

Biosolids Thermal Conversion Sole Source Demonstration Contract Award

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2019 Strategic Plan: Biosolids Management Policy Paper

- Recognized:
 - Growing interest for organics management
 - Rising concerns: **emerging contaminants** such as polyfluoroalkyl substances (**PFAS**)
 - **Biosolids Master Plan**: emerging market opportunities
- Issue a request for information (RFI)
 - **Research and evaluate** available emerging technologies
 - **Biosolids-to-energy** options or other biosolids recycling operations
 - Potentially develop scope of work



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What is Biosolids Thermal Conversion?

- **Onsite – Anaerobic Digestion (Current Practice)**
 - Solids (sludge) to Biogas
 - Methane Recovery
 - Biogas to Electricity
- **Offsite – Biosolids Thermal Conversion**
 - Biosolids (post digester treatment)
 - Pyrolysis, Gasification, Oxidation
 - Biosolids to Electricity, Biochar, and Oil

High Temperature (>400°C)

- Biochar for amending soil
- Bio-oil to fuel onsite digesters

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RFI Results

5 Respondents

- 4 with appropriate thermal temperatures
- 3 with scalable technologies
- 1 with accelerated timeline to demonstrate PFAS destruction technology

Viable Criteria for Initial Pilot

Rialto Biosolids Facility (RBF)

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Rialto Bioenergy Facility (RBF): Location

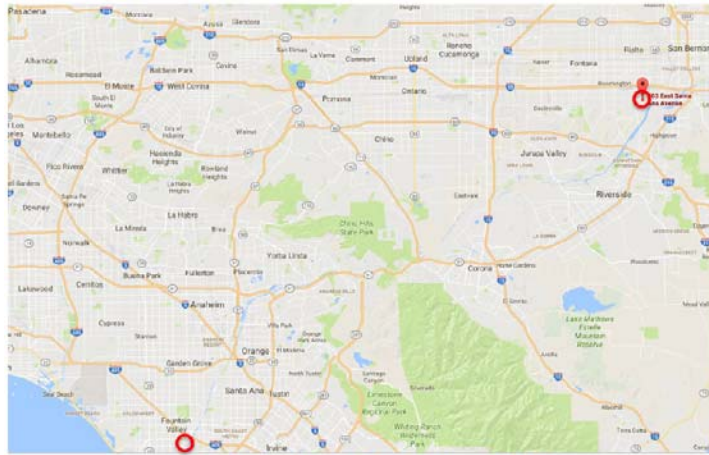


Figure 3: Location of RBF in Relation to OCSD

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Rialto Bioenergy Facility: Aerial

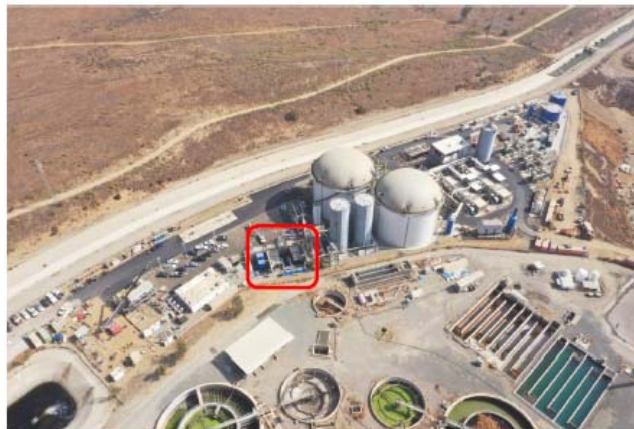


Figure 4: Aerial Photo of RBF with the Receiving Bins Circled

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Rialto Bioenergy Facility: Biosolids Receiving



Figure 6: Truck Unloading at RBF

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Rialto Bioenergy Facility: Dryer



Figure 7: Dryer Installation at RBF

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Rialto Bioenergy Facility Process

Step Two: PYROLYSIS

- Smaller scale pyrolysis unit installation at wastewater plant in Encina.
- Anaergia installation and commissioning starting in Fall 2021.



