewater, starch, and potato peelings. Frito-Lay plans to take the plant off the power grid and run it almost entirely on renewable fuels and recycled water. The managers at the Casa Grande plant have also installed skylights in conference rooms, offices, and a finished goods warehouse to reduce the need for artificial light. More fuel-efficient ovens recapture heat from exhaust stacks. Vacuum hoses that pull moisture from potato slices to recapture the water and to reduce the amount of heat needed to cook the potato chips are also being used.

Frito-Lay has also built over 50 acres of solar concentrators behinds its Modesto, California, plant to generate solar power. The solar power is being converted into heat and used to cook Sun Chips. A biomass boiler, which will burn agricultural waste, is also planned to provide additional renewable fuel.

Frito-Lay is installing high-tech filters that recycle most of the water used to rinse and wash potatoes. It also recycles corn by-products to make Doritos and other snacks; starch is reclaimed and sold, primarily as animal feed, and leftover sludge is burned to create methane gas to run the plant boiler.

There are benefits besides the potential energy savings. Like many other large corporations, Frito-Lay is striving to establish its green credentials as consumers become more focused on environmental issues. There are marketing opportunities, too. The company, for example, advertises that its popular Sun Chips snacks are made using solar energy.

At Frito-Lay’s Florida plant, only 3.5% of the waste goes to landfills, but is still 1.5 million pounds annually. The goal is zero waste to landfills. The snack food maker earned its spot in the National Environmental Performance Task Force Program by maintaining a sustained environmental compliance record and making new commitments to reduce, reuse, and recycle at this facility.

Substantial resource reductions have been made in the production process, with an energy reduction of 21% across Frito-Lay’s 34 U.S. plants. But the continuing battle for resource reduction continues. The company is also moving toward biodegradable packaging and seasoning bags, cans, and bottles. While these multiyear initiatives are expensive, they have the backing at the highest levels of Frito-Lay as well as corporate executives at PepsiCo, the parent company.

**Discussion Questions**

1. What are the sources of pressure on firms such as Frito-Lay to reduce their own environmental footprint?
2. Identify the specific techniques that Frito-Lay is using to become a “green manufacturer.”
3. How do you think being a “green manufacturer” is impacting Frito-Lay’s supply chain?