

TREATMENT PLANT PATHWAY TO ENERGY NEUTRALITY

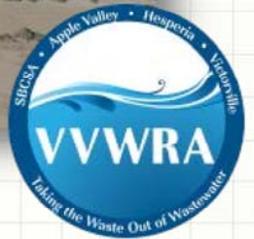
Logan Olds
VVWRA General Manager



VVWRA covers 446 acres



Victorville, CA



2008

- Planning to address nutrient and capacity issues
- Initial idea to use existing assets to move to energy neutrality



May, 2012

- Partnership with local electric utility



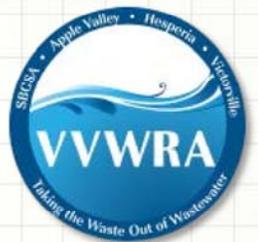


**Would you
throw
away
your used
car?**



2012

- **Develop RFP for :**
 - a. Biogas Optimization
 - b. Energy Production
 - c. Power Purchase Agreement (PPA)



No such thing as luck!



Success is where opportunity
and preparation meet!



June, 2013

- Construction of Omnivore digester improvements begins
- Public Private Partnership (PPP) \$2.6 million



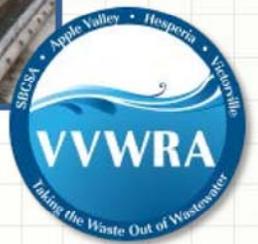
Omnivore



Innovative technology

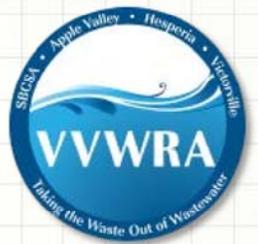


Recuperative Thickener



August, 2013

- **COMPLETED: Phase IIIA Regulatory Upgrade Project**
 - UV
 - Gas conditioning system
 - Helical grease skimmer
 - Ferric chloride station
 - Convert CL2 contact tank to recycled water storage
- **Initiated UV system RetroCommission Project with Edison**



April 2014

- Construction of Biogas to Energy project begins



December 2013

- Coordination with Edison electrical utility regarding On Bill Financing for Aquarius Diffusers

