

# **Energy Technology Investment Trends**

October 2004

**A RESEARCH STUDY OF VENTURE CAPITAL  
INVESTMENT TRENDS IN NEW ENERGY  
TECHNOLOGIES**

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**ABSTRACT:**

As a result of increasing consumer needs, rising energy costs and recent technological advances, new energy technology markets have grown rapidly throughout the past decade, with promise of dramatic advancements in the years ahead. Energy technology and infrastructure no longer lie exclusively within the realm of government programs. Rather, such segments have opened to the private sector, indicating significant return on investment (ROI) possibilities. Recent research has revealed a wave of private venture capital flowing into energy startups – a trend echoed in the pages of this study.

A survey was conducted to determine the investment tendencies within new energy technologies. The study analyzed 18 investment organizations that focus on emerging energies market. Using a combined qualitative and quantitative study, researchers delved into firm demographics, current investments, segments of future interest, and funding decision criteria.

**BACKGROUND:**

According to the US Department of Energy, America spends over \$500 billion dollars annually on energy. In the past decade, the country has increased oil consumption by 20%, and 60% of oil utilized arrives via imports. Despite vast use, research suggested the world's oil production will peak within the next 35 years.

In October 2004, oil prices rest just above \$50 a barrel and pushed gasoline to \$2 per gallon at the pump. This represents a 40% cost increase since 2003. Additionally, natural gas prices tripled to \$6 per million BTUs in less than a decade, and usage of fossil fuels climbs steadily.

Energy issues impact more than transportation. The August 2003 blackout was the largest in North American history. Effecting eight states and Ontario province, the power outage reached 50 million people and left behind an estimated \$750 million in damages.

Without a doubt, energy crises continue to plague society through multiple means, assigning new urgency to the quest for solutions. Until recently, investing in “energy” was less attractive to capital markets than other technology investments. In the past, energy investments required large capital commitments with high risks and long payback periods while investors demanded a guaranteed, regulated return.

However, the strain on energy sources and North America's ravenous appetite for energy to power automobiles, businesses and homes is troublesome. The need for new energy technologies is expected to expand nearly tenfold by the year 2012 and become a \$95 billion market. A number of venture capital groups have recognized this potential and are beginning to place additional capital in this sector. Investments in the clean energy field rose 10X from five years ago and saw \$1.7 billion placed into energy companies in the past three years.<sup>1</sup> Truly, the time for new energy technology investments has arrived.

**THE SURVEY:**

Following a June 2004 Energy Venture Forum in Houston, researchers queried representatives from 18 energy venture groups. They investigated a variety of aspects regarding investment perspectives. Specifically, the assessment tool acquired details concerning the representatives' organizations, their investment criteria, as well as their specific areas of interest (including both current portfolio and preferred sectors for new investments).

Survey respondents included major players for private funding in new energy technologies, including: Advent International Global Private Equity, Altira Group, ChevronTexaco Technology Ventures, ConocoPhillips, Contango Capital, DFJ Mercury Ventures, DTE Technology Ventures, Easenergy, EnerTech Capital, Eyes of Texas Partners, First Albany Tech Ventures, Hunt Power, Murphree Ventures, Nth Power, Reliant Energy, Shell Technology Ventures, Techxas Ventures, and Trillium Group.<sup>2</sup>

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<sup>1</sup> *Clean Energy Trends 2004*. Joel Makower, Ron Pernick, Client Wilder. March 2004. ([www.cleantedge.com](http://www.cleantedge.com))

<sup>2</sup> If your organization was not listed and you would like to be included in survey updates, please contact [bmartin@jumpstartpartners.com](mailto:bmartin@jumpstartpartners.com).  
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**FUND SIZE, INVESTMENT AVERAGES & COMPLETED TRANSACTIONS:**

Survey results revealed that participants held an average fund size of \$117 million, with four firms commanding more than \$150 million of available capital.

Additionally, the study discovered that, on average, firms committed \$2.9 million per investment in new energy technologies. The pledged monies ranged from \$500,000 to \$6 million per transaction. Notably, this average deal size ranked significantly below more mature venture segments. For example, in 2003, software investments averaged \$5.1 million per deal; during the same timeframe, telecommunications averaged \$7.9 million, and biotechnology commanded \$11.2 million.<sup>3</sup>

Survey participants also noted that portfolio additions were not frivolously incorporated. Rather, results suggested that firms meticulously screened a variety of potential deals before committing capital. On average, organizations invested 4.5 times per year. These investments represented approximately 1.1% of the total opportunities reviewed. Specifically, venture organizations would examine 88 business plans and meet with 18 different executive teams in order to complete a single transaction.

