



ITU-WMO-UNESCO IOC Joint Task Force

Green Cables Funding Study

Joint Task Force to investigate the potential of using submarine telecommunications cables for ocean and climate monitoring and disaster warning



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ITU/WMO/UNESCO IOC Joint Task Force Green Cables Funding Study

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Executive Summary

The United Nations Joint Task Force (JTF) was established in 2012 by the International Telecommunication Union (ITU), the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO to examine novel uses for submarine telecommunication cables. The JTF is developing a strategy and roadmap that could lead to enabling the availability of modified “green” submarine cable systems equipped with scientific sensors (such as temperature, pressure and acceleration) for climate monitoring and disaster risk warning (particularly tsunamis) over extended areas of the world’s oceans.

This report is responsive to a need by the JTF to understand what options exist to fund this work. According to estimates made at the 2013 Madrid workshop, it will require between \$1M and \$6M to develop the necessary sensors and determining the methods to incorporate these into today’s submarine cable systems. It will further require between \$10M and \$20M to include such sensors into an initial demonstration project.

OCI Group investigated multiple funding options for the ITU JTF Initiative. During the course of this investigation it was determined that the potential funders all fell into the following categories and were address accordingly:

- International Development Agencies
- Foundations
- Governmental Agencies
- Private Companies

Each of these was researched to determine the subset of most likely candidates based upon their mission, focus, etc. Based upon this research, the following is a brief summary of each category:

International Development Agencies – Amongst these, the World Bank is both the largest, and in our opinion, the mostly likely candidate within this group to fund green cables. The World Bank has initiatives that address both climate change and disaster prevention. We identified the key individual at the World Bank as Rachel Kyte, whose title is World Bank Group Vice President and Special Envoy, Climate Change Group. Her bio also lists Disaster Risk Management as an expertise. We reached out to Ms. Kyte using multiple mechanisms but have yet to receive a response. Secondly, out of the regional development banks, the European Investment Bank would seem like the best candidate. We have identified Jonathan Taylor, who is Vice-President responsible for Environment and Climate Action as a key individual with which to speak. At the time of this publication, we are still seeking to reach Mr. Taylor. There is also a potential issue with any of the development banks as to whether the green cables initiative is “bankable”. This needs to be clarified once engaged in discussions with the appropriate people.

Foundations — When one looks into foundations, the several millions required as stated to fund green cables is quite a large sum for the foundations. There are not many foundations that can support grants of that size. This means the focus has to be on large

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foundations, which immediately reduces the universe of foundations from 120,000 to a couple of hundred. We therefore proceeded from two different perspectives. First, we examined each of the largest 30 foundations to see if either climate change or disaster prevention would fit into their funding focus and mission. In addition, we purchased a subscription to an online directory of foundations and used it to search for funds that had made sizeable grants in either climate change or disaster prevention. From these efforts, we narrowed the focus to nine (9) foundations.

We reached out to several of these and did make contact with three. After either email exchanges or phone calls, both the Hewlett Foundation and the Moore Foundation indicated green cables would not fit their current funding priorities. (For example, the Hewlett Foundation informed us that their current focus for climate change grants is policy advocacy.)

We believe the Packard Foundation is likely to be the best fit with the green cables initiative. They have a long history of providing substantial funding for the environment and the oceans in particular. For example, they provide over \$50M per year for the Monterey Bay Aquarium Research Institute, and have provided some of the funding for the Monterey Accelerated Research System (MARS), an underwater observatory system on the bottom of Monterey Bay. (The rest of the funding was from the National Science Foundation.)

We also believe contact should be made with the UN Foundation. One of its functions is to connect people, ideas and resources with the UN to solve the great global challenges of the 21st century. We would also suggest targeted contacts be made to the other foundations.

Government Agencies – Government Agencies were researched as sources of funding for the ITU JTF Initiative. Over 160 government agencies for which this initiative would be applicable were identified for coastal countries, but specific attention was paid to U.S., Canadian, European, Japanese, and Korean government agencies.

All government agencies are bureaucratic and will require extensive effort to develop funding proposals, building relationships, and consensus. In addition, all government agency funding will be contingent on appropriations and the government budget cycle.

Based on this research there are a number of candidate government organizations that should be further investigated for funding. These include:

- Canada – Department of the Environment
- European
 - European Commission – Institute for Environment and Sustainability
 - European Multidisciplinary Seafloor and Water Column Observatory
- Japan – JAMSTEC - Japan Agency for Marine Earth Science and Technology
- Korea – KISOT – Korean Institute of Ocean Science and Technology
- Taiwan, China – MOST – Ministry of Science and Technology
- United States
 - Department of the Interior, US Geological Survey
 - Environmental Protection Agency
 - Department of Commerce, Economic Development Administration
 - Department of Defense, Office of Naval Research

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Additional effort should also be made with agencies in China, India, and Brazil. These are all technologically savvy countries with growing influence in the world.

Private Companies – This study considered the possible interest of commercial entities in supporting the ITU JTF Initiative as part of their long-term business objectives and interests.

The key here is the word **supporting vs funding**. In our opinion, commercial entities would be unlikely to **fund** an initiative for two reasons; first, internal R&D dollars are expensive dollars internally, representing margin on cost and investment, and would be more probably used to support internal technology development, and second, funding may result in a commercial entity funding a competitor's development efforts. However, **supporting** the ITU JTF opened the possibility that a commercial entity might provide internal engineering support at minimal cost, serve in a review function or assist in establishing standards. Consequently, this study targeted companies that have commercial interests in subsea sensor and technology development, and solicited them as to their interest in this initiative. Out of a total of over 300 companies gleaned from OCEANS 2013 and OCEANOLOGY 2014 attendance lists and other sources, letters soliciting interest were sent to 29 companies. Unfortunately, only 6 companies responded to this solicitation of interest, and to date only discussions with one, Bluefin Robotics, have taken place – without fruit.

Based on the anemic response from the commercial entities that have a self interest in the technology and technology demonstration proposed by the ITU JTF Initiative, it is unlikely that commercial entities will lend support to the ITU JTF Initiative, and even more unlikely that any support would come in the form of funding.

Summary

This study researched four categories of potential funding for the Green Cables Initiative. For each category, potential funders were identified and were rated as to the likelihood of funding.

Best opportunities for funding appear to be in select development banks, private foundations and government agencies, but these opportunities require additional investigation and discussions with key decision makers and staff.

Within the Private Companies category, no company was identified as a potential funder, and based on the poor response from companies **it is unlikely that private companies will provide any significant funding to the effort**. The amount of funding being requested is quite substantial, and hence, there is a good likelihood that the project will require a partnership of multiple funders. This is not unusual.

In order to proceed further, **good collateral material will need to be generated**. First and foremost, this would include a detailed proposal along **with a cost and benefit analysis**. In addition, there will need to be a **clear understanding as to whom the recipient of the funding will be and it's organizational structure and governance**.

It is also our observation that **the key to successful solicitation will be determining and contacting key decision makers within the organization, preferably with a suitable introduction**. This effort will require the high-level personal support from the three sponsoring organizations. Funding organizations are deluged with requests, and it will be important to have an internal supporter. We found that speaking to the right contact will provide useful information and often lead to good introductions to others, and in this

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manner, one can work in the most promising directions. **To achieve success will require concerted effort over a sustained period**, while also completing the necessary collateral materials.

1 Introduction

1.1 Statement of Work

This report is in response to a need by the JTF which was documented in a Statement of Requirements: Study for Funding for “Green Cable Initiation Project”. This document contains the following:

The Requirement for a Study

The availability of funding for such a wide-ranging objective is difficult to navigate without some form of guidance and charting of the sources, parties and processes.

The JTF therefore requires that a study be undertaken to understand the sources of funding and the routes to such funding for the development and deployment of an initial ‘green cable’ system.

From the discussions at the Madrid Workshop it seems clear that between \$1M & \$6M will be required to develop the sensors themselves and for the relevant system vendors to tailor their solutions to incorporate the sensors and desired data transmission methodologies.

Further, a fund of between \$10M and \$20M would be expected to be required to include such sensors on a commercially viable cable as an initial project.

Potential Sources

The study shall detail global (such as World Bank), regional (ASEAN fund, Asian Development Bank) and country-specific potential sources of both development and deployment funding. Philanthropic sources should also be investigated. The report will also extend to explain common processes and mechanisms for applying for such funds and the typical assessment criteria for funding along with the periodicity of availability.

This report shall detail the research performed to date in response to the requirements and the stated financial objectives.

1.2 Organization of the Report

This section has provided an overview of the objectives that were established for this research and report. Section 2 briefly discusses the overall methodology used to perform the research. Section 3 contains the detailed report on the research and findings of each category of potential funding sources:

- International Development Agencies
- Foundations

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- Governmental Agencies
- Private Companies

Within Section 3, there is further discussion of methodology specific to each of the constituencies that were studied. Section 4 provides a summary of findings and includes recommendations for follow-up and further work.

2 Methodology

The researchers created an initial overall outline for tasks that would be required. From these, the most sizable tasks would be the actual research involved in examining the very large number of potential funding candidates that fall within each category examined. While the number of international development agencies is not huge, the number of foundations is huge (over 120000), as is the number of companies (>225). Therefore, for each category, it was necessary to first perform some initial research and to determine how best to prioritize the candidates within the category. This would be different for each category and is specifically addressed with each subsection of Section 3.

Once the candidates were narrowed down, it was then necessary to perform research and understand in detail how candidates within the category operate and how to best understand the likelihood that they would potentially fund the green cables initiative. For the International Development Agencies and the large Foundations, there is a great deal of public information about their mission, objectives and in many cases, what is the focus of their funding activities and their detailed historical record of funding programs. For Government Agencies, while their mission and objectives may be clear, the funding solicitation process is less clear. Private companies represent a completely different set of challenges since they are not normally in the business of providing funds to other entities (international or domestic) such as the JTF constituent. As such, the task was reduced to identifying those that would have a specific interest in the green cables initiative and then communicating with them to ascertain their potential interest level.

In some cases, we reached out directly to specific individuals that we identified as being in key positions. For example, we made contact with program managers or officers at some large Foundations. Similarly, we identified the individual who manages the climate change program within the World Bank; however, our efforts to contact her so far have been unsuccessful. In cases where we were successful, we did get specific responses, although sometimes without explanation.

3 Findings

3.1 International Development Agencies

3.1.1 Introduction and Methodology

It would first be instructive to understand what institutions fall within this category. Using Wikipedia http://en.wikipedia.org/wiki/International_financial_institutions, we find the following:

Multilateral Development Banks

*A **multilateral development bank (MDB)** is an institution, created by a group of countries, that provides financing and professional advising for the purpose of development. MDBs have large memberships including both developed donor countries and developing borrower countries. MDBs finance projects in the form of long-term loans at market rates, very-long-term loans (also known as credits) below market rates, and through grants.*

The following are usually classified as primary MDBs:

- *World Bank*
- *European Investment Bank (EIB)*
- *Asian Development Bank (ADB)*
- *European Bank for Reconstruction and Development (EBRD)*
- *CAF - Development Bank of Latin America (CAF)*
- *Inter-American Development Bank Group (IDB, IADB)*
- *African Development Bank (AfDB)*
- *Islamic Development Bank (IsDB)*

There are also several "sub-regional" multilateral development banks. Their membership typically includes only borrowing nations. The banks lend to their members, borrowing from the international capital markets. Because there is effectively shared responsibility for repayment, the banks can often borrow more cheaply than could any one member nation. These banks include:

- *Caribbean Development Bank (CDB)*
- *Central American Bank for Economic Integration (CABEI)*
- *East African Development Bank (EADB)*
- *West African Development Bank (BOAD)*
- *Black Sea Trade and Development Bank (BSTDB)*
- *Eurasian Development Bank (EDB)*

There are also several multilateral financial institutions (MFIs). MFIs are similar to MDBs but they are sometimes separated since they have more limited memberships and often focus on financing certain types of projects.

- *European Commission (EC)*
- *International Finance Facility for Immunisation (IFFIm)*

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- International Fund for Agricultural Development (IFAD)
- Nordic Investment Bank (NIB)
- OPEC Fund for International Development (OPEC Fund)
- Nederlandse Financieringsmaatschappij voor Ontwikkelingslanden NV (FMO)

Regional Development Banks

The regional development banks consist of several regional institutions that have functions similar to the World Bank group's activities, but with particular focus on a specific region. Shareholders usually consist of the regional countries plus the major donor countries. The best-known of these regional banks cover regions that roughly correspond to United Nations regional groupings, including the Inter-American Development Bank, the Asian Development Bank; the African Development Bank; the Central American Bank for Economic Integration; and the European Bank for Reconstruction and Development.

Table 3.1-1- Regional Development Banks

Founded	Name	www Address	Notes	HQ
1959	IDB Interamerican Development Bank	http://www.IADB.org	Works in the Americas, but primarily for development in Latin America and the Caribbean	Washington
1960	CABEI Central American Bank for Economic Integration	http://www.cabei.org	Central America	Tegucigalpa
1964	AFDB African Development Bank	http://www.afdb.org	Africa	Abidjan
1966	ADB Asian Development Bank	http://www.adb.org	Asia	Manilla
1970	CAF - Development Bank of Latin America	http://www.caf.com	Latin America	Caracas
29/5/91	EBRD European Bank for Reconstruction and Development	http://www.ebrd.com		London
16/4/56	CEB Council of Europe Development Bank	http://www.coebank.org	Coordinated organisation	Paris
14/11/73	BOAD Banque ouest-africaine de développement West African Development Bank	http://www.boad.org	Union économique et monétaire ouest-africaine, Cf. BCEAO Banque centrale des États de l'Afrique de l'Ouest	Lomé
1975	BDEAC Banque de développement des États de l'Afrique Centrale, DBCAS Development Bank of Central African States	http://www.bdeac.org	Communauté économique et monétaire de l'Afrique centrale (CEMAC), Cf. BEAC Banque des États de l'Afrique centrale	Brazzaville, Congo

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From the ones above, we narrowed the focus to those we felt would be the most promising. These included:

- World Bank Group (all five agencies)
- Asian Development Bank
- InterAmerican Development bank
- European Investment Bank
- China Development Bank
- KfW (German Development Bank)

Details on each of these can be found in Appendix I.

3.1.2 International Development Agencies

When one investigates all the regional or country specific development banks, one finds that their vision or charter is very specific. They will only providing funds which will specifically be targeted at their region and/or reduction in poverty. For example, from the Inter-American Development Bank website, their very first statement about themselves is:

We support efforts by Latin America and the Caribbean countries to reduce poverty and inequality. We aim to bring about development in a sustainable, climate-friendly way.

Similarly, the Asia Development Bank says:

Approximately 1.6 billion people in the region are poor and unable to access essential goods, services, assets and opportunities to which every human is entitled.

As can be seen, their focus would not seem to lend itself to providing funds for green cables. The only one that seems a bit more flexible is The European investment Bank, which says the following:

As the largest multilateral borrower and lender by volume, we provide finance and expertise for sound and sustainable investment projects which contribute to furthering EU policy objectives. More than 90% of our activity is focused on Europe but we also support the EU's external and development policies.

We support projects that make a significant contribution to growth and employment in Europe. As part of our counter-cyclical approach, our activities focus on four priority areas:

- *Innovation and skills*
- *Access to finance for smaller businesses*
- *Climate Action*
- *Strategic Infrastructure*

We generally finance one-third of each project but it can be as much as 50%. This long term, supportive financing often encourages private and public sector actors to make investment which might not otherwise be made.

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What makes the EIB different?

All the projects we finance must not only be bankable but also comply with strict economic, technical, environmental and social standards.

The EIB would appear to be a possibility for part of the financing. Clearly, to meet their requirement as “bankable”, there would have to be a business case which demonstrated how their investment would ultimately be rewarded. We have identified **Jonathan Taylor, who is Vice-President responsible for Environment and Climate Action** as a key individual with which to speak, however, we have not reached out to him yet.

The World Bank Group is considered a specialized agency of the UN. These organizations are autonomous and work with the UN and each other through the coordination of the Economic and social council. The sponsors of the JTF, the ITU, the WMO and IOC (which is part of UNESCO) are all also considered UN specialized agencies.

The World Bank group consists of five organizations:

- *the International Bank for Reconstruction and Development (IBRD), established in 1945, which provides debt financing on the basis of sovereign guarantees;*
- *the International Finance Corporation (IFC), established in 1956, which provides various forms of financing without sovereign guarantees, primarily to the private sector;*
- *the International Development Association (IDA), established in 1960, which provides concessional financing (interest-free loans or grants), usually with sovereign guarantees;*
- *the International Centre for Settlement of Investment Disputes (ICSID), established in 1965, which works with governments to reduce investment risk;*
- *the Multilateral Investment Guarantee Agency (MIGA), established in 1988, which provides insurance against certain types of risk, including political risk, primarily to the private sector.*

Only the first three are relevant as potential funders. The IBRD and IDA are collectively the World Bank. Each organization is a separate legal entity owned by its member countries.

From researching the websites of the World Bank and IFC, it is clear there is a high priority to address climate change. Some highlights from their website follow:

Climate change is a fundamental threat to development and the fight against poverty. *The World Bank Group is concerned that without bold action now, the warming planet threatens to put prosperity out of reach of millions and roll back decades of development.*

At the Bank, we are stepping up our mitigation, adaptation, and disaster risk management work, and will increasingly look at all our business through a climate lens.

Climate change is not just an environmental challenge – it is a fundamental threat to development in our lifetime. The World Bank Group has made confronting climate change a top priority in our push to eradicate extreme poverty and boost shared prosperity. At IFC, the World Bank Group’s private sector arm, we are stepping up

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our investments in climate change mitigation and adaptation and helping our clients understand and manage the risks and opportunities climate change presents.

The World Bank Group's total climate investments increased to almost \$11.3 billion during fiscal year 2014, with the bulk of the lending going to climate-friendly investments in energy, transportation, and agriculture.

In all, the World Bank Group had 220 climate investment projects in over 60 countries worldwide in FY2014. Over the last four years, the group has committed \$42 billion to climate-related activities.

From our research, we identified **Rachel Kyte** as the key individual to contact. Her title is **World Bank Group Vice President and Special Envoy, Climate Change Group**. From her bio on the World Bank website: <http://www.worldbank.org/en/about/people/vp-rachel-kyte>

She oversees work on climate change adaptation, mitigation, climate finance, and disaster risk and resilience across the institutions of the World Bank Group, including IBRD, IDA, IFC and MIGA.

The climate group is focused on ensuring that all Bank Group operations integrate climate change and take into account the opportunities that inclusive green growth presents. The group is also an advocate for global climate action.

AREAS OF EXPERTISE

- *Climate Change*
- *Sustainable Development*
- *Disaster Risk Management*
- *Environment & Natural Resources*
- *Social Development*

We have reached out to her via multiple routes including a common acquaintance, email to the media contact listed on her bio page and a phone call to her office in which we spoke with her assistant. When we spoke to her assistant at some length and explained about green cables, she confirmed that Rachel Kyte is the right person to discuss proposals concerning both climate change and disaster prevention. We have not yet heard back from Ms. Kyte yet.

We would also like to point out a study of climate finance by the key development banks which we found at the European Investment Bank website.

http://www.eib.org/attachments/joint_report_on_mdb_climate_finance_2013.pdf

3.1.3 Analysis and Summary

From our research, it is clear that all development banks have a primary focus on reducing poverty and improving the lives of those that don't have access to life's essentials such as clean water, electricity, health care, etc. They also mention shared prosperity and usually support for climate action. When dealing with regional development banks or country

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specific development banks, there is also a mandate that most of the funds be spent within their region.

From our analysis of the development banks, it is clear that the World Bank (probably the IDA) is by far the most promising for the following reasons:

- First, it is a member of the UN family.
- Its focus is global, and
- it has more funds available than any of the other regional or country banks.

We would also consider the European Investment Bank as a possibility, since there is less focus on extreme poverty in Europe and more focus on climate action. One key issue with any development bank is whether the project is “bankable”.

Since development banks usually provide loans, albeit under very favorable terms (low rates and long durations), there is an expectation that the money will be repaid. They can also take equity positions, provide loan guarantees, and have other financial products, so there is some flexibility. It’s not clear what financial product would best apply to the green cables project. Obviously, an outright grant would be best, but it’s not clear that’s possible, with the possible exception of the World Bank.

Our recommendation on the development banks is first and foremost to speak with Rachel Kyte at the World Bank. She seems to be the key to understanding what is possible at the World Bank and can address their involvement from both a climate change and disaster prevention standpoint. If she cannot be contacted, it is suggested that an approach via the World Bank ICT group be considered.

Secondarily, we would recommend reaching out to **Jonathan Taylor, who is Vice-President responsible for Environment and Climate Action at the European Investment Bank.**

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Below is a table summarizing results of this section:

Table 3.1-2 Development Agencies - Summary and Recommendations

Foundation	Primary Website	Recommendation	Comment
The World Bank Group	http://www.worldbank.org/	Further investigation and contact.	Potential for Funding. Goals seem aligned. Rachel Kyte is key person.
Asian Development Bank	http://www.adb.org/	Further investigation and contact	Low Probability of Funding. Focus on poverty.
Inter-America Development Bank	http://www.iadb.org/en/inter-american-development-bank,2837.html	No further investigation and contact.	Low Probability of Funding. Focus on poverty.
European Investment Bank	http://www.eib.org/	Further investigation and contact	Some potential for Funding. Jonathan Taylor is key person.
China Development Bank	http://www.cdb.com.cn/english/index.asp	No further investigation and contact.	Low Probability of Funding.
kfW (German Development Bank)	https://www.kfw-entwicklungsbank.de/International-financing/KfW-Entwicklungsbank/	No further investigation and contact.	Low Probability of Funding.

3.2 Foundations

3.2.1 Introduction and Methodology

A **foundation** (also a **charitable foundation**) is a legal categorization of nonprofit organizations that will typically either donate funds and support to other organizations, or provide the source of funding for its own charitable purposes. A private foundation is typically endowed by an individual or family. For our purposes, the key is that these organizations provide grants to other organizations.

Typically, foundations are very specific about what they will fund. Just like private companies, they establish goals and objectives, and from these, they develop strategies. In the case of many of the largest foundations, these goals and objectives are established by the person or persons who founded and funded the foundation. In order to obtain any funds from a foundation, the grantseeker must be able to demonstrate that their proposed program aligns with the goals, objectives and strategy of that particular foundation. Let's look at one example to demonstrate this.

The William and Flora Hewlett Foundation (set up by one of the founders of Hewlett-Packard) is amongst the largest foundations in the world with an endowment of over \$8B. It awarded over \$200M in grants during 2013. It has five areas of focus, one of which is Environment. In 2013, it made 139 grants related to the Environment for a total of \$52.5M. So initially, it would appear to be promising. Within the Environment category, they further define several categories (e.g. Increase Clean Transportation). They also provide a lot of funding to General Support of other Organizations (e.g. European Climate Foundation). In the end, much less is available to fund specific projects such as Green Cables. We were able to make contact with the Program Officer for Environment Programs, Erin Rogers, and to have a short call with her. While she understood the value that Green Cables would provide, she indicated that the Hewlett Foundation's focus in the Environment Program was on policy advocacy and not on projects such as Green Cables, with technology development, implementation, and assessment. It would have been impossible to know this without an actual conversation with someone at the foundation with a clear understanding of the mission and objectives of the organization.

This brings up another complication in approaching foundations. As you can see from the example, foundations are very specific about what they fund. The Green Cables program potentially would appeal to two different constituencies. One would be those that fund environmental programs, particularly with a focus on climate change or oceans. The other constituency would be those with an interest in earthquake and tsunami detection and disaster prevention. These are not usually found within one foundation (for example the Hewlett Foundation has no focus on disasters), and even if found within one foundation, it would have to very specifically fit within the focus of both constituencies.

It is useful to have a brief discussion here relating to grant size and its implications. The funds that are needed to support the green cables program (\$10-20M) are quite large relative to the amount of the typical grant. For example, using the Hewlett Foundation again as an example, and remembering that it is the 10th or 11th largest foundation in the world, the total of all 139 grants on the environment in 2013 was \$52.5M which means the average was \$377K. In researching their individual grants over the past 3 years related to

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the environment and specifically climate change, the largest grant was \$3.6M and typically, there were only one or two grants made in excess of \$1M in any given year.

Our methodology in researching foundations was first to focus on the largest foundations. We started with a list of the 30 largest global foundations. We researched them primarily through their websites and from that were able to eliminate any that did not have a focus on environment (and specifically something green cables could address), or have a focus on disaster detection and prevention (as opposed to disaster assistance and relief). Those that passed this filtering are further addressed in the next section. In the course of our research we also came across an organization known as the Foundation Center which maintains an extensive database of information of over 120,000 foundations and their grant history. Using this database and performing targeted searches we were further able to identify foundations that appeared to have the right focus and size and merit further research. These foundations are also addressed in the next section.

