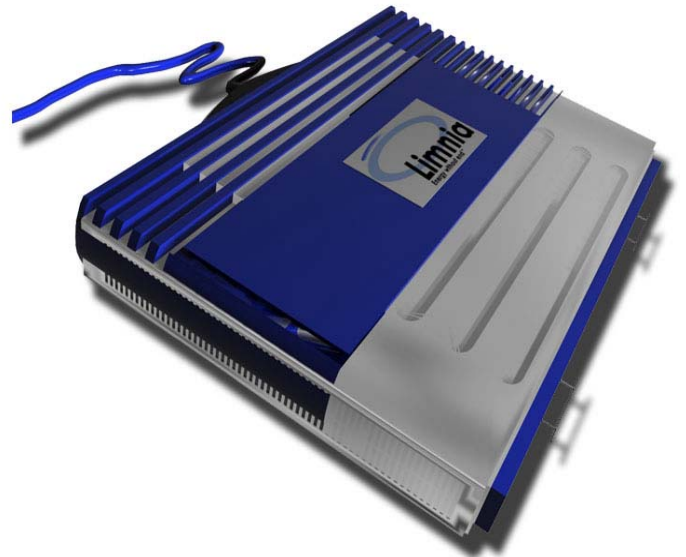


# Limnia, Inc.

*Advanced solid state technologies for the  
generation, storage  
and delivery of clean, renewable energy*

Hydrogen Storage  
Demonstration for  
Solid State Storage  
Fuel Cell (S3FC)  
Data Center Services

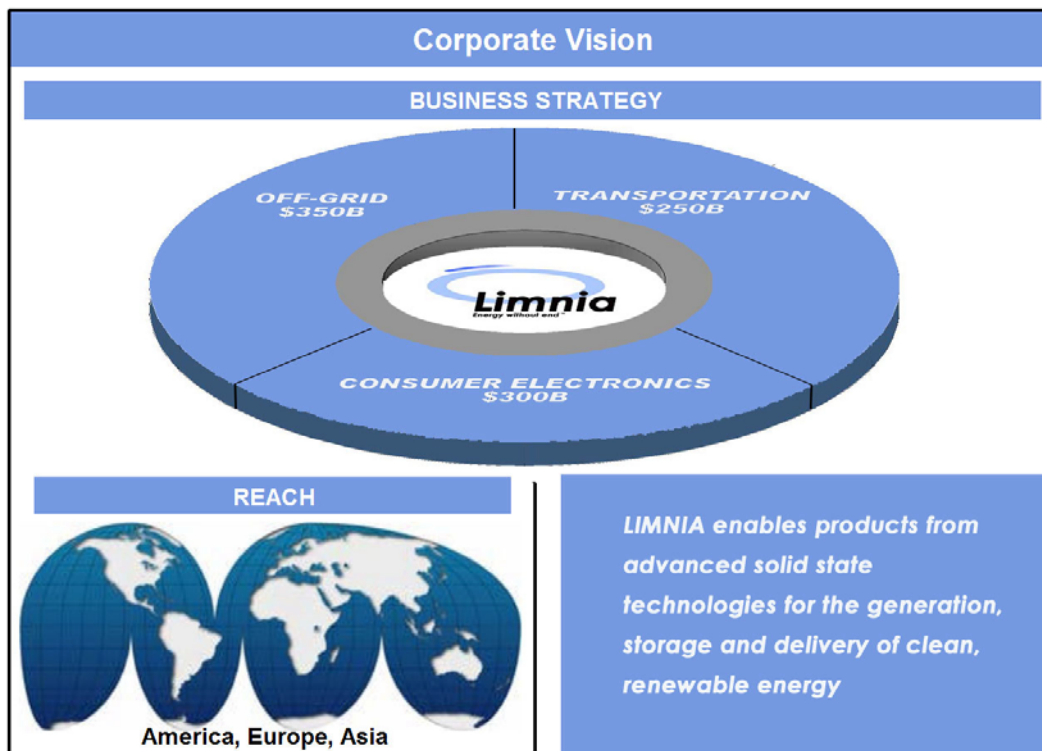


## Proposal Overview

On behalf of Limnia, Inc., we are happy to participate in a joint project to demonstrate Limnia's solutions for advanced solid state hydrogen. The joint project will allow your project to evaluate a solution to ultimately provide peak power to customers by way of load –shifting utilizing safe, clean and energy efficient applications.

