New Enabling Technology for Converting Flares to Fuel

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GLOBAL FORUM
On Flaring and Venting Reduction and Natural Gas Utilisation

Goal: Tools to Economically Monetize Associated Gas Producing Two Income Streams

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Why is Associated Gas Still Flared?

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Flares to Cooking Fuel

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Contents

- Why is Associated Gas still Flared?
- Total Cost of World Flaring
- Drawback of Syngas
- Why the Methion MSA Enabling Technology can do what others can't. High Margin Product Fungibility
- Current Progress
- Modular "Flare Gas" Plant
- Proposed Gross Sales Economics
- Request from Operators, Need Field Flares

World Flare Economics Using MSA Technology to DME (Estimate)

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Quantity mcf/day	DME Produced gal/day	$/gal	Amount $/day
14520500	159725500	1.32	$210,837,660
CO2 Tons/day		$/tonne	
1068000		12	$12,816,000
Total Daily Gross Revenue			**$223,653,660**

World Bank GGFR

5.3 Trillion Cubic Feet of Associated gas flared annually

390 million tonnes of CO2 Produced from Flares annually

Drawbacks of Syngas for Small Sites

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- Needs Extensive Utilities
- Large Infrastructure
- Need Economies of Scale
- Large NG Reserves >3 TCF
- Complicated Process, many unit operations
- Waste Problem
- Product Efficiency 55-65%
- Carbon Efficiency 65-75%
- Oxygen Plant is an explosive hazard, especially with offshore production

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Oxygen Plant and Hydrocarbons Not an Offshore Solution

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T2 Labs Jacksonville, FL *Methylcyclopentadiene and O2*

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Benefits of MSA to DME Enabling Technology

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- High Product Efficiency, >90% Theoretical
- High Carbon Efficiency, >95%
- Exothermic First Step,
  - Does not require “Economies of Scale”
  - Minimal Utilities and Infrastructure, No Steam
  - No Oxygen, Suitable for Offshore Applications
  - Simple Process for Remote Locations
  - Much lower Capital Cost and Operating Cost
- Dimethyl ether Product
  - Not tied to Natural Gas Pipeline Markets
  - Uses existing LPG infrastructure
  - Fungible in Propane, Diesel and Natural Gas Markets

