



Vermont House Energy and Technology Committee

The Environmental Role of Trucked Natural Gas

Tom Evslin

Founder and Chairman

April 11, 2019



Trucked Natural Gas in Vermont: The Beginning

- ❖ In 2011 energy-intensive manufacturing plants in Vermont NOT located on a pipeline were priced out of business and faced closure
- ❖ In 2012 NGA purchased land in Milton and built compressor station on the VGS pipeline
- ❖ In March 2013 NGA delivered the first US truck load of compressed natural (CNG) to a producer of recycled paper in Vermont replacing dirty #6 oil
- ❖ Fuel cost savings of 30%, net GHG reduction of 25%, elimination of almost all SO₂, NO_x, and particulates
- ❖ Plant sold to new owner who upgraded instead of shutting down



Virtual Pipeline Process



Compressor site on pipeline



Full trailer (350-550 Mcf)



24/7/365 Monitoring



Empty trailer returns for refilling



Customer decompression station



The 2018 Environmental Scorecard

- ◆ NGA customers reduced CO₂ emissions 160 million lbs by switching from oil to natural gas
- ◆ Equivalent to taking more than 15,000 cars off the road
- ◆ About equal to the energy savings from all installed wind power in Vermont during the year
 - ▶ 293,000 MW hours produced
 - ▶ Assume CO₂ savings of 572 lbs/MWh (New England average)
 - ▶ 169 million lbs of emissions avoided
- ◆ SO₂ emissions reduced by 4 million pounds, NO_x and particulates eliminated



Current Vermont Customers

- ⇒ Weidmann (St. J)
- ⇒ Pike (Waterford)
- ⇒ Cabot (Cabot)
- ⇒ Pike (Berlin)
- ⇒ Wilke (Rutland)
- ⇒ Long Falls Paper (formerly Fibermark, Brattleboro)
- ⇒ Pike (New Haven)
- ⇒ Foley Linen (Rutland)
- ⇒ Central Vermont Hospital (Berlin)
- ⇒ Rutland Regional Medical Center (Rutland)
- ⇒ Southwestern VT Medical Center (Bennington)
- ⇒ Northeastern VT Regional Hospital (St. J)

Two More Stories

- ◆ The Middlebury Gas Island
 - ▶ Agrimark got an three extra years of environmental advantage
 - ▶ Middlebury College got to be carbon neutral two years early
 - ▶ When no longer needed, NGA redeployed infrastructure
- ◆ International Paper
 - ▶ The pipeline that wasn't
 - ▶ The jobs that are still there
 - ▶ No more black smoke drifting over Vermont



If New Fossil Fuel Infrastructure Had Been Banned...

- ❖ Many of the manufacturing jobs would have been lost
- ❖ The hospitals would be paying more and polluting more
- ❖ The asphalt plants would still be burning bunker oil
- ❖ Middlebury College still wouldn't be carbon neutral
- ❖ If there is a ban in the future...
 - ▶ New customers will have to stay on oil or shutdown
 - ▶ Existing installations won't be improved
 - ▶ Rutland will remain economically disadvantaged
 - ▶ Renewable deployment will slow



What's So Good About Natural Gas?

- ◆ 50% less CO₂ than coal, 26% less CO₂ than oil or propane per BTU
- ◆ Essential enabler for renewables on the grid
- ◆ No SO₂ or particulates; potential for zero NO_x
- ◆ Clean burn reduces maintenance costs
- ◆ Safer to transport than oil or propane – ask first responders
- ◆ Competitive with coal
- ◆ Substantially cheaper than oil or propane
- ◆ Supply is North American and secure



Arguments Against Natural Gas

- ❖ “Fugitive emissions” cause global warming
 - ▶ Not happening according to EPA and UN Climate Commission
- ❖ Fracking is unsafe
 - ▶ Drilling for natural gas is safer than it’s ever been
 - ▶ Less shafts mean less danger to environment
 - ▶ Fracked OIL is a significant source of atmospheric methane
- ❖ It’s a fossil fuel
 - ▶ It is responsible for most major reductions of emissions
 - ▶ Don’t let the perfect be the enemy of the good
- ❖ Hard to compete against



Natural Gas as a Transition Fuel

- ◆ GHG reduction today: The US was the first nation to meet Kyoto Standards even though we didn't sign the treaty!
- ◆ Crucial enabler for increased use of renewables on the electric grid
- ◆ Major stepping stone to the hydrogen economy (no GHGs)
 - ▶ Today's pipelines and trucks will carry tomorrow's hydrogen
 - ▶ Solar arrays and wind turbines will be much cheaper to build if generating hydrogen directly (smart bubbles)
 - ▶ Hydrogen rather than noxious, expensive batteries will be used for storage

