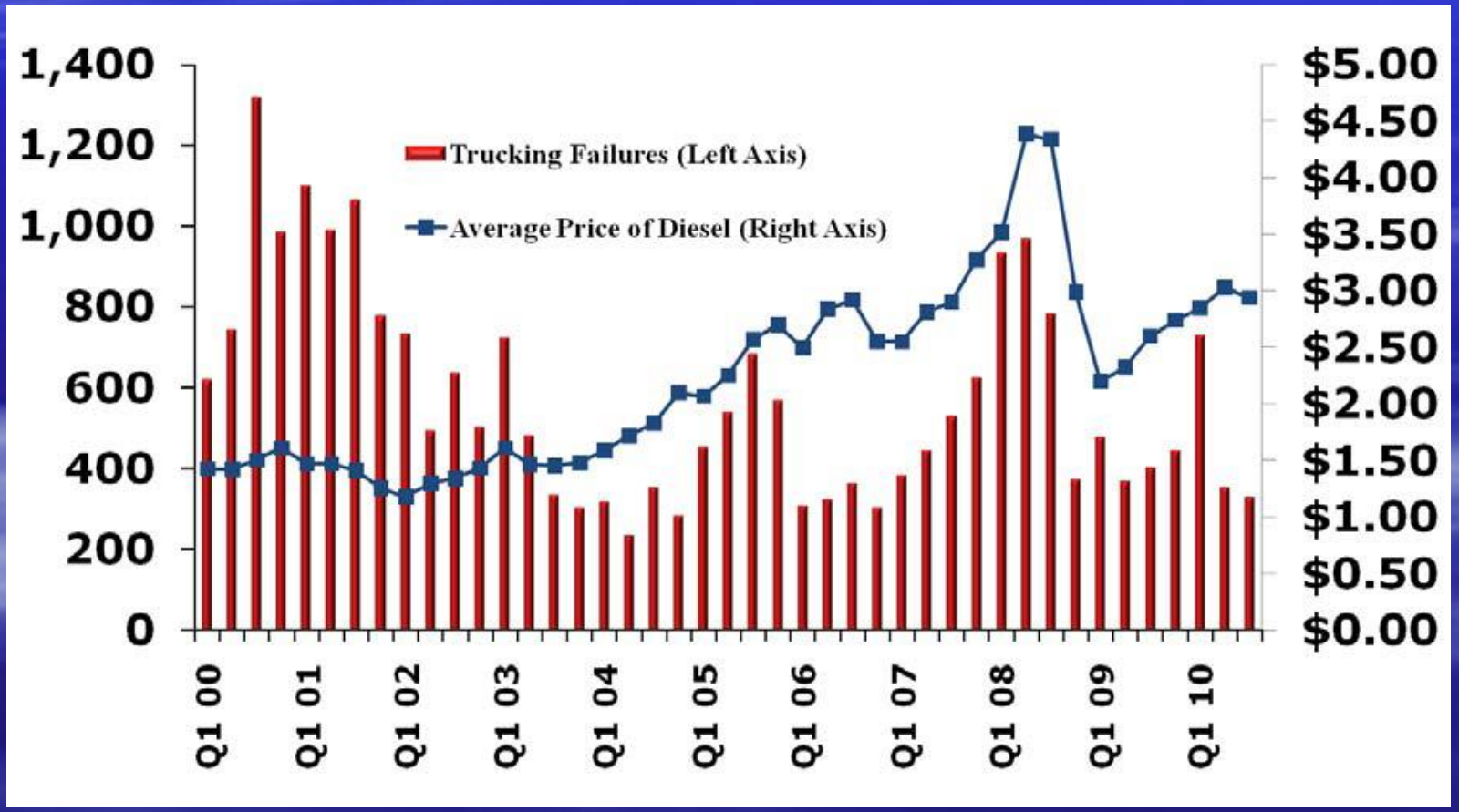
Freedom CNG

New power for the road ahead

What we are trying to avoid!

