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## ***Clean Cities Transportation – Workshop for Almaty***

**Hosted by the U.S. Department of Energy  
*Almaty, Kazakhstan – March 30, 2011***

**Clean Energy Fuels Corp, Dba IMW Industries**

***Kirk D. Livingston, Senior Vice President, Int'l Business Development***





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## ***Clean Energy – North America’s Leader in Clean Transportation***

Fueling  
Services

Compressors  
& Equipment  
IMW

Engineering  
&  
Construction

Service &  
Support

Grants &  
Finance

Vehicles &  
Conversion  
BAF

LNG Tech &  
Construction  
NorthStar

***Clean Energy’s Business Sectors***

Clean Energy Fuels Corp., together with its subsidiaries, provides natural gas as an alternative fuel for vehicle fleets. It designs, builds, finances, and operates fueling stations; and supplies CNG, LNG, LCNG.

The company also produces renewable biomethane, which could be used as vehicle fuel.

In addition, it provides natural gas conversions, alternative fuel systems, application engineering, service and warranty support, and research and development for natural gas vehicles.



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Clean Energy fuels over **19,900** vehicles at **211** strategic locations across the United States and Canada with a broad customer base (i.e. UPS, Port of Los Angeles) in the **refuse, transit, trucking, shuttle, taxi, airport** and **municipal fleet** markets.

It owns (**70%**) and operates a landfill gas facility in Dallas, Texas, that produces renewable methane gas, or biomethane, for delivery in the nation's gas pipeline network.

It owns and operates LNG production plants in Willis, Texas and Boron, Calif. with combined capacity of **260,000** LNG gallons per day and that are designed to expand to **340,000** LNG gallons per day as demand increases.



## *....A Century of Manufacturing Excellence*

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**1912**, IMW was established in Canada (close to Vancouver)

**1984**, became a manufacturer/exporter of CNG products

**2000**, entered the Chinese market and is now #1 foreign brand

**2004**, BC Exporter of the Year Award for Manufactured Products Category (also in 2007)

**2008**, invested into manufacturing facilities in Taicang, China

**2009**, established Shanghai as the central hub for Asia Pacific, BC Exporter of the Year Award, as well as the Winner in the Manufactured Products Category

**2010**, merged with Clean Energy Fuels Corporation (CLNE)

*CLNE - publicly traded on Nasdaq*

*CLNE - over one billion US dollar market capitalization*



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***...what we offer: Partnership, technology & expertise***

**IMW has evolved to a fully integrated turn-key solutions provider**

- Compressors, dryers, dispensers, storage, metering/pressure reducing systems
- All covered under one warranty and service plan; and financing

**IMW and the Clean Energy Group is technology based**

**We work in CNG, LNG, LCNG, Hydrogen, Nitrogen**

**Gas Applications**

- Fueling stations
- Industrial gas burners/Power generation
- Residential
- Gas gathering, biogas, landfill gas
- Moving into coal gas and gasification of coal



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*“Turn-Key Gas Solutions”*





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# *IMW Gas Engineering Services: Specifications, Design, Layout & Technical Institute Support*





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# IMW CNG Products are Turn-key, Fully Integrated Systems

## Applications include Fleet Fueling, Industrial Burners/Power Stations & Residential

### 母站压缩机

IMW 制造高排量天然气压缩机组和售气机/加气柱, 实现给汽车/散装运输槽车快速加气。(母站)

### Type III Daughter Station

Flow Capacity Concept

Power Consumption Concept

Higher flow capacity, especially at high inlet pressure.

Operates over 75% load most of the time, more efficient. Concept

- All three cylinders are identical. 1.750" SAHE
- All three cylinders work at all times. No cylinder wastes energy.
- Simple control system and PLC program, like normal CNG stations. No need for complex valving/switching.
- Average flow capacity approximately twice that of other daughter compressors, therefore you can fill vehicles faster.
- Smooth flow and power characteristics.
- Lower pressure ratio, pressure differential, and discharge temperature make 2nd stage ring life significantly longer.
- Small diameter of 1st stage cylinders reduces piston ring cost.
- Fewer components make the system more reliable.
- Type III design can meet the requirement to decant trailers down to 200 psig, if required.

#### Station Cost Saving

Three identical cylinders = Less manufacturing cost  
 Small compressor valves & rings = Less material cost  
 Fewer overall components = Less material cost and service  
 Less piping = Less material cost and service  
 Simple control system = Easier trouble shooting and service  
 Longer ring life = Less operating and maintenance cost  
 Common components = Less spare parts cost and inventory  
 Option: diverter panel = About 1/3 cost of 3-line priority panel  
 Option: buffer storage = Less cost than 3-bank cascade

### Natural Gas Dryer

- Twin tower, closed loop with zero release.
- Continuous service; uninterrupted output.
- Auto regeneration by tower and manual switching between towers.
- Heat reactivated closed loop natural gas concurrent desiccant regeneration system.
- With NA blower and of low rise design: International Standard

