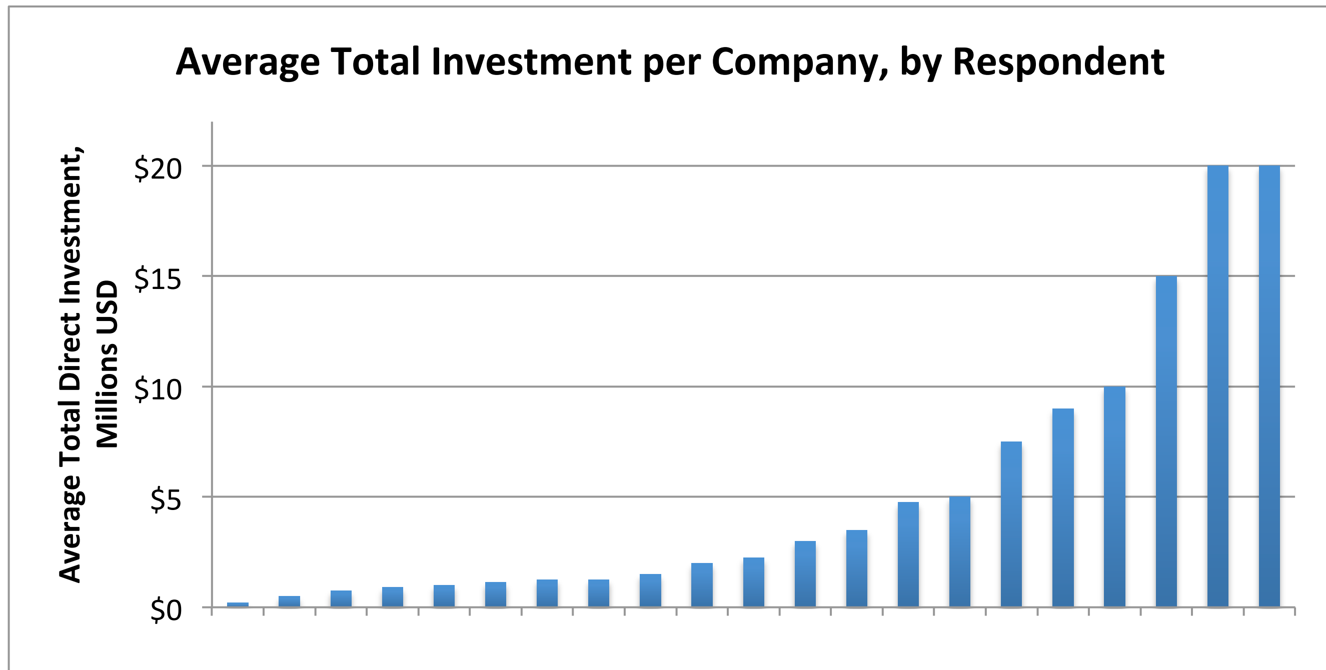
ENERGY INNOVATION
POLICY & TECHNOLOGY, LLC

Family Offices and Cleantech Investing

Nicole Schuetz, January 2015



Introduction

Investing in the development and commercialization of clean technologies is crucial for any reasonable climate future. The technological frontiers are vast, the markets are enormous, and the social need is unquestionable. But the challenges in this field are legion—ranging from technological uncertainty to large capital requirements to barriers to entry to regulatory dysfunction.

To wrestle with this dilemma, Energy Innovation LLC held a roundtable of cleantech venture capitalists and family office investors in April 2014. At that meeting, participants noted the withdrawal of venture capitalists from early stage cleantech and clean energy investing, alongside the interest of family offices to invest in the space across asset classes. To better track interests, this survey project was created. The aims: gather more information on how and why family offices are currently investing in clean energy; understand how they would like to invest in the sector in the future; and assess what constrains them from increasing investment.

