

ALSET

Materials Innovations In An Emerging Hydrogen Economy
February 24th, 2008

Title: Global Perspectives Towards the Establishment of the
Hydrogen Economy

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Global Overview

Oil dependency

Alternatives

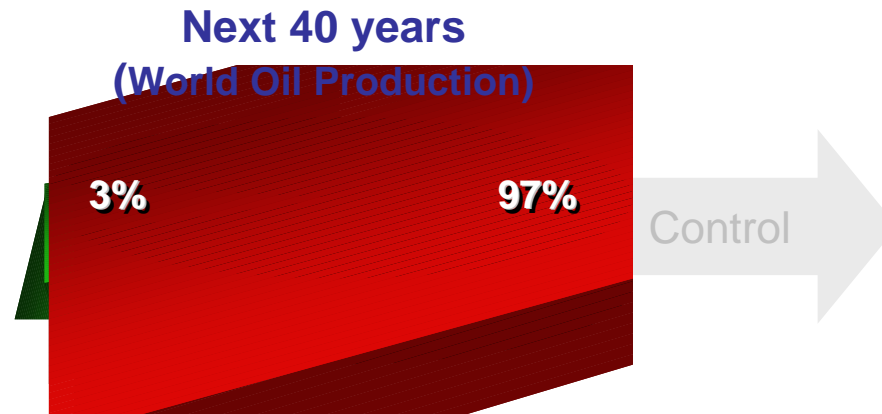
ALSET Proposal

Transition Plan

Conclusions



International Energy Agency (IEA) Estimations:
Investments are 20% below (20,000 billion investment)
needed to assure suitable supply during the next 25
years.