The following section will discuss those foundations that appear to have the right focus and potentially the scale to make a sizable contribution to the Green Cables Program.

3.2.2 Prospective Foundations






Following is the initial list of the 30 largest foundations that were researched and identified. The source of this list is Wikipedia.

http://en.wikipedia.org/wiki/List_of_wealthiest_charitable_foundations




Table 3.2-1 - Largest Foundations

Rank	Organization	Country	Headquarters	Endowment (USD)	Endowment (home currency)	Founded
1	Stichting INGKA Foundation	 Netherlands	Leiden, Netherlands	\$36.0 billion		1982
2	Bill & Melinda Gates Foundation	 United States	Seattle, Washington	\$34.6 billion		1994
3	Wellcome Trust	 United Kingdom	London	\$28.3 billion	£16.6 billion (GBP)	1936
4	Howard Hughes Medical Institute	 United States	Chevy Chase, Maryland	\$16.1 billion		1953
5	Ford Foundation	 United States	New York City, New York	\$11.0 billion		1936
6	J. Paul Getty Trust	 United States	Los Angeles, California	\$10.5 billion		1982
7	Mohammed bin Rashid Al Maktoum Foundation	 United Arab Emirates	Dubai	\$10.0 billion	\$36.7 billion (AED)	2007

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8	Robert Wood Johnson Foundation	 United States	Princeton, New Jersey	\$9.0 billion		1972
9	Li Ka Shing Foundation	 Hong Kong	Hong Kong	\$8.3 billion	\$64.4 billion (HKD)	1980
10	The Church Commissioners for England	 United Kingdom	London	\$8.1 billion	£5.2 billion (GBP)	1948
11	William and Flora Hewlett Foundation	 United States	Menlo Park, California	\$7.4 billion		1967
12	Kamehameha Schools	 United States	Honolulu, Hawaii	\$7.3 billion		1887
13	Lilly Endowment	 United States	Indianapolis, Indiana	\$7.28 billion		1937
14	W.K. Kellogg Foundation	 United States	Battle Creek, Michigan	\$7.26 billion		1930
15	Robert Bosch Foundation	 Germany	Stuttgart	\$6.9 billion	€4.5 billion (EUR)	1964
16	Garfield Weston Foundation	 United Kingdom	London	\$6.5 billion	£4.2 billion (GBP)	1958
17	David and Lucile Packard Foundation	 United States	Los Altos, California	\$5.8 billion		1964
18	John D. and Catherine T. MacArthur Foundation	 United States	Chicago, Illinois	\$5.7 billion		1975
19	The Pew Charitable Trusts	 United States	Philadelphia, Pennsylvania	\$5.6 billion		1948
20	Gordon and Betty Moore Foundation	 United States	Palo Alto, California	\$5.4 billion		2000
21	Knut and Alice Wallenberg Foundation	 Sweden	Stockholm	\$5.3 billion	kr 32.7 billion (SEK)	1917
22	Andrew W. Mellon Foundation	 United States	New York City, New York	\$5.26 billion		1969
23	The MasterCard Foundation	 Canada	Toronto, Canada	\$4.9 billion		2006
24	William Penn Foundation	 United States	Philadelphia, Pennsylvania	\$4.4 billion		1945
25	The Leona M. and Harry B. Helmsley Charitable Trust	 United States	New York City, New York	\$4.1 billion		1999

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26	Tulsa Community Foundation	 United States	Tulsa, Oklahoma	\$3.8 billion		1998
27	The California Endowment	 United States	Los Angeles	\$3.7 billion		1996
28	Rockefeller Foundation	 United States	New York City, New York	\$3.51 billion		1913
29	Realdania	 Denmark	Copenhagen	\$3.5 billion	€2.8 billion (EUR)	2000
30	Calouste Gulbenkian Foundation	 Portugal	Lisbon	\$3.5 billion	€2.8 billion (EUR)	1956
31	The Kresge Foundation	 United States	Troy, Michigan	\$3.0 billion		1924

Based upon researching all the above foundation and the Foundation Center online database, only the following foundations appeared to have any degree of match with the Green Cables Initiative based upon their goals, objectives and programs.

- **Bill and Melinda Gates Foundation**
- **William and Flora Hewlett Foundation**
- **David and Lucille Packard Foundation**
- **Pew Charitable Trusts**
- **Gordon and Betty Moore Foundation**
- **Rockefeller Foundation**
- **UN Foundation**
- **Qatar Foundation**
- **Schmidt Ocean Institute**

Just by way of example, let's consider the Ford Foundation and why it is not on our list. From their website,

The Ford Foundation supports visionary leaders and organizations on the frontlines of social change worldwide.

Our goals for more than half a century have been to:

- ***Strengthen democratic values***
- ***Reduce poverty and injustice***
- ***Promote international cooperation***
- ***Advance human achievement***

As can be seen, they would have no interest in either climate change or disaster detection.

The following sections will cover all the foundations which we found to have some potential for assisting the green cables initiative.

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3.2.2.1 Bill and Melinda Gates Foundation

A summary of the Bill and Melinda Gates Foundation from The Foundation Center can be found in Appendix II.

One of the Gates Foundation areas of focus is Global Development. Within Global Development is a category of Emergency Response. The following excerpts from their website are of particular interest:

Our GOAL: to reduce suffering and save lives in regions affected by natural disasters and complex emergencies.

The Bill & Melinda Gates Foundation's Emergency Response program aims to reduce suffering, disease, and death in countries affected by natural disasters and complex emergencies. In addition to responding directly to emergencies, we have a longer-term strategy to help improve the speed and performance of our partners in the first critical hours of an emergency and help communities prepare for disasters and recover more quickly after an emergency.

In early 2012, we awarded a US\$5 million grant to Tulane to create the Disaster Resilience Leadership Program, which will help universities in disaster-prone regions of Africa and Asia establish programs in disaster planning, risk reduction, and emergency-response leadership.

Consequently, The Gates Foundation could conceivably have an interest in the disaster prevention aspect offered by green cables. While their focus on disasters is much more on the Emergency Response side; there is a mention of the following grant:

In early 2012, we awarded a US\$5 million grant to Tulane to create the Disaster Resilience Leadership Program, which will help universities in disaster-prone regions of Africa and Asia establish programs in disaster planning, risk reduction, and emergency-response leadership.

This grant includes disaster risk reduction, which certainly could be claimed as a benefit of green cables. The Gates Foundation does not have any focus area that deals with environmental issues, climate change, etc.

3.2.2.2 The William and Flora Hewlett Foundation

As discussed above, The Hewlett Foundation has a strong focus on the environment and expends consider funds in its Environmental Program. Below are key relevant excerpts from their website:

The Environment Program makes grants to support conservation in the North American West, reduce global warming and conventional pollution resulting from the use of fossil fuels, and promote environmental protection efforts in California. The Program supports domestic and international policies aimed at more efficient, lower-polluting cars and trucks, and by helping large developing nations reduce greenhouse gas emissions that lead to global warming. For example, the Foundation's U.S. grantees have developed data to inform the United States Congress's consideration of a cap on greenhouse gas emissions, and in China

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grantees have provided technical assistance to mayors and other officials on bus rapid transit and urban planning.

Our Approach

- *The vast majority of the grants we make are to organizations that work on policy development and advocacy because we think policy change provides the greatest opportunity to reach our goals.*
- *We pursue our strategies with a focus on engaging the people and organizations most needed to achieve our goals. An important aspect of this approach is building a broad base of support among those not traditionally involved in environmental protection.*
- *We are outcome focused and whenever possible use quantitative metrics to track progress toward goals.*
- *Our Western Conservation grantmaking embraces the region west of the Rocky Mountains in the United States and Canada, and includes Alaska, but not Hawaii.*
- *Our Energy and Climate grantmaking is global.*
- *Our grants for clean transportation mainly support work in China, Mexico, Brazil, and the United States.*
- *We fund the vast majority of our Energy and Climate grants through large grants to organizations like the ClimateWorks Foundation and the Energy Foundation, which in turn make smaller grants to a variety of organizations.*
- *When there is a high degree of alignment between our goals and those of a grantee, we often will provide general operating support rather than project support.*
- *In some cases, we provide support to develop the organizational health and efficiency of our grantees.*
- *Our Serving Bay Area Communities grantmaking funds efforts to improve outdoor recreational opportunities, urban parks, and access to transit in the San Francisco Bay Area and to minimize environmental threats in the region's disadvantaged communities.*

As can be seen from the first bullet, their focus is on policy development and advocacy, as we were told by their Program Officer, Eric Rogers. In the seventh bullet, it mentions that the vast majority of their Energy and Climate grants are to the ClimateWorks Foundation and the Energy Foundation. Funding smaller foundations is something that is quite common with the larger foundations. Checking on the **Energy Foundation** first, we find that

The foundation works to assist in a transition to a sustainable energy future by promoting energy efficiency and renewable energy.

And

Giving limited to the U.S. and China.

The Energy Foundation is therefore, not a potential funder of green cables.

The history of **ClimateWorks** is as follows.

In 2007, six foundations: William and Flora Hewlett Foundation, David and Lucille Packard Foundation, The Oak Foundation, Doris Duke Charitable Foundation, The

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Joyce Foundation, and The Energy Foundation commissioned research called the Design to Win (DTW) study and identify the most effective approaches, by sector and by country, to rapidly reduce global carbon emissions. Based on these recommendations, the William and Flora Hewlett Foundation, together with the David and Lucille Packard Foundation and the McKnight Foundation, provided the initial commitments to launch the ClimateWorks Foundation.

As indicated above, the focus is on ways to reduce carbon emissions. The following are its areas of focus:

- Power
- Buildings and Appliances
- Transport
- Forests and Land Use
- Industry
- Climate Policy - *We encourage implementation of strong domestic and international policies to limit the production of greenhouse gas emissions.*

ClimateWorks is also therefore, not a potential funder of green cables.

Recommendation: While the Hewlett Foundation has a large and well-funded Environment Program; based upon the research and the conversation with Erin Rogers, it does not appear to be a likely source of funds for green cables.

3.2.2.3 David and Lucille Packard Foundation

A summary of the David and Lucille Packard Foundation from The Foundation Center can be found in Appendix II.

The Packard Foundation has several areas of focus, one of which is Conservation and Science. Its website describes its work in this area as follows:

Our grantmaking is focused on ocean and land conservation, climate change mitigation and scientific research. We invest in action and ideas that conserve and restore ecosystems while enhancing human well-being. We support public policy reforms, changes in private sector practices, and scientific activities to develop essential knowledge and tools for addressing current and future priorities.

With respect to its Climate Program, it says:

Climate change is the defining issue of our day. It is a global problem that demands global action, while we still have time. Our current strategy focuses on reducing emissions that contribute to environment-damaging climate change.

With respect to Oceans, it says:

We are working toward healthy oceans that support a diversity and abundance of marine life which can withstand pressures over time, providing people and communities with food, stable livelihoods and economic, social and cultural benefits.

With respect to Science, it says:

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Our founders believed in the power of science to improve the human condition and restore the health of the planet. Today, we remain rooted by these same principles. We support efforts to gather fresh knowledge about the Earth's ecosystems and use these findings to generate creative solutions.

The Packard Foundation spends a great deal of its funds on supporting research institutes, notably the Monterey Bay Aquarium Research Institute (MBARI) and the Center for Oceans Solutions. Before continuing with the Packard Foundation, let's digress briefly and consider these two institutes.

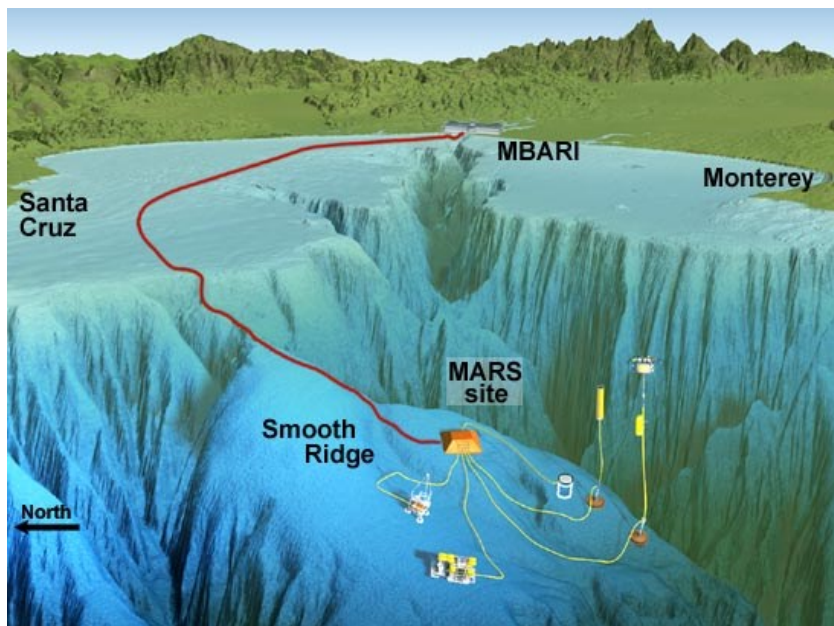
From the MBARI website:

The Monterey Bay Aquarium Research Institute (MBARI) was founded in 1987 by David Packard.

The mission of MBARI is to achieve and maintain a position as a world center for advanced research and education in ocean science and technology, and to do so through the development of better instruments, systems, and methods for scientific research in the deep waters of the ocean.

One of the MBARI programs, the **Monterey Accelerated Research System (MARS)**, is an underwater observatory system on the bottom of Monterey Bay. From the website:

The system consists of a 52-km (32-mile) undersea cable that carries data and power to a "science node" 891 meters (2,923 feet) below the surface of Monterey Bay. More than eight different science experiments can be attached to this main hub with eight nodes. Additional experiments can be daisy-chained to each node. MARS is located at latitude North 36 degrees 42.7481 minutes and longitude West 122 degrees 11.2139 minutes. We invite ocean scientists to consider deploying instruments on the MARS ocean observatory testbed.



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The MARS observatory "science node" (shown in orange) has eight ports, each of which can supply data and power connections for a variety of scientific instruments. Scientists have constant access to their experiments through the seafloor cable. Support for MARS is provided by the National Science Foundation and the David and Lucile Packard Foundation.

While MBARI does not provide grants to others, it is a resource that should be contacted to see if there are any opportunities for joint cooperation.

*The **Center for Ocean Solutions (COS)** focuses on finding practical and enduring solutions to the greatest challenges facing the oceans. The core of this work takes place through our three long-term focal areas - climate change, ecosystem health and land-sea interactions- and in work with partner institutions to develop and implement strategies designed to solve major ocean challenges. As the need arises, COS also engages in shorter-term projects to help decision-makers address specific problems by providing advice, conducting research, and catalyzing working groups that bring together diverse perspectives.*

Once again, COS does not make grants to others, however, it represents a resource that should be further investigated.

Returning to the Packard Foundation, it appears that this foundation would have an interest in a program such as green cables from a climate change, oceans and science perspective. They would not seem to have any interest in the disaster detection aspects. We attempted to contact the Packard Foundation, initially via their Program Officer for Climate Change, Audrey Chang. She was out on leave and we were instructed to try contacting Alexia Kelly. To date, she has neither responded to emails nor returned phone calls.

3.2.2.4 Recommendation: Pew Charitable Trusts

A summary of the Pew Charitable Trusts from The Foundation Center can be found in Appendix II.

Pew Trusts does not seem to have a small number of areas of focus which characterize other foundations. The closest they come to defining their focus areas is within their Vision and Mission Statement, which says

Informed by the founders' interest in research, practical knowledge and a robust democracy, our portfolio has grown over time to include public opinion research; arts and culture; and environmental, health, state and consumer policy initiatives.

Based on the above, they have an interest in environmental issues, but more from a policy perspective. Looking into their grants, they provide funding to The Center for Climate and Energy:

The Center for Climate and Energy Solutions (C2ES) – an independent, nonpartisan, nonprofit organization working to advance strong policy and action to address the twin challenges of energy and climate change.

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Launched in 2011, C2ES is the successor to the Pew Center on Global Climate Change, long recognized in the United States and abroad as an influential and pragmatic voice on climate issues.

As can be seen, this organization primarily focuses on policy advocacy.

Looking through the list of experts on the Pew staff, we found a Mr. Lee Crockett who leads Pew's efforts to establish policies to end overfishing and promote ecosystem-based fisheries management in the United States. We emailed him but did not receive a response. We also reached out to the media contact provided on Mr. Crockett's webpage and talked to a Pew media director. He indicate that he would see if there was any interest in green cables but has not replied yet.

Recommendation: Overall, Pew is a remote possibility, but is worth some follow up investigation.

3.2.2.5 Gordon and Betty Moore Foundation

A summary of the Gordon and Betty Moore Foundation from The Foundation Center can be found in Appendix II.

The Moore Foundation has four areas of focus, two of which could pertain to the green cables initiative. These are their Environment program and their Science program. Within the Environment program are Special Projects, which they describe as follows:

New ideas come from many directions. In conservation work, solutions may emerge from technology innovation, unprecedented partnerships or collaborations, or fresh perspectives from other disciplines such as economics or behavioral science.

In addition to large-scale, long-term initiatives, we back bold ideas that can have a transformative effect on complex environmental issues.

These projects include:

- *Developing new insights, research tools and methods in environmental science*
- *Supporting sustainable land use in unique and irreplaceable sites*
- *Fostering economic, social and policy changes that enable lasting environmental conservation*

Green cables could fall within developing new insights, research tools and methods. Within the Science Program, there is an existing program on an earthquake early warning system.

That's why we made an investment in developing the earthquake early-warning system prototype. Through our grants to Caltech, UC Berkeley, the University of Washington and the United States Geological Survey, core research for the earthquake early-warning system is now underway to propel the science forward.

Clearly, green cables can play a role in early warning of earthquakes and tsunamis, and within the Science Program, there is also a Special Projects program.

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Approximately 15 percent of our portfolio is dedicated to grants that support unique and promising research opportunities in a broad range of scientific disciplines. From funding the first international expedition to assess the impact of radiation released into the Pacific Ocean after the 2011 tsunami in Japan to the creation of the Airborne Taxonomic Mapping System, which creates 3D digital maps from the air, we support projects that make a difference.

The Moore Foundation is a potential interested funder. We did try reaching out to a Program Associate, Annika Carroll, who is involved in both the earthquake warning and special projects. We got a one line reply indicating this isn't consistent with their current funding priorities.

Recommendation: We believe the Moore Foundation should be contacted for further follow-up.

3.2.2.6 Rockefeller Foundation

A summary of the Rockefeller Foundation from The Foundation Center can be found in Appendix II.

The Rockefeller Foundation has several current areas of focus. From their website:

The Rockefeller Foundation works at the intersection of four focus areas – advance health, revalue ecosystems, secure livelihoods, and transform cities – to address the root causes of emerging challenges and create systemic change.

Within these focus areas; they have a major initiative on climate change resilience.

Our Developing Climate Change Resilience Initiative aims to catalyze attention, funding and action to promote resilience to climate change on several levels. We focus on three pivotal areas: Asian urban environments, African agriculture and US policy.

They also have a major activity called 100 Resilient Cities.

100 Resilient Cities - Pioneered by the Rockefeller Foundation (100RC) is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. 100RC supports the adoption and incorporation of a view of resilience that includes not just the shocks – earthquakes, fires, floods, etc. – but also the stresses that weaken the fabric of a city on a day to day or cyclical basis. Examples of these stresses include high unemployment; an overtaxed or inefficient public transportation system; endemic violence; or chronic food and water shortages. By addressing both the shocks and the stresses, a city becomes more able to respond to adverse events, and is overall better able to deliver basic functions in both good times and bad, to all populations.

Green cables might appeal to the Rockefeller Foundation on two levels, from a climate change perspective, and as a means to improve resilience of cities. We have tried to contact the President of their 100 Resilient Cities Initiative, Michael Berkowitz, though a common acquaintance, however, to date we have not been able to make a direct contact with him.

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Recommendation: The Rockefeller Foundation should be considered, and additional efforts made to follow up with them.

3.2.2.7 United Nations Foundation

The UN Foundation is included here because, as a part of the UN family, it appears to be in a position to provide support to the green cables initiative. From their website:

The United Nations Foundation links the UN's work with others around the world, mobilizing the energy and expertise of business and non-governmental organizations to help the UN tackle issues including climate change, children's health, peace and security, and poverty eradication.

Climate change is included as one of the issues. The UN Foundation has also provided funding in the aftermath of disasters and may potentially be interested from that perspective. In speaking about climate change, they continue:

The Copenhagen climate change negotiations provide a new basis for countries to collectively tackle climate change. We are working with the UN Secretary-General and his Climate Team, government, business, and non-profit leaders to carry forward the progress made in Copenhagen.

About disasters:

Natural and humanitarian disasters are increasingly occurring around the world. Through our partnerships with Télécoms Sans Frontières and the World Food Programme, we have supported many emergency deployments to help reestablish communications, provide equipment and help support humanitarian response.

It's not clear what form the support of the UN Foundation might take; however, they do talk about creating partnerships:

In today's interconnected world, governments working through the United Nations can't do it alone. A worldwide partnership between the public and private sectors is needed involving individuals, non-governmental organizations, corporations and foundations.

We work with UN Secretary-General Ban Ki-moon and the [UN Office of Partnerships](#) to connect people, ideas and resources with the UN to solve the great global challenges of the 21st century.

As far as fiscal sponsorships, they say:

We provide fiscal services for UN agencies and programs. For more information, please e-mail donation@unfoundation.org.

We attempted to contact Minh-Thu Pham, a Senior Policy Director at the United Nations Foundation via email mpham@unfoundation.org. We have not received any reply.

Recommendation: The UN Foundation should be contacted regarding the Green Cable Initiative.

3.2.2.8 Qatar Foundation

We also would like to mention the Qatar Foundation as a possibility. There is not much publicly available about its finances or its grants other than what the foundation puts forth on their website. Mr. Mariano, OCI Group, Inc, has a personal relationship with Khaled Naguib, an individual who has recently won a grant related to green/renewable energy and has a good relationship with the Director of the Fund. He also has ties to the **Kuwait Institute** and the **Alwaleed Bin Talal Foundation**. We are continuing to pursue this avenue.

3.2.2.9 Schmidt Family Foundation and Schmidt Ocean Institute

Based upon the suggestion of Zdenka Willis of NOAA (Reference XX), we were advised to look into these the Schmidt Family Foundation and Schmidt Ocean Institute. Ms. Willis also provided a contact at the latter. Both of these foundations/Institutes have a strong focus on the environment, although with quite different focus. Neither is especially large, so they are probably not in a position to fund the entire green cables effort. From the Schmidt Family Foundation website:

The objective of our Renewable Energy & Climate program is to accelerate the shift towards a 100% renewable energy economy.

The Renewable Energy & Climate program focuses on two linked goals: reducing our reliance on fossil fuels and accelerating the production and adoption of renewable energy. Our work is based in widely accepted science that indicates that we must drastically reduce climate-forcing pollutants in order to prevent catastrophic climate disruption. We believe fossil fuels cannot be a part of our energy future not only because of their climate impacts, but also because of the destructive practices required for their extraction. The only path towards a vibrant, healthy and sustainable future is one lined with truly clean, renewable energy sources.

Based upon this, green cables would not fit into their focus. The Schmidt Ocean Institute has a very different focus. Some details from their website can be found in Appendix II, and a few highlights are below:

Vision

The world's oceans understood through technological advancement, intelligent observation, and open sharing of information.

Instrumenting the Ocean

The ocean is notoriously under-sampled. Large volumes of ocean are poorly characterized. This mission area emphasizes oceanographic research projects that promise to make effective exemplary use of or facilitate further development of capabilities for pervasive ocean data collection with high spatial and temporal resolution.

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Technology Innovation for Ocean Sciences

Due to the large scale of the ocean, enabling pervasive ocean sensing would require innovative cost-efficient sensors and instruments suitable for being mass-produced, deployed, and reliably operated at sea over extended periods of time without human support. This focus area emphasizes projects that facilitate or exemplify technical innovation in sensor and instrument design, fabrication, operation, and maintenance aiming to make pervasive ocean characterization more feasible technically and/or economically.

These two areas of focus are highly aligned with the climate aspect of green cables. They do not have any focus that would correspond to tsunami detection. Based upon this, we reached out to the contact Ms. Willis provided, Victor Zykov, Director of Research. victor@schmidtocean.org. We have not received a reply yet.

