Fueling Innovation for 100 years

Our Story
About Us

IMW Industries’ roots (now Clean Energy Compression Corp.), go back over 100 years to a Blacksmith’s shop in Chilliwack, BC Canada where Ironsides Machining & Welding was established in 1912.

Over decades of custom fabrication, IMW Industries became an early adopter of compressed natural gas and in 1987 began building CNG fueling systems for station operators.

Today, we are Globally recognized for delivering effective solutions, quality engineered products, proven technology and superior customer service. Clean Energy Compression Corp. (CEC) sets the Gold standard for clean non-lubricated CNG systems and provides a single source for fully integrated solutions of all types of CNG fueling and industrial applications.

In 2010 IMW Industries joined Clean Energy Fuels Corp, making them the largest provider of natural gas fueling solutions for transportation in North America and Global leader in the natural gas market.
Our Vision

We are an added value collaborator, serving our clients, employees, suppliers, community and stakeholders through our values:

- Integrity
- Professionalism
- Growth
- Passion for excellence.

Our vision is to be the top global creator of innovative clean energy fuel products while living our values on a day to day basis.
Clean Energy Fuels Corp

- Delivered nearly 1 billion gallons of CNG and LNG to customers
- Built over 500 LNG & CNG fueling stations
- Opened two LNG production plants and developed supply contracts with others nationwide
- Built and operated one landfill-to-gas plant providing renewable natural gas or biomethane to the grid and to vehicles and is building a second biomethane plant
Capabilities
Design and Engineering

Long before a natural gas fueling system is manufactured a team of highly skilled designers work with the client to ensure our solutions will meet their long-term needs. With a full compliment of modern engineering tools, we ensure our CNG systems are designed for optimum performance, serviceability and customer value.

Natural Gas Fueling System Engineers take over and pour their years of experience into each project getting it right the first time. CECC fueling systems are shipped all over the world and must be designed and engineered to meet ISO 9001 -2008 standards, regional standards/codes and harsh environmental conditions.

*Grab a pic with the new Clean CNG on the monitor*
Manufacturing

CNC MACHINING CAPABILITIES
The most advanced CNC equipment in the World

PRESSURE WELDING AND FABRICATION
We’ve been fabricating for over 100 years

ASSEMBLY AND INTEGRATION
A series of assembly stations ensures on time delivery.
Manufacturing

PROPRIETARY TECHNOLOGIES
Non-lubricated composite piston rings and seals, high-efficiency heat exchangers

IN-HOUSE TESTING WITH NATURAL GAS
It won’t leave our factory until its 100% certified field ready

DELIVERING COMPLETE CNG SYSTEMS
Offering a range of fueling systems solutions
Certifications

- ISO 9001:2008 Quality Management System
- The American Society of Mechanical Engineers
  - Manufacture and Assembly of Power Boilers
  - Manufacture of Pressure Vessels
- National Board of Boiler and Pressure Vessels Inspectors
Global Presence

- Over 1800 CNG systems sold worldwide
- Representation on five continents
- 225+ employees at the Chilliwack plant
- 250+ employees at 5 global subsidiaries

CEC SERVICE CENTERS
- Canada
- USA | Clean Energy
- Colombia
- Peru
- China
- Bangladesh

AUTHORIZED CEC SERVICE CENTERS
- Mexico
- Czech Republic
- Turkey
- Nigeria
- Pakistan
- Malaysia
- Indonesia
Solutions
Solutions

TRANSIT

1-1.5B gal/yr
market size

30% of new transit vehicles are natural gas

Clean Energy® fuels

6K transit vehicles a day
Solutions
Solutions
Solutions

HEAVY DUTY TRUCKS

25B gal/yr
Market Size

3.2M
Class 8 Trucks

1700+
Natural Gas Trucks

Clean Energy Fuels
90% of Natural Gas Trucks
Market Potential

Heavy Duty Truck Market Potential is Huge

- 1-1.5B Transit buses
- 2B Airport vehicles
- 2B Refuse trucks
- 25B Heavy duty trucks

Gallons of Fuel Used Per Year
Market Potential

Fleets Exploring Natural Gas Fueling
Market Potential

Cost Of Oil Vs. Natural Gas

Commodity Per Gallon (DGE)
Oil: $2.36
Natural Gas: $0.56

Price per mmBTU

CECC Offerings
CNG Equipment
CNG Fueling Solutions

- CNG Station design, procurement and commissioning
- Provides full-service manufacturing for CNG equipment and other clean-tech products
  - Compressors with proprietary designs
  - Dispensers
  - Fill posts
  - CNG storage assemblies
  - Gas and electric control systems
Compressor Block

