LAZARD CAPITAL MARKETS

Hydrogen and Fuel Cells Technical Advisory Committee

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U.S. DEPARTMENT OF ENERGY
Hydrogen Program

Sector Overview

- LCM's Alternative Energy & Infrastructure coverage is broad in scope and considers power generation, transmission & distribution and transportation solutions with a convergence theme.

Generation	Grid Infrastructure	Transportation
▪ Solar ▪ Wind ▪ Fuel Cell ▪ Microturbine ▪ Clean Coal ▪ Nuclear ▪ Hydro & Wave ▪ Biomass	▪ Transmission & Distribution ▪ Smart Grid ▪ Energy Storage ▪ Demand Response ▪ Energy Efficiency	▪ Electric Vehicles ▪ Electric Vehicle Batteries ▪ Natural Gas Vehicles ▪ Next Generation Biofuels

Sub Sector Thesis

- **Solar**
  - Sector bifurcation is inevitably creating distinct winners. Key to LT success remains cost leadership, brand, bankability and global distribution. Irrational NT market will be trading choppy. Sector remains underweight in the NT. **Demand elasticity unlikely till 2Q12. Value shifting to downstream and decline in poly prices should help low cost, high brand vertically integrated players.**
- **Wind**
  - Mature industry, already an oligopoly and industry growth remains contingent upon Asian demand, increasing price of natural gas, and federal RPS mandate. Decline in equipment prices and new product innovation could have a meaningful impact on cost competitiveness of wind power, even in world of low natural gas prices. We remain cautious on the sector in the near term.
- **DG**
  - We see increasing opportunity for microturbine and base load fuel cells due to reduction in the cost curve as well as increased policy shift towards DG solutions. Companies within this segment remain speculative investments in nature, but could present outsized upside potential on successful execution.
- **Grid**
  - This segment remains a key to the convergence of electrons and BTU.
  - Smart Grid facilities demand response, integration of electric vehicles, load management, and renewable integration.
  - We see an attractive opportunity within this segment from companies that generate strong cash flow.
- **Transportation**
  - We believe electrification of the transportation industry is a MEGA trend. Sector is still evolving and investment opportunities remain somewhat speculative and limited.
  - Within NGV, we prefer engine manufacturers rather than fueling infrastructure companies.
  - We do not see value in traditional corn based ethanol industry, but see some large potential in next generation biofuels driven by biocatalysts.

Sector Outlook and Equity Markets Perspective

Sector holds great promise but is receiving no investor attention

- Transform power generation industry
- Revolutionize transportation industry
- Reduce dependence on foreign oil
- Create domestic JOBS!

