

A New Technology For Flare Mitigation



Broken links of energy supply and demand



STRANDED ENERGY

>5T

cubic feet of gas flared per year, enough to power all of Africa

>5K

megawatts of stranded wind power in the U.S.



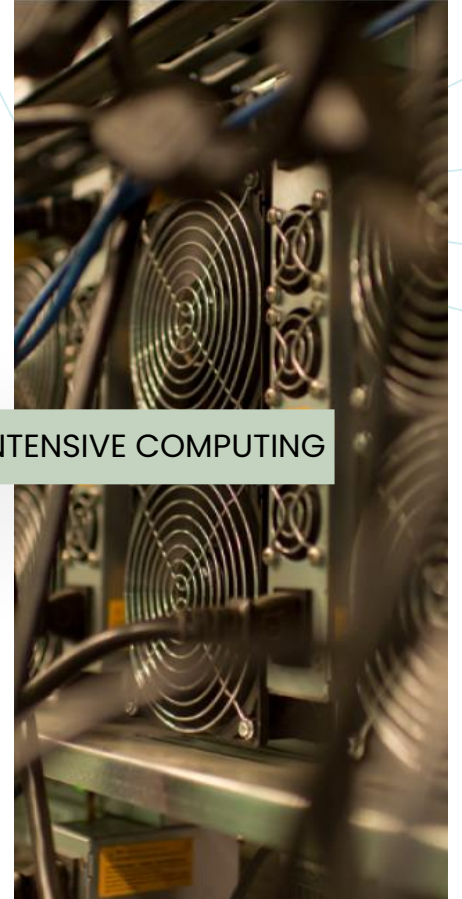
500M

megawatt hours per year consumed by datacenters.
Equals Germany's total demand

ENERGY-INTENSIVE COMPUTING

78M

megawatt hours per year consumed by bitcoin mining



Flaring negatively impacts operators through regulatory penalties, production curtailments, negative PR and investor pressure.

THE SOLUTION

Digital Flare Mitigation®

- Crusoe converts “stranded” natural gas into electricity for energy-intensive computing at the well site
- Digital Flare Mitigation® (“DFM”) solves critical regulatory and environmental challenges for oil and gas companies by achieving beneficial use, reducing flaring and lowering emissions

Crusoe’s Objective: help operators solve the regulatory and environmental challenges of stranded gas



Why Digital Flare Mitigation®?

- DFM is the most cost-effective solution for flare mitigation
- Modular design allows for rapid turnkey deployment and mobilization
- Scalable to many mmcfpd
- High reliability with few failure points

Patented Digital Flare Mitigation® System



Stranded Gas



Power Generation



Energy-Intensive
Computing



Remote Network



- The Digital Flare Mitigation® system is a mobile and modular assembly of power generation, computing and remote telecommunications components optimized specifically for stranded gas resources
- Designed for rapid commissioning, rugged oilfield conditions and modular scalability

Plug-and-Play Gas Capture Service

Commercially structured as a modified Gas Purchase Agreement



- Crusoe purchases the excess gas from the operator at a designated “Delivery Point” on the wellsite, creating a transfer of custody and establishing a basis for royalty payments and tax revenue.
- Crusoe provides and installs all Digital Flare Mitigation[®] equipment on site and manages all maintenance and operations beyond the Delivery Point.
- Crusoe’s producer partners generally bear little to no cost, so DFM represents a truly free solution to natural gas flaring.

Easy Integration, Completed in Days

Step 1: Connection Point 1-2 Days

- Operator provides simple manifold and valve to existing gas line
- Typically, manifold connects directly onto line leading to flare

Step 2: Generator 1 Day

- Minor dirt work performed in preparation for deployment
- Generator system delivered on portable trailer or skid

Step 3: Compute Module 1-5 Days

- Computing modules delivered by truck
- Computers installed within modules
- Satellite antennae installed and aligned after delivery

