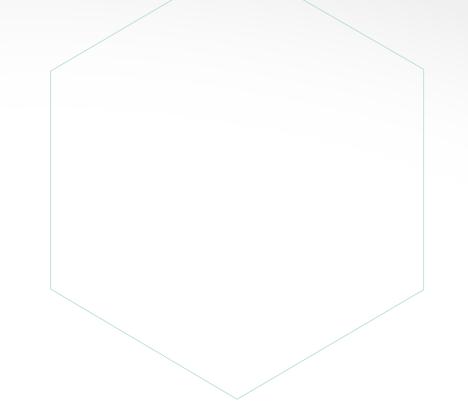


ENERGY SOLUTIONS FOR...



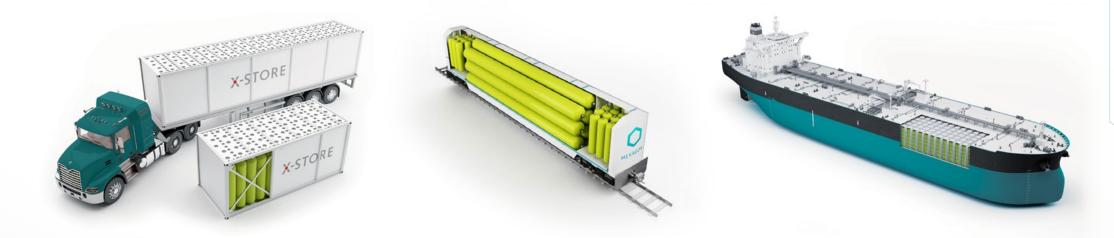




HOW MOBILE PIPELINE® WORKS

Mobile Pipeline[®] is an agile method of delivering gaseous energy fuels to permanent or temporary sites not serviced by pipeline.

Trailers and modules are outfitted with cutting-edge Hexagon composite cylinders to transport compressed gaseous fuels: natural gas, renewable natural gas, and hydrogen. **Hexagon's Titan cylinders are the largest composite cylinders now available.**







WHY MOBILE PIPELINE®?

COST-EFFECTIVE

For medium and large energy users, **Mobile Pipeline*** typically delivers gaseous fuels less expensively than liquefied transport alternatives and is ideally suited for short and medium distance applications.

MEETS DEMAND

Mobile Pipeline* operators deliver on-demand natural gas to areas not served by traditional pipeline, whether the demand is permanent or transient, such as oilfield services.

ENVIRONMENTALLY FRIENDLY

Natural gas emits 30% less CO₂ compared to oil distillates. **Mobile Pipeline*** increases access of natural gas to sites that were off the gas grid, reducing emissions and helping meet increasingly stringent environmental regulations.

CASE STUDY





A paper mill in the U.S. Pacific Northwest saves \$1.2MM and reduces emissions by 17,000 tons of CO₂ per year, every year with Mobile Pipeline[®]









APPLICATIONS FOR MOBILE PIPELINE®

ENERGY-INTENSIVE INDUSTRIES

Conversion to natural gas from incumbent fuels provides industrial customers with a stable, low-cost energy source with a decrease in CO₂ emissions. Mobile Pipeline® has the capacity to meet large industrial needs for this increasingly in-demand fuel source.

VIRTUAL INTERCONNECTS

has become a vital part of the solution to increase natural gas supply to areas that lack sufficient pipeline capacity for peak demand requirements. CNG can be re-injected into a pipeline to serve this demand in a manner more cost-effective than other methods.

CREATION OF GAS ISLANDS

When a town, industrial park, or other region is isolated from the natural gas grid, Mobile Pipeline® delivers a valuable fuel source with gas islands to serve multiple end-use customers.

OIL AND GAS EXPLORATION

hydraulic fracturing requires significant quantities of energy. Mobile Pipeline* is used by oil and gas producers to reduce their consumption of diesel, reducing energy costs and emissions.

POWER GENERATION

When reliable onsite power is needed for a city, neighborhood or business Mobile Pipeline® supplies natural gas for temporary energy or distributed power generation.





