

The State of Clean Tech and Venture Finance in Washington

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Northwest Energy Angels



Table of Contents

I. Introduction	3
II. Methodology	8
III. Findings	8
IV. Discussion	15
V. Conclusion	17
VI. Acknowledgements	18
VII. Appendix	19
VIII. Endnotes	21

Section I: Introduction

The marked success of Washington venture-backed companies – Amazon and Starbucks, to name just a couple – has helped establish the state as a leader in innovation while also serving as a catalyst for economic growth. Between 2006 and 2008, the Washington state ranked first in employment growth (5.65%) and revenue growth (13.45%) of venture-backed companies.¹ In the realms of entrepreneurship and venture finance, Washington has developed clear competitive advantages in the software, Internet, and the life sciences industries. Given this legacy of technological innovation, economic growth and national leadership, Washington's failure to lead in the development and deployment of clean technologies is particularly striking.

At first glance, one would expect clean technology to be a promising emerging sector of the state's economy. Along with abundant natural resources, the state has a strong history of environmental stewardship, conservation, and progressive political leadership. However, both Washington's public and private sector have been slow to invest in and gravitate toward the clean technology sector. California, Massachusetts, and Texas are widely, and rightly, seen as the national leaders in this field. That such a "green" state has been slow in its development of a clean technology sector has perplexed many observers. In 2007, *The Economist* wrote:

A few other places--experts mention New Jersey, Arizona and (strangest of all) Toledo, Ohio--are also trying to attract clean-tech start-ups. But more striking are the "green" cities that are doing very little. In Seattle there is little clean-tech buzz beyond a massive biodiesel company, Imperium Renewables, founded in 2004. Denver, despite having the NREL in its suburbs, has also seen little start-up activity.²

A snapshot of overall venture capital activity during the second quarter of 2010 reveals that Washington ranks fifth for overall funding at \$187,436,500 and sixth for deals completed at 37.³

Figure 1: Overall Q2 2010 Investments by State

STATE	Q2 2010	STATE	Q2 2010
	Amount		Deals
Grand Total	\$6,516,604,800	Grand Total	906
CA	\$3,781,508,600	CA	369
MA	\$557,943,200	MA	86
NY	\$321,374,100	NY	69
TX	\$188,707,000	PA	41
WA	\$187,436,500	TX	39
PA	\$176,317,100	WA	37

Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report, Data: Thomson Reuter

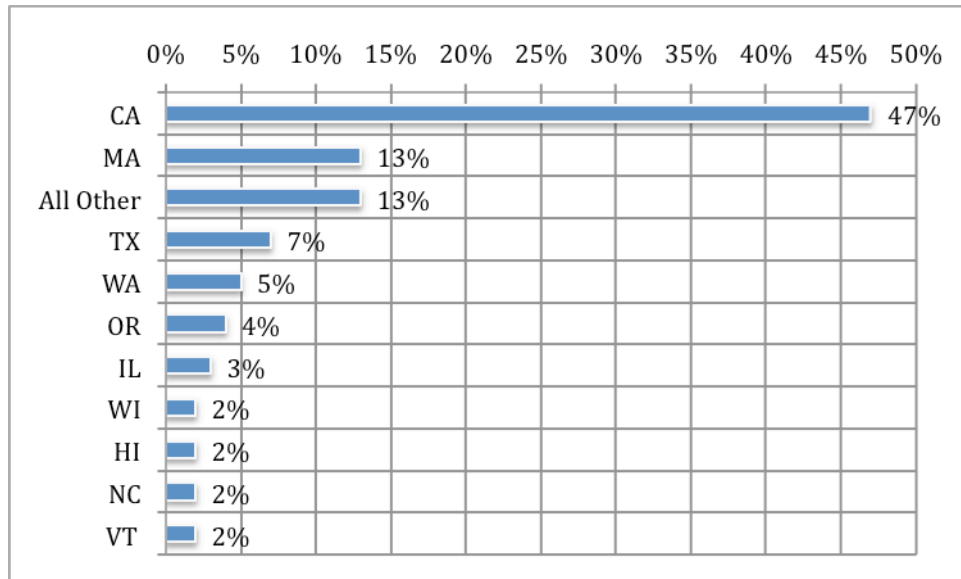
An analysis of venture capital invested in clean technology illustrates that Washington ranks near the bottom when compared to other top states. The most recent quarterly numbers published by CB Insights reported that 5% of venture capital clean technology deal volume occurred in Washington, but these deals accounted for only 1% of dollars invested nationally.⁴ This means that Washington had significantly smaller financings. On a dollar basis, states such as Wisconsin, Illinois, Oregon, Hawaii, North Carolina, and Vermont are investing more in clean technology than Washington.

