

Bay Area Regional Biosolids to Energy Partnership

Focused on Sustainable Long-Term Benefits
for Society and the Environment



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The country that harnesses the power of clean, renewable energy will lead the 21st century.

America can be the 21st century clean energy leader by harnessing the power of alternative and renewable energy, ending our addiction to foreign oil, addressing the global climate crisis, and creating millions of new jobs that can't be shipped overseas.



President Barack Obama

What are biosolids ?

Biosolids are the nutrient rich natural by-product of wastewater treatment. Produced by removing the organics from municipal sewage - the majority of which comes from homes.

- 7.2 million metric tons of “dry solids” produced in the USA annually
 - (156,000 dry-tons generated in San Francisco Bay Area)
- Nearly 80% Northern California biosolids reused:
 - Daily landfill cover
 - Soil amendment on agricultural fields



3 Specific Challenges to Industry:

- **Current biosolids management not sustainable:**

- 20% projected population increase by 2030
- Limited landfill capacity
- Longer hauling distances
- Increasing costs (current range \$45-\$90 per wet ton)

- **State and Federal Regulations:**

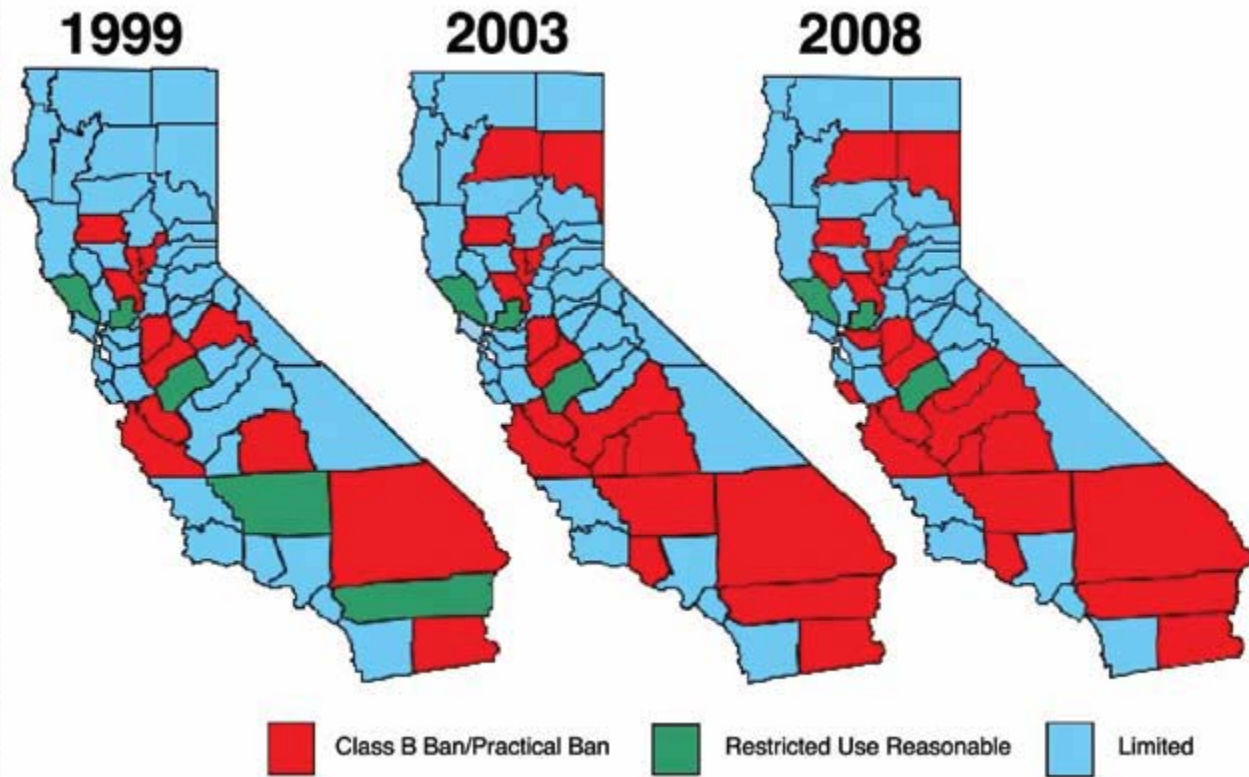
- Increasing restrictions on current practices – land application and ADC

- **Local Restrictions:**

- Solano County Ordinance
- San Joaquin AQMD Rule 4565 (Biosolids eliminated as ADC; incorporation within 3 hours – currently 24 hours)
- Kern County initiative



County Land Use Restrictions Impacting Biosolids Land Application



[Carollo Engineers, March 2007]

State and Federal Initiatives - Opportunities

- Climate Change / Greenhouse Gas
 - Carbon Footprint – AB32
 - Federal Initiatives
 - Potential GHG Credits
- Energy
 - Fossil Fuels – Energy Costs
 - Renewable Energy Sources – Credits
 - Potential for state/federal grants



“The energy potential contained in wastewater and biosolids exceeds by at least five times the energy used to treat it.”

Water Environment Research Foundation (April, 2009)



BA B2E Coalition

- 16 San Francisco Bay Area agencies
- Over 2 million residents
- Seeking local, sustainable solution to biosolids management
- Maximize state and federal support
- Unprecedented collaborative approach



Coalition Partners



Project Goal

Explore opportunities to create a project maximizing sustainable use of Bay Area biosolids as a resource of value for society and the environment.

- Maximize renewable energy resource potential
- Minimize GHG Footprint
- Maximize potential for federal and state financial assistance



Project Focus:

- Utilize state of the art technology
- Net energy producer
- Create “green” jobs
- Not incineration
- Meet or exceed stringent Bay Area air quality standards
- Considering use of drier fuels currently going to landfills:
 - Lawn clippings
 - Leaves
 - Wood waste
 - ...but no municipal solid waste (MSW)



Process Thermodynamics

Parameter	Value
Energy to evaporate water	1,800 BTU/lb water
Primary Sludge Fuel Value	7,400 BTU/lb dry solids
Waste Activated Sludge Fuel Value	6,500 BTU/lb dry solids
Combined Primary and Waste Activated Sludge Fuel Value	7,000 BTU/lb dry solids

Funding & Financing Mechanisms

- Existing and Potential

- Project Delivery Method and Partnerships will influence
- Public-Private Partnership
- State and Federal Grants Potential
- Renewable Energy Credit Potential



“On The Table...”

- State of the Art Technology
- Air Quality (technology, emissions)
- Greenhouse Gases
- Risk Analysis
- EPA definition of Biosolids
- Public Opinion / Education
- State and Federal Partnerships
- Transportation



Summary

- Leading Edge Project – “first of its kind!”
- State and Federal Initiatives
- Proactive Approach
- Regional Cooperation
- Environmental Benefits
- Energy Benefits
- Cost Control
- Public Engagement
- Next Steps





Questions ??