From June-October 2014, 29 interviews were conducted with family office principals (some who invest on their own behalf), general/multi-family office managers, specialized family office managers (i.e. managers given a mandate in cleantech investing), and a few independent fund managers/advisors who primarily serve family office clients. These individuals participated in an hour-long interview and discussion of their cleantech investing activities, the results of which are summarized below. Due to the heterogeneity of the sample and the prerogative of some respondents to keep information private, the results can only be taken as indicative of

trends within the family office cleantech investing community. Still, we hope that this work illuminates some of the needs of family offices with respect to cleantech investing; along those lines we make some recommendations to increase family office investment in cleantech.

The results of the survey are offered below, but we begin this report with a synthesis of recommendations:

Recommendations

1. **Empower family office principals to work with their financial managers to formally allocate a portion of their portfolio to cleantech.**
   Most family offices outsource some or all of the management of their investment portfolio to general financial managers, who are typically measured against mainstream financial benchmarks. Many survey participants note resistance from their own general financial managers to moving the portfolio into cleantech and/or other socially beneficial areas, citing the lack of general managers' expertise in this type of investing. In order to counteract this inertia, family office principals need to be educated on the potential returns, risks, and unique characteristics of cleantech investing; principals will then be prepared to work proactively with their financial managers to set clear cleantech investment targets and select appropriate benchmarks against which managers' performance can be measured. It is important to note that cleantech has grown beyond clean energy and hard technology to encompass nearly any company working to increase the sustainability of customers' resource use (whether through innovative business models, e.g. SolarCity, the development of new technologies, e.g. Nest, or both); under this definition, cleantech applications can be found in nearly every major industry.

2. **Help family offices identify co-investors.**
   Many family offices note that the difficulty of assembling a strong, aligned syndicate, and identifying broad funding is the single largest threat to an individual company's success—and to the growth of the cleantech sector as a whole. At the same time, many smaller family office investors express frustration with an inability to find collaborators with similar investment goals. While some family office networks/syndicates already exist (e.g. CREO, the Cleantech Syndicate, TONIIC), there still seems to be a need for purpose-built collaboratives—developed when offices have a common purpose, but can see real economies of scale in due diligence, leading investments, and proffering enough capital to make a real difference.

3. **Develop new investment products/structures to facilitate cleantech investment across asset classes.**
   Many survey respondents express a desire to engage in cleantech related investing throughout their portfolio, but typically report that current cleantech activities are confined to direct, venture capital style investments. At the same time, most respondents engaged in venture style investing note that their existing investments have required more capital and longer time frames to exit than initially anticipated. Alternative deal structures (i.e. profit-sharing) could be more widely implemented to increase early stage cleantech investment while still providing family offices with needed liquidity. At the same time, family offices are seeking investment opportunities at later stages, such as project finance.

4. **Raise the profile of the cleantech sector among investors in general.**
   Several of the previous recommendations boil down to one fact—that more investment is needed in the sector, across asset classes and company stages. Raising the profile of the sector and trumpeting its financial successes could bring more co-investors and follow-on sources of capital to the table—early investments in companies like Tesla, SolarCity, and Uber have performed extremely well and are prime examples. Increased investment in the space could then help ensure that new innovation continues, while also providing more established companies with the resources necessary to deploy innovations in the field and achieve long-term viability.

Results and Trends

Definition of "cleantech." In the context of this paper, the term "cleantech" is meant to be as inclusive as possible. When asked what they considered "cleantech," many people include anything that reduces the use of natural resources or increases productivity. In terms of actual investing activities, the majority of participants are investing in clean energy, while also investing in a variety of other sectors (Figure 1).