Figure 2: VC Investment in Clean Tech, Q2 2010 Highlights

55 deals \$1,046M	
Top Five Deals	Top Cities
BrightSource Energy	Oakland, CA
Amonix	1 deal \$150M
Boston-Power	Torrance, CA
SunRun	1 deal \$129M
Virent Systems	San Francisco, CA
	3 deals \$66M
	Sunnyvale, CA
	3 deals \$64M
	Westborough, MA
	1 deal \$60M
	Madison, WI
	1 deal \$46M
	Irvine, CA
	2 deals \$46M
	Fremont, CA
	1 deal \$45M
	League City, TX
	1 deal \$40M
	Cambridge, MA
	3 deals \$34M

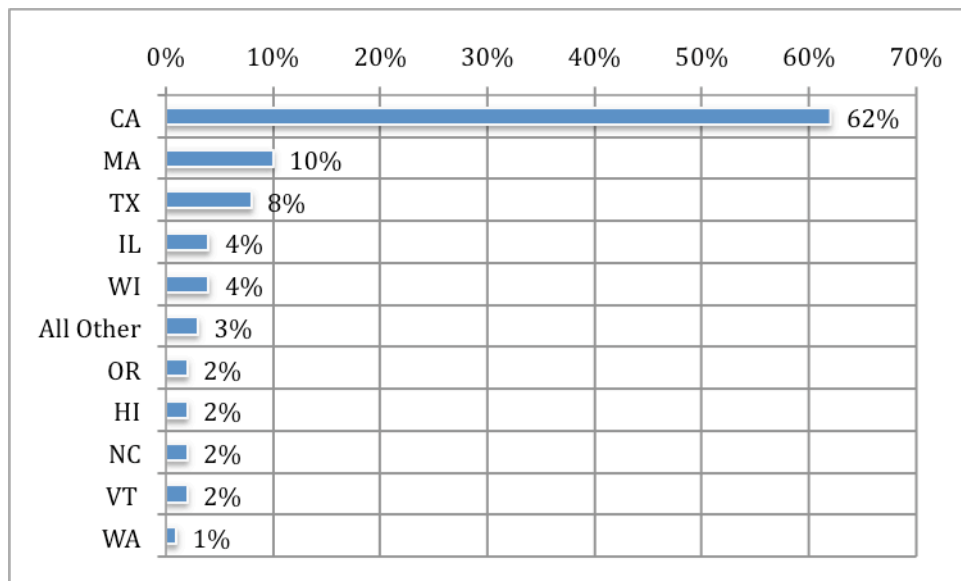
Source: CB Insights

Figure 3: VC Deal Volume (#) in Clean Tech by State, Q2 2010



Source: CB Insights

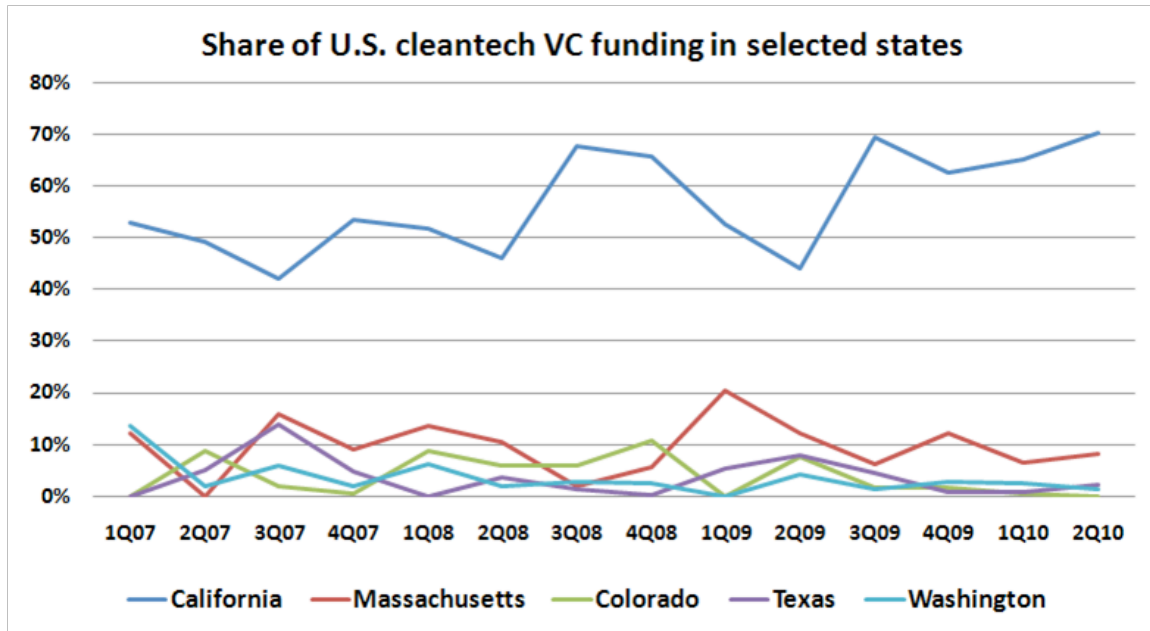
Figure 4: VC Investment (\$) in Clean Tech by State, Q2 2010



Source: CB Insights

While these numbers fluctuate, the previous quarters confirm an overall trend of weak clean technology investment in Washington with increasingly stronger clean technology investments in California, Massachusetts, and Texas.⁵ As a whole, Washington has not captured nearly the same share of clean technology investment as the state has for the life sciences or other industries.

Figure 5: Share of U.S. cleantech VC funding in selected states



Source: Cleantech Group

The aim of this paper is to evaluate the state of clean technology and venture finance in Washington and prepare recommendations for improving the investment picture. It highlights the challenges the state faces and to explore how policy makers can better promote investment and growth of this emerging sector. It argues that a vibrant investment community is necessary to create a healthy ecosystem for clean technology. Just as it did for the software and the life sciences industries, venture financing will provide a valuable source of capital for clean technology companies. Second, it argues that Washington state has not put forth the proper policies to support this emerging sector, and offers a series of recommendations made by local investors.

