Recovered Energy Generation for Creating Emission Reductions

Gas / Electric Partnership Conference

February 9, 2017

Veyo Heat Recovery Facility, Utah

ORMAT

Green energy you can rely on

Disclaimer

Information provided during this presentation may contain statements relating to current expectations, estimates, forecasts and projections about future events that are forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995.

These forward-looking statements generally relate to the company's plans, objectives and expectations for future operations, and are based on management's current estimates and projections of future results or trends. Actual future results may differ materially from those projected as a result of certain risks and uncertainties.

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In addition, during this presentation, statements may be made that include a financial measure defined as non-GAAP financial measures by the Securities and Exchange Commission, such as EBITDA and adjusted EBITDA. These measures may be different from non-GAAP financial measures used by other companies. The presentation of this financial information is not intended to be considered in isolation or as a substitute for the financial information prepared and presented in accordance with GAAP.

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EBITDA and Adjusted EBITDA are not a measurement of financial performance or liquidity under accounting principles generally accepted in the United States of America and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net earnings as indicators of our operating performance or any other measures of performance derived in accordance with accounting principles generally accepted in the United States of America. EBITDA and Adjusted EBITDA are presented because we believe they are frequently used by securities analysts, investors and other interested parties in the evaluation of a company's ability to service and/or incur debt. However, other companies in our industry may calculate EBITDA and Adjusted EBITDA differently than we do.

Introduction

Market leader with proven track record in the geothermal sector

Our mission is to become a leading global renewable energy provider

50

Years of experience

667

$million LTM Revenue

Own & Operate

710MW

1,060

Employees

Business Segment Overview

The only vertically integrated player with a balanced business model

Electricity

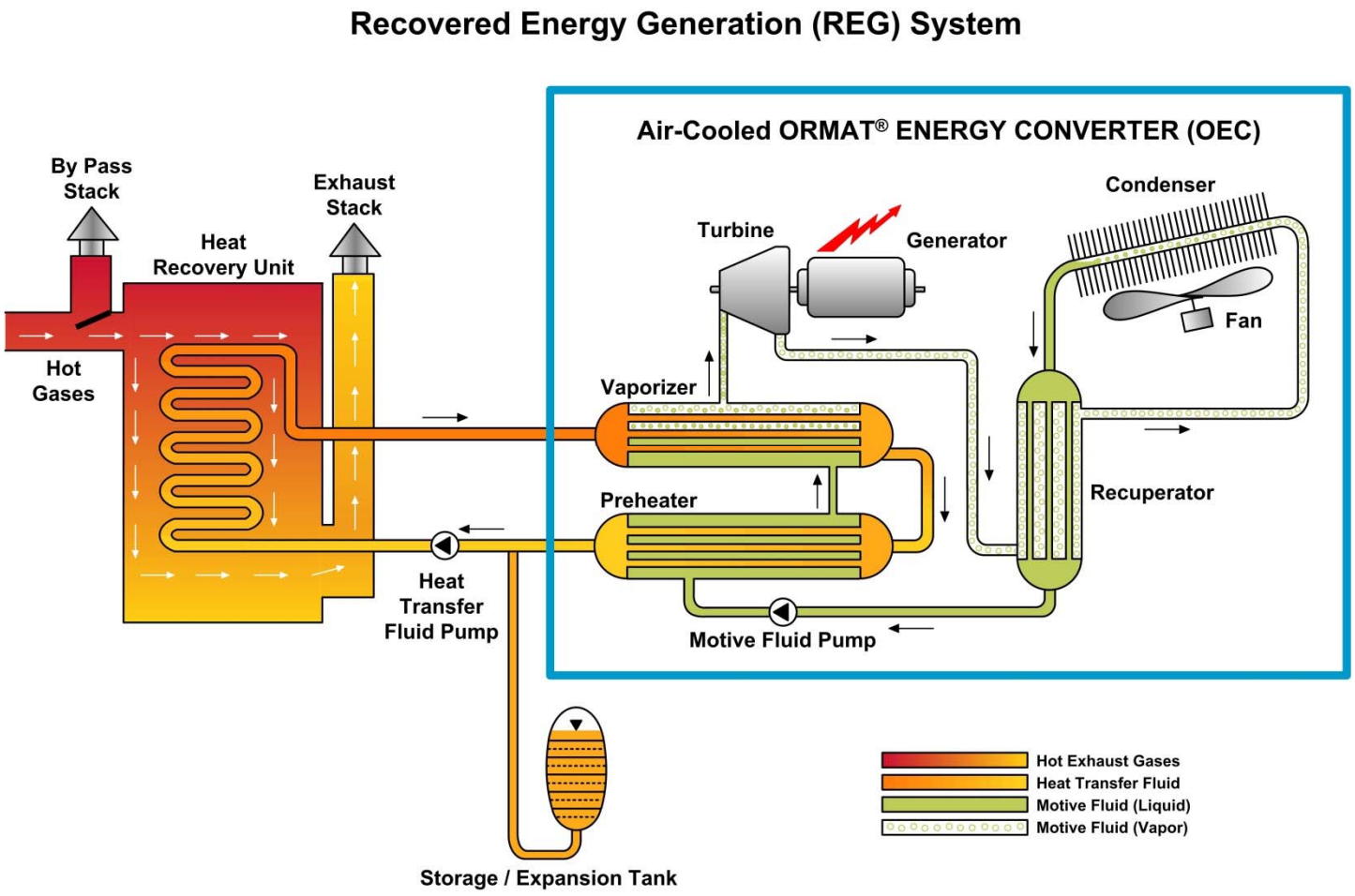
- Owns & operates 710 MW
- Sells firm & flexible electricity
- Fully contracted

