

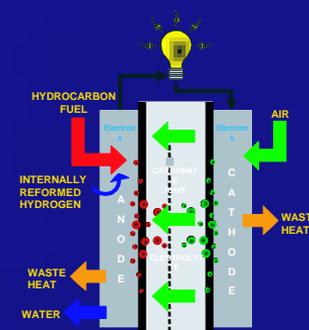
# BRIEFING ON

## THE BIOFUELS ENERGY, LLC BENEFICIAL USE OF DIGESTER GAS (BUDG) PROJECT

### AND THE SOUTH BAY FUEL CELL (SBFC) PROJECT



**BioFuels**  
energy, LLC



**SDGE**  
A Sempra Energy utility

# The BioFuels Energy BUDG & SBFC Projects



- The BUDG Project and the SBFC Project are privatized projects owned by BioFuels Energy LLC
- BUDG Project will buy the Point Loma Wastewater Treatment Plant's excess methane for about \$260,000/year
- BioFuels will clean the gas and send it to UCSD and the South Bay Water Reclamation Plant to produce renewable energy in fuel cells
- BioFuels' 1.4MW South Bay Fuel Cell will sell the SBWRP electricity at a reduced rate saving the plant about \$78,000/year
- BioFuels is using the SDG&E natural gas lines to transport the cleaned gas from the PLWTP to UCSD and the SBWRP



# BUDG & SBFC UPDATE

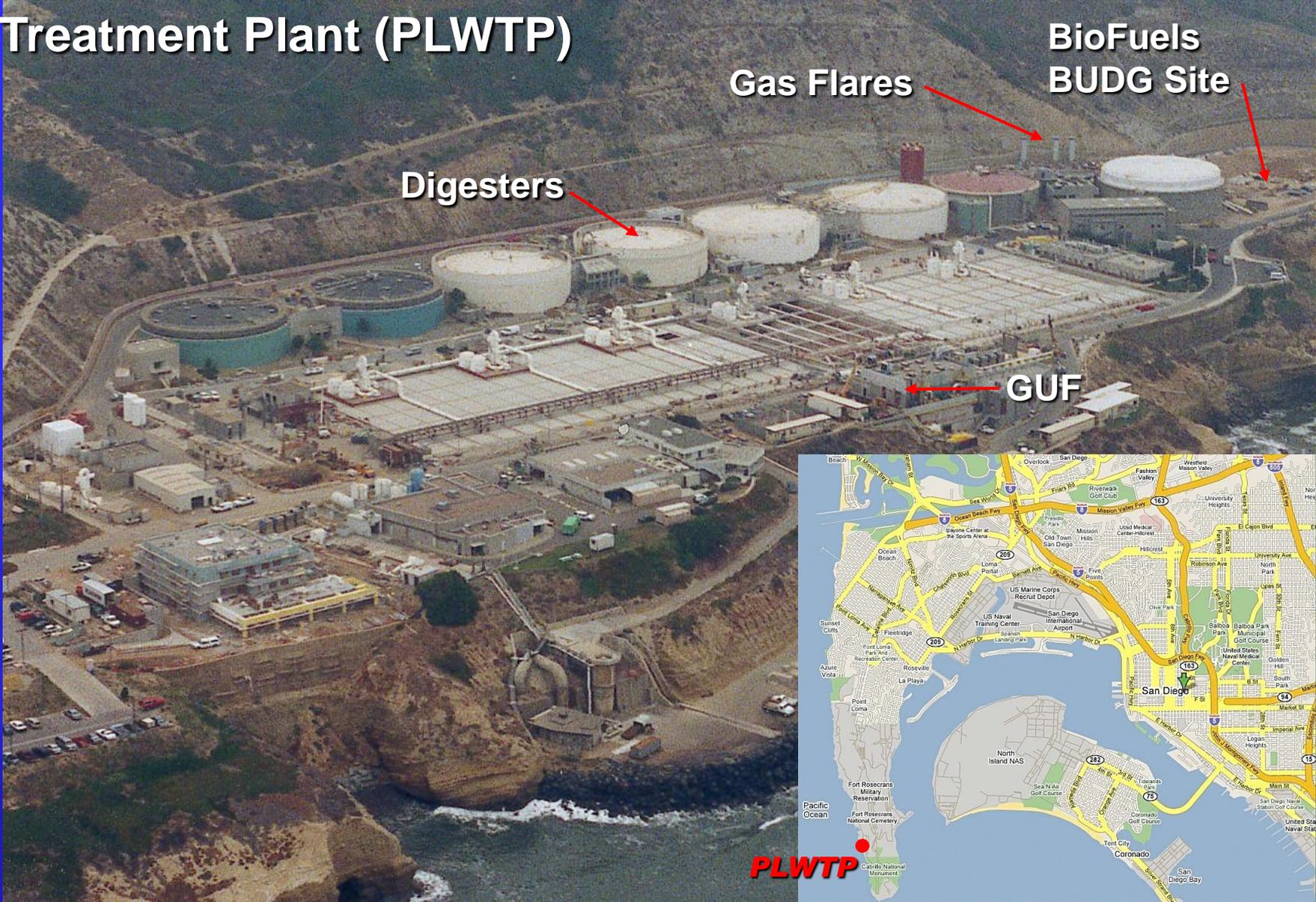
✓ SBFC is 98% Complete  
- Now in Startup Process



