

**ENERGY DEVELOPMENT PROJECTS  
AND CONTACT NOTES FROM PAST  
PROGRAMS**

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**These are notes and sections from various energy projects**

# First-Mover Position Proven In Court:

The Energy Project has sued 3 large technology companies and forced them to stop using The Energy Project technology. Those firms were unable to overturn the The Energy Project IP. Believing that additional patents would be awarded, which would make The Energy Project's case stronger, against those three and others, The Energy Project withdrew those cases in order to position for a stronger portfolio. Indeed, the additional patents have been issued.

Those three were ECD Ovonics (a front for Chevron), UTC (Working with GM and Chevron and others as a front program), and Aerovironment. Even though those three agreed to cease work with our technology, media and government contacts advise that they are still using it and have increased the use of it for their drone products. Each, or their ownership companies, may now be ripe again for new litigation. All of the major car companies and hydrogen distribution companies have extensive efforts in mobile hydrogen as do all fuel; cell companies.

When The Energy Project first invented the technology, they asked Andy Grove and Intel, who the best patent attorney's around were, they said: "Ours". We retained that group to do a worldwide patent search and map out the opportunity. They did, and helped us file and draft patents as comprehensive, and extensive. as something that Intel might do. In one case, our prior art references go on for a uniquely long number of pages. One of our issued patents is substantial in it's size and scope.

After oil fails, or the Middle East falls, or petroleum divestment exceeds economic viability; Hydrogen energy is the back-up plan for almost very major nation. It is the only 24/7 sustainable fuel that is not intermittent can power whole grids and distributed grids with no toxic waste and is plentiful inside each nations national borders. With global dynamics such as they are, it is a poor bet for the hundreds of players in energy, hydrogen, fuel cells and mobile tech to run the gambit that they can wait out the decade+ until our patents expire. The smart players will get in now, while the market is accelerating.

We have received Congressional commendation in the Iraq War Bill, by the U.S. Congress. We have received a grant from the U.S. Department of Energy. We have been awarded an extensive number of patents. We have received numerous accolades. We have assisted law enforcement, and Congress in investigations of malfeasance in the Energy Industry. We have built a number of operational systems.

We have discovered a large number of infringers who have found this technology to offer a top solution for mobile energy.

We hired a firm to do a few claims charts against a few infringers but we do not have current charts on Intelligent Energy, as we are not lawyers.

We have a core set of issued patents and a subset of possible related patents owned by the founder and associated with other companies.

## LICENSING OPPORTUNITIES

# Intelligent Energy Inc.

A very promising licensee/litigation potential is:

John McGuire  
CFO, Executive Director  
Intelligent Energy Inc.  
1731 Technology Drive  
Suite 755  
San Jose  
California 95110  
USA

Telephone + 1 408-503-0503  
marketing@intelligent-energy.com  
[marketing@e2-india.com](mailto:marketing@e2-india.com)

We have informed them of the following:

**“ Re: *The Energy Project’s’ Intellectual Property*”**

*Dear Mr. McGuire:*

*We are writing to discuss a patent license with The Energy Project, Inc. (“The Energy Project”). The Energy Project is the owner of U.S. patents and has applied for several additional patents that, taken together, provide a comprehensive solution to the problems associated with storing and transporting hydrogen and multiple end-user applications. Our IP suite is now the preeminent patent portfolio for transportable solid state fuel cell hydrogen energy systems.*

*The The Energy Project Fuel Cassette® system uses any liquid, powder or related solid state or standard storage media to safely and efficiently absorb and store hydrogen in an inert solid-state hot-swap media to power fuel cells. The Energy Project’s patent filings address the use of a variety of storage chemistries and fuel types, including methane mixtures, novel mixed metal catalysts, alloys and other materials from which hydrogen is released as a fuel source.*

*Your mobile product appears to exploit technology developed and patented by The Energy Project and we are seeking to offer you a license In order to support that product.*

*The Energy Project seeks to promote the rapid growth of the fuel cell industry, a market hampered in one important aspect by the lack of efficient means to transport hydrogen to customers. The Energy Project believes that its technology is positioned to become the standardized platform for distributing hydrogen in diverse applications, including portable power systems and transportation without the need for new infrastructure. We would like to offer your company the opportunity to participate with The Energy Project in this pioneering endeavor. Following is a description of The Energy Project’s issued patents; we would be pleased to ask The Energy Project to brief you on additional aspects of its IP and research program under an appropriate NDA.*

*Upon review of our patents at <http://www.uspto.gov> you will see the applicable details relative to your product*

pool.

*For example: The '489 Patent is entitled Hydrogen Storage, Distribution, and Recovery System." One aspect of the claimed invention includes a hydrogen fuel container (e.g., a cassette), a material within the container to store hydrogen, and a probe fully contained within the container to interrogate the material without physical attachment to an external system. The probe may be configured to generate a variety of signal types and may be coupled to one or more microelectronic devices.*

*Another aspect of the invention claimed in the '489 Patent includes a hydrogen dispensing unit comprising: a payment system to enter payment information, a user interface to qualify a hydrogen fuel purchase, and a cassette exchange system to exchange one or more cassettes with a user; the cassette exchange system including a depleted cassette acceptor to accept a depleted hydrogen fuel cassette and a charged cassette dispenser to dispense a charged hydrogen fuel cassette. The hydrogen-dispensing unit optionally includes a device to read information stored in an information storage system of a cassette added to the cassette acceptor. The hydrogen-dispensing unit will be a key aspect of the hydrogen service station.*

*The '768 Patent is entitled "Methods for Hydrogen Storage Using Doped Alanate Compositions." Specifically, one aspect of the invention claimed in the '768 Patent includes a composition comprising  $\text{NaAlH}_4$  and  $\{\text{n}^5\text{-C}_5\text{H}_5\}_2\text{TiH}_2$  in a variety of molar ratios. As you probably know, such compositions have been found to be highly efficient solid-state hydrogen storage materials. (As alluded to above, The Energy Project also is developing a range of new alloys that are expected to be much more efficient in hydrogen storage.) Another aspect of the claimed invention includes the inclusion of the above composition in a cassette as may be installed in a vehicle. The cassette may include a heater and a feature configured to report temperature, pressure and the amount of hydrogen in the cassette. We plan to pursue litigation against infringers and can assist you with enforcing your licenses of our patents.*

*The more recent patents cover the use of a cassette, pod or module with hydrogen storage material for hot swap or cassette use.*

*The Energy Project would like to discuss a potential license to The Energy Project's intellectual property. If you have any plans to put solid-state hydrogen materials into containers, The Energy Project has a licensing solution for you. We would be happy to answer any preliminary questions you may have about The Energy Project, its technology or its licensing program. "*

-----

Intelligent Energy has been non-responsive. We are advised it is time to sue them in order to induce communication.

Their clone product is the following:

URL <http://www.fuelcelltoday.com/news-events/news-archive/2014/january/intelligent-energy-announces-brookstone-as-us-launch-partner-for-upp%E2%84%A2>

<http://www.intelligent-energy.com/our-divisions/consumer-electronics/products/>

<http://www.intelligent-energy.com/our-divisions/consumer-electronics/consumer-electronics/products/upp/>

BE UPP is a front organization for IE:

<http://www.beupp.com/>

IE has purchased the assets of BIC, the pen and lighter company, who had previously contacted The Energy Project.

# Chevron:

We were once contacted by:

Ricardo Angel - Chevron;Technology Ventures,;

Chevron Technology Ventures Ricardo Angel

rangel@chevrontexaco.com

Chevron Owns A Number of Patents in Hydtrogen Storage, ie:

```
NDH LOOKUP FOR 1325165.001  APH HIT # 1          APH  STATUS D  MHDGC2F
NDH 041 0443 1650 7 found on SEQ0

APH  2005-11-17  20050255382/US-A1

Hydrogen storage alloys having improved cycle life and low temperature
operating characteristics

INVENTOR- Young, Kuo Troy, MI
INVENTOR- Ouchi, Taihei Rochester, MI
INVENTOR- Fetcenko, Michael Rochester, MI

APPLICANT- Chevron Technology Ventures LLC  PATENT APPLICATION NUMBER-
184476/11  DATE FILED- 2005-07-19  PUBLICATION NUMBER- 20050255382/US-A1
PUBLICATION DATE- 2005-11-17  MAILING ADDRESS- ENERGY CONVERSION DEVICES,
INC.; 2956 WATERVIEW DRIVE; ROCHESTER HILLS; MI; 48309; US  FIRM- ENERGY
CONVERSION DEVICES, INC.  US PATENT CLASS- 4292182000; X140426000;
X420900000; X420455000  INTERNATIONAL PATENT CLASS- *07; H01M00450;
*C22C01903
```

Texaco and Energy Conversion Devices, Inc. Form Hydrogen Storage

cached

Oct 31, 2000 ... ECD's proprietary metal hydride hydrogen storage technology has the potential to overcome one of the key challenges to making fuel cells and ...

[http://www.chevron.com/chevron/pressre\[...\]siondevicesincformhydrogenstorage.news](http://www.chevron.com/chevron/pressre[...]siondevicesincformhydrogenstorage.news)

Meet Chevvrn's Stan Ovshinsky, the Energy Genius - Renewable...

cached

Meet Stan Ovshinsky, the Energy Genius Stan Ovshinsky has invented revolutionary energy technologies that are making a renewable solar-hydrogen future possible.

[http://www.motherearthnews.com/renewab\[...\]nergy/stan-ovshinsky-zmaz06onzraw.aspx](http://www.motherearthnews.com/renewab[...]nergy/stan-ovshinsky-zmaz06onzraw.aspx)

[New hydrogen storage material could be added directly to fuel tanks](#)

[cached](#)

Jan 31, 2011 ... The company adds that the hydrogen storage materials are actually safer to .... unfortunately the company closed its solid state hydrogen division due to lack of funding. chevron-texaco owns a 20% share of the company.

<http://phys.org/news/2011-01-hydrogen-storage-material-added-fuel.html>

[ChevronTexaco, Energy Conversion Devices Team to ...](#)

[cached](#)

... nickel-metal hydride (NiMH) batteries, as well as hydrogen storage systems and ... Initially, Bekaert ECD Solar Systems, Chevron ES and ECD will focus on ... and hydride storage materials capable of storing hydrogen in the solid state for ...

[http://investor.chevron.com/phoenix.zh\[...\]102&p=irol-newsArticle\\_Print&ID=238960](http://investor.chevron.com/phoenix.zh[...]102&p=irol-newsArticle_Print&ID=238960)

[ChevronTexaco broadens solar and hydrogen activities](#)

[cached](#)

Jul 31, 2002 ... Chevron Energy Solutions is collaborating with Energy Conversion ... nickel- metal hydride (NiMH) batteries, as well as hydrogen storage ...

<http://www.sciencedirect.com/science/article/pii/S1473832502800451>

[Stationary Case Studies - Cobasys](#)

[cached](#)

Chevron Selects Cobasys NiGUARD NiMH Battery Backup Power Supply System ... an integrated energy storage system solution using Nickel Metal Hydride ...

[Green Car Congress: So Cal Edison and Chevron ...](#)

[www.greencarcongress.com/2007/05/so\\_cal\\_edison\\_a.html](http://www.greencarcongress.com/2007/05/so_cal_edison_a.html)

May 28, 2007 - Southern California Edison (SCE) and *Chevron* Technology Ventures LLC last week dedicated a comprehensive *hydrogen* energy station ...

[PDF][Chevron Energy and Hydrogen Renewal Project - California ...](#)

[www.energy.ca.gov/.../chevron/.../2007-0...](http://www.energy.ca.gov/.../chevron/.../2007-0...)

California Energy Commission

May 11, 2007 - *Chevron* Energy and *Hydrogen* Renewal Project i. ESA / 205166. Draft Environmental

Impact Report. May 2007. TABLE OF CONTENTS.

[Air Products' Hydrogen Technology Now Operating in ...](#)

[www.airproducts.com/.../0524-air-products-hy...](http://www.airproducts.com/.../0524-air-products-hy...)

Air Products & Chemicals

May 24, 2007 - Air Products news release - Air Products' Hydrogen Technology Now Operating in *Chevron Hydrogen* Company's Orlando, Florida ...

[Chevron hydrogen station uses Modine technology](#)

[www.sciencedirect.com/science/article/.../S146428590671183...](http://www.sciencedirect.com/science/article/.../S146428590671183...)

ScienceDirect

Nov 13, 2006 - In the US, Modine Manufacturing Company, which specializes in thermal management systems and components, is entering a second phase ...

[Underground hydrogen storage - Wikipedia, the free ...](#)

[https://en.wikipedia.org/wiki/Underground\\_hydrogen\\_storage](https://en.wikipedia.org/wiki/Underground_hydrogen_storage)

Wikipedia

Jump to [Chevron Phillips Clemens Terminal](#) - [edit]. The *Chevron* Phillips Clemens Terminal in Texas has stored *hydrogen* since the 1980s in a ...

[Praxair to Build Hydrogen Facility at the Chevron Richmond ...](#)

[www.praxair.com/.../praxair-to-build-hydrogen-facility-at-the-ch...](http://www.praxair.com/.../praxair-to-build-hydrogen-facility-at-the-ch...)