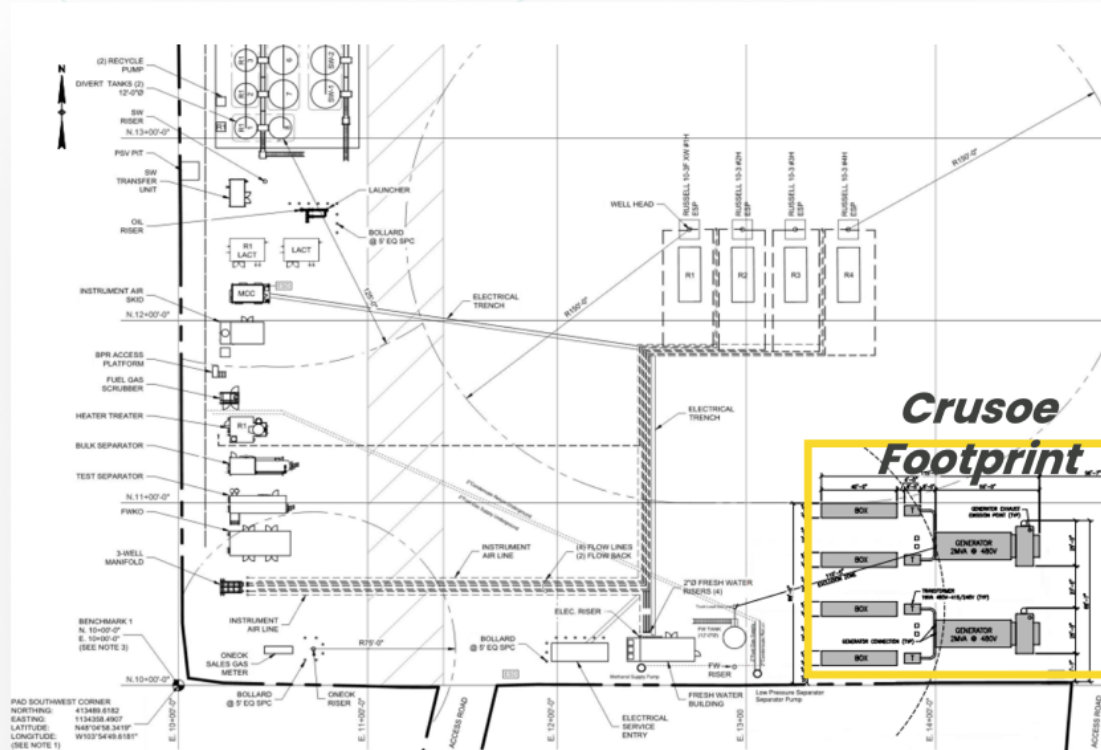
Step 4: Startup 1 Day

- Computing modules connected to generator
- Generator energized
- Flare becomes back-up gas plan