Recommendation: The Schmidt Ocean Institute is a good candidate for some funding for the Green Cable Initiative, and every effort should be made to contact them and open a dialogue.

3.2.3 Analysis and Summary

Foundations represent a huge universe. The Foundation Center's Online Directory indicates it has data on over 120,000 foundations. The vast majority of these are far too small to consider a project the size of green cables. If one looks at only foundations that provided total grants for a year of over \$100M, the number of remaining foundations drops to under 200.

We researched all of the top 30 foundations. We also extensively researched the Foundation Center's online directory. We looked for foundations that provided large grants using keyword searches such as climate change, disaster, earthquake, tsunami, etc. We also did just web searches to see what would turn up.

Based upon this, we have provided detailed information on potentially interested foundations in Appendix II, and we provided commentary on each of these foundations in the previous section. We also attempted reaching out to most of these funds to get a better sense for their potential interest in supporting green cables.

The responses have been mostly disappointing. Funds such as the Hewlett Foundation and the Moore Foundation would have seemed like the best possibilities. We have received feedback from both of those foundations indicating that that the Green Cables initiative is not consistent with their current funding priorities.

The most promising foundation based upon their priorities and grant history is the Packard Foundation. The Packard Foundations spends over \$50M per year on the Monterey Bay Aquarium Research Institute (MBARI). Among the MBARI projects is Monterey Accelerated Research System (MARS), an undersea observatory system funded jointly with the National Science Foundation. Our recommendation would be a high level approach to the Packard Foundation, preferably by someone with a good connection. As you can imagine, cold calling into foundations is not a very good way to approach them as they are probably deluged with organizations seeking funds. This is true of all the foundations that JTF may try contacting in the future.

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The UN Foundation should be contacted to solicit some direct support. As a member of the United Nations family, it may be able to provide support (e.g. network of high level contacts), although probably not funding. They may be able suggest ways to go about raising funds and perhaps actually help identify and connect with funders.

Below is a table summarizing results of this section:

Table 3.2-3.2-2: Foundations - Summary and Recommendations

Foundation	Primary Website	Recommendation	Comment
Bill and Melinda Gates Foundation	http://www.gatesfoundation.org/	Further investigation and contact	Low Probability of Funding.
William and Flora Hewlett Foundation	http://www.hewlett.org/	Further investigation and contact	Low Probability of Funding. Priority on policy advocacy.
David and Lucille Packard Foundation	http://www.packard.org/	Further investigation and contact	Potential for Funding. Goals seem aligned.
Pew Charitable Trusts	http://www.pewtrusts.org/en	Further investigation and contact	Some Probability of Funding.
Gordon and Betty Moore Foundation	http://www.moore.org/	Further investigation and contact	Some Probability of Funding.
Rockefeller Foundation	http://www.rockefellerfoundation.org/	Further investigation and contact	Some Probability of Funding.
United Nations Foundation	http://www.unfoundation.org/	Further investigation and contact	May be able to provide assistance in funding efforts.
Qatar Foundation	http://www.qf.org.qa/	Further investigation and contact	Personal contact.
Schmidt Ocean Institute	http://schmidtocean.org/	Further investigation and contact	Potential for Funding. Goals seem aligned.

3.3 Governmental Agencies

3.3.1 Introduction and Methodology

Government agencies were identified as one group of potential sources of funding the ITU JTF Green Cable Initiative. These were separated into the following groupings:

- **United States Government Agencies**
- **Canada Government Agencies**
- **Eurozone Agencies**
- **Individual Non-United States Agencies**

3.3.2 Findings

3.3.2.1 United States Government Agencies

A review of United States Government funding was conducted based on the aggregation of U.S. funding programs identified in **List of US Federal Government Funding Programs** (<http://funding-programs.idilogic.aidpage.com/>), which compiled a list of 1607 U.S. Government funded programs resulting in approximately 1.97 trillion dollars of funding. This listing was analyzed and redacted to a listing of 15 programs that were environmental or scientific based. (This redacted list can be found in Appendix 7.3.1.1). This redacted list identified the sponsoring organization for each of these programs. In summary, these fifteen environmental and scientific programs were funded by:

- **Department of Commerce National Ocean Atmospheric and Administration**
- **National Science Foundation**
- **Department of the Interior Geological Survey**
- **Department of the Interior US Fish and Wildlife Service**
- **Environmental Protection Agency Office of Research and Development**

In discussions with Zdenka Willis, Director, U.S. Integrated Ocean Observing System, NOAA, (Reference 5.2-1) two additional government agencies were identified as potential funding sources:

- **Department of Defense Office of Naval Research (ONR)**
- **Department of Commerce Economic Development Administration (EDA)**

Each of these agencies is discussed in the sections below to assess their potential as a source of funding for the ITU JTF Green Cable Initiative.

3.3.2.1.1 National Ocean and Atmospheric Administration (NOAA)

The NOAA (www.noaa.gov) has six (6) line offices:

- **National Environmental Satellite, Data, and Information Service**
- **National Marine Fisheries Service**
- **National Ocean Service**

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- **National Weather Service**
- **Office of Oceanic and Atmospheric Research**
- **Office of Program Planning and Integration**

Of these six line offices, only the National Weather Service and the Office of Oceanic and Atmospheric Research missions appear to be aligned with the ITU JTF Green Cables Initiative.

National Weather Service Mission: *Provide weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy.*

Office of Oceanic and Atmospheric Research (<http://research.noaa.gov/>): *Provides the research foundation for understanding the complex systems that support our planet. Working in partnership with other organizational units of the National Oceanic and Atmospheric Administration, a bureau of the Department of Commerce, NOAA Research enables better forecasts, earlier warnings for natural disasters, and a greater understanding of the Earth. Our role is to provide unbiased science to better manage the environment, nationally, and globally.*

And within this office, the Office of Ocean Exploration and Research (<http://explore.noaa.gov/>) mission, ‘*catalyzes discovery to transform understanding of the global ocean*’, appears to be directly applicable to the Green Cables initiative.

Within the NOAA is the Acquisition and Grants Office (<http://www.ago.noaa.gov/grants/policy.html>), which provides the guidelines for grant applications.

In fiscal year 2012 the Grants Management Division (GMD) of the Acquisition and Grants Office (AGO) issued 2,000 financial assistant awards for research and conservation initiatives coordinated by state and local governments, non-profits, and colleges and universities. GMD awarded funds totaling \$750 million to over 800 recipient organizations. Approximately 25 % of NOAA’s annual budget was committed to making progress in understanding the link between our global economy and our planet’s environment. GMD was also responsible for completing 1,500 administrative actions

Unfortunately, discussions with Zdenka Willis, Director, Director, U.S. Integrated Ocean Observing System, NOAA indicates that the NOAA is currently struggling with its funding, and that **obtaining funding for this particular initiative would be difficult.**

3.3.2.1.2 National Science Foundation (NSF)

The National Science Foundation (<http://www.nsf.gov/>) is a United States government agency that supports fundamental research and education in all the non-medical fields of science and engineering. Its medical counterpart is the National Institutes of Health. With an annual budget of about US\$7.0 billion (fiscal year 2012), the NSF funds approximately 20% of all federally supported basic research conducted by the United States' colleges and universities.[1] In some fields, such as mathematics, computer science, economics and the social sciences, the NSF is the major source of federal backing. (Source: http://en.wikipedia.org/wiki/National_Science_Foundation).

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The mission of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

It also has a Proposal and Award Policies and Procedures Guide

(<http://www.nsf.gov/pubs/policydocs/pappguide/nsf14001/index.jsp#fn1>)

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

The Foundation considers proposals submitted by organizations on behalf of individuals or groups for support in most fields of research. Interdisciplinary proposals also are eligible for consideration.

*NSF **does not normally support** technical assistance, pilot plant efforts, research requiring security classification, **the development of products for commercial marketing**, or market research for a particular project or invention.*

Based on the funding exclusions noted above, the NSF does not appear to be a promising source for funding.

3.3.2.1.3 Department of the Interior - Geological Survey

The United States Geological Survey (USGS) 9 (<http://www.usgs.gov/>) is a science organization that provides impartial information on the health of our ecosystems and environment, the natural hazards that threaten us, the natural resources we rely on, the impacts of climate and land-use change, and the core science systems that help us provide timely, relevant, and useable information.

Mission: *The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.*

Working with the USGS:

There are a variety of ways to interact with the USGS and its science.

Business Opportunities: *The USGS is interested in forming cooperative partnerships with organizations from all levels of government and industry. The following links provide information about doing business and partnering with USGS.*

- *Contracts and Grants Information (<http://www.usgs.gov/contracts/>)*

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Science Partnerships and Opportunities : *Collaborative work the USGS is doing with other Federal agencies, non-government organizations, State/local and tribal governments and the private sector and further opportunities to partner with us to further our science mission.*

Cooperative Agreements: *USGS works with many other Federal agencies and the private sector to accomplish its science mission through formal memorandums of understanding and memorandums of agreement.*

International Activities: *USGS carries out international activities as a complement to its domestic programs.*

A review of the USGS website, indicates that this agency has the potential for providing funding to the ITU JTF based on the alignment of the JTF Initiative with the USGS Mission.

3.3.2.1.4 U.S. Fish & Wildlife Service (FWS)

The U.S. Fish and Wildlife Service (<http://www.fws.gov/>) *mission is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.*

While the FWS has a specific focus on Climate Change (<http://www.fws.gov/home/climatechange/>), the **FWS does not appear to be a probable funding source for the ITU JTF Green Cable Initiative.**

3.3.2.1.5 Environmental Protection Agency (EPA)

The Environmental Protection Agency, (EPA) *was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress.*

(Source: http://en.wikipedia.org/wiki/United_States_Environmental_Protection_Agency)

The EPA has the lead under the President's Plan to address Climate Change here, and as a consequence is somewhat aligned with the objectives of the ITU JTF Green Cable initiative and ultimate goals. The EPA also provides a variety of grants to various federal, state, and community organizations (<http://www2.epa.gov/home/grants-and-other-funding-opportunities>). Of the grant categories listed at the EPA site, the most promising grant for the ITU JTF Initiative is the Extramural Research: STAR Grants, P3, Fellowships, & SBIR Programs (<http://www.epa.gov/ncer/>).

Within the EPA, is the Office of Research and Technology (<http://www2.epa.gov/research>) which seems to be most applicable to the ITU JTF initiative, and currently has a strong focus on Climate Change. *'EPA conducts research to understand the environmental and health impacts of climate change and to provide sustainable solutions for adapting to and reducing the impact from a changing climate.'* And supports this effort through their Climate Change Research Models, Tools, and Databases. (<http://www2.epa.gov/research/climate-change-research-models-tools-and-databases>).

Per that site, these grants are used for

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Supporting high quality research by the nation's leading scientists and engineers to improve EPA's scientific basis for decisions on national environmental issues. EPA supports leading edge extramural research in exposure, effects, risk assessment, and risk management through competitions for STAR grants, fellowships, and research contracts under the Small Business Innovative Research Program.

A review of current grants indicates that these are on the order of \$50,000 to \$415,000.

While not particularly promising based on the types of grants and magnitude of awards, the EPA should still be considered as a source of JTF Initiative funding.

3.3.2.1.6 Department of Defense, Office of Naval Research (ONR)

Discussions with Zdenka Willis, Director, Director, U.S. Integrated Ocean Observing System, NOAA suggested that the Office of Naval Research (ONR) might be a potential funding source for the ITU JTF Green Cable Initiative.

The Department of Defense, Office of Naval Research (ONR): The 2011 Naval Science and Technology Strategic Plan describes ONR's investments in 13 technology focus areas that will enable the future operational concepts of the U.S. Navy and Marine Corps. Additionally, ONR supports technologies for the U.S. Marine Corps.

Naval Science and Technology Strategic Plan

The Naval Science and Technology (S&T) Strategic Plan describes how the Office of Naval Research (ONR) sponsors scientific research efforts that will enable the future operational concepts of the Navy and the Marine Corps. Department of Defense and Department of Navy (DoN) strategic documents provide the basic foundation for this plan. The priorities of the Secretary of the Navy, Chief of Naval Operations and Commandant of the Marine Corps are reflected in the shape of the investment portfolio and nine S&T focus areas outlined in the plan. This is a broad strategy that articulates a general direction for the future, while retaining sufficient flexibility and freedom of action to meet emerging challenges or alter course as directed by senior naval leadership.

This online version provides an abbreviated overview of the plan's focus areas. For more detailed information, download any of the complete plans indicated below:

- *2011 Naval Science and Technology Strategic Plan*
- *2012 Marine Corps Strategic Plan*
- *Marine Corps Vision and Strategy 2025*

As the DoN's S&T provider, ONR identifies S&T solutions to address Navy and Marine Corps needs. Since its establishment in 1946, ONR continues to be the first place that senior naval leadership turns to for addressing emerging technology issues and challenges. The ONR mission, defined in law, is to plan, foster and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security; and to manage the Navy's basic, applied and advanced research to foster transition from science and technology to higher levels of research, development, test and evaluation.

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This strategy ensures that ONR's investments respond properly to naval needs and support the realization of innovative naval operational concepts. Its principal goals include:

- *Ensuring alignment of naval S&T with naval missions and future capability needs*
- *Balancing and managing the S&T portfolio*
- *Communicating the S&T vision and approach to senior decision-makers, key stakeholders, S&T partners, customers and performers*

Focus Areas

For each of the nine focus areas, the following sections provide a synopsis of the S&T strategic drivers, vision, description, high-level objectives and sub-objectives that were presented to and approved by the Naval S&T Corporate Board. These focus areas highlight how S&T advances naval capabilities and guides our investments. The corresponding S&T research areas are listed in Appendix B (see the complete plan). These focus areas map the needs of the warfighter to the world of S&T. They embody enduring themes and are:

- *Developed from naval needs*
- *Sized for reasonable scale and magnitude*
- *Linked directly to warfighting functions*

The focus areas are:

1. *Assure Access to the Maritime Battlespace*
2. *Autonomy and Unmanned Systems*
3. *Expeditionary and Irregular Warfare*
4. *Information Dominance*
5. *Platform Design and Survivability*
6. *Power and Energy*
7. *Power Projection and Integrated Defense*
8. *Total Ownership Cost*
9. *Warfighter Performance*

A review of this strategic plan and the nine focus areas does not immediately point to any compatibility with the IUT JTF Initiative, but a review of the previous papers and reports indicates that the ONR has supported projects and studies that pertain to climate and global warming, as seen from the examples below

(<http://www.onr.navy.mil/Search.aspx?q=climate%20global%20warming>):

ONR Funds Scientists in International Climate Research and Mapping Project

<http://www.onr.navy.mil/Media-Center/Press-Releases/2011/Dynamo-Meteorology-Ocean-Weather-ONR.aspx>

Oct. 13, 2011

By: Office of Naval Research

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ARLINGTON, Va.—An international team of researchers co-sponsored by the Office of Naval Research (ONR) is studying Indian Ocean meteorological and oceanographic processes for clues to predicting worldwide weather patterns, ONR announced Oct. 13.

The six-month field campaign known as DYNAMO (Dynamics of the Madden-Julian Oscillation) will improve long-range weather forecasts and seasonal outlooks and enable scientists to refine global climate computer models.

The primary objective is to better understand a tropical disturbance known as the Madden-Julian Oscillation (MJO). The MJO originates in the Indian Ocean approximately every 30 to 90 days and is part of the Asian and Australian monsoons. It impacts weather and climate patterns around the globe, such as enhancing hurricane activity in the northeast Pacific and Gulf of Mexico, triggering torrential rainfall along North America's west coast and affecting the onset of El Niño, a condition of unusually warm ocean temperatures in the Equatorial Pacific.

“As the major source of variability in the tropics, the MJO affects the Department of the Navy’s [DoN] ability to operate safely and effectively,” said Cmdr. Daniel Eleuterio, a program officer in ONR’s Ocean Battlespace Sensing Department. “Recognizing the MJO’s phase and movement can potentially provide useful guidance to route planning on the order of weeks for Navy cross-ocean transits.”

The researchers will study the ocean’s physical properties, including temperature, waves, currents and salinity, and collect data on the atmosphere and ocean-atmosphere interactions. They will use tools ranging from deployed and expendable sensors on aircraft, research ships and moorings to land- and sea-based radars and lidars.

If the ITU JTF Initiative aligns with the ONR and its strategic plan and focus, the ONR might be a potential source of funding.

The ONR has a Grant Proposal Process (<http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal.aspx>)

A grant is a legal instrument which is used to enter into a relationship between the Department of Defense (DoD) and a grantee when (1) the principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, rather than to acquire property or services for the DoD's direct benefit or use and (2) substantial involvement is not expected between the DoD and the recipient when carrying out the activity contemplated by the grant.

A grantee can be a university, nonprofit organization or a commercial entity.

Grant proposals are submitted in accordance with individual broad agency announcements. Each announcement contains specific proposal requirements. Please refer to the individual broad agency announcement for proposal submission guidelines.

As stated above, any Grant Proposal must be submitted in accordance with individual broad agency announcements, i.e. unsolicited proposals are not advised. However, with appropriated discussion as to how the ITU JTF Initiative aligns with the ONR Strategic Plan, it may be possible to generate interest by the US Navy in generating an announcement to which a Grant Proposal can be submitted.

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Dr. Frank Herr, Head, Ocean Battlespace Sensing S&T Department of the ONR was contacted (Reference 5.2-3) regarding the possibility of the ONR providing some funding and support for the ITU JTF Initiative. Unfortunately, the answer was that this initiative was not in their mission objectives, and funding would be very unlikely. **Contact and investigation of the ONR should not continue.**

3.3.2.1.7 Department of Commerce, Economic Development Administration (EDA)

Discussions with Zdenka Willis, Director, Director, U.S. Integrated Ocean Observing System, NOAA suggested that the Department of Commerce, Economic Development Administration (EDA) might be a possible source of funding for the ITU JTF Green Cable Initiative.

However, subsequent discussions with Dr. Bob Headricks (Reference 5.2-4) indicated that there might be a funding path through an SBIR initiative and transition of technology to industry.

From the **Economic Development Administration (EDA)** (<http://www.eda.gov/>) website:

*The **Mission of the Economic Development Administration (EDA)** is to lead the federal economic development agenda by promoting innovation and competitiveness, preparing American regions for growth and success in the worldwide economy. The agency has a competitive grant process and has established the following investment priorities as criteria: collaborative regional innovation, public/private partnerships, national strategic priorities, global competitiveness, environmentally sustainable development, and economically distressed and underserved communities.*

***Economic Development creates the conditions for economic growth** and improved quality of life by expanding the capacity of individuals, firms, and communities to maximize the use of their talents and skills to support innovation, lower transaction costs, and responsibly produce and trade valuable goods and services.*

*Economic Development requires effective, collaborative institutions focused on advancing mutual gain for the public and the private sector. **Economic Development is essential to ensuring our economic future.***

Further:

FUNDING OPPORTUNITIES

FY 2014 REGIONAL INNOVATION GRANTS

EDA is committed to helping foster connected, innovation-centric economic sectors which support commercialization and entrepreneurship as described in the America COMPETES Reauthorization Act of 2010. Working with regions across the country to develop regional innovation strategies, including regional innovation clusters, is also

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a Strategic Goal of the DOC's FY 2014-2018 Strategic Plan and a keystone of the Secretary's commitment to building globally competitive regions. As part of this strategy, funding is available for capacity-building activities that include Proof of Concept Centers and Commercialization Centers as well as scaling of existing commercialization programs and centers; feasibility studies for the creation and expansion of facilities such as science and research parks; and supporting opportunities to close the funding gap for early-stage companies. To that end, EDA's existing and highly successful i6 Challenge is being joined by additional grant opportunities to create the Regional Innovation Strategies (RIS) Program. Under this program, EDA is soliciting applications for three separate competitions: 1. 2014 i6 Challenge; 2. Science and Research Park Development Grants; and 3. Cluster Grants for Seed Capital Funds. Applicants may, but are not required to, submit proposals for more than one competition under the RIS Program.

With respect to Climate Change and Tsunami Warning, the EDA is prepared to support the President's Climate Data Initiative, as highlighted in the following EDA Monthly Update, April 2014:

The President's Climate Data Initiative: Empowering America's Communities to Prepare for the Effects of Climate Change

Climate change is a fact. While it is important to find ways to cut emissions and develop technologies that will lessen our impact on the planet, it is equally important to deal with the new climate and environmental realities we are facing. Last week, President Obama announced the launch of the Climate Data Initiative — a broad effort to leverage the Federal Government's extensive, freely-available climate-relevant data resources to stimulate innovation and private-sector entrepreneurship in support of national climate-change preparedness.

The Administration has made a number of commitments, many of which involve Commerce's National Oceanic and Atmospheric Administration (NOAA), and the Administrator for NOAA has attended meetings with the White House to discuss moving these commitments forward. The White House issued a fact sheet on the initiative that offers more detail, but several important priorities for EDA's sister bureau NOAA include:

- *Launch of climate.data.gov*
- *Launch of NASA and NOAA Innovation Challenge on Coastal Vulnerability and Preparedness*
- *NOAA Request for Information on Increasing Access to Environmental Data*
- *Expanding Stakeholder Outreach & Engagement*

Yet it isn't enough for the federal government to leverage its own resources — the private sector needs to use the information available to build tools that will help make America's communities more resilient to climate change and to forge cross-sector partnerships to make those tools as useful as possible. The President also laid

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out several private sector commitments in his announcement. A full list is available in the White House fact sheet, but here are a few highlights:

- *Intel Corporation: Fostering Regional Partnerships and Hosting Hackathons to Boost the Development of Climate Resilience Tools.*
- *Google: Providing Vast Cloud Computing Resources to Spur Creation of High-Resolution Drought and Flood Mapping, Apps, and Tools for Climate Risk Resilience.*
- *Climate Central: Releasing New Web Tools to Assess Local-Scale Sea Level Rise.*
- *Microsoft Research: Providing Climate Scientists with New Tools and Computing Resources.*
- *The World Bank: Launching New Initiative for Global Use of Open Data for Climate and Disaster Resilience.*
- *Antioch University New England: Creating New Academic Center for Climate Preparedness and Resilience.*
- *MIT Climate CoLab: Crowdsourcing Solutions to Global Climate Change Preparedness.*

The environment is a shared resource and a shared responsibility, and everyone needs to work together to safeguard it. This initiative is just one example of how government and the private sector are joining forces to address climate change.

As seen from the insert above, the EDA appears to be positioned to support industry initiatives associated with Climate Change, and consequently aligned with the ITU JTF Initiative.

Further, the EDA has invested in disaster preparedness which includes tsunami awareness and outreach.

U.S. Department of Commerce Invests \$1.3 Million to Upgrade Disaster Preparedness System in Hawaii

Contact: Public Affairs Department, (202) 482-4085
Friday, September 28, 2012

WASHINGTON - Acting U.S. Commerce Secretary Rebecca Blank today announced a \$1.3 million Economic Development Administration (EDA) grant to the state of Hawaii's Civil Defense Division to help upgrade the state's disaster preparedness system, including a system of tsunami warning sirens.

"This \$1.3 million Economic Development Administration investment is an example of the Obama administration's commitment to ensuring our homes and businesses are protected during natural disasters," said Acting U.S. Commerce Secretary Rebecca Blank. "The grant announced today will help Hawaii put in place a new warning system that will enable the state to minimize loss of life and economic activity in the wake of a disaster, and assure that normal quality-of-life and business activity are able to resume as quickly as possible." ...

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This project is part of a \$200 million appropriation made by Congress to EDA to help communities that received a major disaster designation in fiscal year 2011 with long-term economic recovery and infrastructure support.

The EDA website has a page (<http://www.eda.gov/how-to-apply/>) that describes the funding process. The ITU JTF will need to determine if it is eligible for EDA Grants. But a U.S. Industry Group would appear to be eligible for EDA Grants.

It is recommended that EDA Grants be investigated further as a source of funding for the ITU JTF Green Cable Initiative.

3.3.2.2 Canada Government Agencies

3.3.2.2.1 Overview

A listing of potential Canada Federal and Provincial Government Agencies that might be supportive of the ITU JTF Green Cable Initiative was developed. These reduced to three primary agencies:

- **Institute for Ocean Research Enterprise**
- **National Research Council (Canada)**
 - **Natural Sciences and Engineering Research Council of Canada (NSERC)**
 - **Department of the Environment**
 - **Climate Change Science and Research**
 - **Climate Research Activities**
 - **Funding**
- **Fisheries and Oceans Canada (referred to as DFO, Dept of Fisheries)**
 - **Science and Research**

Of these three agencies, based on mission statements, only the National Research Council and the Fisheries and Oceans Canada agencies appeared to be candidates.

