

Procurement Strategies For Fuel Cells

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Abstract

Fuel cell technology continues to hold great promise for a wide range of applications. While there has been significant experience gained in deployments for stationary, transportation and portable systems there is little access to the actual field performance data and most lead adapters are encrusted in non-disclosure agreements. The lack of verifiable information about existing implementations places a heavy due diligence burden on a prospective user. Yet many fuel cell manufacturers and integrators are now realizing the requirement to separate the risks of technology change to operations from the risks emanating from embedded failure modes and effects inherent in fuel cell systems. The author will present procurement strategies for prospective fuel cell users that mitigate the lack of verifiable performance data and work around the barriers erected to prevent unfiltered assessments from the current user base. These strategies include navigating around the disincentives of users to share information, syndicating potential users to share due diligence data and actual terms & conditions which shield the user from non-disclosed or unknown risks to a capital purchase. The goal of this presentation is to assist the procurement and deployment of fuel cells by providing methods and information to the potential user community.

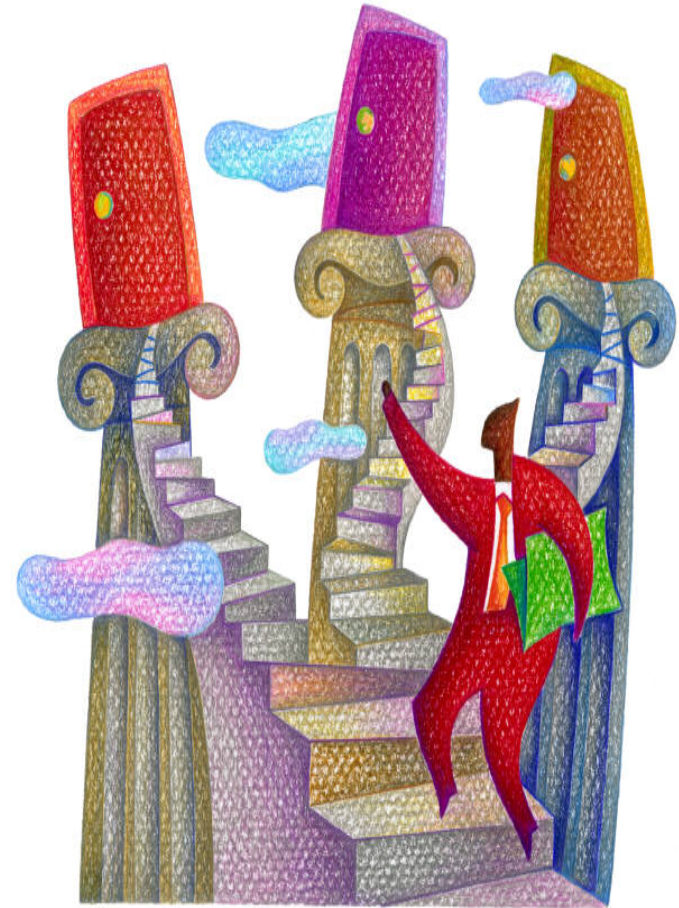
Key Points

- Competitive Landscape Obscured By Fronts Posing As VARs
- Life Cycle Costs Difficult To Verify
- Poisoning The Marketplace Still Possible
- Government Has Not Supported Data Integrity
- Applications Are Sometimes Purchased
- References Are Sometimes Purchased
- Defensive Acquisition Strategies Are Essential



Surveying Suppliers To Develop Real Choices

- Differentiate Between Developers, Manufacturers Value Added Resellers (VARs), Agents, And Rebranding Fronts
- Critical Parts Suppliers Still Have Ambitions To Migrate Into Equipment Providers
- Technology Readiness vs. Product Readiness