Specifications

**Inlet pressure range:** as low as 5 PSI, 0.34-70bar

**Discharge pressure:** up to 4500 PSI, (310barg)

**Flow capacity:**
- 50-2000 SCFM
- 21-834 DGE/h
- 80-3215 Nm³/h
- 85-3390 Sm³/h

**Configuration:** Single, Twin

**Prime Mover:** 50, 100, 150, 250, 300 HP

**Cooling method:** Air-to-gas inter-stage cooling

**Ambient temperature:** -40°C ~ 50°C

Standard Features

- Belt driven W-style radial compressors
- Non-lubricated cylinders, pistons and valves for clean discharge gas (5 ppm or less)
- Balanced reciprocating design - low noise and vibration
- Low speed operation for reduced component wear
- 1800 sold worldwide
- Configurable up to 5 compression stages
# Product Family

## Clean Gas Technology

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<th>Twin CleanCNG</th>
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<tr>
<td><img src="image1" alt="CleanCNG Standard" /></td>
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*by Clean Energy®*
Clean Energy Compression (CEC) is a Canadian Manufacturer best known as a global supplier of high-quality compressed natural gas (CNG) fuelling station equipment and systems for a variety of different market segments.
Applications

COMMERCIAL CNG STATIONS
Results are cleaner operations and dramatic fuel cost reductions. Proven to meet rigorous requirements of public station fuelling, providing consistent roll-out and filling times equivalent to diesel pumps.

TRANSIT CNG STATIONS
Reduced operating costs, emissions and noise pollution in urban environments to protect the environment. Exceed requirements to keep transit fleets fueled and on the road!
Applications

REFUSE/TRASH SECTOR
Today’s natural gas engines match the horsepower, torque and reliability of their diesel counterparts with simplified operation and maintenance. CEC’s CNG time-fill equipment solutions are designed specifically to optimize refuse fleet fuelling and operations.

BULK GAS TRANSPORTATION
Moving CNG by trailer eliminates the hurdles associated with pipeline development and provides a better fuel alternative for those companies off the gas distribution grid.
Clean Energy Compression
Exclusive Advantages
CEC Exclusive Competitive Advantages

ONLY #1: CEC’s exclusive non-lubricated compressors set the global standard for minimum oil carry-over in CNG compressors without the waste, cost and negative environmental issues of additional filters, auto oil drain systems and supplementary oil tanks. Only 5 parts-per-million or less vs. 100 PPM or more.

- Lower operating costs: Oil litres/year: Lubricated systems = up to 1200 vs. CECC = 80 in crankcase
- Lower maintenance costs: no oil accumulation in compressor or vehicle systems. Happier customers and increased station profitability.
- Inside a CNG vehicle, onboard CNG stored at 3600 psig is regulated to 100 psig by a regulator and then injected into engine. There are many examples of oil soaking the regulator diaphragm, affecting its accuracy and, in some cases, causing a rupture of the regulator internals if oil clogs the regulator.

“The majority of engine performance issues are attributable to oil carryover, which is a problem that begins at the fueling station.”

Leo Thomason, Executive Director
Natural Gas Vehicle Institute
“The Achilles Heel of Natural Gas Vehicles”
CEC Exclusive Competitive Advantages

**ONLY #2:** CEC is the largest and only exclusive manufacturer of non-lubricated CNG compressors globally making us a proven manufacturer with the world class experience you need supporting you

- A century of manufacturing experience
- 3 decades of non-lubricated CNG compressor manufacturing experience
CEC Exclusive Competitive Advantages

ONLY #3: The best durability and reliability in the industry

- CEC has the most northerly long term operational installation in the world in Barrow Alaska, which, combined with our installations in Qatar demonstrate reliable commercial operation across more than a 110oC temp range and some of the most abusive conditions on earth.

- Gas dryers are installed on low pressure inlet not the high pressure discharge, keeping CEC compressor system dry with better chances of not freezing during the extreme temperatures of winter.