Section II: Methodology

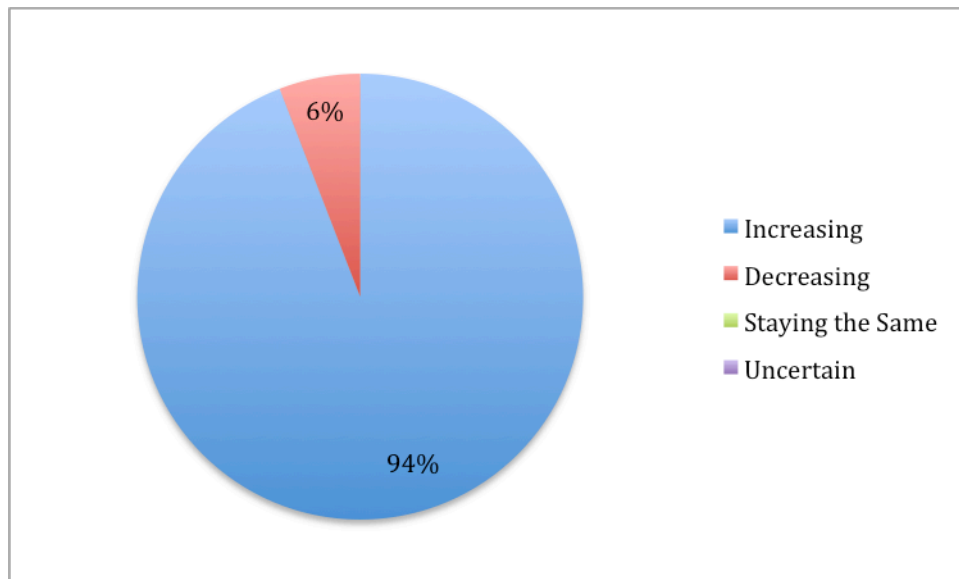
This study is based on a survey of the state’s investment community. More than 35 in-depth interviews were conducted with local angel investors, investment bankers, venture capitalists as well as individuals in related fields such as venture banks, entrepreneurial organizations, and media. (For a full list of the individuals interviewed, please see Appendix B). These individuals were asked to give their impressions of clean technology in the state and provide recommendations to improve the investment picture.

Supplementary research was also conducted with individuals outside of Washington state (e.g., Portland, Denver, Silicon Valley, Newport Beach, and Vancouver B.C.). This information was used to compare this state’s clean technology investment picture and policies to that of other states and provinces. This white paper focused on the venture finance component of clean technology; it does not include interviews with executives from leading clean technology companies. In addition, independent research was conducted to provide additional context to the findings of the interviews.

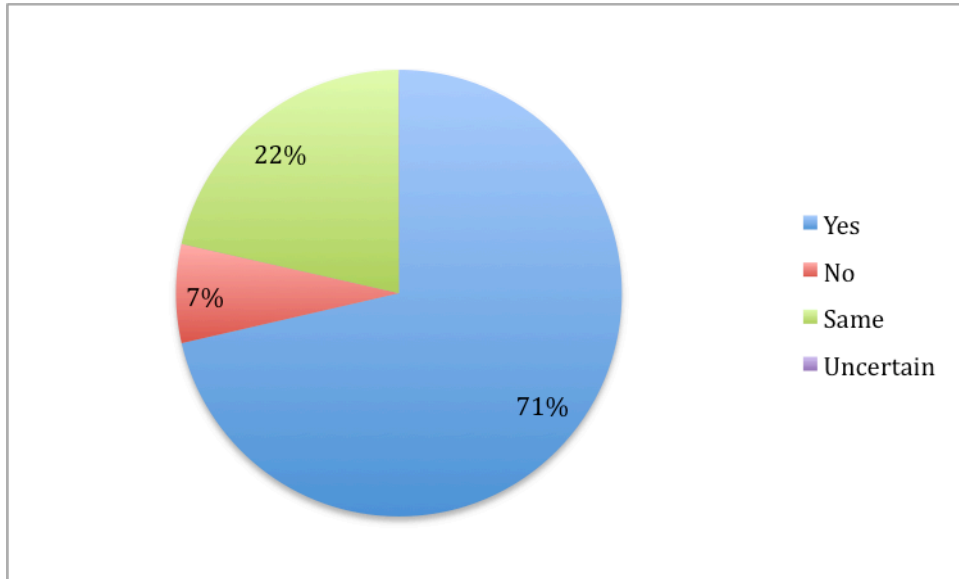
Section III: Findings

The following findings reflect the sentiment of Washington’s investment community.

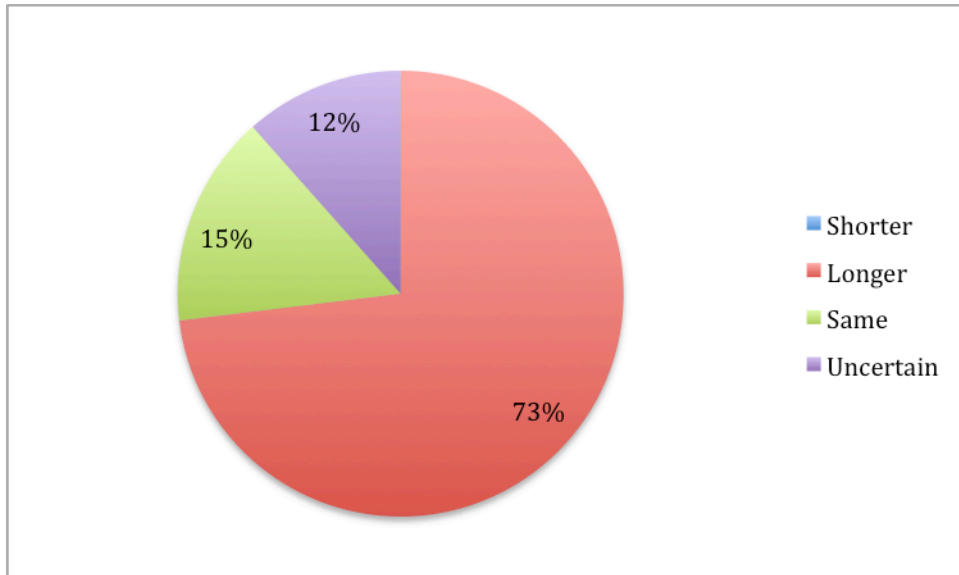
1. Do you see the market for clean technology increasing, decreasing, or staying the same?