Praxair

Oct 11, 2006 - Praxair, Inc. (NYSE: PX) has finalized an agreement with *Chevron* Products Company to build a *hydrogen* facility at the *Chevron* Richmond ...

[Weld Integrity and Performance: A Source Book Adapted from ...](#)

<https://books.google.com/books?isbn=1615032045>

Steve Lampman, ASM International - 1997 - Technology & Engineering

*Hydrogen* damage results from the combined actions of *hydrogen* and stress (Ref ... Weld metal *hydrogen* cracking often takes the form of *chevron* cracks (Ref ...

[PDF][Chevron Cracking](#)

[https://app.aws.org/wj/supplement/WJ\\_1982\\_07\\_s222.pdf](https://app.aws.org/wj/supplement/WJ_1982_07_s222.pdf)

by JMF MOTA - [Cited by 14](#) - [Related articles](#)

vvChevron Cracking" — A New Form of. *Hydrogen* Cracking in Steel Weld MetalsChevron cracking is a form of *hydrogen* induced cold cracking that can be ...

[Chevron's hydrogen environment assessment not good ...](#)

[www.thehydrogenjournal.com/displaynews.php?NewsID=192...](http://www.thehydrogenjournal.com/displaynews.php?NewsID=192...)

*Chevron's hydrogen* environment assessment not good enough - California Production, June 15 2009 (The Hydrogen Journal). - An Environment Impact Report ...

[PDF][JOSOP – 500 Hydrogen Sulfide Program and Procedure](#)

[sachevron.com/FileManager/.../JOSOP500H2SProgramandProcedure.pdf](http://sachevron.com/FileManager/.../JOSOP500H2SProgramandProcedure.pdf)

Aug 4, 2011 - State of Kuwait regulatory requirements and *Chevron Hydrogen Sulfide* ... pose a potential for Hydrogen Sulfide (H<sub>2</sub>S) exposure, and prevent ...

[Review of 4 Hydrogen Fueling Stations in Los Angeles Area ...](#)

[beforeitsnews.com/.../review-of-4-hydrogen-fueling-stations-in-los-angel...](http://beforeitsnews.com/.../review-of-4-hydrogen-fueling-stations-in-los-angel...)

Apr 22, 2015 - The Harbor City Mebtahi *Chevron* integrated a *hydrogen* fueling pump into a typical fossil fuel dispensing service station. One disappointing ...

[First Chevron hydrogen energy station debuts](#)

[connection.ebscohost.com/.../first-chevron-hydrogen-energy-station-deb...](http://connection.ebscohost.com/.../first-chevron-hydrogen-energy-station-deb...)

EBSCOhost serves thousands of libraries with premium essays, articles and other content including First *Chevron hydrogen* energy station debuts. Get access to ...

[2007 REBRAND 100 Notable Winner - Chevron Hydrogen ...](#)

[www.rebrand.com/2007-chevron-hydrogen](http://www.rebrand.com/2007-chevron-hydrogen)

*Chevron Hydrogen* 2007 REBRAND 100 Winners > notable. Industry: Energy & Utilities - Below: Brand Extension - Before Image not Applicable, Rebrand ...

[Chevron refinery project approved by Richmond City Council](#)

[www.sfgate.com/.../Chevron-Richmond-refinery...](http://www.sfgate.com/.../Chevron-Richmond-refinery...)

San Francisco Chronicle

Jul 30, 2014 - *Chevron* Corp. hopes to gain city approval to finish *hydrogen* plant at the Richmond refinery in June or July. Photographer: David Paul Morris/ ...

[PDF][9/13/2011 Letter from Chevron with Attachments - Bay Area ...](#)

[www.baaqmd.gov/~media/files/.../chevron-9-13-11-letter.pdf?la=en](http://www.baaqmd.gov/~media/files/.../chevron-9-13-11-letter.pdf?la=en)

Sep 13, 2014 - *Chevron Energy & Hydrogen* Renewal Project. Renewal of Authority to Construct — District Regulation 2-1—407. Application No. 12842, Plant ...

[Hydrogen Fueling Station – Chevron – Harbor City, CA](#)

[www.hydrogencarsnow.com/.../hydrogen-fueling-station-chevron-harbo...](http://www.hydrogencarsnow.com/.../hydrogen-fueling-station-chevron-harbo...)

Apr 21, 2015 - This public *hydrogen* fueling station is at the Mebtahi *Chevron* in Harbor City, California and dispenses gas at both 5000 psi and 10000 psi.

[SCE, Chevron Add Fuel To Region's Hydrogen Fuel Cell ...](#)

[newsroom.edison.com/.../sce-chevron-add-fuel-to-re...](http://newsroom.edison.com/.../sce-chevron-add-fuel-to-re...)

Edison International

May 21, 2007 - May 21, 2007 Utility's objective is to demonstrate safe, practical *hydrogen* fuel technologies in a real-world setting ROSEMEAD, Calif., May 21, ...

[Chevron restarts Richmond Renewal Project | Richmond ...](#)

[richmondconfidential.org/.../chevron-restarts-rich...](http://richmondconfidential.org/.../chevron-restarts-rich...)

Richmond Confidential

May 25, 2011 - The project intended to upgrade the refinery, replace facility's the *hydrogen* plant and build new components to allow the plant to produce purer ...

[Chevron Hydrogen Company LLC | Open Energy Information](#)

[en.openei.org/wiki/Chevron\\_Hydrogen\\_Company\\_LLC](http://en.openei.org/wiki/Chevron_Hydrogen_Company_LLC)

*Chevron Hydrogen* Company LLC: organization profile. - on OpenEI: Open Energy Information.

[Chevron Hydrogen Plant](#)

[www.aqmd.gov/.../chevron...](http://www.aqmd.gov/.../chevron...)

South Coast Air Quality Management District

*Chevron* Products Company Refinery Proposed *Hydrogen* Plant Project. Page Navigation. Final Negative Declaration (PDF, 2.4MB); Appendix A: Emission ...

[Chevron Richmond Refinery - Hydrocarbons Technology](#)

[www.hydrocarbons-technology.com/projects/richmond-refinery/](http://www.hydrocarbons-technology.com/projects/richmond-refinery/)

*Chevron's* energy and *hydrogen* renewal project. Work on the Richmond refinery renewal project began in October 2008. The renewal project was taken up to ...

[Images for chevron hydrogenReport images](#)



[More images for chevron hydrogen](#)

[PDF][U.S. Hydrogen Fueling Stations - Fuel Cells 2000](#)

[www.fuelcells.org/uploads/h2fuelingstations-US4.pdf](http://www.fuelcells.org/uploads/h2fuelingstations-US4.pdf)

Center. *Hydrogen*. Station at. Humboldt. State. University. Schatz Energy. Research Ctr.,. Humboldt State. U., *Chevron*. Technology. Ventures,. Caltrans, North.

[Search Results for "Chevron Hydrogen" - The Business ...](#)

[www.bizjournals.com/search?...Chevron+...](http://www.bizjournals.com/search?...Chevron+...)

South Florida Business Journal

H2Gen Innovations Inc. has delivered its HGM 2000 hydrogen generation system to *Chevron Hydrogen Co.* for use at *Chevron's hydrogen* energy station being ...

[Plunkett's Renewable, Alternative & Hydrogen Energy ...](#)

<https://books.google.com/books?isbn=1593921004>

[Jack W. Plunkett](#) - 2007 - Business & Economics

CHEVRON TECHNOLOGY VENTURES [technologyventures.chevron.com](http://technologyventures.chevron.com) Industry Group Code: 541710 Ranks within this company's industry group: Sales:

[CALIFORNIA: Environmental justice movement battles 'hot ...](#)

[www.eenews.net/stories/1060005368](http://www.eenews.net/stories/1060005368)

Environment & Energy Publishing

Sep 8, 2014 - The *Chevron* Corp. oil refinery takes up 15 percent of this industrial city ... that *Chevron* just received a permit to expand *hydrogen* production in ...

[Court greenlights Chevron's Richmond refinery project - Oil ...](#)

[www.ogj.com](http://www.ogj.com) > Home > More General Interest

Oil & Gas Journal

Apr 22, 2015 - *Chevron's* attempts to modernize the Richmond refinery date back to nearly a decade, when in 2005, the company proposed a *hydrogen* and ...

[Energy Sources | Chevron](#)

[www.chevron.com/deliveringenergy/](http://www.chevron.com/deliveringenergy/)

Chevron Corporation

The world needs all the energy we can develop, in every potential form.

[First Chevron Hydrogen Energy Station Unveiled](#)

[investor.chevron.com/phoenix.zhtml?c...p...](http://investor.chevron.com/phoenix.zhtml?c...p...)

Chevron Corporation

The *hydrogen* energy station located in Chino, California is part of a five-year DOE cost-sharing program designed to demonstrate safe, practical *hydrogen* ...

[Chevron Refinery Modernization Project — Modernization ...](#)

[chevronmodernization.com/](http://chevronmodernization.com/)

and in 2008 the City approved, the *Hydrogen* and Energy Renewal Project (2008 Project) at the *Chevron* Richmond Refinery. The City of Richmond also ...

[First Chevron Hydrogen Energy Station Unveiled -- re ...](#)

[www.prnewswire.com/.../first-chevron-hydrogen-energy-station-unveile...](http://www.prnewswire.com/.../first-chevron-hydrogen-energy-station-unveile...)

re> CHINO, Calif., Feb. 18 /PRNewswire-FirstCall/ -- First *Chevron Hydrogen* Energy Station Unveiled. ChevronTexaco, Hyundai Motor Co., and UTC Fuel...

[1st Chevron Hydrogen Fueling Site Opens - latimes](#)

[articles.latimes.com/2005/feb/21/business/fi-hydrogen21](http://articles.latimes.com/2005/feb/21/business/fi-hydrogen21)

Feb 21, 2005 - ChevronTexaco Corp. opened a *hydrogen* fueling station Friday, the first of six pilot stations in a federal program to promote study of the fuel's ...

[PDF][CHEVRON ENERGY AND HYDROGEN RENEWAL PROJECT](#)

[www.ci.richmond.ca.us/DocumentView.aspx?DID=2729](http://www.ci.richmond.ca.us/DocumentView.aspx?DID=2729)

Richmond

May 11, 2007 - *Chevron* Energy and *Hydrogen* Renewal Project i. ESA / 205166. Draft Environmental Impact Report. May 2007. TABLE OF CONTENTS.

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[energy.gov/.../hydrogen-piping-exp...](http://energy.gov/.../hydrogen-piping-exp...)

United States Department of Energy

*Hydrogen* Piping Experience in *Chevron* Refining. Overall Perspectives: Few problems with *hydrogen* piping operating at ambient to at least 800F and ...

[PDF][Hydrogen Piping Experience in Chevron Refining - Figure 2 ...](#)

<https://www1.eere.en...>

Office of Energy Efficiency and Renewable Energy

*Hydrogen* Piping. Experience in *Chevron*. Refining. Ned Niccolls. Materials Engineer. *Chevron* Energy Technology Company. *Hydrogen* Pipeline Working ...

[Richmond Approves Contentious Chevron Project | KQED ...](#)

[ww2.kqed.org/science/.../richmond-approves-contentious-chevron-proje...](http://ww2.kqed.org/science/.../richmond-approves-contentious-chevron-proje...)

Jul 30, 2014 - *Chevron's* \$1 billion upgrade at its Richmond refinery will allow it to. ... The partially-built *hydrogen* plant, on hold since a 2009 court ruling.

[Chevron Tries Again With Richmond Refinery Revamp ...](#)

[ww2.kqed.org/.../chevron-tries-again-with-richmond-refinery-revamp/](http://ww2.kqed.org/.../chevron-tries-again-with-richmond-refinery-revamp/)

Apr 14, 2014 - We parked near what looked like a brown barn on stilts: *Chevron's* half-built *hydrogen* plant. That's how much the company was able to ...

# Market Research

<http://www.freedoniagroup.com/World-Fuel-Cells.html>

Global demand for commercial fuel cells will almost triple to **\$4 billion in 2017**, and then triple again by 2022 to \$12 billion. Motor vehicle, portable electronics and industrial stationary/motive power applications will grow the fastest. Japan and the US will remain by far the largest markets, while China and South Korea will grow the fastest.

This study analyzes the **current \$1.5 billion world fuel cell industry**. It presents historical demand data for 2002, 2007 and 2012, with forecasts for 2017 and 2022 by product (e.g., systems, fuels, electronic devices), chemistry (e.g., proton exchange membrane, solid oxide, molten carbonate, phosphoric acid, direct methanol, alkaline), application (e.g., electric power generation, industrial and stationary motive power, motor vehicles, other transportation equipment, portable electronics), world region and for 16 countries.

The study also considers market environment factors, details industry structure, evaluates company market share and profiles 41 industry players, including Bloom Energy, Panasonic and JX Holdings.

