



The federal government should take specific actions to catalyze impact investment in energy innovation and deployment, and to provide strategic coordination among a diverse set of impact-interested capital providers.

Executive Summary

Opportunity:

- Overwhelming social and economic imperatives exist,
 both nationally and globally, for investment in the energy sector.
- Investable capital from the philanthropy and family office community is underused in the energy sector, despite significant and growing interest.
- Recent events hosted by the federal government serve as a stimulus for high-level action.
- Federal government resources could be valuable for impact investors.

Problem:

- Information asymmetries have prevented many types of asset owners from participating in the energy sector.
- Philanthropic investment in energy innovation and deployment has fallen short, both in absolute terms and in strategic orientation.
- High-profile failures in cleantech venture capital and government grants and loans have stigmatized energy solutions for mainstream investors.
- Policy and capital markets are the only interventions large enough to mitigate climate change on a reasonable time horizon, but activities are not currently coordinated.

Resources needed by impact investors that may be coordinated with the federal government:

- Information exchange platform(s)
- Research on policies conducive to the work and dissemination of reports.
- Intermediary organizations: strengthened and coordinated with private investors, as well as public-private partnerships.

Recommendations:

- Support a national task force led by the private sector to coordinate action, propose public-private partnership opportunities, and surface relevant policy issues.
- Offer grant funding for private intermediary efforts.



"A movement is afoot...the movement is called impact investing...[and it requires] a more intentional and proactive partnership between government and the private sector."

US National Advisory Board on Impact Investing, June 2014 1

Introduction

Economic and social imperatives require that energy innovation and deployment become an integral part of the impact investing movement. While the overall market for impact-oriented capital is large and growing – a recent report found \$46 billion in impact investments under management globally – energy has remained on the margins of impact investing in practice.²

In the spring and early summer of 2014, the federal government hosted a series of conversations to stimulate high-level action. Now it is time for the federal government to leverage its resources to help put impact investment in the energy sector into play at scale.

This paper builds on the following events held in Washington, D.C. over the past six months:

Date	Event Title	Host Organization
April 24, 2014	Energy Finance Roundtable for Foundations	U.S. Department of Energy's Office of the Secretary
June 23, 2014	White House Roundtable on Impact Investing	White House Office of Social Innovation and Civic Participation
July 23, 2014	Driving Resources into Energy Innovation	American Energy Innovation Council

We believe in a broad definition of impact investing because of the speed and scale required for low-carbon energy innovation and deployment. This paper covers the motivations and approaches for what we call "capital *I*" Impact investors, whose primary desire is to achieve specific impact objectives and whose approach to investing involves sophisticated impact metrics and screens. It also covers what we call "lowercase *i*" impact investors, a large and growing pool of mission-interested capital providers for whom impact investing is simply the evolution of traditional portfolio management. We use the term "concessionary" to indicate a strategic choice to diverge from traditional asset class standards in terms of financial returns, risk, or timeline to achieve desired impact objectives. We use the term "nonconcessionary" investment to mean investments made at the market rate, where incorporating impact metrics also supports long-term performance objectives.³



Within the core impact investing movement, which is largely

characterized by "capital I" impact investors, discussions of energy have generally been limited to development work abroad or energy efficiency in low-income housing in the U.S. While both are critical pursuits for impact investors, investments in a broader set of energy innovation and deployment opportunities have the potential to generate a much wider range of positive outcomes including job creation, advancing science and technology, stewarding natural resources, and protecting public health.

Experts believe that to avoid the most catastrophic impacts of climate change, investment in clean energy must double by 2020 from a baseline of roughly \$250 billion per year, and quadruple by 2030.⁴ While governments, development banks, and traditional project financiers will deploy the majority of those dollars, impact capital has an important role to play in filling critical capital gaps and leveraging resources. Increased harmony and strategic coordination among "capital *I*" and "lower case *i*" impact investors will help drive success and expediency in scaling up investment in clean energy.

This paper highlights specific actions the federal government can take to provide a strategic coordination function among the diverse set of actors with flexible, mission-interested capital, and to catalyze investment in energy innovation and deployment. Our primary goal is to advance a conversation among government stakeholders that will lead imminently to action, putting energy at the center of the burgeoning impact investing movement.