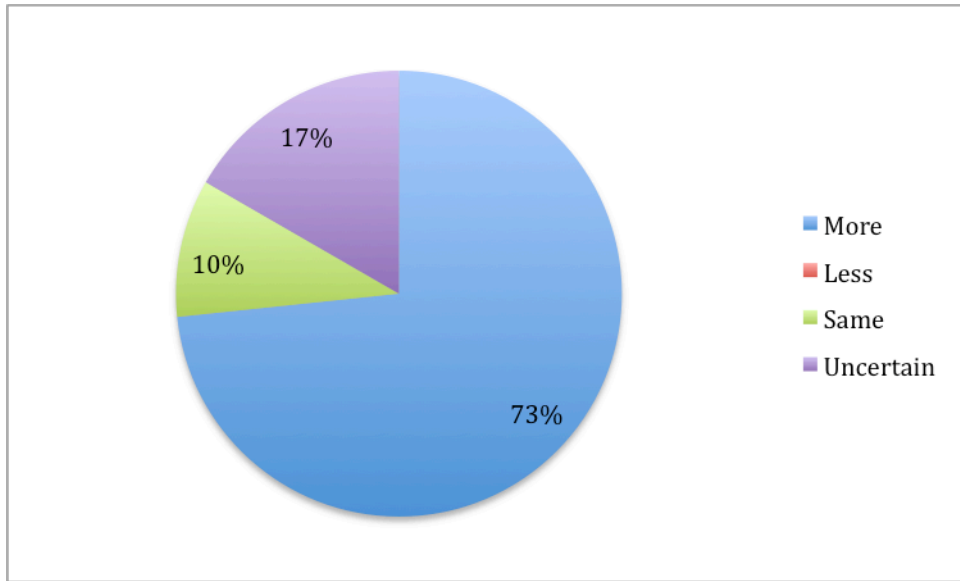
2. Will you or others in your field start to explore the clean tech sector more?



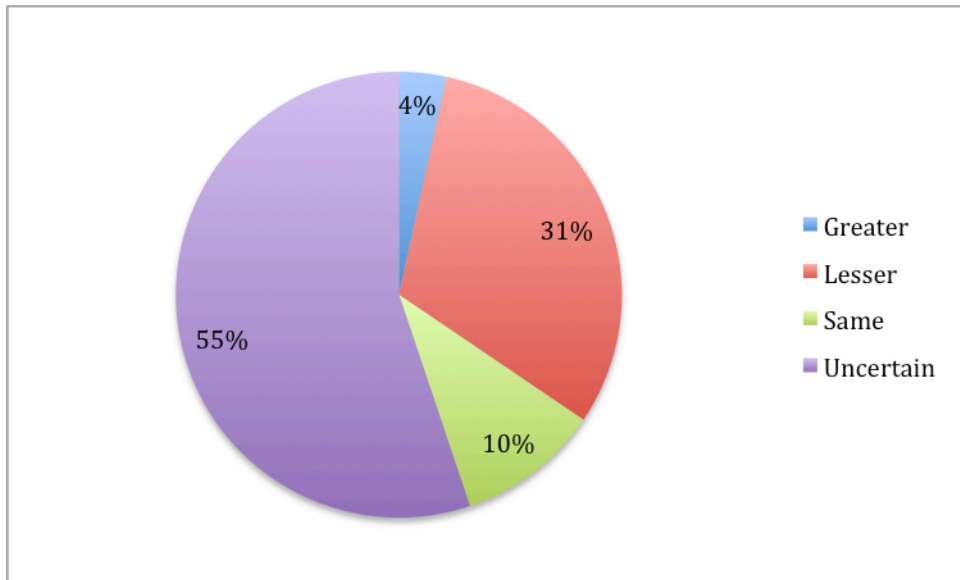
3. Do clean technology investments require a shorter, longer, or same time frame for exit than other sectors?