Advantages of The Energy Project over pressure tanks and batteries:

- Safer
- Runs 3 to 20 times longer
- non explosive
- Can be fueled from fuels inside national borders
- Can use over 3000 different chemistry combinations to store energy
- Instant recharge via hot swap
- Can be recharged at home, office or in the field

TOP PLAYERS MAKING MONEY IN MOBILE FUEL CELL POWER:

Some of the key players dominating this market are:

Altair Nanomaterials,  
Angstrom Power,  
Asahi Glass,  
Ballard,  
BASF,  
Ceramic Fuel Cells,  
Fuel Cell Components and Integrators,  
Gore,  
Horizon,  
GrafTech International,  
Heliocentris Fuel Cells AG,  
ICM Plastics,  
Johnson Matthey,  
Manhattan Scientifics,  
Masterflex AG,  
Medis Technologies,  
Mechanical Technology Incorporated,  
UTC,  
Toyota,  
REI,  
Intelligent Energy,  
Toshiba  
Smart Fuel Cells (SFC)  
PolyFuel  
Altair Nanomaterials  
Angstrom Power  
Asahi Glass  
Ballard

BASF / E-TEK

BASF Direct Methanol Fuel Cells

Ceramic Fuel Cells

Gore

GrafTech International

Heliocentris Fuel Cells AG

Horizon

ICM Plastics

JMC / Tekion

Johnson Matthey

Horizon

BASF

Masterflex

Manhattan Scientifics

Masterflex AG

Mechanical Technology Incorporated (MTI)

Medis Technologies

Microcell

Millennium Cell Liquidation Plan

System Design Program

Sanyo / Hoku Scientific

SGL Technologies

Electric Automotive Vehicle Smart Fuel Cell Battery Charger

Solvay

Tatung System Technologies

UltraCell

BASF Venture Capital / UltraCell

There are over 100 other players

## **Fuel Cell Market Forecast to 2015 - rncos**

[www.rncos.com/Market-Analysis.../Fuel-Cell-Market-Forecast-to-2015-I...](http://www.rncos.com/Market-Analysis.../Fuel-Cell-Market-Forecast-to-2015-I...)

According to our new *research* report, **Fuel Cell Market Forecast to 2015**, the ... the detail *analysis* and forecast of *portable*, large & small stationary *fuel cells* ...

## **World Fuel Cells - Industry Market Research, Market Share ...**

[www.freedoniagroup.com/World-Fuel-Cells.html](http://www.freedoniagroup.com/World-Fuel-Cells.html)

Global demand for commercial *fuel cells* will almost triple to \$4 billion in 2017, and then triple again by 2022 to \$12 billion. Motor vehicle, *portable* electronics ...

## **Fuel Cell Market Forecast to 2015 - PR Newswire**

[www.prnewswire.com/.../fuel-cell-market-forecast-to-2015-163382666...](http://www.prnewswire.com/.../fuel-cell-market-forecast-to-2015-163382666...)

Jul 23, 2012 - Our report covers the extensive *research* on *fuel cell* and *analysis* of various ... In addition, *fuel cell market* forecast for *portable*, stationary and ...

## **Fuel Cells Annual Report 2014 Navigant Research**

<https://www.navigantresearch.com/research/fuel-cells-annual-report-2014>

Stationary, *Portable*, and Transportation *Fuel Cell* Sectors: ... During 2013 and 2014, the *fuel cell market* continued to see the greatest demand from stationary ...

## **[PDF]Fuel Cell Technologies Program Multi-Year Research ...**

[www1.eere.energy.g...](http://www1.eere.energy.g...)

Office of Energy Efficiency and Renewable Energy

2 2010 *Fuel Cell Technologies Market Report*, June 2011, ... By 2015, develop a *fuel cell* system for *portable* power (<250 W) with an energy density of 900.

## **Research and Markets: Fuel Cell Technology Market Trends ...**

[www.reuters.com/.../2015/.../research-and-markets-idUSnBw025...](http://www.reuters.com/.../2015/.../research-and-markets-idUSnBw025...)

Reuters

Press Release | Mon Feb 2, 2015 5:14am EST ... SOFC, DMFC, PAFC, OTHERS) & Application (Stationary, *Portable*, Transportation) *Analysis* ... The global *fuel cell market* is estimated to reach \$5.20 billion by 2019, with a projected CAGR of

## **Fuel Cells Market and Battery Industry Forecasts**

[www.bccresearch.com](http://www.bccresearch.com) > Market Research

*Market research* reports on *fuel cells* and the battery *industry*. Alkaline, molten ... *Portable* Battery Powered Products: Global Markets. This report, which is ...

## [Portable Power Fuel Cell Market - Global Industry Analysis ...](#)

[www.transparencymarketresearch.com](http://www.transparencymarketresearch.com) › Energy & Mining

*Portable Power Fuel Cell Market - Global Industry Analysis, Size, Share, Growth, ...* Hence, such *portable power fuel cells* are best alternative for batteries. ... *Global Industry Analysis, Size, Share, Growth Trends, and Forecast 2015 - 2023.*

## [Worldwide Nanotechnology Portable Fuel Cell Market ...](#)

[wintergreenresearch.com/.../Portable%20Light%20Duty%20Fuel%20Cell...](http://wintergreenresearch.com/.../Portable%20Light%20Duty%20Fuel%20Cell...)

Nanotechnology for *Portable Fuel Cells* Provide Increased Energy Density ... *Portable Fuel Cell Market Shares Strategies, and Forecasts, 2009-2015* ... According to Susan Eustis, lead author of the *study*, “Economies of scale do not entirely ...

Over the past three years the fuel cell and hydrogen industries have made great progress on standards and regulations for the transportation of small fuel cells and their fuels. Standards and regulations for fuel cells and their fuels, including hydrogen, have progressed by defining the requirements for shipping, transporting and carrying fuel cells and their fuels both for commercial distribution and for personal use. Prior to 2005, some fuel cell fuels could not be properly shipped or transported in normal commerce at all. The International Civil Aviation Organization (ICAO) has approved changes to their *Technical Instructions For The Safe Transport of Dangerous Goods by Air* that incorporate the previous changes to the 15th Revised Edition of the UN Model Regulations and also allow all manner of fuel cells and their fuels to be transported by air, and carried on board passenger aircraft for passenger use. Robert Wichert of the US Fuel Cell Council serves as the industry representative to ICAO and to the United Nations and can be contacted for more information on these topics.

The following fuel cell cartridge types are currently covered by the 15th Revised Edition of the *United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations*

- UN 3473 FUEL CELL CARTRIDGE OR FUEL CELL CARTRIDGE CONTAINED IN EQUIPMENT OR FUEL CELL CARTRIDGE PACKED WITH EQUIPMENT, *containing Flammable Liquids* (e.g. methanol)
- UN 3476 FUEL CELL CARTRIDGE OR FUEL CELL CARTRIDGE CONTAINED IN EQUIPMENT OR FUEL CELL CARTRIDGE PACKED WITH EQUIPMENT, containing water-reactive substances (e.g. borohydrides)
- UN 3477 FUEL CELL CARTRIDGE OR FUEL CELL CARTRIDGE CONTAINED IN EQUIPMENT OR FUEL CELL CARTRIDGE PACKED WITH EQUIPMENT, containing corrosive substances (e.g. borohydrides or formic acid)
- UN 3478 FUEL CELL CARTRIDGE OR FUEL CELL CARTRIDGE CONTAINED IN EQUIPMENT OR FUEL CELL CARTRIDGE PACKED WITH EQUIPMENT, containing hydrogen in metal hydride
- UN 3479 3478 FUEL CELL CARTRIDGE OR FUEL CELL CARTRIDGE CONTAINED IN EQUIPMENT OR FUEL CELL CARTRIDGE PACKED WITH EQUIPMENT, containing liquefied flammable gas (e.g. butane)

- *UN 3468 HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM*

The US Fuel Cell Council, on behalf of the fuel cell industry, again petitioned ICAO to allow carry-on and use of all fuels by airline passengers in 2007. This was approved in November of 2007, taking effect in January of 2009. In the United States, the US Department of Transportation published a Notice of Proposed Rulemaking for the purpose of harmonizing the US regulations with the *ICAO Technical Instructions* in July of 2008. This Notice of Proposed Rulemaking can be found here: <http://edocket.access.gpo.gov/2008/pdf/E8-16579.pdf>

### **Hydrogen stored in metal hydride storage systems**

Currently the regulations for the transport of hydrogen stored in metal hydride storage systems are not well harmonized. The *United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations* requires special approval by the country of origin for any shipments, but the *ICAO Technical Instructions For The Safe Transport of Dangerous Goods by Air allow shipments provided that the hydrogen in metal hydride storage systems comply with IEC PAS 62282-6-1 and the International Standards Organization (ISO) document ISO TS 16111, Transportable gas storage devices -- Hydrogen absorbed in reversible metal hydride. These two documents are well harmonized and compatible, so compliance with the air transport regulations is not onerous provided that the proper guidance is followed. It should be pointed out that the shells of the metal hydride storage systems are expected to be cylinders in compliance with ISO cylinder standards and if they are not, specific approval by the country of origin is required.*

In order to better harmonize the transport regulations for hydrogen stored in metal hydride storage systems, the US Fuel Cell Council, on behalf of the fuel cell industry, has proposed changes to the *United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations* to allow hydrogen in metal hydride storage systems to be shipped without special approvals by the country of origin provided that they comply with ISO 16111. This proposal will be considered by the *United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations* in December and can be found here:

- <http://www.unece.org/trans/doc/2008/ac10c3/ST-SG-AC10-C3-2008-74e.pdf>
- <http://www.unece.org/trans/doc/2008/ac10c3/ST-SG-AC10-C3-2008-73e.pdf>

If these proposals are accepted, further revisions by ICAO and the other model bodies should follow.

### **Definitions**

In response to recommendations by the US Department of Transportation Federal Aviation Administration, the US Fuel Cell Council, on behalf of the fuel cell industry, has proposed new definitions for fuel cells and fuel cell cartridges to be included in the *ICAO Technical Instructions for*

*The Safe Transport of Dangerous Goods by Air. These definitions are drawn from both the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations and the IEC Technical Committee on Fuel Cells nomenclature document IEC TS 62282-1, Fuel cell technologies - Part 1: Terminology. This proposal can be found here:*

<http://www.icao.int/anb/FLS/DangerousGoods/DGP/WorkingGroups/WG08/WPs/DGPWG.08.WP.003.1.Rev.en.pdf>

The two proposed definitions are as follows:

*FUEL CELL. A fuel cell is an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products.*

*FUEL CELL CARTRIDGE. An article that stores fuel for discharge into the fuel cell through a valve(s) that control the discharge of fuel into the fuel cell.*

## **Timeline**

A simplified timeline for small fuel cell shipment regulations is given below:

- December 2004 – UN Approves *UN 3473 - FUEL CELL CARTRIDGES Containing Flammable Liquids and UN 3468 HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM* in the 14th Edition of the *UN Recommendations on the Transport of Dangerous Goods* – Takes effect January 1, 2006.
- November 2005 – ICAO approves transport of UN 3473 and UN 3468 by air and passenger aircraft carry-on and use of formic acid, butane and methanol fuel cells – Takes effect January 1, 2007.
- February 2006 – IEC PAS 62282-6-1, *Fuel cell technologies - Part 6-1: Micro fuel cell power systems - Safety* is published.
- October 2006 -- ISO TS 16111, *Transportable gas storage devices -- Hydrogen absorbed in reversible metal hydride* is published.
- December 2006 – UN Approves UN 3476, UN 3477, UN 3478, UN 3479 and amends UN 3473 – Takes effect January 1, 2008.
- September 2007 – US Department of Transportation PHMSA issues notice of proposed rulemaking to allow fuel cells and fuel cell fuels to be carried on board and used by airline passengers. Other countries have already done this, worldwide.
- November 2007 – ICAO approves passenger carry-on and air shipment of all current fuel cell fuels – Takes effect January 1, 2009.
- July 2008 – US Department of Transportation issues Notice of Proposed Rulemaking to allow all fuel cell types to be shipped and carried on board passenger airliners.
- October 2008 - ISO 16111 is approved as an International Standard
- PROPOSED – November 2008 – ICAO Dangerous Goods Panel approves definitions of FUEL

CELL and FUEL CELL CARTRIDGE to support further regulatory work.

- PROPOSED – December 2008 – United Nations Sub-Committee of Experts on the Transport of Dangerous Goods approves hydrogen in metal hydride storage systems in compliance with ISO 16111.
  - January 2009 -- ICAO passenger carry-on and air shipment of all fuel cell fuels takes effect worldwide.
- 

**Our research will continue as we search Free Edgar and SEC S-1 filings to find current revenues...**

## **Classification of Infringer's:**

Infringers are those who market a product which is a portable cassette, pod, box or other container which can be connected to a fuel cell, or hydrogen-using device, in order to fuel that device.

In a number of cases, The Energy Project was contacted by the infringer, examined, copied and then a duplicate product, under another name, was sold by the party who first contacted The Energy Project, prior to that third party ever working in this technology.

Once we establish a contract, or NDA, with the litigating law firm, additional material will be provided, including draft claims charts.

A large number of the companies are selling products in the U.S. to military, police, commercial internal IT groups and drone makers because this technology provides superior performance over any battery. Defense-related sales are not usually disclosed on their websites or in web search-able material

Wikileaks has revealed documents which state that fuel cells are the emergency back-up system for many countries, including the U.S., when fossil fuels fail. Battery manufacturers hate fuel cells because they beat batteries, on every metric, run longer, go further, do not explode on their own like lithium ion batteries, do not cause cancer and brain damage like lithium ion and are not involved in corruption scandals like lithium ion.

