

WHAT ARE VIRTUAL PIPELINES?



Virtual Pipelines distribute natural gas by truck to under-serviced and off-pipeline markets that want to burn natural gas.

Virtual pipeline (VPL) companies typically source natural gas from interstate pipelines and/or well pads, compress it, and deliver it by truck as compressed natural gas (CNG) to industrial, utility, fracking and drilling operations, and fleet customers.

Once at the customer site, the gas pressure is regulated down to meet customer requirements. Gas is flowed off the trailers, negating the needs for any storage tanks. The VPL company will remotely monitor the site inventory levels and gas flow and schedule JIT deliveries to replace the trailers as they run empty.

The experience for the customer is no different than receiving gas from a conventional pipeline.

HOW DO VIRTUAL PIPELINES OPERATE?



1

Gas Compression & Loading:

Natural gas is compressed to 3,600 psi and filled into trailers

2

Delivery & Decompression:


Natural gas is delivered and decompressed to the facility's required pressure for operations.

3

Implementation & Trailer Swap :

Once the trailer is emptied, the system switches gas flow to the next full trailer; a new, full trailer is dispatched

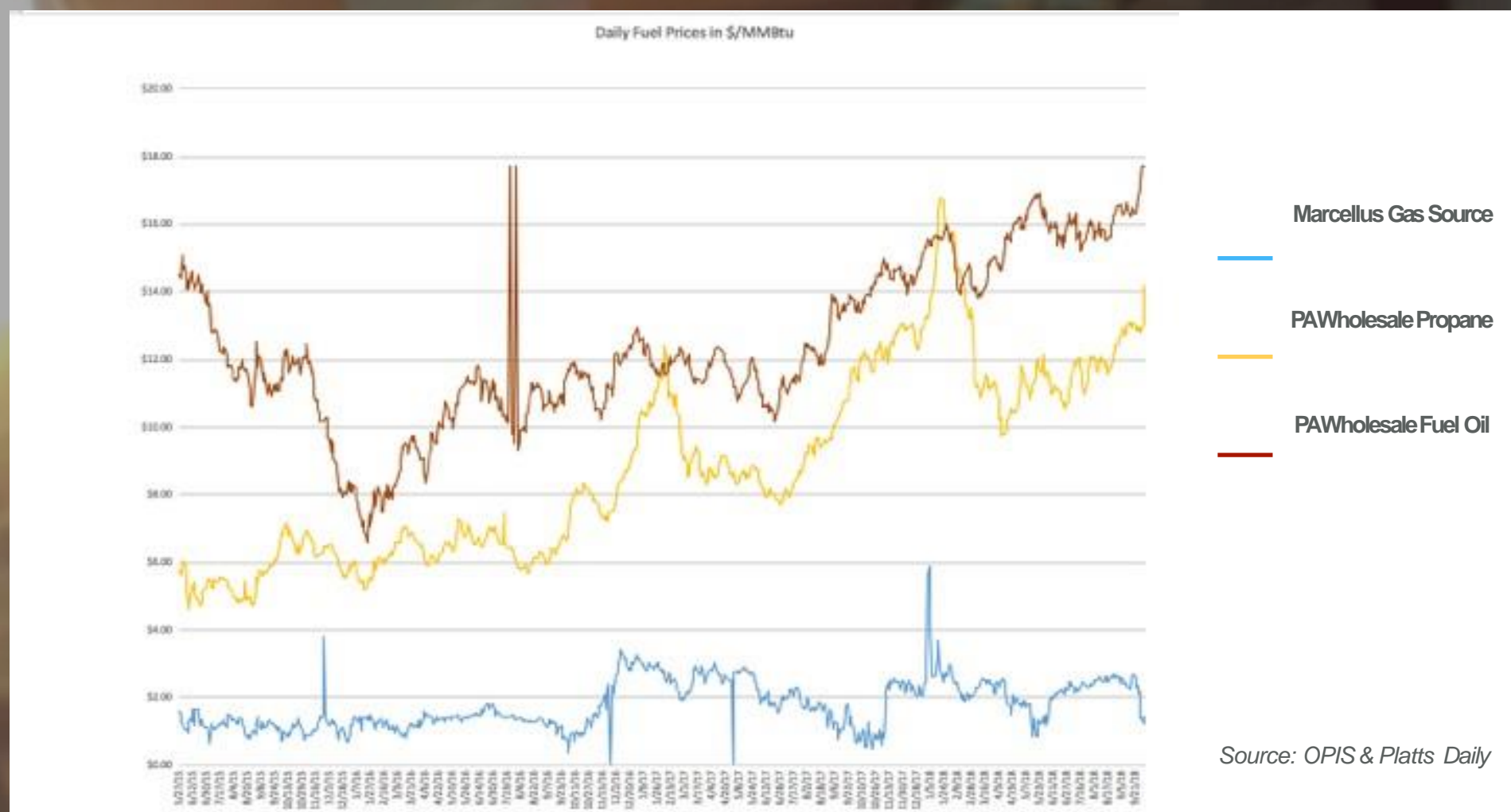
BENEFITS OF VIRTUAL PIPELINES

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- ✓ Complete, scalable fueling solutions
 - ✓ Reliable, non-interruptible service
 - ✓ Avoids pipeline lateral expenses
 - ✓ Avoids utility tariffs for firm gas supply
 - ✓ Minimal customer site work & capex
 - ✓ Quick setup - gas flowing in 3 months or less