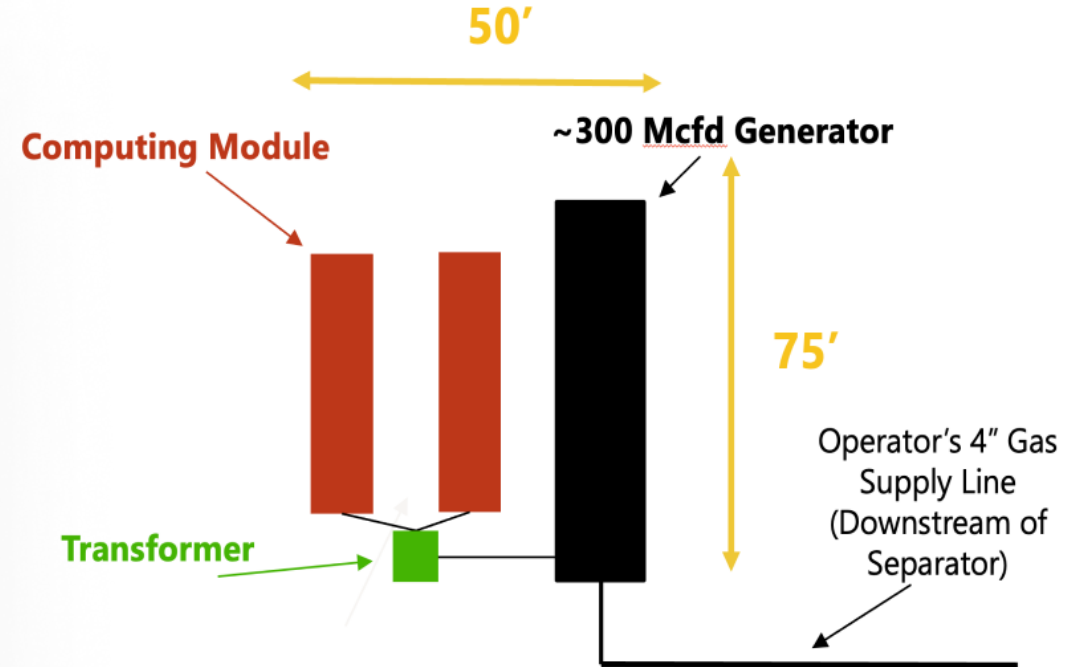
Gas Specifications

Minimum MCF	BTU	PSI	H2S
>300mcfpd	900-2500	30-150 PSI	<20ppm

Compact Footprint



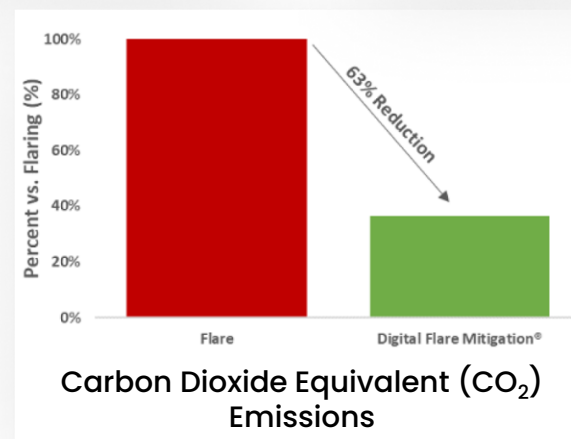
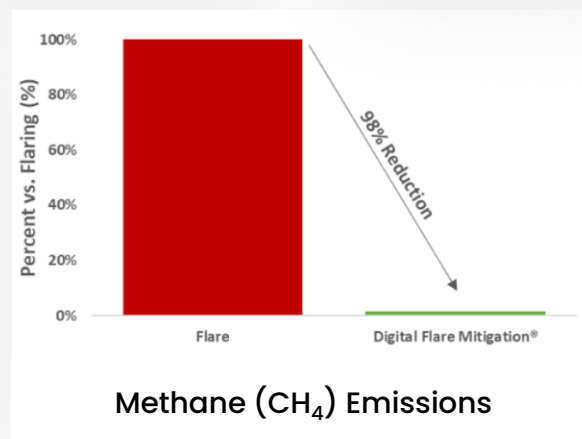
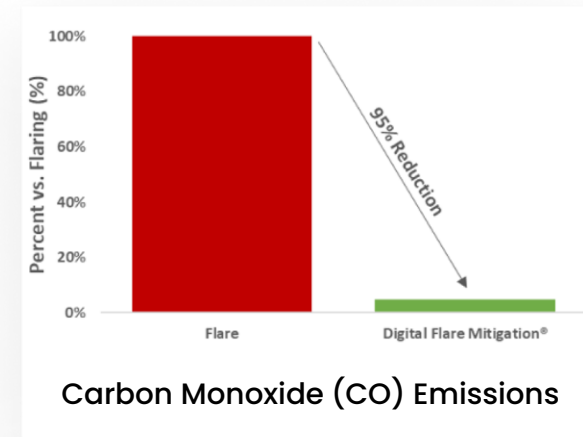
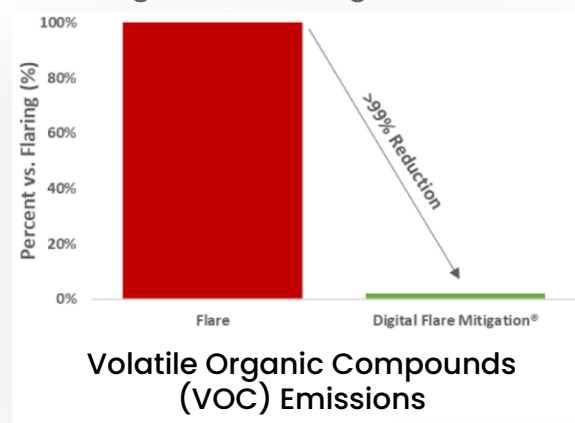
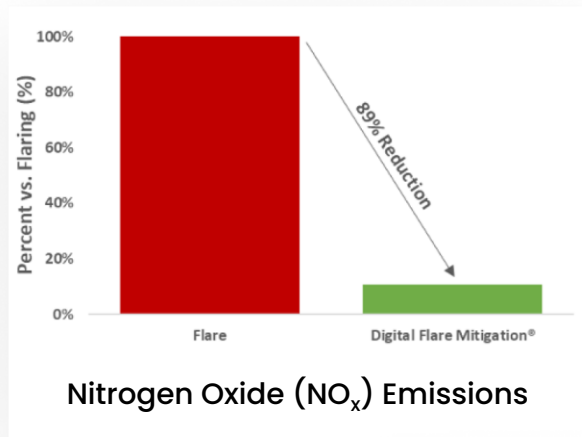
Site Diagram with Two Module System