Types of Impact Investors

Families

Investable assets by families represent a significant, and largely untapped, pool of capital for impact investment in energy. In 2011, individuals were the largest source of charitable giving in the U.S., donating \$218 billion to public charities and accounting for 73% of total charitable giving. In addition to donating to nonprofit organizations, households with assets over a specific threshold – accredited investors – can make for-profit investments that may or may not be inspired by social impact. In 2013, angel investments from accredited investors into companies across all sectors in the U.S. totaled \$24.8 billion, which came from 298,800 separate households and focused primarily on consumer-facing software and media investments. With the advent of crowdfunding websites that facilitate donations from unaccredited investors (e.g., Kickstarter) and angel investments from accredited investors (e.g., AngelList), the crowdfunding industry grew to more than \$2.7 billion in 2012.

One particular structure that has emerged as a popular resource for high-net-worth households is the single or multi-family office – a private company that manages investments and trusts for one or many families. Experts estimate that one family needs at least \$250 million in assets to justify the expenses associated with operating a single-family office; there are approximately 5,000 single-family offices in the United States. Separately, multi-family offices vary widely in terms of assets under management, number of families served, and services provided. Most offer travel and estate planning, accounting, and investment and philanthropy advisory. Philanthropic services might include helping clients to establish a private foundation or providing strategic guidance for grantmaking and endowment management.



Foundations

In 2011, U.S. foundations' endowments were estimated to be worth approximately \$600 billion and grant disbursements totaled \$47 billion. There are three types of foundations in the U.S.: private foundations - typically endowed by one individual or family (e.g., William and Flora Hewlett Foundation), corporate foundations - operated by a for-profit company (e.g., Newman's Own Foundation), and public foundations, including community foundations, that are focused on defined geographic areas (e.g., the Boston Foundation) or constituents (e.g., women and girls). Ninety-eight percent of the more than 86,000 foundations in the U.S. have less than \$50 million in assets under management, and 60% of foundations have less than \$1 million. As of February 2014, the 100 largest U.S. foundations controlled approximately \$300 billion in assets, and capturing 1% of those assets annually would eclipse total current U.S. public spending on energy R&D. Internal Revenue Code (the Tax Code) mandates that private foundations spend 5% of total assets on charitable purposes annually. Increasingly, foundations are forging impact investment strategies both to meet the 5% distribution requirement and to manage the other 95% (i.e., foundation endowments).



Institutional Investors

Beyond families and foundations, a vast universe of asset owners make critical investment decisions pertaining to energy innovation and deployment. This group includes pension and insurance funds, university endowments, and sovereign wealth funds. These capital providers are motivated to pursue investments in energy solutions for one or both of these reasons: (1) to please stakeholders or shareholders and/or (2) to accomplish strategic portfolio objectives. It is important to note that investment professionals at these institutions have a fiduciary responsibility to preserve and grow capital over time, making them primarily "lower case i" impact investors.

Estimates vary for the amount of institutional capital with an appetite for impact in energy. One illustrative data point is the Investor Network on Climate Risk (INCR), run by Boston-based nonprofit Ceres, which represents more than \$11 trillion in assets managed by more than 100 institutional investors, and where all members have committed to investing in opportunities tied to climate change. Because the majority of capital among institutional investors today is deployed via fund managers, public equity screens are currently the primary mechanisms for these investors to achieve impact. The trend toward disintermediation (e.g., direct deployment of capital at scale) creates the opportunity for institutional investors to more actively incorporate impact considerations in their investment decision-making. 13

Types of Impact Investments

Program-Related Investments (PRI)

One tool used by foundations to achieve their charitable end goals is to invest in market-based solutions using program-related investments (PRIs). PRIs are concessionary investments that count toward a private foundation's 5% mandatory payout requirement; they can be made as equity investments, loans, loan guarantees, or other types of investment to either nonprofit or for-profit enterprises. Community and other public foundations may also make concessionary PRI-like investments but are not required to meet the same tax criteria as private foundations.

Despite their compelling value proposition to philanthropists, PRIs have been used sparingly since being added into the Internal Revenue Code in the 1960s. Best available data shows approximately 5,000 PRI transactions made since 1998, representing approximately \$4.4 billion in total investment. More than 75% of those transactions focused on creating jobs, education, and affordable housing, while less than 2% of all PRIs made were relevant to the energy sector.¹⁴ PRIs remain a promising but underused tool across many charitable purposes related to energy innovation and deployment.