✓ BUDG is 85% Complete



# Point Loma Wastewater Treatment Plant (PLWTP)



**PLWTP**

# BUDG Site



NO.		REVISION	DATE
SHEET TITLE GENERAL ARRANGEMENT			
PROJECT TITLE POCKET LOMA HWYTP WASTEWATER TREATMENT PLANT DISBURSE GAS TO PIPELINE GAS			
		<b>SCS ENERGY</b> <small>AN SCS GROUP COMPANY</small>	
BIOFUELS ENERGY, LLC 201 ENCINITAS BLVD. ENCINITAS, CA 92024		DRAWN BY: [ ] CHECK BY: [ ] DATE: 10/19/09	SCALE: AS SHOWN
DRAWING NO. of		DATE: 10/19/09 SCALE: AS SHOWN DRAWING NO. of	

# Emissions Benefits Comparison

Based on average 315 Therms/hour consumption

## Flares:

15 lbs/hr of NO<sub>x</sub>

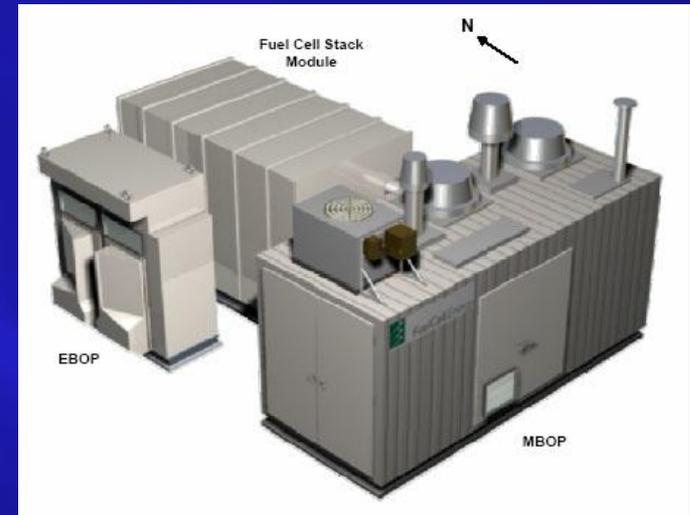
20 lbs/hr of CO



75 Tons of NO<sub>x</sub>  
99 Tons of CO  
per year avoided

97%  
Reduction  
In both  
NO<sub>x</sub> and CO  
(Precursors  
to ozone)