	Average	Lowest	Highest
Fund Size (\$M)	\$ 117	\$ 3.5	\$ 250
Average Deal Size (\$M)	\$ 2.9	\$ 0.5	\$ 6
Investments / Year	4.5	1	10
Company Meetings / Year	84	25	150
Reviews / Year	300	15	1,250
IRR Objective	28%	15%	60%

Figure 1: Aggregated Information on Participating Firms

**AREAS OF INVESTMENT:**

As an investment area, the energy technology sector reflects an amazing emerging market, expecting phenomenal growth in the coming years. In fact, according to a CS First Boston 2002 study, this segment is anticipated to grow by over 35% annually.

To discover specific topics of concentration, respondents identified current investments and the compilation of their existing portfolios. For specific areas of interests ranked by individual firms, please see Appendix A (see page 12).

In effort to discern interest in additional market segments, participants also indicated sectors they intended to pursue. Interestingly, most respondents only invested in a fraction of the areas in which they deemed attractive. Specifically, the average investment organization expressed interest in over 11 separate energy market segments, but invested in less than four distinct sectors.

<sup>3</sup> Data from 2003 MoneyTree survey.  
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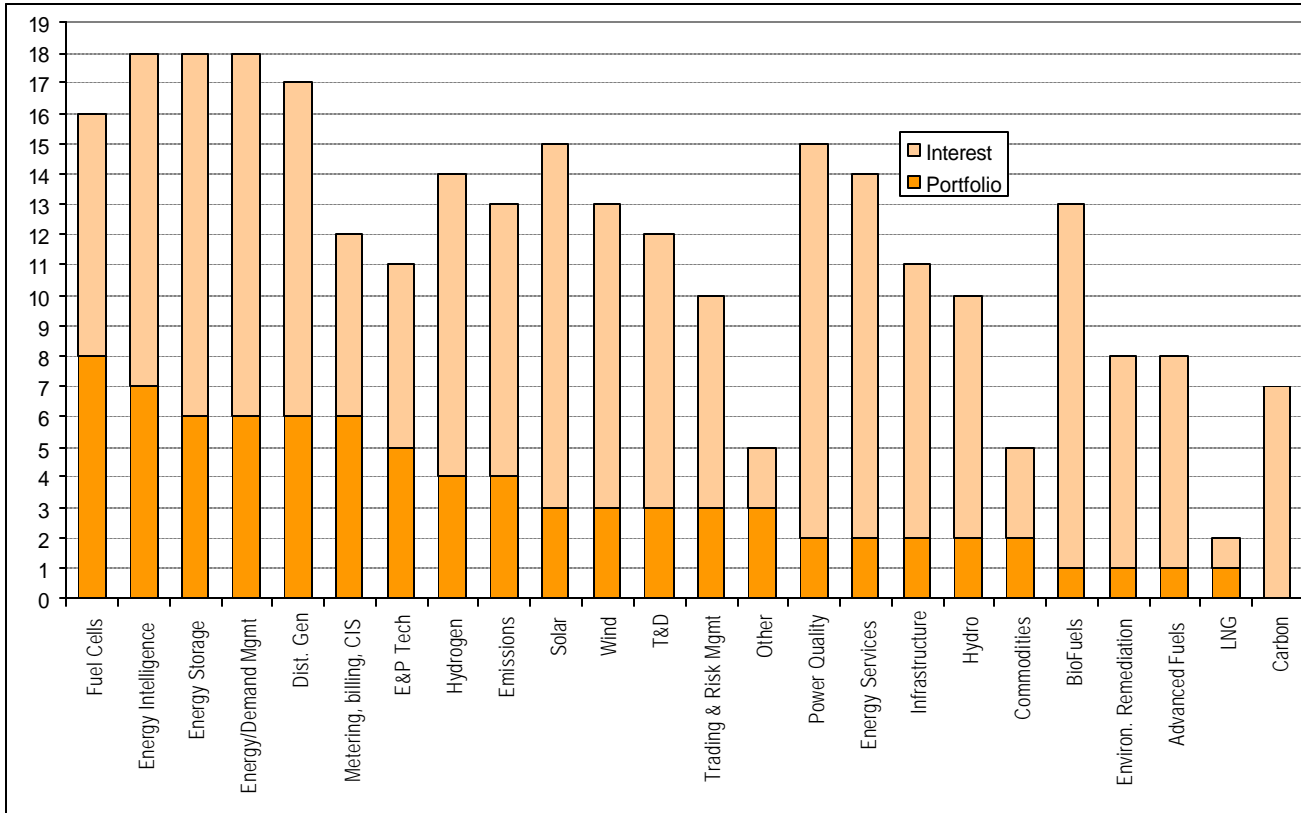
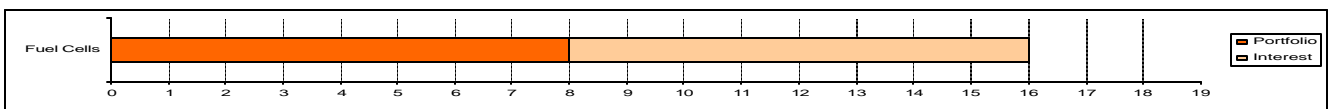