3.3.2.2.2 National Research Council (Canada)

The **National Research Council** (www.nrc-cnrc.gc.ca) is the primary national research and technology organization (RTO) of the Government of Canada in science and technology research and development. The Minister of Industry is responsible for the National Research Council (NRC).

Under the auspices of the NRC, there are two organizations of interest:

Natural Sciences and Engineering Research Council of Canada (NSERC) (http://www.nserc-crsng.gc.ca/index_eng.asp) provides grants for research in the natural sciences and in engineering. Its mandate is to promote and assist research.

Department of the Environment (<http://www.ec.gc.ca/default.asp?lang=en&n=FD9B0E51-1>) is the department of the Government of Canada with responsibility for coordinating environmental policies and programs as well as preserving and enhancing the natural environment and renewable resources.

And within Department of the Environment there are two initiatives that appear to be aligned with the objectives of the ITU JTF Initiative. These are:

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Climate Change Science and Research (<http://www.ec.gc.ca/sc-cs/Default.asp?lang=En&n=56010B41-1>) a national focal point for Canadian research on the climate system and the science of climate change, and

Climate Research Activities (<http://www.ec.gc.ca/sc-cs/default.asp?lang=En&n=1F788646-1>)

Environment Canada is a major government initiative associated with Climate Research Activities. Environment Canada's climate research program is an integral part of national and international efforts to understand climate system behaviour, the human influence on climate and future climate change. The results and knowledge produced from these activities provide the scientific basis for services to Canadians and for the development of timely actions to confront the challenges of climate change. Funding is offered through various Grants and Contributions programs. These programs offer funding to eligible groups, organizations and individuals for local action projects that protect or conserve our natural environment and to create employment opportunities for young scientists and post-secondary graduates seeking hands-on training.

Based on the description of funding above, the Climate Research Activities do not appear to be aligned with technology development and implementation. However, the higher level mission statement does appear to be complimentary.

It is recommended that the Department of the Environment be investigated further as a funding source for the ITU JTF Initiative.

3.3.2.2.3 Fisheries and Oceans Canada (DFO)

Fisheries and Oceans Canada (<http://www.dfo-mpo.gc.ca/science/oceanography-oceanographie/index-eng.html>) is responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and inland waters. Its mandate includes responsibility for the conservation and sustainable use of Canada's fisheries resources while continuing to provide safe, effective and environmentally sound marine services that are responsive to the needs of Canadians in a global economy. The stated vision of the department is "Excellence in service to Canadians to ensure the sustainable development and safe use of Canadian waters."

Within the auspices of the DFO, is Science and Research (<http://www.dfo-mpo.gc.ca/science/oceanography-oceanographie/index-eng.html>) where aquatic issues related to climate change, such as ecosystem shifts, ocean acidification, hypoxia (low oxygen), changes to ocean currents, sea ice variability and other factors impact fisheries resources. Rising sea levels, severe storms, inundations and erosion that threaten coastal communities and coastal infrastructure concern researchers. A five year science program is underway to assess climate change impacts as emerging risks or opportunities, and to devise tools and technologies to help the Department adapt appropriately.

Based on the description for Science and Research, the objectives of the ITU JTF appear to be complimentary, but not aligned. Some additional investigation is warranted.

3.3.2.3 Eurozone Agencies

3.3.2.3.1 Overview

An internet search resulted in identifying several European Agencies that provide funding for research and / or technology development

(http://en.wikipedia.org/wiki/Category:International_organizations_of_Europe). These are:

- **European Research Council**
- **European Cooperation in Science and Technology**
 - **Earth System Science and Environmental Management (ESSEM)**
- **European Commission – Joint Research Centre**
 - **Institute for Environment and Sustainability**
 - **Air and Climate Unit**
 - **Climate Risk Management Unit**
- **Mediterranean Science Commission**
- **Global Exploration Fund**
- **Science Europe**
- **European Multidisciplinary Seafloor and Water Column Observatory**

3.3.2.3.2 European Science Foundation (ESF)

The European Science Foundation (ESF) (<http://www.esf.org/>) has a charter similar to the United States NSF and appears to be modeled after NSF. Its mission reads:

ESF is committed to achieving the highest quality science in Europe to drive progress in research and innovation. We help our Member Organisations collaborate internationally on research programmes that we coordinate in almost every scientific domain. We provide services to the science community, including peer review, evaluation and conferences, as well as support career tracking. ESF also hosts high-level expert boards and committees to support them in achieving their objectives

Like the NSF, the ESF is focused on Science vs technology development and implementation, and consequently does not appear to be a good fit for the ITU JTF objectives.

3.3.2.3.3 European Cooperation in Science and Technology (COST)

The European Cooperation in Science and Technology (COST) (<http://www.cost.eu/>) is an organization that fosters cooperation among scientist and researchers in Europe. Within the general framework of this organization is the Earth System Science and Environmental Management (ESSEM). Its mission statement reads:

ESSEM encompasses the rapidly-growing science and technology agendas relating to better understanding, observing, modelling and predicting the Earth system and thereby improved management of environmental conditions.

The core of Earth System Science is to enhance our capacity and operational forecast systems to understand, observe, model and predict these interactions at a variety of

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spatial and temporal scales. A key aspect is to analyse and predict the trends, and to assess the impacts of natural processes and human activities on the Earth system functioning and natural resources.

The core of Environmental Management is to provide support to decisions related to environmental issues, especially in the context of competition for natural resources, city development, risk management, and development of environmental policies. ESSEM puts emphases on science and technology related to improving natural resource management for minimising environmental degradation.

This mission statement is complimentary to the ITU JTF in that it would be an end user of the data provided by the ITU JTF initiative, but does not specifically address funding of technology development and implementation.

COST and its subsidiary organization, ESSEM, does not appear to be a viable source of funding for the ITU JTF Green Cable Initiative.

3.3.2.3.4 European Research Council (ERC)

The mission of the European Research Council (<http://erc.europa.eu/>) is **“to encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields, on the basis of scientific excellence”**.

ERC grants are awarded through open competition to projects headed by starting and established researchers, irrespective of their origins, who are working or moving to work in Europe. The sole criterion for selection is scientific excellence. The aim here is to recognize the best ideas, and confer status and visibility on the best brains in Europe, while also attracting talent from abroad.

Again, the focus of the ERC is to support basic research and not technology development and implementation. **This organization is not a viable source of funding for the ITU JTF initiative.**

3.3.2.3.5 European Commission

Within the European Commission is the Joint Research Centre, and in hierarchical order:

- **The Institute for Environment and Sustainability**
<http://ies.jrc.ec.europa.eu/>
 - **Air and Climate Unit** (<http://ies.jrc.ec.europa.eu/the-institute/units/air-and-climate-unit.html>)
 - **Climate Risk Management Unit** (<http://ies.jrc.ec.europa.eu/the-institute/units/climate-risk-management.html>)

Focusing on the Climate Risk Management Unit has the following mission statement:

The Climate Risk Management Unit contributes to the observation, evaluation, anticipation and communication of the impacts of current weather extremes and

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future climate change, and evaluates the effectiveness of policies and measures that reduce their risks towards sustainable development.

The activities of the Institute for Environment and Sustainability are outlined in the Multiannual Framework Programme of the Joint Research Centre (JRC). The research activities of the Institute for Environment and Sustainability are undertaken by its eight Scientific Units through more than 130 individual projects, financed by the direct actions of the EU Research and Innovation programme (Horizon 2020) or by additional income acquired through third party work, direct support to Commission Services and indirect actions.

The website does list grants for supporting individuals, but does not specifically mention, nor negate technology development grants. All grants, however, must be sponsored by a member state of the European Commission, and consequently it is likely that initial support must be through a member state science and technology organization.

This organization deserves additional research to determine its applicability to the ITU JTF initiative and funding.

3.3.2.3.6 Science Europe

Science Europe (<http://www.scienceeurope.org/>) is an association of European Research Funding Organisations (RFO) and Research Performing Organisations (RPO), based in Brussels. Its founding General Assembly took place in Berlin in October 2011.

Mission: Science Europe promotes the collective interests of the Research Funding and Research Performing Organisations of Europe. It supports its Member Organisations in their efforts to foster European research. It will strengthen the European Research Area (ERA) through its direct engagement with key partners. In doing so it will be informed by direct representation of all scientific communities in its reflections on policies, priorities and strategies.

It works and partners with other entities such as the European Universities, the European Academies, the European Scientific Intergovernmental Organisations and the European Commission to develop a coherent and inclusive ERA.

With the focus of Science Europe on basic research and not technology development and implementation, **Science Europe is not a viable source of funding for the ITU JTF initiative.**

3.3.2.3.7 European Multidisciplinary Seafloor and Water Column Observatory

EMSO (European Multidisciplinary Seafloor and Water Column Observatory) (<http://www.emso-eu.org/>) is a large-scale **European Research Infrastructure (RI)**. It is a European network of **fixed point, deep sea observatories** with the basic scientific objective of real-time, long-term monitoring of environmental processes related to the interaction between the geosphere, biosphere, and hydrosphere.

EMSO is one of the environmental RIs on the ESFRI roadmap (http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri). The ESRFI

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Roadmap identifies new RIs of pan-European importance that correspond to the long term needs of European research communities.

It is a geographically distributed infrastructure composed of several deep-seafloor and water-column observatories, which will be deployed at key sites in European waters, spanning from the Arctic, through the Atlantic and Mediterranean, to the Black Sea.

EMSO will be the sub-sea segment of the Global Monitoring for Environment and Security (GMES) initiative and will significantly enhance the observational capabilities of European member states. An open data policy compliant with the recommendations being developed within the GEOSS initiative (The Global Earth Observation System of Systems) will allow for shared use of the infrastructure and the exchange of scientific information and knowledge.

This organization appears to be the equivalent of the United States Ocean Observatory Initiative.

Projects funded under RTD Framework Programmes

Support for Research Infrastructures is open to infrastructures across the fields of science and technology. The overall objective of the RI part of the FP7 Capacities Programme is to optimise the use and development of the best existing RIs in Europe, as well as to help create new facilities which best meet the needs of researchers and support their achievements.

The activities being supported are identified under three main lines of actions:

- *Support for **existing research infrastructures***
- *Support for **new research infrastructures (or major upgrades of existing ones)***
- *Support for **policy development and programme implementation, including support to emerging needs***

The implementation of deep water sensors on telecom cable systems appears to be an applicable corollary for the EMSO. Consequently, **this organization should be further investigated for its applicability as a source of funding for the ITU JTF Green Cable Initiative.**

3.3.2.4 Individual Non-United States Agencies

To complete a study of non-U.S. country agencies, a listing of 146 coastal nations was developed and for those that seemed to be a viable source of funding, the federal government ministry or agency most likely to be involve or supportive of the ITU JTF Initiative is identified . These are listed in the table below.

No further investigation was pursued regarding these individual agencies with the exception of the following three non-U.S. Government agencies which recommended for further investigation by Zdenka Willis Director, U.S. IOOS Program Office, NOAA. These are:

- **Japan – JAMSTEC - Japan Agency for Marine Earth Science and Technology (<http://www.jamstec.go.jp/e/>)**
- **Korea – KIOST - Korean Institute of Ocean Science and Technology (http://eng.kiost.ac/kordi_eng/main/)**

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- Taiwan, China – MOST - Ministry of Science and Technology (<http://www.most.gov.tw/>)

These are discussed in more detail in the sections that follow.

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Country	Major Gov Science and Technology	Website
Australia	Australian Institute of Marine Science	http://www.aims.gov.au/
Australia	Australian Ocean Data Centre	http://www.aodc.gov.au/
Australia	Australian Science and Technolgoy	http://australia.gov.au/topics/science-and-technology
Australia	Commonwealth Scientific and Industrial Research Organization	http://www.csiro.au/
Australia	Defence Science and Technology Organization	http://www.dst.defence.gov.au/
Australia	Geoscience Australia	http://www.ga.gov.au/
Bermuda	Bermuda Institute of Ocean Sciences	http://www.bios.edu#!/healthier-oceans
Bosnia and Herzegovina		
Brazil	Ministry of Science and Technology	http://www.brasil.gov.br/ciencia-e-tecnologia
Chile	Ministry of the Environment	http://portal.mma.gob.cl/
China	Ministry of Enviromental Protection	http://english.mep.gov.cn/
China	Ministry of Science and Technology	http://www.most.gov.cn/eng/
Costa Rica	Ministry of Science, Technology and Telecommunications	http://www.micit.go.cr/
Ecuador	Charles Darwin Foundation	http://www.darwinfoundation.org/en/
Ecuador	National Council for Science and Technology (CONACYT)	
Ecuador	Research center for monitoring of active volcanos and tectonic faults in Ecuador	http://www.igeeon.edu.ec/
Finland	Ministry of Education, Science, and Communications	http://www.minedu.fi/OPM/?lang=en http://www.agence-nationale-recherche.fr/en/project-based-funding-to-advance-french-research/
France	The French National Research Agency	
Germany	Federal Agency for Nature Conservation, Bonn	
Germany	Federal Institute for Geosciences and Natural Resources, Hannover	
Germany	Federal Maritime and Hydrographic Agency	
Germany	Federal Ministry of Education and Research	http://www.bmbf.de/en/6696.php?D=857&LANG=ENG&V=list#dtl
Greenland	RANNIS - Icelandic Centre for Research	http://en.rannis.is/
Iceland	Icelandic Research Council	
India	Department of Ocean Development	http://www.dod.nic.in/
India	Ministry of Earth Sciences	http://www.dod.nic.in/
India	Ministry of Enviroment	http://www.moef.nic.in/index.php/
India	Ministry of Science and Technology	http://www.dst.gov.in/
Indonesia	Agency for the Assessment and Application Technology	http://indonesia.go.id/en/lpkn/badan-pengkajian-dan-penerapan-teknologi/2455-profile/374-badan-pengkajiar-dan-penerapan-teknologi
Indonesia	Ministry of Research and Technology	http://www.ristek.go.id/english/home.html
Iran	Iranian Research Organization for Science and Technology	http://www.irost.org/en/
Ireland	Department of Jobs, Enterprise, and Innovation	http://www.enterprise.gov.ie/en/
Ireland	Ministry for Research and Innovation	
Ireland	Scienc Foundation Ireland	http://www.sfi.ie/
Ireland	Technology Strategy Board	www.innovateuk.org
Italy	Ministry Education, University and Research	www.miur.it
Italy	Ministry Environment, Land and Sea	www.minambiente.it
Jamaica		
Japan	Ministry of Environment	http://www.env.go.jp/en/
Kenya	National Commission for Science, Technology, and Innovation	http://www.ncst.go.ke/
Malaysia	Ministry of Science, Technology, and Innovation	http://www.mosti.gov.my/
Mexico	Environment, Natural Resources & Fisheries Ministry	http://www.ine.gob.mx/
New Zealand	Ministry of Research, Science, and Technology	http://www.msi.govt.nz/
Norway	The Research Council of Norway	http://www.forskingsradet.no/servlet/Satellite?c=Page&cid=1177315753906&p=1177315753906&pagename=ForskningradetEngelsk/Hovedsidemal
Oman		
Pakistan	Ministry of Science and Technology	http://www.most.gov.pk/
Philippines	Department of Environment and Natural Resources	http://www.denr.gov.ph/
Philippines	Department of Science and Technology	http://www.dost.gov.ph/
Portugal	National Institute of Engineering, Technology and Innovation	
Qatar	Qatar National Research Fund	http://qnrf.org/
Qatar	Qatar Science & Technology Park	http://www.qsto.org.qa/
Russia	Ministry of Education and Science	
Russia	Ministry of Natural Resources and Environment	
Sao Time and Principe		
Saudi Arabia	King Abdulaziz City for Science and Technology	http://www.kacst.edu.sa/en/about/Pages/default.aspx
Scotland	Environment	http://www.scotland.gov.uk/Topics/Environment
Scotland	Marine and Fisheries	http://www.scotland.gov.uk/Topics/marine
South Africa	Departmentn of Science and Technology	http://www.gov.za/aboutsa/science.htm
South Korea	Ministry of Environment	http://eng.me.go.kr/eng/web/main.do
South Korea	Ministry of Maritime Affairs and Fisheries	
South Korea	Ministry of Science, ICT and Future Planning	http://english.msip.go.kr/index.do
Spain	Ministry of Education and Culture	
Spain	Spanish Council on Scientific Research	http://www.csic.es/web/guest/home
Sweden	Ministry of the Environment	http://www.government.se/sb/d/2066
Sweden	Swedish Foundation for Strategic Research	http://www.stratresearch.se/en/
Sweden	Swedish Research Council	http://www.vr.se/inenglish_4_12fff4451215cb083e4800015152.html
Tahiti		
Taiwan, China	Ministry of Science and Technology	http://taiwannoc.com/about-taiwan/science-and-technology/
Tanzania		
Thailand	Ministry of Science and Technology of Thailand	http://www.most.go.th/eng2012/
United Kingdom	Technology Strategy Board	www.innovateuk.org
United Kingdom	United Kingdom Research Council - Engineering and Physical Sciences	http://www.epsrc.ac.uk/
United Kingdom	United Kingdom Research Council - Natural Environment	http://www.nerc.ac.uk/
United Kingdom	United Kingdom Research Council - Science and Technology	http://www.stfc.ac.uk/home.aspx
Venezuela	Venezuelan Institute for Scientific Research	http://www.ivic.gob.ve/
Vietnam	Ministry of Science and Technology	http://www.most.gov.vn/Desktop.aspx/Home-EN/

3.3.2.4.1 Japan – JAMSTEC – Japan Marine Science and Technology Center

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Japan Marine Science and Technology Center, JAMSTEC, has the main objective to contribute to the advancement of academic research in addition to the improvement of marine science and technology by proceeding the fundamental research and development on marine, and the cooperative activities on the academic research related to the Ocean for the benefit of the peace and human welfare. It has been in operation since 2004, and has a great deal of experience in detecting and warning of tsunami events.

Most recently, JAMSTEC has re-evaluated its mission and goals:

Towards a New Maritime Nation

The Japanese government formulated the Basic Act on Ocean Policy in 2007, which emphasized the importance of establishing a new maritime nation seeking the peace and safety of the sea under international cooperation. In response to this policy and various changes in circumstances surrounding the ocean, as part of the JAMSTEC vision, we envision that our country will become an entirely ocean-based nation in the future. We have focused our mission on supporting our society in achieving this goal, through developing new scientific and technological capabilities which contribute to the sustainable development, and responsible maintenance, of a peaceful and fulfilling global society.

In order to accomplish this mission, JAMSTEC will take on the challenge to develop an integrated and comprehensive understanding of the Ocean, Earth, and Life and the pursuit of ever-advanced theories to open new paradigms of research.

Research and Development Challenges and Approaches

JAMSTEC will need to address the following challenges related to research and development over the next 15 years:

- An integrated understanding and prediction of global environmental changes.*
- The establishment of an advanced understanding of the Earth's interior, and its application for the mitigation of earthquake and tsunami disasters.*
- A comprehensive study of the evolution of life and the history of the Earth.*
- Development of resources research, and biotechnology.*

These challenges can help JAMSTEC develop new marine-related scientific knowledge, create advanced technologies, and propose specific solutions for social issues.

Towards an Integrated Research Institution of the Ocean, Earth, and Life

JAMSTEC personnel from various fields will continue to conduct a wide range of research and development into the future, using their free and flexible thinking. JAMSTEC will undertake the initiative to enhance all Japanese research and development capabilities, through a close cooperation with domestic and foreign

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universities, research institutes, and industries. Further, it will actively share with society the results and knowledge gained from the study of the ocean, Earth, and life.

JAMSTEC has been involved in the DONET project.

DONET (Dense Oceanfloor Network System for Earthquakes and Tsunamis) is a unique development program of submarine cabled real-time seafloor observatory network. This program has aimed to establish the technologies of large scale real-time seafloor research and surveillance infrastructure for earthquake, geodetic and tsunami observation and analysis. The first phase of this program has been carried out since 2006 with the purpose to monitor the hypocentral region close to Nankai trough and the installation of observational equipment on 20 stations at Kumanonada has been completed in 2011. The second phase (DONET2) has also started to cover a wider region in 2010. Totally 29 observatories are planned to be installed at offshore Kii peninsula for DONET2 and 2 additionally at Kumanonada for DONET.

DONET and S-Net (another earthquake detection system) are funded by MEXT (Ministry of Education, Science, Culture and Sports (MEXT) Japan).

Within JAMSTEC is the Research Institute for Global Change (RIGC)

(<http://www.jamstec.go.jp/rigc/e/index.html>)

About RIGC:

The earth we inhabit consists of the natural habitats of ocean, air, and land, and all the ecosystems they nurture interact to shape the global environment. For thousands of years the earth's environment has conferred tremendous benefit to all life and also protected and fostered human existence and civilization. However, in recent years the drastic environmental changes stemming from human activity, including global warming, have appeared. It has become a significant and urgent problem for the world to examine the specific conditions, investigate their causes, and forecast future developments.

The science of environmental change is a field that aims to monitor the oceans, air, land, and ecosystems, using a wide variety of techniques to define prevailing conditions, understand the mechanisms of change, and then develop forecasting models that combine the findings with the expertise to better predict future changes.

While there is no specific information regarding funding of projects or initiatives, the underlined vision statement above appears to be very aligned to the ITU JTF Initiative, and

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JAMSTEC has also collaborated on a number of international initiatives, which seems ideal in supporting the ITU JTF Green Cables Initiative.

JAMSTEC and RIGC warrant further research as a potential funding source or partner for the ITU JTF. It has recently been pointed out that JAMSTEC and RIGC may not be funding organizations and that that Japan Society for the Promotion of Science (JSPS), Japan Science and Technology Agency (JST) and JICA (Japan International Cooperation Agency) should also be considered. In addition, contact with MEXT (Ministry of Education, Science, Culture and Sports) should be undertaken.

3.3.2.4.2 Korea - KIOST – Korea Institute of Ocean Science and Technology

KIOST (http://eng.kiost.ac/kordi_eng/main/) formerly KORDI, has the following introduction of its mission:

KIOST will play a major role in realizing a dream of becoming a prosperous ocean nation through innovative and leading ocean research and development in fundamental and applied ocean science and technology.

- *To perform basic and applied research to promote the efficient use of coastal and ocean resources*
- *To undertake comprehensive surveys and studies of Korea's seas and open oceans*
- *To conduct scientific research in polar and tropical regions, especially in Antarctica and south Pacific*
- *To develop technologies related to the coastal & harbor engineering, ships & ocean engineering, and maritime safety*
- *To support and cooperate with other government agencies, universities and private industries towards the*
- *development of marine resources and the protection of the ocean environment*
- *To coordinate and participate in the international cooperation concerning oceanographic research projects*

The mission statement of KIOST appears to be very well aligned with the ITU JTF Initiative. A secondary interesting development regarding KIOST is a joint venture with NOAA, and share facilities in Vienna, Virginia, USA.

We recommend that KIOST be further investigated as a potential funding source for the ITU JTF Initiative.

To this end, Ms. Willis, has provided a contact at KIOST in Virginia; Dr. Sik Huh.

Sik Huh, Ph.D. KIOST-NOAA Lab NOAA (National Oceanic and Atmospheric Administration), Climate Program Office 1100 Wayne Avenue, R/CP4 Suite 1212, Silver Spring, MD 20910, USA Tel: 1-301-427-2473 Fax: 1-301-427-0033 MP: 1-267-632-9624

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E-mail: sikhuh@kiost.ac, sik.huh@noaa.gov, sikhuh0@gmail.com

3.3.2.4.3 Taiwan, China: MOST - Ministry of Science & Technology

MOST, the Ministry of Science and Technology of Taiwan, has been separately identified as a consequence of Ms. Zdenka Willis, Director, U.S. IOOS Program Office, NOAA identifying this organization as one that has a strong interest in tsunami detection and early warning, as demonstrated by recent purchases of High Frequency Radar units to be used on the coast for this purpose.

The MOST website is unreadable, and so no assessment has been made based on the information there within.

Recommend that MOST be investigated further as a funding source for the ITU JTF Initiative based on Ms. Willis' insight.

3.3.3 Analysis and Summary – Government Agencies

A summary listing of the Government Organizations researched for this study appear in Table Table 3.3-1 below, along with recommendations of further action.

