**Agenda Item A.1**
**PRESENTATION**
**Meeting Date: December 17, 2007**

**TO:** Mayor and Councilmembers

**FROM:** Steve Wagner, Community Services Director

**CONTACT:** Kimberly Nilsson, Community Services

**SUBJECT:** Presentation on Conversion Technology by the City and County of Santa Barbara Conversion Technology Study Group

**RECOMMENDATION:**

Receive a presentation by the City and County of Santa Barbara Conversion Technology Group.

**BACKGROUND:**

The Conversion Technology Study Group is a collaborative multi-jurisdictional project of the City and County of Santa Barbara. They are tasked with evaluating the feasibility of conversion technology (the process of turning refuse to energy) and the specific type of technology to be used at the Tajiguas Landfill.

Conversion technology is a general term used to describe many different processes that turn municipal solid waste into energy and/or other marketable products to be used later for energy (such as bio-diesel or ethanol). This can be done through biological, chemical or thermal processes but does not include incineration or burning the waste.

There are many different options for our community concerning conversion technology. The Study Group is seeking input from the City Council of Goleta to help define community goals that will guide the decision making process.

It is the Study Group's goal that all affected jurisdictions be invited to participate at any and all levels in this evaluation process of conversion technologies. The most significant decision made at this early stage of the evaluation process has been the selection of the primary technical consultant; Alternative Resources Incorporated (ARI) of Concord, Massachusetts. The City of Goleta, the Montecito Sanitation District, the City of Santa Barbara and the County of Santa Barbara all participated in the consultant selection process.

Attached is a PowerPoint presentation of what will be presented by the Conversion Technology Study Group to the City Council.

**ALTERNATIVES:**

None at this time.

**FISCAL IMPACTS:**

None at this time.

| Submitted By: | Reviewed by: | Approved By: |
|---|---|---|
| _____ | _____ | _____ |
| Steve Wagner<br>Community Services Director | Michelle Greene<br>Administrative Services Director | Daniel Singer<br>City Manager |

**ATTACHMENTS:**

1. Conversion Technology Presentation

# Conversion Technology

**The Next Component of Our Community's Integrated Waste Management System**

The City & County of Santa Barbara Conversion Technology Study Group

## Background/Framework

- **Greater Consensus on the Causes of Climate Change**
  - United Nations Intergovernmental Panel on Climate Change 2007 Report (Nobel Peace Prize Winners)
    - Industrial processes, not a normal pattern of climate change
    - Situation more serious than previously thought

## Background/Framework

- **Increased Legislative Activity**
  - Federal – recent shift from reducing energy demand to reducing GHG emissions
  - California - AB 32 requires 25% reduction in carbon emissions statewide by 2020 and by 80% by 2050, including…
    - Cleaner emission standards for vehicles
    - Greater methane gas capture from landfills

## Background/Framework

- **Greater Corporate Movement Towards Green Production Processes**
  - Increased public pressure
  - Economic benefits and cost savings

## Background/Framework

- **Focus of Local Governments on "Sustainability"**
  - Green building design standards
  - Alternative fuels for fleets (e.g. bio-diesel)
  - Renewable energy sources (Solar, wind, wave power)
  - Conversion technologies
    - Biomass to fuel
    - Waste to electricity/fuel

## Challenges in Solid Waste Management

- Population growth since 1990 → 18%
- Growth in waste generation since 1990 → **54%**

## Challenges in Solid Waste Management

- Limited permitted capacity/siting a new landfill
- Projected cost increases
- Environmental impacts

## Local Response

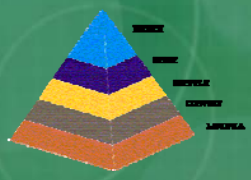
- **Leaders in State in Solid Waste Management**
  - Leaders in the State in diversion (64% and rising!)
  - Successful partnerships
  - Well-managed landfill
  - Studying new technologies for long-term solutions to waste management

## What is Conversion Technology (CT)?

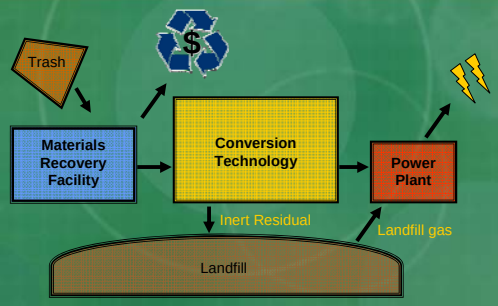
- **Primary purpose:** Divert trash that would otherwise be landfilled
- Mitigate environmental impacts of disposal
- Convert energy stored in trash into electricity or fuel

## Where Does CT Fit In?

- EPA's Hierarchy of Waste Management
  - Reduce
  - Re-Use
  - Recycle
  - **Convert**
  - Landfill



## CT in Action




## Benefits of CT

- Offers the opportunity to:
  - Complete the waste management infrastructure
  - Reduce environmental impacts
  - Produce a sustainable energy source
  - Increase recovery of recyclables
  - Provide long-term rate stability

## Types of CT's

- Biological
- Chemical
- Thermal
- Mechanical

(Not combustion or incineration!)

## CT Trade-Offs

| Non-Thermal | Thermal |
|---|---|
| Lower net energy output | Higher net energy output |
| More residual (inert) | Less residual (inert) |
| Less complicated permitting process | More complicated permitting process |
| Lower initial capital costs | Higher initial capital costs |

## Which conversion technology makes the most sense for our community?

- What are our community priorities?

## Initial Goals

- Increase diversion of post-recycled MSW intended for landfill
- Convert remaining portion into beneficial products (i.e., energy, fuels, etc.)

## Initial Goals

- Reduce the environmental impacts of landfilling MSW

## Initial Goals

- Provide long-term financial stability and sustainability

## Initial Goals

- Produce green energy/fuel and other marketable products

## Initial Goals

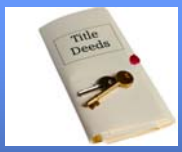
- Provide a humane work environment

## Initial Goals

- Result in a long-term waste disposal plan

## Other Considerations

- Public ownership?
- Private ownership?
- Public / private partnership?




## Timeline

- PHASE I
  - Finalize Goals & Criteria (January 2008)
  - Complete CT Feasibility Study (March 2008)
  - Decide whether to move forward (May 2008)
- PHASE II
  - Issue CT RFP (Summer 2008)
  - Award RFP to a specific CT vendor (Fall 2008)

## Feedback

- Feedback on goals
  - This group
  - City Council
  - Board of Supervisors

## Questions/Feedback?