12,000 Tons/yr  
Reduction of  
Non-Biogenic  
CO<sub>2</sub>



## Fuel Cell:

0.46 lbs/hr of NO<sub>x</sub>

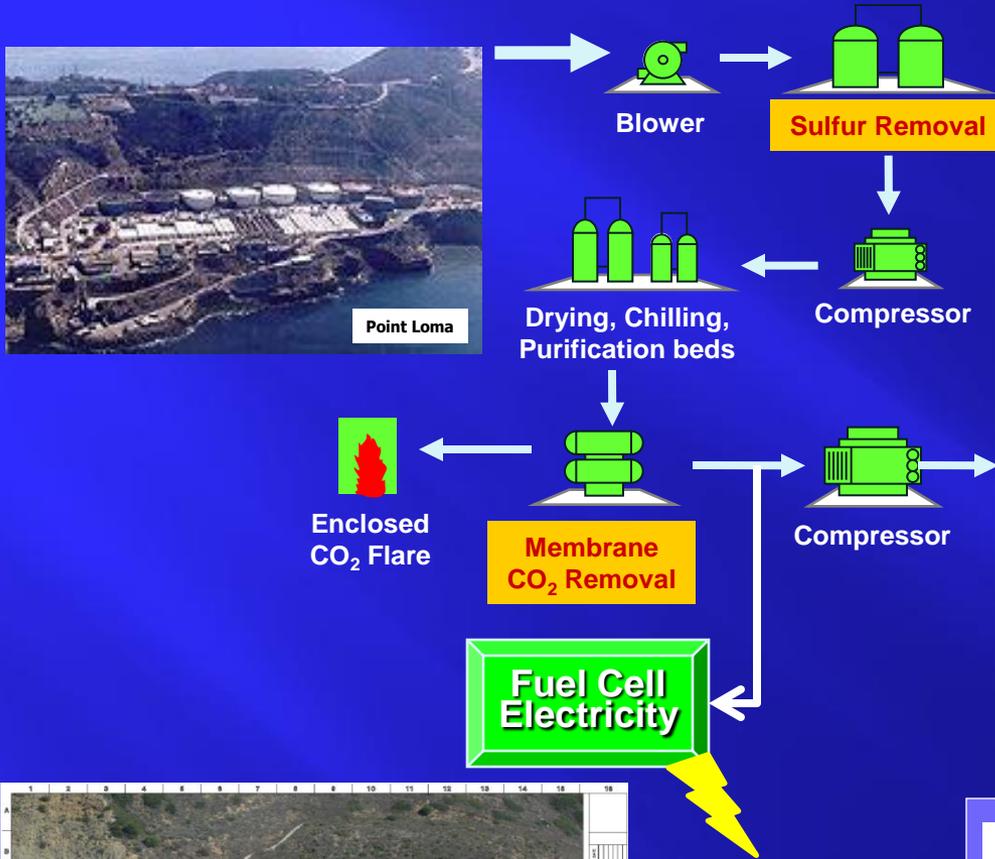
0.3 lbs/hr of CO

# Use of PLWTP's Available Digester Gas

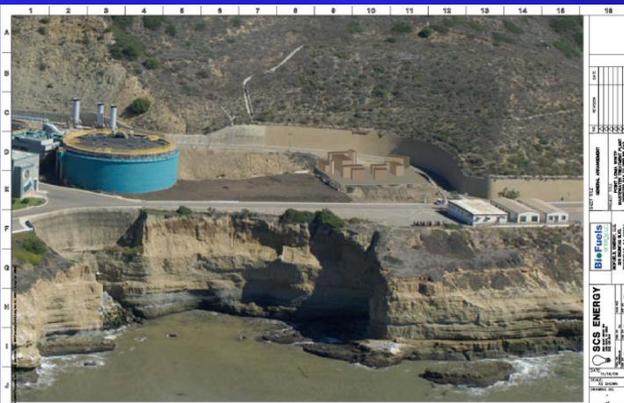
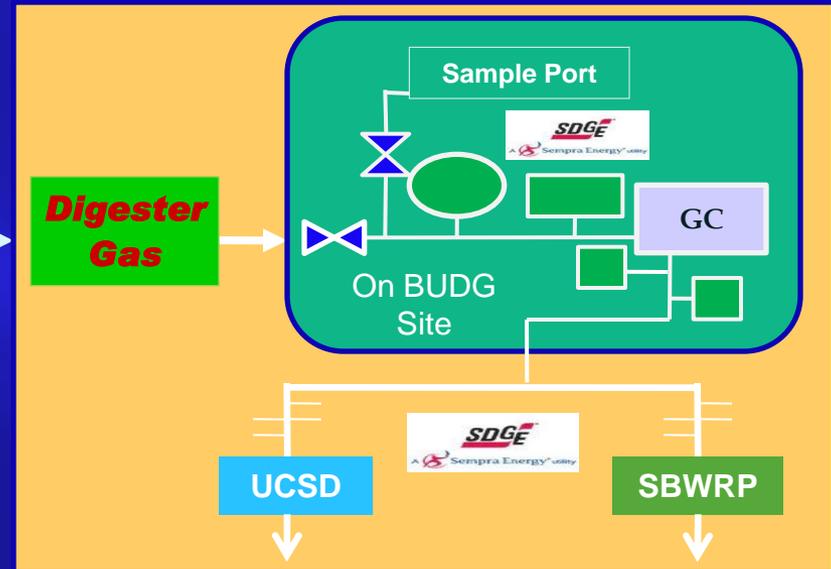
- 1,100,000+ cubic feet of renewable fuel per day is now being flared and is available for beneficial use