Figure 2: Areas of Interest of Participating Firms

**Fuel Cells**

In the 1960s, NASA invested in fuel cell technology to provide both energy and water in space. However, fuel cell investments no longer rest solely with large governmental entities. Within the past decade, this technology has developed competitively, with broad applications ranging from long-lasting batteries in computers to new automobile technologies. Fuel cells continue to generate investment interest, as the electricity produced uses only hydrogen and oxygen, thus emitting heat and clean water. This provides an interesting alternative to the “dirty” energy sources of present day.

Of all the energy technology sectors listed in the survey, fuel cells received the greatest frequency of current investments. Eight respondents (44%) reported fuel cell companies as part of their portfolios, and an equal number expressed continued interest in the category.



Several fuel cell companies, including Fuel Cell Energy, Plug Power, and Ballard Power Systems, have held successful IPOs. Although these are currently trading 50% lower than their 52-week high, some have valuations as high as 30-times revenue, in spite of negative earnings!

Additionally, government entities remain bullish on fuel cells, suggesting this market segment should remain strong. With the commitment of \$1.2 billion to hydrogen research by President George W. Bush, and the US Department of Energy's established fuel cell incentive programs, combined with nearly 40% of the states championing a fuel cells support agenda, it is understandable why this sector ranks so highly among survey participants.

### **Energy Intelligence (Wireless, Sensors, Network)**

Energy intelligence systems improve monitoring & control, reduce operating costs, and improve performance of energy assets. They also optimize the power grid that distributes and produces energy.

In this survey, energy intelligence ranked closely behind fuel cells, appearing in the portfolios of seven (39%) responders. Four firms had also invested in more than one company within this category. In addition, all firms identified energy intelligence as a segment of interest.

One reason for the widespread attraction in this arena lies in the potential cost savings that energy intelligence represents. For example, a 2002 Royal Dutch / Shell Oil study of the oil & gas market identified over 1,600,000 well heads that each had potential for 25-60% system cost-savings with remote monitoring and automation procedures.<sup>4</sup>

With the exception of a few larger players (i.e. Honeywell, ABB, Invensys, GE, IBM), suppliers are fragmented and few companies have revenues over \$20 million. As a result, investors are more likely to sell a portfolio company to a larger competitor than file a public offering. Although valuations as high as 10X revenue have been noted, appraisals ranging from one to two times revenue are more common, with a premium paid for recurring annual sales.

### **Energy Management / Demand Management**

As the wholesale electricity markets deregulate, the ability to reduce energy demand has enormous economic value and continues to woo investors. Electronic components and communication technology have become more cost-effective and consumers are beginning to install demand management technology. Electricity markets in Texas and California demonstrated that a 10% demand reduction for electricity could result in a price reduction of over 60%. With such potential results, it is no wonder that investment interest in this sector has followed.

Perhaps this contributes to the reason why the Energy Management / Demand Management vector also ranked high as an area of significance for investors. The survey revealed that six investors (33%) already committed to

### **Case Study: ChevronTexaco Technology Ventures Investments**

#### **Portfolio Investment: MetaCarta**

MetaCarta developed a new search technology that allows users to search unstructured document collections (e.g. web documents) for geographically relevant information, and display the information positioned on a map. This enables users to integrate data from structured Geographical Information Systems (GIS) with unstructured document collections. The company targeted the intelligence community, where MetaCarta technology is now widely utilized.

#### **Investment Rationale**

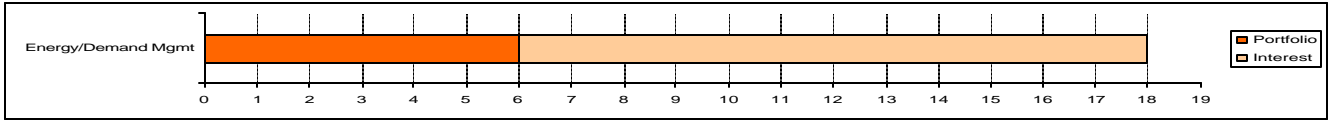
This investment opportunity satisfied multiple dimensions used in CTTV's screening process, including: outstanding technology, professional investment syndicate, market size, and strategic fit for ChevronTexaco.