Bond Breaking and Making

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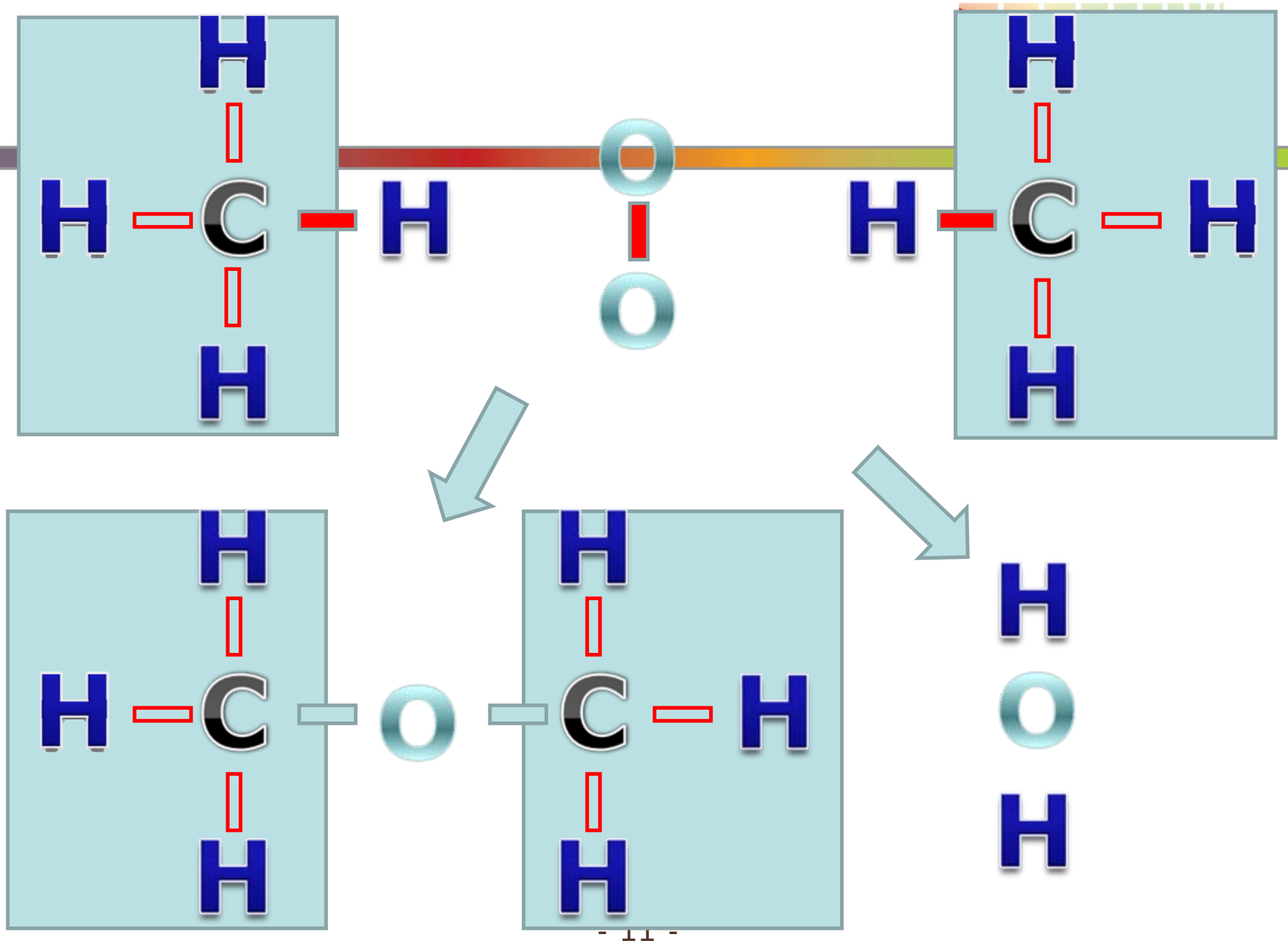
- Syngas Breaks all 4 H Bonds to Carbon
  - Endothermic Reaction Requires Extremely High Heat and Compression
  - Large Infrastructure, Cost, Large Reserves, High Risk
- MSA Technology Breaks only 1 H Bond to Carbon
  - 3 Remaining H Bonds of Methane remain in Product
  - Broken H Bond goes off with Oxygen as Water
- Exothermic First Step
  - Little Required Infrastructure, Low Capital Cost
  - Closed System, ideal for Remote and Offshore Flares
  - Low Risk, Profit from Waste gas to DME & CO2 credits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First Reaction runs at 80 Degrees Centigrade!

