CONVERSION TECHNOLOGY PROJECTS IN THE RMDZ PROGRAM

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October 30, 2009

www.SoCalConversion.org

What are Conversion Technologies?

- Processes capable of converting post-recycled residual solid waste into useful products and chemicals, green fuels, and renewable energy

- May be thermal, chemical or biological, but are not incinerators

The Southern California Conversion Technology Demonstration Project

The Benefits of Conversion Technologies

Reduce dependence on landfilling and waste exportation

Create export-proof environmental sector jobs

Locally produce renewable energy and green fuels, including ethanol, biodiesel, & electricity. Reduce dependence on foreign oil.

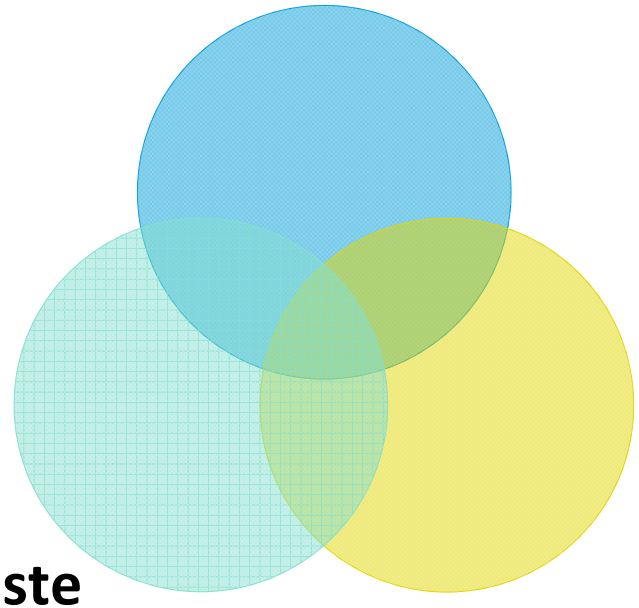
Reduce emissions, including GHG emissions, by reducing disposal, transportation, and fossil fuel usage

Project Background

- Each year, Los Angeles County generates approximately 24 million tons of materials, with approximately 50 % being diverted.
- Twelve million tons of trash or 40,000 tons per day must be safely and properly disposed.
- This presents a challenge not only protecting public health and safety and the environment, but also continuing to expand waste reduction, resource recovery, and recycling programs and policies.

Diversification is Key

Enhance/Increase Recycling and Reduction Programs



Expand Solid Waste Infrastructure

Conversion Technologies

Conversion Technology Suppliers

Currently there are **four** conversion technology suppliers recommended for consideration for the final demonstration project.

Vendor	Technology Type
Arrow Ecology	Anaerobic Digestion
International Environmental Solutions	Pyrolysis
Interstate Waste Technologies	Pyrolysis/ Gasification
Entech Environmental	Gasification

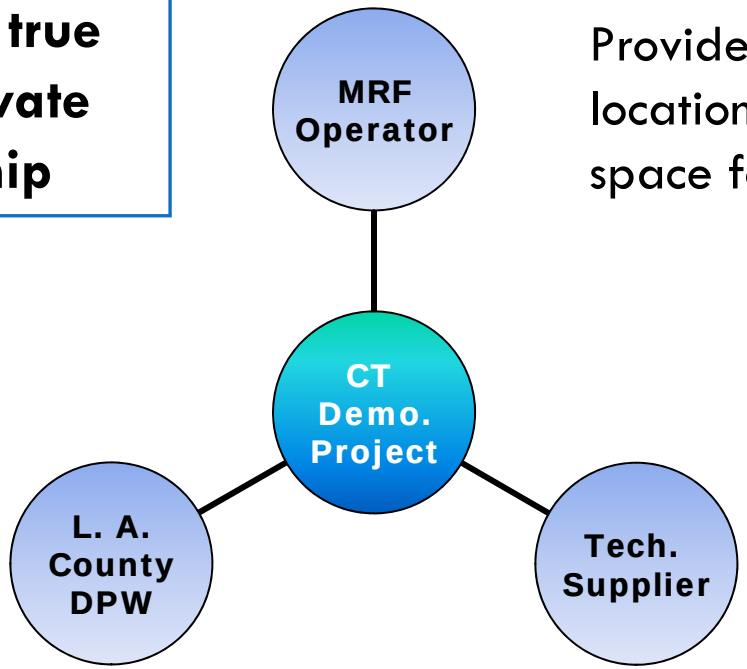
Potential Site Locations – MRFs

There are also three Material Recovery Facilities (MRF) under consideration for partnership with the chosen technology supplier(s).