APPLICATIONS FOR MOBILE PIPELINE® continued...

VEHICLE REFUELING

For areas that do not have adequate natural gas supply or infrastructure, Mobile Pipeline* is an alternate means of supplying gaseous fuels to vehicle fueling stations.

RENEWABLE NATURAL GAS

Mobile Pipeline is used to transport Renewable Natural Gas (RNG) the green fuel of tomorrow — to a pipeline. RNG creates an energy fuel from waste streams including landfills, agriculture and waste water. This clean fuel works just like natural gas; just cleaner.

HYDROGEN — FUEL OF THE FUTURE

The near future
will see increased
demand for
hydrogen as a fuel
for motor vehicles.
Hexagon uses
Mobile Pipeline*
solutions to
transport fuel grade
hydrogen to where
it is needed.

HIGH HORSEPOWER

The marine and rail industries also can benefit from Mobile Pipeline* products. Hexagon has developed innovative and specialized solutions in the marine and rail industries that will address the specific concerns and limitations in these industries.

INDUSTRIAL GASES

Mobile Pipeline[®] is not just for energy gases. Industrial gases such as helium, argon, and nitrogen are also transportable. Lightweight composite materials allow 2-3 times more gas to be transported in a single trip when compared to traditional steel tube trailers.





BENEFITS OF MOBILE PIPELINE®

UPSTREAM

Mobile Pipeline* allows upstream producers to benefit from capturing gases that are currently flared. Mobile Pipeline* helps producers meet their regulatory requirements, monetize the value of gases previously flared, all while reducing the producers' environmental footprint.

DOWNSTREAM

Facilities that lack access to natural gas are the principal downstream beneficiaries of CNG **Mobile Pipeline***. Replacing incumbent fuels has saved end-use facilities 25%-35% on fuel costs while reducing environmental impact.





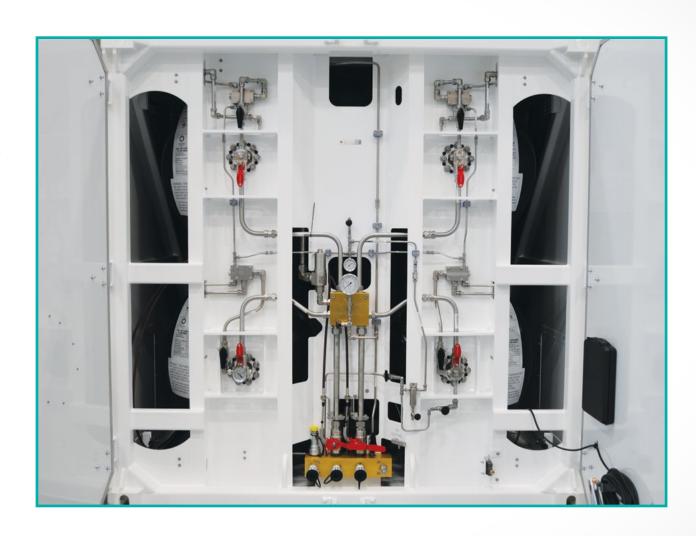
HEXAGON MEANS SAFETY

CORPORATE TRACK RECORD

Hexagon has delivered more than 400,000 highpressure gas full-composite cylinders over 25 years. To date there are no known failures resulting from a design or manufacturing issue.

MOBILE PIPELINE®

Mobile Pipeline* TITAN® is designed specifically for bulk transportation of natural gas. Our composite cylinders hold up to triple the capacity of steel at the same vehicle weight. TITAN® modules and trailers come equipped with a state-of-the-art fire protection system. If the ambient temperature surrounding the tanks reaches 230°F/110° C, the tank contents will be released to the top of the module and vented into the atmosphere.







HYDROGEN — THE FUEL OF THE FUTURE

Hydrogen is the cleanest fuel for transportation. In order to de-carbonize our global transportation systems, hydrogen must be part of the solution. Hydrogen mobility and distribution starts with **Mobile Pipeline***. Mobile H₂ pipeline enables the distribution of this clean energy solution. Hexagon's H₂ pipeline can deliver up to 150% more hydrogen per trip than competing products.

