

# TECHNOLOGY SOLUTIONS PLATFORM

HTEC delivers engineering and design services, and specialty products and solutions, to customers around the world. We are continually expanding our suite of technologies and internal expertise to provide world-leading, cost-effective, and reliable hydrogen technology solutions.

Hydrogen Fueling Stations (Retail, Containerized, Mobile, Heavy Duty, Transit, Specialty) | Electrolyser and Small SMR Systems | Hydrogen Processing and Purification Systems | Advanced Hydrogen Delivery Systems Demonstration and Validation | Risk Analysis | Costing | Safety Training and Programs | Market-development Support



**Production & Processing**



**Distribution & Logistics**



**Fueling Solutions Design**



**Technical Solutions**



## ENGINEERING & DESIGN SERVICES

### Hydrogen Purification Systems:

HTEC developed a custom modular hydrogen purification system to clean a hydrogen waste gas stream to SAE J2719 purity requirements, utilizing HTEC's proprietary solution to address high sulfide contaminants. HTEC has developed similar systems to improve purity of SMR and waste hydrogen outputs.

## SPECIALTY PRODUCTS & SOLUTIONS

### **PowerCube Hydrogen Distribution System:**

HTEC's 450-bar modular hydrogen storage system—approved by Transport Canada and the US Department of Transportation—can be used for transportation or ground storage. Since 2012, HTEC PowerCubes have delivered more than 100,000 kilograms of hydrogen.

**PowerFill Gas Transfer Module:** HTEC's hydrogen PowerFill gas transfer module facilitates the safe transfer of hydrogen from one storage vessel to

another. When paired with the PowerCube product, the PowerFill gas transfer module delivers a cost-effective, rapid-deployment hydrogen fueling solution for mobile or temporary industrialized applications.

**Advanced Hydrogen Mobile Fueler:** HTEC developed and built this fully integrated mobile hydrogen compression, storage, and dispensing unit with Air Liquide, with US Department of Energy funding. It has the capacity to fill 20 hydrogen fuel cell electric vehicles per day.

## PROJECT EXAMPLES

**ZECAP/Port of Los Angeles Project:** HTEC is delivering the fueling solution for a trial of two hybrid fuel cell yard trucks, utilizing our PowerCube modular storage system and PowerFill high-volume gas transfer module. The solution will provide 180-kilogram (kg) storage at 450 bar to support 10 kg of fueling per day per truck, with 0.5-kg-per-minute fueling time. Pilot begins in 2021.

### **Alberta Zero-emissions Truck Electrification Collaboration (AZETEC)**

**Project:** HTEC's fueling solution will support a heavy-duty long-haul transportation project involving fuel cell electric Class 8 trucks driving a 700-kilometre route between Edmonton and Calgary. The solution utilizes a compression and purification system integrated by HTEC: the PowerCube modular storage system and PowerFill high-volume gas transfer module. The station will allow 200 kilograms per day of hydrogen fills, with a three-kilogram-per-minute fueling-time target. Testing will begin in 2021.

**Quebec Containerized Fueling Station:** HTEC designed and built this first-of-a-kind station in Quebec for Toyota and continues to provide operational support. It is a semi-mobile station that provides up to 75 kilograms per day of hydrogen storage.



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**Contact HTEC about your hydrogen projects and needs today.**

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### **Fueling the Drive to Hydrogen**

At HTEC, we are focused on making zero-emission travel and transport possible, building the low-carbon future we want to live in and leave behind for future generations. We are unlocking hydrogen's potential to reduce pollution and climate change by

building hydrogen supply solutions and station networks to support the rollout of fuel cell electric vehicles. Every day, HTEC is delivering safe, reliable, convenient, sustainable, and low-cost hydrogen to customers and consumers, how, when, and where they need it.