Figure 8: Pyrolysis System at Encina

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Rialto Bioenergy Facility: Products

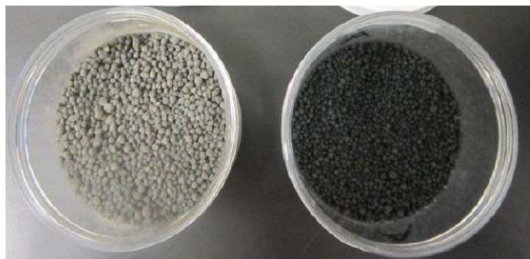


Figure 9: Biosolids after drying (left) and after pyrolysis (right)

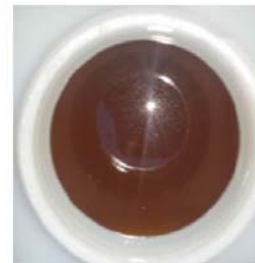


Figure 10: Bio-oil from pyrolyzed biosolids

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Rialto Bioenergy Facility: Contract

- Diversification
- PFAS Sampling
- Sole source
- Accelerated timeline
- Low-Risk, Non-guaranteed tonnage
- First-In Line for New Advanced Technology
- Performance Guarantees
- Short-term
- Standard Contract Components



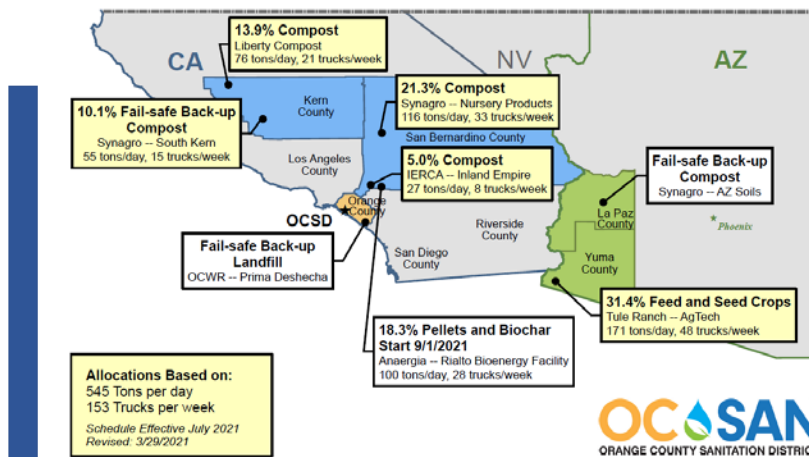
Biosolids Pellets from dryer

Biosolids Pyrolysis Biochar

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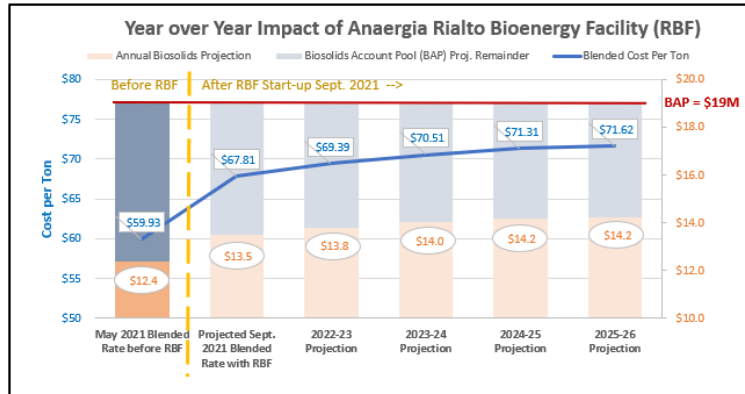
Biosolids Management Locations & Distributions



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Financial Impact of RBF Contract



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Questions



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