Hexagon is a globally leading supplier of Type 4 high-pressure composite cylinders and systems for storage and transport of various gases under pressure. Type 4 tanks are the best combination of safety, efficiency and durability available. Their lightweight construction improves vehicle range, payload and handling.











MOBILE PIPELINE® TRANSPORT SOLUTIONS

		1		I	I					
		X-STORE® DOT 20 ft.	TITAN4® 30 ft. **	TITAN4® 40 ft.	TITAN4® 53 ft.	TITAN®XLTrailer40ft.				
Cylinder system approval		DOT / ABS								
Hydraulic capacity, approx.	g/l	5,710 / 23,175	6,475 / 24,500	8,985 / 34,000	12,285 / 46,500	13,010 / 49,250				
Nominal transport capacity (15°C)	scf / scm	243,985 / 6,910	262,100 / 7,420	364,050 / 10,300	488,265 / 13,825	526,610 /14,910				
Container dimensions length x width x height	ft/m	20 x 8.2 x 9.5 6.10 x 2.55 x 2.95	30 x 8 x 8 9.14 x 2.44 x 2.44	40 x 8 x 8 12.2 x 2.44 x 2.44	53 x 8 x 8.5 12.2 x 2.44 x 2.59	40 x 8.5 x 13.5 12.2 x 2.59 x 4.11				
Net weight container, approx.	lb / kg	19,840 / 9,000	28,890 / 13,105	34,500 / 15,650	32,450 / 14,720	42,415 / 1 9,280				
Gas weight CNG (D=0.75 kg/m³)	lb / kg	11,170 / 5,065	11,780 / 5,345	16,360 / 7,420	22,050 / 10,000	24,520 / 11,125				
Total weight + CNG	lb / kg	31,010 / 14,065	40,670 / 18,450	50,860 / 23,070	54,500 / 24,720	66,935 / 3 0,305				
Quantity of cylinders	pcs	15 x (1,545I)	4 x (6,120I)	4 x (8,500l)	4 x (11,625l)	12 (*)				
Operating pressure (15° C)	MPa (bar)	25 (250)								
Burst pressure, minimum	MPa (bar)	60 (600)								
Cylinder operating temp., max.	°C	-40 / + 65								
Cylinder type		Type 4								
Cylinder design		Full carbon								
Cylinder liner material		High density polyethylene (HDPE)								
Inspection standard		DOT								

^{* 4} units TITAN® 42" x 38', 1 unit TITAN® 42" x 28', 4 unit MAGNUM™ 26" x 224", 2 unit MAGNUM™ 26" x 174", 1 unit MAGNUM™ 26" x95"



^{**} TITAN4® 30 ft. available in Southeast Asia only



X-STORE® GAS CONTAINER MODULES

HYBRID DESIGN, 250 BAR, CNG		I	I	l	I	I				
ili bilib besidit, 250 bili, cita		X-STORE® 10 ft.	X-STORE® 20 ft.	X-STORE® 30 ft.	X-STORE® 40 ft.	X-STORE® 45 ft.	X-STORE® 48 ft.			
	Cylinders	According to ISO 11439								
Approval	System	Leak tested according to DIN EN 1779, not approved for U.S. and Canada								
	Container	А	ccording to ISO 668	According to CSC						
Hydraulic capacity, approx.	I	8,750	19,250	29,750	40,250	45,500	48,300			
Nominal transport capacity (15° C)	m³	2,570	5,655	8,735	11,820	13,360	14,185			
Container dimensions length x width x height	mm	3,048 x 2,438 x 2,743	6,058 x 2,438 x 2,743	9,087 x 2,483 x 2,743	12,192 x 2,438 x 2,743	13,176 x 2,438 x 2,743	14,630 x 2,438 x 2,743			
Net weight container, approx.	kg	5,560	11,465	17,275	22,930	25,815	27,510			
Gas weight CNG (D=0.75 kg/m³)	kg	1,930	4,240	6,550	8,865	10,020	10,640			
Total weight + CNG	kg	7,490	15,705	23,825	31,795	35,835	38,150			
Quantity of cylinders	pcs	25	55	85	115	130	138			
Operating pressure (15° C)	MPa (bar)	25 (250)								
Burst pressure, minimum	MPa (bar)	59 (590)								
Cylinder operating temp., max.	°C	-40 / +65								
Cylinder type		Type 4								
Cylinder marking		TH_500_HY_1								
Cylinder design		Hybrid (glass fiber over carbon fiber)								
Cylinder liner material		High density polyethylene (HDPE)								
Service lifetime	Limited to 20 years									