**The Economy
is driven by
Politics**

2006

\$ 2.81 per gallon



2008

\$ 3.14 per gallon

2 years – 12%

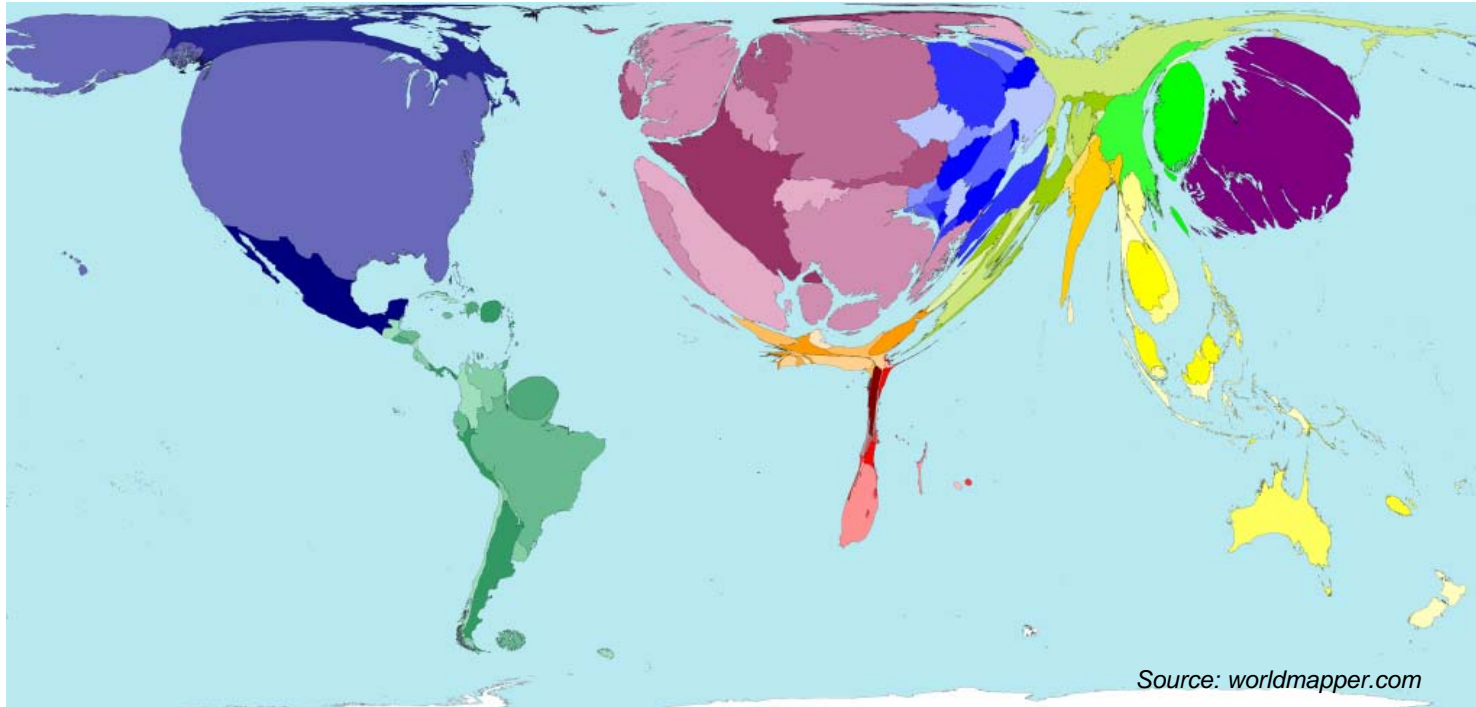
The US Market



45% of the OIL consumed in the US  **GASOLINE**

**AUTOMOBILE INDUSTRY IS
EXTREMELY IMPORTANT**

There are 600 million passenger cars in the world, 97% gasoline powered.



The Market



The more dependent a country is on foreign fuel, the more interested it will be in an alternative source of power.

Country	Amount imported	Percentage
United States	12,220	59,35%
Japan	5,097	97,61%
China	3,438	47,26%
Germany	2,483	94,41%
Korea, South	2,150	99,68%

Thousands of barrels per day.

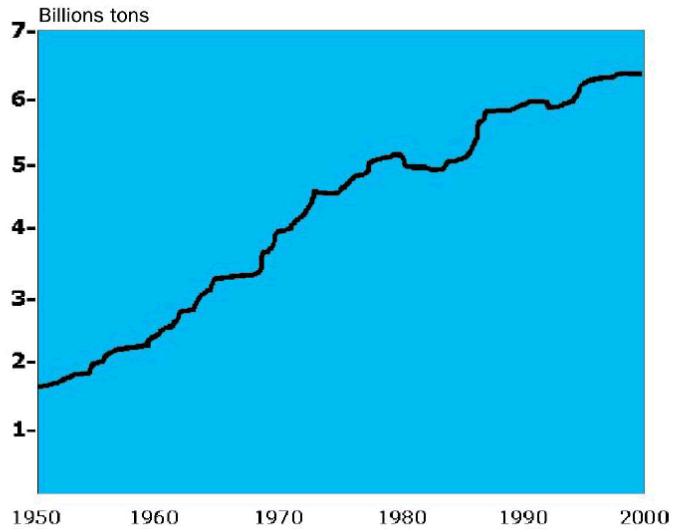
Source: International Petroleum Monthly

There is need for fuel independency

Energy Independency becomes a National Security Issue.

Environmental trends

Carbon Dioxide emissions due to hydrocarbon combustion



Source: Hydrogen Futures: Toward a Sustainable Energy System (Worldwatch Institute)

Global Warming

Acid Rain

Investors' concern for their company's impact on the environment

The US Market



WHAT ARE THE ALTERNATIVES?

Competitive Analysis



Some agricultural products can be converted into fuel.

✓ Biodiesel required Diesel engines (less efficient)

Several countries, like Brazil, have invested in these technologies.

commodity.