### ISO 容器

IMW的产品应用于天然气的散装运输和工业应用(虚拟管道)

### IMW售气机 加气柱性能

IMW售气机 加气柱性能

- 充气速度快;
- 安全灵敏可靠;
- 具有手动顺序控制功能;
- 具有超载保护功能;
- 具有拉断安全保护功能;
- 具有断电后数据长期保存, 并停电复显功能;
- 具有自动检测故障和故障保护并自动显示故障代码功能;
- 具有定金额、定加气量的予置加气功能;
- 具有介质密度设定功能;
- 具有与其它设备以及与IC卡进行通讯功能。



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# IMW CNG bulk storage, virtual pipeline transportation, pressure reducing systems & mobile compression/dispensing lead the way



## Pressure Reducing Unit

**HIGH FLOW PRESSURE REDUCTION SYSTEM**

- Consist of two modules  
Pressure Reduction Module (PRM), rated for class 1, div 2, group D.
- Heating Control Module (HCM), for non-hazardous

**Features :**

- High flow PRS with oversize piping components to minimize residual mobile storage pressure at "empty".
- Designed in accordance with International Standard
- Singlet inlet to PRS. Requires manual switch over when a storage is depleted.
- Multiple 1st stage regulation feature to minimize pressure droop over inlet pressure range.
- Two stage regulation with a final stage pilot operated regulator upstream of the meter.
- Hot water gas heating system compensates for "Joule Thompson" gas cooling as temperature before the final regulator stage is controlled within +/- 10oC.
- Manual ESD push button.
- Custody transfer grade gas meter



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# *IMW Green, Emission Reduction Systems attract Carbon Credits & EXIM Financing*





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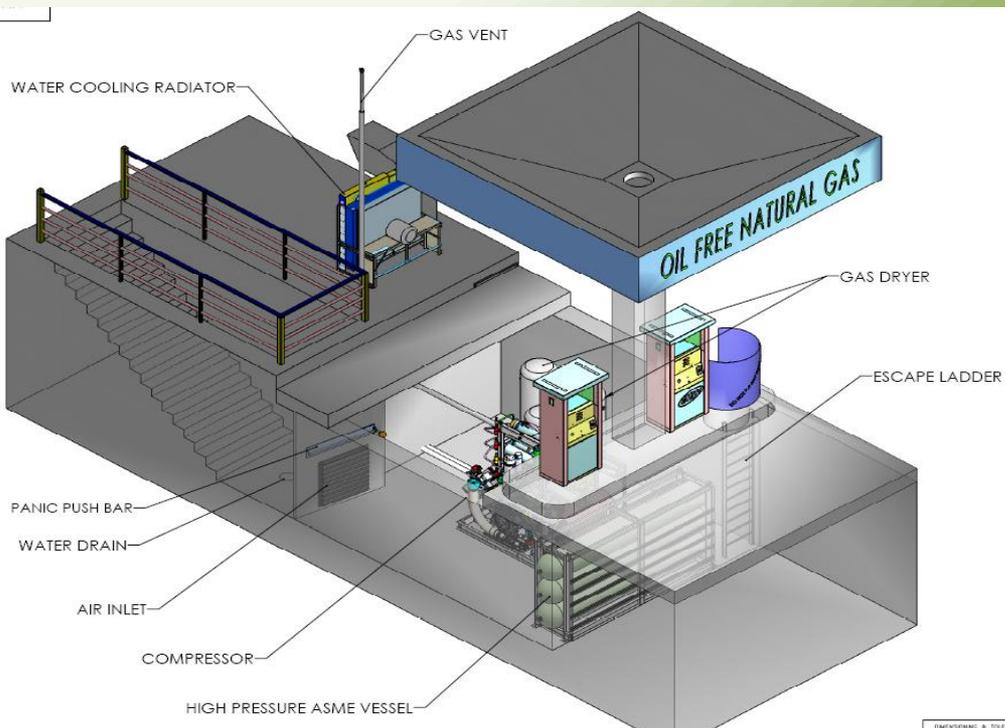
***IMW LNG-LCNG  
Refuelers, Storage,  
LNG Conversions***





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# *IMW Expanding into Coal Gas, Bio-Gas, Land Fill Gases and New Underground Stations*





## *IMW Production Capabilities*

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**Chilliwack, BC, Canada  
5200 m<sup>2</sup> factory**

**Taicang, Jiangsu, China  
6000 m<sup>2</sup> Factory**





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## *Manufacturing Overview*





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# ISO9001: 2000 Quality Certification



THE INTERNATIONAL CERTIFICATION NETWORK

## CERTIFICATE

IQNet and QMI hereby certify that the organization

### IMW Industries Ltd.

45831 Hocking Avenue  
Chilliwack, British Columbia  
V2P 1B5 Canada

for the following field of activities

Design, manufacturing, aftermarket service and parts supply of gas compressor systems, related high pressure products inclusive of, but not exclusive to dispensers, dryers, heat exchangers, filters, solenoid valves and storage vessels. Specializing in natural gas and hydrogen.