American Trucking Associations

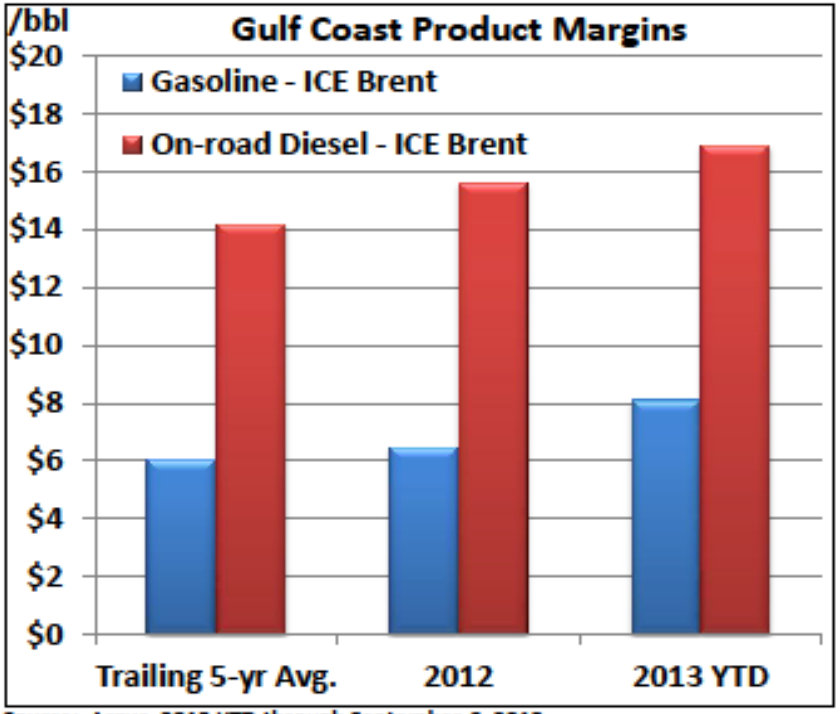
Sources: Avondale Partners, LLC and Energy Information Administration. *Note* failure statistics only include fleets with five or more trucks.



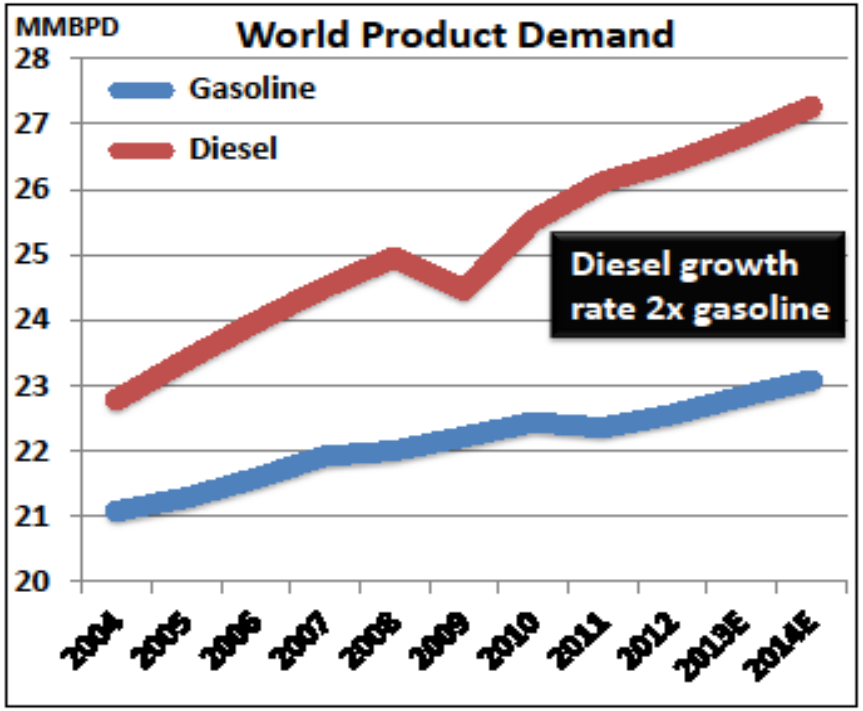
Where we are headed!

Global Distillates Demand Growth Yields Higher Margins

- Distillates (diesel, kero, jet fuel) margins are significantly higher than gasoline due to less spare distillates production capacity
- Distillates demand growth rate is much higher than gasoline
- Europe continues to be short diesel, but long marginal refining capacity and processing expensive crude oils and natural gas



Source: Argus, 2013 YTD through September 6, 2013



Freedom CNG Site 1

Freedom CNG site characteristics

- Host fleet on site (NOVUS Wood Group)
- Open to the public
- 106,000 daily traffic count/5200 three axle truck count
- Inlet gas pressure of 180 lbs.
- Phase I station capacity is 100 trucks per day
  400 gallon per hour peak capacity
- Approximately 1000 fleet vehicles within 5 miles of the site
- Built for truck friendly access
- Fast fill – 5 to 8 minutes, depending upon tank size
- 24 hour lighted operation and surveillance
- Expandable to two acres