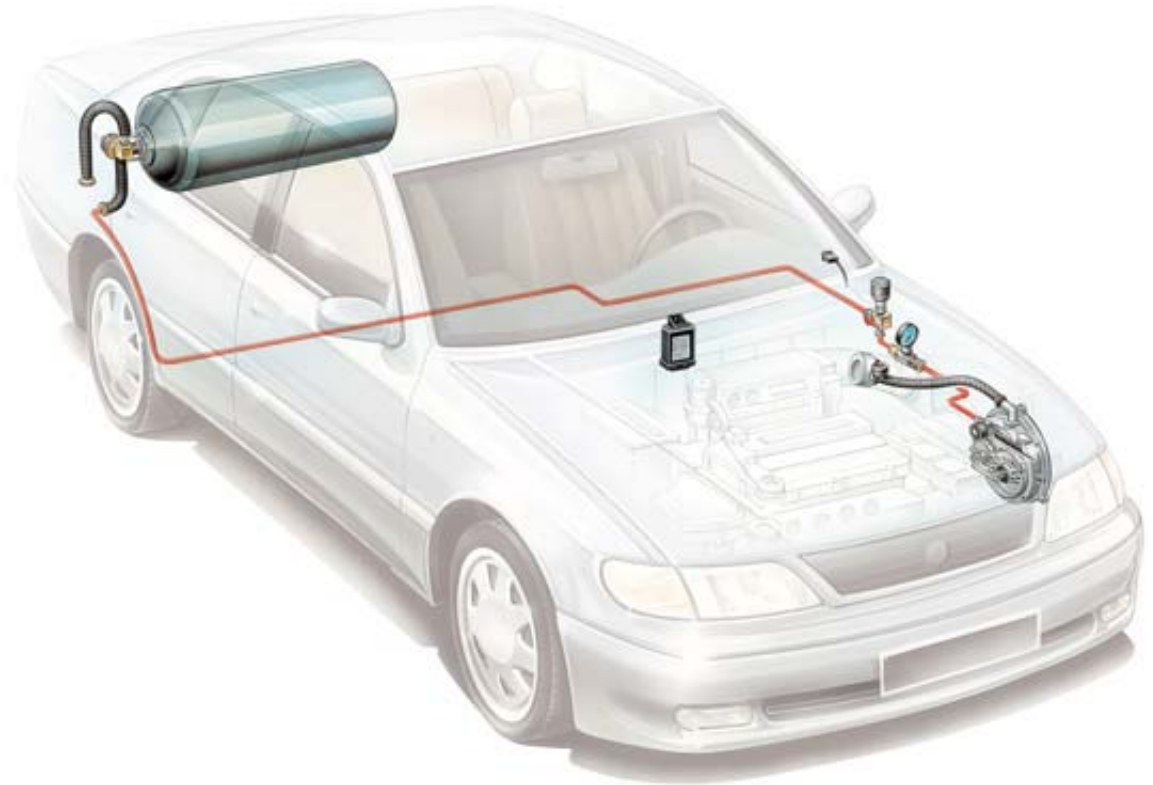


Competitive Analysis



- ✓ CNG is substantially cheaper.
- ✓ It is already distributed all over the world

- ✓ CNG is still a fossil fuel.
- ✓ The technology is years old and it never took off in the US



Although gasoline
**THEY STILL
DEPEND ON
FOREIGN FUEL**
runs on recovered
energy from braking.

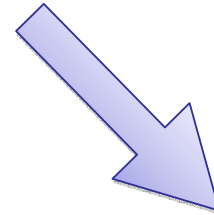
They save up to 50% in
gasoline!



Competitive Analysis



Oil price dramatic increase
Oil's imminent shortage
Rising environmental concerns



Need for a new energy carrier

HYDROGEN

✓ Available all over the globe

✓ Clean

✓ Fossil fuel independent

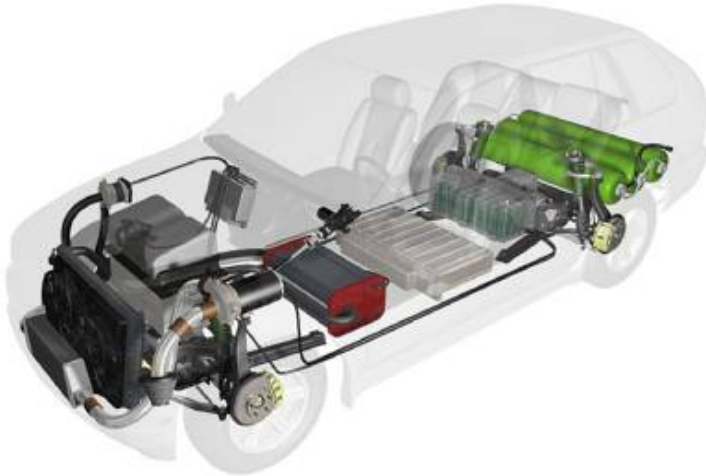


Introduction



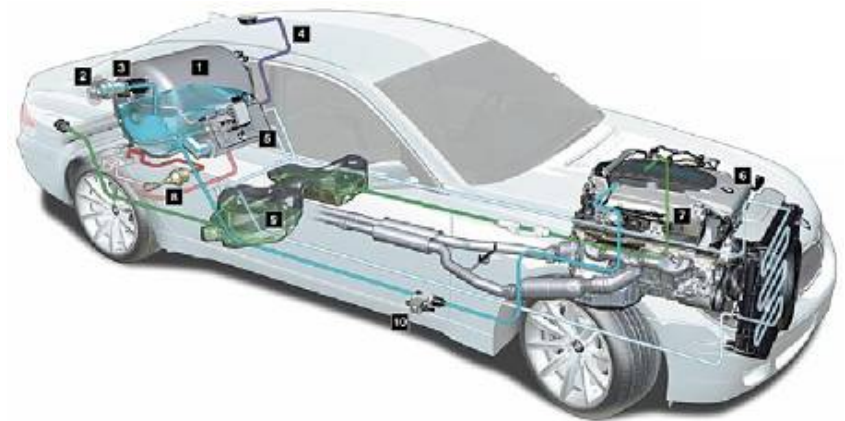
Fuel Cell cars

- ✓ Hydrogen consuming battery
- ✓ Electric engine
- ✓ Zero emissions!