## **Example Claims Chart:**

Current targets with product announcements of qualifying metrics, as exemplified in the following claim chart for one of the patents:

CLAIM 1 OF U.S. Pat. No. 7,169,489	EVIDENCE FROM JADOO DOCUMENTATION
1. A system comprising:	<p>This appears to be evidenced by the image and description of the N-Gen™ Fuel Cell Power Unit (1)</p> <p>This appears to be evidenced by the image and description of the XRT™ Extended Runtime Adapter (2)</p> <p>This appears to be evidenced by the image and description of the N-Stor™ Fuel Canisters (3)</p>
a hydrogen fuel container;	<p>This appears to be evidenced by the image and description of the N-Stor™ Fuel Canisters (3)</p> <p>This appears to be evidenced by the drawing depicted on the cover of the N-Stor™ Users' Guide (4)</p> <p>This appears to be evidenced by the statement "<i>The N-Stor supplies the hydrogen fuel necessary to power Jadoo fuel cell products. The N-Stor contains a metal hydride powder that absorbs hydrogen and releases it upon demand from the fuel canister</i>", which appears in on page 3 of the N-Stor™ Users' Guide (4).</p>
a material within the container to store hydrogen; and	<p>This appears to be evidenced by the statement "<i>The N-Stor contains a metal hydride powder that absorbs hydrogen and releases it upon demand from the fuel canister</i>", which appears in on page 3 of the N-Stor™ Users' Guide (4).</p> <p>This appears to be evidenced by the statement "<i>Instead of storing hydrogen in gaseous form, the N-Stor™ uses metal hydrides</i>", which appears on page 2 of the article "Thirty Days With Jadoo Power" (5).</p>
a probe to interrogate the material	<p>This appears to be evidenced by the statement "<i>The display panel on the side of the N-Stor displays information about the state-of-fill</i>", which appears on page 3 of the N-Stor™ Users' Guide (4).</p> <p>This appears to be evidenced by the statement "<i>The state-of-fill will automatically update based on fuel consumed by the N-Gen</i>", which appears on page 6 of the N-Stor™ Users' Guide (4).</p> <p>This appears to be evidenced by the statement "<i>Pressing the second button on the user interface scrolls you through additional information including liters per minute of hydrogen being consumed, data from the <b>hydrogen sensors</b> (emphasis added), total hydrogen consumed in liters and how long the unit has been running</i>", which appears on page 4 of the article "Thirty Days With Jadoo Power" (5).</p>
fully contained within the container	<p>A probe that is not fully contained within the canister does not appear to be shown in the image of the N-Stor™ Fuel Canisters (3)</p> <p>A probe that is not fully contained within the canister does not appear to be shown in the drawing depicted on the cover of the N-</p>

	<p>Stor™ Users' Guide (4)</p> <p>That statement “<i>The N-Stor can be filled/used with a failed battery and state-of-fill information will be maintained, but the canister display will not be functional</i>”, appears on page 7 of the N-Stor™ Users' Guide (4). If the state-of-fill information is maintained without the display being functional then this appears to indicate that the display is not part of the probe.</p>
without physical attachment to an external system.	<p>Overall, the N-Stor™ Users' Guide and “Thirty Days With Jadoo Power” appear to indicate that the fuel indicator operates without requiring physical attachment to an external system. For example, page 6 of the N-Stor™ Users Guide states “<i>To activate the display, push and release the raised button</i>”, without indicating that physical attachment to an external system is needed.</p>

- (1) “Fuel Cell Power Unit”, printed from the Jadoo website [https://jadoopower.com/fuel\\_cell.html](https://jadoopower.com/fuel_cell.html), on that the display is not part of the probe. October 4, 2007, one page.
- (2) “XRT Extended Runtime Adapter”, printed from the Jadoo website <https://jadoopower.com/accessories.html>, on October 4, 2007, one page.
- (3) “N-Stor™ Fuel Cannisters”, printed from the Jadoo website [http://jadoopower.com/n\\_stor\\_fuel\\_cannisters.html](http://jadoopower.com/n_stor_fuel_cannisters.html), on October 4, 2007, one page.
- (4) “N-Stor™ Users' Guide”, printed from the Jadoo website <http://jadoopower.com/pdfs/User%20Guides/N-Stor%2011162006%20email.pdf>, on October 4, 2007, pages 1-12.
- (5) “Thirty Days With Jadoo Power”, printed from the Internet at [http://jadoopower.com/pdfs/pdfs/Articles/2006\\_06-12\\_FuelCellWorks.pdf](http://jadoopower.com/pdfs/pdfs/Articles/2006_06-12_FuelCellWorks.pdf), on October 4, 2007, pages 1-9.

Later issued patents eliminate the need for a probe, so an infringer must meet the following:

1. A system comprising:
a hydrogen fuel container;
a material within the container to store hydrogen; and
fully contained within the container
without physical attachment to an external system.

New products are being announced all the time. Those who meet the criteria, that sell products which meet the requirements are. Many of them sell in the U.S. via distributors or other names:

# Annual revenues of infringers and possible licensees known to be using the technology:

## Mobile fuel cell/hydrogen products company annual revenues:

(Not exhaustive)

[HORIZON FUEL CELL TECHNOLOGIES PTE. LTD.](#) Singapore, Singapore \$5.04M

[INTELLIGENT ENERGY LTD](#) Loughborough, Leicestershire, England \$22.1M

[KYOCERA CORPORATION](#) Kyoto, Kyoto, Japan \$12758.79M

[Toshiba Electronics Europe GmbH](#) Krottendorf-Gaisfeld, Steiermark, Austria \$1122.98M

[Ultracell Corporation](#) Livermore, CA, United States \$3.4M

[AQUAFAIRY CORPORATION](#) Kyoto, Kyoto, Japan  
\$1M+

[BOC LTD](#) Guildford, Surrey, England \$1262.91M

[PRAXAIR, INC.](#) Danbury, CT, United States \$12273.0M

[Chevron Technology Ventures LLC](#) Houston, TX, United States \$9.23M

[Signa Engineering Corp.](#) Houston, TX, United States \$11.05M

[American Air Liquide Inc.](#) Fremont, CA, United States \$3585.06M

[Sony Electronics Inc.](#) San Diego, CA, United States \$2934.53M

[TOYOTA MOTOR SALES, U.S.A., INC.](#) Torrance, CA, United States \$4312.5M

[United Technologies Corporation](#) Hartford, CT, United States \$65100.0M

[Aerovironment, Inc.](#) Simi Valley, CA, United States \$259.4M

[BALL AEROSPACE & TECHNOLOGIES CORP.](#) Boulder, CO, United States \$605.28M

[PANASONIC CORPORATION](#) Kadoma, Osaka, Japan \$64482.28M

[Panasonic Corporation of North America](#) Newark, NJ, United States

[Signa Chemistry, Inc.](#) New York, NY, United States \$8.93M

[RECREATIONAL EQUIPMENT, INC.](#) Kent, WA, United States \$2217.13M

Sun catalytix ????

[Heliocentris Energy Solutions AG](#) Berlin, Berlin, Germany \$23.0M

[Wanxiang America Corporation](#) Elgin, IL, United States \$955.76M

[MTI ELECTRONICS, INC.](#) Menomonee Falls, WI, United States \$20.6M

Neah power systems ???

[OCEANEERING INTERNATIONAL, INC.](#) Houston, TX, United States \$3659.62M

[CHEVRON CORPORATION](#) San Ramon, CA, United States \$211970.0M

[SHELL OIL COMPANY](#) Houston, TX, United States \$91946.0M

[Protonex Technology Corporation](#) Southborough, MA, United States \$13.8M

<a href="#">HORIZON FUEL CELL TECHNOLOGIES PTE. LTD.</a>	Singapore, Singapore	\$5.04M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">HORIZON FUEL CELL JAPAN, K.K.</a>	Fukuroi, Shizuoka, Japan	\$0.24M	<a href="#">See Details</a>	
<a href="#">Horizon Fuel Cell Technologies (Shanghai) Co., Ltd.</a>	Shanghai, Shanghai, China		<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">Horizon Fuel Cell Technologies (u.s.) Ltd.</a>	San Francisco, CA, United States	\$0.77M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">Horizon Fuel Cell Technology (Hong Kong) Limited</a>	Central District, Hong Kong, Hong Kong	\$4.0M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">Horizon Fuel Cell Europe s.r.o.</a>	Praha, Czech Republic	\$0.76M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">HORIZON FUEL CELL INDIA PRIVATE LIMITED</a>	Nagpur, Maharashtra, India			

<a href="#">Linde AG</a>	München, Bayern, Germany	\$20720.63M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">LINDE MATERIAL HANDLING (UK) LTD</a>	Basingstoke, Hampshire, England	\$271.1M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">Stichting "Dorpshuis Linde"</a>	Linde Dr, Drenthe, The Netherlands		<a href="#">See Details</a>	
<a href="#">LINDE NORTH AMERICA INC.</a>	New Providence, NJ, United States	\$1688.68M		

[BRUNTON TECHNOLOGIES INC](#) Tustin, CA, United States \$1.29M

[SFC Energy AG](#) Brunnthal, Bayern, Germany \$65.19M

[Ini Power Systems, Inc.](#) Morrisville, NC, United States \$1.5M [See Details](#) [Buy Report](#)  
[Ini Power Systems Inc](#) Apex, NC, United States \$0.05M

<a href="#">MCPHY ENERGY SAS</a>	La Motte Fanjas, Drome, France	\$0.4M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">MCPHY ENERGY ITALIA SRL</a>	San Miniato, Pisa, Italy	\$3.55M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">McPhy Energy Deutschland GmbH</a>	Wildau, Brandenburg, Germany	\$0.54M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#">MCPHY ENERGY SAS</a>	Grenoble, Isere, France			

[Samsung Electronics Co., Ltd.](#)

Suwon-Shi, South Korea

\$187606.21M

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Details](#)

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<a href="#"><u>Samsung Display Co., Ltd.</u></a>	Yongin-Gun, South Korea	\$53147.32M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Life Insurance Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$27113.54M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Fire &amp; Marine Insurance Company</u></a>	Seoul, Seoul, South Korea	\$18903.28M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung C&amp;T Corporation</u></a>	Seoul, Seoul, South Korea	\$25879.73M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Heavy Industries Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$11717.37M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Engineering America Incorporated</u></a>	Ridgefield Park, NJ, United States	\$9374.15M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Group</u></a>	Seoul, Seoul, South Korea		<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>SAMSUNG INDIA ELECTRONICS PRIVATE LIMITED</u></a>	Gurgaon, Haryana, India	\$6733.35M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Engineering Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$8107.64M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Electro-Mechanics Co., Ltd.</u></a>	Suwon-Shi, South Korea	\$6499.38M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung SDI Co., Ltd.</u></a>	Yongin-Gun, South Korea	\$4980.45M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung SDS Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$4162.13M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>SAMSUNG ELECTRONICS (UK) LIMITED</u></a>	Chertsey, Surrey, England	\$4046.6M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Card Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$3204.18M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>SAMSUNG SEMICONDUCTOR, INC.</u></a>	San Jose, CA, United States	\$750.24M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung C&amp;T America, Inc.</u></a>	Ridgefield Park, NJ, United States	\$641.69M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Fine Chemicals Co., Ltd.</u></a>	Ulsan, South Korea	\$1101.31M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Securities Co., Ltd.</u></a>	Seoul, Seoul, South Korea	\$945.55M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>SAMSUNG SDS EUROPE LIMITED</u></a>	Weybridge, Surrey, England	\$204.28M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
<a href="#"><u>Samsung Climate Control Co., Ltd.</u></a>	Changwon, Kyongsangnam-Do, South Korea	\$91.57M	<a href="#">See Details</a>	<a href="#">Buy Report</a>
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<http://www.fuelcelltoday.com/news-events/news-archive/2013/august/brunton-portable-fuel-cell-wins-awards#sthash.s1HtojIS.dpuf>

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Internal U.S. and British intelligence service analysis reports are now reporting that analysts now believe that the Middle East is “unrecoverable” by Western interests. Options for new energy sources and mining potentials are now being moved to active discussion. In a key indicator NBC news filed the following report:

[Business](#)

**NBC NEWS**

## **Toyota to Phase Out Gas-Powered Vehicles, Doubling Down on Hydrogen**

by Paul A. Eisenstein

Toyota Motor Co. wants to virtually eliminate gasoline-powered vehicles from its fleet by 2050, and is betting that hydrogen cars, rather than electric vehicles, will be the long-term answer.

The Japanese maker recently introduced the Mirai, its first retail fuel-cell vehicle, and though sales have so far been measured in the hundreds, the target is to reach 30,000 annually by 2020, and even higher in the years beyond.

A number of other automakers are experimenting with hydrogen power; Hyundai already offers a fuel-cell version of its Tucson SUV, and Honda will launch a retail model next year.

While most competitors are focusing on hybrids, with a heavy emphasis on battery-based models, Toyota remains skeptical about the long-term role of electric vehicle technology.