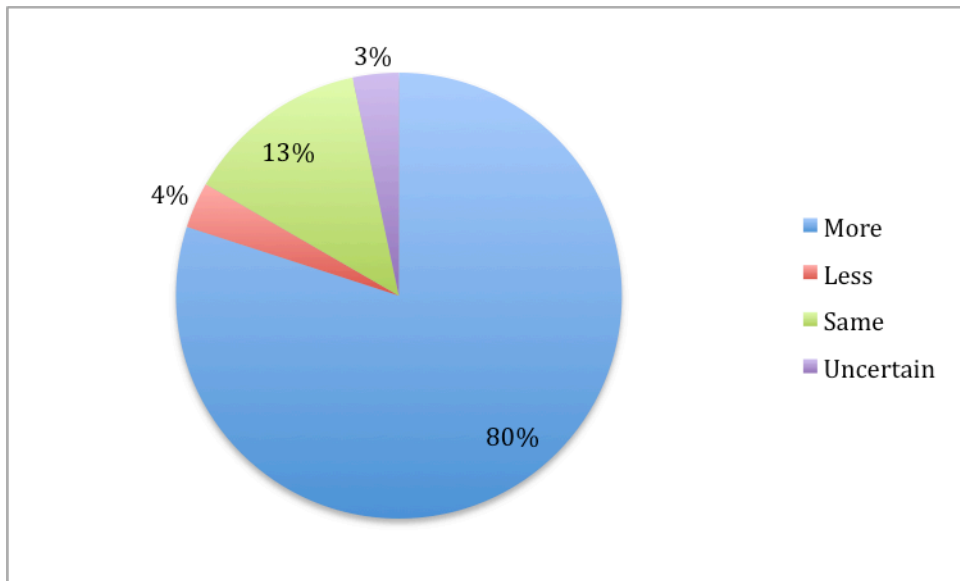
4. Do clean technology investments require more, less, or the same amount of capital than other sectors?



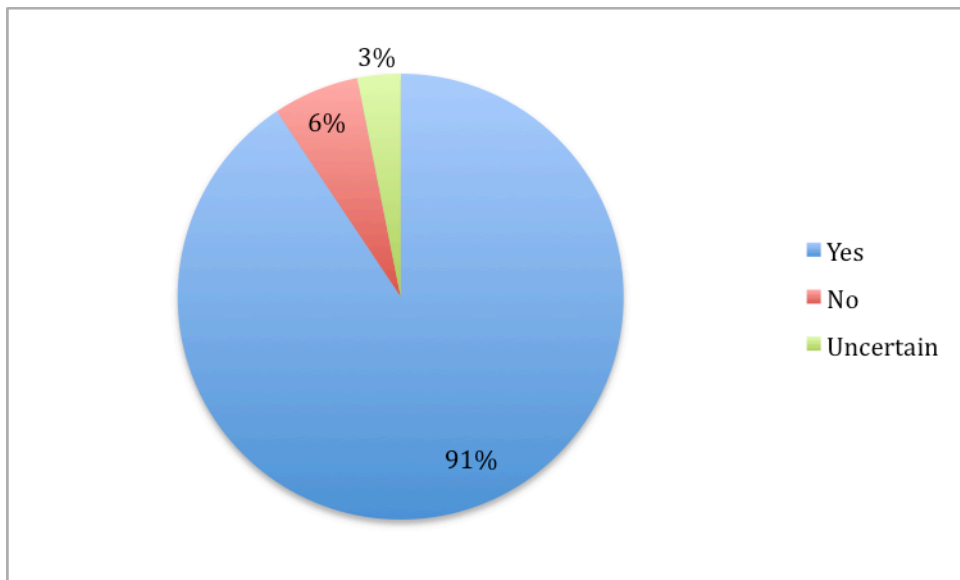
5. Is the potential return on investment (ROI) for clean technology investments greater, lesser, or the same compared to other sectors?



6. Is there more, less, or the same amount of risk in clean technology investments than other sectors?



7. Should the government shape policies and/or incentives for clean technology?



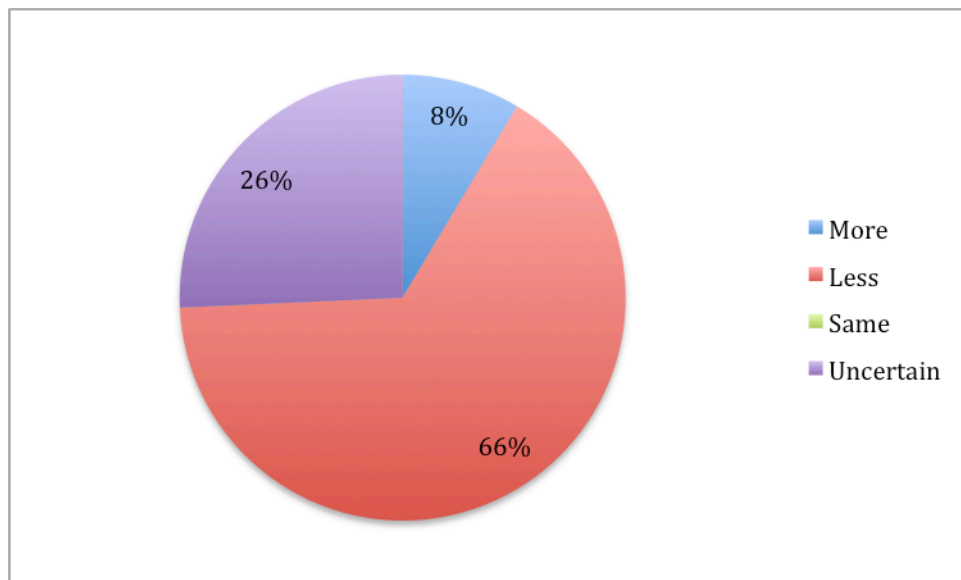
8. Compared to other states, do you think Washington state is seeing (compared to overall investment) more or less investment in clean technology, both in dollars and deal flow?

“Look around. Who’s doing it? The deals that are getting done are almost always getting done with California money.”

“My sense is Oregon is way ahead of where Washington state is.”

“I’m not convinced the Northwest is really a center of excellence for clean tech.”

“I really don’t know what is going to happen to this state. I think it will just languish. They will give lip service saying they will do it, but it will be hard to take root.”