#### **About ChevronTexaco Technology Ventures**

CTTV identifies, assesses, and introduces new technology to ChevronTexaco via a venture capital model. CTTV enhances portfolio companies by: providing access to ChevronTexaco technology resources, soliciting direct feedback from internal customers, assisting in product development, and identifying additional connections in the VC and petroleum industry.

<sup>4</sup> The authors completed a corresponding research study in 2003 regarding the energy intelligence/enterprise energy management market. Contact Bob Martin (bmartin@jumpstartpartners.com) or Steve Meyers (steven@stevenmeyers.com) for more information. October 2004

this market, and every venture organization also noted that the category of energy/demand management was an area of interest.

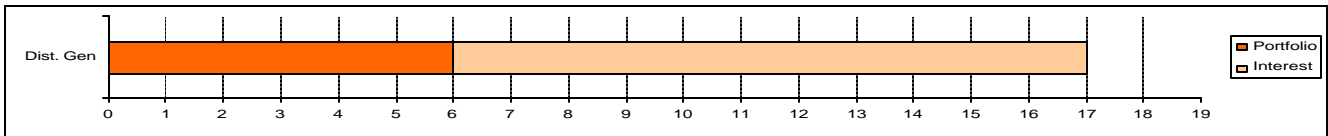


The use of this technology continues to prove valuable, as rising energy use and costs plague the nation. In effort to relieve the problem, the California Energy Commission (June 2004) announced an \$8 million commitment to fund a demand-response research center. This economic possibility suggests that investors are seeking opportunities to participate in a greater fashion in this segment.

**Distributed Generation**

This technology has considerably evolved in recent years. Originally, distributed generation was utilized two-fold. Customers once purchased large distributed generation equipment for back-up generation at mission-critical facilities (e.g. hospitals and microelectronics manufacturing). Additionally, the technology was employed to reduce overall energy costs at large industrial facilities.

Recently, the development of smaller, more efficient generators have enabled diverse applications and increased investment firms’ interest in the technology. A third of the venture (6) firms surveyed already invested in distributed generation companies and 94% of responders indicated interest in this category.



Venture firms have backed companies such as ClarusEnergy and Real Energy in this market space. These turn-key, distributed generation solutions provide back-up energy while reducing costs through dynamic operations. Success has been limited for these companies, though, as high natural gas prices, uncertain regulatory environments, complex implementation, and long sales cycles have challenged their business model.

**Customer Information Systems, Metering & Billing**

As energy systems’ complexity and dynamic nature evolve, billing and customer information systems must adapt. The complicated process of energy billing must consider real-time prices, limited usage measurements, complex rates, taxes, and several adjustments while integrating into legacy information systems.

As a result of the increased need for integrated systems, this category appeared in a third (6) of the responders’ portfolios. Additionally, 66% of the organizations noted interest in this segment.

Companies providing both billing software solutions and billing services have done well. Although this area may have a low barrier to entry, it requires significant market experience to achieve success in this vector.

**Renewables**

Renewable energy (such as wind and solar technology) has seen recent growth in the U.S. and is forecasted to grow nearly 10-fold over the next decade according to a 2003 Clean Energy Incubator study. Notably, wind energy has grown faster in the U.S. than nuclear energy did at its peak (Rocky Mountain Institute, 2004). In addition, prices are considerably more competitive in certain regions because of proximity to favorable locales, efficient transmission & distribution networks, and local government subsidiaries.

Despite such accolades, the survey indicated few actual investments. Three firms (17%) held portfolio companies, despite high levels of interest. More than 50% of the firms noted this as an area for future investments. New solar technologies are combining nano-technology with thin-film technology from the photography industry to create ultra-thin, light-weight rolls of plastic solar cells with a variety of applications.

Over two-thirds of US states have policies that encourage renewable energy and thus regulate either net-metering, renewable portfolio standards, or green energy programs. Despite positive trends at the state level, the national level has yet to follow suit, leaving the potential prosperity of these programs in question. In fact, DOE studies illustrated federal funding has been reduced for wind energy and remain constant for solar.

