Hyperion Treatment Plant
Digester Gas Utilization Project

CASA Energy Conference
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HYPERION TREATMENT PLANT

- Owned and operated by LASAN
- Produces digester gas (digas)
  - Today: 7.2MMscf/day
  - Future: 9.6MMscf/day
- Current Energy Exchange:
  - Digas goes to Scattergood
  - Electricity/steam returned
  - 20-Yrs Contract w/DWP Ends in ‘2015
- Anaerobically produced digas is a renewable fuel and will be beneficially used for generating on-site electricity and steam for its operations
DGUP DRIVERS

- DWP’s repowering of Scattergood
- Avoid Flaring
- Maximum Beneficial Use of Digas
- Plant Reliability → Proven Technology
- Managing energy costs in a volatile energy market
1. Utilize 100% of renewable biogas; no flaring
2. On-site generation of electricity and steam
3. Sustainable production of renewable energy through a proven technology, and pre-certified for RPS
4. Electrical System Reliability: enable Hyperion to operate “off the grid” in emergencies
5. Build a community friendly project
EIR CHALLENGES/SOLUTIONS

• Air Quality:
  – Use of existing high stack for the best dispersion, lowest health risks
  – Use of BACT for control of NOx, CO, SOx, PM-2.5, VOC’s

• Noise:
  – Use of existing/decommissioned buildings with the interior sound proof enclosures

• Aesthetics:
  – No new stack, no new building
• Ownership the by City:
  — As Essential Public Service qualified for Emission Reduction Credits from the Priority Reserves

• Renewable Portfolio Standards:
  — Design an electrical inter-connection and metering configuration that meets the CEC requirements for maximum RECs
KEY FACTORS IN SELECTING THE CONTRACTOR

- **Sustainability**
  - Low environmental impact
  - Electrical system reliability
  - Manage energy costs

- **Tight Schedule**
  - Fully Commissioned: Fall of 2016

- **Alternative Delivery**
  - Design & Build & Operate
  - 10 years operation by contractor
  - Transfer to City after 10 yrs

- **Established Power Company**
  - Power generation
  - Distribution
  - Renewable energy
• CHP (Combined Heat & Power):
  – Two (2) Solar Mars 100-16000 GTGs (gas turbine generators)
  – One (1) Condensing Steam Turbine
  – Rated capacity of 27 MW & 70klb of steam

• Auxiliary Equipment:
  – Hi Pressure Compressors
  – Digas Pre-treatment skids
  – Thermal Oxidizers
• **Aux. Equipment:**
  - Heat Recovery Steam Gen (HRSG ea. train)
  - Main Stack

• **Air Pollution Control Devices:**
  - SCR/Ammonia for NOx control
  - CatOx for CO control
  - T.O. for VOC destruction
  - Dual GAC/Gel
  - CEMS
GENERAL LAYOUT
• Award Jan 2014
• Online Summer 2016
CONCLUSIONS

• Beneficial use of biogas as a renewable resource is starting to be recognized by the State
• Project configuration/layout meets our immediate and future needs, and is sustainable and expandable
• Design-build-operate: a new model
• Many hurdles overcome, but none insurmountable!