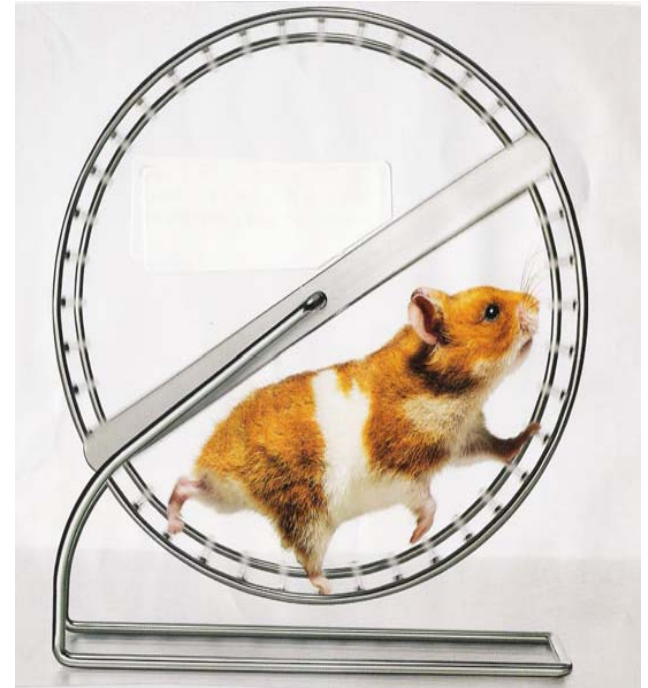
Decoding Vendor Expressions

- Many Websites Contain False Information
- Some Recent Studies Fail To Properly Reflect Commitments To Commercialization
- The Dimension Of Time Missing From Field Operations Claims
- Why Is The Warranty So Vague



Chasing Data Integrity

- Careful With NDAs To Avoid Exposure To False Claims
- Distinct Lack Of Accountable & Non – Conflicted Reviews
- Valuations Rarely Supported (Pretense Of Knowledge Syndrome)
- Government Procurement Is Not Demonstrative Of Trustworthy Information



Following Government Fuel Cell Procurements

- The Half Life Of Old Decisions
- Government Strives For Goodwill On Its Selections
- The Ability To Write A Proposal Is Not An Indicator Of Commercial Capability Or Intent
- Peer Reviews Are Rarely Enlightening



Lobbying May Effect Congressional Decisions



Due Diligence

- Start With Hardware
- User Experience
- Customer References
- Vendor Facility Inspections
- Visit User Installations
- Warranty Specificity
- Pricing Vs. Buy The Business
- Sell Stock Vs. Sell Fuel Cells
- Capabilities Mix
- Enterprise Strength
- End With Hardware



Do Not Waste Time

- Intellectual Property
 - Stale
 - Integrator's IP
Defensive
- Resumes
- Marketing Material
- Stage Managed Demos
- Implied Quid Pro Quo