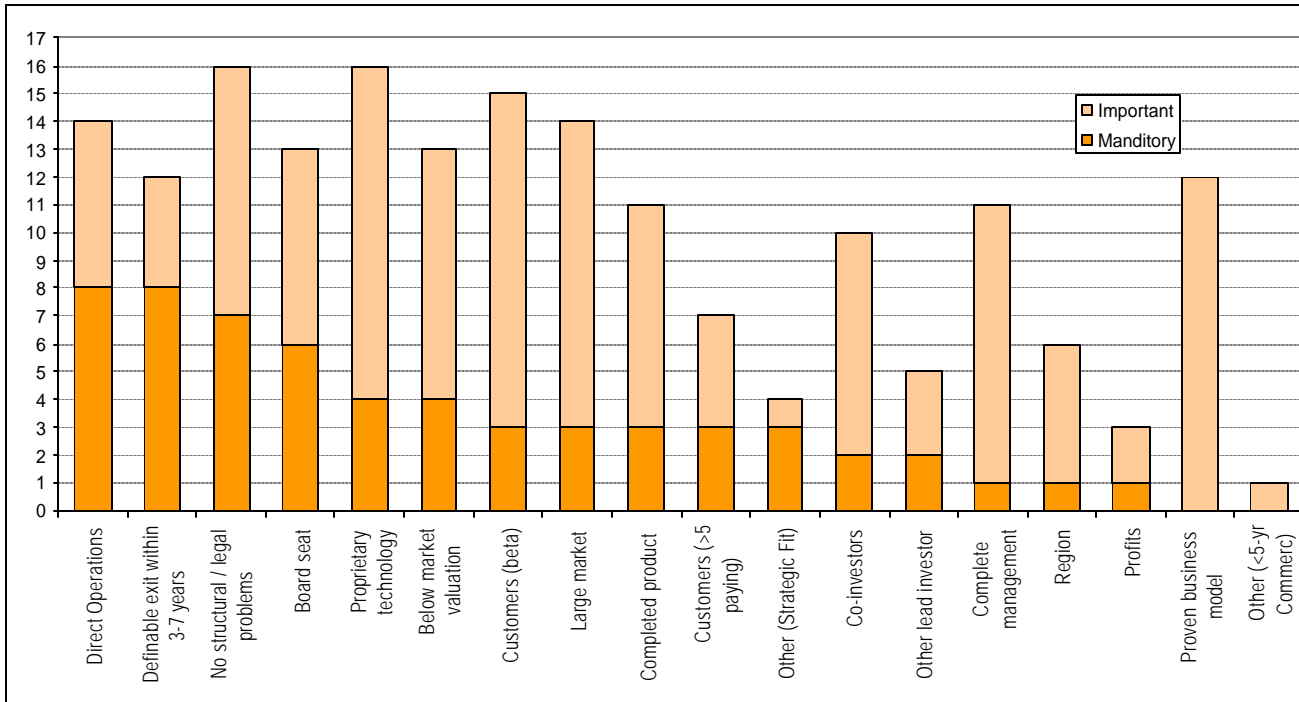
**HIGH INTEREST, LIMITED INVESTMENT:**

After compiling and analyzing the data surrounding areas of significance, a noteworthy sub-group emerged. Interestingly, 50% of the firms listed the following nine sectors as an area of interest, but less than 17% of those firms (three organizations) actually made an investment. Because of the incongruence between suggested interest and capital infusion, it is asserted that the following segments may experience substantial investment growth over the next few years, while firms attempt to balance interests with actual investments.

Sector	Total Interest	Total Investments	Description & Trends
Power Quality	13	2	<ul style="list-style-type: none"> <li>• Sell equipment and/or services</li> <li>• Hard to sell to customers</li> <li>• Provide large benefits customer benefits</li> </ul>
Solar	12	2	<ul style="list-style-type: none"> <li>• Can apply manufacturing technology from the semiconductor industry</li> <li>• Net-metering, rebates, and high-peak electricity prices increase value for solar technology</li> <li>• Still not economic al in many areas</li> </ul>
Energy Services	12	2	<ul style="list-style-type: none"> <li>• Large existing US industry (&gt;\$3.0 billion/year)</li> <li>• As more energy technology appears, customers will look to a competent one-stop system integrator</li> <li>• Potentially long sales cycles</li> </ul>
Emissions	11	2	<ul style="list-style-type: none"> <li>• Even without Kyoto, markets exist for emissions trading</li> <li>• Systems require emissions capture, trades, valuations and verifications</li> </ul>
Biofuels	9	0	<ul style="list-style-type: none"> <li>• Nationwide increase in demand for biofuels</li> <li>• New production of more efficient and cleaner fuel (such as enzymes)</li> <li>• Innovative business models link production facilities with other bio-waste product producers</li> <li>• Federal incentives reduce costs</li> </ul>
Wind	11	3	<ul style="list-style-type: none"> <li>• Wind is becoming competitive with other energy sources</li> <li>• Expected nearly 10-fold growth over the next decade</li> </ul>
Hydro Power	10	2	<ul style="list-style-type: none"> <li>• Investments in energy from oceans, tides, or rivers</li> </ul>
Hydrogen	10	2	<ul style="list-style-type: none"> <li>• Government funding increased over 100% in 2004</li> <li>• Often requires large, long-term infrastructure investments</li> </ul>
Transmission & Distribution	10	2	<ul style="list-style-type: none"> <li>• Uncertain regulatory environment</li> <li>• Requires large capital investments</li> </ul>

**INVESTMENT CRITERIA:**

In addition to firm statistics and areas of interest, participants also ranked 18 investment criteria to determine the importance of each in the funding process. These criteria were marked as mandatory, important or optional. The following table outlines a summary of such results.