MRF	Location
Perris MRF/Transfer Station	Riverside County
Rainbow Disposal Co., Inc. MRF	Orange County
Robert A. Nelson Transfer Station and MRF (RANT)	Riverside County

Public-Private Partnership model

Project is a true Public- Private Partnership



Provide feedstock and location with adequate space for technology

Provide technology for demonstration facility

Finance construction, Build/Own/Operate facility (as negotiated with MRF)

Facilitate partnering & permitting

Obtain operational data for future support of CT facilities

Procure supplemental grant funds

Project Description

- Three individual projects
  - Different technologies, different sites
  - Projects selected through extensive vetting process by Alternative Technology Advisory Subcommittee and County
- Collocated with Material Recovery Facilities (MRF)/Transfer Stations (TS)
  - Utilize residual material that would have otherwise gone to a landfill
  - Reduce truck traffic

Project Description

- Public-Private Partnerships
  - Numerous potential partners, including technology vendor, MRF/TS owner/operator, LA County, host jurisdiction
  - Facilities will be owned/operated/financed by CT and MRF partners
- Smaller scale projects designed to test the environmental, technical, and regulatory feasibility of these types of technologies in California
- Impetus for future commercial projects

Project Timeline

Phase I: Initial Technology Evaluation (2004)

- Contracted with URS Corporation
- Conducted a preliminary evaluation of a range of conversion technologies and suppliers
- Indentified material recovery facilities and transfer stations capable of hosting a project

Phase II: Facilitation Efforts for Demonstration Facility (2006)

- Contracted with Alternative Resources, Inc
- Conducted an independent evaluation and verification of the qualifications of selected technology suppliers and capabilities of their conversion technologies
- Review of permitting pathways and funding opportunities
- Conducted evaluation of potential sites in Southern CA

Phase III: Development of Demonstration Projects (December 2009)

- Issued a Request for Proposals to shortlisted companies in January 2008. Received proposals in August 2008. Issued an RFP for consultant for Phase II/IV
- Will make recommendations to the Los Angeles County Board of Supervisors in October 2009
- The County will assist each project with funding procurement, permitting, & technical work

Phase IV: Development of Demonstration Projects (December 2009)

- Partner with interested cities and other stakeholders to facilitate development of a commercial sized facility within Los Angeles County

Benefits of RMDZ Program to CT Projects

- Streamlined permitting
- Assistance with finding an appropriate site
- Low cost, long-term loan program
  - Financiers are waste experts
- Assistance in identifying markets for various products
  - Conversion technologies produce various byproducts depending on the process
- Update on current market conditions/trends.
- Evaluation of technology and equipment
- Geographical data on demographics, waste streams, and economics

Benefits of CT Projects to Communities

- Opportunity for capital project or public-private partnership
- Localized waste management, reduced dependence on landfilling or costly exportation
- Production of renewable energy
- Potential to assist the jurisdiction in meeting AB 32, AB 939 requirements
- Creation of local green-collar jobs

Obstacles to Development

- Cost
  - Most new CT plants have a large start up cost
  - Landfill disposal is (currently) relatively cheap
- Misconceptions
  - Perception of CT as similar to incineration
  - Perception that facilities will emit high levels of toxic emissions (esp. dioxins/furans)
- Regulatory Hurdles
  - Currently only incineration or composting technologies are clearly defined
  - CTs are transitional technologies and have no clear permitting or regulatory pathway

Innovative Conversion Technology Projects Underway

- Ortigalita Power Co (Northern CA) – CIWMB approved RMDZ loan last month to company to utilize a gasification system that will convert almond trimmings and orchard scraps into energy
- Gills Onions (Southern CA) – this anaerobic digestion project will convert 300,000 lbs of agricultural onion waste to biogas. Biogas will be upgraded and fed into a fuel cell producing electricity. Company expects to save $700,000 each year in energy expenses and $400,000 in disposal costs.
- Hiriya Recycling Park (Israel) – plans are underway to convert a former dumpsite into a premier resource recovery park featuring anaerobic digestion facility, HHW, tire recycling, and other recycling features.
- ARRA Funding for Biofuels Research & Development (U.S.) - The Biomass Program's $786.5 million of Recovery Act funding is distributed across five areas. The largest portion, $480 million, will go toward solicitations for integrated pilot- and demonstration-scale biorefineries.

Conclusions

- Conversion Technologies can **revolutionize** how we manage our waste: stretching landfill capacity, reducing GHG emissions, generating valuable products, renewable electricity and green fuels, and leading to a less polluted, more sustainable world
- It's important for scientists, politicians, policy makers, environmentalists, and industry to continue **collaborating** to reshape the new era of resource management
- Opportunities like RMDZ make these types of projects more feasible in California.

Contact Information

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For copies of the
County's Evaluation Reports, visit:
www.SoCalConversion.org

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