Important regulatory details about Program-Related Investments (PRIs)

A PRI can be counted as part of a private foundation's charitable distribution if it meets these three requirements:

1) the primary purpose of the investment is to accomplish one or more of the charitable, religious, scientific, literary, educational and other exempt purposes described in section 170(c)(2)(B) of the Internal Revenue Code;

2) no significant purpose of the investment is the production of income or the appreciation of property;

3) no purpose of the investment is to lobby, support, or oppose candidates for public office or to accomplish any of the other political purposes forbidden to private foundations by section 170(c)(2)(D) of the Internal Revenue Code.¹⁵

The first prong – primary exempt purpose – requires a determination specific to each foundation, its mission, and its relation to the investment. There are two parts to the primary exempt purpose test for PRI-making – the investment must significantly further the accomplishment of the foundation's exempt activities, and it would not have been made but for the relationship between the investment and the accomplishment of exempt purposes. To meet the "significantly further" test, the foundation must determine that the PRI is consistent with one or more purposes described in section 501(c)(3) of the Code.

Section 501c3 of the Internal Revenue Code defines charitable activities as:

- Religious
- Educational
- Scientific
- Literary
- Fostering amateur sports competition
- Preventing cruelty to children or animals
- "Charitable"
 - Relief of the poor
 - Protecting and preserving the natural environment
 - Lessening the burdens of government
 - Lessening neighborhood tensions
 - Eliminating prejudice and discrimination
 - Defending human rights
 - Combating community deterioration and juvenile delinquency
 - Economic development for distressed populations



Types of Impact Investments (Continued)

Mission-Related Investments (MRI)

Foundations may also invest funds from their endowments in ways that generate both social and financial returns, provided that those investments do not jeopardize the longevity of the endowment and long-term achievement of charitable purpose. Nonconcessionary investments from the endowment are oftentimes referred to as Mission-Related Investments (MRI).

Recently, a high-profile movement called Divest-Invest Philanthropy highlights how foundations have the power to influence discussions about the uses of investment capital within the philanthropy community and beyond. The movement calls for endowments to divest of fossil fuel interests for ethical and financial reasons and commit to investment in clean energy (e.g., renewables, clean tech, and other innovations).

Investor Toolkit

Outside of the world of foundation capital, PRIs and MRIs become simply investments that also have an impact. As noted above, the majority of institutional capital that carries an "impact" label is managed through public equity funds with impact screens. While this type of investing, along with shareholder activism and divestment, can send important market and moral signals, for the purposes of this paper the focus is on capital and tools that will directly influence outcomes in energy innovation and deployment. Tools for managing direct investment include financial instruments such as equity or debt into companies and projects, as well as organizational designs such as hiring in-house expertise, participating in investor networks, and ring-fencing committed pools of capital for investment in energy innovation and deployment.

Dedicated impact funds are proliferating across the institutional investment landscape – from mainstream financial institutions and state pension funds, to new classes of impact asset managers and public-private collaborations. For example, the investment bank Morgan Stanley believed the impact capital trend was widespread enough to announce a five-year goal to reach \$10 billion in client assets in its investing-with-impact program. The California Public Employees' Retirement Program (CalPERS), which manages a \$300 billion portfolio, has committed to "consider risk factors that are slow to develop, such as climate change and resource scarcity" as part of its ten governing "investment beliefs." In the mold of a public-private partnership, the Overseas Private Investment Corporation (OPIC) and the Rockefeller Foundation established an aligned capital fund for co-investment in the development of renewable energy projects overseas. Most recently, in the lead-up to the September 2014 UN Climate Summit in New York, the California State Teachers' Retirement System (CalSTRS, the country's second-largest public pension fund) announced a commitment to more than double its clean energy investments to \$3.7 billion over the next five years, and the University of California agreed to commit \$1 billion of its \$91 billion endowment for direct investments in solutions to climate change over the next five years.