- Existing installation in South America still running at 70,000 hours.
CECC Exclusive Competitive Advantages

ONLY #4: CEC is the only manufacturer offering advantages of multiple configurations:

- Allows for variable supply for higher efficiency at low demand periods
- Full redundancy and enhanced reliability
CEC Exclusive Competitive Advantages

**ONLY #5:** The only manufacturer that covers the widest spectrum of compression requirements with a single block instead of multiple, unique machines:

- Less training required – better maintained machines
- Common parts – lower inventory, lower cost of ownership
CEC Offerings

Last Mile Distribution Equipment
Industrial CNG

- Bulk gas transportation systems have enabled customers worldwide to take advantage of the tremendous cost reduction and environmental benefits of converting to natural gas without waiting for expensive pipeline or LNG infrastructure.

- The Pressure Reduction System (PRS) is made up of two modules: Pressure Reduction Module (PRM) and Heating & control Module (HCM).

- CEC’s considerable experience in building PRS units for various markets has resulted in a quality standard design to perform under a variety of conditions.
Virtual Pipelines for Remote Energy Systems

Why?
- Use local, domestic energy
- Save 20 – 30% of energy costs
- Clean energy solution – lower emissions
Mother Station

- Compressors
- Trailers Filling with Compressed Natural Gas (CNG)
- Chillers
- Heat Exchanger
- Gas Inlet
- Fill Posts (x6)
FullFill Technology ensures that every bulk gas shipment is completed quickly and filled as completely as possible.

CEC systems ensure that transport modules are filled at the optimum temperature and gas density through:

- Proper prediction of trailer filling temperature rise
- Proper sizing of cooling equipment
- Integration of proprietary compression technology and comprehensive dispensing algorithms
- PLC controlled continuous thermal management
Daughter Station
Decompression – ‘Daughter’ Station

**Maximum Offload Capacity** ensures that only a minimal amount of gas is left on the trailer before it is disconnected. This is achieved by:

- Using two line unloading methodologies where possible
- Designing systems for minimal pressure drop
- Employing scavenging compression where necessary to remove remaining gas
Industrial CNG

Pressure Reducing Module:
- Emergency Shut Off valves
- Heat exchanger modules to heat gas
- 2 stages of pressure regulation
- Overpressure protection after both stages of pressure regulation
- Optional metering
CEC Exclusive Competitive Advantages

**ONLY #1: FullFill Technology** ensures that every bulk gas shipment is completed quickly and filled as completely as possible. Our systems ensure that transport modules are filled at the optimum temperature and gas density through:

- Integration of proprietary compression technology and comprehensive dispensing architecture.
- PLC controlled continuous thermal management
ONLY #2: Maximum Offload Capacity ensures that only a minimal amount of gas is left on the trailer before it is disconnected. This is achieved by:

- Using two line unloading methodologies where possible
- Designing systems for minimal pressure drop
- Employing scavenging compression where necessary to remove remaining gas
ONLY #3: Proven Scalability to provide standard product to custom applications with current systems installed with capacity of up to 14,000 Nm3/h.

- Provides redundancy, reliability and quality.
- Can easily add more units if demand increases, or remove equipment and move to several smaller sites once gas pipeline arrives.
Clean Energy Compression Benefits

• **CERTIFICATION**
  • Approved designs in Canada, US, Mexico, Indonesia
  • Currently working on approvals for Israel, Europe and Australia

• **LARGEST OF ITS KIND ON THE PLANET**
  • 14000 Nm3/h capacity from 250 barg to 4 barg supplying a large industrial plant
  • 16000 Nm3/h capacity from 250 barg to 50 barg supplying a power generating plant (in process)

• **GOOD RELATIONSHIP WITH SUPPLIERS**
  • Work closely with all major trailer manufacturers to optimize trailer design
  • Experience with coupling providers to ensure reliable connect / disconnect operation
CEC Offerings
LNG Equipment
LNG

LNG TRANSPORT

LNG VEHICLE TANK

LNG DISPENSER

OFFLOAD PUMP

DISPENSE PUMP
Experience

- CEC LNG station solutions has been deployed globally since 1984

- 75% of all LNG/LCNG fueling stations throughout North America

- CleanCNG stations meet and exceed all ASME and NFPA code requirements

- Reliable, quick to install, easy to use, and high performing fueling systems
CleanCNG - Overview

- All standard stations are designed with LNG/LCNG expansion potential. As fueling demand increases, equipment can easily be added with minimal cost and effort.
- Standard station designed for (1) 18,000 gal storage tank with room for an additional 18,000 gal tank.
- Dual skid-mounted dispense pumps
- Remote access via integrated web server
- Extensive safety precautions including fire detectors, methane detectors, fire alarm control panel, alarm logging, battery backup system
CleanCNG - System Benefits