9. What has promoted or hindered investment in Washington clean technology?

“There’s a very big hole in capital markets in Seattle. There is virtually no private equity. There is virtually no venture capital that focuses on this space. There are some guys that do. But in reality there’s not nearly enough money here to fund all the companies looking for money in the clean tech space.”

“In my opinion, what I have seen is that there is really a dearth of money available in the Pacific Northwest from the next traditional funding stage, which is VC money. There are very, very few, in fact only one that I know of, VCs that are actively pursuing clean technology as a sector.”

“The State of Washington has done a poor job of creating incentives and reason to come to the state.”

“One of our greatest historical assets of cheap hydro is actually a limiting factor in the new amount of clean tech we adopt.”

Most commonly identified reasons that have promoted investment in Washington clean technology:

- History of environmentalism
- Quality, educated workforce
- Abundant natural resources

Most commonly identified reasons that have hindered investment in Washington clean technology:

- Smaller venture capital community
- Few venture capital firms with exposure to this sector
- Cheap surplus of hydro power
- Fragmented public utilities
- Lack of state policies and leadership compared to other states

10. How can the clean technology investment picture of Washington be improved?

“The best thing that we can do is leverage our strengths. If our strengths are engineering, if our strengths are software development, if our strengths are gaming, if our strengths are consumer products, let’s figure out how we can take that existing talent pool and retool that to focus on, even if not energy creation, energy reduction. For me, that makes sense for our region. So let’s figure out what we can do without trying to completely transform ourselves. Let’s use what we have. Every region is going to have its own strengths and weaknesses. So let’s get really smart about what our strengths are and then support those.”

“You’ve got to get the software guys to come in. That is the first, second, and third priority. You get the best and brightest software guys to focus their energy and talent in energy as opposed to social media, you would have a shot.”

“The state has to come up with a real energy policy, which it never has had.”

Most common responses:

- Identify and leverage Washington’s competitive advantages and core competencies
- More effective leadership and policies at the state level
- Study what similar states and provinces such as Oregon and British Columbia are doing
- Explore ways in which the Washington State Investment Board (WSIB) can employ more capital locally while balancing fiduciary duty and economic development
- Establish a state clean technology investment fund

11. What are Washington’s competitive advantages in clean technology?

“Their hydro is this amazing asset they were blessed with, and is really the cheapest storage out there. It is the thing they could use to firm up renewables that are either in their state or in adjoining regions but can be used if done right as of way providing fixed compactly for renewables, which nobody else can do and only hydro can do that today...If you could firm your renewable power intermittent with hydro and sell that at premium into a market like California, or even Oregon...and some portion of that should be taken off the top to go into a renewable energy fund.”

Most commonly identified competitive advantages in clean technology:

- Information technology applications to clean tech
- Expertise in agricultural biotech
- Expertise in hydro/tidal
- Geographic proximity to emerging markets in Asia
- Ability to sell renewable power to states like California at a premium
- Retail/e-commerce
- Green building
- Premier research institutions of UW, WSU, and PNL
- Anchor companies of Boeing, Microsoft, and McKinstry

Section IV: Discussion

Investors are bullish about the future of clean technology and will continue to explore this sector as it expands. Similar to biotech, the defining features of clean technology include a longer-time frame until exit as well as higher amounts of capital and risk. The political and regulatory framework of clean technology also adds a level of risk previously unseen in software and Internet deals. Furthermore, the market for clean technology is unproven; there have been few, if any, successful exits that have generated a venture return on investment. For this reason, investors remain uncertain about the profitability of this sector. As suggested above, the government should create policies that shape the market and make clean technology investments more economically viable.

The majority of investors believe that Washington state is seeing relatively less investment in clean technology than other states in both dollars and number of deals. While the state benefits from having a rich history of environmentalism, a quality and educated workforce, as well as abundant nature resources, it faces distinct disadvantages in this market.

First, Washington's smaller venture capital community hinders the private sectors' ability to support this capital-intensive industry. The states' venture capital community has its greatest exposure to software, Internet, and life science; very few of the local firms have exposure to clean technology. Secondly, clean technology companies in the area of energy generation must be cost competitive with the states' hydroelectric power. Unlike California, Washington has never experienced shortages of power or a significant increase in price per kilowatt. Similar to the oil industry, this is also an industry that has benefited from nearly fifty years of subsidies as well as a market controlled by the federal government. Third, Washington has fragmented public utilities as opposed to California and Massachusetts, which have larger, privately held utilities. This makes coordination of an energy policy and private investment difficult. Most importantly, many investors believe the state has lacked sufficient policy and leadership in this space. States and provinces such as Oregon, California, and British Columbia have been more progressive in implementing policies to foster the growth of clean technology.

To improve the investment picture, investors recommend that the state should identify and leverage its competitive advantages and core competencies. Commonly identified competitive advantages include: information technology, agricultural biotech, hydro/tidal, retail/ecommerce, green building, premier research institutions of UW, WSU, and PNL, as well as anchor companies of Boeing, Microsoft, and McKinstry. Furthermore, Washington is strategically located along the Pacific Rim to become an exporter of both energy and the technology used to produce the energy. Any surplus of renewable energy can be sold into California at a premium. This would allow California to meet its renewable portfolio standards while Washington would benefit economically. Affordable power would also allow Washington manufacturers to produce energy technologies at a lower cost. These technologies could then be sold into the Asian markets.

Second, many investors suggested that the state should create clean technology investment policies. A lack of favorable policies makes Washington less competitive in the national market.