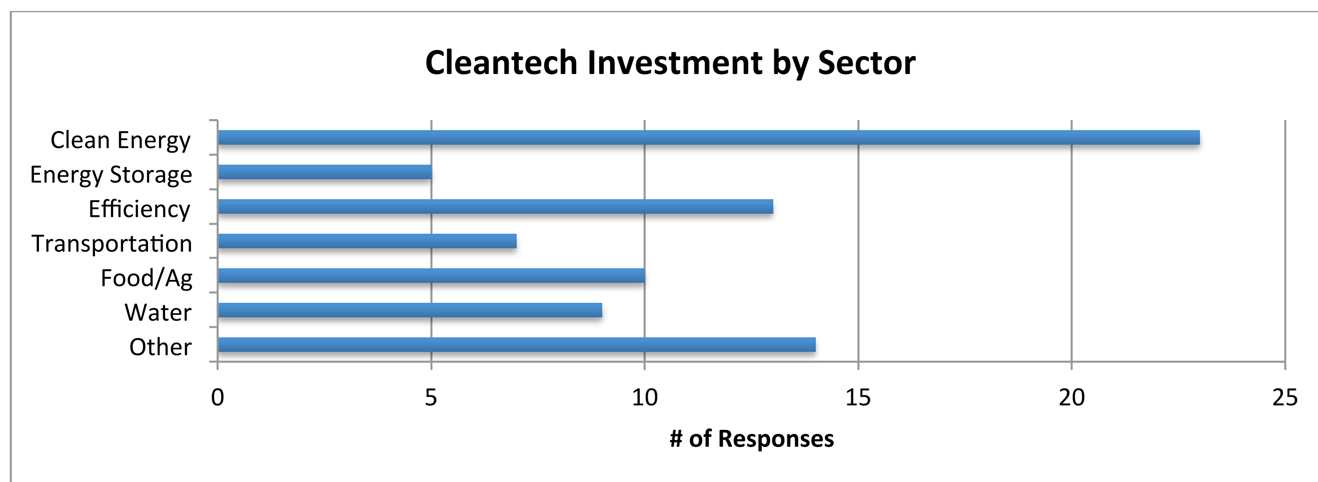


Figure 1

Description of survey population. Survey respondents consist of 12 principals (six first generation and six later generation), 13 specialized financial managers, and four multi-family office financial managers. Many respondents use multiple vehicles to invest in the cleantech space (e.g. family foundations in addition to the general investment portfolio), with one-third of respondents employing a dedicated cleantech venture capital and/or private equity fund structure. Participants reported an average of 1.54 staff with a mandate to spend at least part of their time on cleantech investing, with the majority reporting zero or one person dedicated to cleantech full time (often just the principal him or herself). These small numbers alone illustrate the challenge for family offices interested in cleantech.

While families are typically investing in cleantech due to a commitment to "make the world a better place," many are also quick to point to the potential financial returns from the sector. Indeed, even among survey participants who consider the social/environmental "impact" of an opportunity in the investment decision (five respondents) and/or measure impact after the decision has been made (two respondents), the focus is on

achieving market and/or better than market returns for the relevant asset class (see discussion below). Five respondents noted that the principal's original wealth came from the oil and gas sector, and investing part of the family's portfolio in cleantech is seen as a hedging strategy.

Cleantech in the context of the portfolio. Most family offices view cleantech investing as a small piece of their overall portfolio. While a handful of people allocate over 40% of their net worth to cleantech, over half of participants report that cleantech related investments make up less than 10% of their portfolio (many decline to give numbers but note that their cleantech allocation is "very small"). This makes sense in that the majority of the cleantech investment activity covered by this survey is occurring through direct, private investment, with a strong focus on seed/Series A venture capital style investments (Figure 2). The relatively "risky" nature of these investments limits the amount of capital participants are willing to allocate, in the context of overall portfolio management.