## Corporate Vision

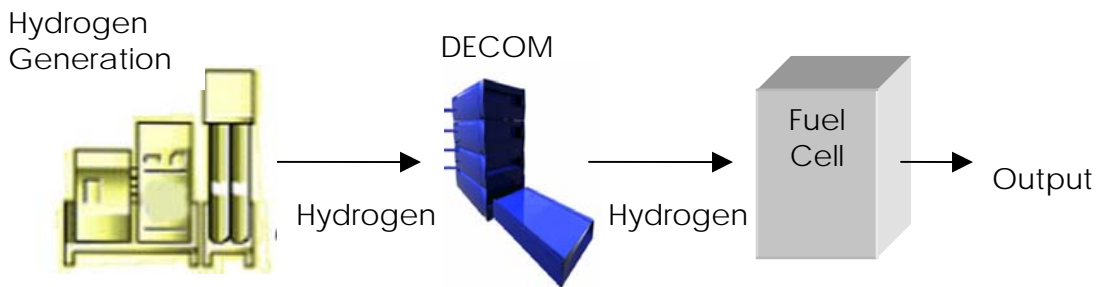
Limnia is the first to introduce a standardized platform into the market that links hydrogen powered applications to the currently existing supply infrastructure using common carrier resources in a scalable, cost effective manner. Overcoming the need to move and store pressurized hydrogen; Limnia's patented Fuel Cassette™ system is portable, using existing infrastructure to deliver (solid state) hydrogen in far greater amounts more safely and efficiently than pressurized cylinders. Limnia's additional IP covers overall hydrogen infrastructure, transport, telemetry, chemistry, business methods and associated apparatus.



The proprietary LIMNIA technology enables companies to increase revenue by reducing transportation, insurance, physical plant and storage costs by employing solid-state chemistry energy solutions that solve the current infrastructure and safety problems associated with transporting and storing hydrogen via traditional compressed gas or liquid. The LIMNIA solution is secure under issued and pending U.S. and international patents.

**Solution**

The system proposed by Limnia will be sized to provide a given KW for a given number of hours resulting in a total output of a target KWH. The system will generate hydrogen during off peak (night-time) hours via hydrolysis and store it in hydride cassettes. During peak (day-time) hours the system will produce electricity using a fuel cell system and the hydride cassettes.



- Hydrogen Generation via hydrolysis
  - Water Consumption 1gph (4.5lph)
- DECOM
  - Approx. cassettes (12in x 12 x 2.75in)
- Fuel Cell
  - PEM system output.

**Budget to Include:**

Materials:  
Hydrolysers, DECOM Master, Cassettes, Fuel Cell Stack

Labor:  
Design, Development, integration, onsite commissioning

**Project Time Frame:**

System requirements, site approval.....3 Months  
 Detailed Design Phase .....5 Months  
 Verification and Build .....2 Months



Installation .....0.5Months  
Commissioning .....1 Months

**Considerations:**

Five Nines availability. —99.99999% availability.

Regarding cost, the fuel cells came out as winners when taking into account the cost of natural gas, excess power sold to the grid, and maintenance. DOE rebates and incentives can supplement this. The upfront cost of purchasing and installing a solids state storage fuel cell system today is much higher than the cost of a diesel generator or gas turbine, but the 20-year payback is comparable due to the S3FC's lower maintenance and better efficiency.

Compared to the top 5 competing systems, we anticipate our billing on repeat systems after unit #2 to be 10% to 20% lower than the top 5 competing systems.



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