

Presentation

Power from Flares & Vented Gas

Prepared by the
“Waste-to-Power” (W2P) Team
BIEWU International UAE
with
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Value Proposition

- Flare Gas is possibly wasted; causing Pollution
- Conversion of Waste Gas to Clean Energy
- Gases currently vented converted to Power
- Virtually no harmful emission (Zero CO, Zero HC, < 1 PPM NOx)
- Will contribute to reducing cost of electricity and power consumption

Flares and Vents: Wasted....??

- We will use the Flares and Vented gas that cannot be used in oilfield & petrochemical plants
- Harmful to humans and environment as they emit NOx and CO gases, increasingly unacceptable to Governments and Society
- These gases may be dirty, weak and sporadic; not suitable for process.

“W2P Team to your rescue”

The “Waste-to-Power” (W2P) Team

- **BIEWU Intl.**, with a strong net work and presence in the M.E.
 - **Turbo-Tech (a BIEWU affiliate)**; turbine manufacturer, construction management, power plant installation, startup, servicing and maintenance
- **Prabhu Energy Labs (PEL): 50** years of experience with oilfields, flares, renewable energy, developer of SuperFlex Technology
 - **FlexEnergy Inc. (a PEL affiliate)**; microturbine manufacturer, specializing in oilfield flare gas and waste gas applications

The Flex 333 *ready and available today*

- The Flex 333 will accept flare gas in the range of **3500 kcal/m³ to 20,000 kcal/m³** with **sulfur content up to 1%**
- The Flex 333 requires 1,100,000 kcal/m³ to generate 333 kW
- The Flex 333 generates **below 5 ppm NO_x**
- Gas delivered at atmospheric pressure is acceptable
- Units may be shipped within 6 months from confirmed order
- Installation takes 1 to 3 months

The SuperFlex *will be available in 2021*

- The SuperFlex is currently being developed by PEL. It will be available for demonstration projects in 2021.
- The SuperFlex will accept gas from **200 kcal/m³** to 30,000 kcal/m³
- Gas delivered at atmospheric pressure is acceptable
- The SuperFlex generates below **1 ppm NO_x**
- Future units will handle liquid fuels and even hydrocarbon/water mixtures
- Like the Flex, the SuperFlex needs 1.1 million kcal/m³ for 333 kW

Gas Quality Parameters:

- For both Flex and SuperFlex, up to 15% variability in gas quality is acceptable
- If the flare is below 1,100,000 kcal/m³, the gas turbine can be run at partial load
- If the flare is more than 1,100,000 kcal/m³, multiple units may be installed
- For the SuperFlex, if gas is below 200 kcal/m³, it may be enriched to bring it up to 200 kcal/m³
- If gas quality is fluctuating, an interim gas tank may be installed to reduce the variation before use

Technology & Team robustness

Flex Turbines have been in operation in oilfields in the US for over ten years; they are reliable, specially designed for high sulfur



TurboTech has been installing and servicing turbines for 20 years



Prabhu Energy Labs is currently developing SuperFlex technologies and filing U.S. patents.



Flex Turbine Credentials

Oil & Gas



Industrial



Municipalities, Universities and Defense

