

# INDIA DEMONSTRATION PROJECT

## CLEAN FAST CNG FUEL

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IMW Industries Ltd.  
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IMW is a Canadian manufacturer of  
Compressed Natural Gas (CNG)  
compressors and fueling systems



IMW's 6500 m<sup>2</sup> factory and offices are located near Vancouver, Canada



Since 1984, IMW has provided reliable & efficient CNG systems, service, and support to customers on 5 continents worldwide



IMW's "clean" (non-lubricated) CNG systems protect the environment and save money for vehicle and station operators



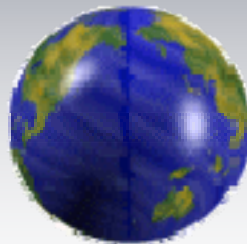
IMW compressor enclosures are weatherproof, sound attenuating, and secure for stand-alone installation



IMW manufactures high-flow CNG dispensers and fill-posts for cars, buses, and mobile storage trailers



As of 2006, IMW has sold over 400 CNG systems to major gas utilities, transit bus companies, fleet operators, and private CNG fueling stations around the world



## INDIA DEMONSTRATION PROJECT

### Goal: To Demonstrate CNG Fueling Best Practices

- Clean & Oil Free CNG Fuel
- Fast Fueling & Station Traffic Flow Optimization
- High System Efficiency
- Low System Life Cycle Cost
- Low Greenhouse Gas Emissions
- Low Environmental Impact
- Application Of Codes and Standards



## MAJOR PROJECT MILESTONES

- **Identify Indian Partner – nearly complete**
  - Configure and site station with partner
- **Equipment Design/Build/Deliver – 4-5 mos.**
- **Site Installation & Commissioning – 1-2 mos**
  - Includes training of operations and maintenance personnel
- **Operations – 3 years**
- **Station Testing Program – in parallel with operations**
  - Test demonstration station for base line data
  - Test many existing fuel stations for comparative data
  - Analyze data and report findings



## CLEAN & OIL FREE FUEL

- **Non-lube compression**
  - No oil injected into cylinders, packings and valves
- **Minimal Oil carry-over**
  - < 5 ppm w/o oil scrubbing (< .05 liters per day)
  - 100 – 300 ppm common for lubricated compressors (3 liters per day – 14 hours compressor operation/day)



## OIL FREE GAS BENEFITS

- **Lowest Maintenance Cost**
  - Oil cost savings - \$2K - \$4K per year + labor savings
  - Savings on oil filtration consumables + labor + capital cost
- **Lower vehicle emissions – no oil being burnt**
- **Enhanced CNG vehicle performance/reliability**
  - Oil accumulation impacts & even rupture fuel regulators
  - Oil can cause oxygen sensor malfunction and engine shutdown.
  - Oil can accumulate in CNG fuel tanks reducing vehicle range.
- **No environmental issues with oil disposal**



# FAST, EFFICIENT FUELING

## ➤ Fuel System Design To Match The Market

- Conventional 3-bank system does not fit the market reality
- An alternative system will be demonstrated.

## ➤ System Benefits To Be Demonstrated

- Reduced traffic congestion
- Quicker fill times
- Greater fuel throughput per fueling site
- Increased profitability
- Increased energy efficiency



thank you

