Inland Empire Utilities Agency
Fuel Cell Update

SCAQMD Biogas Technology Committee Meeting
May 28, 2014

Jesse Pompa
Inland Empire Utilities Agency
IEUA Fuel Cell

**Technology**
- On-Line 1/1/13
- Goal – 75/25 DG/NG blend
- 2.8 MW gross output
- 3-stage gas conditioning
- Manufactured by Fuel Cell Energy

**Benefits**
- Low emission alternative
- Heat Recovery
- PPA – No Capital Outlay
- $0.129/kWh + 2.5%/yr
Fuel Cell Gas Flow

- Sept 2013 – Dimethyl Sulfide (DMS) breakthrough resulted in DG shutdown
- Oct 2013 – DMS contamination required catalyst replacement
- Dec 2013 – Media replaced in gas conditioning system prior to DG introduction
- Feb 2014 – DMS continued to trend upward; DG shut down preventively
Average Fuel Cell Power Output

![Graph showing the average fuel cell power output from January 2013 to April 2014. The graph includes data for both operational and overall power outputs, as well as expected net power output as per PPA.](image)
DMS Effect on Fuel Cell Operation

Pre-DMS Breakthrough
- 87% Uptime
- 76% DG Blend
- 97% of Expected Generation

Post-DMS Breakthrough
- 86% Uptime
- 22% DG Blend
- 75% of Expected Generation
Fuel Cell Update Summary

- **DMS breakthrough increased downtime and reduced power generation**
  - Cause of higher DMS levels in DG unknown
  - Fuel cell currently operating on 100% NG
  - DG being sent to boilers and flare
- **Additional DMS removal required**
- **IEUA’s Power Cost**
  - Fuel Cell (includes NG) ~$0.146/kWh
  - SCE ~$0.125/kWh