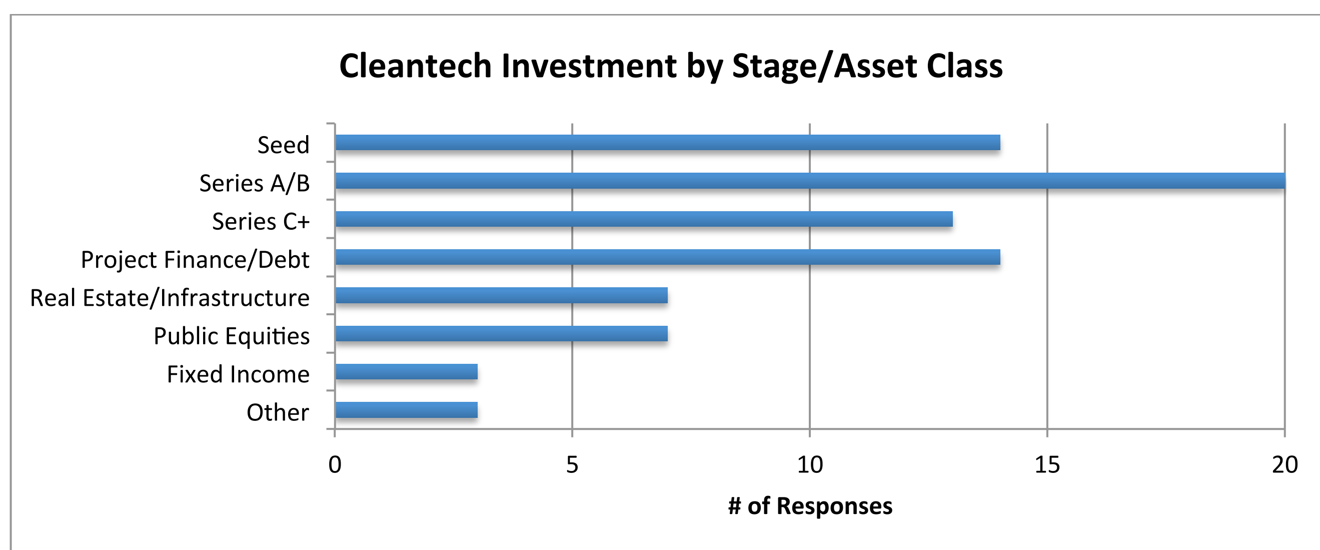


Figure 2

Major constraints on increased cleantech investment. Capital availability is the second most frequently reported constraint on cleantech investment (Figure 3). This is closely linked to the constraint of liquidity concerns, with many participants hesitating to lock up more capital in direct private equity and/or closed-end fund investments, due to the longer than expected duration or larger than expected capital demands of previous direct investments.

The most popular constraint on cleantech investing (15 responses) is lack of staff bandwidth to source and diligence investment opportunities.

In general, lack of technical expertise is not mentioned as an investment constraint—although, this is likely due to the fact that many family offices will not take technology risk and therefore do not need to assess the technical merits of a potential investment. Additionally, many investors outsource technical due diligence to experts.

One-third of respondents note a lack of deals in which to invest. While most people feel they have good access to potential investment opportunities and deal flow, many family offices struggle to find deals that meet their specific investment criteria, on good terms, and at an appropriate valuation/price.

Finally, two survey participants are not making any market investments in cleantech at all. These participants view philanthropic investments as the best way to invest in the space and increase its capacity.