Single Module System Layout
(expandable to include additional modules as needed)

Crusoe Environmental Benefits

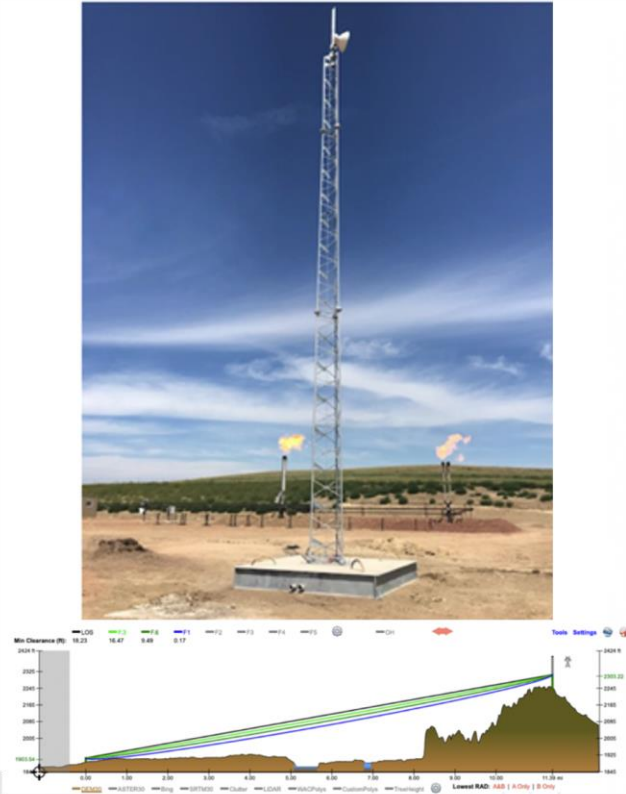
Relative to flaring, Crusoe's Digital Flare Mitigation® technology achieves deep reductions in emissions of methane, volatile organic compounds (VOCs), nitrogen oxides (NO_x), carbon monoxide (CO), smog-forming compounds and CO₂-equivalent greenhouse gasses.



