

# Enhancing Sustainability in a Dairy Processing Facility using KTT Tools

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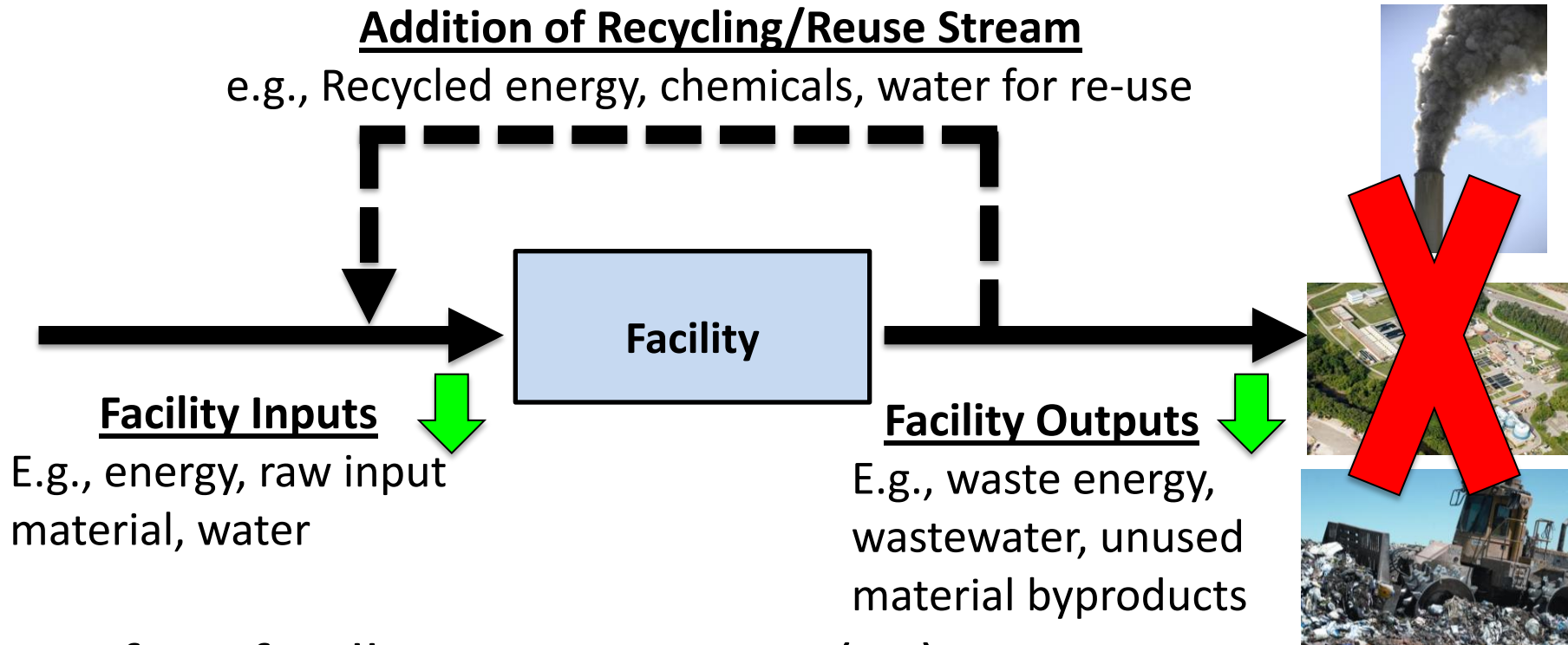


# Research Context

- Business environment of today:
  - Turbulent
  - Complex
  - Unpredictable
- Innovation = Competitive Advantage
- Rising environmental compliance and operational costs
  - Dairy processing research facility consumes large quantities of water, energy, and materials (chemicals)



# Pollution Prevention vs. Pollution Control



## Benefits of Pollution Prevention (P2)

- Cost-saving opportunities at process inputs **AND** outputs
- Improved environmental performance and sustainability