Table 3.3-1: Government Agencies - Summary and Recommendations

Government Agency	Primary Website	Recommendation	Comment
U.S. NOAA	www.noaa.gov	Maintain Contact	Low Probability of Funding
U.S. NSF	www.nsf.gov	No further action	Low Probability of Funding
U.S. Geological Survey	www.usgs.gov	Further investigation and contact	Potential for Funding
U.S Fish & Wildlife Service	www.fws.gov	No further action	Low Probability of Funding
U.S. EPA	www.epa.gov	Further investigation and contact	Low levels of funding possible
U.S. DoD ONR	http://www.onr.navy.mil/	No further action	Discussions with Dr. Herr indicate that this is not a mission focus of the ONR
U.S. EDA	www.eda.gov	Further investigation and contact	Potential for Funding especially since initiative aligns with President's Climate Initiative
Canada Dept of Environment	www.ec.gc.ca	Further investigation and contact	Probability of funding
Canada Fisheries and Oceans	www.dfo-mpo.gc.ca	Further investigation and contact	Within the Science and Research branch of DFO objectives appear to

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			be aligned
European Science Foundation	www.esf.org	No further action	Low Probability of Funding
European – COST	www.cost.eu	No further action	Low Probability of Funding, not a technology development organization
European - ERC	http://erc.europa.eu/	No further action	Low Probability of Funding
European Commission – Environment and Sustainability and Climate Risk Mgmt	http://ies.jrc.ec.europa.eu/the-institute/units/air-and-climate-unit.html http://ies.jrc.ec.europa.eu/the-institute/units/climate-risk-management.html	Further investigation and contact Further investigation and contact	Probability of funding Probability of funding
Science Europe	www.scienceeurope.org	No further action	Low Probability of Funding
EMSO	www.emso-eu.org	Further investigation and contact	Probability of funding
Japan – JAMSTEC	www.jamstec.go.jp/e	Further investigation and contact	Probability of funding
Korea – KIOST	http://eng.kiost.ac/kordi_eng/main/	Further investigation and contact	Probability of funding, Joint venture with NOAA in VA, USA
Taiwan, China - MOST	www.most.gov.tw	Further investigation and contact	Probability of funding Recently procured HF-Radar for Tsunami Warning

As shown in the table above, we believe that **there are a number of government agencies that are possible sources of funding, but need to be further investigated.** In nearly every case, however, the funding process is onerous and time consuming. We would recommend immediate further investigation of these agencies, and more specifically, a Point of Contact, by which the funding process can be navigated.

Of special interest is the U.S. Economic Development Authority, which now has a mandate to forward the President’s climate initiative, and consequently should be onboard with an initiative such as the ITU JTF Green Cable Initiative.

Along with the government agencies specifically described and researched in this report, recall that there are a number of agencies of coastal nations that have also been identified, but no research completed on them specifically. It would be **worthwhile to identify the most promising of these countries (China, Russia, India, Brazil, Malaysia, Indonesia, etc) and their associated agencies,** and to find an in-country representative to do more research on funding possibilities.

3.4 Private Companies

3.4.1 Introduction and Methodology

In the early stages of this study, it was determined that Private Companies or Commercial Enterprises might support the ITU JTF Green Cable Initiative.

Companies, of course, vary in their size and resources, and consequently, the form of SUPPORT could be just as varied, and might include, but not be limited to:

- Financial Contribution or Funding
- Donation of Services
 - Direct Technical Services – Design and Development
 - Third Party Review of Technical Concepts and Designs
- Donation of Materials and Equipment

With this in mind, a **generic interest letter** was developed (See Appendix 6.4.3), soliciting interest in the ITU JTF Initiative from select companies. No specific type of support was referenced in the letter, since the intent here was to determine interest in the Initiative, and then to query responding companies as to how they believe they could best participate and SUPPORT the Initiative.

Supplier / Vendor Attendance Sheets from the OCEANS 2013 and the OCEANOLOGY 2014 Conferences were used as the source of the majority of potential companies. These two attendance lists contained 164 companies that attended OCEANS 2013 and 203 companies that attended OCEANOLOGY 2014. (See Appendix 6.4.1) There was surprising, less overlap in the attendance of companies at the two events than one would suspect, and the resulting combination of lists resulted in over 300 companies.

These attendance lists were reviewed, and pared down based on a company website review of services and products provided. (For example, companies specializing in leased equipment, contract personnel, undersea wifi, etc were eliminated.) This paring resulted in approximately 25 companies selected for solicitation with the **generic interest letter**. See Table 3.4-1 below. It should be noted that prior to this specific study, the JTF had already sent out correspondence to [Alcatel-Lucent Submarine Networks](#), [Fujitsu](#), [Huawei Marine Networks](#), [NEC](#), [Nexans](#) and [Xtera Communications](#) and hence, they were omitted from this effort.

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Table 3.4-1: Generic Letter Recipient Companies

Company	Website	Description / Products and Services	Address	Key Individual
Aanderaa	http://www.aanderaa.com/index.php	Coastal Protection	Aanderaa Data Instruments AS Sanddalsringen 5b N-5225 Nesttun, Norway +47.55.60.48.00 +47.55.60.48.01	Gretchen W. McClain, CEO
AML Oceanographic Ltd.	www.amloceanographic.com	Manufacturer of Sound Velocity, CTD and Environmental sensors, probes and instruments. Our customers are located in more than 100 countries and include organizations in the fields of hydrography, science and research, and environmental monitoring.	2017 Malaview Avenue Sidney, B.C V8L 5X6 Canada Tel: +1.250.656.0771 Fax: +1.250.655.3655	Robert Haydock President and Owner
AXYS Technologies, Inc.	www.axystechnologies.com	Environmental monitoring services	AXYS Technologies Inc. 2045 Mills Road Sidney, BC V8L 5X2 Canada	Terry Tarle President and CEO
Bluefin Robotics Corp.	www.bluefinrobotics.com	AUVs - Possible future docking	Bluefin Robotics Corporation 553 South Street Quincy, MA 02169 USA	David Kelly, CEO and President Omar Poroy , VP of Business Development
Channel Technologies Group	www.channeltechgroup.com	global leader in the manufacturing of piezoelectric materials, transducers, systems and electro-optical technologies.	879 Ward Drive Santa Barbara, CA 93111, USA Tel: +1.805.967.0171 Fax: +1.805.683.3420	Ralph Phillips, CEO
Deep Ocean Engineering, Inc.	www.deepocean.com	Customized ROVS	Deep Ocean 2528 Qume Drive, Suite 11 San Jose, CA 95131, USA	Robert Sabo, President
DOER Marine	doermarine.com	ROVs	DOER Marine 1827 Clement Ave, Bldg 19 Alameda, CA 94501	Liz Taylor, President and CEO
EMO Marine Technologies	www.emomarine.com	Fiber Optic Subsea Communications	EMO Marine Technologies 7a Canal Street Dartmouth, Nova Scotia B2y 2W1, Canada	Tom Knox, President
Falmouth Scientific, Inc	http://www.falmouth.com/	Instruments and Instrumentation	Falmouth Scientific, Inc 1400 Route 28A PO Box 315 Cataumet, MA 02534, USA Tel: +1.508.564.7640 Fax: +1.508.564.7643	John Baker President and General Manager
High Tech, Inc.	http://www.hightechincusa.com/Main.html	Instruments and Instrumentation	High Tech, Inc 21120 Johnson Road Long Beach, MS 39560 USA Tel: +1.228.868.6632 Fax: +1.228.868.6645	Stephen Spychalski Founder and Chairman Brian Spychalski, President

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Company	Website	Description / Products and Services	Address	Key Individual
Hydro Group plc	www.hydrogroupplc.com	Subsea cables, connectors, penetrators, glands, terminations, & Molds	Hydro Group PLC Hydro House, Claymore Avenue Aberdeen Energy Park Bridge of Don, Aberdeen AB23 8GW Scotland UK	Ian Smale
InterOcean Systems, Inc.	www.interoceansystems.com	design and manufacture of premier quality oceanographic and environmental equipment and systems	3738 Ruffin Road San Diego, CA 92123, USA Tel: +1.858.565.8400 +1.858.268.9695	Michael Pearlman, CEO
Kongsberg Underwater Te	www.kongsberg.com	AUVs, Marine Ssystems, Oil and Gas	Kongsberg Gruppen ASA Kirkgårdsveien 45 Nj-3616 Kongsberg	Walter Qvam, CEO
L-3 Communications Klein Associates, Inc. L-3 Ocean Systems	www.L-3Klein.com	side scan sonar equipment and waterside security and surveillance systems	L-3 Klein Associates 11 Klein Drive Salem, NH 03079 USA	Frank Cobis, Vice President & General Manager
MacArtney Inc.	www.macartney.com	Various - Instruments	MacArtney A/S Headquarters Gl. Guldagervej 48 DK-6710 Esbjerg V CVR NO. 84 16 48 28 Tel: +45.7513.2000 Fax:+45.7511.7220	Glen MacArtney (Chairman)
MetOcean	www.metocean.com	ocean data collection (buoys) and comms	MetOcean Data Systems 21 Thornhill Drive Dartmouth, Nova Scotia B3B 1R9 Canada	Tom Chedray, President and CEO
Ocean Aero	www.oceanaero.us	Ocean Aero represents the next generation in unmanned ocean systems – the creation of autonomous, highly persistent, energy scavenging, wind/electric unmanned vessels packaged in a small, man-portable configuration. “Submaran” – a new class of Unmanned Underwater, Surface Vessel (UUSV)	Ocean Aero 10755 Scripps Poway Parkway Suite 367 San Diego CA 92131 USA	Eric Patten, CEO President
Ocean Innovations	www.o-innovations.com	represents the manufactures of many types of underwater equipment and marine technology	Ocean Innovations 7416 Cabrillo Avenue La Jolla, CA 92037, USA	Brock Rosenthal, President
Ocean Sonics	www.oceansonics.com	Hydrophone Company, Environmental Monitoring	Ocean Sonics Ltd. Hill House 11 Lornevale Road Great Village, Nova Scotia B0M 1L0, Canada Tel: +1.855.360.3003	Mark Wood, President
Oceanworks International	www.oceanworks.com		OceanWorks, International 11611 Tanner Road Houston, Texas 77041 USA Tel: +1.281.598.3940 Fax: +1.281.598.3948	Rod Stanley , CEO John Jacobson, President
Plante Ocean Ltd	http://planet-ocean.co.uk/wp/	Instruments and Instrumentation	Planet Ocean Ltd Camberley Business Center Unit 16 Bracebridge, Camberley GU15 3DP, UK +44(0) 845.108.1457 +44.(0)845.280.33.49	Terry Sloane, Managing Director

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Company	Website	Description / Products and Services	Address	Key Individual
Rowe Technologies, Inc	http://rowetechinc.com/	Instruments and Instrumentation	Rowe Technologies, Inc. 12655 Danielson Court, Suite 306 Poway, CA 92064 CA USA Tel: +1.858.842.3020 Fax: +1.858.842.3021	Marc Parent, CEO / President
Saab Seaeeye	www.seaeeye.com	ROVs and AUVs	SAAB SEAEYE LTD 20 Brunel Way, Segensworth Fareham, Hampshire PO15 5SD UK	Jon Robertson, Managing Director
Sensor Technology, Ltd	http://www.sensortech.ca/site/index.cfm	Seismic Equipment	Sensor Technology Ltd P.O. Box 97 20 Stewart Road Collingswood, ON Canada L9Y 3Z4	Sailu Nemana, R&D Manager
Ultra Electronics	www.ultra-ms.com/	Maritime Systems earned its reputation as a world leader in the development and manufacture of solutions for Undersea Surveillance, Magneto Inductive Technology and Infrastructure Optimization and Protection	Ultra Electronics Maritime Systems 40 Atlantic Street Dartmouth, NC Canada B2Y 4N2	Ken Walker, President

The intent was to email the **generic interest letter** to decision makers within the company, Founder, CEO, President, COO, CTO, etc, and in many cases, a decision maker was identified, and his or her email address found. In those cases, where the individuals email address could not be found, the email was sent to the generic company info address, and a request made to forward the letter to the individual of interest.

In addition to the companies identified through the two conference attendance lists, OCI Group also included companies that it has connections with and might have an interest in supporting the ITU JTF Initiative. These are provided in

Table 3.4-2 below.

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Table 3.4-2: Additional Letter Recipients

Company	Website	Description	Address	Key Person
Leidos	www.leidos.com	Leidos develops marine products to meet today's challenges. These products monitor global climate change and marine meteorology, chart and analyze hydrographic data, and help to manage waste and control pollution.	Leidos, Inc. 11951 Freedom Drive Reston, VA 20190	Neil Rondorf Vice President, Maritime
Ocean Specialists, Inc	www.oceanspecialists.com	Ocean Specialists, Inc (OSI) serves the ocean industry by providing a broad range of capabilities and services to the Offshore Oil & Gas, Submarine Telecom, Government and Scientific markets	Ocean Specialists, Inc. 8502 SW Kansas Avenue Stuart, Florida 34997 USA	Jim Byous, President
Google	www.google.com		Google Belgrave House 76 Buckingham Palace Road London SW1W 9TQ United Kingdom	Doyle Barlow
General Cable, NSW	www.nsw.com	Undersea Cable Manufacturer for Telecom and Power	Norddeutsche Seekablewerke GmbH Kablestr. 9-11 26954 Nordenham, Germany	Matthias Hoch, Vice President, Project Implementation Peter Meiler, Senior Project Manager Tom Schmitz, Director, Project Support & Engineering
L3 - MariPro	www.L-3Com.com	For nearly five decades, L-3 MariPro has provided cabled maritime range systems to the US and foreign navies. L-3 MariPro has designed manufactured and installed systems currently in operation into their 3rd decade in water depths up to 5,000 meters. L-3 MariPro also provides portable transponder based systems to support training and test and evaluation in forward areas. L-3 MariPro is a supplier of through water communication technology to the US Navy providing acoustic digital spread spectrum capability in support of communications at speed and depth and other applications. L-3 MariPro also provides deep sea observatories (power and data connectivity) for the science community. Finally L-3 MariPro provides engineering and offshore services to a variety of customers successfully supporting marine operations worldwide including telecommunications systems, power cables and other support in oceans from the tropics to the arctic. MariPro is certified to ISO 9001:2008 and currently seeking certification to AS9100C	L3 - MariPro 1522 Cook Place Santa Barbara, CA 93117 USA	Nazeh Shaheen, Birector, Ocean Observing Systems John Reardon, Director of Programs, Regional Scale Nodes
Battelle	www.battelle.org	Battelle is the world's largest nonprofit research and development organization, with over 22,000 employees at more than 60 locations globally. A 501(c)(3) charitable trust, Battelle was founded on industrialist Gordon Battelle's vision that business and scientific interests can go hand-in-hand as forces for positive change.	Battelle Laboratories 505 King Avenue Columbus, Ohio 43201 USA	James Trees, Program Manager, Special Programs Roland Bissonnette, Project Manager
Fujitsu	www.fujitsu.com	Submarine Cable System Hardware Supplier and Integrator	Fujitsu 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, 211-8588, Japan	Yasua Mizutani, Director Sales & Marketing
Global Marine Systems	www.GlobalMarineSystems.com	Service Provider and Installer for Marine Infrastructure, including Subsea Telecom Cable and Power Systems	Global Marine Systems Limited New Saxon House 1 Winsford Way Boreham Interchange Chelmsford Essex CM2 5PD United Kingdom	Stephen Holder
e-marine	www.emarine.ae	Service Provider and Installer for Marine Infrastructure, including Subsea Telecom Cable and Power Systems	E-marine PJSC P.O>Box 282727 Dubai, UAE	Muhammed Shameer, Manager

A total of 34 companies were the recipients of the generic interest letter.

3.4.2 Analysis and Summary – Private Companies

Of the 29 companies that were sent the generic interest letter, only 6 companies acknowledged receipt of the letter, and of these only three wished to have further discussions, and to date only discussions with one, Bluefin Robotics (Reference 5.2-2), have taken place – without fruit.

Based on the anemic response from the commercial entities that have a self interest in the technology and technology demonstration proposed by the ITU JTF Initiative, **it is unlikely that commercial entities will lend support to the ITU JTF Initiative, and even more unlikely that any support would come in the form of funding.**

4 Summary

4.1 High Level Review of Research and Findings

We have researched all the categories of potential funding for the green cables initiative. This has included:

- International Development Agencies
- Foundations
- Governmental Agencies
- Private Companies

First and foremost, it needs to be said that obtaining funding for a project of this size and scope is very difficult. There are several reasons for this. The amount that is needed, between \$10M and \$20M, is very substantial. Second, and maybe even more important, is that any request for funds must match very well with the mission and focus of the funder. Repeating an example used earlier, it appeared that there was a good match with the climate change initiative of the Hewlett Foundation. However, when we spoke directly with an individual who is in their climate program, we were told that their current focus is policy advocacy. Similarly, when you look at the mission and focus of regional or country specific development agencies or organizations, they will only consider projects that are going to very directly impact their region or country. That usually means a project that will result in physical infrastructure in region. This is not to say that the task is impossible, but it certainly means the community of potential funders is not large, and it will probably require finding an internal advocate within one of these organizations who can help navigate the internal issues and perhaps help pull together other partners in order to secure all the funds.

4.2 Most Promising Avenues

Within each category, we have identified what we believe are the most promising potential funders. For international development agencies, this is the World Bank. We identified the individual at the World Bank who we believe needs to be contacted. Our efforts to contact her so far have failed. We have identified several large foundations that appear to have a mission and focus that might permit them to fund green cables. We believe all of these should be pursued further. On the top of the list is the Packard Foundation, who funds the Monterrey Bay Aquarium Research Institute and has co-funded the Monterrey Accelerated Research System (MARS) undersea observatory system. [Need some here on gov't and companies]

In addition to those specifically mentioned here, additional potential funders have been reviewed in each section, and they should certainly be considered for additional contact once the most promising avenues have been thoroughly evaluated.

4.3 Recommendation for Future Funding Efforts

4.3.1 Focus Funding on Select Organizations

Given the most promising avenues highlighted above, future funding efforts should focus on these organizations. In many cases, we have provided specific contacts within the organization. We do not believe that, in general, going through the standard process will be successful. For example, many foundations have online means or proposal formats for

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submitting grant requests. We do not believe for a project of this magnitude and complexity that would result in success. We believe those organizations identified as promising need to be approached at the right level (preferably the highest levels) and a suitable champion identified. If the right contact indicates that such a grant is not a possibility given their priorities and circumstances, then no more time need to be devoted to submitting a detailed proposal. For those that indicate sufficient interest, the internal champion will undoubtedly help to navigate the proposal process and can be re-engaged as necessary to help when roadblocks are encountered.

Given the size of the project, it is also likely that multiple funding organizations will be needed. This is not unusual. As previously mentioned, the MARS undersea observatory is jointly funded by the Packard Foundation and the NSF. It has also been our observation in discussing this project with people in these organizations that they are often able to provide very good contacts. Future efforts need to be able to have sufficient time to follow-up with these contacts. There is a community of people and organizations that exist in the world of government, research institutes, academia and non-profits that is quite distinct from the commercial side of the submarine cable industry, and this project needs to be able to bridge those two communities in a way that has never been done before.

4.3.2 Required Collateral Material

4.3.2.1 Detailed Project Description/Proposal

In order to continue moving the funding process forward, there will need to be a much more detailed project description which can be provided to potential funders. As one would expect, funders want to know exactly what the project involves, who is going to be responsible, what the schedule is, how the funds are to be expended and what the project benefits will be. Although there is work going on to clarify these, it is difficult to get beyond an initial discussion with potential funders without have suitably presentable material available. In addition, the JTF should use every suitable opportunity to communicate it's efforts and develop a sense of urgency and intensity around its goals.

4.3.2.2 Governance and Oversight

It is likely that the Joint Task Force will need to create a formal organizational structure. Grantors, be it foundations, development banks, etc. can only provide funds to certain types of organizations. In the case of foundations, this is certainly some kind of non-profit. The organization will need all the usual legal structures, such as a charter, a Board of Directors, officers, audited financials, etc. Exactly what relationship this new entity would have with the JTF is not clear. Legal advice should be sought on this from counsel that specializes in non-profits, grants, etc. This topic is certainly one of the first that needs to be clarified with potential funders, as they all seem to have clear rules governing to whom they can grant.

4.3.3 Contacting Key Decision Makers

It is also our observation that the key to successful solicitation will be determining and contacting key decision makers within the organization, preferably with a suitable introduction. Funding organizations are deluged with requests, and it will be important to have an internal supporter. We found that speaking to the right contact will provide useful information and often lead to good introductions to others, and in this manner, one can work in the most promising directions. To achieve success will require full-time effort over a

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sustained period, while also completing the necessary collateral materials. The JTF should consider hiring an experienced fundraiser who has the requisite experience and support team.

5 References

5.1 Terms of Reference

1. Business Model Study, Author Erica Campionga, 11July2014.

5.2 Notes

1. Teleconference Notes, OCI Group and Zdenka Willis, Director, U.S. Integrated Ocean Observing System, NOAA, September 24, 2014
2. Teleconference Notes, OCI Group and David Kelly, President and CEO, Bluefin Robotics, September 26, 2014
3. Teleconference Notes, OCI Group and Dr. Frank Herr, Head, Ocean Battlespace Sensing S&T Department, Office of Naval Research, October 1, 2014
4. Teleconference Notes, OCI Group and Dr. Bob Headrick, Ocean Acoustics Basic Research Ocean Battlespace Sensing S&T Department, Office of Naval Research, October 2, 2014

6 Appendices

6.1 Appendix 1: Development Banks

6.1.1 World Bank Group

The World Bank Group has set two [goals](#) for the world to achieve by 2030:

- End extreme poverty by decreasing the percentage of people living on less than \$1.25 a day to no more than 3%
- Promote shared prosperity by fostering the income growth of the bottom 40% for every country

The World Bank is a vital source of financial and technical assistance to developing countries around the world. We are not a bank in the ordinary sense but a unique partnership to reduce poverty and support development. The World Bank Group comprises [five institutions](#) managed by their member countries.

Established in 1944, the World Bank Group is headquartered in Washington, D.C. We have more than 10,000 employees in more than 120 offices worldwide.

[Financial Products and Services](#)

We provide low-interest loans, interest-free credits, and grants to developing countries. These support a wide array of investments in such areas as education, health, public administration, infrastructure, financial and private sector development, agriculture, and environmental and natural resource management. Some of our projects are cofinanced with governments, other multilateral institutions, commercial banks, export credit agencies, and private sector investors.

Five Institutions, One Group

The **World Bank Group** consists of five organizations:

- [The International Bank for Reconstruction and Development](#)

The International Bank for Reconstruction and Development (IBRD) lends to governments of middle-income and creditworthy low-income countries.

- [The International Development Association](#)

The International Development Association (IDA) provides interest-free loans — called credits — and grants to governments of the poorest countries.

- **Together, IBRD and IDA make up the World Bank.**

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- [The International Finance Corporation](#)

The International Finance Corporation (IFC) is the largest global development institution focused exclusively on the private sector. We help developing countries achieve sustainable growth by financing investment, mobilizing capital in international financial markets, and providing advisory services to businesses and governments.

- [The Multilateral Investment Guarantee Agency](#)

The Multilateral Investment Guarantee Agency (MIGA) was created in 1988 to promote foreign direct investment into developing countries to support economic growth, reduce poverty, and improve people's lives. MIGA fulfills this mandate by offering political risk insurance (guarantees) to investors and lenders.

- [The International Centre for Settlement of Investment Disputes](#)

The International Centre for Settlement of Investment Disputes (ICSID) provides international facilities for conciliation and arbitration of investment disputes.

International Bank for Reconstruction and Development

The International Bank for Reconstruction and Development (IBRD) aims to reduce poverty in middle-income countries and creditworthy poorer countries by promoting sustainable development through loans, guarantees, risk management products, and analytical and advisory services. Established in 1944 as the original institution of the World Bank Group, IBRD is structured like a cooperative that is owned and operated for the benefit of its [188 member countries](#).

IBRD raises most of its funds on the world's financial markets and has become one of the most established borrowers since issuing its first bond in 1947. The income that IBRD has generated over the years has allowed it to fund development activities and to ensure its financial strength, which enables it to borrow at low cost and offer clients good borrowing terms.

The **International Development Association** (IDA) is the part of the World Bank that helps the world's poorest countries. Established in 1960, IDA aims to reduce poverty by providing loans (called "credits") and grants for programs that boost economic growth, reduce inequalities, and improve people's living conditions.

IDA complements the World Bank's original lending arm—the International Bank for Reconstruction and Development (IBRD). IBRD was established to function as a self-sustaining business and provides loans and advice to middle-income and credit-worthy poor countries. IBRD and IDA share the same staff and headquarters and evaluate projects with the same rigorous standards.