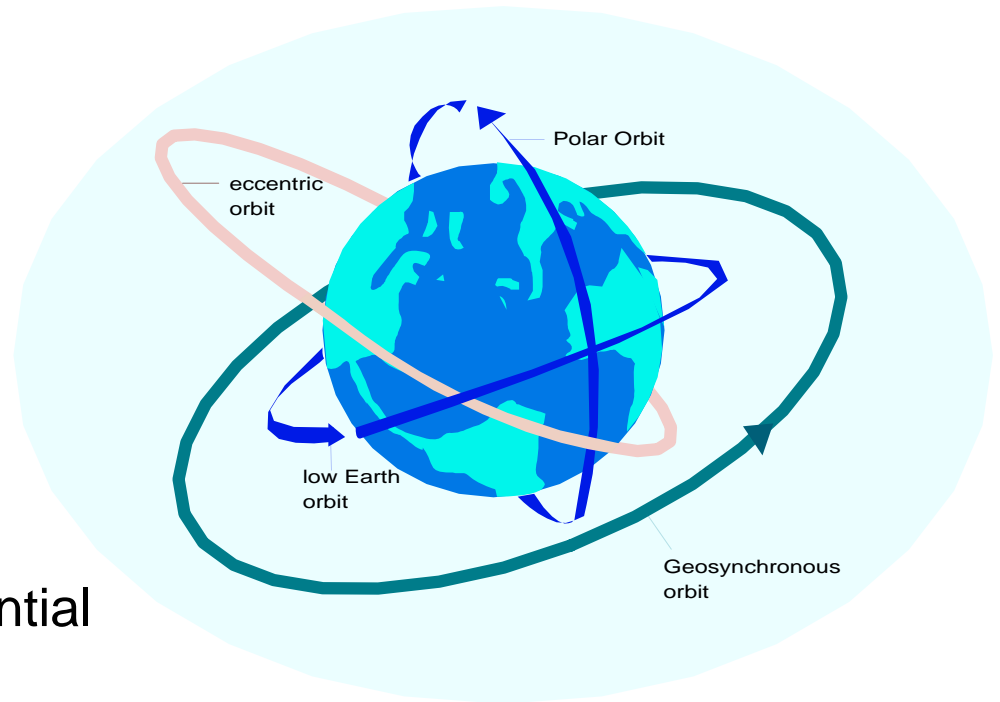
Syndication Of Due Diligence

- Confidential Business To Business Analytical Data Sharing
- Cost Sharing On DD, Procurement & Logistics
- Joint Data Base Maintained
- Avoid NDA Entanglements & Liabilities
- User Orientation



Orbits Of Value

- Initial Justification May Not Be Big Payoff
- Initial H2 Build Out Over-capacitized
- Positioning For Scale Of Economy Improvements
- Fuel Supply Stability Essential
- Hydrogen Quality Assurance



Cost Benefit Analysis

- CBA Time Horizon
Restricted To Service Life
- IRR Sensitive To Upfront
NRE Costs
- Interest On Contingency
Allocations (Self Insure)
- Interest On Liquidated
Damages Reserve (R&M)
Performance Incentive
- Out Year Credits (Royalty
Income) For Market
Positioning Augmentations



Value Proposition

1. Create Weighted Algorithm Which Reflects Enterprise Specific Priorities
2. Recalculate Regularly
3. Learning Has Value
4. Sustainability Has Value
5. Vendor Relationship Has Value
6. Positioning For Hydrogen Has Value



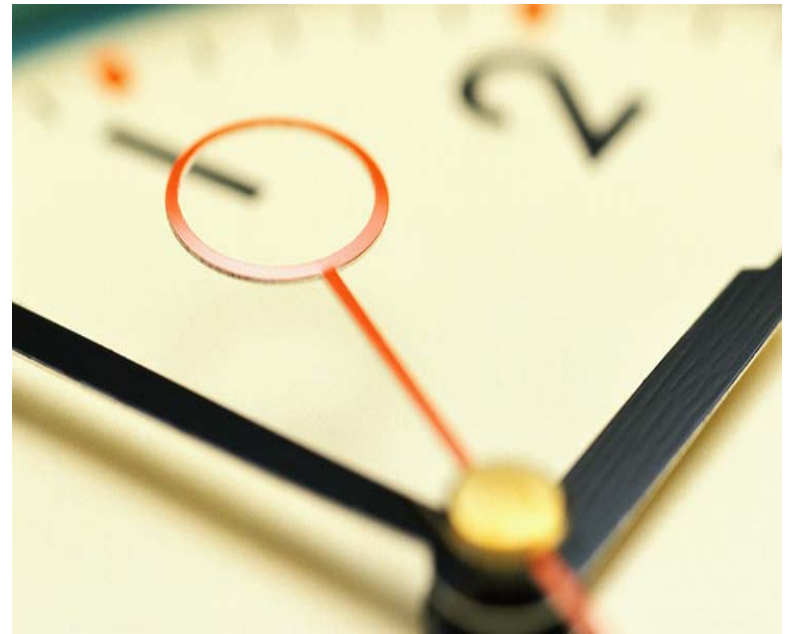
Ensure Vendor Won't Drop The Ball

1. Performance Warranty
Based On Intended Service
2. Liquidated Damages On
Both Performance &
Logistics
3. Withhold Endorsements
Until Operational
Milestones
4. Prioritization Clause
5. Most Favored Customer
Terms
6. Maintain Control Of Data



Guarantee Timely Logistical Support

- Service Availability Metric
- Response Time Enforcement
- Certify Customer Personnel For Tier One Maintenance
- Useful Diagnostics
- Spares Kit On-site
- Vehicle Warranty Impacts Negated
- R&M Cost Ceiling



