

BALLAST NEDAM-IPM is a Big Name in the “Gas” Station Business

Ballast Nedam is one of the leading construction and infrastructure companies in the Netherlands and one of the top-five largest Dutch construction and engineering companies operating around the world. Ballast Nedam International Product Management (BN-IPM) is a division specializing in installation technology for energy and mobility and is a turn-key supplier of service and filling stations for traditional fuels, LPG, Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG), Biomethane and Hydrogen.

Background

LNG and LCNG are clean energy sources used for vehicle fueling applications. Natural gas lowers the carbon footprint and significantly reduces overall vehicle emissions. Because LNG has a high concentration of methane (95%-99% on average), it is an ideal fuel to meet Europe's stringent 2020 environmental targets.

In addition to the environmental benefits, LNG's lower cost, compared to conventional fuels, improves the bottom line for operators. For these reasons, LNG is considered to be the logical future fuel alternative and BN-IPM's "gas" station technology provides a solution to meet the emission reduction objectives.

What BN-IPM is doing

BN-IPM's mission is, "working together for a better environment, for now and the future" while focusing on providing "lasting quality". BN-IPM is at the forefront of the construction industry working to create a network of LNG stations for cars and trucks running on LNG. BN-IPM plans to build more than 60 LNG filling stations within the next 5 to 10 years, to serve an estimated 10,000 Heavy-Duty Vehicles. Three LNG stations are expected to

be completed in 2012, with the first one online in Zwolle, Netherlands.

This Zwolle LNG station is a unique filling station - it can fuel all types of LNG vehicles at saturated pressures (from 6 to 24 bar) from one dispenser - the first of its kind in Europe.

BN-IPM's Zwolle LNG station is also a fully automatic, unmanned public station that is equipped with a vehicle recognition system that tells the station control system what saturation setting and fueling system is required for each vehicle. This information is compared to the driver's DKV card (a fuel card used throughout Europe) that is scanned at the pay terminal to ensure safe dispensing as well as proper fueling speed and quality.

All of BN-IPM's new LNG stations will also include:





- Vapor collapse filling and vapor return filling as well as on-the-fly saturation heater
- A dispenser equipped with a counterwork specially adapted for LNG fuel. (Metering method is currently being tested for MID certification.)
- All necessary certifications: CE, PED, ATEX and conformity to all applicable standards. (The permitting process was very extensive and thorough and will be used as the standard for Dutch national regulations on LNG filling stations).
- Automatic overfilling protection by weight measurement
- Filling rates up to 150 l/min depending on vehicle type
- An ACD TC-34 4-stage pump which is the only pump available for attaining high LNG pressures
- A remote control and Supervisory Control and Data Acquisition (SCADA) system where all the data from the station is con-

tinuously uploaded to a SCADA server.

The 60 LNG filling stations that BN-IPM plans to build are expected to serve the public as well as various domestic goods transport companies, large supermarket chains, waste-collection firms and other HDV fleets. At this moment several Dutch logistic companies are planning to have LNG trucks in their fleet very soon.

ACD, as a major global manufacturer of cryogenic pumps, has been involved in the design and realization of early LNG facilities in the USA and around the world over the past several years. ACD has acquired extensive knowledge and valuable experience with the pumps required for LNG and LCNG filling stations. The TC-34 submerged LNG pump was particular successful due to its multi-tasking capabilities, tanker unloading and vehicle filling. Submerged motor pumps

are gastight and therefore the safest and most reliable pump solution possible. TC-34 pumps start immediately which is a requirement for unattended filling stations, and it is the most widely used pump for vehicle re-fuelling in the world.

BN-IPM conducted an extensive study in LNG vehicle re-fueling before any projects were accepted or construction began. A major contributor to BN-IPM's research was ACD through its European subsidiary ACD Cryo. Combining the strengths of both companies creates a low-cost solution and provides the needed infrastructure to safely and reliably use LNG as a vehicle fuel.

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