The U.S. energy sector is a massive enterprise of interconnected and interrelated systems. The U.S. is fortunate to have a network of celebrated national labs and universities, venture capital resources and talented entrepreneurs supported by incubators and accelerators, a sophisticated financial industry, a legal system that protects the sanctity of contracts, and large technology and energy companies with the skills to scale technologies.²¹ Within this diverse ecosystem, there are many opportunities – both concessionary and nonconcessionary – for impact-interested capital to invest. ²²

Examples of investment opportunities across the innovation and deployment pipeline:

	Concessionary		Nonconcessionary	
Innovation	Seed-stage equity to support a new venture developing a new, ultra-high-efficiency solar photovoltaic material	Recipient: Corporation Investor: Corporate Foundation Investment: PRI - convertible debt Charitable Purpose: Advancement of Science	Series B equity for cleanweb startup building grid management software	Recipient: Corporation Investor: Single Family Office Investment: Equity
Deployment	Series C convertible note to a private company that conducts energy efficiency audits and retrofits, to support opening an office in an underserved community	Recipient: Corporation Investor: Community Foundation - grantmaking (5%) Investment: PRI - equity Charitable Purpose: Economic Development	Loan with a competitive interest rate to support new, price-competitive clean energy infrastructure projects	Recipient: Corporation Investor: Private Foundation - endowment (95%) Investment: Debt



Innovation

Today, there is no shortage of breakthrough energy technologies being developed in universities, national labs, and garages. One salient place to look for examples is the ARPA-E website; since 2009, ARPA-E has funded more than 360 potentially transformational energy technology projects, and many of these projects have already demonstrated technical success.

Unfortunately, the current financial marketplace lacks patient, early-stage capital and expert support that can translate these projects into lasting companies. While one might expect traditional venture capital to fill this gap, the venture asset class has come to focus primarily on developing varieties of consumer-oriented digital innovation over short time periods.²³ Concurrently, U.S. venture capital activity in clean energy has dropped more than 67% between 2011 and 2013.²⁴

Philanthropic asset owners are in a unique position to contribute, invest, and leverage resources to meet this need. Unlike conventional venture investors, philanthropists are in a position to be more flexible and patient, and to accept significant levels of risk to achieve measureable social or environmental returns. As early investors, and by absorbing a higher amount of risk, philanthropists can attract follow-on capital to promising enterprises. Unlocking even a small portion of the \$50 billion given as grants annually from U.S. private foundations or the \$700 billion in foundation endowments would revolutionize the way we develop unproven energy technologies for applications in developed economies as well as the developing world.

Imagine a \$250 million PRI Fund focused on filling the gap between ARPA-E and venture capital that supports 20 transformational companies over a 20-year time horizon – just one price-competitive grid storage solution could drastically reduce annual greenhouse gas emissions globally by 2050.



Rapid, large-scale investment in the deployment of proven clean energy solutions is critical in order to meet the economic and social imperatives for emissions reduction at the pace and scale required. In many cases, cleaner alternatives proven at a small scale exist but are not deployed at a full scale because of financing barriers. Impact investors can play a valuable role in bridging this "commercialization gap" ²⁶ by supporting technologies – such as advanced nuclear, carbon capture and sequestration, or deployment of wind and solar in critical geographies – through low-cost debt, subsidized off-take agreements, and early-stage development capital.

Imagine a \$200 million PRI commitment to subsidize a first-of-a-kind nuclear facility, bringing technology down the cost curve and promoting baseload electricity generation with zero carbon emissions.



In addition to commercializing technologies, there are opportunities for impact investors to support business model innovations that drive commercialization, such as enabling distributed asset financing at scale (e.g., SolarCity, Mosaic, Next Step Living). Additionally, opportunities abound to incentivize later-stage companies with proven technologies to work on projects they would not otherwise prioritize - opening an office that brings green-collar jobs to underserved neighborhoods, developing technology specifically for charitable applications, or deploying projects in the developing world.

Imagine a \$5 million PRI to incentivize a small private company to deploy its water filtration technology to clean up tailings ponds at oil drilling sites in the Rocky Mountains to reduce harmful flooding.