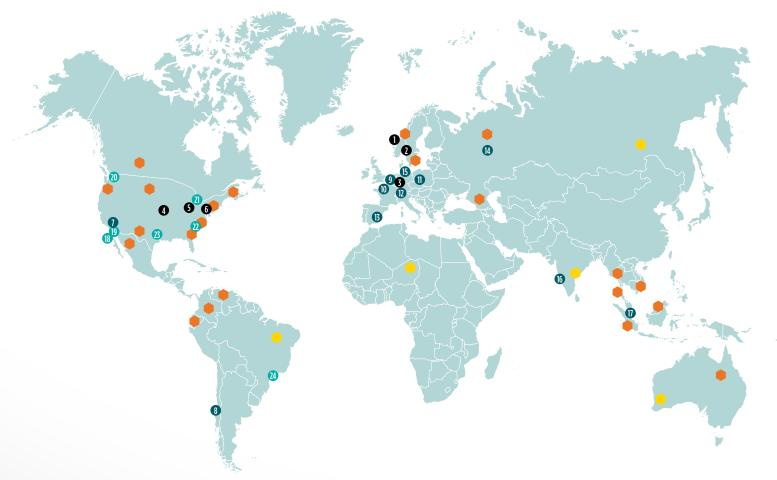
1) The filling process underlies the complex physical laws of fluid mechanics. The actual filling volume depends on several factors: chemical composition of gas, ambient temperature, filling speed Metric unit system and inlet temperature which in turn, depend on the equipment of the compressor station (compressors, chillers, piping, valves and fittings). Therefore an exact statement about the real filling volume cannot be given. Typically filling efficiencies of 75-95% are reached.



^{2) +1 %} tolerance due to manufacturing reasons



DRIVING ENERGY TRANSFORMATION AROUND THE GLOBE



Hexagon Administration and Production Sites

- Aalesund, Norway Headquarters
- 2. Raufoss, Norway
 LPG Cylinders
 Light-Duty Vehicles
- 3. Kassel, Germany
 Hydrogen
 Light-Duty Vehicles
 Mobile Pipelines
- **4.** Lincoln (NE), U.S. Hydrogen Mobile Pipelines
- **5. Heath (OH), U.S.** LPG Cylinder distribution
- **6. Taneytown (MD), U.S.** Hexagon MasterWorks

Hexagon Sales Offices

- 7. Prescott (AZ), U.S.
- 8. Santiago, Chile
- 9. Arnheim, Netherlands
- 10. Paris, France
- 11. Wroclaw, Poland
- 12. Klagenfurt, Austria
- 13. Barcelona, Spain
- 14. Nizhny Novgorod, Russia
- 15. Copenhagen, Denmark
- 16. Bangalore, India
- 17. Singapore

Agility Fuel Solutions (50/50 Owned)

- 2. Raufoss, Norway
- 4. Lincoln (NE), U.S.
- 18. Costa Mesa (CA), U.S.
- 19. Fontana (CA), U.S.
- 20. Kelowna (BC), Canada
- 21. Wixom (MI), U.S.
- 22. Salisbury (NC), U.S.
- 23. Georgetown (TX), U.S.
- 24. Sao Paolo, Brazil

- Existing markets/projects
- Developing markets/projects

More than 1,100 Mobile Pipeline® modules deployed globally as of 2017.





HEXAGON'S GLOBAL MOBILE PIPELINE® TEAM IS READY TO HELP YOU WHEREVER YOU ARE.