Japanese auto giant Toyota Motor's hydrogen fuel-cell vehicle Mirai is displayed in Tokyo in November 2014. YOSHIKAZU TSUNO / AFP - Getty Images

"When we first announced the Mirai, we said we were at the start of the age of hydrogen," Kiyotaka Ise, a senior managing officer for Toyota Motor Corp., told reporters in Tokyo. "The figure we've announced today is ambitious, but it needs to be to keep the ball rolling."

Fuel-cell vehicles are seen by many as the ultimate green car technology. They use a device, called a stack, to combine hydrogen and oxygen from the air. The process creates a flow of current that can run the same electric motors used for a battery car. The only exhaust gas is water vapor.

The Toyota Mirai has a range of up to 300 miles and can be refueled in about five minutes, comparable to a gasoline or diesel-powered vehicle - which is one reason proponents sometimes refer to the technology as a "refillable battery."

### **Wolf of Wolfsburg? Leonardo DiCaprio Plans Movie on VW Scandal**

But there are plenty of skeptics, notably including Elon Musk, CEO of battery-carmaker Tesla Motors, who calls hydrogen technology "fool cells." Critics point to the lack of a hydrogen refueling infrastructure -- the challenges of both creating the gas and then distributing it.

There currently are barely a dozen public hydrogen pumps in California, Ground Zero for the launch of the technology, but the goal is to have more than 100 in place by 2020. Germany, meanwhile, is launching an aggressive plan to have more than 400 hydrogen stations open by decade's end. And Japan is pushing for more pumps, partly through a new consortium backed by Toyota, Nissan and Honda.

The limited hydrogen distribution network is one reason Toyota's targets are, at once, both ambitious

and modest. By 2020, officials said in Tokyo they expect to be selling 1.5 million hybrid-electric vehicles a year.

Toyota is just launching an all-new version of the Prius, the world's first hybrid, and expects to boost fuel economy by 10 percent, to around 55 miles per gallon. The Toyota Prius is currently the world's best-selling hybrid though, like other battery-based vehicles, sales have slowed in the wake of declining petroleum prices.

### **Volkswagen Plans to Overhaul Diesel Technology in Scandal's Wake**

The 2016 Toyota Prius features a surprise move by the maker, with the automaker offering buyers a choice of a conventional nickel-metal hybrid battery, or a pack using more advanced lithium-ion chemistry that can deliver more range in electric-only mode.

Toyota has been openly skeptical of battery power other than limited use of nickel-metal technology in hybrids. It is grudgingly planning a new version of the Prius plug-in hybrid, primarily to meet California's demanding zero-emissions vehicle, or ZEV mandate. But the carmaker has made it clear it does not see a long-term future for plug-ins or pure battery-electric vehicles.

That stands in sharp contrast to competitors such as Nissan, Volkswagen, General Motors and even luxury brands such as Audi and Mercedes-Benz, who see a mix of battery-based vehicles and, possibly, hydrogen power.

Auto industry critics, if anything, would like to see things move faster in a bid to make automotive transportation carbon neutral.

"You may think 35 years is a long time," Ise said Wednesday. "But for an automaker to envision all combustion engines as gone is pretty extraordinary."

**More From [TheDetroitBureau.com](http://TheDetroitBureau.com)**

## **Honda also announces hydrogen commitment:**



Honda

Honda just unveiled its new hydrogen-powered car

Emits nothing but water vapour.

BEC CREW

Just when everyone's getting all excited about electric cars usurping their fossil fuel-guzzling counterparts, Honda has announced that its hydrogen-powered cars will go on sale in Japan as early as March 2016, with launches in Europe and the US to follow.

The five-seated sedan, called the FCV Clarity, can travel 700 km (434 miles) on a single charge. It's been priced at 7.66 million yen, or US\$62,807, which puts it just in the affordability range for the average consumer, the Japanese automaker saying it expects to sell far more than the [72 units it sold](#) of its previous-generation model, the FCX Clarity. "We want this car to be the trigger for the 'hydrogen society'," Honda operating officer, Toshihiro Mibe, [told Reuters](#) at the Tokyo Motor Show in Japan this week.

A Honda hydrogen-powered car is nothing new. Back in 2008, [the FCX Clarity](#) was leased to a handful of private buyers in California as part of a subsidised trial deal, but things didn't go so well that time around.

For one thing, the car cost 10 times more than it does now, and on top of that, it was 30 percent less powerful. The hydrogen fuel cell stack was also incredibly bulky, and the last thing you want to do is spend more than half a million dollars on a car you can barely fit into. "Until this point, fuel cells have been so large that they needed to be packaged elsewhere in the vehicle, like in Toyota's Mirai, which has its fuel cell stack in the centre of the vehicle, cutting into interior space," [Nick Jaynes writes for Mashable](#).

The FCV Clarity, on the other hand, features a fuel cell stack that's 33 percent smaller, now taking up the same amount of room under the hood as a typical V-6 engine.

Hydrogen-powered cars work by having the fuel cell stack convert hydrogen into electricity, which powers an electric motor via a lithium-ion battery pack. "Essentially, think of it as an electric vehicle that can be refilled in 3 minutes and emits only water vapour out of its tailpipes," [says Jaynes](#).

And therein lies the biggest hurdle in convincing drivers to join the "hydrogen society" - you're gonna need at least one hydrogen station in your local area to make buying one of these environmentally friendly vehicles in any way practical. [Joann Muller reports at Forbes](#) that companies like First Element and Air Liquide are installing some in Northeastern US and California, supported by government grants and loans from Toyota and Honda, but the rollout has so far been slow.

Not that Honda isn't aware of the challenges its drivers could face in finding places to charge - it's now

developing a personal-use Smart Hydrogen Station, which is designed to be installed at home so you don't have to go looking for a re-up. "There's no word on when that might be available, but if it's affordable, it could be a huge breakthrough in speeding the adoption of fuel cell vehicles," [says Muller](#).

It's exciting to see a car company go all-in on a vehicle that completely eliminates the need for toxic emissions. In a world where outdoor air pollution is killing more than 3 million people every year, [with automobile exhaust](#) being a significant part of the problem, alternatives like this are crucial. But only time will tell if there's truly a market for hydrogen cars out there.

"Compared to 10 years ago, I think fuel cell vehicles have developed significantly in terms of the technology," Honda president Takahiro Hachigo [told Muller](#). "Ten years ago, we said fuel cells could not be driven in cold weather, for example, and that the hardware was too heavy. Today, fuel cells are equal to gasoline engine cars."

**Samples of ads and marketing from copy cats  
that appeared after our company was formed:**

YEP!:



YEP!:



# **Business Overview of the Company and Market:**

# ONE TEMPLATE FOR A POSSIBLE BUSINESS PLAN

**Name:**

## **The Energy Project**

**Core Product:** Patented "Smart-Compression" of hydrogen into safe, reliable and easily transportable form for use in fuel cells or internal combustion engines.

**Intellectual Property:** Extensive business method, software, hardware, chemistry, metallurgy, systems & trademark IP.

**Revenue Types:**

- Product sales
- Licensing fees
- Custom development and OEM system integration professional services

**Business Model:** Creating cost effective, secure, and high performance private and vertical market fuel delivery systems to meet specific customer needs.

**First Market:**

- Existing hydrogen merchant market and back-up power/distributed generation market
- OEM & partner contracts

**Asset Types:** Proprietary hardware, software, compounds, material and automation technology, vehicle converters, existing business relationships.

**Uses of funds:** Staffing, engineering for production, tradeshow, demo, marketing.

**Funding Sought:** Up to \$10 million series A round

**Current Investors:** Founders

**Potential Market Size:** Total Market= \$180+ Billion, Addressable= \$40+ Billion

**Customers:** OEM Partners, Existing hydrogen merchant market and large manufacturers (key targets: ChevronTexaco, Shell, Praxair, Air Products, Ford, GM), US government (DoD, DoE, NASA), fuel cell systems & producers

**Contract Opportunities Upon Close of Round:** Hydrogen merchant market, back-up power and distributed generator mfgs, remote power supplies, datacom, telco, DoD/DoE

**Time to Ship:** 4 to 6 months for client demo products

**What We Do:** The Energy Project provides a unique, cost-effective, safe, reliable & feasible alternative fuel compression, transport & distribution technology.

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# Executive Summary

The Energy Project Technologies, Inc. is a hydrogen fuel storage and distribution company. Its mission is to develop and commercialize immediately deliverable, cheap, portable, safe and reliable next-generation hydrogen fuel storage and distribution technology.

## Market Background

Energy is a \$350 billion market in the US and over \$1 trillion worldwide. However, while the demand for energy is large and growing, problems with safety, oil "blends" costs, infrastructure build-out costs, carbon requirements, pollution, dwindling resources and geopolitical tensions have made alternatives to fossil fuels increasingly attractive for the short and long term. New initiatives are being sought with hydrogen fuel cells being the future power source most likely to replace other energy solutions. Many governments, including the US government, have indicated that they intend to support the development of hydrogen fuel cell technology as the primary energy resource in the coming decades.

Hydrogen is an abundant, clean, renewable fuel that has the potential to solve many of the world's energy problems and, after years of development, is now commercially viable. *However, the safe, reliable storage and delivery of hydrogen to a mass market remains a major impediment to it becoming the world's primary fuel source.*

## The The Energy Project Solution

The Energy Project has developed a *complete* unique solution to this problem – It has invented, filed patents and trademarks for, and begun commercialization of a proprietary technology and process called Hydrogen-Direct™. In simple terms, The Energy Project is able to “compress” hydrogen into a solid state, enabling the element to be transported in a safe, volume-reduced, easy and reliable manner. The Energy Project's proprietary technology is more than a generation ahead of any other known market-ready solids based storage solution. The Energy Project's solution does not require building of pipelines, transportation of dangerous or explosive materials *or the adaptation of new habits by consumers*. The Energy Project's fuel has an energy density that is equal to or greater than that of gasoline or other conventional power sources. The Energy Project's solution bypasses the need for expensive on-board reformers and gaseous or liquid hydrogen containment systems currently viewed as the solution. Unlike competing solutions, The Energy Project's system can be manufactured in the metric ton+ capacity and delivered now. The Energy Project's success does not rely on a down-the-road potential.

The Energy Project products are inexpensive to produce using non-exotic materials and off-the-shelf components. The solution is highly scalable and is easy for the market to adapt to – simple adjustments to existing infrastructure will enable hydrogen to be distributed and used on a high volume basis. Its system can support all known or projected hydrogen based systems as well as help convert existing systems to hydrogen. Working demonstration models will be ready to ship within four to six months of “A”

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Round financing being received.

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### **Sources of Revenue and Marketing Strategy**

Revenues will be earned primarily from licensing fees, direct product sales and OEM development contracts. Current specific power related applications for the company's products total approximately \$180 billion. Initially, this will be back-up and remote power applications where there already exists a strong need for hydrogen related solutions. The company also intends to license its technology to OEM and partner contracts that already sell products and services into the current hydrogen market or are in the process of developing new applications. As the integration and acceptance of hydrogen fuel cell use widens, the company intends to license its technology products and services into the broader automobile and consumer goods market.

### **Founders and Management Team**

The founders and management team are each strongly committed to the development of the Company. They have spent considerable personal resources and time to develop the technologies. They are experienced in managing large-scale technology projects and have substantial background in hydrogen fuel development.

### **Intellectual Property**

The Company has created barriers to competition through the implementation of strong patent protection to its core intellectual property and business processes. The Company has hired one of the most prestigious IP firms in Silicon Valley – the patent group for Sony, Sun Microsystems and Intel.

### **Offering and Use of Proceeds**

The Company is offering up to \$10 million in Series "A" Preferred Stock to Accredited Investors. The net proceeds from the offering will be used primarily for product development and launch; complete next-generation product samples and demonstrate them at tradeshows and to targeted OEM's, partners and alliances; develop compelling sales tools; and hire key sales, marketing, technical and executive staff.

### **Exit Strategy**

Assuming the market for new public offerings is moderately healthy, the company anticipates it will be of quality and size to present itself as a serious candidate for an initial public offering. As a secondary strategy, The Energy Project may be an attractive acquisition target for an energy company or transportation major.

## **Market Background**

The Energy Project Technologies Inc. operates within the alternative energy technology market – products that are being developed as alternatives to existing fossil fuel resources.

The broad existing market for energy is \$350 billion in the US and over \$1 trillion worldwide - specific power related applications for the Company's products total \$180 billion. However, there is a range of short and long term problems with the continued reliance on existing resources and distribution and transmission systems:

- 
- World's energy resources are dwindling and even with the most aggressive exploration and efficient extraction the supply of economically accessible oil is likely to be exhausted within 50 years;
  - Commercial access to the largest sources of oil are highly vulnerable to geopolitical tensions, embargo and price control; and,
  - Growing environmental concerns, ranging from pollution to global warming.

Within the United States, there are several other forces that are forcing governments and companies to look for alternative sources to energy:

- Inadequacy of the existing electrical power infrastructure to keep pace with soaring demand for sources of high quality and reliable power;
- Dramatic reduction in large electric generating plant investment due to regulatory, environmental and political constraints;
- Restructuring of the power industry leading to competitive markets and reduced incentives for utilities to invest in new generating facilities; and,
- The market for automotive power driven by government prodding is beginning to invest in next generation power systems.