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IDA is one of the largest sources of assistance for the world's 82 poorest countries, 40 of which are in Africa. It is the single largest source of donor funds for basic social services in these countries. IDA-financed operations deliver positive change for 2.5 billion people, the majority of whom survive on less than \$2 a day.

IDA lends money on concessional terms. This means that IDA charges little or no interest and repayments are stretched over 25 to 40 years, including a 5- to 10-year grace period. IDA also provides grants to countries at risk of debt distress.

In addition to concessional loans and grants, IDA provides significant levels of debt relief through the [Heavily Indebted Poor Countries \(HIPC\) Initiative](#) and the [Multilateral Debt Relief Initiative \(MDRI\)](#).

Since its inception, IDA has supported activities in 108 countries. Annual commitments have increased steadily and averaged about \$16 billion over the last three years, with about 50 percent of that going to Africa. For the fiscal year ending on June 30, 2013, IDA commitments reached \$16.3 billion spread over 160 new operations. 15 percent of the total was committed on grant terms...

The International Finance Corporation

Our Goals and Values

As a member of the World Bank Group, IFC has two overarching **goals**:

- End extreme poverty by 2030
- Boost shared prosperity—in every developing country

Our commitment to alleviating poverty and creating opportunity is reflected in our **values**:



In everything we do, we seek to achieve the things that few others are able or inclined to. **This is our brand value proposition:**

Innovation: For more than half a century, IFC has innovated to strengthen private sector development wherever it's needed most.

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Influence: As the world's largest global development institution focused on the private sector, IFC plays a significant role in influencing the course of private sector development.

Demonstration: We have a long history of setting a good example—of demonstrating the rewards of investing in challenging markets.

Impact: We go wherever we are needed most, and deploy our resources wherever they will achieve the greatest impact.

The purpose of the Corporation is to further economic development by encouraging the growth of productive private enterprise in member countries, particularly in the less developed areas, thus supplementing the activities of the International Bank for Reconstruction and Development (hereinafter called the Bank). In carrying out this purpose, the Corporation shall:

- (i) in association with private investors, assist in financing the establishment, improvement and expansion of productive private enterprises which would contribute to the development of its member countries by making investments, without guarantee of repayment by the member government concerned, in cases where sufficient private capital is not available on reasonable terms;
- (ii) seek to bring together investment opportunities, domestic and foreign private capital, and experienced management; and
- (iii) seek to stimulate, and to help create conditions conducive to, the flow of private capital, domestic and foreign, into productive investment in member countries.

The Corporation shall be guided in all its decisions by the provisions of this Article.

The Multilateral Investment Guarantee Agency

MIGA is a member of the World Bank Group. Our mission is to promote foreign direct investment (FDI) into [developing countries](#) to help support economic growth, reduce poverty, and improve people's lives.

Our strategy

MIGA's operational strategy plays to our foremost strength in the marketplace—attracting investors and private insurers into difficult operating environments. We focus on insuring investments in the areas where we can make the greatest difference

- Countries eligible for assistance from the International Development Association (the world's poorest countries)
- Conflict-affected environments
- Complex deals in infrastructure and extractive industries, especially those involving project finance and environmental and social considerations
- Middle Income Countries where we can have impact

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MIGA offers comparative advantages in all of these areas—from our unique package of products and ability to restore the business community's confidence, to our ongoing collaboration with the public and private insurance market to increase the amount of insurance available to investors.

Read our strategy for fiscal years 2015-2017.

As a multilateral development agency, MIGA only supports investments that are developmentally sound and meet high [social and environmental standards](#). MIGA applies a comprehensive set of social and [environmental performance standards](#) to all projects and offers extensive expertise in working with investors to ensure compliance to these standards.

Our products

We fulfill our mission by providing political risk insurance [guarantees](#) to private sector investors and lenders. MIGA's guarantees protect investments against non-commercial risks and can help investors obtain access to funding sources with improved financial terms and conditions. Our unique strength is derived from our standing as a member of the World Bank Group and our structure as an international organization with our shareholders including most countries of the world. Since our inception in 1988, MIGA has issued more than \$28 billion in political risk insurance for [projects](#) in a wide variety of [sectors](#), covering all regions of the world.

We also conduct research and share knowledge as part of our mandate to support foreign direct investment into emerging markets. This underscores our position as a thought leader and source of pertinent information for the political risk insurance community.

Our team

Our people have extensive experience in political risk insurance, with backgrounds including banking and capital markets, environmental and social sustainability, project finance and sector specialties, and international law and dispute settlement. Meet our [senior management](#).

Our shareholders

A Council of Governors and a [Board of Directors](#) representing our [member countries](#) guide the programs and activities of MIGA. MIGA's corporate powers are vested in the Council of Governors, which delegates most of its powers to a Board of Directors. Voting power is weighted according to the share of capital each director represents. The directors meet regularly at the World Bank Group headquarters in Washington, DC, where they review and decide on investment projects and oversee general management policies.

The International Centre for Settlement of Investment Disputes

ICSID is an autonomous international institution established under the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the ICSID or the Washington Convention) with over one hundred and forty member States. The [Convention](#)

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sets forth ICSID's mandate, organization and core functions. The primary purpose of ICSID is to provide facilities for conciliation and arbitration of international investment disputes.

The ICSID Convention is a multilateral treaty formulated by the Executive Directors of the International Bank for Reconstruction and Development (the World Bank). It was opened for signature on March 18, 1965 and entered into force on October 14, 1966.

The Convention sought to remove major impediments to the free international flows of private investment posed by non-commercial risks and the absence of specialized international methods for investment dispute settlement. ICSID was created by the Convention as an impartial international forum providing facilities for the resolution of legal disputes between eligible parties, through conciliation or arbitration procedures. Recourse to the ICSID facilities is always subject to the parties' consent.

As evidenced by its large membership, considerable caseload, and by the numerous references to its arbitration facilities in investment treaties and laws, ICSID plays an important role in the field of international investment and economic development.

Today, ICSID is considered to be the leading international arbitration institution devoted to investor-State dispute settlement.

6.1.2 Asian Development Bank

PURPOSE, FUNCTIONS AND MEMBERSHIP

Article 1: PURPOSE

The purpose of the Bank shall be to foster economic growth and co-operation in the region of Asia and the Far East (hereinafter referred to as the "region") and to contribute to the acceleration of the process of economic development of the developing member countries in the region, collectively and individually.

Wherever used in this Agreement, the terms "region of Asia and the Far East" and "region" shall comprise the territories of Asia and the Far East included in the Terms of Reference of the United Nations Economic Commission for Asia and the Far East.

Article 2: FUNCTIONS

To fulfill its purpose, the Bank shall have the following functions:

- (i) to promote investment in the region of public and private capital for development purposes;
- (ii) to utilize the resources at its disposal for financing development of the developing member countries in the region, giving priority to those regional, sub-regional as well as national projects and programmes which will contribute most effectively to the harmonious economic growth of the region as a whole, and having special regard to the needs of the smaller or less developed member countries in the region;
- (iii) to meet requests from members in the region to assist them in the coordination of their development policies and plans with a view to achieving better utilization of their resources, making their economies more complementary, and promoting the orderly expansion of their foreign trade, in particular, intra-regional trade;
- (iv) to provide technical assistance for the preparation, financing and execution of development

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projects and programmes, including the formulation of specific project proposals;
(v) to co-operate, in such manner as the Bank may deem appropriate, within the terms of this Agreement, with the United Nations, its organs and subsidiary bodies including, in particular, the Economic Commission for Asia and the Far East, and with public international organizations and other international institutions, as well as national entities whether public or private, which are concerned with the investment of development funds in the region, and to interest such institutions and entities in new opportunities for investment and assistance; and
(vi) to undertake such other activities and provide such other services as may advance its purpose.

What does ADB do?

With \$21.02 billion in approved financing in 2013 and 3,062 employees from 61 of its 67 members, ADB in partnership with member governments, independent specialists and other financial institutions is focused on delivering projects that create economic and development impact.

ADB helps developing member countries tackle poverty by providing loans, technical assistance and grants for a broad range of development activities. Guiding ADB's work is [Strategy 2020](#), our long-term strategic framework.

ADB focuses on five core areas of operations: infrastructure; the environment, including climate change; regional cooperation and integration; finance sector development; and education.

Description

ADB's corporate mandate is to help achieve an Asia and Pacific region that is free from poverty. During more than 40 years of operation, ADB has successfully addressed this challenge by providing projects and programs to its DMCs focusing on economic growth as the foundation of poverty reduction efforts. As ADB's development work in the region approaches the half century mark, countries within the region need stronger support for their pursuit of sustainable development. Continued poverty reduction will not be possible without proactive efforts to address environmental sustainability, including mitigating the causes of global warming and helping the most vulnerable citizens adapt to the already unavoidable impacts of climate change. In the new millennium, the climate change agenda has become one of the defining challenges that ADB - and the entire development community - must face in achieving further progress in poverty reduction.

Recognizing this, ADB has developed these strategic priorities to promote an Asia and Pacific region that is more resilient to the adverse impacts of climate change and will contribute to the global reduction of GHG emissions by helping the region follow a low-carbon path for economic growth and poverty reduction. ADB will devote increased attention and resources to the five strategic priorities of (i) expanding the use of clean energy; (ii) promoting sustainable transport and urban development; (iii) managing land use and forests for carbon sequestration; (iv) building the climate resilience of the DMCs and the region; and (v) strengthening related policies, governance, and capacities.

<http://www.adb.org/documents/environment-operational-directions-2013-2020>

6.1.3 Inter-American Development Bank

About the Inter-American Development Bank

We [support](#) efforts by Latin America and the Caribbean countries to reduce poverty and inequality. We aim to bring about development in a sustainable, climate-friendly way.

Established in 1959, we are the leading source of development financing for Latin America and the Caribbean, with a strong commitment to achieve measurable results, increased [integrity](#), [transparency](#) and [accountability](#). We have an evolving [reform](#) agenda that seeks to increase our [development impact](#) in the region.

While we are a regular bank in many ways, we are also unique in some key respects. Besides loans, we also provide grants, technical assistance and do [research](#). Our shareholders are [48 member countries](#), including 26 Latin American and Caribbean borrowing members, who have a majority ownership of the IDB.

Our [Fund for Special Operations](#) (FSO) provides concessional financing to our most vulnerable member countries.

Given our shareholder base and prudent management, we have a [strong financial position](#). As a result, the IDB is able to borrow in international markets at competitive rates and transfer that benefit to our clients.

What We Do

Partnering with clients, the IDB seeks to eliminate poverty and inequality, and promotes sustainable economic growth.

The Bank supports clients in the design of projects, and provides financing, technical assistance and knowledge services to support development interventions. The IDB focuses on empirical evidence for making decisions and measuring the impact of this projects to increase its [development effectiveness](#).

Our Clients

The IDB lends to national, provincial, state and municipal [governments](#) as well as to [private sector](#) companies. [Civil society organizations](#) are also eligible for IDB financing.

What we finance and what we seek to achieve:

- [Our priorities and areas of action](#)
- [Mandates](#)
- [Sector Initiatives](#)
- [Regional initiatives](#)

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What types of products we offer:

- [Lending and Grants \(Financial Instruments: Rates, Loans, Grants, Guarantees, Equity Investments, Technical Cooperation, Financing Solutions, Funds under Administration\)](#)
- [Knowledge Generation](#)
- [Project Preparation Facilities](#)

Operations:

- [Operational Summary](#)
- [Review of the New Lending Framework](#) (March 2011)
- [Evaluation and Auditing](#)
- [Integrity and Transparency](#)
- [Debt Relief](#)

To help raise awareness of tackle social issues, the IDB supports [campaigns](#) that promote changes in key areas such as human trafficking and youth participation in development.

6.1.4 European Investment Bank

The EIB is the European Union's bank. We are the only bank owned by and representing the interests of the [European Union Member States](#). We work closely with other [EU institutions](#) to implement EU policy.

A major player

As the largest multilateral [borrower](#) and lender by volume, we provide finance and expertise for sound and sustainable investment projects which contribute to furthering EU policy objectives. More than 90% of our activity is focused on [Europe](#) but we also support the [EU's external and development policies](#).

Lending, blending and advising

- **Lending:** The vast majority of our financing is through loans, but we also offer guarantees, microfinance, equity investment, etc.
- **Blending:** Our support helps us unlock financing from other sources, particularly from the EU budget. This is blended together to form the full financing package.
- **Advising:** Lack of finance is often only one barrier to investment. We can help with administrative and project management capacity which facilitates investment implementation.

Our priorities

We support projects that make a significant contribution to growth and employment in Europe. As part of our counter-cyclical approach, our activities focus on four priority areas:

- [Innovation and skills](#)

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- [Access to finance for smaller businesses](#)
- [Climate Action](#)
- [Strategic Infrastructure](#)

We raise the bulk of our lending resources on the international capital markets through bond issues. Our excellent rating allows us to borrow at advantageous rates. We thus are able to offer good terms to our clients.

Our multiplier effect

We generally finance one-third of each project but it can be as much as 50%. This long term, supportive financing often encourages private and public sector actors to make investment which might not otherwise be made.

What makes the EIB different?

All the projects we finance must not only be bankable but also comply with strict economic, technical, environmental and social standards. Our corps of 300 engineers and economists screens every project, before, during and after we lend. We work hard to be accountable to EU citizens.

Our expertise

Around 2000 staff build on more than 50 years' experience and expertise in project financing. [Headquartered in Luxembourg](#), we have a [network of local and regional offices in Europe and beyond](#).

The EIB Group

The EIB Group consists of the European Investment Bank and the [European Investment Fund](#), – the specialist arm providing SME risk finance. The EIB is the majority EIF shareholder with the remaining equity held by the European Union (represented by the European Commission) and other European private and public bodies.

Climate Action

Climate change is one of the most urgent challenges of this century. Consequences such as drought, flooding and extreme weather events are already being felt and threaten growth and development. A shift to a more resource efficient, climate resilient and low-carbon economy is needed.

Our commitment

We encourage low-carbon and climate resilient growth in Europe and around the world. Given the significant investments needed to achieve international and European climate policy goals, we have committed to invest at least 25% of our lending portfolio in climate action.

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In 2013, we invested EUR 19bn in climate action projects, and this figure reaches EUR 88bn for the last five years (2009-2013).

We finance projects specifically dedicated to climate change mitigation and adaptation across a variety of [sectors](#), and provide a range of [financial and advisory solutions](#) tailored to the needs of our clients. Our financial leverage and innovative products enable us to catalyse significant additional funding, benefitting everyone.

Our approach

Climate action is an integral part of how we do business, assess projects and carry out our own activities.

The benefits of climate action projects are multiple and extend beyond CO₂ emissions reduction and adaptation to climate. Greener industries help develop more sustainable economic growth and jobs. Resource efficiency saves money and has environmental benefits. Sustainable transport, access to water and clean air improve quality of life.

We engage with a wide range of stakeholders to develop climate action harmonized good practices and achieve more effective global solutions.

Calls for Proposals

Grants are direct financial contributions to finance either an action intended to help achieve an objective forming part of a European Union policy or the functioning of a body which pursues an aim of general European interest or has an objective forming part of a European Union policy.

Each year DG Climate Action publishes an annual work programme, including information on grants that are going to be awarded during the year: the objectives, the schedule of the call for proposal(s) with the indicative amount and the expected results, the essential selection and award criteria to be used to select the proposals.

The submission of proposals is only possible upon their publication. All the necessary information to introduce an application is provided in the specific call for proposals.

The European Union has the task to promote equality between women and men and shall aim in all its activities to eliminate gender inequality (article 8 of the Treaty on the Functioning of the European Union). In this context, women are particularly encouraged to either submit proposals or to be involved in their submission.

6.1.5 China Development Bank

China Development Bank ("the Bank" or "CDB") provides medium- to long-term financing facilities that assist in the development of a robust economy and a healthy, prosperous community. It aligns its business focus with national economic strategy and allocates resources to break through bottlenecks in China's economic and social development.

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CDB carries out its mission by:

- Supporting the development of national infrastructure, basic industry, key emerging sectors, and national priority projects;
- Promoting coordinated regional development and urbanization by financing low-income housing, small business, agricultural/rural investment, education, healthcare, and environment initiatives;
- Facilitating China's cross-border investment and global business cooperation.

CDB is committed to market-based practices that stimulate solid performance, innovation and sustainable growth.

CDB undertook a string of major international projects in 2013, including Phase III of the China-Venezuela Fund, and deepened cooperation in multilateral financial frameworks such as the Shanghai Cooperation Organization Interbank Association, the China-ASEAN Interbank Association, and the BRICS Interbank Ministry of Finance, CDB co-organized a FOCAC (Forum on China-Africa Cooperation) roundtable, strengthening our cooperation with the World Bank in the field of African development. By the end of 2013, the foreign currency loans reached RMB 250.5 billion in total, with a high grade of asset quality.

6.1.6 KfW (Germany Development Bank)

In carrying out German Financial Cooperation (FC) we follow two main principles: we strengthen our partner country's sense of ownership and align our work with the country's national development strategies and structures.

An agreement reached between the government of a partner country and the German Government during intergovernmental negotiations (held about every two years) serves as the basis for bilateral cooperation. The partner countries themselves propose projects and programmes within the framework of these agreements and are responsible for their preparation and implementation. Programmes and projects we support generally go through the same processing cycle.

All stages are monitored by a comprehensive quality assurance system - from the idea to the project appraisal, from implementation to operation all the way to the ex post evaluation. Since we do not want FC projects to have solely a short-term impact but instead to initiate structural changes, we take a very close look to see whether they serve this goal. The success of our efforts is measured by the question 'What have we achieved for the people?'

Knowledge Transfer

We closely guide each step of a project and are ready to help our partners and to provide advice throughout the entire project period. If problems arise we find solutions in dialogue with our partners. This ensures the transfer of knowledge and encourages the buildup of our partner's capacities. After all, each new project benefits from the extensive know-how we collected in

ITU/WMO/UNESCO IOC Joint Task Force - Green Cables Funding Study

similar promotional projects in the past. Project acceptance and the ex post evaluation supplement this system.

We do not forget about projects after their completion. After all, we hope that, in the end, the circle will indeed close. We are not satisfied until the independent final evaluation that is conducted three to five years after project completion and acceptance confirms that we were able to sustainably improve the situation of the people living in the region. This also confirms the success rate of the KfW projects from 2009 and 2010. With about 80 percent it lies a little higher than in the long-term average - a success which obliges.

Environment and Climate

Climate Change, scarce raw material, loss of biodiversity and population growth require a closer connection of economy and ecology in the sense of sustainable development. Environmental and climate-related aspects are increasingly important in promoting sustainable development in partner countries: More than 60 per cent of all new commitments by KfW Entwicklungsbank are geared towards environmental and climate projects.

Responsibility of the Industrialised Nations

In the past, the intensive use of fossil resources in industrial nations has greatly increased greenhouse gas levels in the Earth's atmosphere. This places even greater responsibility on the industrial nations not only to make a concerted effort to reduce greenhouse gas emissions themselves, but also to help to alleviate the consequences of climate change. Pressure is also mounting on the larger, fast-growing emerging economies with their huge hunger for energy to reduce their own greenhouse gas emissions.

At the same time, it is also in the own interests of the industrial nations to help developing countries and emerging economies adapt to climate change, in order to defuse the already existing conflicts relating to resources. Furthermore, it is essential to use the environment and natural resources in a responsible manner. To make sure, next projects are in compliance with international standards, KfW Development Bank has implemented a systematic environmental, social and climate assessment which is essential part of the sustainability guidelines.

It is important to develop and share new technologies, thus enabling CO₂-saving and environmentally friendly economic activities, thereby supporting the process of transforming nations into green economies - i.e. sustainable economies that balance the needs of humans, nature and the environment. At the same time, there is a responsibility to offer effective assistance to those developing countries which - due to lack of financial means and weak institutions - are least able to protect themselves against the consequences of climate change - for example through improved disaster control, measures for establishing sustainable water supplies or forward-looking structural adaptation of the economy. This is where KfW has been coming in for years with competence and commitment, and where efficient and targeted approaches are necessary.

6.2 Appendix 2: Foundations

6.2.1 Bill and Melinda Gates Foundation

The following is the summary found at The Foundation Center.

Profile

Last Updated: 2014-07-21

At A Glance

Bill & Melinda Gates Foundation



(formerly William H. Gates Foundation)

P.O. Box 23350

Seattle, WA United States 98102-0650

Telephone: (206) 709-3100

Contact: Inquiry Admin.

E-mail: info@gatesfoundation.org

URL: www.gatesfoundation.org

Type of Grantmaker

Independent foundation

Additional Descriptor

- Celebrity: Business
- Family foundation

Financial Data

(yr. ended 2012-12-31)

Assets: \$37,176,776,438

Total giving: \$3,178,235,962

EIN

562618866

990

[2012](#) [2011](#) [2010](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

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990 and 990-PF Forms

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The Foundation Center displays Forms 990 and 990-PF in the form displayed by the Internal Revenue Service (IRS) as filed by the applicable nonprofit organization. The Foundation Center does not control information in the tax returns that it receives from the IRS. If a user believes any information in a return should not be displayed or is incorrect, we encourage you to contact the organization that prepared the return. You may also inform the [Foundation Center](#), which will use reasonable efforts to remove information, where appropriate. The Foundation Center makes no warranty of any nature about any information in tax returns displayed on its web site.

Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010.

Additional Contact Information

For grant inquiries: (206) 709-3140. East Coast Office address: P.O. Box 6176, Benjamin Franklin Station, Washington, DC 20044, tel.: (202) 662-8130

Background

Established in 1994 in WA as the William H. Gates Foundation.

The William H. Gates Foundation, focused on global health, was created in 1994 by Microsoft co-founder William H. "Bill" Gates, III and his wife, Melinda French Gates. Three years later, he and Melinda created the Gates Library Foundation, which worked to bring public access computers with Internet connections to libraries in the United States. Its name changed to the Gates Learning Foundation in 1999 to reflect its focus on ensuring that low-income minority students are prepared for college and have the means to attend. In 2000, to increase efficiency and communication, the two organizations merged into the Bill & Melinda Gates Foundation. In 2006, Warren Buffett, founder of Berkshire Hathaway Inc., pledged 10 million shares of Berkshire Hathaway B stock (valued at approximately \$31 billion) to the Bill & Melinda Gates Foundation. Each year, 5 percent of the remaining pledged shares will be transferred to the asset trust, and starting in 2008, the total value of the previous year's gift must be spent. In 2007, the foundation restructured and created a separate organization, the Bill & Melinda Gates Foundation Trust, to oversee the foundation's assets. The trust will include the annual installments of Warren Buffett's gift to the foundation and in turn, will fund the program foundation. Bill and Melinda Gates will be the sole trustees of the asset trust. The original entity, the Bill & Melinda Gates Foundation, conducts the foundation's programmatic and grantmaking activities. Based in Seattle, Washington, the foundation also has offices in Washington, D.C.; Beijing, China; Delhi, India; and London, United Kingdom. The foundation plans to close 50 years after the deaths of its three current trustees - Bill and Melinda Gates, and Warren Buffett. Separately from the foundation, Bill and Melinda Gates and Warren Buffett have made a commitment to The Giving Pledge, an effort to invite the wealthiest individuals and families to give the majority of their wealth to philanthropic causes during their lifetime or after their death.

Purpose and Activities

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Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. In the United States, it seeks to ensure that all people-especially those with the fewest resources-have access to the opportunities they need to succeed in school and life. Grantmaking areas are: 1) Global Development: to help the world's poorest people lift themselves out of hunger and poverty; 2) Global Health: to harness advances in science and technology to save lives in developing countries; and 3) U.S. Division: to improve U.S. high school and postsecondary education and support vulnerable children and families in Washington State.

Program Area(s)

The grantmaker has identified the following area(s) of interest:

Global Development Program

The program aims to identify and fund high-impact solutions that can help hundreds of millions of people lift themselves out of poverty and build better lives. The foundation works closely with its partners to support innovative approaches and expand existing ones so they reach the people who are most in need. The program concentrates on the following areas and goals: 1) Agricultural Development: reduce hunger and poverty for millions of farming families in Sub-Saharan Africa and South Asia by increasing agricultural productivity in a sustainable way; 2) Emergency Response: reduce suffering and save lives in regions affected by natural disasters and complex emergencies; 3) Family Planning: bring access to high-quality contraceptive information, services, and supplies to an additional 120 million women and girls in the poorest countries by 2020 without coercion or discrimination, with the longer-term goal of universal access to voluntary family planning; 4) Financial Services for the Poor: alleviate poverty by expanding access to digitally-based financial tools and services.; 5) Global Libraries: ensure that all people, especially those in disadvantaged communities around the world, have access to information through technology in public libraries; 6) Maternal, Neonatal and Child Health: ensure that mothers and babies survive and remain healthy during pregnancy, childbirth, and early childhood; 7) Nutrition: ensure that all children have the nutrition they need for a healthy start in life; 8) Polio: eradicate polio worldwide; 9) Vaccine Delivery: eliminate vaccine-preventable diseases worldwide; and 10) Water, Sanitation and Hygiene: enable universal access to sustainable sanitation services by supporting the development of radically new sanitation technologies as well as markets for new sanitation products and services, such as the initiative to Reinvent the Toilet in order to bring sustainable sanitation solutions to the 2.5 billion people worldwide who don't have access to safe, affordable sanitation.