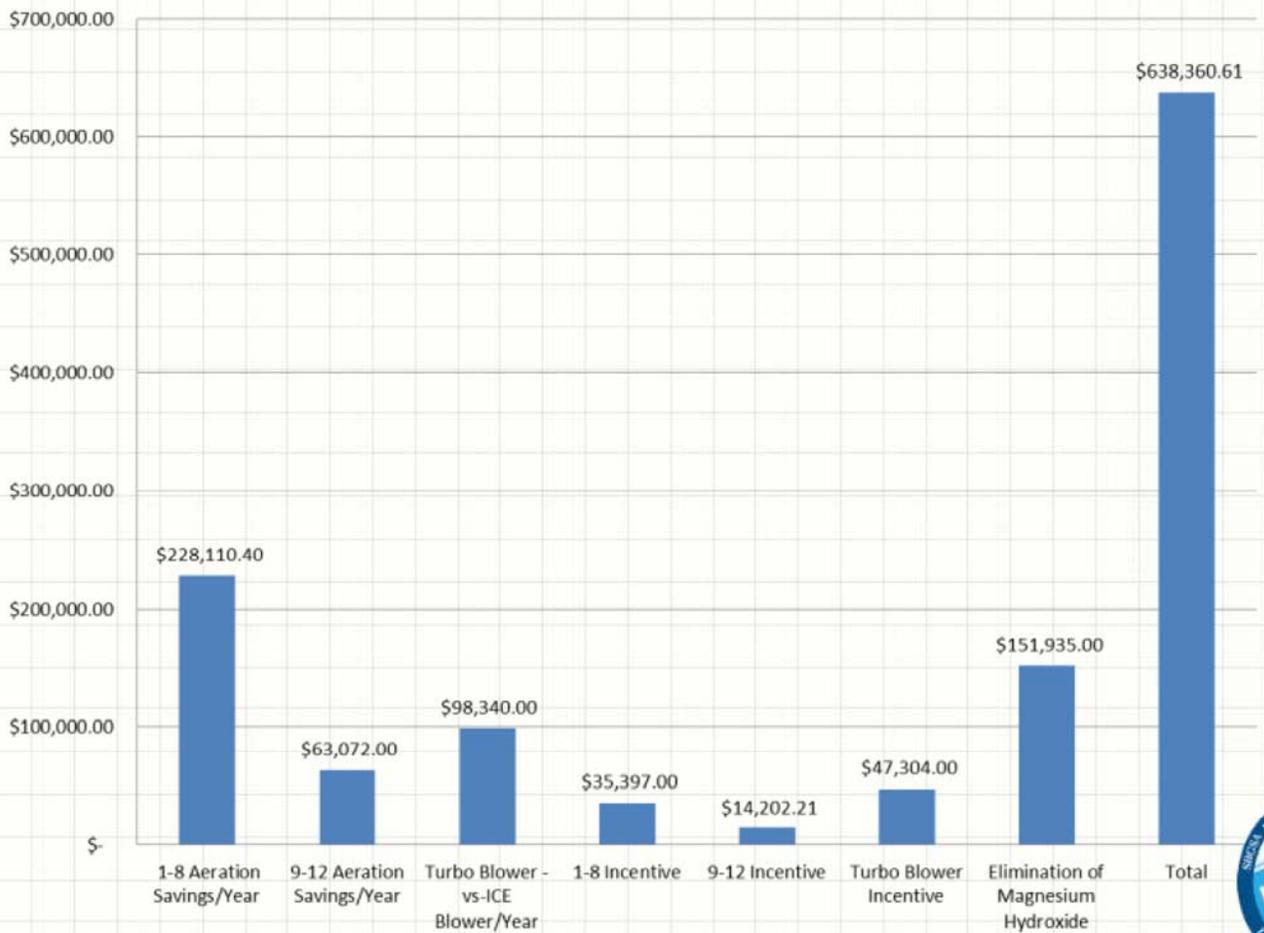




SOUTHERN CALIFORNIA
EDISON

An EDISON INTERNATIONAL Company

Savings and Incentives



June 2014

- Began experimenting with receiving imported waste



ADM/FOG/Septage Potential Revenue



*** Net Revenue after full time septage attendant is factored in.**

ADM/Fog Received Gallons



ADM/FOG

262% Increase BIOGAS



Digester Solids Treatment Capacity

100 %

Biogas

Biogas

Potential for Septage Digestion or Addition External Loads

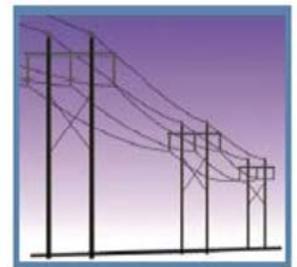
Excess Capacity

Excess Capacity

46 %

Fe

1600 kW Plant Max Load



Export Power

Export Power (Future)

WW Solids

WW Solids



Cogen

Electrical Power to Plant

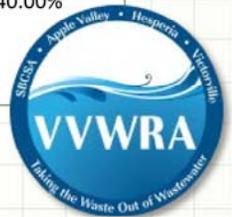
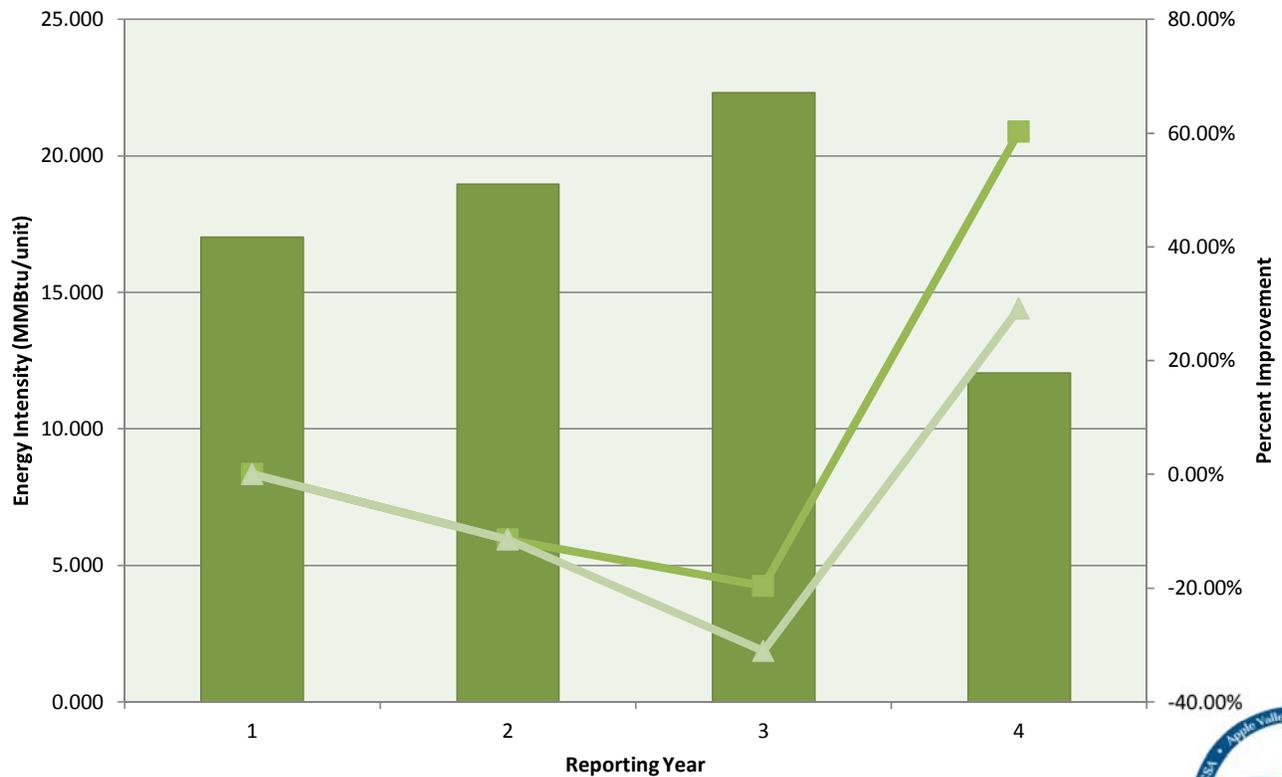