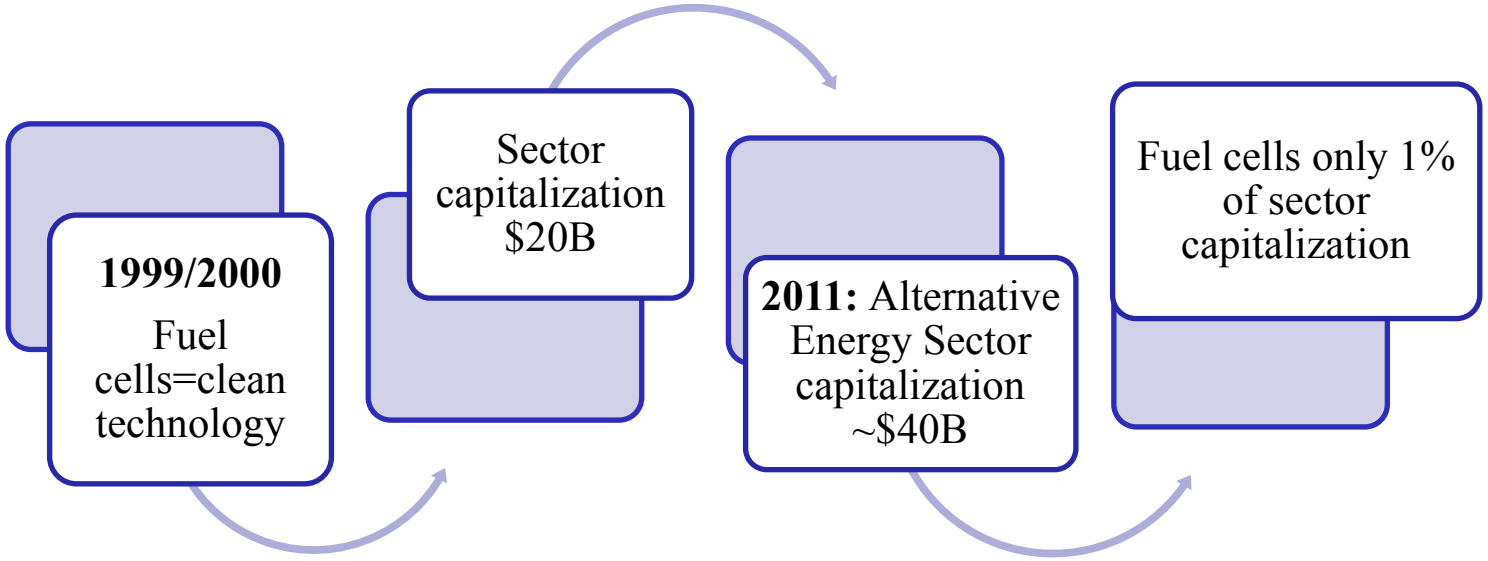
Role of Distributed Generation

- Onsite power enhances reliability 24/7
- Avoid transmission constraints
- Environmental as well as economic benefit
- CHP application improves energy efficiency

Transportation Solutions

- Concerns on safety of hydrogen need more education and public awareness
- Natural Gas and biofuels have taken central stage
- Electrification is gaining momentum
- Fuel cells with limited application in heavy duty for demonstration purposes have taken back stage
- Public investors have practically ignored the sector

Last 10 Years….



Valuation Discrepancy Despite Tremendous Strides

- Trading at less than one time backlog
- Trading at less than backlog + cash
- Some are at the cusp of profitability
- Broader market/recession/and overall sector sentiment has played a role but…
- **Lack of meaningful policy support to sustain growth is largely to be blamed**

The Misperception

Hydrogen can never be restored economically

- Has safety issues

Fuel cells are never going to be economical

- Only viewed as futuristic with no real commercial merits

Case Study: PV Growth

Growth

- PV has grown from 1.6 GW in 2006 to 18.1 GW in 2011
- Approaching cost parity

Subsidy

- High subsidization in Europe has created massive competition
- Result: Difficult 2011/oversupply
- But demand elasticity could drive significant demand by end of 2012

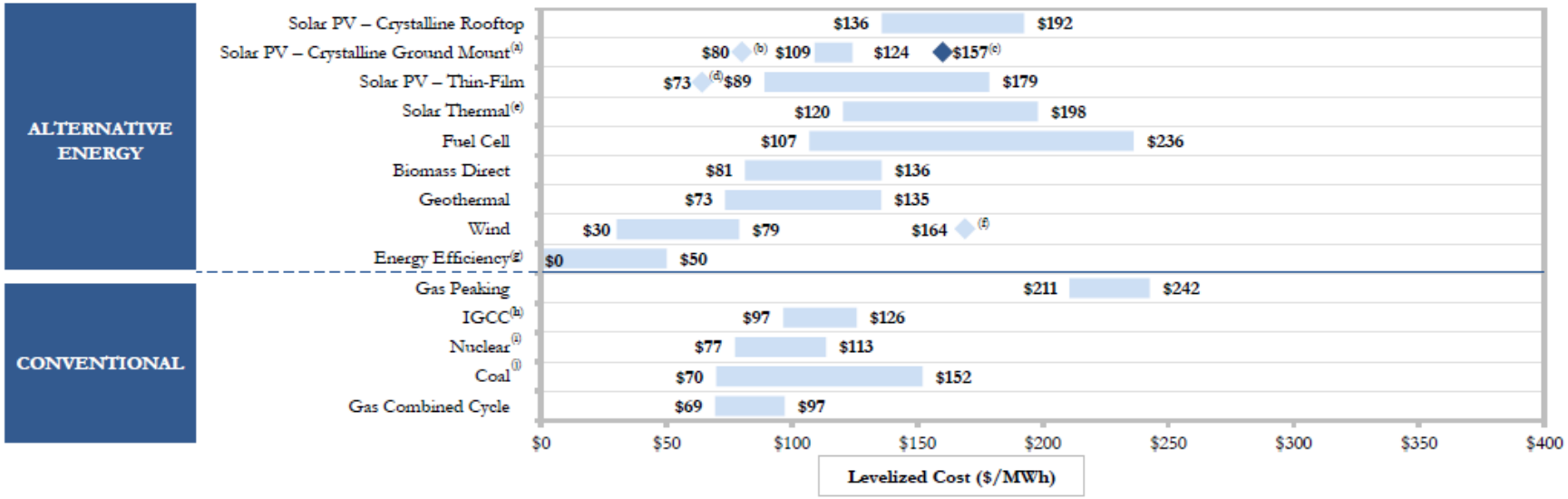
Challenges

- Many NT challenges, but real industry has evolved
- Different financing and business models are evolving
- Utility involvement expanding

Wind Sector

- Has several issues including storage, transmission and grid stability
- However, US wind accounts for 21% of total global installed capacity of 194 GW
- Why? Clear subsidy program and RPS
- Role of large conglomerates

Levelized Cost of Energy Comparison



Source: *Lazard estimates.*

Note: Reflects production tax credit, investment tax credit and accelerated asset depreciation, as applicable. Assumes 2010 dollars, 20-40-year economic life, 40% tax rate and 5-40 year tax life. Assumes 30% debt at 8.0% interest rate, 50% tax equity at 8.5% cost and 20% common equity at 12% cost for Alternative Energy generation technologies. Assumes 60% debt at 8.0% interest rate and 40% equity at 12% cost for conventional generation technologies. Assumes coal price of $2.50 per MMBtu and natural gas price of $5.50 per MMBtu.