Products

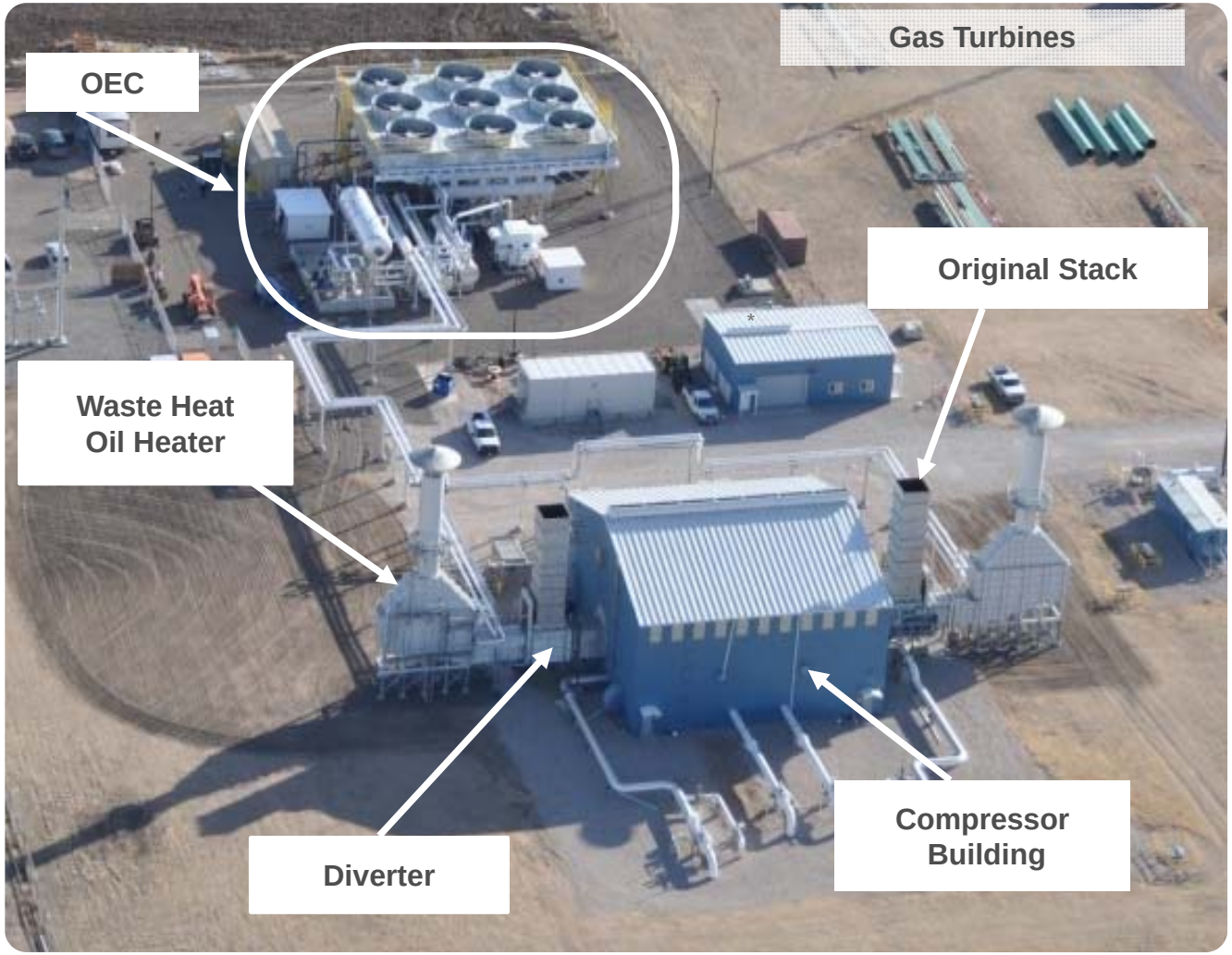
- Technology leadership
- Supplies power plants of geothermal, REG[1] and other units to 3rd parties
- Provides EPC services