 - ✓ Equipment can compress, store, and regulate renewable natural gas (RNG) with no modifications

VIRTUAL PIPELINE ECONOMICS

Despite current energy prices, natural gas remains one of the lowest and price-stable energies on the market.

Virtual pipeline companies are not utilities and therefore can tailor proposals to meet customer's unique requirements



BENEFITS OF NATURAL GAS

More
Dangerous

LNG

Propane

Gasoline

Diesel

CNG

A Safer Fuel

Lighter than air +
dissipates

A Cleaner Fuel

Significant emissions reductions
(30% - 40% less compared to
diesel)

An American Fuel

Enabling energy independence

OUTLOOK FOR VIRTUAL PIPELINES



- ✓ As the world electrifies, natural gas will remain the primary fuel source for the next few decades
- ✓ At the same time, pipeline construction will remain politically difficult and expensive, which will benefit VPLs
- ✓ The ability of VPLs to facilitate burning natural gas anywhere could facilitate the rise of micro-grids and decentralized power generation
- ✓ Capturing (and burning) waste methane is emerging as a main climate fighting strategy
- ✓ The gas extraction industry's shift to natural gas for drilling and fracking operations will accelerate in the coming years



COMPASS NATURAL GAS PARTNERS

TRUCK-DELIVERED NATURAL GAS



COMPASSNGP.COM

SOURCE: QUAKER TERMINAL, MONTROUSEVILLE, PA

Operational October, 2016

Nameplate capacity: 275,000 gallons of propane equivalent/day; 187,500 gallons of fuel oil equivalent/day

Easy access to interstate highway

- 200+ mile service radius
- 2.3 Bcf delivered to date; Compass will deliver another 700MM cf in 2021