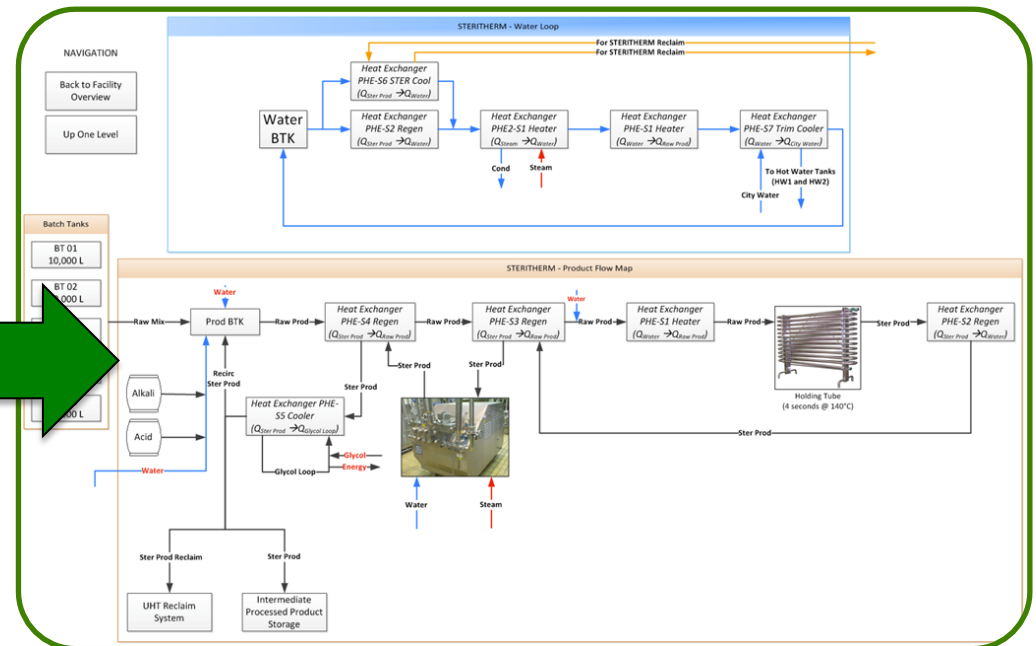
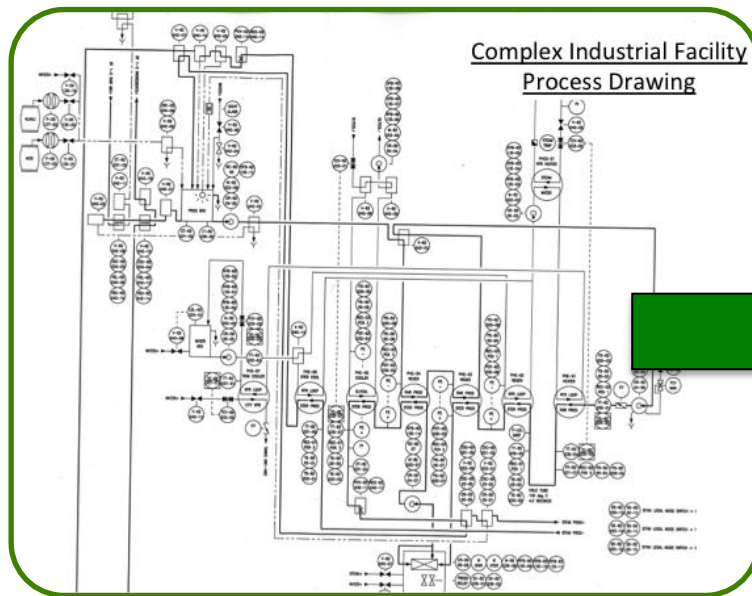
# Barriers to P2 Implementation

- Technical vs. Organizational barriers
- Organizational readiness to change
  - Top management buy-in and sponsorship of change
  - Support from organizational policies / procedures
  - Performance measurement system
- Exclusion of relevant stakeholders in solving problems
  - Knowledge is abundant but underutilized



# Tools Developed to Facilitate KTT

- Resource Mapping Tool
  - Simplifies complex facility information
  - Quantity and quality of energy, water, material use
  - Capable of tracking progress of P2 initiatives



# Tools Developed to Facilitate KTT

- Interview Process with Facility Operators
  - Capture "on-the-ground" experience and perspectives
  - Identified areas of inefficient use of water, energy, and materials



# Research Results

- Identification of P2 Opportunities
  - Water Conservation AND Product Spillage
  - Use of resource mapping tool in interviews helped stimulate employee idea generation

Resource	Environmental Savings	Economic Savings
Water	17,500 m <sup>3</sup> /yr	\$40,000 /yr
Chemicals	154,000 kg/yr	\$54,000 /yr

# Ongoing & Future Research

- Set up learning groups of facility employees to focus on **water conservation** and **product spillage**
- Use previously identified employee ideas to jumpstart P2 implementation
- Learning groups will help retain knowledge in P2 and develop a culture of learning and innovation at the organization level