has implemented and maintains a

### Quality Management System

which fulfills the requirements of the following standard

## ISO 9001:2000

Issued on: September 12, 2006  
Validity date: September 11, 2009  
Registration Number: CERT-0019981 - 801666



Dr. Fabio Roversi  
President of IQNet



Wendy J. Tifford  
President of QMI



Management Systems Registrar

**IQNet Partners\*:**  
AENOR Spain AFAQ France AIB-Vinçotte International Belgium ANCE Mexico APCER Portugal CISO Italy COC China  
CQM China CCS Czech Republic DQS Germany DS Denmark ELDT Greece FCV Brazil FONDORIMA Venezuela  
HKQAA Hong Kong ICONTEC Colombia IMNC Mexico IRAM Argentina JQA Japan KEMA Netherlands KFG Korea MSZT Hungary  
Nemko Certification Norway NSAI Ireland OQS Austria PQS Poland PSB Certification Singapore QMI Canada RR Russia  
SAI Global Australia SFS Finland SII Israel SIQ Slovenia SQS Switzerland SRAC Romania TEST St. Petersburg Russia  
IQNet is represented in the USA by the following partners: AFAQ, AIB-Vinçotte International, CISO, DQS, KEMA, NSAI, QMI and SAI Global  
\* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under: www.iqnet-certifications.com



## Certificate of Registration

Management Systems Registrar

# IMW Industries Ltd.

43676 Progress Way  
Chilliwack, British Columbia  
V2R 0C3 Canada

has demonstrated that its Quality Management System is in compliance with:

## ISO 9001:2000

The following scope of registration applies:

Design, manufacturing, aftermarket service and parts supply of gas compressor systems, related high pressure products inclusive of, but not exclusive to dispensers, dryers, heat exchangers, filters, solenoid valves and storage vessels. Specializing in natural gas and hydrogen.

Certificate Number:	CERT-0019981
QMI File Number:	801666
SIC Number / NACE Code:	3563 / DK29.1
Original Registration Date:	August 26, 2003
Effective Date:	September 12, 2006
Registration Expiry Date:	September 11, 2009





Accreditation number No. 19028  
Validity of this accreditation from 2007/01/01 to the expiration date 2011/01/15





Wendy J. Tifford  
President of QMI

Certificate Issue Date: January 30, 2008

QMI, 20 Carlton Court, Suite 100, Toronto, Ontario, M0W 7K6, Canada  
This Certificate remains the property of QMI. All copies shall be returned to QMI upon request.



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## *IMW Customer Profile*

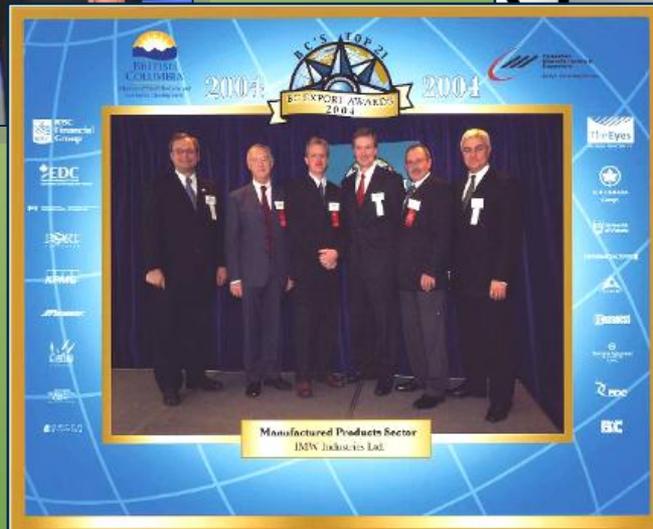
*Petroleum Companies, Transit Bus & Taxi Fleets, LNG – CNG Station Operators... Including:*





# 2004 & 2007 BC Export Award for Manufacturing Excellence

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## *IMW GNG Systems Around The World*

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**Towngas CNG Station, Changzhou, China**

**Towngas CNG Station, Nanjing, China**





## ***IMW GNG Systems Around The World***

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**School Bus CNG Fuelling, Canada**



**Public CNG Station, Xianyang, China**



## *IMW GNG Systems Around The World*

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**CNG Transit Bus Fuelling, Canada**

**CNG Bus Fuelling, Colombia**





## *IMW GNG Systems Around The World*

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**CNG Taxi Station, Peru**



**CNG Taxi Station, Pakistan**



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## *... The Partnership*

- Solid relationship with our clients
- Tailored fully integrated turn-key gas solutions
- Engineering, installation, commissioning, aftermarket
- Speed to market with IMW China production close by
- Strong Service & parts build up
- One stop shopping – OEM volume pricing
- Strong ethics and corporate social responsibility
- Carbon credit and green technology processing



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***Thanks***

***Q & A***

***[www.imw.ca](http://www.imw.ca)***