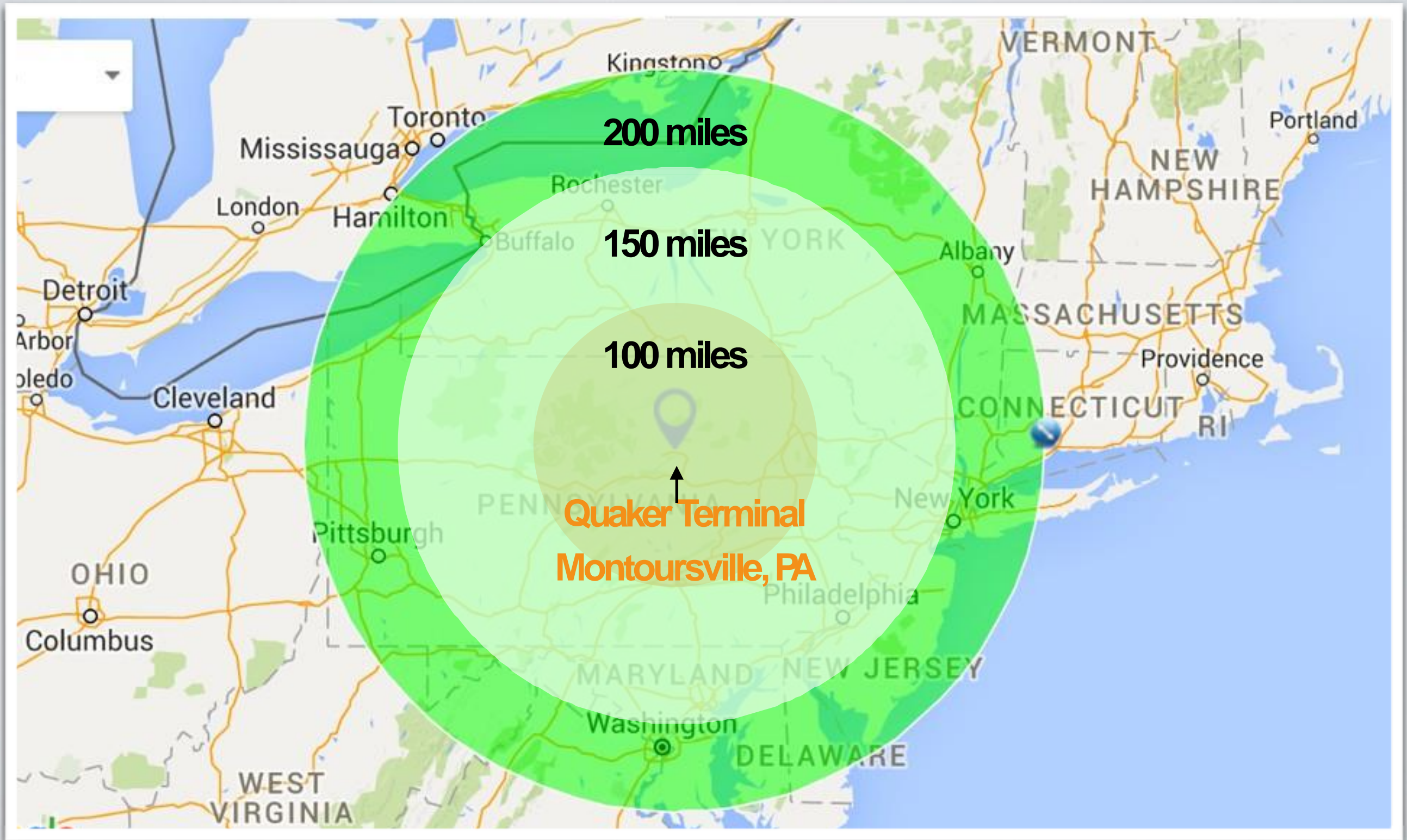


OVERVIEW OF OPERATIONS



- ✓ Compass operates a fleet of 36 specialized natural gas trailers
- ✓ Compass terminal operators, drivers, and 3rd party carriers operate around the clock, 365 days per year
- ✓ All Compass permanent customer sites are designed to run autonomously, and do not require any action by customers – we aim to provide the same experience as a conventional pipeline
- ✓ Compass monitors all customer sites 24/7 to ensure proper site operation and to track inventory levels
- ✓ Compass is the first, and only, VPL to receive authorization to deliver CNG to customers in NJ

MID ATLANTIC SERVICE AREA



INDUSTRIES WE SERVE

Industrial

- Asphalt
- Poultry Farms
- Greenhouses
- Manufacturing plants
- Aggregate producers

Fleets

- Return to base
- Distribution centers
- Waste hauling
- Over the road
- Municipal transit authorities

Utilities & “Gas Islands”

State & Government facilities



TYPICAL CUSTOMER SITE FOOTPRINT



**LINE
HEATER**

**CNG
DELIVERY
TRAILER**

**MONITORING
BUILDING**

FOOD PROCESSING PLANT



- Industrial food processing plant in Pennsylvania
- 1,800 fuel oil gallons replaced every day
- 20 - 30% reduction in emissions
- Planned expansion in near future