## **Hydrogen as Alternative Energy Source**

Hydrogen is an abundant, clean and renewable fuel that has the potential to solve many of the world's energy related problems. As a source of energy, it has the following positive characteristics:

### **Efficiency**

- Better energy supply duration than battery, flywheel or superconductor systems.
- 100% more efficient than any other fuel solution, particularly gasoline.
- No friction mechanisms in primary engine.

### **Safety**

- Easier to secure than oil or other fuel alternatives.
- No caustics or liquid electrolytes.
- Less dangerous than gasoline.
- No high temperatures.

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### **Reliability**

- Reliable as a battery - with superior specific energy, energy density and cycle life.
- No friction mechanisms in primary engine.

### **Environmental benefits**

- No carbon monoxide or carbon dioxide byproducts.
- Zero harmful emissions.
- No noise.
- Reduces or halts global warming.

### **Convenience**

- Instantaneous startup.
- Less/or NO fuel system congestion.
- Portable over all systems and networks.
- Minimal repair and maintenance needs.
- Simple and easy-to-use.
- Standards compliant and interoperable.

### **National security**

- Eliminates reliance on foreign governments.

**Fuel-cell technology is now moving at such a rapid arc of development that it promises to amplify its already compelling pluses for decades to come.**

## **The The Energy Project Solution**

The Energy Project has developed a *complete*, end-to-end solution to these problems – It has invented, filed patents and trademarks for, and begun commercialization of a proprietary technology and process called Hydrogen-Direct™.

**In simple terms, The Energy Project is able to “compress” hydrogen into a solid state, enabling the element to be transported in a safe, volume-reduced, easy and reliable manner.**

The Energy Project’s proprietary technology is more than a generation ahead of any other known market-ready solids based storage solution. The Energy Project’s solution does not require building of pipelines, transportation of dangerous or explosive materials *or the adaptation of new habits by consumers*. The Energy Project’s fuel has an energy density that is equal to or greater than that of gasoline or other conventional power sources. The Energy Project’s solution bypasses the need for expensive on-board reformers and gaseous or liquid hydrogen containment systems currently viewed as the solution.

The Energy Project products are inexpensive to produce using non-exotic materials and off-the-shelf components. The solution is highly scalable and is easy for the market to adapt to – simple adjustments to existing infrastructure will enable hydrogen to be

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distributed and used on a high volume basis. Its system can support all known or projected hydrogen based systems as well as help convert existing systems to hydrogen. Working demonstration models will be ready to ship within four to six months of “A” Round financing being received.

The Energy Project’s first product solution launches with a hydrogen storage system based on alanates and follows with an integrated approach for the "supercharging" of this alanate with a plasma array and then concludes with a glass permeation technique to provide our latest unique solution. The Energy Project’s solution has designed a transition to a metal-based catalyst with the alanate system. From this point The Energy Project will improve the already best-of-breed weight percentage of our solution to an even more dramatic percentage, that can challenge any other known solution. This will be accomplished with our revolutionary conductive charged particle hydrogen array system. This solution is a patent-pending product invention of The Energy Project. Key personnel that will be assigned to this project have been integral to this solution.

The Energy Project has designed a complete end-to-end solution that will provide an easily adaptable infrastructure solution. In addition to the favorable storage metrics, the metal allows us to program "memory" into the compound so that magnetized polarity data (re: compound "health"), location and unique ID can inter-operate with Smart chip technology, which is part of the thermal vanes in the The Energy Project Fuel Cassette, housing, and the The Energy Project Energy Unit, unit which connects to our supply chain tracking and user supply locating system. The Energy Project has also developed engineering and IP for a low cost, rapid gasoline-engine-to-hydrogen-engine conversion kit.

It should also be noted that The Energy Project has over eight proprietary, completely unrelated, chemistries for the “core material” of its smart-fuel cassettes. Each chemistry type is relevant to certain customers or certain countries where the raw materials for that core material are more plentiful or a better value than others. Part of the Company’s mission is to constantly refine its technology and chemistries. Each chemistry compound designed will be made obsolescent by the next but will remain in its asset pool should an emerging market or other circumstances require it.

## **The Energy Project Product Descriptions**

The Energy Project offers a three-phase product solution:

- **Energy Unit 300 Series.** The Energy Project’s first phase chemistry solution launches with a hydrogen storage system based on hydrides, which are compounds with metals that are able to reversibly absorb and release hydrogen. When exposed to hydrogen at certain pressures and temperatures, they absorb large quantities of gas and form metal hydride compounds. When this happens, hydrogen is distributed compactly throughout the metal lattice. Characteristics include:
  - Cassette based
  - Desktop/trunk size unit
  - Remote power & vehicle test capable

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- Modular
  - Any customer in the world can be restocked today
  - Universal interface- connects to anything
  - Recharge 500+ times
  - 14 Liters = 300 miles
  - Manufacturable in metric tons
- **Energy Unit 500 Series.** FTS's second phase chemistry solution improves upon phase one by using carbon- bonding manipulation and glass uptake improvements that hold more hydrogen. Capable of outputting hydrogen or electricity. Characteristics of the improved system include:
- Multi-size cassette based
  - Recharge capable. Bi-directional
  - Smarter system
  - Covers more customer needs
  - More efficient
  - Automatic sourcing of fuel stock
  - Compound upgradeable
  - Improved net energy density & saturation metrics over phase one
  - Recharge 600+ times
  - 10 – 13 liters = 300 miles
  - Manufacturable in metric kilo-tons
- **Energy Unit 800 Series.** The Energy Project's third phase chemistry solution involves the plasma spraying of fly ash and related compounds with a very fine coating of metal particles Characteristics include:
- Multi-size cassette based
  - Reforms Hydrogen from water or compressed natural gas.
  - Fully networked system
  - Device to recharge Hydrogen 6,000+ times internally
  - Covers all customer needs
  - Highest efficiency
  - Automatic sourcing of fuel stock
  - Compound upgradeable
  - Chemistry can turn fly ash waste into Hydrogen storage

**The Energy Project products are inexpensive to produce using non-exotic materials and off-the-shelf components.**

## Product Sales

Product sales will comprise 7% of The Energy Project's overall revenue. Directly developing and manufacturing products is an important element to a multi-purpose market entry strategy. The Company does not envision becoming a large scale product manufacturer but realizes that developing products for early adoption markets benefits top line growth as well as providing a means to prove, test, refine, and commercialize its

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core technologies and drive the company's R&D efforts. The Energy Project recognizes delivering real products to the market enhances its ability to license technologies to growth markets such as transportation, automobiles, energy, and consumer electronics. The Energy Project's product sales strategy targets early adoption markets of premium power, portable power, and remote power. Product development follows a path directly parallel to fuel cell products aimed at these markets in order leverage and augment fuel cell industry efforts.

Additional revenue sources include licensing and original equipment manufacturer (OEM) development contracts.

## **Licensing**

The Company will neither manufacture nor sell hydrogen but, rather, will license its technology, patents and other intellectual property on a nonexclusive and worldwide basis to refining, energy, automotive, electronic and industrial gas companies which manufacture energy solutions incorporating The Energy Project's hydrogen compression and distribution technology. License fees represented in the financials are calculated on a \$/MM BTU basis for the current hydrogen merchant market. Licensing will comprise 85% of The Energy Project's revenue stream.

## **OEM Development Contracts**

OEM development contracts will comprise 8% of The Energy Project's overall revenue. It is anticipated that OEM companies will contract out The Energy Project's technical, scientific and engineering expertise to customize The Energy Project's proprietary technologies in hydrogen matrices and compression and Energy Unitpression techniques to fit specific product and market needs. OEM development contracts will likely be sold in concert with licensing and royalty agreements.

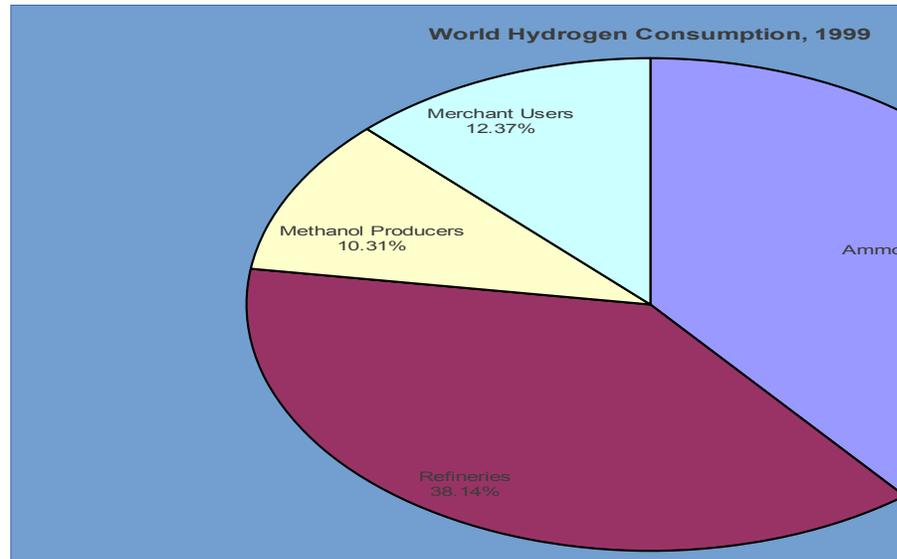
Examples of OEM development contracts include:

- Hydrogen merchants requiring technical co-development expertise to scale up The Energy Project technology to meet industrial needs of their market at both production and customer sites. Hydrogen merchants may need design assistance to integrate The Energy Project solutions into existing or entirely new transportation and distribution methods.
- An Oil OEM requiring expertise to safely and cost effectively storage high volumes of hydrogen gas for use in refinery operations; and/or requiring assistance to engineer hydrogen supply infrastructure for new markets.
- Fuel Cell OEMs needing The Energy Project to customize, form-fit, deliver fueling characteristics to particular fuel cells. For instance, integration of The Energy Project technology will be different for stationary power fuel cells as compared to portable power fuel cells.
- An Automobile OEM will need The Energy Project to work with their engineers to customize The Energy Project technology to a mobile, rapid power delivery, on-board storage, and consumer friendly environment.

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# Current Hydrogen Market



2002 U.S. hydrogen demand is 23.1 billion standard cubic feet (scf) per day and growing. Hydrogen usage is growing at 12%-15% per year, driven primarily by U.S. air quality regulations mandating the reduction of nitrogen oxides (NO<sub>x</sub>) and sulfur emissions. Spearheading this growth will be uses in merchant hydrogen activity and applications in fuel cells. The pie chart above defines the current user market.

There are two key markets for hydrogen around the world: (i) Captive, which is hydrogen that is produced and consumed by the same plant; and, (ii) Merchant, which includes hydrogen produced for sale to other end markets. The U.S. captive market today is approximately \$4.6 billion, compared to the smaller though fast growing, \$3.7 billion merchant market.

## Captive Hydrogen Market

- Estimated US Market Size: 3,400 – 3,700 billion scf/year.
- Market Growth: 10% - 15% per year in recent times.
- U.S. Market Value - \$4.6 billion.

**Petroleum refining both produces and consumes large amounts of hydrogen:** The principal use of hydrogen in refineries is in the removal of sulfur and other contaminants from various petroleum products. More stringent emissions regulations, combined with the increasingly high sulfur content of many remaining crude reserves are expected to drive demand for the gas. Refiners' demand for hydrogen has grown by 10% to 15% a year for the past five years. The rate is expected to increase to nearly 20% per year based on the need for clean-burning, low-sulfur gasoline and diesel fuels to comply with the new Environmental Protection Agency (EPA) regulations coming into effect in 2004 and 2006.

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**Ammonia production is the single-largest consumer of hydrogen in the chemicals industry:** Significant quantities of both merchant and captive hydrogen are consumed by the chemical industry. The merchant gas is usually delivered in either single or multi-user pipelines, while bulk liquid deliveries satisfy the needs of small-scale users.

## Merchant Hydrogen Market

- Estimated US Market Size: up to 379 billion scf/year.
- Market Growth: Historically 5% to 14% per year.
- US Market Value - \$3.7 billion.

**Edible fats and oils:** Hydrogen is used in the hydrogenation of unsaturated fats and oils. Many hydrogenators purchase their hydrogen in bulk liquid form.

**Metals:** Hydrogen is used in both primary metals production as well as in secondary metals processing. Primary production of tungsten, tungsten carbide and molybdenum all involve the use of hydrogen.

**Healthcare:** Hydrogen is used in the production of sorbitol, which is an input to a number of pharmaceutical products including cosmetics, adhesives, and vitamins.

**Electronics:** Hydrogen is widely used during integrated circuit, optical fiber, and fused quartz manufacturing. Because of the high purity required in these applications, bulk hydrogen sold to the electronics industry is usually in liquid form, or as gas vaporized from liquid. On a normalized basis, the electronics industry's demand for gases is growing 10% to 12% annually.

**Utilities:** Hydrogen serves as a heat transfer medium that allows power station equipment to cool.

**Other:** Hydrogen is also used in the space industry as rocket fuel, in instrumentation as a calibration gas, and in a variety of environmental and lab applications.