[1]REG - recovered energy generation

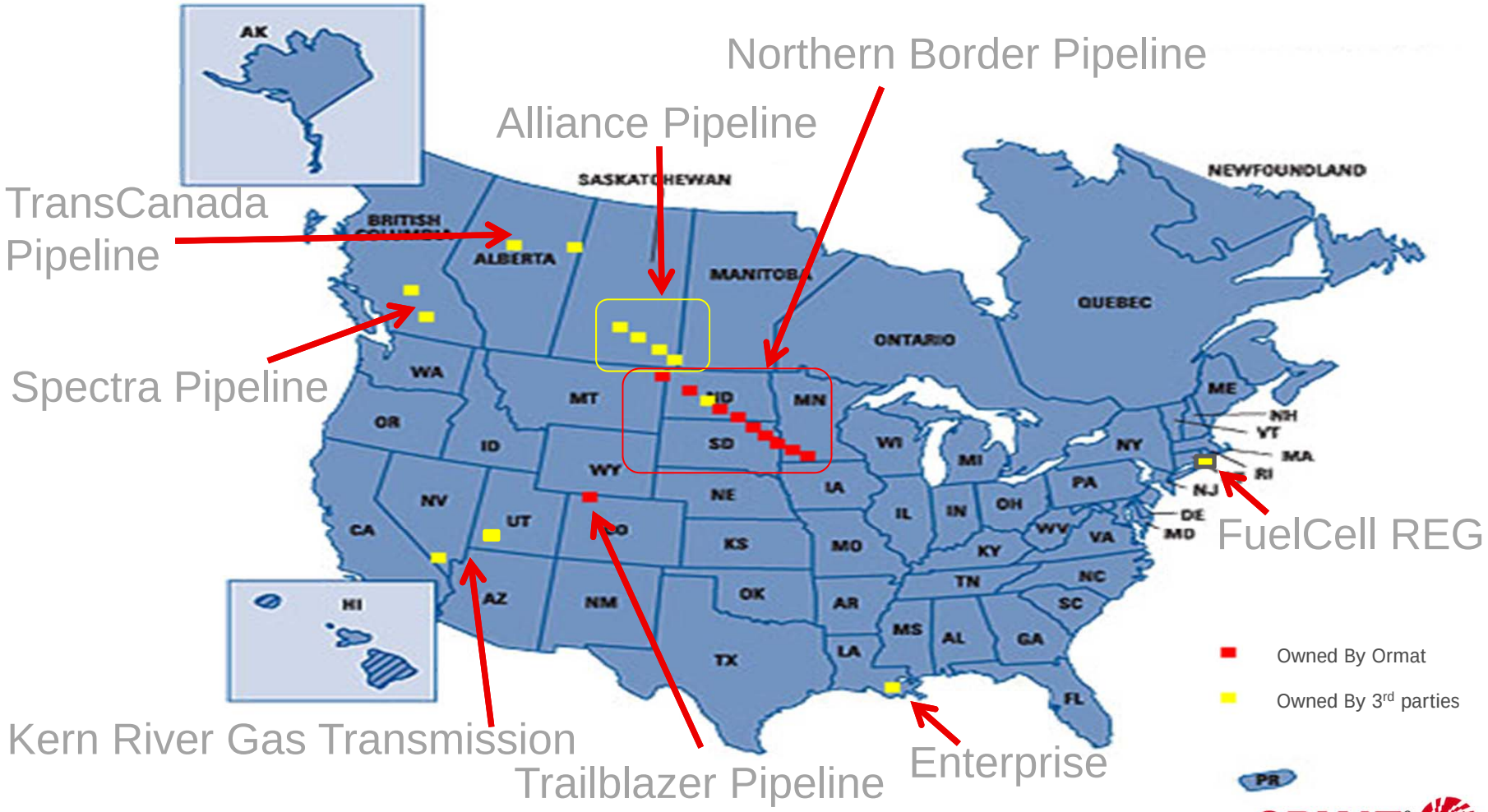
REG Process Diagram



Different Applications of REG



REG Power Plants in North America



Example for REG in a Compressor Station

- On Northern Border Pipeline - Montana, N&S Dakota, Minnesota
- Gas Turbines: Rolls Royce RB 211 – 39,600 hp
- 8 sites, 1 OEC per site
- Gross generating capacity: 8 x 6.3 MW = 50.4MW
- Generator output: 3-phase, 7.5 MW, 8.82 MVA
- Turbine exhaust gas flow: 179.3 lb/sec
- Gas inlet temp. to oil heater: 908°F
- Gas outlet temp. to stack: 230°F
- Thermal oil fluid:
  - Inlet temp.: 217°F
  - Outlet temp.: 572°F

Example for REG in a Compressor Station (cont.)