STOP

NOVUS
STOP
ANGI
SERVICE
FILTERS

Freedom CNG

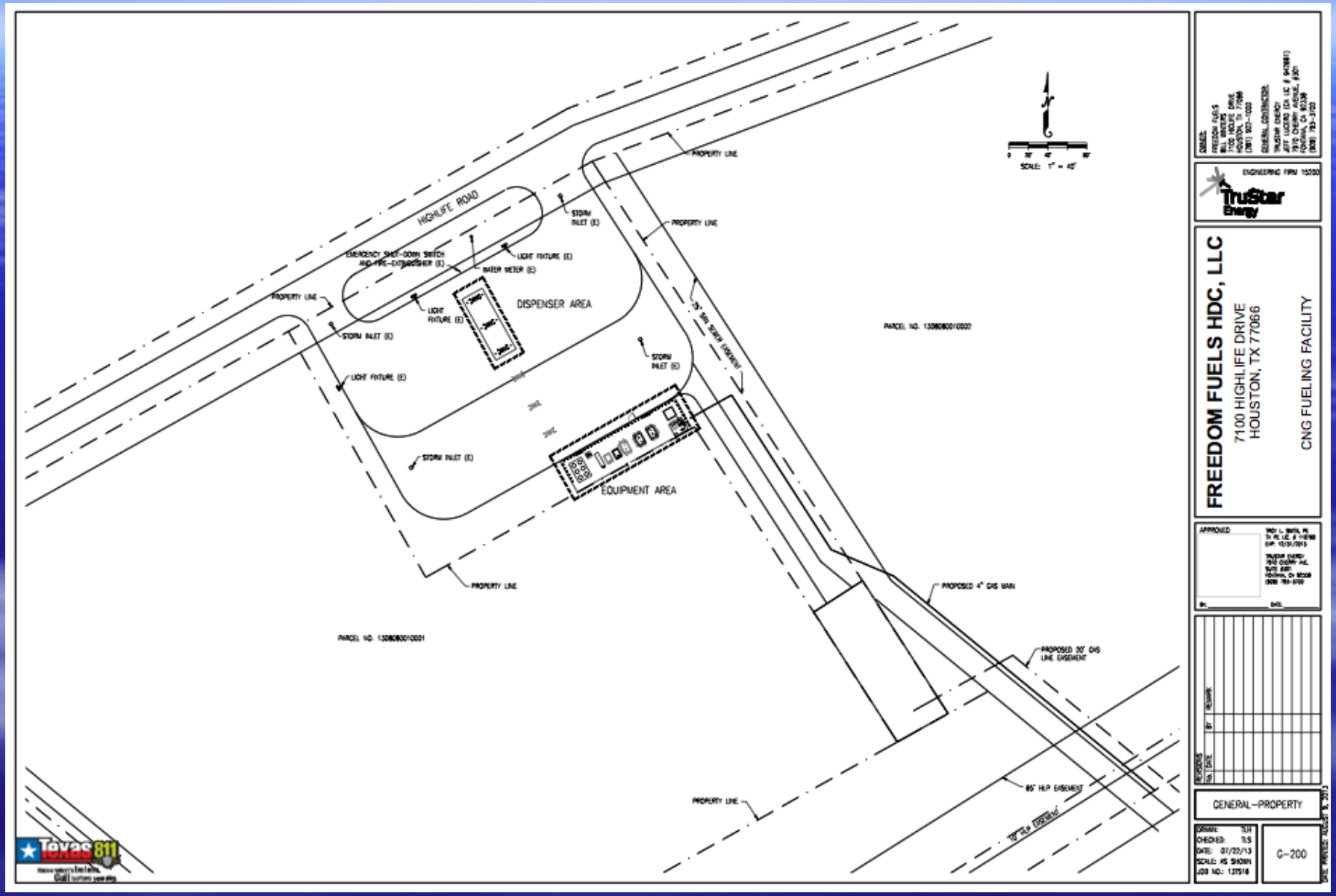
Site at Night

Freedom CNG Site #2

Freedom HDC site characteristics

- Host fleet on site (Houston Distributing).
- Open to the public.
- HDC to purchase 700,000 gge/year for 7.25 years.
- HDC operates 310 vehicles and plans to utilize CNG as much as possible in fleet operations.
- Inlet gas pressure of 600 lbs.
- 1,528 gallon per hour peak capacity
- Station can fill 13 trucks per hour at 120 gallons ea
- Estimated 440 Class 8 fleet vehicles within 5 miles
- Built for truck friendly access
- Fast fill, 24 hour lighted operation and surveillance
- Expandable to three acres

HDC Site Plan



HDC Site: 7011 High Life Dr.

The First 9 Liter HDC CNG Truck

What was good and worked well?

- Civil design, construction and equipment installation.
- Gas service interconnect/power delivery provided by local LDC.
- RRC authority, testing, and outreach.
- Vehicle acquisition and grant funding.
- CNG vehicles exceed expectations.
- The first site produced a second almost immediately. (seeding produces “fruit”)

What were the challenges?

- Local permitting
- Equipment backlog
- Dispenser calibration and card reader interface.
- System idiosyncracies (not plug and play)
- Fleet education and penetration is time-consuming and inefficient
- Speed of CNG adoption (enthusiasm is not the same as ordering equipment)

What we need for success?

- Leadership, courage and CNG adoption
- Real collaboration and cooperation between the private and public sectors
- Public/private stations avoid duplication of effort
- “Seeding” CNG fueling stations begets regional CNG fleet adoption. Fleets need confidence!
- Recognize, encourage and honor early adopters
- Fleet segmentation, education and penetration
- Focus on CNG demonstrations for fleets
- Celebrate the “clean air dividend” from natural gas

Fighters for Fuel Freedom!

Freedom CNG

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