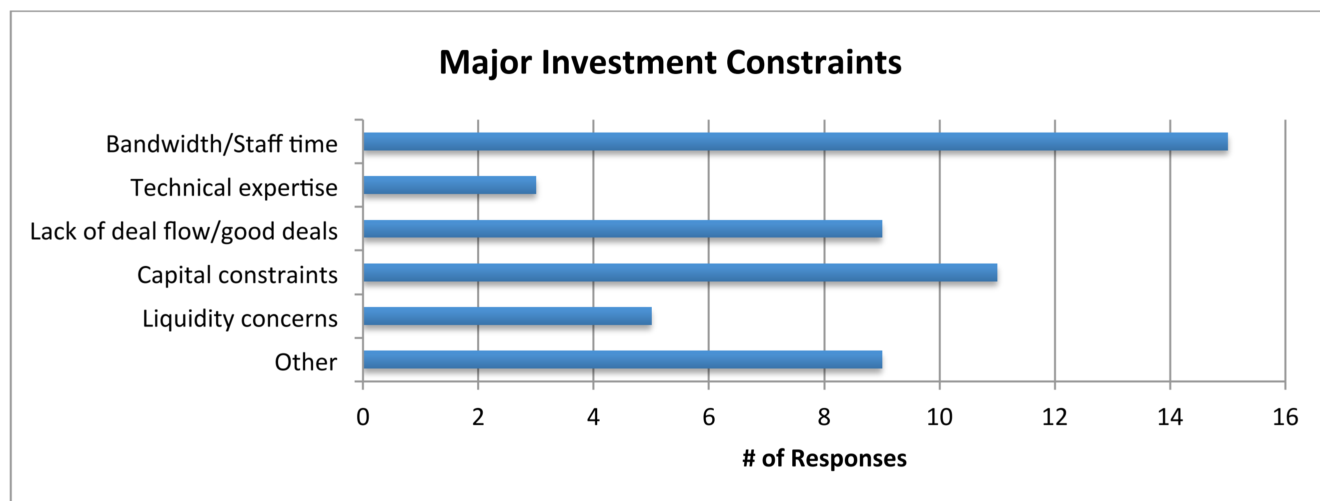


Figure 3

Attitude toward risks. In general, most participants describe their risk assessment and diligence process as "standard venture capital" with respect to evaluating direct investments in cleantech firms and project finance funds.

Management and the ability of the team to execute the company's strategy is typically reported as the main risk investors are concerned about, although many respondents express dissatisfaction with their ability to assess management's capability. Participants' strategies to mitigate this risk include not investing in first-time entrepreneurs, building a relationship with the management team over several months to get an indication of performance prior to investment, and to scale/size the investment or gate portions of the full investment commitment based on the company achieving certain milestones.

Technology risk strongly divides survey participants, between those who pursue investment opportunities with (and in some cases, based almost solely on) high technology risk (11 responses), and those who strongly avoid technology risk in favor of investing in companies based on business model innovation (11 responses). Those respondents seeking technology risk tend to be principals who are engineers themselves, or principals who have engineers on staff to perform technical diligence. Among those who avoid technology risk, many respondents note, "if I can't understand [the technology], I won't invest." This group also believes that their resources are better spent on scaling existing clean technologies, and/or that a large capital commitment into one type of technology (e.g. investing in 15 different battery companies) is needed to properly hedge that portion of the portfolio. Further, this group indicates a preference for "capital light" or "platform" companies, so that one's investment is significant relative to the company's needs (see discussion below), the timeline to

exit is likely shorter, and market risk is managed through the possibility of multiple sales channels/customer types.

Investing stage and size of commitment. Many people describe the importance of scaling and timing investments such that their investment is significant relative to the size of the round or the financing needs of the company at the time of investment. Scaling the investment properly is critical to protect ultimate returns and ensure that the family office has the desired level of control over the governance of the company in question. Given that half of respondents invest less than $2 million and another quarter invest between $2-5 million in any one company, most respondents make initial investments in the early stages (seed/series A), prior to the participation of large institutional investors, and follow on with equity or debt in later rounds as necessary (Figure 2). Among those who avoid technology risk, investors typically want to see evidence of market traction, some revenue, and/or established customer channels prior to investment (even for early stage investments). Despite the early stage trend in the data, respondents generally describe themselves as “opportunistic” and many will not define themselves as early stage investors.

Moving beyond equity, a significant portion of the survey group reports participating in venture debt, convertible note, and project finance instruments. This strategy is variously viewed as a way to engage with start-up companies in a “less risky” manner, a means of acting as a true “capital partner” to the entrepreneur (providing capital in the form appropriate to the company’s needs), and a way of gaining exposure to cleantech in a different asset class.

Many survey participants express a desire to invest in cleantech throughout their portfolio/across asset classes. However, most family offices find this difficult. While the survey did not directly address the causes of this, we speculate that a main driver is that small family offices do not have the time and/or expertise to effectively manage multiple asset classes, and outsource much of this work through investment in external funds. Additionally, respondents who use a dedicated venture capital/private equity fund within their own family office typically report that the rest of their portfolio is more conventionally managed, indicating that direct cleantech investment is where the principal/manager feels their time is best spent.