## Current Hydrogen Supplier Models

Current Hydrogen supply can be described under four models.

- **Traditional Model:** Produce hydrogen, store hydrogen, transport hydrogen, use hydrogen (Hydrogen compression and distribution companies). *This model is expensive and dangerous. Unit costs for hydrogen increase as the hydrogen moves through the system towards use. It is also dangerous with pressurized hydrogen moving from refinery to point of use. (Traditional suppliers including Impco, H<sub>2</sub>GEN and Dynatek)*
- **Hydrogen produced at point of use:** Deliver fossil fuels to near usage site, produce hydrogen, use hydrogen. *However, this model uses energy intensive processes to*

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*produce hydrogen from fossil fuels. This is inefficient and creates pollution. (Shell leads this group)*

- **Hydrogen forced onto a hydride:** Produce hydrogen, attach hydrogen to metals (producing hydrides), desorb hydrogen at usage. *Again, hydrogen must be produced in order to adsorb it to a metal to produce the hydride. This is inefficient and currently dangerous. (Companies include: Powerball, Hydrogen Components, ECD/Ovonics)*
- **The Energy Project solution:** Deliver hydrogen core material via cassette to point-of-use. *Hydrogen is not generated and then stored. The Energy Project solution is safe, cheap and universal to all workable hydrogen core materials. (Competing companies. Millenium Cell, Hydrogenics)*

The Energy Project believes that the fourth model is the most commercially effective, safe and reliable. Eventually, hydrogen will be extracted from safe-to-transport materials at point-of-use. The The Energy Project solution is designed to transport any core material capable of hydrogen-release at point of use.

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# The Market Opportunity

It is believed a substantial long term opportunity exists for alternative energy products and hydrogen fuel cells. According to a report by Banc of America Securities Equity Research the total size of *available* markets for The Energy Project's products, ie, the market for alternative energy, is \$180 billion. The segments of this available market are: Stationary (\$70 billion), Reliability (\$11 billion), Transportation (\$90 billion) and Portable (\$10 billion).

## Stationary (Estimated Annual Market Potential of \$70 Billion)

This market includes electricity generation products utilized to reduce costs through Distributed Generation. The key advantage of Distributed Generation is the ability to sell power directly to end customers and bypass transmission and distribution charges. There are several key drivers for this market:

- A significant supply/demand imbalance on a global scale, which should result in new electric generation capacity being built (part of which should be Distributed Generation);
- The ability to site plants close to the end customers, which eliminates the need for transmission and distribution infrastructure (which is particularly valuable in remote areas and developing countries);
- Elimination of pay transmission/distribution charges (by getting off the utility grid).

The global power market is large and growing significantly. According to Banc of America Securities Equities Research, the global power market has an installed base of 3.1 million megawatts (MW) currently, and will likely add 1.2 million MW over the next 10 years (a capital investment of \$600 billion). The U.S. market alone has an installed base of 740,000 MW, and we project an additional 70,000 MW of capacity (\$35 billion) over the next five years.

The target market for Distributed Generation products is primarily in the small-sized (20 kW to 5 MW) range. There is already an existing annual market of 12,000 MW for generation equipment in that size range, and this market has been growing at 5% per year. This market is predominantly being served by Reciprocating Engines (94% market share) and combustion turbines (6%). From a geographic perspective, the largest regions for this equipment currently are the Far East (31%), Southeast Asia/Oceania (16%) and North America (10%). In terms of usage, the three largest end-market applications for this equipment include: (i) serving remote locations (23%); (ii) serving the oil and gas industry (12%); and (iii) supplying weak grid areas or peak shaving (11%).

Looking forward, it is forecast the stationary power market will have significantly higher growth rates, and Banc of America Securities projects a market of 75,000 MW per year by 2010, implying a compound annual growth rate of 19%. That expected growth rate can be supported by just looking at the estimated commercial market in the United States

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alone, which currently stands at more than 82,000 MW.

### **Reliability (Estimated Annual Market Potential of \$11 Billion)**

This market consists primarily of backup and control devices utilized to increase power reliability and shave peak demand. There is an existing market with generation equipment representing 16,000 MW of capacity (\$11 billion) sold each year. From a geographic perspective, the largest markets include: Western Europe (24%), the Far East (21%) and North America (20%). This market historically has grown at an annual rate of 3%. However, looking forward, it is believed the need for standby/back-up power generation will increase dramatically with the advent of the new “digital” economy. The reason for this is the fact that computer devices require a higher degree of reliability (99.9999%) than what can be provided by the electric grid (99.99%). A recent survey of Silicon Valley executives indicated that every day of power outage has an opportunity cost of \$75 million. Similarly, a study by Sandia National Labs estimated that the annual cost of power outages and voltage sags for large industrial customers in the United States was \$150 billion. Consequently, looking forward, Banc of America Securities is estimating an annual growth rate of 10% for this market.

### **Transportation (Estimated Annual Market Potential of \$90 Billion)**

The transportation market is divided into the following categories: buses/coaches, automobiles, rail, and marine. This market currently is supplied primarily by reciprocating engines (diesel and gasoline).

There currently are 5.0 million bus and coach units in operation globally, with additions of approximately 350,000 units per year. Assuming an average load of 200 kW per unit, this translates into an annual market of 70,000 MW. Assuming an average price of \$500/kW, an annual market size of \$35 billion is derived. The geographic breakdown of this market is as follows: Asia Pacific (30%), North America (17%), Western Europe (15%), and the Rest of the World (38%).

Similarly, the annual global production of automobiles is 56 million units, of which the North American market is 18 million units. Assuming an average load of 50 kW, it is estimated that there is an annual global market of 2.6 million MW and a North American market of 950,000 MW. Assuming an average price of \$20/kW, this market totals \$52 billion in annual size.

Looking forward, Banc of America assumes an annual growth rate of 2% in this market. While it will be difficult for new products to displace existing engines, it is believed there are key factors aiding that trend, including:

- Cost-improvement potential as economies of scale grow and per unit costs decline;
- Superior environmental performance (particularly in areas with stringent regulations).

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Given the large size of this market, even a small penetration should translate into a significant market opportunity.

## **Portable (Estimated Annual Market Potential of \$10 Billion)**

The portable market is defined as products that provide energy for small-scale energy user applications. The size of these applications could vary from a watt to 20 kW. These applications include diverse products such as cordless tools, cellular phones, camcorders, computers, television sets, and other office and home electronics. Banc of America estimates that the targeted Portable market is in the range of \$8-10 billion. The current market is dominated by small internal combustion engines and batteries.

While this is the smallest of the four markets, it is also one of the fastest-growing and most receptive to new product innovations. The key factors driving the introduction of new technology include: lower cost, noise, and emissions, ability to operate continuously without lengthy recharging, light weight, and reliability. Consumer products form a large part of this potential market, and with a forward looking growth rate of 15% per year.

## **The Energy Project - Market Focus**

Fuel cell systems are already shipping albeit for use in small scale applications and demonstration purposes. The primary barriers to acceptance by the market are the prohibitive cost related to establishing efficient support infrastructure for hydrogen distribution and storage. The management The Energy Project strongly believes that the introduction of its technology related to the storage and distribution end of the fuel cell equation will further help to push the per unit cost of fuel cells to within reasonable economic levels. There are also high capital costs associated with the on-going development of fuel cell power systems but these are expected to be reduced in time as related technologies become more mature and economies of scale are established.

The Energy Project will initially focus on the following markets for early period revenues:

- Merchant market – ie, current users of hydrogen include semiconductor and chemical manufacturing, metals and oils processing, generator cooling.
- EMF-free energy needs. This group includes Datacom, Telco, and ISP back-up power, as well as specialized applications in medicine and defense.
- Other specialized users. This group includes specialized vehicles, remote event power, tactical and medical team power, etc.

Expansion Markets (Domestic 3-10 Years Out):

- Government Agencies, NASA and Military Applications
- Manufacturing
- Portable power for consumer products
- Transit fleets and entry level automotive markets

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# Competitive Advantage

The Company is not looking to replace or compete with existing suppliers (ie, the oil companies) or the providers (ie, the utilities or power equipment market) but to work with them to develop solutions to these longer term problems. The Energy Project sees itself as providing a key enabling technology - it helps to dramatically lower the capital costs behind the development of competitive fuel cells.

The Energy Project has a competitive advantage in the marketplace based on four principle factors: *First Mover Advantage, Proprietary Breakthrough Technology, Significant Leverage in Business Model and a High Barrier to Entry.*

*First Mover Advantage:* The Energy Project is the first company to solve the storage and delivery problems for Hydrogen. Because The Energy Project's solution holds hydrogen chemically during delivery and distributes hydrogen only when needed, storage and delivery is drastically safer than current solutions. We believe that we are well positioned with our demand driven model to participate in the inevitable growth of the hydrogen market.

*Proprietary Breakthrough Technology / Distribution:* The Energy Project's solution is to use its proprietary technology to store the hydrogen in safe-to-transport un-pressurized cassettes. The energy potential of hydrogen is carried in the chemical bonds of our fuel cassettes™ core material, which, in the presence of a catalyst inside our Energy Unit Units™, releases hydrogen and produces electricity. We claim patent rights on our methods and apparatus for producing the Hfuel cassettes, the Energy Unit™ processing engines the base material processing system as well as the later-stage product for direct vehicle mounting. In addition, we also claims patent rights on its associated trademarks. The technology is currently protected under the trade-secret process. One of the founders has five issued patents in industry-notable inventions for multiple applications and many pending patents. The Energy Project's intellectual property strategy is to identify key intellectual property developed by us in order to protect it in a timely and effective manner. In addition, The Energy Project seeks to use and assert such intellectual property to its competitive advantage.

The Company's breakthrough technology enables it to leverage existing distribution channels. This ease of delivery revolutionizes the energy distribution and transport industries and possess significant cost advantages.

*Significant Leverage within Business Model:* The Energy Project's business model offers significant leverage as its investment focus centers around a core competency of product development. The Energy Project will not engage in manufacturing or assembly, as volume production will be outsourced to contract manufacturers. The Company believes it is well positioned to participate in the impending growth in the market for hydrogen as additional enterprise and consumer applications become commercially available. Thus, the Company does not intend to undertake expensive direct marketing programs to the

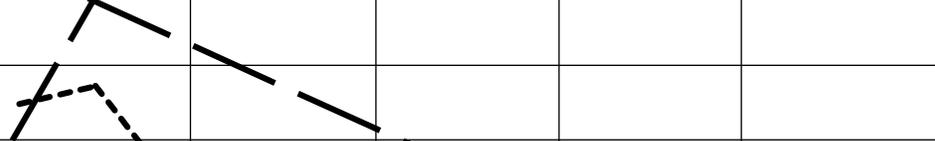
end-user customer but concentrate instead on joint customer education programs and trade shows.

*Significant Barriers to Entry:* The specific knowledge behind the Company's core technology is difficult to acquire and/or duplicate. The findings of the Company's scientists are the culmination of almost a decade of research and development in areas as diverse as metallurgy and chemistry.

## Technology Comparison

The Energy Project's advantage is its patent pending technology that will be ready to ship within four to six months of Series A funding being received. This technology is far ahead of competitive hydrogen producers/storage companies/providers. Advantages include:

- Solves storage and delivery problems. Because The Energy Project's solution holds hydrogen chemically during delivery and distributes hydrogen only when needed, storage and delivery is significantly safer than current solutions.
- The Energy Project's hydrogen is much cheaper. Without costly production, storage, delivery costs, The Energy Project can deliver hydrogen at many times lower costs than current market prices.
- Lowest cost of operation.
- The Energy Project's distributed hydrogen is 99.99% pure. Most hydrogen today comes from fossil fuel reformers that produce hydrogen from methane, gasoline, natural gas, or other fossil fuels. This hydrogen is wasteful to produce and contains carbon monoxide that can poison some types of fuel cells if not removed.
- Infinitely scalable.
- Business infrastructure from point of presence.
- Smart technology and fuel management software.