Indeed, nearly every subsector of the clean energy economy could benefit from catalytic or flexible impact capital, but this is especially true in the developing world. Globally, 1.3 billion people lack access to electricity and instead rely on heavily polluting and expensive kerosene, candles, and flashlights for their basic energy needs. Fortunately, companies providing services and deploying proven energy technologies – modern lighting and mobile phone charging from solar power – are growing rapidly with 95% compound annual growth rates in Sub-Saharan Africa, according to the World Bank's Lighting Africa program. These companies increasingly have proven track records but struggle to raise the risk capital they need to expand. Again, unlocking impact investment assets that are focused on absorbing the first loss risk associated with deploying the proven technologies of today is imperative in developed economies as well as the developing world.

Imagine a \$40 million PRI loan guarantee reserve to kick-start solar electricity businessesin Sub-Saharan Africa that alleviate poverty by providing electricity to households currently living in the dark.

High barriers currently prevent impact investment in energy.

	PRI (philanthropic investors)	MRI (returns driven investors)
Operational Barriers		
In-house staff lack the deep expertise and organizational support to find, screen and structure energy investments.	Х	х
External advisors - accountants, lawyers, trustees and investment advisors - lack resources to evaluate and facilitate investment in energy innovation and deployment.	X	Х
Transaction costs are prohibitively high on a deal-by-deal basis.	X	X
There are too few examples of energy-related PRIs to serve as precedent.	X	
There is a scarcity of attorneys with experience making PRIs to energy-related causes.	X	
Educational Barriers		
There is no educational or exchange forum dedicated to reducing the information asymmetries between charitable investors and energy experts.	X	
There remains a lack of familiarity and comfort with program-related investing among grantmaking foundations.	X	
There is an acute lack of awareness about the capital gaps in energy innovation and deployment - those stages that are not currently covered by traditional investors or government.	X	
The impact metrics for energy opportunities are difficult to quantify before and after investment.	X	X
Asset class silos obscure energy opportunities that span multiple investment types and asset classes.	X	X
Perceived Policy Barriers		
Climate change (mitigation or adaptation) are not explicitly charitable purposes in the Tax Code.	X	
The IRS has issued inconsistent written determinations regarding PRIs in the energy sector.	X	
Regulatory uncertainty undermines long-term investment in the energy sector.	X	Х

It is important to note that the perceived policy barriers described here do not prohibit PRI-making to energy or climate causes per se, but are causing hesitation in the marketplace on behalf of those asset holders looking for clear guidance. The operational and educational barriers described above are the primary hurdles that need attention and smart government intervention.

Call to Action

To address the educational, operational, and perceived policy barriers enumerated above, it is essential that the federal government work side-by-side with private and social sector intermediaries to bolster and coordinate impact investment in the energy sector. Not only is the energy sector inexorably linked to government intervention, but the federal government also has the capacity to help impact investors break down barriers that currently prevent action. Most critically, there is a coordination function missing today to help impact asset owners achieve their goals in a sector defined by scale – the federal government could help fill this gap immediately.



Nonprofit intermediaries rising to answer the call

Efforts to address a number of the barriers noted above are being addressed through the emergence of intermediary organizations and working groups, including the following:

Ceres: INCR Working Group for Families & Foundations | Ceres is a leading Boston-based NGO that mobilizes business and investor leadership. In 2003, Ceres created the Investor Network on Climate Risk (INCR), a consortium of asset managers, asset owners, foundations, and endowments focused on integrating climate risk comprehensively into investment policies and practices. Currently, there are 112 INCR members with a combined \$13 trillion in assets under management. In Fall 2014, Ceres created a new working group for family offices and family foundations in INCR that will offer programming and peer-to-peer networking opportunities on climate-conscious investing.

Climate and Energy Funders Group | The Climate and Energy Funders Group (CEFG), supports, facilitates, and seeks to expand a network of funders responding to global climate change. CEFG is the only national forum of funders focused exclusively on addressing this issue and believes that philanthropy has a critically important role to play as the impacts of global climate change become more evident. CEFG's vision is a global transition to a clean energy economy, leading to a stable climate that protects human life and global ecosystems.

Confluence Philanthropy | Confluence Philanthropy supports and catalyzes the work of private, public and community foundations, individual donors, and investment advisors committed to moving philanthropy towards mission-aligned investment. Confluence Philanthropy hosts conferences, webinars, trainings, and supports working groups focused on specific areas of investment and change strategies.