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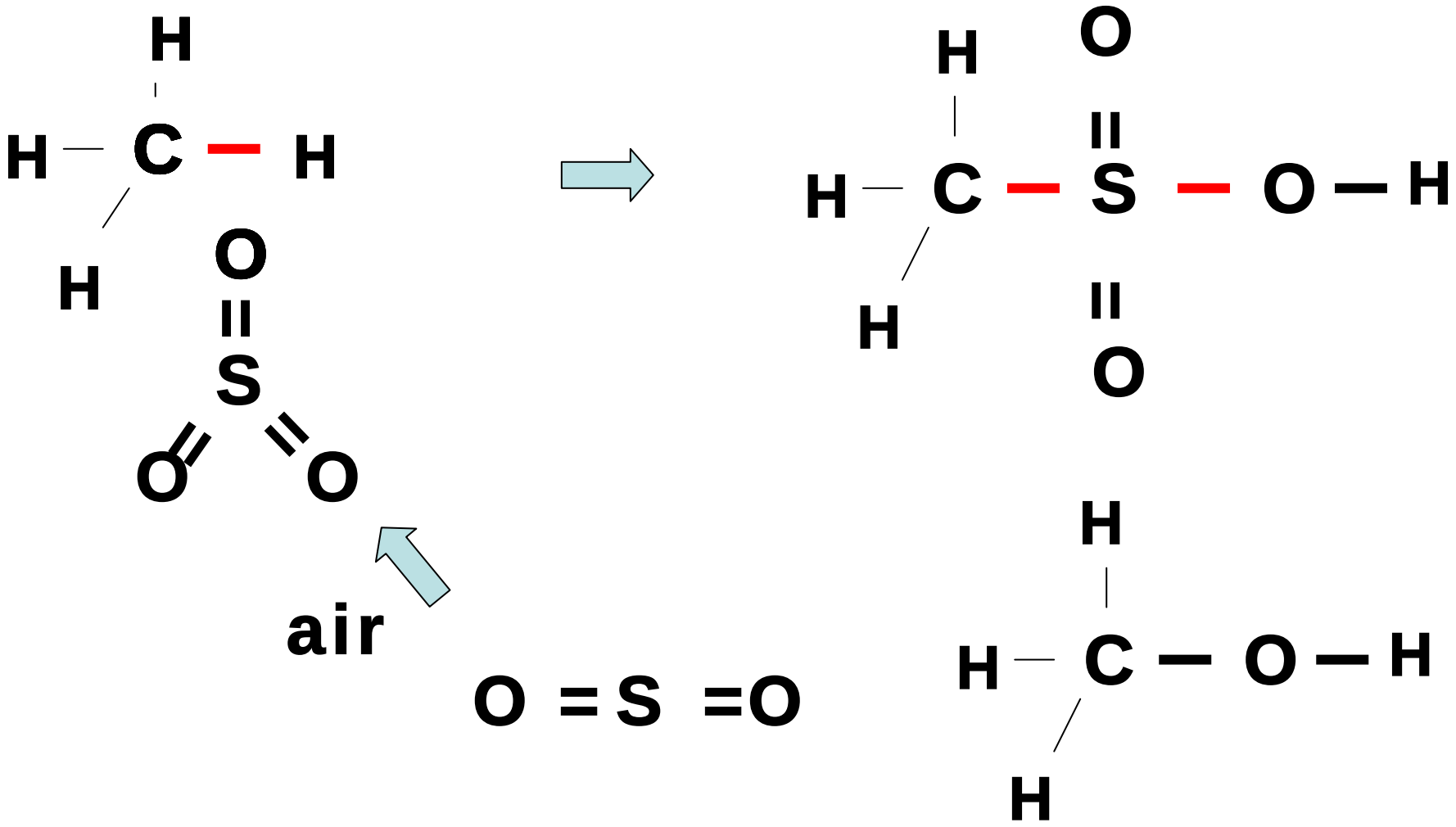

Methion Continuous Pilot

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MSA to DME

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Supervisory Control and Data Acquisition