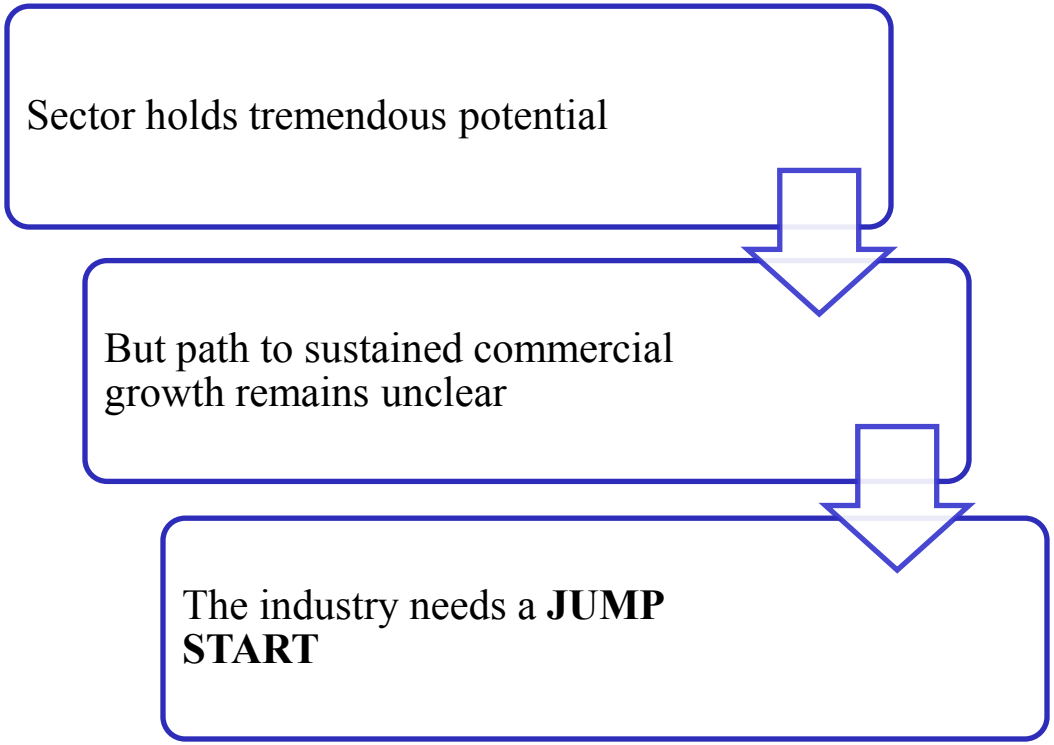
(a) Low end represents single-axis tracking crystalline. High end represents fixed installation.
(b) Represents estimated implied levelized cost of energy in 2012, assuming a total system cost of $2.50 per watt for single-axis tracking crystalline.
(c) Represents a leading concentrating photovoltaic company's targeted levelized cost of energy, assuming a total system cost of approximately $4.00 per watt.
(d) Represents a leading thin-film company's targeted implied levelized cost of energy in 2012, assuming a total system cost of $2.00 per watt.
(e) Represents both solar tower and solar trough, each with 3 hour storage capability.
(f) Represents estimated midpoint of offshore wind's levelized cost of energy, assuming a range of total system cost of $3.10 – $5.00 per watt.
(g) Estimates per National Action Plan for Energy Efficiency; actual cost for various initiatives varies widely.
(h) High end incorporates 90% carbon capture and compression.
(i) Does not reflect decommissioning costs or potential economic impact of federal loan guarantees or other subsidies.
(j) Based on advanced supercritical pulverized coal. High end incorporates 90% carbon capture and compression.

Source: Lazard

What Could Increase Investor Attention?

- Clear path to economic parity
- More companies developing breakthrough technologies
- Industry needs COOPETITION not COMPETITION
- Subsidy support that allows for long term PPAs
- Step function: DG, industrial applications and then transportation
- Have to incentivize utilities, industrial users and large auto players
- Educate, innovate, let the best technology win
- Need national level policy

Closing Comments



Energy Policy cannot be a political issue; it is a national security issue.

Thank You

Sanjay Shrestha