**Figure 3: Investment Criteria from Survey Respondents**

**Ability for Investor to Make a Direct Impact in Operations or Management**

As the energy technology market is still in its infancy, many investors demanded a voice in the operations and management of the companies they fund. Of the 14 respondents who ranked this point as high (82%), eight (47%) considered it an absolute requirement. In a category related to operational control, a half-dozen investors (35%) mandated a seat on the board of directors, and another seven deemed it an important consideration.

These results mirror recent studies that surveyed venture capitalists across the nation. A 2003 McKinsey & Company review revealed that top quartile venture capitalists are 40% more likely than average quartile investors to have been “extremely active” in guiding their portfolio companies’ growth and ensuring corporate governance. Not surprisingly, the desire to impact a company’s direction is most prevalent among early-stage firms still refining their business model.

**Definable Exit Within 3-7 Years**

Of the venture organizations surveyed, 70% said that it was mandatory or important that companies had a definable exit within 3-7 years. Given the promising industry life cycle of many segments in the energy technology industry, the predominant amount of funding for research & development activities continues to arrive from government sources for the next few years. Therefore, most initiatives seeking funding will need a business model that can demonstrate sales, profits or a rationale for an increased valuation in the relatively near-term.

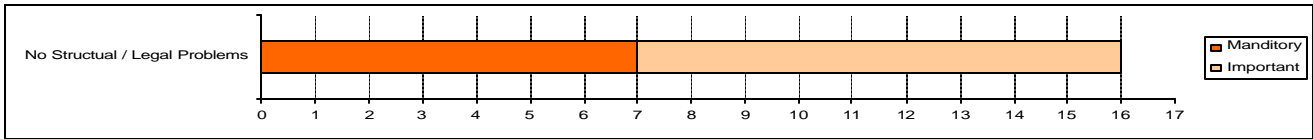
“At the end of the day, our primary objective is to make money for our investors,” one partner commented. “We have 1-2 years to make investments, 2-3 years to growth the companies, and 2-3 years to liquidate the investment. If we haven’t started returning money to our limited partners by the fourth or fifth year and show



them that we can provide more than they've given to us, we need to look for another job. I can't invest in anything that has more than a 5-6 year time horizon.”

**No Structural or Legal Problems**

For nearly all survey respondents, structural or legal problems ranked among the top as something investors *don't* want to see within a potential portfolio company. Of the 17 firms who completed this section of the assessment, 16 (94%) ranked the absence of legal or structural snags as either important or mandatory in evaluating companies for funding.



A principal of one investment organization commented, “Of all of the plans that we receive, typically 10-15% will have some type of fundamental structural or legal problem. This is an immediate deal killer for the company. These entrepreneurs would be much better served working with angel investors and/or finding competent legal counsel and fixing the problem before bringing it to us.”

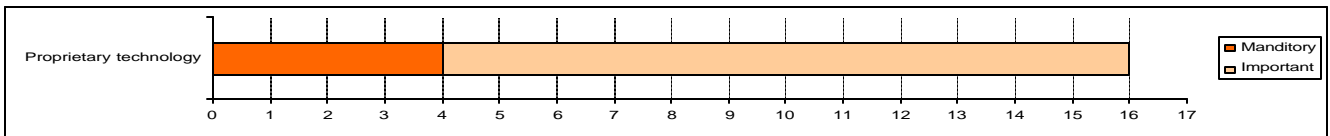
**Existing and Potential Customers**

Only three investors mandated that companies possess five or more paying customers. However, most all responded that beta customers (or some type of demonstrable activity revealing actual interest in the product/service) were important.

Of the firms surveyed, 88% wanted beta customers in place, though only three (18%) considered it mandatory. A large target market, as opposed to a niche segment, was another critical point for three of the venture groups and preferable for 14 (82% in total).

**Product Development & Intellectual Property Issues**

Of the participants, 94% stated that proprietary technology, patents or well-defined intellectual property was mandatory or important. Four firms (24%) stated that they would not invest in a company without them. This echoed a variety of venture capital studies over recent years.