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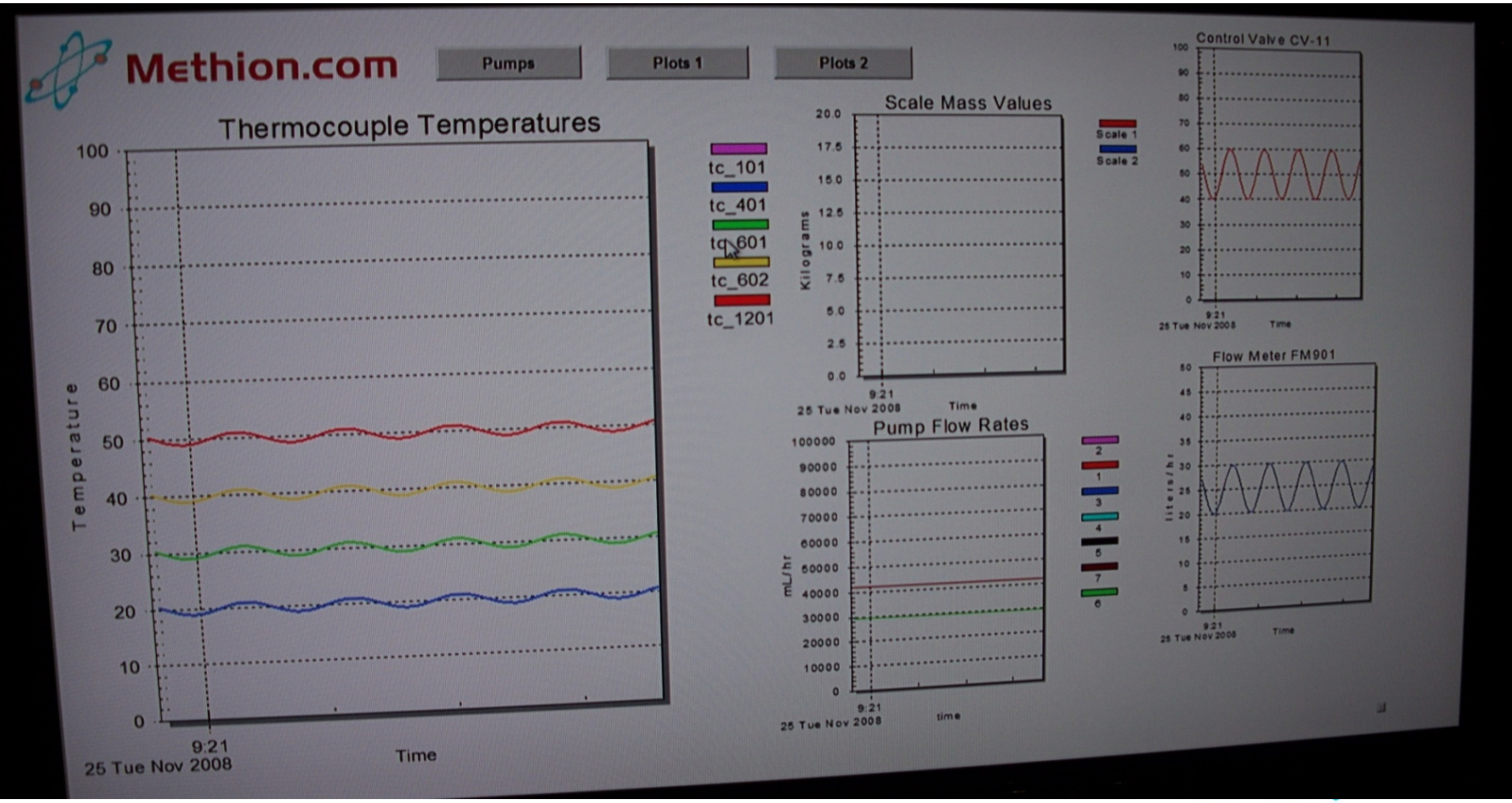

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MSA to DME

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Methane **DME**

MSA **DME**

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Plant “Flare Gas” Economics

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Typical Nigerian Well - Flare Income Estimate

Gas Quantity Flared - 4,000 mcf Per Day			Revenue Per Day
DME Produced Per Day	44,000 Gallons Per Day	Cost Per Gallon $1.32	$58,080.00
CO2 Tonnes Per Day	262.8	Cost Per Tonne $12.00	$3,153.60
Total Revenue Produced Per Day by Eliminated Flare			$61,233.60

Low Cost NG High Pipe Number Up not Scale Up

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Request for Demonstration Flare

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- Request to bring Enabling Tools to Market
- Goal: Enable Operators to Monetize Waste Flares and Provide Revenue Streams
- Request, Participation from Oilfield Operators
  - Participation in Development
  - Joint Ventures
  - Licensing
  - Partnerships
- Investment Opportunities Available

If you would like to see the Pilot Video, Please Contact Me

THANK YOU!

Further Offering & Information on MSA Technology Available.

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