Internal Combustion

- ✓ Mature Technology
- ✓ Allow Bivalent Operation
- ✓ Near Zero emissions



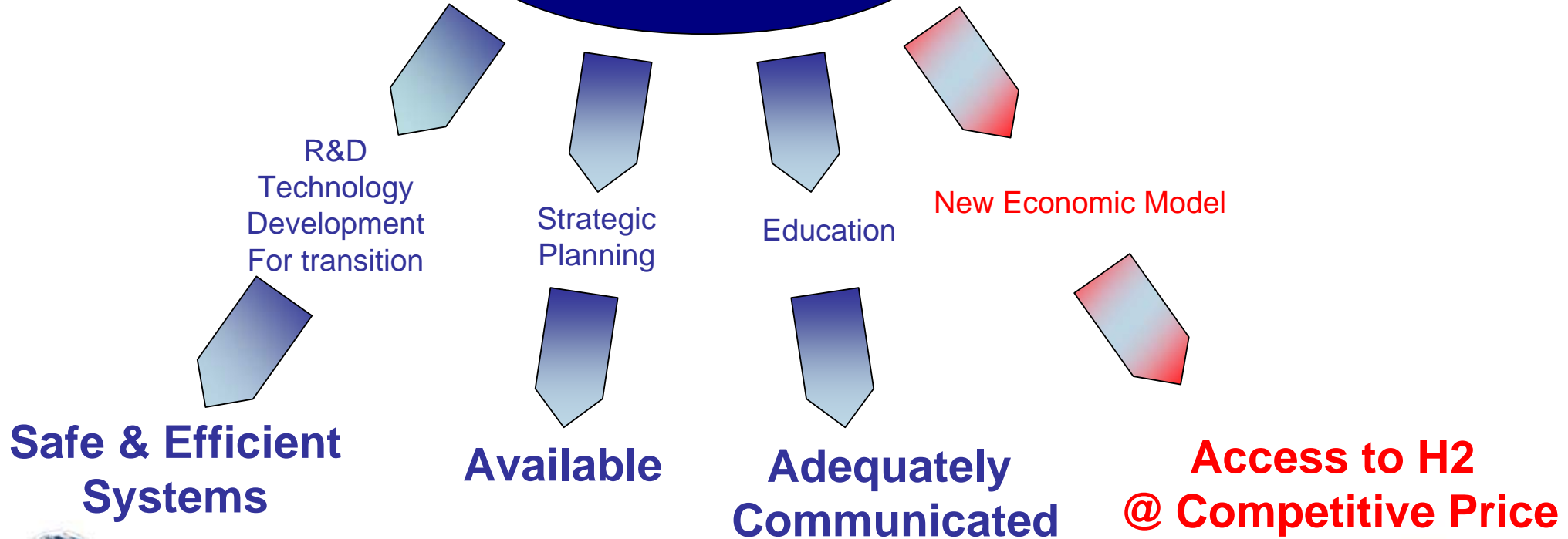
Introduction



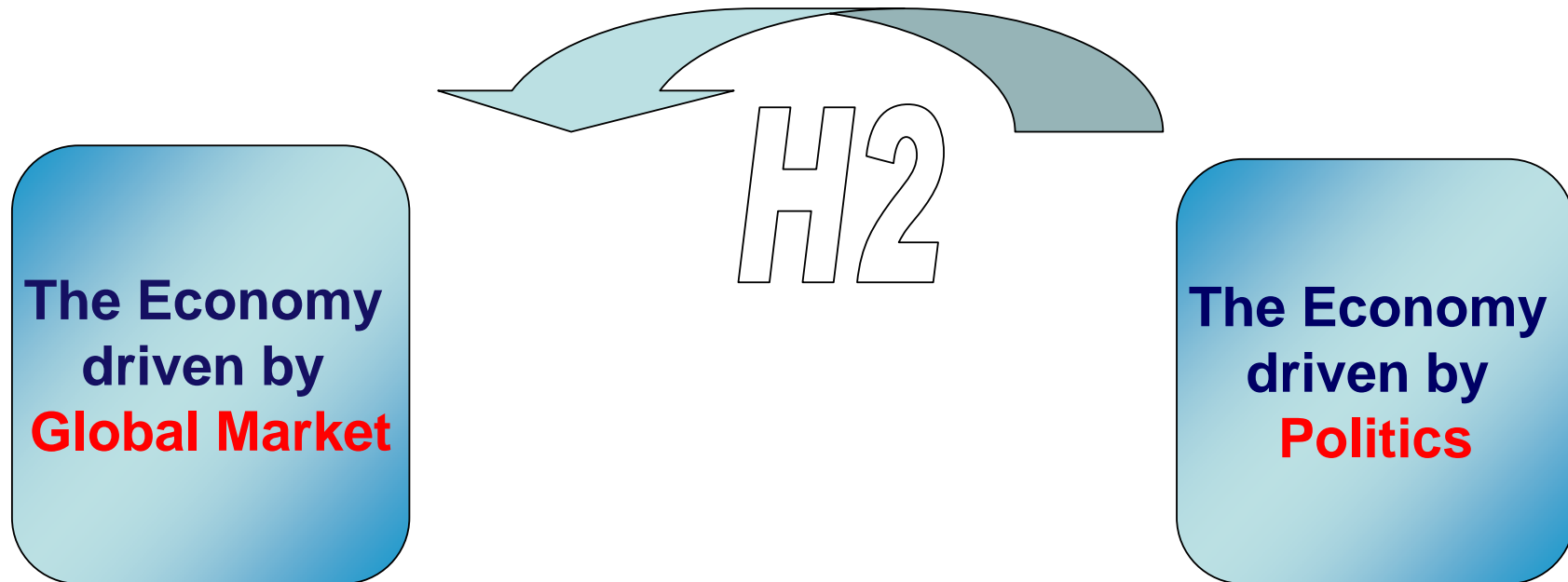
There is a need for

**The development of Technologies
that allow the transition from fossil
fuel to Hydrogen**

H2 Policies



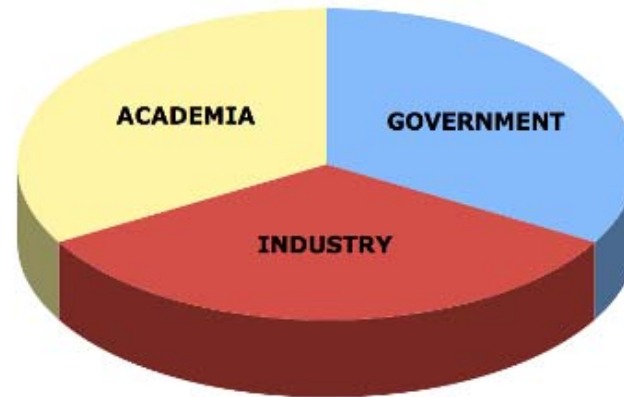
WE HAVE TO CREATE A WAY TO GO BACK TO ECONOMICS



Source: Financial Times



THERE HAS TO BE CONSENSUS AMONG



For a successful Implementation of the Hydrogen Economy,
industry and future consumers have to:

ACKNOWLEDGE HYDROGEN AS A VALID ALTERNATIVE TO GASOLINE

HAVE ACCESS TO HYDROGEN AT COMPETITIVE PRICES

WE NEED TO START TODAY TO DO THE TRANSITION



Alset Technology:

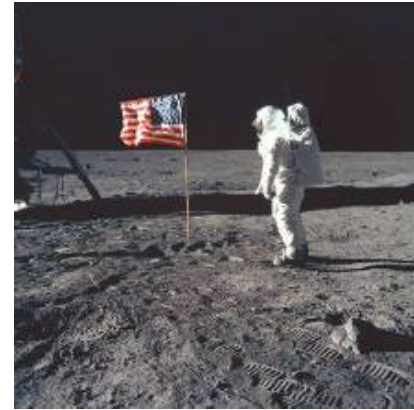
Alset is working on technologies for the transition to the Hydrogen economy:

- State of the art Technology for Internal Combustion of Hydrogen
- Hydrogen Production



LEADERSHIP ISSUE

***THE UNITED STATES HAS
THE CAPACITY TO LEAD
THIS TRANSITION TO THE
HYDROGEN ECONOMY***



***H2 ECONOMY SHOULD BE
The Next Shared vision of America...***



ALSET

Redefining
the future
of power generation

THANK YOU VERY MUCH

ALSET

Be the change you wish to see

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