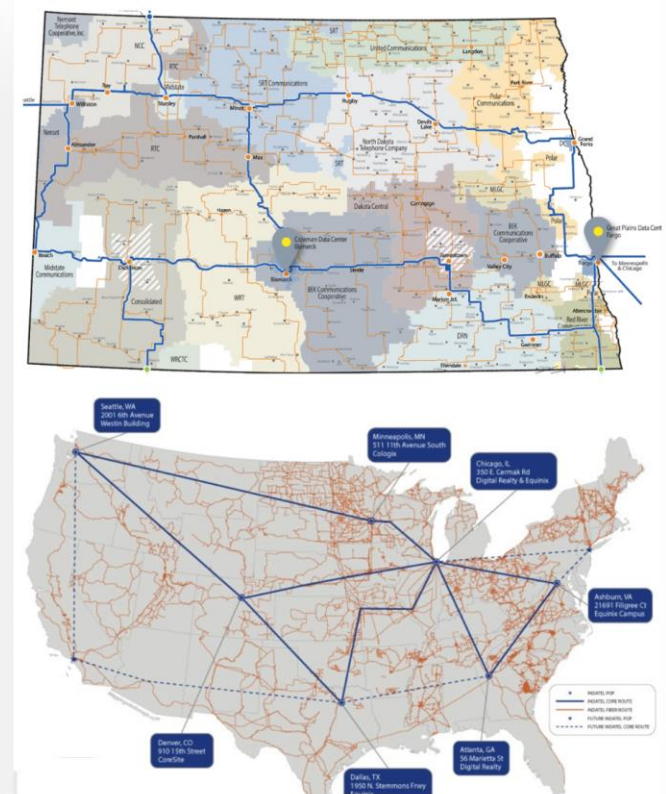
Crusoe Digital Pipeline Architecture



**Satellite: 40+ connections
redundant satellites**
25Mbps, ~600ms latency (1-way)



**Hybrid Network:
microwave & fiber**
600 Mbps < 10ms latency (1-way)



**Fiber: combining private
and public circuits**
100 Gbps, <12ms latency (1-way)

Achieve Gas Capture Without Midstream Infrastructure

Existing Flare Gas

Superior gas-capture alternative for producing wells that are currently flaring

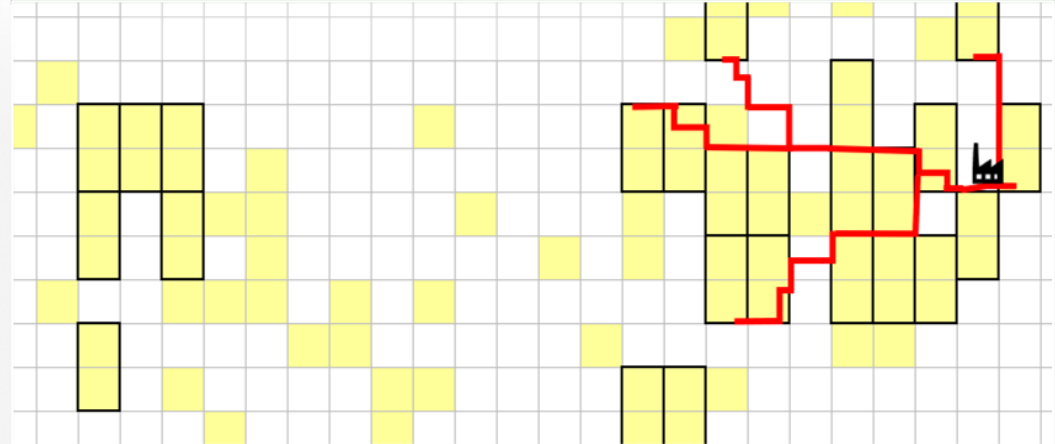


Use Cases

- Producing wells without midstream infrastructure
- Delayed pipeline arrival
- Extended gas plant downtime
- Pipeline capacity challenges
- Joint power generation

Development Flexibility

Gas offtake plan for future wells to be drilled outside existing infrastructure



Development Flexibility

- Drilling exploratory or step-out wells ahead of pipeline build
- Satisfying expiring leases outside of existing infrastructure service areas
- Delineating acreage prior to formal midstream agreement, avoid or postpone minimum drilling commitments

Case 1: Right-of-Way Issues



Topography

Badlands and other natural features have caused midstream challenges for years

Severe topography has no impact on DFM effectiveness



Surface Owner Challenges

Inability to get Right-of-Way agreement executed by Surface Owner(s)

Digital Flare Mitigation®:

- Delivers solution for stranded locations which may never justify or realize permanent gas takeaway infrastructure
- Creates an opportunity to monetize gas that would have otherwise been flared.

PRODUCING OIL WITH GAS TAKEAWAY LIMITATIONS

Case 2: Midstream Constraints

Constraints in compression or processing capacity can leave a well without gas takeaway for extended periods of time due to third party infrastructure limitations

- Gathering System Capacity Limits
- Interruptible Gas Contracts
- Extended Gas Processing Plant Downtime
- Compressor Station Issues

Digital Flare Mitigation®:

- Allows operator to continue producing oil despite midstream constraints while mitigating the risk of regulatory violations and reducing emissions
- Operates reliably and independently regardless of infrastructure performance



GAIN COMFORT IN DRILLING WELLS PRIOR TO INFRASTRUCTURE INVESTMENT

Case 3: Exploration Wells & Acreage Delineation

Digital Flare Mitigation®:

- Provides flexible flare mitigation solution during the acreage delineation phase before entering midstream contract with more rigid minimum volume commitments
- Acts as stop-gap prior to arrival of pipeline through easy mobilization
- Solves ESG and compliance challenges while evaluating performance of exploration wells

