



CHANGES, DEVELOPMENTS & INNOVATIONS IN THE CNG MARKETPLACE BY ANGI ENERGY SYSTEMS

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Who is ANGI?

- > Designer and Manufacturer of Systems for CNG Vehicle Fueling, Tube Trailer Transport and RNG.
- > Over 30+ Years of CNG Experience.
- > Natural Gas Fueling Equipment is Our Core Business.
- > North America's Leading Supplier of CNG Refueling Equipment.
- > Long Standing Reputation as a Leader in the CNG Industry.
- > CNG Equipment Innovator.

What are the Major Changes?

- > Vehicle Market Now Primarily Medium and Heavy Duty.
- > Faster and Fuller Fills Required.
- > Station Flow Rates Are Higher.
- > Use of Mobile Pipelines Increasing.
- > Use of RNG Increasing.
- > Increased Use of Remote Station Monitoring.
- > Increased Use of Integrated Skids.

Why Faster & Fuller Fills?

- > CNG Fueling Has Typically Taken Longer Than Liquid Fuels.
- > Time Is Money – Limit Downtime.
- > Try To Match Retail & Commercial Liquid Fill Rates.
- > Reduce Onboard Vehicle Storage Volume.
- > Increase Vehicle Range.
- > Reduce Number of Fueling Events.

How Do We Achieve Faster Fills?

- > High Flow Compression and Station Equipment.
- > Pressure Drop/Flow Analysis of Station Design.
- > Pressure Drop/Flow Analysis of Onboard Vehicle Fuel System.
- > Provide a Refueling Strategy Based on Fueling Needs.
- > Ensure First In – First Out Fueling Strategies.

How Do We Achieve Fuller Fills?

- > Change Code To Allow More Cylinder Overfill Capability.
- > Provide Steady, Reliable Pressure to Dispenser.
- > Improve Fueling Algorithms.
- > Reduce Hydraulic Losses In The Fueling Hose & Vehicle.
- > Introduce Cool Gas Into The Onboard Cylinders.
- > Utilize Onboard Vehicle Telemetry.

Tube Trailers

- > Use Increasing Due To Pipeline Limitations, Stranded Gas Wells, Utility Peaking and RNG.
- > Typically Requires High Flow Equipment.
- > Chillers Common To Maximize Trailer Gas Capacity.
- > Decant Panels Utilized to Reduce Trailer Pressure To Required Application Pressure.
- > May Require Additional Compressors To Extract More Gas From Trailer At High Pressure Gas Lines.

Biogas/RNG

- > ANGI Works With Most Gas Cleanup System Manufacturers.
- > Booster Compressors Used To Put Gas Into HP Pipelines.
- > Tube Trailer Required for Remote Locations.
- > Compressors With Variable Frequency Drives Used To Match RNG Output.
- > Often Requires Custom Solutions.
- > ANGI Has Dedicated Staff Specifically For This Market.

Remote Communication

- > ANGI Has Had Remote Monitoring Capability For Several Years.
- > ANGI Has Developed A Mobile App – CNG Live – Which Works With Most Smart Phones and Tablets.
- > ANGI Will Also Host Remote Monitoring On Our Server.
- > ANGI Developed a New Simpler SCADA System.
- > All Above Allow Real Time Monitoring and Annunciation.

Integrated Skids

- > Integrated Skids Can Incorporate Compressor(s), Dryer, Valve Panels, Storage, Defueling and Dispensing.
- > Increasing Use With Fleet Customers to Simplify Installations.
- > Allows Easy Re-Location If Required



New Product Development

- > Gilbarco Encore Dispenser With CRIND (Card Reader In Dispenser).
- > New Design Time Fill Posts.
- > Heated High Flow Vehicle Defueling Panel.
- > NG75 and NG100 Compressor Development.
- > Dispenser With Integrated ANGI Patented JT (Joule-Thomson) Cooling.
- > RFID Dispenser Communication.

Questions????

THANK YOU

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