CREO | CREO is a network of qualified family offices, private investors and advisors focused on developing and investing in the global environmental marketplace. Established in 2011, participation has grown from a small group of family offices and principals to over 100 private investors and asset owner representatives with over \$50 billion of investable capital. To date, CREO has showcased 150 investment opportunities with capacity of \$1 billion, initiated programmatic content partnerships, organized eight events and, in June 2014, coordinated commitments of \$300 million in new impact investments from members.

Energy Options Network | Energy Options Network is a nonprofit organization created to increase the portfolio of zero-carbon energy options available to accelerate large-scale global energy system de-carbonization. Its team and network possess significant real-world experience in energy technology development, moving forward complex, large-scale global energy projects, commercializing innovative technology, "getting things done" in China, and driving U.S. energy policy. Energy Options Network focuses heavily on the application of low-carbon energy technologies in the developing world.

Mission Investors Exchange | is a national network of foundations that are using investment strategies to achieve their philanthropic goals. It offers education, training and technical assistance to foundations and other philanthropic asset owners, and encourages and supports working groups on common issues and concerns.

PRIME Coalition | PRIME is a nonprofit organization formed in 2014 with grant support from seven prominent family foundations. Its mission is to empower philanthropic families and foundations with the critical tools they need to invest in market-based solutions to climate change – companies that won't otherwise be funded and projects that won't otherwise be done without philanthropic support. PRIME's vision is to harness the expertise embedded in the for-profit sector and within government agencies to help lower barriers that currently prevent philanthropic investment in energy.

Stanford Steyer-Taylor Center for Energy Policy & Finance | Founded in 2011 as a joint initiative of the Stanford Law and Graduate School of Business, the Steyer-Taylor Center develops and explores economically sensible policy and finance solutions that advance cleaner, more secure energy. Affiliated faculty and fellows research, publish, teach, and engage market players and policy makers on solutions for increasing the flow and reducing the cost of capital to scale up clean energy. The center runs research and programs focused on opportunities for philanthropic and long-term investors to fill critical information and financing gaps in clean energy innovation and deployment.



Recommendation 1

Support the creation of a National Task Force led by the private sector.

Summary | The National Task Force will identify and propose strategies to stimulate and coordinate impact-interested capital for energy innovation and deployment and facilitate public-private partnerships related to impact investing in the energy sector.

Grant Award | The Department of Energy's Office of Energy Efficiency & Renewable Energy would offer a grant award to support the National Task Force over a two-year period.

Recipient | Private nonprofit organizations would apply to become the recipient of the DOE's grant award in order to become Secretariat of the National Task Force. Each applicant would propose their own Task Force structure, prioritized workflow, deliverables, budget, prospective Task Force members, and plan for sustainability beyond the two-year grant.

Objectives | a) Map the landscape of impact-investing actors and platforms as well as relevant state and federal agencies and resources.

- b) Track and evaluate state and federal tax, budget, procurement, and regulatory policies that present material barriers to, or opportunities for, the flow of impact capital into energy innovation and deployment.
- c) Research and describe best practices among previous public-private partnerships in other sectors.
- d) Deliver a formal and ongoing public-private partnership proposal for impact investing in the energy sector that includes an implementation timeline, an action plan, performance metrics, and a theory of change.

Examples of potential public-private partnership structures to be considered by the National Task Force:

- Community development financial institution program for energy
- Contract for differences program for commercializing energy technologies
- Matchmaking service for impact investors around energy technology due diligence
- · Office of philanthropic engagement at the DOE
- Enhanced financial information related to impact investing in energy: grants, PRI, venture capital, private equity, project finance
- White House initiative equivalent to My Brother's Keeper

Examples of potential policies the National Task Force may consider from the perspective of impact investors:

- State-based public-private finance partnerships
 (e.g., Connecticut's Clean Energy Finance and Investment Authority and NYSERDA)
- Existing and proposed energy-related state and federal tax policy
- Federal energy procurement strategies
- Examination of the regulatory language for concessionary investors related to energy innovation and deployment, such as:
 - o PRI Examples in the Tax Code
 - o Charitable purpose language in the Tax Code, including:
 - Adding climate change as a charitable purpose
 - Defining "lessening the burdens of government" as it relates to energy





Recommendation 2

Support impact investment intermediaries working in the field.