Global Health Program

The program aims to harness advances in science and technology to save lives in developing countries. The foundation works with partners to deliver proven tools-including vaccines, drugs, and diagnostics-as well as discover pathbreaking new solutions that are affordable and reliable.

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Equally important is innovation in how it can bring health interventions to those who need them most. The foundation invests heavily in vaccines to prevent infectious diseases-including HIV, polio, and malaria-and support the development of integrated health solutions for family planning, nutrition, and maternal and child health. The program concentrates on the following areas and goals: 1) Discovery and Translational Sciences: direct scientific research toward areas where it can have the most impact and to accelerate the translation of discoveries into solutions that improve people's health and save lives; 2) Enteric and Diarrheal Diseases: eliminate the gap in mortality from enteric and diarrheal diseases between developed and developing countries and to significantly reduce impaired development associated with these diseases in children under age 5; 3) HIV: significantly reduce the incidence of HIV infection and extend the lives of people living with HIV; 4) Malaria: create a world free of malaria; 5) Neglected Infectious Diseases: reduce the burden of neglected infectious diseases on the world's poorest people through targeted and effective control, elimination, and eradication efforts.; 6) Pneumonia: significantly reduce childhood deaths from pneumonia; and 7) Tuberculosis: accelerate the decline in tuberculosis incidence worldwide.

Global Policy and Advocacy Division

The division engages in advocacy efforts to promote public policies that advance the foundation's work, build strategic alliances with governments and the public and private sectors, and foster greater public awareness of urgent global issues. The division has teams dedicated to advocacy, policy analysis, and government relations, as well as strengthening the charitable sector in the United States and overseas. In addition to the policy and advocacy staff at the foundation's Seattle headquarters and in Washington D.C., it has a European and Middle East office based in London, country offices in China and India, and representatives in Ethiopia and South Africa. The division works on tobacco control to reduce tobacco-related death and disease in developing countries by preventing the initiation of new smokers, decreasing overall tobacco use, and reducing exposure to secondhand smoke. And, through its charitable sector support it empowers the growing charitable sector with knowledge, tools and a supportive policy environment to unlock more resources, invest more effectively, and achieve greater impact around the world.

Matching Gifts Program

The foundation matches the monetary gifts of its employees to eligible charitable organizations.

Program Related Investments

The investments are used as high impact tools to stimulate private-sector driven innovation, encourage market-driven efficiencies and attract external capital to priority initiatives. They are made in the following areas: Global Development, Global Health, United States Program and Special Initiatives.

U.S. Program

The program's primary focus is on ensuring that all students graduate from high school prepared for college and have an opportunity to earn a postsecondary degree with labor-market value.

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The approach is to play a catalytic role-to support the development of innovative solutions in education that are unlikely to be generated by institutions working alone and that can trigger change on a broader scale. The foundation also works to address issues of social inequity and poverty in Washington State, where the Gates family has lived for generations and the foundation makes its permanent home. The program concentrates on the following areas and goals: 1) College-Ready Education: support innovation that can improve U.S. K-12 public schools and ensure that students graduate from high school ready to succeed in college; 2) Postsecondary Success: ensure that all low-income young adults have affordable access to a quality postsecondary education that is tailored to their individual needs and educational goals and leads to timely completion of a degree or certificate with labor-market value; and 3) Washington State: create opportunities for all children in Washington State to thrive in stable families, great schools, and strong communities.

6.2.2 The William and Flora Hewlett Foundation

The following is the summary found at The Foundation Center.

The William and Flora Hewlett Foundation



2121 Sand Hill Rd.

Menlo Park, CA United States 94025-6909

Telephone: (650) 234-4500

Contact: Heath Wickline, Comm. Off.

Fax: (650) 234-4501

URL: www.hewlett.org

Type of Grantmaker

Independent foundation

Additional Descriptor

- Celebrity: Business

Financial Data

(yr. ended 2013-12-31)

Assets: \$8,607,073,000

Total giving: \$240,100,000

EIN

941655673

990

[2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2004](#) [2003](#) [2002](#) [2001](#)

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990 and 990-PF Forms

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Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010. [Learn more »](#)

Close

Additional Contact Information

E-mail for Heath Wickline: hwickline@hewlett.org

Background

Incorporated in 1966 in CA.

Founded by the late William R. and Flora Hewlett. Mr. Hewlett was an engineer who co-founded the Hewlett-Packard Company, a global corporation developing and manufacturing information technology such as data storage, networking hardware and a variety of other technological products. In June 1977, the foundation elected its first full-time president, Roger W. Heyns. At that time, while redefining its areas of interest, the foundation also made plans to assume a national scope, with a modest proportion of funds allocated for a regional grantmaking program. In its grantmaking decisions as well as its interests and activities, the foundation is wholly independent of the Hewlett-Packard Co. and the Hewlett-Packard Company Foundation.

Limitations

Giving limited to the San Francisco Bay Area and Central Valley, CA, for family and community development programs; performing arts primarily limited to the Bay Area.

No funds for individuals and generally the foundation does not fund scholarships, endowments, capital campaigns, building construction, for-profit organizations, or unincorporated associations or groups. In addition, the foundation's funds can be used only for purposes that are consistent with its status as a charitable organization.

Purpose and Activities

The foundation makes grants to help people build measurably better lives. It concentrates its resources on activities in education, the environment, global development, performing arts, philanthropy, and population, and makes grants to support disadvantaged communities in the

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San Francisco Bay Area. A full list of all the Hewlett Foundation's grants can be found on its website.

Program Area(s)

The grantmaker has identified the following area(s) of interest:

Education

The program makes grants to improve education by expanding the reach of openly available educational resources, improving California education policies, and supporting "deeper learning"-a combination of the fundamental knowledge and practical basic skills all students will need to succeed. Since 2002, the program has concentrated on improving the conditions for education policy reform in California and fostering the spread of high-quality open educational resources. The foundation is now building on this pioneering work by broadening its focus to include deeper learning, to help schools nationwide prepare a new generation of students to respond to the ever-increasing demands of a rapidly changing world. With these grants, the foundation hopes to improve education for all students, with a particular focus on those from disadvantaged areas. The main goals of the program are to: (1) increase economic opportunity and civic engagement by educating students to succeed in a changing world through deeper learning; (2) improve the conditions for education reform in California; (3) equalize access to knowledge for teachers and students around the globe through Open Educational Resources; and (4) raise educational achievement in disadvantaged communities in the San Francisco Bay Area. The program pursues these goals by investing in organizations that develop and advocate for innovation in ideas, practices, and tools, as well as those that participate in the public policy debate on these issues. The program also reserves part of its grantmaking budget for organizations that do not neatly fit into one of the above goals. The program does not accept letters of inquiry.

Employee Matching Gifts

The foundation matches gifts from officers, directors, and staff to eligible 501(c)(3) organizations. The maximum staff gift matched per year is \$10,000. The gifts are matched on a two-to-one basis.

Environment

The program pursues four goals designed to protect the environment for future generations: 1) Conserve the ecological integrity of the western United States and Canada for people and wildlife; 2) Avoid the worst effects of global climate change by reducing greenhouse gas emissions; 3) Ensure clean and efficient supplies of energy, while protecting human health and the environment; and 4) Reduce environmental problems that disproportionately affect disadvantaged communities in the San Francisco Bay Area. To review grant guidelines for specific priorities for each goal, visit the foundation's web site page Environment Program Grantseekers.

Global Development and Population

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The program seeks to help people around the world develop their capabilities as individuals, citizens, workers, and parents. It makes grants to expand women's choices about whether to have children, how to raise their family, and how they earn a living. It works to amplify the voices of people calling for government officials to deliver better results, so citizens are more likely to get a quality education, receive adequate health care, obtain needed services, and earn a decent living. It also makes grants to help citizen groups get information about what their governments do, helping them take action to improve the quality of schools, health clinics, and other services in their communities.

Organizational Effectiveness

Grants through this category of the Effective Philanthropy Group provides targeted support to help strengthen existing grantees' strategies, leadership and organizational systems, better enabling them to do their work and enhance their impact.

Performing Arts

The program makes grants to sustain artistic expression and encourage public engagement in the arts in the San Francisco Bay Area. Grantmaking in this area is divided into three parts: 1) Continuity and Engagement. These grants help the Bay Area public to engage in a variety of arts experiences; 2) Arts Education. Funding in this part is designed to give California students equal access to an education rich in the arts; and 3) Infrastructure. Funding in this part provides necessary resources to help organizations and artists to be effective in their work. For determination criteria and online letter of inquiry, visit the foundation's web site page Performing Arts Grantseekers.

Philanthropy Grantmaking

This program makes grants to build a stronger philanthropic sector and support effective philanthropic practice so that all foundations are better equipped to make social and environmental change. There are two main strategies: (1) Knowledge Creation and Dissemination, and (2) Increasing Two-Way Openness in Foundations. The foundation is not accepting unsolicited letters of inquiry for this program area.

Serving Bay Area Communities

William and Flora Hewlett had a deep and abiding commitment to the community in which they lived. Today, their foundation provides support to a range of vital nonprofit organizations that offer services to disadvantaged communities in the Bay Area and Central Valley. Drawing from the expertise of its Education, Performing Arts, Environment, and Population programs, the foundation makes grants directly and through intermediaries to address some of the region's most pressing social problems. At this time, only the Environment Program accepts unsolicited letters of inquiry for its Serving Bay Area Communities grantmaking.

Special Projects

The foundation recognizes that sometimes unanticipated problems and opportunities arise that require flexibility in how it responds. The foundation reserves funding each year to support

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special projects that do not necessarily align with its primary strategies. The foundation is not accepting unsolicited letters of inquiry for this program area.

Fields of Interest

Subjects

- Arts
- Community/economic development
- Elementary/secondary education
- Environment
- Environment, natural resources
- Higher education
- Higher education, college (community/junior)
- International economic development
- International studies
- Performing arts
- Performing arts, dance
- Performing arts, music
- Performing arts, theater
- Philanthropy/voluntarism
- Population studies
- Public policy, research
- Reproductive health, family planning
- Urban/community development

International Interests

- China
- India
- Latin America
- Southern Asia
- Sub-Saharan Africa

Population Groups

- Minorities

Geographic Focus

- California

Types of Support

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- Continuing support
- Employee matching gifts
- General/operating support
- Matching/challenge support
- Program development

Publications

- Application guidelines
- Annual report
- Grants list
- Informational brochure
- Newsletter
- Program policy statement

Application Information

The Hewlett Foundation prefers to receive letters of inquiry via its online submission form on its web site. The foundation is not currently accepting letters of inquiry for the following programs: Global Development and Population, Philanthropy, and Special Projects. The foundation accepts unsolicited letters of inquiry for various areas of work within its Environment and Performing Arts programs. For detailed application information, visit the foundation's web site page For Grantseekers.

Application form not required.

Applicants should submit the following:

1. Copy of IRS Determination Letter
2. Copy of most recent annual report/audited financial statement/990
3. What distinguishes project from others in its field
4. Detailed description of project and amount of funding requested
5. Copy of current year's organizational budget and/or project budget
6. Additional materials/documentation

Initial approach: Online letter of inquiry preferred

Copies of proposal: 1

Board meeting date(s): Mar., July, and Nov.

Deadline(s): None

Final notification: 2 to 3 months

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- William R. Hewlett‡

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- Flora Lamson Hewlett‡

Officers and Directors

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **Harvey V. Fineberg, M.D. ***, Chair.

Affiliation(s):

Institute of Medicine, Pres.

- **Larry Kramer**, Pres.

Affiliation(s):

Equal Justice Works, Dir.

ClimateWorks Foundation, Board Member

- **Ana Weichers-Marshall**, V.P. and C.I.O.

Affiliation(s):

Commonfund, Board Member

The Louisville Presbyterian Theological Seminary, Board Member

Howard Hughes Medical Institute, Member, Investment Comm.

- **Elizabeth Peters**, Corp. Secy. and Genl. Counsel
- **Susan Ketcham**, C.F.O. and Treas.
- **Mariano-Florentino Cuellar**

Affiliation(s):

Stanford University, Professor

Freeman Spogli Institute for International Studies, Dir.

- **Eric Gimon**

Affiliation(s):

Flora Family Foundation, Tr.

Pacific Institute, Board Member

The Land Institute, Board Member

- **Walter B. Hewlett**

Affiliation(s):

The Stanford Theater Foundation, Dir.

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The Packard Humanities Institute, Dir.

Center for Computer Assisted Research in the Humanities, Pres.

- **Patricia House**

Affiliation(s):

C3 Energy, Co-founder and Exec. Vice-Chair.

Mary Mae Foundation, C.F.O.

Carnegie Endowment for International Peace, Tr.

- **Koh Boon Hwee**

Affiliation(s):

Nanyang Technological University, Chair., Board of Tr.

- **Mary H. Jaffe**

Affiliation(s):

Mountain Springs Ranch, Owner

Skyline Alpacas, Owner

- **Richard C. Levin**

Affiliation(s):

Yale University, Pres.

- **Stephen C. Neal**

Affiliation(s):

Cooley, LLP, Chair.

Levi Strauss &

Co., Chair.

- **Rakesh Ranjani**

Affiliation(s):

Open Government Partnership, Member

- **Jean Gleason Stromberg**

Memberships

Regional Associations of Grantmakers

ITU/WMO/UNESCO IOC Joint Task Force - Green Cables Funding Study

- Northern California Grantmakers

Affinity Groups

- Africa Grantmakers' Affinity Group
- Asian Americans/Pacific Islanders in Philanthropy
- Consortium of Foundation Libraries
- Consultative Group on Biodiversity
- Environmental Grantmakers Association
- Funders Network on Population, Reproductive Health and Rights
- Grantmakers for Education
- Grantmakers for Effective Organizations
- Grantmakers In the Arts
- International Human Rights Funders Group
- National Committee for Responsive Philanthropy
- Neighborhood Funders Group
- Peace and Security Funders Group
- The Nonprofit Technology Network

Associations and Other Philanthropic Organizations

- Council on Foundations
- Independent Sector

Financial Data

Year ended 2013-12-31

Assets: \$8,607,073,000 (market value)

Expenditures: \$298,400,000

Total giving: \$240,100,000

Qualifying distributions: \$271,100,000

Giving activities include:

\$238,700,000 for 634 grants

\$1,400,000 employee matching gifts

\$5,200,000 for foundation-administered programs

Additional Location Information

County: San Mateo

Metropolitan area: San Francisco-Oakland-Fremont, CA

Congressional district: California District 18

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Selected Grants

The following grants are a representative sample of this grantmaker's funding activity:

- \$100,000,000 to ClimateWorks Foundation, San Francisco, CA, in 2012. For general operating support
- \$6,000,000 to Energy Foundation, San Francisco, CA, in 2013. For China Sustainable Cities Initiative
- \$4,000,000 to International Initiative for Impact Evaluation, Washington, DC, in 2012. For general operating support
- \$4,000,000 to Revenue Watch Institute, New York, NY, in 2013. For general operating support
- \$3,700,000 to Rockefeller Philanthropy Advisors, New York, NY, in 2013. For the California Education Policy Fund
- \$3,600,000 to Rockefeller Philanthropy Advisors, New York, NY, in 2012. For the California Education Policy Fund
- \$3,350,000 to International Projects Assistance Services, Chapel Hill, NC, in 2013. For general operating support
- \$3,000,000 to Marie Stopes International, Washington, DC, in 2012. For general operating support
- \$2,000,000 to Center on Budget and Policy Priorities, Washington, DC, in 2012. For the International Budget Partnership
- \$1,500,000 to Creative Commons, Mountain View, CA, in 2013. For general operating support
- \$1,500,000 to Transparency International, Berlin, Germany, in 2013. For a project to support civil society groups promoting open governance standards
- \$1,200,000 to National Public Radio, Washington, DC, in 2012. For general operating support
- \$300,000 to IntraHealth International, Chapel Hill, NC, in 2013. For civil society advocacy coalitions in West Africa
- \$260,000 to Results for Development Institute, Washington, DC, in 2013. For a project to update the book *Managing Think Tanks*
- \$230,000 to University of California, San Francisco, CA, in 2012. For a research project on self-removals of IUDs
- \$200,000 to Center for Public Integrity, Washington, DC, in 2012. For national security reporting
- \$177,723 to SRI International, Menlo Park, CA, in 2013. For providing guidance on the Education Program's deeper learning research agenda

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- \$175,000 to Open University, Milton Keynes, England, in 2012. For the Teacher Education in Sub Saharan Africa project
- \$150,000 to Sierra Club Foundation, San Francisco, CA, in 2012. For the India Planning and Research project
- \$150,000 to Christian Coalition, Washington, DC, in 2013. For the Young Conservatives for Energy Reform project

6.2.3 The David and Lucille Packard Foundation

The following is the summary found at The Foundation Center.

The David and Lucille Packard Foundation



343 Second St.

Los Altos, CA United States 94022-3632

Telephone: (650) 948-7658

Contact: Communications Dept.

E-mail: communications@packard.org

URL: www.packard.org

Type of Grantmaker

Independent foundation

Additional Descriptor

- Celebrity: Business
- Family foundation

Financial Data

(yr. ended 2012-12-31)

Assets: \$6,299,952,716

Total giving: \$256,130,462

EIN

942278431

990

[2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2004](#) [2003](#) [2002](#) [2001](#)

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990 and 990-PF Forms

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Background

Incorporated in 1964 in CA.

Founded by the late David and Lucile Packard, co-founders of Hewlett-Packard (HP). HP is a global corporation developing and manufacturing information technology such as data storage, networking hardware and a variety of other technological products. The Packards formalized their passion for philanthropy in 1964 when they established the David and Lucile Packard Foundation. They believed America to be the home of a unique type of organization-foundations-that constitute a great American tradition and complement government efforts to focus on society's needs. Today, their children and grandchildren continue to help guide the Foundation's work.

Limitations

Giving for national and international grants, with a special focus on the Northern CA counties of San Mateo, Santa Clara, Santa Cruz, Monterey, and San Benito; giving also in Pueblo, Colorado.

No support for religious or political organizations.

No grants to individuals.

Purpose and Activities

The David and Lucile Packard Foundation is a family foundation. The foundation works on the issues its founders cared about most: improving the lives of children, enabling the creative pursuit of science, advancing reproductive health, and conserving and restoring the earth's natural systems. The foundation invests in effective organizations and leaders, collaborates with them to identify strategic solutions, and supports them over time to reach its common goals.

Program Area(s)

The grantmaker has identified the following area(s) of interest:

Children, Families, and Communities (CFC)

The program works to ensure opportunities for all children to reach their potential by addressing two interrelated and fundamental needs that must be met for children to thrive: health and education. The focus areas are: 1) Early Learning. This program seeks to improve the

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quality of early learning and developmental experiences, in both formal and informal settings, for all children in California from birth through age five; 2) Children's Health Insurance. This program works to ensure that all children receive appropriate health care by creating nationwide systems that provide access to health insurance for all children; and 3) After-School and Summer Enrichment. This program aims to strengthen California's public commitment to school-based, after-school programs and to ensure that after-school and summer learning opportunities are fully integrated in to the education system.

Conservation and Science

The program invests in action and ideas that conserve and restore ecosystems while enhancing human well-being. It supports public policy reforms, changes in private sector practices, and scientific activities to develop essential knowledge and tools for addressing current and future priorities. Focus areas include: 1) Climate: Reducing emissions that contribute to environment-damaging climate change; 2) Oceans: Working toward healthy oceans that support a diversity and abundance of marine life which can withstand pressures over time, providing people and communities with food, stable livelihoods and economic, social and cultural benefits; 3) Land: Working to protect some of the continent's iconic natural treasures and remaining wilderness areas; 4) Science: Supporting efforts to gather fresh knowledge about the Earth's ecosystems and use these findings to generate creative solutions.

Local Grantmaking

The program supports an array of nonprofit organizations in geographic areas that are significant to the Packard family. These include the five California counties that surround the Foundation's headquarters in Los Altos, California: San Mateo, Santa Clara, Santa Cruz, Monterey, and San Benito, as well as Pueblo, Colorado, the birthplace of David Packard. The goal in supporting these communities is to help make them stronger and more vibrant places where all families can thrive and reach their potential. To achieve this goal, the Local Grantmaking program focuses its resources on addressing six fundamental issue areas: 1) Arts; 2) Children and Youth; 3) Conservation and Science; 4) Food and Shelter; 5) Population and Reproductive Health; 6) Beyond the Check.

Matching Gifts

All foundation employees are eligible to have their gifts to public charities, schools, colleges and other 501(c)(3) organizations matched by the foundation. The gifts may range from \$35 to \$10,000 per calendar year.

Organizational Effectiveness and Philanthropy Funds

The program supports grantees to help them build core strengths in areas like strategic and business planning, financial management, board and executive leadership, and communications. It also makes grants to build these capacities among groups of leaders and cohorts of grantees, through initiatives called Partnership Projects -so that nonprofit leaders can share knowledge, learn from their peers, and grow their networks. Partnership Projects are grants focused on groups of leaders and cohorts of grantees. They are developed as a collaboration between Organizational Effectiveness and programs at the foundation, grantees and, when possible,

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other funders, and are designed to allow grantees to strengthen organizational capacity and learn from and connect with their peers.

Population and Reproductive Health

The program seeks to promote women's reproductive health and rights and to stabilize population growth. The program supports efforts to expand access to and improve the quality of essential services, including comprehensive sexuality education, voluntary family planning/contraception, and safe abortion. It focuses its efforts in South Asia, Sub-Saharan Africa, and the United States. In each region, it makes grants to strengthen service delivery, build leadership and advocacy capacity, and shift social and cultural norms that prevent women and youth from seeking the services they need to make healthy reproductive decisions. The foundation uses the evidence and experience it collects to forge partnerships with global research and advocacy organizations, especially youth-led networks, and to shape the discourse at the regional and global levels.

The Packard Fellowships for Science and Engineering

The fellowships allow the nation's most promising professors to pursue science and engineering research early in their careers with few funding restrictions and limited reporting requirements. Each year, the foundation invites the presidents of 50 universities to nominate two early-career professors each from their institutions. An advisory panel of distinguished scientists and engineers carefully reviews the nominations and selects 16 fellows to receive individual grants of \$875,000, distributed over five years. Candidates must be faculty members who are eligible to serve as principal investigators engaged in research in the natural and physical sciences or engineering and must be within the first three years of their faculty careers. Disciplines that will be considered include physics, chemistry, mathematics, biology, astronomy, computer science, earth science, ocean science, and all branches of engineering. Candidates engaged in research in the social sciences will not be considered. If your university is on the "Invited Institutions" list and if you meet the eligibility requirements, contact your Office of Sponsored Research or department chair to discuss the selection process at your university. See web site for complete information. Applications from individuals are not accepted.

Fields of Interest

Subjects

- Agriculture/food
- Animals/wildlife, fisheries
- Arts
- Arts, cultural/ethnic awareness
- Child development, services
- Civil liberties, reproductive rights
- Education
- Education, early childhood education

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- Engineering
- Environment
- Environment, beautification programs
- Environment, energy
- Environment, natural resources
- Environment, public education
- Family services
- Food services
- Foundations (private operating)
- Health care, insurance
- Housing/shelter
- Marine science
- Museums
- Performing arts
- Philanthropy/voluntarism
- Philanthropy/voluntarism, management/technical assistance
- Population studies
- Reproductive health
- Reproductive health, family planning
- Science
- Youth development

International Interests

- Global Programs
- Oceania
- Southern Asia
- Sub-Saharan Africa

Geographic Focus

- National, International
- California
- Colorado

Types of Support

- Consulting services
- Continuing support
- Employee matching gifts
- Fellowships
- General/operating support
- Land acquisition

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- Management development/capacity building
- Matching/challenge support
- Program development
- Program evaluation
- Program-related investments/loans
- Research

Publications

- Application guidelines
- Annual report
- Financial statement
- Grants list
- Newsletter
- Occasional report
- Program policy statement
- Program policy statement (including application guidelines)

Application Information

Review program guidelines online; foundation does not accept proposals for all of their areas of interest.