Post Purchase Seeking The ROI

- Track Performance – Data Acquisition & Analysis
- Collect All R&M Expenses
- Fuel Consumption Trends
- Consistent Cost Comparisons (Real vs. Planned)
- Logistics Responsiveness
- Early Action To Counter Failures
- Operations Experience vs. Training



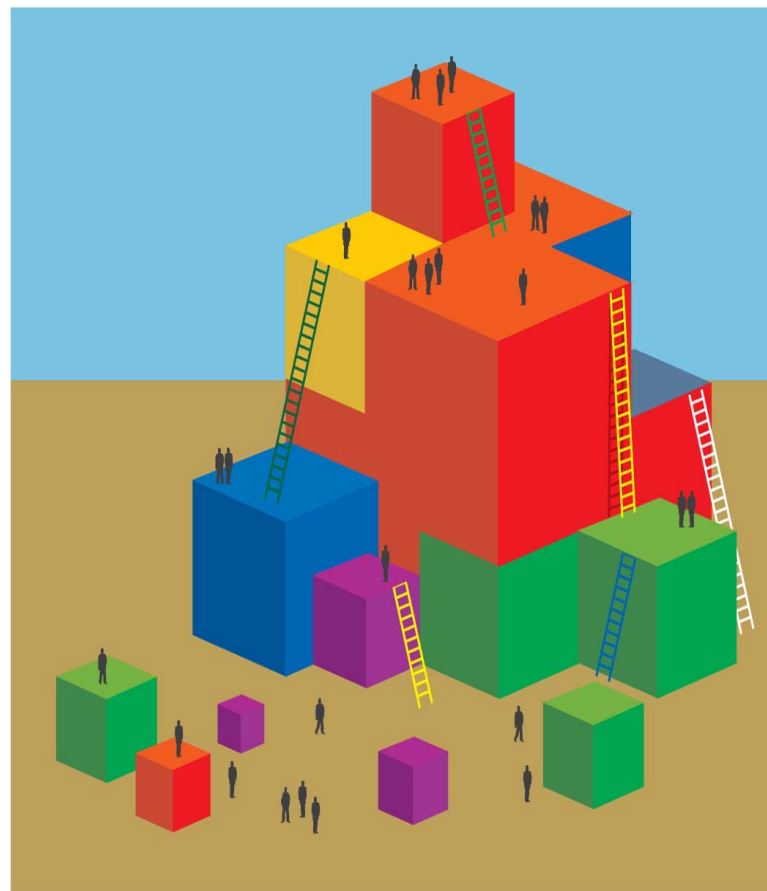
Internal Expectation Management

- Careful Support Of Budget Allocation
- Quick Response To Propaganda &
- Public Disappointments
- Analyze Accidents
- Illuminate Vendor Guidance
- Timing Surrender
- Damned By Faint Praise
- How To Build On Success



Achieving Enterprise Objectives By Building Upon The Hydrogen Economy

1. Fuel Cell Success Requires Control Of Fuel
2. Fuel Purity
3. Availability Of H2 In Proximity To Use Amplifies Value
4. Hydrogen Is Safe
5. Natural Gas Trading Metrics Do Not Reflect Reformed H2 Prices





COUNCIL FOR HYDROGEN ENERGY IMPLEMENTATION

The Council for Hydrogen Energy Implementation (CHEI) is a 501 (c) 6 non profit trade association representing a diverse membership of industry, academic, and government leaders whose aim is to facilitate implementation of hydrogen energy facilities, products and services as part of the nation's energy mix. The CHEI exists to promote the business interests of its members, facilitate joint efforts and to advocate for state, regional and federal legislative activities that remove or mitigate barriers to the commercialization of hydrogen energy.

<http://www.council4hydrogenenergy.org>

Fuel Cell Procurement Is Not A Simple Transaction

David Haberman has 20 years of experience in the development, manufacture, applications engineering and logistic support of fuel cells for portable, stationary and transportation applications. Today he manages the procurement of fuel cells for multiple clients.

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