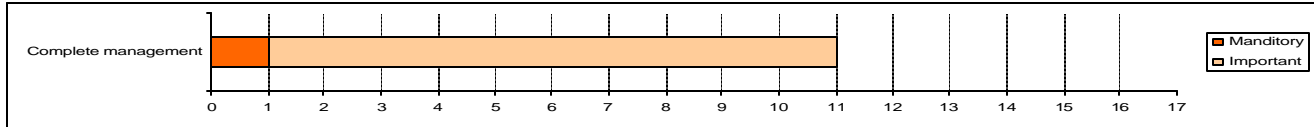


The trend of re-emergence of “hard” intellectual property and proprietary technology had also been noted by respondents. “During the bubble, many venture capitalists would invest based upon ‘first mover advantage,’ ‘a good idea,’ or other equally soft notions. None of these possess value in a bankruptcy or liquidation event. We have focused more on proprietary assets or other tangible assets that hold intrinsic value,” commented one principal.

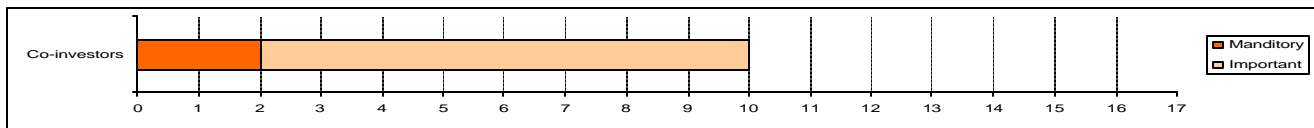
However, despite the interest in product development, most investors (82%) did not mandate that intellectual property take the form of a completed product. However, three firms (18%) did require finished products for investment, while eight firms (47%) mentioned it as an important item.

### Additional Criteria

Areas where various fund representatives indicated greater flexibility included having a complete management team (only one respondent (6%) deemed this mandatory), and producing a completed product. Both of these categories were necessary or important to 11 companies (65% of respondents).



The presence of co-investors or syndicate was optional to eight respondents (47%) and mandatory for only two (12%); the same two also required another lead investor in deals. Interestingly, despite the importance of having direct impact in the company (see page 7), only a half-dozen organizations (35%) found it necessary or important to be located in the same geographic region as the funded company.



Thirteen of the venture capitalists (76%) believed a company should be at or below market valuation to merit funding, though only four (24%) mandated this point. Benchmarking ratios such as price-to-sales, price-to-cash flow, or price-to-earnings against comparable transactions provided a logical analysis to support the valuation.

Three (18%) of the venture groups required a strategic fit with their portfolios. Of those, all were affiliated with or divisions of larger companies. Profits were of low concern to all but a few; one group mandated profits, two (12%) judged profits as important, but the remaining 14 (82%) considered them optional in an early stage company.

### CONCLUSIONS:

As indicated throughout this whitepaper, the new energy technology market is growing rapidly. However, there are still a variety of segments that have not garnered significant investment capital due to market immaturity, and in some cases, a lack of sustainable business models. This survey indicated that the average venture capital firm has an interest in eleven sub-segments, but has invested in only four, suggesting this segment's investment potential has just begun.

There are several investment strategies that firms utilized to mitigate risk. Some firms focused exclusively within closely-related niches, corresponding to their companies' existing operations or core expertise. Other firms developed synergies between their portfolio, sharing customers, key lessons and market opportunities. In addition, investors appeared more collaborative with outside funding sources than stereotypical venture funds who invest in more mature markets like software or hardware.

The diversity of the energy industry is apparent within this survey. As investors find their comfort zone within the broad range of investment options, they should explore recent investments and technologies in a specific area of interest. Also, it is advised not to assume that trends in one sub-segment will necessarily transfer to others within the energy industry. However, investors should learn about which other sub-segments interface with their areas interest, as certain developments and advances in one category can have a profound effect on others. For example, an investor in hydrogen-fuel cells should understand the up-stream technologies of hydrogen production which may be exposed to volatile natural gas prices.

Investors in the emerging technology segment should be encouraged by the findings of this survey. As a result of increasing consumer needs, rising energy costs and recent technological advances, new energy technology markets growth is destined to continue, providing intriguing investment opportunities for funds in the space.

Society's strain on energy resources indicates that dramatic efforts must be taken to provide more sustainable energy solutions. As a result of such burdens, the new energy market promises to become a \$95 billion industry. The vast potential of this sector continues to provide opportunities for investors. As we look to the future, the investments of today, representing only a fraction of what 'will be', forecast the incredible new energy technologies to come.