Pipeline – Kern River Gas Transmission - Veyo REG Project in Utah

- Commissioned in May 2016
- Owned and Operated by Utah Associated Municipal Power Systems
- Gas Turbines: 3 Solar Mars 100's
- Gross generating capacity: 8.9 MW
- Generator output: 3-phase, 8.9 MW
- Turbine exhaust gas flow: 229.8 lb/sec. total
- Gas inlet temp. to oil heater: 920°F
- Gas outlet temp. to stack: 230°F
- Thermal oil fluid:
  - Inlet temp.: 257°F
  - Outlet temp.: 572°F

Example for REG in a Gas Processing Plant

In a gas processing plant in Louisiana

- Neptune Plant - Owned and operated by Enterprise Products
- 2 Solar Mars 100 gas turbines
- Gross generating capacity: 4.5MW
- Generator output: 3-phase, 4.5MW, 5 MVA
- Turbine exhaust gas flow: 184 lb/sec. total
- Gas inlet temp. to oil heater: 910°F
- Gas outlet temp. to stack: 230°F
- Duty: Thermal oil fluid:
  - Recovered heat: 100.2 MMBTU/hr
  - Inlet temp.: 190°F
  - Outlet temp.: 500°F

REG Applications

- Numerous industrial applications: compressor stations, gas processing, gas fractionation, glass manufacturing, cement, pulp and paper and many more
- Use air or liquid heat streams ranging from 200°F to 1500°F and above
- Solar Taurus 70 GT– 10,000hp
  - Exhaust gas: 60lb/sec at 950°F
  - 1.9 MW gross output*
- Solar Titan 130 GT – 20,500hp
  - Exhaust gas: 110lb/sec at 940°F
  - 4.2 MW gross output*
- Rolls Royce RB211-6562 GT – 39,600hp
  - Exhaust gas: 179lb/sec at 908°F
  - 6.8 MW gross output*
- 3 Solar Mars 100 GT – 35,800hp
  - Exhaust gas: 230-280lb/sec at 920°F
  - 9 MW gross output*

* - Estimated REG power output using general GT nameplate figures

REG Heat Source Mediums / Operations

- 20% overall net thermal conversion efficiency
- 88-92% ORC efficiency
- Thermal oil operating range
  - Type: Dowtherm Q, Solutia Therminol 59 or equivalent
  - Inlet to Outlet: ~160°F to ~535°F
- Organic working fluid operating range
  - Type: Cyclopentane or pentane
  - Inlet to Outlet: ~415°F to ~200°F
  - Amount: ~25 tons/14,000 lbs*
- REG unit availability **
  - OREG Units 1-4: 94.6 - 99%

* - Assuming an 8MW REG unit.
** - Most recent figures

REG Efficiency Improvements

- REG projects exceed performance capacity requirements
- Recent Efficiency Improvements
  - New organic motive fluids with proven success
  - Implementing new high-efficiency recuperator design
  - Implementing new higher efficiency Ormat turbine design
  - Utilizing superheating to boost power cycle
  - New air cooled condenser design with improved airflow and reduced power consumption

REG Benefits

- Creates methane emissions offsets
- Creates tradable renewable energy credits and emission reduction/offset credits (CO_2, SO_X, NO_X)
- Improves efficiency of industrial facilities
- Environmentally friendly; emission-free
- Cost effective with low O&M costs
- Reliable, unattended operation
- Customized to specific heat source and site
- No interference with host operations

REG Federal and State Program Eligibility

- EPA methane emissions reduction plan:
  - Potential for off-set emissions credits through energy efficiency
- Complies with FERC guidelines for pipeline efficiency
- Most states' Renewable Portfolio Standards
- Presidential Executive Order 13693 (March 19, 2015)
  - Greenhouse gas reductions, energy efficiency and clean energy deployment across Executive departments and agencies
- EPA Clean Power Plan
- Several draft bills aiming to make it qualify for ITC

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REG Environmental Benefits

- Each MWh derived from recovered energy generation will save approximately*:
  - 1.0 ton of CO_2
  - 1.25 kg of NO_x
  - 4.5 kg of SO_2
- At designed capacity, a 6 MW REG plant will save:
  - ~ 44,500 tons of CO_2 per year
  - ~ 56 tons of NO_x per year
  - ~ 200 tons of SO_2 per year

* Offsetting energy generated by coal-fired power plants.

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The Power of Experience