- **Flexibility:**
  - Optional LCNG expansion, additional storage tank and duel skid-mounted dispense pumps

- **Rapid Fueling:**
  - 15 gpm pumps (1235 scfm) provide a full fill for vehicles rated at 3600 psi

- **Dedicated Pumps:**
  - Dedicated pumps allow simultaneous offloading, saturating, and dispensing
  - Pressure offloading if the offload pump is out of service

- **Remote Monitoring**
  - SCADA is web based allowing station equipment, operations and fueling to be remotely monitored on laptop, Smartphone or tablet
CleanCNG - System Benefits

- Quick Deployment
  - Standard skid based design complete with onboard power for RAPID DEPLOY
  - Results in very low civil works and installation costs

- Zero venting
  - Optional excess vapor compressor takes excess vapor from the LNG storage tank and compresses it into the CNG dispensing system.

- No Priority Panel
  - CNG storage bottles are arranged a single common buffer rather than a cascade system
RapidLNG - Overview

- The self contained RapidLNG fueling skid consists of six subsystems: Storage tank, dispensing/offloading/saturation pumps, dispenser(s), vaporizers, MCC and air compressor.

- Web based SCADA System allows local access to all station information, parameters and alarms through the HMI touch screen and also remotely through internet connection.

- Superior safety standards with emergency stop buttons, spill containment, fire proofing materials and methane sensors.
RapidLNG - System Benefits

- All-in-one:
  - Compact Integrated footprint with 60 cubic meters storage and dispensing onboard
  - The skid is built into a 2-piece skid frame assembly which are bolted together on site to a concrete foundation
  - Storage tank, dispensing/offloading/saturation pumps, dispenser(s), vaporizers, MCC and air compressor all on board.
Rapid LNG - System Benefits

- **Rapid Deploy**
  - Pump skid, LNG dispenser and control system are factory installed to the skid frame before shipment, minimizing the amount of field work required to put the LNG station into service.

- **Versatile:**
  - Three Configurations:
    - Single dispenser, side of skid
    - Two dispensers, second at rear of skid
    - Two dispensers, second on offload side of skid

- **Pressure Offload System**
  - Offload connections located on the opposite side of the skid from the dispensers, minimizing disruption to dispensing while offloading delivery vehicle.
  - Pressure offloading is completed in 3 to 4 hours.
  - Dispense pump can also be used as an offload system to offload the LNG delivery vehicle.
Why Natural Gas?
Global Challenge? Smog.
Global Solution? Natural Gas.
Advantages of Natural Gas

- Globally abundant
- Safer than liquid fuels
- Produces 25% less greenhouse gases
- Saves up to 50% of the cost of gasoline or diesel
- Can be transported anywhere

Natural Gas Vehicles: Dynamics are Worldwide

- 4000 new CNG cars on the road each day
- 8 new CNG stations being built every day
- 65 million new CNG vehicles projected by 2020
Why Clean Energy Compression?
CEC Benefits

LARGEST SERVICE NETWORK IN THE WORLD

• Approved, full service partners in 10 countries globally

• Global network of parts & service providers for first-class supports all of its products

• NOC (Network Operations Center) allows Customer Care Representatives to closely monitor the performance of each unit in the field.
OmniSCADA Remote Monitoring

REMOTE MONITORING CAPABILITY

- Real Time Equipment status available from any location with internet access.
- E-mail notifications sent on alarm condition
- Increases technical response time.
- Visibility to Equipment performance
Satisfied Clients Worldwide

Gas suppliers, petroleum companies, commercial fleets, CNG/LNG station operators and clean-tech companies depend on Clean Energy Compression for their alternative fueling solutions.
Clean Energy Compression is the leading provider of CNG equipment, including compressors, dispensers, gas control systems and CNG storage worldwide.

We manufacture high-quality products with superior reliability and unique technological advantages to reduce operating costs, improve efficiency, increase flow capacity and optimize station performance. Clean Energy Compression delivers timely after-market service worldwide, including technical support and parts.

Clean Energy Compression operates as a wholly owned subsidiary of Clean Energy Fuels Corp. (NASDAQ: CLNE). Clean Energy is the largest provider of natural gas fuel for transportation in North America and a global leader in the expanding natural gas vehicle market. Clean Energy has operations in CNG and LNG vehicle fueling, construction and operation of CNG and LNG fueling stations, biomethane production, and compressor technology.