ASPHALT PLANTS

- Natural gas helps reduce emissions by 30% or more
- Baghouse and burner maintenance drastically reduced
- Automatic fuel dispatch for seamless natural gas supply

LINE
HEATER

NATURAL GAS
DELIVERY TRAILER

GASMETER &
LINE TO
CUSTOMER SITE

GREENHOUSES

NATURAL GAS
DELIVERY
TRAILER

LINE HEATER

GAS UNLOADING
POST

- CNG can offer price certainty during periods of peak energy demand
- Lighter-than-air qualities of natural gas eliminate the dangers of fuel spills or contamination of products
- Clean natural gas is the superior fuel for crop growing and food processing

GAS EXTRACTION INDUSTRY



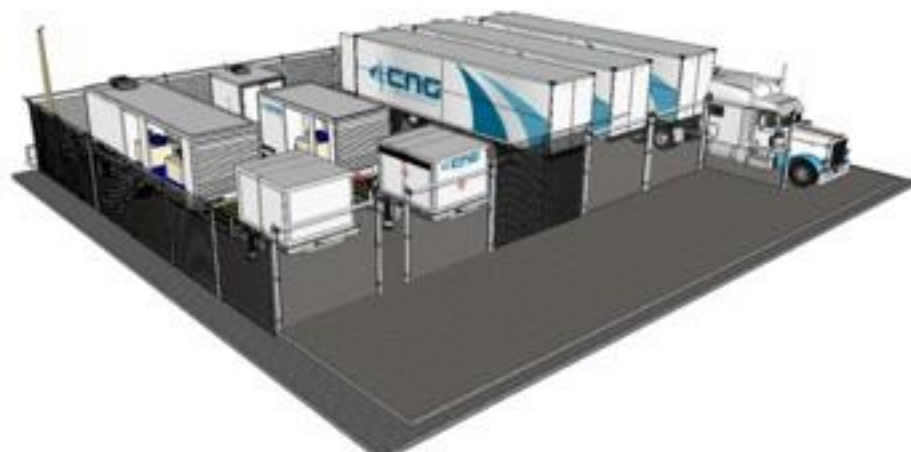
- Compass is fully-equipped to handle all of the natural gas needs of the fracking industry
 - Well lifts – Uses the high gas pressure (3,600 psi+) of the CNG trailers to open shut-in wells; unlike nitrogen, all of the injected gas is marketable product
 - Bi-fuel Fracking – More efficient than pure gas or pure diesel engines, both fuels are used at the optimal time for maximum efficiency
 - E-Fracking – CNG supplies a gas-powered turbine, which in turn supplies power to the fracking equipment

“THE SCOUT” VEHICLE FUELING SYSTEM



- Completely self contained fueling unit
- Minimal site footprint
- Time Fill & Fast Fill capable
- Fully scalable
- Fast Fill Rate: 3 - 5 gge/minute
- Time Fill Rate: 25 trucks, 10 hours

“THE PATHFINDER” VEHICLE FUELING SYSTEM



- The next generation in vehicle fueling
- Less expensive & faster to deploy than pipeline- connected stations
- Electric driven, trailer mounted unit
- Requires external power
- Separate gas dispenser needed
- Robust Time Fill & Fast Fill
- Fast Fill Rate: 18 - 20 gge/minute
- Time Fill Rate: 30 trucks, 8 hours

BACKUP GAS SERVICE



- In response to planned and emergency gas outages, VPL sets up downstream of pipe maintenance and supplies gas to customers for as long as necessary
- In response to utility delays, VPL can supply gas to institutions and communities until the pipelines can be completed

CNG LOGISTICS FOR THE 21ST CENTURY



Thank you Pittsburgh Clean Cities!

We'll now open up the presentation to a question & answer session

FOR MORE INFORMATION, PLEASE
VISIT COMPASSNGP.COM AND
FOLLOW US ON LINKEDIN!