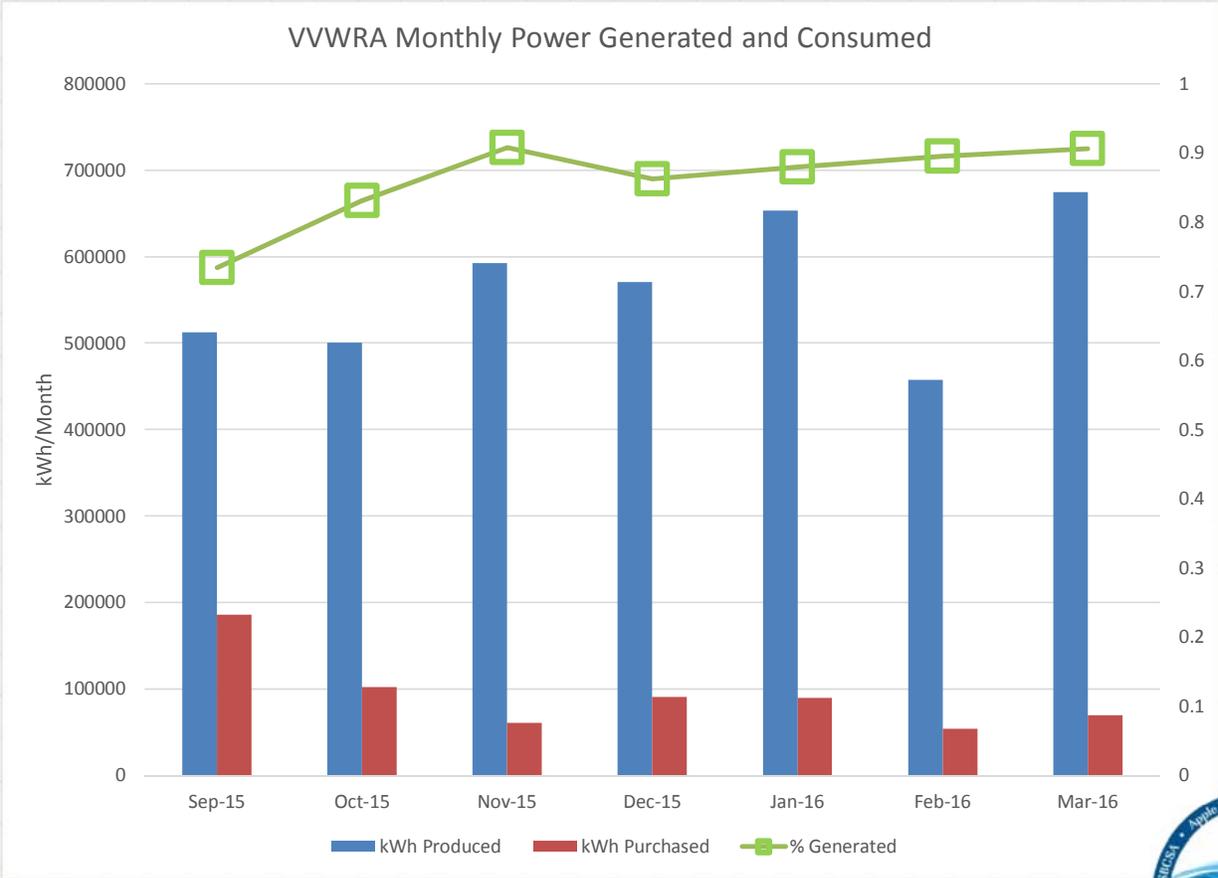
DOE Better Plants Program



■ Production Energy Intensity (MMBtu/unit production) ■ Annual Improvement in Energy Intensity (%)
▲ Total Improvement in Energy Intensity (%)



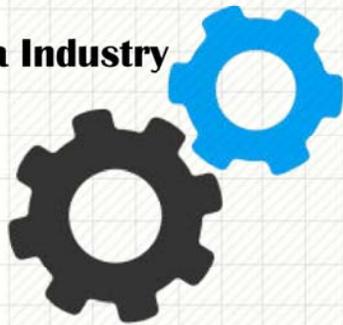
Energy Consumption & Production





New Colleagues

Area Industry



What's next?

- RFP
- CEC grant for Battery Storage System and Microgrid



Logan Olds

***Victor Valley Wastewater
Reclamation Authority***

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