Investment return and time-to-exit expectations. Almost universally, respondents expect to realize comparable market or superior returns on their cleantech investments. Concessionary investments in cleantech (e.g. lowered return expectations, extending debt at lower than market interest rates) is not a major priority for the survey group—13 participants had no interest in concessionary investments at all, eight make some concessionary investments out of their market portfolio, and 10 make concessionary investments out of a family foundation. Many respondents believe that concessionary investing in the space isn’t necessary due to the availability of market-rate opportunities, and in some circumstances can hurt the space by holding back the development of a robust market. In general, respondents expect 15-20% IRR on the private equity portion of their portfolios, or a minimum 5x multiple. Debt is typically extended at a 7-10% interest rate.

Family offices are also somewhat conventional in their expectations of time-to-exit for private equity investments. Only eight participants describe themselves as “long-term” investors, with no time constraint for holding direct investments. Most respondents express a desire to realize return as soon as possible, although

acknowledge that most of their early stage direct investments take longer than originally anticipated to exit (often 5-10 years in total).

Length of investment decision process. About half of participants report that they make an investment decision in less than two months, viewing their ability to make a quick decision as a competitive advantage in closing deals. The other half of participants take longer to make an investment decision, some extending the process out to six months; this group is often resistant to entrepreneurs who need a quick decision.

Ongoing involvement in direct investments. The majority of respondents have some level of ongoing involvement with their portfolio companies, often through formal board seats or playing a less formal (but still significant) advisory role. Many respondents report that the principal's business experience and/or connections are viewed as extremely valuable by the entrepreneur. While ongoing involvement is typically viewed as a necessary part of direct investing, many respondents also wish that it wasn't required, as board seats in particular demand a great deal of time and therefore limit the number of direct investments a family office can make.

Collaborators and co-investors. There was a great deal of disagreement in the data set on the subject of collaborators. One group (relatively more professionalized, larger scale investors) invests often with the same group of investors. A second group maintains a vast network of collaborators/co-investors, but typically changes whom they collaborate with on every deal. A third group reports frustration with a lack of co-investors, and a struggle to find any other investors with similar goals. Still, almost everyone mentions the necessity of putting together a syndicate of aligned co-investors (aligned both internally and with management), in order to realize the long-term potential of the company in question. Many note that the difficulty of assembling a strong syndicate and identifying other sources of financing is the single largest threat to an individual company's success and the growth of the cleantech sector as a whole.

Other interesting dynamics. While the survey questions did not focus explicitly on the aspects of cleantech investing discussed in this section, we mention them here due to their potentially significant impact on the design of strategies and organizations that could be created to facilitate more family office investing in the cleantech space.

Generational dynamics. Some respondents touched on the influence of generational differences within families on cleantech investing. Generally, respondents agree that first generation principals interested in cleantech investing (i.e. the initial wealth creators of the family) are often more inclined to take risks and interested in direct investing, as they have built companies themselves and often take pleasure in contributing their experience to the growth of new enterprises. By contrast, later generation principals are often more focused on capital preservation, and therefore have less risk appetite. On the other hand, there is a growing trend among later generation principals to invest in line with one's values, which can often be the source of the motivation to invest in cleantech when the prior generation has had no interest in the sector.

General manager incentives. Several principals report that while they wish to increase their portfolio allocation in cleantech, their general financial managers resisted the move. Many respondents note that increasing family office investment in cleantech will require an adjustment of the incentives that general financial managers face, as their compensation is often tied to beating market benchmarks instead of achieving

cleantech investment goals. Understandably, general financial managers can be reluctant to wade into cleantech investing if it is not an area of expertise.

In multi-family offices (family offices that manage wealth on behalf of multiple clients), managers report that their clients are not asking for investment in cleantech, and further, that ramping up cleantech investment would require outside expertise as there is little cleantech expertise on staff. This is probably why the vast majority of family office cleantech investing is done through single-family offices, when the principal can recruit managers in part based on cleantech expertise.