- PLWTP does not currently utilize this gas on site due to site restrictions, including capacity of SDG&E's electrical supply/export substation
- Previous "SDG&E" requirements prevented use of their Natural Gas transportation system



# BUDG BioFuels System Diagram



This will be the First Bio-Methane Project in California to Use the Utility's Gas Transportation System

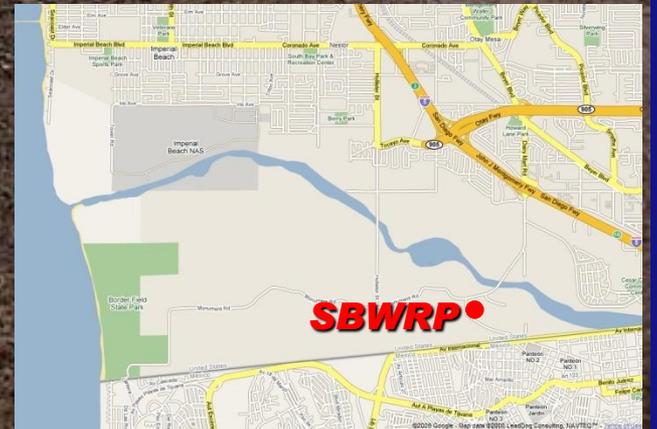
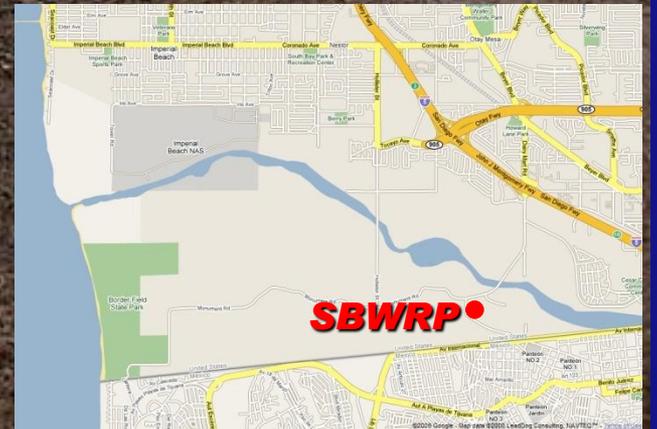