A recent example of this is Propel Fuels' move from Washington to California, which offered more attractive incentives to the Seattle start-up.⁶ State policies makers should study what similar states and provinces such as Oregon and British Columbia are doing to promote the growth of this sector.

Third, Washington should direct more investment capital locally. The Washington State Investment Board (WSIB) has the potential to do so through venture capital and fixed income investments. The state has historically done a poor job of balancing fiduciary duty and economic development. Currently, the WSIB invests approximately 1.1% of its private equity funds here in Washington while the majority of the funds are placed with California managers.⁷ Policy makers should take notice of how other states and provinces are directing more investment capital in their own region. Through its "Green Wave Imitative," California has developed an environmentally targeted investment policy, which has resulted in significantly more clean technology investment.⁸ In the life sciences, Washington has facilitated investment and economic development through the Life Sciences Discovery Fund. To promote investment and growth of clean technology, Washington should explore ways it could duplicate this policy and that of other states and province. Not doing so could further hinder Washington in the national market for clean technology.

Last, many investors believe that clean technology should continue to be promoted locally in order to attract more entrepreneurial interest and investment capital. To an extent, events and organizations such as the Clean Tech Open have done this. A key objective for the next few years should be getting the software and venture community to translate their expertise from software to clean technology. This is an area in which Washington can excel.

Section V: Conclusion

“You will hear a lot of people say the problem is on the capital side. There is not enough capital. I think the problem is more on the supply side. There are not enough interesting companies.”

Clean technology is in its very early stages, and we can expect tremendous growth of this sector in the future. Furthermore, it would be inaccurate to say that there is no investment in clean technology in Washington state; there are deals being done in this space. There are also several promising early-stage companies currently seeking capital here in the state. Furthermore, events and organizations such as the Pacific Northwest Clean Tech Open, Northwest Energy Angels, Washington Clean Technology Alliance, and the McKinstry Clean Tech Incubator comprise an important foundation for future growth in the clean tech space.

However, as this study demonstrates, compared to other states Washington’s clean technology sector is stagnant.

It is widely accepted that clean technology investments tend to be longer-term, risky, and require higher amounts of capital. As suggested above, policy can help make such investments more attractive. But in the near term, the state’s constitution, which prohibits investment into private companies, and ongoing budgetary and fiscal challenges, will continue to limit the state’s ability to provide the incentives to drive growth in clean technology. It is highly unlikely that Washington will become the “Silicon Valley of Clean Tech,” but as a state, with the right policy framework we can become national leaders in areas in which we have historically excelled.

It may be by chance that the next “Microsoft of clean tech” is founded and funded in Washington state. However, creating the right ecosystem will maximize the chances of this happening. Based on the data and findings, Washington has not yet created such an ecosystem.

Further research should be conducted to determine whether the problem in Washington clean technology is a lack of investors, a lack of investment opportunities, or both. However, it is highly likely that the two are related and, in fact, mutually reinforcing trends.

The goal of this study was to highlight the challenges faced by the state and how policy makers can promote investment and growth of this emerging sector. If anything, the hope is that this study can contribute to the conversation about how Washington state can foster a vibrant clean technology sector and ensure the state reaps the environmental and economic benefits of this immense opportunity.

Section VI: Acknowledgements

This paper was made possible through the support of enterpriseSeattle. The Washington Clean Technology Alliance and Northwest Energy Angels provided additional support for this research project. I would especially like to thank and acknowledge the following individuals for their encouragement, guidance, and support: Steve Gerritson of enterpriseSeattle, Cathy Callow of enterpriseSeattle, Margo Shiroyama of both enterpriseSeattle and the Northwest Energy Angels, and Tom Ranken of the Washington Clean Technology Alliance.

I would also like to thank all of the individuals who graciously donated their time to participate in the study. In addition, the individuals listed below helped to provide supplementary research so that I could better compare this state's clean tech investment picture and policies to that of other states and provinces. This includes:

Brian Kremer	Senior Research Analyst	Roth Capital Partners	Newport Beach, CA
Dan Ahn	Managing Director	Voyager Capital	Menlo Park, CA
David Gold	Partner	Access Venture Partners	Westminster, CO
Eric Pozzo	Fund Manager	Oregon Angel Fund	Portland, OR
Greg Semler	Co-Founder, Managing Director	Pivotal Investments LLC	Portland, OR
Jon Naimon	Co-Founder & President	Light Green Advisors	Seattle, WA
Leola Ross	Senior Investment Strategist	Russell Investments	Tacoma, WA
Rob Wiltbank	Partner	Montlake Capital	Salem, OR
Wal Van Lierop	President & CEO	Chrysalix	Vancouver, BC
Wayne Embree	Founder & Managing Partner	Reference Capital	Portland, OR

Section VII: Appendix

Appendix A

About enterpriseSeattle

enterpriseSeattle, formerly known as the Economic Development Council of Seattle and King County, is a 39-year-old public-private economic development partnership that provides one-on-one, confidential consulting services, free-of-charge, to individual businesses seeking to establish, expand or relocate to King County and its 39 cities.

Innovative, knowledge-based industries drive our economy. enterpriseSeattle is committed to their continued success to accelerate regional economic development and ensure sustained prosperity.

About Washington Clean Technology Alliance

The Washington Clean Technology Alliance is a business alliance for clean tech sectors in Washington State. The organization was founded in 2007 through a collaborative effort of business and economic development interests in the Greater Seattle/Puget Sound region. It was developed in response to a growing need in the region for an advocacy organization specifically focused on the emerging set of industries known collectively as clean tech, green tech or environmental technologies.