LEADERSHIP

Management Team, Organization Structure



NITIN PERUMBETI
CTO



MATTHEW DENEZZA
CFO



CHASE LOCHMILLER
CEO & Co-Founder



CULLY CAVNESS
President & Co-Founder

Operations / Engineering



SHAYLA MARTIN
Project Engineer



KEN PARKER
VP Facilities Engineering
& Operations



PHIL ARCHER
Project Engineer



BROOK KIMBER
Director of Purchasing &
Logistics



DEBBIE MEEKS
Basin Manager-
Mechanical &
Administration



NICK CORREDOR
Field Operations
Manager

Finance



JAMIE ZYNGER
Controller



MARIAM NAZEMI
Senior Financial
Analyst



MARK NOWAKIWSKY
Financial Analyst

Business Dev



ANDREW LIKENS
VP Business
Development



ANNA PIERINI
Business
Development
Manager

Software / Networking



CAGRI AKSAY
VP Software
Engineering



SYLVAIN VAILLANCOURT
Director of Network
Architecture

Investors and Capital Resources

DRIV VC

Exor

Polychain Capital

K
C
K

 **BainCapital**
VENTURES


VALOR
EQUITY PARTNERS

WINKLEVOSS
CAPITAL

 **Dragonfly**
Capital

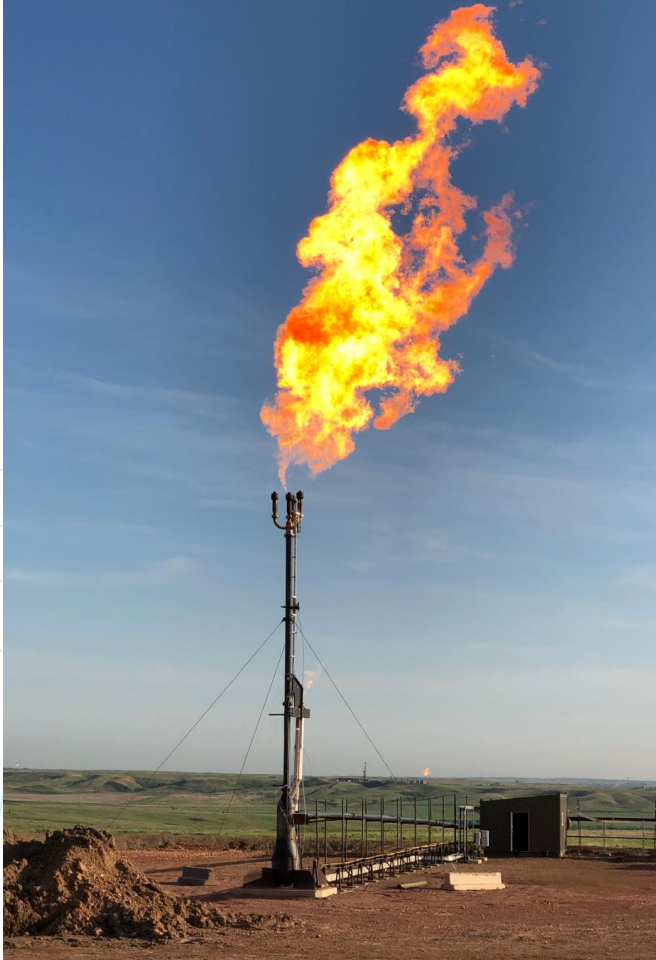
 **FOUNDERS FUND**

upper 90

ZIGG

- \$600k Series Seed-1 funded by founding team in late 2018
- \$4.5 million Series Seed-2 led by Bain Capital Ventures and Founders Fund, closed in early 2019
- \$30 million Series A led by Bain Capital Ventures and KCK, closed in early 2020
- \$40 million project financing facility with Upper90 closed in parallel with Series A
- \$20 million equipment financing for generators from multiple lenders
- \$15 million in additional flexible and credit-based financing
- \$128 million in Series B equity financing, closed in early 2021

Key Points



- **Flare mitigation and regulatory compliance**
 - Achieves a bona fide beneficial use and 3rd party gas offtake plan
 - Reduces flaring, waste and emissions of NO_x, SO_x and VOCs (smog precursors)
- **Opportunity to earn gas revenue on stranded wells**
 - Monetizes unmarketable production at little or no cost to the operator
- **Modular, easily mobilized and scalable to match available gas resource**
 - Accommodates as little as 300 mcfpd up to many mmcfpd, adding or subtracting modules as gas resource changes over time
- **Fast implementations**
 - Commissions Digital Flare Mitigation® services in days once components arrive on-site
 - Requires system delivery lead time of several weeks to several months dependent on gas volumes
 - Enables operator to avoid lengthy land acquisition, right-of-way negotiation or pipeline permitting process
- **Flexible deal structures and applications to fit operator's need**
 - Involves no minimum drilling commitments or onerous volume guarantees
 - Adapts to interruptible gas volumes



Learn more at: www.crusoeenergy.com

Email: info@crusoeenergy.com