# BUDG CONSTRUCTION



# South Bay Water Reclamation Plant (SBWRP)

**Fuel  
Cell  
Area A**



# South Bay Water Reclamation Plant Fuel Cell Site North View



# SBFC CONSTRUCTION



# BUDG Renewable Energy Production

- UCSD 2.8 MW
- SBWRP 1.4 MW
- PLWTP 0.3 MW

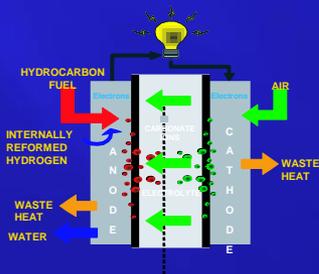
TOTAL 4.5 MW

This is the Largest Fuel Cell Project in the United States



# Project Summary

- PLWTP is not currently utilizing this available digester gas
- Restrictions prevented reasonable investment in its utilization by City so a Public Request for Qualification for Privatized options was issued.
- This will be the first wastewater digester Bio-methane using the utility gas system for transportation
- This innovative concept to transport this available renewable digester gas to ultra clean fuel cells will:
  - ✓ Clean the region's air
  - ✓ Reduce global warming
  - ✓ Encourage these innovative technologies
  - ✓ Provide Public Utilities over \$260,000 per year in gas revenues
  - ✓ Provide \$78,000 per year in energy saving
- Amendment 2 provides the City a \$250,000 fee for a project schedule extension and other issues
- Amendment 3 provides a \$180,000 one time payment to the City for our assistance in arranging the gas transportation



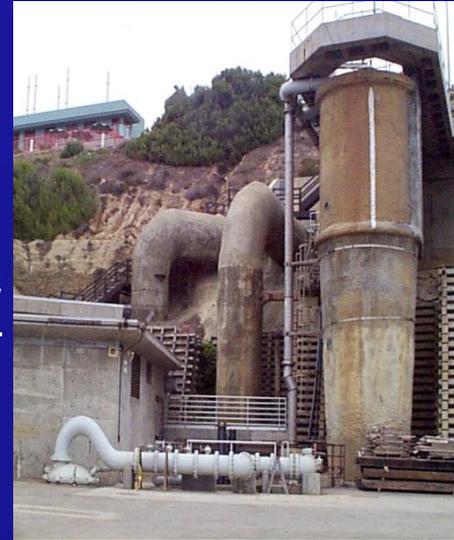
# Public Utilities Department's Green Projects & Awards

2010 California Center for Sustainable Energy's  
Outstanding Organization, Energy All Star Award

Department Owned Renewable Energy Projects - 5.95MW

- PLWTP 4.57MW Gas Utilization Facility
- PLWTP 1.35MW Hydroelectric Generator
- MOC-3 30kW Photovoltaic System

Generating 40,000 MWh/year of Renewable Energy, Saving  
the Ratepayers \$2M/year in Utility Costs and  
Producing \$1.6M in Revenues



# Public Utilities Department's Green Projects & Awards Continue



## Privatized Renewable Energy Projects - 11.95MW

- Privatized 3.8MW North City Cogeneration Facility
- Privatized 6.4MW Metro Biosolids Center Cogeneration Facility
  - Received 1998 San Diego Taxpayer Association's Golden Watch Dog Award
- Alvarado Water Treatment Plant 945kW Photovoltaic System
- Otay Water Treatment Plant 800kW Photovoltaic System

Producing 45,000 MWh/year of Energy Purchased by the City at a Reduced Costs, Saving Ratepayers \$2.8M/year

Total Savings/Revenues Equals \$6.4/year

And More Projects in Progress.....



# Thank you