Summary | We view the Department of Energy's recent National Incubator Initiative for Clean Energy (NIICE) as an award that could be replicated to jumpstart the efforts of impact investment intermediaries. The NIICE Program funded awards in two topic areas: (1) creating a national organization to serve as a coordinating body for clean energy incubators and a central source of information for clean energy stakeholders; and (2) setting a benchmark to develop top-performing, clean energy-focused incubators by funding three to five incubators across the United States.³⁰ Similarly, we suggest an Impact Investment for Clean Energy Program to support the National Task Force (above) and a suite of nonprofit intermediaries.

Grant Award | The Department of Energy's Office of Energy Efficiency & Renewable Energy would offer multiple grant awards to support impact investment intermediaries over a two- or three-year grant period.

Recipients | Single organizations or consortia of existing organizations with capacity to engage, organize, and facilitate co-investing among impact investors or create investment opportunity exchange platforms in the energy sector would apply for the grant award. Applicants would need to be specific on which investor type (e.g., philanthropists, family offices, institutional investors), investment type (e.g., PRI, MRI, investor toolkit), and energy opportunity type (e.g., innovation or deployment) will be included in their DOE-supported program.

Objective | Accelerate the pace and volume of private sector investments designed to meet critical funding gaps and leverage new investments into clean energy companies and projects.

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References

- 1 US National Advisory Board on Impact Investing, "Private Capital, Public Good. How Smart Federal Policy Can Galvanize Impact Investing and Why It's Urgent." June 2014.
- 2 JP Morgan and GIIN's Investor's survey, 2014, pg 6.
- 3 Brest, Paul and Kelly Born, "Unpacking the Impact in Impact Investing," Stanford Social Innovation Review, August 14, 2013.
- 4 Fulton, Mark and Reid Capalino. "Investing in the Clean Trillion: Closing the Clean Energy Investment Gap." A Ceres Report. January 2014.
- 5 Sohl, Jeffrey. "The Angel Investor Market in 2013: A Return to Seed Investing," Center for Venture Research, April 30, 2014. Print.
- 6 Pollack, Marv. "How Many Family Offices are there in the United States?" Family Office Exchange. September 2014.
- 7 Prince, Russ. "How Many Family Offices Are There?" Forbes. Forbes Magazine, 11 Nov. 2013. Web. 23 June 2014.
- 8 Bugg-Levine, Antony, and Jed Emerson. Impact Investing: Transforming How We Make Money While Making a Difference. San Francisco: John Wiley & Sons, Inc, 2011.
- 9 Connolly, Paul. "Creating a Smarter Philanthropic Marketplace." Stanford Social Innovation Review, 7 Mar. 2014. Web. 23 June 2014.
- 10 Foundation Center. "Top 100 US Foundations by Asset Size." September 2014.
- 11 American Energy Innovation Council, "Catalyzing American Ingenuity: The Role of Government in Energy Innovation," 2011.
- 12 Ceres Investor Network on Climate Risk. Website. September 2014.
- 13 Monk, Ashby HB. "The New Dawn of Financial Capitalism." Institutional Investor. September 8, 2014.
- 14 Wood, Sarah J. The Role of Philanthropic Capital in Entrepreneurship: An empirical analysis of financial vehicles at the nonprofit/for-profit boundary of science and engineering. MS thesis. Massachusetts Institute of Technology, 2012.
- 15 IRC Section 53.4944(a)(1)(i-iii)
- 16 Dorsey, Ellen. "Philanthropy Rises to the Fossil Divest-Invest Challenge." Divest Invest. Huffington Post, 30 Jan. 2014. Web. 23 June 2014.
- 17 Morgan Stanley. "Investing with Impact: Creating Financial, Social and Environmental Value." 2012.
- 18 Stausboll, Anne. "Analyzing Climate Risk: Why Mandatory Reporting Matters." Institutional Investor. August 16, 2014.
- 19 Burr, Barry B. "CalSTRS announces big boost in clean energy, technology investments ahead of the U.N. Climate Summit." Pensions & Investments. September 19, 2014.
- 20 UC Office of the President. "UC Announces New Approaches to Combat Climate Change." September 10, 2014.
- 21 American Energy Innovation Council, "Catalyzing American Ingenuity: The Role of Government in Energy Innovation," 2011.
- 22 Brest, Paul and Kelly Born, "Unpacking the Impact in Impact Investing," Stanford Social Innovation Review, August 14, 2013.
- 22 "Program-Related Investments," US Internal Revenue Service. September 2014.
- 23 Kearney, Sarah, Fiona Murray and Matthew Nordan, "A New Vision for Funding Science," Stanford Social Innovation Review, August 2014.
- 24 MIT Tech Review. "35 Innovators Under 35" Fall 2014. Pg. 46.
- 25 Kearney, Sarah, Fiona Murray and Matthew Nordan, "A New Vision for Funding Science," Stanford Social Innovation Review, August 2014.
- 26 Jenkins, Jesse and Sara Mansur, "Bridging the Clean Energy Valleys of Death: Helping American Entrepreneurs Meet the Nation's Energy Innovation Imperative," Breakthrough Institute. November 2011.
- 27 International Energy Agency. "Energy Poverty." Website. October 2014.
- 28 World Bank's Lighting Africa Program. Website. October 2014.
- 29 MacWilliams, John. "Building a Stronger Foundation for Philanthropic Energy Investments," June 24, 2014.
- 30 Department of Energy. "Funding Opportunity Announcements." DE-FOA-0001042: NATIONAL INCUBATOR INITIATIVE FOR CLEAN ENERGY (NIICE). eere-exchange.energy.gov. 22 Aug 2014