#### **ABOUT THE AUTHORS:**

**Bob Martin** is the CEO of JumpStart Partners, Inc., a merchant banking firm specializing in mergers, acquisitions, and corporate change, enabling companies to achieve their growth objectives. JumpStart Partners, Inc. was founded in 2000 and has worked with over 60 clients including Royal Dutch / Shell Oil, IBM and Dalkia. JumpStart Partners has recently completed a variety of projects in the emerging energy technology market. Prior, he held roles with Trilogy Software, Advent International Global Private Equity and Procter & Gamble. In addition, he is the Membership Chairman of the Houston Angel Network and sits on the Success Committee of The Clean Energy Incubator. Bob graduated with honors from Harvard University with a BA in Economics and attended Sloan Business School at the Massachusetts Institute of Technology. Bob can be reached at 512-576-9000 or [bmartin@jumpstartpartners.com](mailto:bmartin@jumpstartpartners.com).

**Steven Meyers** has worked at the forefront of technology, efficiency, and finance in the energy industry for over than a decade. Steven is currently president and founder of the Rational Energy Network, a consulting practice offering technical, financial, strategic, and market analysis. Since Rational Energy's recent inception in August 2003, clients have ranged from early-stage companies and entrepreneurs to large utilities and multinational corporations. Prior, Steve served as a Vice President at Invensys PLC, where he developed technical products and services for the Electric Utility Industry. He also worked as a Vice President at Enron Energy Services, conceptualizing and managing a portfolio of nearly \$300-million of investments in energy-efficiency projects at dozens of Fortune 500 companies. Additionally, his vita includes Lawrence Berkeley National Laboratory, Energy Service Companies (ESCO's) in Singapore and California, as well as an Internet start-up. Steve has published articles, spoken nationally, and sits on two boards of energy related organizations. Steve received his MS in Engineering from the University of California at Berkeley and a BS in Physics from Haverford College. Steve can be reached at 512-323-6788 or [steven@stevenmeyers.com](mailto:steven@stevenmeyers.com).

**Bob Schwartz**, Vice President and Director of Energy Programs at the Houston Technology Center, has an extensive background in the Energy industry spanning 40 years. Bob has worked for Exxon/Mobil, ConocoPhillips and FMC Technologies in both upstream and downstream functions. He has consulted for companies in the energy and chemical industries as well as in the public sector. Prior to joining the HTC, Bob spent 10 years as the Director of the Entrepreneurship Concentration at The University of Texas at Austin McCombs Graduate School of Business. He is also a partner in Encore Energy LLC. Schwartz serves on the Board of Directors of SmartPrice, an Austin based technology start up and of GTEHC a Swedish/American technology company. Mr. Schwartz holds a degree in chemical engineering from the University of Oklahoma and an MBA from the Harvard Business School. Bob can be reached at 832-476-9323 and at [bschwartz@houstontech.org](mailto:bschwartz@houstontech.org).

## Appendix A

### Specific Firm Information - Areas of Interest

	Altria Group	ChevronTexaco Tech Ventures	ConocoPhillips	Contango Capital	DFJ/Mercury	DTE Energy	Easenergy	EnerTech Capital	FA Tech Ventures	K-L Energy Partners	Murphree Ventures	Nth Power	Shell Tech. Ventures	Trillium Group
Fuel Cells	X		X	X	x	x	x	X	X			X		
Energy Intelligence	X	X	x	x	x		X	X	x	x	x	X		
Energy Storage	x	x	X	X	x	x	X	x	x	x		X		
Energy/Demand Mgmt	X	x	x	x	x		X	X	x	x		X	X	
Dist. Gen	x		x	X	x	x	x	X	X	x			x	X
Metering, billing, CIS	X	x			x		X		x			X		X
E&P Tech	X	X	X	x	x			x	x		X		X	
Hydrogen	x	x	X		x	x	x	x	X			X	x	
Emissions	x		X	x	x	x	x	X	x			x		
Solar	x	X		x	x	x	X	x	x			X	x	
Wind	X			x	x	x	X	x	x			x	x	
T&D	x				x	x	X	x	x	x		X		
Trading & Risk Mgmt	X	X			x	x	x		x	x		x		
Other		X	X										x	
Power Quality	x			x	x	x	X	x	x	x		X		
Energy Services	x			x	x	x	X	x	x	x		x	x	
Infrastructure				x	x		X		x	x	x			
Hydro				x	x		x	x	x		X			
Commodities				X			x		x	x				
BioFuels	x	x	X		x	x	x	x	x			x		
Environ. Remediation			x	x	x	x	x		x				x	
Advanced Fuels		x	X		x	x		x	x					
LNG			X											
Carbon			x		x	x		x	x				x	

\* Total quantities above do not reconcile with aggregated data, as some firms have requested not to have their data shared individually.

X Denotes firm has a portfolio company in the sector

x Denotes firm has an interest in the sector