About Northwest Energy Angels

Founded in 2006, Northwest Energy Angels is a Washington non-profit organization and business network that connects members with outstanding cleantech entrepreneurs in the Pacific Northwest. Funds are not pooled; each member makes her/his own investment decisions but shares due diligence and the wealth of experience inherent in our powerful network of investors, entrepreneurs, venture capitalists, executives, scientists, engineers, bankers and attorneys. To date, members have invested over \$3 million in 17 companies.

Appendix B

The interview sample of 35 local angel investors, investment bankers, venture capitalists, and individuals in related fields included:

Andy Dale	Managing Director	Montlake Capital	Seattle, WA
Ann Grodnik	Assistant Vice President	Seattle Northwest Securities	Seattle, WA
Arnie Prentice	Principal	Prentice Family Partnership	Seattle, WA
Bill Lemon	Chair Screening Committee	NW Energy Angels	Seattle, WA
Bob Nelsen	Co-founder and Managing Director	ARCH Northwest	Seattle, WA
Brian Boatman	Team Leader	Silicon Valley Bank	Seattle, WA
Bruce MacCormack	Chairman	Bellingham Angel Group	Bellingham, WA
Byron McCann	Co-Chair	NW Energy Angels	Seattle, WA
Chris Prentice	Partner	Prentice Family Partnership	Seattle, WA
Gary Brackett	Chair	Tacoma Angel Network	Tacoma, WA
Gary Ritner	Founder & Administrator	Puget Sound Venture Club	Seattle, WA
Greg Gottesman	Managing Director	Madrona Venture Group	Seattle, WA
Greg Mollner	President & Founder	Vinton Street Partners	Seattle, WA
Harry Lee	NW Region Entrepreneur Director	Keiretsu Forum	Seattle, WA
Jae Easterbrooks	Vice President	ShoreBank Pacific	Seattle, WA
James Parsons	Managing Partner	Kingston Capital LLC	Bainbridge Island, WA
James Stearns	Managing Director	Roth Capital Partners	Seattle, WA
Jamie Boyd	Senior Vice President	Cascadia Capital	Seattle, WA
Jeff Canin	Advisor	StoneBridge Securities	Seattle, WA
Jerry Keppler	Managing Director	Alexander Hutton Venture Partners	Seattle, WA
Jill Watz	Venture Partner	Vulcan Capital	Seattle, WA
John Cook	Co-Founder & Executive Director	TechFlash	Seattle, WA
John Merrill	Chair Marketing Committee	NW Energy Angels	Seattle, WA
John Reagh	Managing Director	WRF Capital	Seattle, WA
John Siegler	Managing Partner	Capital Run LLC	Seattle, WA
JP Michael	Senior Vice President	Comerica Bank	Bellevue, WA
Kirk Van Alstyne	Managing partner	Evolution Capital Advisors	Seattle, WA
Leslie Smith	Senior Vice President	Square 1 Bank	Seattle, WA
Mary Holmes	Vice President Business Development	Zino Society	Seattle, WA
Max Witter	Advisor	Compass Capital	Mercer Island, WA
Michael Butler	Chairman & CEO	Cascadia Capital	Seattle, WA
Rebecca Lovell	Executive Director	NW Entrepreneur Network	Seattle, WA
Rick LeFaivre	Managing Director	OVP Venture Partners	Kirkland, WA
Todd Dean	President	Keiretsu Forum	Seattle, WA
Tom Elzey	Managing Director	Alexander Hutton, Inc.	Seattle, WA

Section VIII: Endnotes

¹ IHS Global Insight, comp. *Venture Impact: The Economic Importance of Venture Capital-Backed Companies to the U.S. Economy*. Tech. Fifth ed. National Venture Capital Association, 2009. Print

² "The Economist: Seattle's Clean Tech Industry Weaker than Toledo's?" Web blog post. *Seattle Blogs | Seattle Pi | Seattlepi.com*. Ed. John Cook. Seattle PI, 31 May 2007. Web. 16 Aug. 2010. <<http://blog.seattlepi.com/venture/archives/116066.asp>>.

³ PricewaterhouseCoopers, National Venture Capital Association, and Thomson Reuters. *PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q2 2010 Investments by State*. 31 Mar. 2010. Raw data.

⁴ CB Insights. *Q2 2010 - Venture Capital Activity Report*. Rep. CB Insights, 2010. Print

⁵ Cleantech Group. "Cleantech Thriving in California under AB 32, Shows Data | Cleantech Group." Web blog post. *Cleantech Group | Accelerating the next Wave of Innovation*. 5 Apr. 2010. Web. 08 Sept. 2010. <<http://cleantech.com/news/5755/cleantech-thriving-AB32-data>>.

⁶ Cook, John. "Propel Names New CEO, Moves Headquarters to Sacramento." Web blog post. *TechFlash: Seattle's Technology News Source*. Puget Sound Business Journal, 26 Feb. 2009. Web. 08 Sept. 2010. <http://www.techflash.com/seattle/2009/02/After_moving_HQ_to_California_Propel_names_new_CEO_40361832.html>.

⁷ Washington State Investment Board. *Economically Targeted Investment Policy*. Rep. Washington State Investment Board, 2009. Print.

⁸ Angelides, Phil. "Catching the Green Wave: Believing Again in the Promise of California." *Commonwealth Club*, San Francisco. 12 Apr. 2004. Speech