Prime

SARAH KEARNEY Executive Director, PRIME Coalition & Visiting Researcher, MIT Sloan School of Management Sarah Kearney serves as Executive Director of PRIME Coalition as

Sarah Kearney serves as Executive Director of PRIME Coalition, a nonprofit organization whose mission is to empower foundations and families with the critical tools they need to invest in market-based solutions to climate change. Before PRIME, Sarah served as Executive Director and Trustee of the Chesonis Family Foundation, a grantmaking organization that supports transformational energy innovation. Based on her work, Sarah has been inducted into the Raven Society at the University of Virginia, and awarded the 2012 MIT Ronald Heller Entrepreneurship Award, 2014 Caltech Resonate Award, 2014 Echoing Green Fellowship, and the MIT Technology Review 2014 35 Innovators Under 35. Sarah currently sits on the board for Saha Global, a social enterprise bringing civil services to rural Africa. She holds a B.S. in Commerce from the University of Virginia and an M.S. in Technology and Policy from MIT's Engineering Systems Division.



Stanford | Steyer-Taylor Center for Energy Policy and Finance

ALICIA SEIGER Deputy Director, Stanford Steyer-Taylor Center for Energy Policy and Finance

Alicia Seiger serves as Deputy Director of the Stanford Steyer-Taylor Center for Energy Policy & Finance, where she manages the center's research, programming, operations, and market engagement. Alicia also leads the center's work to identify opportunities for philanthropic and long-term investors to fill financing gaps to scale up clean energy. A serial entrepreneur and pioneer of new business models, Alicia was at the forefront of the web advertising and carbon offset industries before pursuing solutions in the rapidly evolving area of climate finance. Prior to joining the center, Alicia founded Climate Strategy Partners, a strategic advisory services provider that designed and executed climate and energy programs for foundations, investors and NGOs. She has served on the management teams of multiple startups, including TerraPass, a pioneer of the US carbon offset market, and Flycast Communications, one of the first web advertising networks. She holds a MBA from the Stanford Graduate School of Business, where she also served as a case writer for the Center for Entrepreneurial Studies, and a BA in Environmental Policy and Cultural Anthropology from Duke University.



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PETER BERLINER Managing Director, Mission Investors Exchange

Peter Berliner is the managing director of Mission Investors Exchange, a national network of foundations and related organizations that are using investment strategies to accomplish their philanthropic goals. Peter has served in a number of leadership roles within philanthropy and the not-for profit sector, including program director for the Paul G. Allen Family Foundation and, executive director of the Children's, a policy advocacy organization based in Washington State. He is a contributor and editor to the Community Foundation Field Guide to Impact Investing and Strategies to Maximize Philanthropic Capital: A Guide to Program Related Investments. Peter has an MPA degree from the University of Puget Sound; a Masters in Teaching from Oberlin; and a BA from Earlham College.