Comparative Deliverable Technologies	Highest # of Recharges	Best Energy Density	Best Value/ Price	Safest	Least Infrastructure
The Energy Project H-Matrix 2					
Liquid Tank					
Pressure Tank					
Nanotubes	Will Not Exist in Deliverable Form for 5-10 Years				
Glass Spheres	Will Not Exist in Deliverable Form for 4-8 Years				
Fullerenes	Will Not Exist in Deliverable Form for 3-7 Years				

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## Hydrogen Fuel Cell / Technology Players

<b>Company</b>	<b>Company Technology Attributes</b>	<b><i>The Energy Project Technology Attributes</i></b>
<b>Millenium Cell</b>	<ul style="list-style-type: none"> <li>Relies on single compound</li> <li>Not able to recycle/recharge</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project is compound agnostic</i></li> <li><i>The Energy Project is fully recycle-rechargeable</i></li> </ul>
<b>H2Gen</b>	<ul style="list-style-type: none"> <li>Requires dangerous poison methane</li> <li>Not transportable</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project uses no methane</i></li> <li><i>The Energy Project fully transportable</i></li> </ul>
<b>Powerball</b>	<ul style="list-style-type: none"> <li>Very unsafe</li> <li>DoE contracted report slams them</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project is very safe</i></li> <li><i>The Energy Project built past their problems</i></li> </ul>
<b>Dynatek</b>	<ul style="list-style-type: none"> <li>High pressure tanks</li> <li>DoE not in favor</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project cassette requires no pressure</i></li> <li><i>DoE fully in favor of The Energy Project solution type</i></li> </ul>
<b>Impco/ Quantum</b>	<ul style="list-style-type: none"> <li>High pressure tanks</li> <li>DoE not in favor</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project cassette requires no pressure</i></li> <li><i>DoE fully in favor of The Energy Project solution type</i></li> </ul>
<b>Proton Energy</b>	<ul style="list-style-type: none"> <li>Must use energy to make energy</li> <li>Not transportable</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project is fully safe powered</i></li> <li><i>The Energy Project system is fully transportable</i></li> </ul>
<b>Ergenics</b>	<ul style="list-style-type: none"> <li>Requires high heat</li> <li>Only one part of a solution</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project requires low or no heat</i></li> <li><i>The Energy Project is a complete market solution</i></li> </ul>
<b>ECD</b>	<ul style="list-style-type: none"> <li>Requires high-heat</li> <li>Uses first generation approach.</li> </ul>	<ul style="list-style-type: none"> <li><i>The Energy Project requires low or no heat</i></li> <li><i>The Energy Project to yield higher weight percentages</i></li> </ul>

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# Strategy and Implementation

## Product Development Strategy

A basic working example of the Company's concept exists and is available for demonstration purposes. Following upon the completion of this working model, the Company's scientists have significantly improved the efficiencies and power outputs of its concepts and is ready to begin building and testing of next generation products. Upon receipt of sufficient funding, The Energy Project believes that it should take between four to six months of further research and develop to commercially viable next generation products.

The Company's has already developed a path to move from Phase 1 to 2 and on through 3 which is only hindered by the Company's available budget to build-out its production space. The technology systems, processes and chemistries have already been developed and only need core optimization.

The Energy Project's system will be tested by government agencies and major energy and automotive providers. We will deliver on a limited run basis to test/evangelical market leaders and ramp up via OEM deployments.

## Manufacturing Strategy

Manufacturing production expenses will be outsourced. We do not anticipate any specialty set up costs that would be unusual. There are a number of manufacturing fabricators in the Silicon Valley who have assembly lines capable of completing The Energy Project's products immediately. Currently we have identified manufacturing houses and have secured letters of intent upon funding.

## Raw Materials Sourcing Strategy

The core material for The Energy Project's fuel cassettes is manufactured from a number of base materials and then "accelerated" in a proprietary manner. There is a significant global supply of our core material, and the United States is among the largest holders of core material reserves in the world. Currently, a few manufacturers make The Energy Project's core material as a specialty chemical. Non-monopolist suppliers include Rohm & Haas Company and Dow Chemical Company. There are many commercial applications that require the Company's core material today and its by-products.

## Partnership Strategy

The Energy Project's near term focus is to validate its core technologies in the portable and back-up power markets. These markets are experiencing huge growth and are

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searching for new solutions. We are aggressively seeking partnerships with companies in the portable power and back-up power industries.

The Energy Project's longer term strategy is focused primarily on licensing, on a non-exclusive basis, its internally developed process for the manufacture and redistribution of its fuel cassettes core material with large, industrial partners including chemical, industrial hydrogen providers, chemical providers, and major energy producers (including oil, gas, and electricity companies) on a global basis. If market acceptance of The Energy Project's technology increases as planned in the transportation, portable power and battery markets, we believe that demand for the Company's fuel cassettes core material will result in the need for additional global manufacturing capacity. By licensing the process of producing The Energy Project's fuel cassettes core material, it is believed a significant revenue stream could be achieved. The goal of The Energy Project's research and development efforts in the area of its core material production is to lower raw material costs by significantly reducing the amount of chemical material that is required in the current manufacturing process. One of the Company's objectives is to ensure the short-term and long-term supply of its fuel cassettes core material for energy applications. This will involve collaboration with present and future producers of this chemical. In addition, The Energy Project will continue to evaluate ways to ensure an affordable supply of its fuel cassettes core material to our potential partners and customers. The Energy Project intends to sign letters of intent with the world's largest producers of its fuel cassettes core material, to jointly develop a lower cost, higher yield processes to manufacture and recycle the core material. The Company believes partnerships like this may lead to an affordable, adequate supply of the core material to support commercialization of products that utilize The Energy Project's technology.

Partnership Opportunities include:

- *Fuel Cell Companies.* The Energy Project is pursuing ventures with manufacturers of fuel cells. It is believed that the Hydrogen-Direct™ system will provide a solution for existing fuel cell companies that cannot produce hydrogen as safely or as efficiently. The Energy Project will seek to leverage these relationships to further brand awareness and decrease the time to commercialization.
- *Automotive Manufacturing Community.* The Company is pursuing relationships with automotive manufacturers and component system providers because it is believed they will be the key to capitalizing on transportation opportunities in the future. As many of the top tier global automotive manufacturers continue to allocate substantial resources to research and development of alternative fuel technologies, The Energy Project believes that its technology will be an attractive choice and will allow the Company to position its technology as a leader in the alternative fuel market.
- *Truck Manufacturers.* The Energy Project plans to pursue relationships with manufacturers of heavy duty, over-the-road trucks. It is believed the Company's technology can be used to deliver hydrogen as a fuel for modified internal combustion truck engines, which could significantly reduce diesel fuel emissions.

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It is also believed that the Hydrogen-Direct™ system, when used in conjunction with a small fuel cell can provide sufficient power to operate all on-board electrical devices, thereby allowing the engine to be shut down when the truck is parked. The reduction in emissions would result in a significantly cleaner environment.

- *Fleet Operators.* The Energy Project plans to pursue opportunities with operators of fleets of vehicles. Fleet vehicle operations are an ideal application for its technology because of the high volume of consumption and the number of vehicles serviced through a single location.
- *Battery Manufacturers.* The Energy Project is pursuing relationships with key battery manufacturers. The Company believes such relationships will facilitate the commercialization, distribution and consumer acceptance of batteries based on its fuel cassettes core material process, which may be developed in the future.
- *Core Material Companies.* The Energy Project's fuel cassettes core material is currently a specialty chemical that is produced by a few manufacturers located in the United States and Europe. It is believed that the Company can successfully compete in the battery markets at the current price of the core material, but it will be necessary to scale-up production of the chemical to be cost competitive in the transportation markets. In 2003, The Energy Project plans to begin construction of a process demonstration unit that it believes will cost approximately \$1.0 to \$2.0 million to build and will take approximately six months to complete. The Energy Project's goal is to demonstrate the viability of cost-effective mass production of its fuel cassettes core material through economies of scale and improved manufacturing efficiencies exhibited in the process demonstration unit.

## **Marketing and Sales Strategy**

The Energy Project Technologies, Inc. has three marketing avenues for its initial markets.

- Licensing its products and technology as a packaged enterprise solution.
- Host distribution services on a metered rate or flat fee subscription basis.
- Work with prospective vertical market partners and core technology licensees to define and build a custom solution.

The Energy Project will employ a direct sales force to reach potential customers in immediate target markets. The The Energy Project Professional Services team will then work with the customer to target the best The Energy Project solution. The Energy Project may offer category exclusivity to partners willing to make longer-term financial commitments to The Energy Project. Financial Projections are set out in the final section to this document.

## **Customer Examples**

Shell, Chevron, Praxair, Liquid Carbonic, NASA, Department of Defense, Department of

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Energy, Government of American Samoa, Government of Norway, Paramedic Services division in each city, Qwest, AT&T, Toyota, Aprillia, Honda, REI Co-Op, Kaiser Permanente.

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# Management Summary

The information below provides summary data regarding the some of the Company's executives as of today. The Energy Project Technologies, Inc. is designed to operate, for its next phase, with a staff not to exceed 20 W2 employees and 30 1099 part-time contractors.

Below is a partial list of management and leading project scientists who have agreed to join The Energy Project upon funding:

We anticipate a search for the Chief Executive Officer position will begin after securing the series A funding, and welcome input and potential candidates from the Series A investors. The ideal candidate will have a strong pedigree, which will include a background with the following attributes: Funding, Marketing, Day-to-day operations, Energy, Distribution, Product launch. We have sourced approximately 20 candidates.

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# Intellectual Property

The Energy Project Technologies, Inc. claims patent rights on its methods and apparatus for producing the Hfuel cassettes, the Energy Unit™ processing engines the base material processing system as well as the later-stage product for direct vehicle mounting. The Energy Project also claims patent rights on its associated trademarks. The technology is currently protected under the trade-secret process. One of the founders has five issued patents in industry-notable inventions for multiple applications and many pending patents. The founder has a high level of confidence relative to issuance on the current technology for The Energy Project. This is a patent pending and patent licensed technology.

Proprietary The Energy Project Inventions:

- The business method of common carrier fuel transport:
- Smart Fuel
- Multiple compression chemistries
- Multiple metallurgy alloys
- A rapid ICE to H vehicle conversion kit.
- Conductive charged particle hydrogen array system
- Multiple chemistry and atomic level treatment processes
- The MemTel™ unit
- The Hnet Software
- The Fuel Device and its embodiments and iterations
- The Energy Unit Unit and its embodiments and iterations
- The methodologies
- Certain trademarks including "Hfuel"
- Certain business relationships
- Certain licenses

The Energy Project has a patent-pending design for a belt pack personal power supply and a standalone hydrogen battery.

The Company has filed a patent application for the primary production and redistribution of its fuel cassettes core material. The Energy Project believes that this new process will lower the cost of its fuel cassettes core material by reducing or eliminating some of the costly raw materials that are required today. The Company is currently performing laboratory work and will be constructing a process demonstration unit in 2002 to validate its process technology.

The Company's intellectual property strategy is to identify key intellectual property developed by us in order to protect it in a timely and effective manner. In addition, The Energy Project seeks to use and assert such intellectual property to its competitive advantage. Its goal is to be first to market with superior technology and to sustain a long-term competitive edge in the market. The Energy Project relies on a combination of patents, trade secrets, trademarks, copyrights and contracts to protect its proprietary

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technology.

The Energy Project uses patents as the primary means of protecting its technological advances and innovations, such as proprietary hydrogen generators, fuel cell designs, components, materials, operating techniques and systems and, therefore, the protection of patents is critical to its business. The Company has adopted a proactive approach to identifying patentable inventions and securing patent protection through the timely filing and aggressive prosecution of patent applications. Patent applications are filed in various jurisdictions internationally, which are carefully chosen based on the likely value and enforceability of intellectual property rights in those jurisdictions.

The Energy Project's intellectual property program includes a strong competitor-monitoring element. The Company actively monitors the patent position, technical developments and market activities of its competitors. The Energy Project expects activities relating to assertion and enforcement of its intellectual property rights to increase as the market develops.

The Energy Project employs multiple patent attorneys.

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# Company Background and Financial Matters

## Financial Projections

The financial projections on the following pages assume an initial investment of \$5 million and an additional investment of \$8 million within 15-18 months for a total of \$13 million required to fund the company to exit.

Revenues are derived primarily from licensing hydrogen compression technologies to the Hydrogen gas market, oil and gas producers/refiners, government entities including the US military, backup power and the automotive/fleet vehicle/transportation industries. Annual royalty payments by individual licensees will average approximately \$200,000 per year over the projection period. After funding, The Energy Project will have licensed to approximately 25% of the total of 3,100 companies in these combined markets. Margins derived from licensing revenues peak at 91% representing the relatively low cost of license marketing, sales, administration and intellectual property enforcement.

Additional revenues will be derived from OEM development contracts. The Energy Project will provide assistance with OEM development projects on an hourly basis. These revenues represent less than 10% of total revenues by target date.

Sales of Energy units and hydrogen cassettes to the portable and backup power market represent approximately 19% of total revenues. The "Energy Unit" unit sells for \$750 each and carries a unit cost of approximately \$500 in the first three years. Unit costs drop to \$415 due to economies of scale. Hydrogen cassettes sell for \$15 each and have a unit cost of approximately \$3. The blended gross margin from product sales reaches 64% in target year.

Research and development expense is 10% of total revenues. Marketing and Sales expense is slightly less than R&D; General and Administrative expense is approximately 4% of total sales.



We engineer and license products and services to produce, store, transport, time-shift and extend the duration-of-use of electrical energy.

We power: Backup

We power: Transportation

We power: Electronics



## Limnia Fast Forwards the Green Economy

Limnia is the first to introduce a patented standardized all-in-one **energy production, storage and delivery** platform that is clean green, compact, scalable, safe, cost effective and can leverage existing distribution channels for industrial and consumer segments



THE BOX

Make Green/Clean energy, store energy, recharge batteries,  
Cycloot energy; Patented and in development.



## Huge demand for ultra-portable version



- Up to 300% longer lasting than traditional batteries.
- Recharge anywhere
- Clean, green power
- Fits in pocket, on belt or in briefcase

## Communications Backup Energy Solutions Telecommunications, Utility, Government

### Patented Modular Cassette Technology for

- Hot-swappable
- High reliability, redundant
- Simplicity of design
- Scalable
- Configuration from 1 hour to days
- Ease of maintenance
- Low operating expense