Application form not required.

Applicants should submit the following:

1. Timetable for implementation and evaluation of project
2. Signature and title of chief executive officer
3. Results expected from proposed grant
4. Qualifications of key personnel
5. Name, address and phone number of organization
6. Copy of IRS Determination Letter
7. Brief history of organization and description of its mission
8. Geographic area to be served
9. Copy of most recent annual report/audited financial statement/990
10. How project's results will be evaluated or measured
11. Listing of board of directors, trustees, officers and other key people and their affiliations
12. Detailed description of project and amount of funding requested
13. Contact person
14. Copy of current year's organizational budget and/or project budget
15. Listing of additional sources and amount of support
16. Additional materials/documentation

Initial approach: Proposal or 2- to 3-page letter of inquiry

Copies of proposal: 1

Board meeting date(s): Mar., June, Sept., and Dec.

Deadline(s): None

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Final notification: Varies

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- David Packard‡
- Lucile Packard‡

Officers and Trustees

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **Susan Packard Orr ***, Chair.

Affiliation(s):

Telosa Software, C.E.O.-Founder

Lucile Packard Children's Hospital, Tr.

Monterey Bay Aquarium, Tr.

Packard Humanities Institute, Tr.

- **Nancy Packard Burnett ***, Vice-Chair.
- **Julie E. Packard ***, Vice-Chair.

Affiliation(s):

Bay Aquarium Research Institute, Chair., Board of Directors

- **Carol S. Larson ***, C.E.O. and Pres.

Affiliation(s):

The David and Lucile Packard Foundation, Board Member

American Leadership Forum-Silicon Valley, Board Member

- **Chris DeCardy**, V.P. and Dir., Progs.

Affiliation(s):

American Leadership Forum-Silicon Valley, Fellow

- **Craig Neyman**, V.P. and C.F.O.
- **John H. Moehling**, C.I.O.
- **Mary Anne Rodgers**, Secy. and Genl. Counsel
- **Edward W. Barnholt**

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Affiliation(s):

KLA-Tencor Corporation, Chair.

eBay, Dir.

Adobe Systems Inc., Dir.

- **Ipek S. Burnett**
- **Jason K. Burnett**
- **Linda Griego**

Affiliation(s):

Griego Enterprises, Inc., C.E.O. and Pres.

CBS Corp., Dir.

AECOM Technology Corp., Dir.

- **Jane Lubchenco**

Affiliation(s):

Oregon State University, Professor

- **Linda A. Mason**

Affiliation(s):

Mercy Corps, Chair.

Bright Horizons Family Solutions, Founder and Chair.

- **David Orr**

Affiliation(s):

Google, Product Mgr.

- **Louise Stephens**
- **Ward W. Woods**

Affiliation(s):

Wildlife Conservation Society, Chair. of the Board, Chair. of Exec. Comm.

Staff

Number of Staff

- 56 full-time professional
- 3 part-time professional
- 36 full-time support
- 5 part-time support

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Key Staff

Note: Does not include officers.

- **Justina Acevedo-Cross**, Prog. Off., Children, Families, and Communities
- **Linda Schuurmann Baker**, Prog. Off., Organizational Effectiveness, Philanthropy, and President's Fund
- **Kathy Barton**, Grantmaking Oper. Coord.
- **Meredith Blair**, Off., Eval. and Learning
- **Jennifer Blum**, Prog. Off., Population and Reproductive Health
- **Inger Brinck**, Prog. Oper. Mgr., Children, Families and Communities and Local Grantmaking
- **Audrey Chang**, Prog. Off., Conservation and Science
- **Cheryl Chang**, Prog. Specialist., Organizational Effectiveness, and Philanthropy, and President's Fund
- **John Claussen**, Prog. Off., Conservation and Science
- **Ellen Clear**, Prog. Off., Local Grantmaking
- **Lester Coutinho**, Prog. Off., Population and Reproductive Health
- **Richard Cudney**, Prog. Off., Conservation and Science
- **Lana Dakan**, Prog. Off., Population and Reproductive Health
- **Eunice Delumen**, Grantmaking Oper. Compliance Mgr.
- **Vanessa Fumia**, Grantmaking Oper. Systems Mgr.
- **Amy Gavin**, Prog. Oper. Mgr., Population and Reproductive Health
- **Mary Shipsey Gunn**, Pueblo Grantmaking Mgr.
- **Megan Jellinek**, Legal Analyst
- **Minna Jung**, Dir., Comms.
- **Tamara Kreinin**, Dir., Population and Reproductive Health
- **Kai N. Lee, Ph.D.**, Prog. Off. and Mgr., Conservation and Science
- **Heather Ludemann**, Prof. Off., Conservation and Science
- **Felicia Madsen**, Comm. Dir.
- **Jessica Mancini**, Prog. Off., Local Grantmaking
- **Merra Mani**, Dir., Children, Families and Communities
- **Jamaica Maxwell**, Prog. Off., Organizational Effectiveness, Philanthropy, and President's Fund
- **Lisa Monzon**, Prog. Off. and Mgr., Conservation and Science
- **Belinda Morris**, Prog. Off., Conservation and Science
- **Lori Prince**, Dir., HR

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- **Kathleen Reich**, Dir., Organizational Effectiveness and Philanthropy
- **Walter V. Reid, Ph.D.**, Dir., Conservation and Science
- **Curt Riffle**, Prog. Off., Conservation and Science
- **Mary Anne Rodgers**, General Counsel
- **Miguel M. Salinas**, Prog. Off., Local Grantmaking
- **Bernadette Sangalang**, Prog. Off., Children, Families and Communities
- **Diana Scarce**, Dir., Evaluation and Learning
- **Susan Phinney Silver**, Prog. Mgr., Program-Related Investment
- **Jeff Sunshine**, Prog. Off., Children, Families and Communities
- **Kenneth K. Tsuboi**, Cont.
- **Stella Underwood**, Grantmaking Oper. Coord.
- **Xiao-Wei Wang**, Prog. Mgr., Conservation and Science
- **Stacey Lenn Webb**, Dir., Prog. Oper. and Info.
- **Irene Wong**, Dir., Local Grantmaking
- **Liane Wong**, Prog. Off., Children, Family and Communities

Memberships

Regional Associations of Grantmakers

- Colorado Association of Funders
- Northern California Grantmakers

Affinity Groups

- Asian Americans/Pacific Islanders in Philanthropy
- BoardSource
- Environmental Grantmakers Association
- Grantmakers for Education
- Grantmakers for Effective Organizations
- Grantmakers In Health
- Grantmakers In the Arts
- Hispanics in Philanthropy
- International Human Rights Funders Group
- Mission Investors Exchange
- National Committee for Responsive Philanthropy

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- Technology Affinity Group

Associations and Other Philanthropic Organizations

- Council on Foundations
- GuideStar USA
- Independent Sector
- Philanthropy Roundtable

Financial Data

Year ended 2012-12-31

Assets: \$6,299,952,716 (market value)

Expenditures: \$311,653,368

Total giving: \$256,130,462

Qualifying distributions: \$340,586,438

Giving activities include:

\$254,497,853 for 927 grants (high: \$66,100,000; low: \$2,500)

\$1,632,609 employee matching gifts

\$6,525,622 for foundation-administered programs

\$36,055,512 for 14 loans/program-related investments

Online Communications

- [Grantee Perception Report](#)
- [Grants Database](#)
- [Knowledge Center](#)

Additional Location Information

County: Santa Clara

Metropolitan area: San Jose-Sunnyvale-Santa Clara, CA

Congressional district: California District 18

Selected Grants

The following grants are a representative sample of this grantmaker's funding activity:

- \$66,100,000 to ClimateWorks Foundation, San Francisco, CA, in 2013. For general support of the ClimateWorks Foundation's work to help reduce global greenhouse gas emissions and avert climate change

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- \$66,100,000 to ClimateWorks Foundation, San Francisco, CA, in 2012. For general support of the ClimateWorks Foundation's work to help reduce global greenhouse gas emissions and avert climate change
- \$38,209,855 to Monterey Bay Aquarium Research Institute, Moss Landing, CA, in 2013. For operating support, research projects, and ordinary capital support
- \$37,460,642 to Monterey Bay Aquarium Research Institute, Moss Landing, CA, in 2012. For operations, research projects, and ordinary capital expenses during 2013
- \$10,000,000 to Monterey Bay Aquarium Foundation, Monterey, CA, in 2013. For general support
- \$4,750,000 to Resources Legacy Fund, Sacramento, CA, in 2012. For grantmaking activities under the Western Conservation subprogram, focusing on California, private land conservation across the West, and the Bay Area Conservation Initiative
- \$2,400,000 to DKT International, Washington, DC, in 2012. To increase sustainability of the Janani social franchising program in India, and to start up a new initiative to improve access to contraceptive products and services through public and private sector in Pakistan
- \$2,100,000 to Resources Legacy Fund, Sacramento, CA, in 2013. For the sixth and final year of grantmaking activities under the Northwest Mexico Land Conservation Program of Resources Legacy Fund
- \$2,100,000 to Institute of International Education, New York, NY, in 2013. For the Technical Assistance Program in South Asia and Sub-Saharan Africa
- \$1,250,000 to World Wildlife Fund, Washington, DC, in 2012. To promote sustainable fisheries in Southeast Asia and Oceania regions using market-based mechanism
- \$1,000,000 to Tides Center, San Francisco, CA, in 2013. For Communications Partnership for Science and the Sea (COMPASS)
- \$1,000,000 to Tides Center, San Francisco, CA, in 2012. For Communications Partnership for Science and the Sea (COMPASS)
- \$875,000 to University of California, Santa Barbara, CA, in 2012. For 2012 Packard Fellowship for Cenke Xu, Department of Physics
- \$875,000 to Harvard University, Cambridge, MA, in 2013. For 2013 Packard Fellowship for Emily Balskus, Department of Chemistry and Chemical Biology
- \$205,000 to Planned Parenthood Federation of America, New York, NY, in 2013. For communication efforts and community outreach and mobilization in Mississippi and Louisiana
- \$150,000 to University of Washington, Seattle, WA, in 2012. To establish a working group of experts in ecology and fisheries management to provide a scientific basis for policies on bottom trawling
- \$150,000 to Pathfinder International, Watertown, MA, in 2012. To explore potential and develop approaches for mobilizing commitment to improve sexual and reproductive health outcomes in Asia and Africa

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- \$110,220 to BirdLife International, Cambridge, England, in 2013. For Indian Ocean Tuna Commission seabird bycatch workshop and a study of gillnet bycatch mitigation methods
- \$100,000 to O'Neill Sea Odyssey, Santa Cruz, CA, in 2013. For environmental education classes over two years through 5/31/15
- \$100,000 to Centro Mexicano de Derecho Ambiental, Mexico City, Mexico, in 2012. To ensure adherence to environmental laws and regulations in the Gulf of California region by providing legal advice to local groups

6.2.4 Pew Charitable Trusts

The following is the summary found at The Foundation Center.

The Pew Charitable Trusts



1 Commerce Sq. , 2005 Market St., Ste. 2800

Philadelphia, PA United States 19103-7077

Telephone: (215) 575-9050

Contact: Rebecca W. Rimel, C.E.O. and Pres.

Fax: (215) 575-4939

E-mail: info@pewtrusts.org

URL: www.pewtrusts.org

Type of Grantmaker

Public charity

Financial Data

(yr. ended 2013-06-30)

Assets: \$753,245,419

Total giving: \$131,988,597

EIN

562307147

990

[2013](#) [2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2004](#) [2003](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

x

990 and 990-PF Forms

The Foundation Center displays Forms 990 and 990-PF in the form displayed by the Internal Revenue Service (IRS) as filed by the applicable nonprofit organization. The Foundation Center

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does not control information in the tax returns that it receives from the IRS. If a user believes any information in a return should not be displayed or is incorrect, we encourage you to contact the organization that prepared the return. You may also inform the [Foundation Center](#), which will use reasonable efforts to remove information, where appropriate. The Foundation Center makes no warranty of any nature about any information in tax returns displayed on its web site.

Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010. [Learn more »](#)

Close

Additional Contact Information

Additional address: 901 E St. N.W., Washington, DC 20004-2037; tel.: (202) 552-2000, fax: (202) 552-2299

Background

Established in 1948; the trusts reorganized into a public charity in 2004.

Limitations

Giving on an international basis, with a special commitment to the Philadelphia, PA, region. No grants to individuals, or for endowment funds, capital campaigns, construction, equipment, deficit financing, scholarships, or fellowships (except those identified or initiated by the trusts)

Purpose and Activities

The Pew Charitable Trusts support nonprofit activities in the areas of culture, education, the environment, health and human services, public policy and religion. Based in Philadelphia, the trusts make strategic investments to help organizations and citizens develop practical solutions to difficult problems. Under its Public Policy initiative, the Trusts support environmental causes including wilderness protection, conservation of living marine resources, and clean energy. Under its Government Performance, the Trusts interest include state policy, health, consumer financial stability, and fiscal and economic policy. The Trust's Philadelphia Program includes arts and culture, civic initiatives, health and human services, and the Philadelphia Research Initiative. The Pew Research Center aligns with the Trust's Informing the Public program.

Fields of Interest

Subjects

- Aging, centers/services
- Animals/wildlife, preservation/protection
- Arts
- Biology/life sciences
- Biomedicine
- Child development, education
- Child development, services

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- Children/youth, services
- Education
- Education, research
- Employment
- Environment
- Environment, energy
- Environment, natural resources
- Family services
- Government/public administration
- Health care
- Historic preservation/historical societies
- Homeless, human services
- Housing/shelter, development
- Human services
- Humanities
- Leadership development
- Media, print publishing
- Minorities/immigrants, centers/services
- Museums
- Performing arts
- Performing arts, dance
- Performing arts, music
- Performing arts, theater
- Public affairs
- Public affairs, citizen participation
- Public affairs, election regulation
- Public health
- Religion, public policy
- Religion, research
- Science
- Social sciences
- Visual arts
- Voluntarism promotion
- Youth development, citizenship
- Youth development, services

International Interests

- Australia
- Canada
- Europe

Population Groups

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- Adults
- Aging
- Children/youth
- Economically disadvantaged
- Homeless
- Mentally disabled
- Offenders/ex-offenders
- Physically disabled

Geographic Focus

- Pennsylvania

Types of Support

- Continuing support
- Employee matching gifts
- Program development
- Program-related investments/loans
- Research
- Technical assistance

Publications

- Application guidelines
- Grants list
- Occasional report

Application Information

Contact Pew for specific guidelines and limitations or visit the Trusts' web site; applicants should not send full proposals unless requested by trustee representatives. Examples of past work, articles, reports, videos or other material should not be submitted with the letter of inquiry.

Application form required.

Applicants should submit the following:

1. Timetable for implementation and evaluation of project
2. Results expected from proposed grant
3. Statement of problem project will address
4. Population served
5. Copy of IRS Determination Letter
6. Brief history of organization and description of its mission
7. How project's results will be evaluated or measured
8. Detailed description of project and amount of funding requested

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9. Copy of current year's organizational budget and/or project budget
Initial approach: Letter of inquiry (2 to 3 pages)
Copies of proposal: 1
Board meeting date(s): Mar., June, Sept., and Dec.
Deadline(s): See foundation web site for current deadlines
Final notification: Approximately 4 to 6 weeks

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- Mary Ethel Pew‡
- Mabel Pew Myrin‡
- J. Howard Pew‡
- Joseph N. Pew, Jr.‡

Officer and Board Members

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **Rebecca W. Rimel ***, C.E.O. and Pres.

Affiliation(s):

Deutsche Banc Scudder Funds, Board Member

Monticello-The Thomas Jefferson Foundation, Vice-Chair.

Greater Philadelphia Chamber of Commerce, Member, Executive Comm.

College of Physicians of Philadelphia, Fellow

- **Robert H. Campbell**

Affiliation(s):

The Hershey Co., Dir.

CIGNA Corporation, Dir.

Vical, Inc., Dir.

Rocky Mountain Institute, Dir.

- **Susan W. Catherwood**

Affiliation(s):

WomenMatter, Inc., Member, National Advisory Board

The College of Physicians of Philadelphia, Tr.

- **Aristides W. Georgantas**

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- **J. Howard Pew, II**
- **J.N. Pew, IV, M.D.**
- **Mary Catherine Pew, M.D.**
- **R. Anderson Pew**

Affiliation(s):

Sunoco Inc., Dir.

- **Sandy Ford Pew**
- **Doris Pew Scott**
- **Robert G. Williams**

Trustee

- **The Glenmede Trust Co.**

Staff

Number of Staff

398 full-time professional

17 part-time professional

128 full-time support

6 part-time support

Key Staff

Note: Does not include officers.

- **Lester W. Baxter**, Dir., Planning and Evaluation
- **Henry B. Bernstein**, Treas. and Managing Dir., Finance
- **Michael G. Caudell-Feagan**, Deputy Dir., Pew Center on the States
- **Bruce C. Compton**, Sr. Mgr., Research and Records
- **Rebecca A. Cornejo**, Sr. Off., Prog. Admin.
- **Erin Currier**, Project Mgr., Economic Mobility Project
- **Lisa Cutler**, Deputy Dir., Comm.
- **Michael J. Dahl**, Managing Dir., Strategic Planning and Technology
- **Alan Erenhalt**, Dir., Information, Pew Center on the States
- **Kathleen Gaisler**, Sr. Off., Institutional Planning
- **Lori Grange**, Deputy Dir., Pew Center on the States
- **Michael D. Greco**, Mgr., Procurement Svcs.
- **Connie Harshman**, Sr. Mgr., Facilities Devel.

ITU/WMO/UNESCO IOC Joint Task Force - Green Cables Funding Study

- **Shelley A. Hearne**, Managing Dir., Pew Health Group
- **Glen Howard**, Managing Dir., Legal Affairs, and Genl. Counsel
- **Estee Irby**, Mgr., Gift Acct. Svcs.
- **Phillip Ishikawa**, Sr. Mgr., Oper. Contracts and Fin. Svcs.
- **Donald Kimelman**, Managing Dir., Info. Initiatives and the Philadelphia Program
- **Frazierita D. Klasen**, Dir., Pew Fund and Deputy Director, The Philadelphia Prog.
- **Susan Lieberman**, Deputy Dir., International Policy
- **F. Deming Love**, Sr. Mgr., Web and Application Devel.
- **Tamera Luzzatto**, Managing Dir., Government Rels.
- **Katharine Marshall**, Sr. Mgr., Prog. Fin.
- **Joann McGuire**, Senior Mgr., Procurement, Payment and Agenda, and Document Svcs.
- **Kenneth V. Miller**, Sr. Specialist, Enterprise Systems
- **Lori Olson**, Sr. Mgr., Oper., Pew Center on the States
- **Kathy Patterson**, Sr. Off., Government Rels.
- **Joshua S. Reichert**, Managing Dir., Pew Environment Group
- **Gregory T. Rowe**, Dir., Cultural Initiatives and Deputy Dir., The Philadelphia Program
- **Stephanie Rubin**, Sr. Off., Campaigns, Pew Center on the States
- **Ingrid Schroeder**, Dir., Pew Fiscal Analysis Initiative and Subsidyscope
- **Alexis Schuler**, Sr. Off., Campaigns, Pew Center on the States
- **Laura Shell**, Sr. Officer, Oper. and Board Rels.
- **Bryana Shirley**, Sr. Specialist, Oper., Pew Environment Group
- **Melissa Skolfield**, Managing, Dir., Comm.
- **Eliza W. Smith**, Mgr. Employee Rels.
- **Gregory S. Smith**, Deputy Dir., Information Technology and C.I.O.
- **Jeremy Smith**, Dir., Strategic Initiatives, Pew Center on the States
- **Kevin Smith**, Deputy Dir., Fin.
- **Karen Steuer**, Dir., Government Rels., Pew Environment Group
- **Susan K. Urahn**, Managing Dir., Pew Center on the States
- **Alyson Warner**, Mgr., Oper. Contact Svcs.
- **Gaye Williams**, Deputy Dir., Comm.
- **Birgitt S. Wirth**, Mgr., Benefits

Memberships

Regional Associations of Grantmakers

ITU/WMO/UNESCO IOC Joint Task Force - Green Cables Funding Study

- Philanthropy Network Greater Philadelphia

Affinity Groups

- Consortium of Foundation Libraries
- Consultative Group on Biodiversity
- Early Childhood Funders' Collaborative
- Environmental Grantmakers Association
- Funders' Committee for Civic Participation
- Grantmakers for Children, Youth and Families
- Grantmakers for Education
- Grantmakers for Effective Organizations
- Grantmakers In Health
- Grantmakers In the Arts
- Neighborhood Funders Group
- The Canadian Environmental Grantmakers' Network (CEGN)

Associations and Other Philanthropic Organizations

- Council on Foundations
- Independent Sector

Financial Data

Year ended 2013-06-30

Assets: \$753,245,419 (market value)

Gifts received: \$305,809,297

Expenditures: \$307,065,604

Total giving: \$131,988,597

Qualifying distributions: N/A

Giving activities include:

\$131,988,597 for grants

Additional Location Information

County: Philadelphia

Metropolitan area: Philadelphia-Camden-Wilmington, PA-NJ-DE-MD

Congressional district: Pennsylvania District 02

Selected Grants

The following grants are a representative sample of this grantmaker's funding activity:

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- \$3,890,000 to Center for Climate and Energy Solutions, Arlington, VA, in 2010. For general operating support
- \$1,750,000 to OMG Center for Collaborative Learning, Philadelphia, PA, in 2010. To continue to provide capacity-building support to health and social service organizations in Philadelphia region
- \$1,294,000 to University of the Arts, Philadelphia, PA, in 2010. For Pew Center for Arts and Heritage, which houses Philadelphia Cultural Management Initiative and Pew's artistic initiatives: Dance Advance, Heritage Philadelphia Program, Pew Fellowships in the Arts, and Philadelphia Exhibit
- \$325,000 to Philadelphia Academies, Philadelphia, PA, in 2010. To provide career-oriented education for Philadelphia public school students that prepares them for employment and postsecondary opportunities
- \$270,000 to Public Citizens for Children and Youth, Philadelphia, PA, in 2010. For continued support of Child Health Watch Helpline to assist families in the region to secure available behavioral health services for their children
- \$262,000 to Philadelphia Futures: A Union of White-Williams Scholars, Philadelphia, PA, in 2010. For continued support of Sponsor-A-Scholar program for at-risk high school students in Philadelphia
- \$210,000 to Quebec-Labrador Foundation/Atlantic Center for the Environment, Ipswich, MA, in 2010. For ministry among the people and clergy of Quebec North Shore
- \$120,000 to Eleutherian Mills-Hagley Foundation, Wilmington, DE, in 2010. For general operating support of Library and Center for History of Business, Technology and Society, which provides archives and research on America's economic and technological heritage
- \$120,000 to Foundation Center, New York, NY, in 2010. For general operating support
- \$98,000 to Library of Congress, Washington, DC, in 2010. For Congressional Research Service's orientation seminar for incoming members of the United States House of Representatives

6.2.5 Gordon and Betty Moore Foundation

The following is the summary found at The Foundation Center.

Gordon and Betty Moore Foundation



1661 Page Mill Rd.

Palo Alto, CA United States 94304-1209

Telephone: (650) 213-3000

Contact: Genny Biggs, Comm. Manager

ITU/WMO/UNESCO IOC Joint Task Force - Green Cables Funding Study

Fax: (650) 213-3003

URL: www.moore.org

Type of Grantmaker

Independent foundation

Additional Descriptor

- Celebrity: Business

Financial Data

(yr. ended 2012-12-31)

Assets: \$5,697,258,026

Total giving: \$233,047,309

EIN

943397785

990

[2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2003](#) [2002](#) [2002](#) [2001](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

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990 and 990-PF Forms

The Foundation Center displays Forms 990 and 990-PF in the form displayed by the Internal Revenue Service (IRS) as filed by the applicable nonprofit organization. The Foundation Center does not control information in the tax returns that it receives from the IRS. If a user believes any information in a return should not be displayed or is incorrect, we encourage you to contact the organization that prepared the return. You may also inform the [Foundation Center](#), which will use reasonable efforts to remove information, where appropriate. The Foundation Center makes no warranty of any nature about any information in tax returns displayed on its web site.

Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010.

Close

Additional Contact Information

E-mail for Genny Biggs: genny.biggs@moore.org. Additional e-mail: grantprocessing@moore.org

Background

Established in 2000 in CA.

Founded by Gordon and Betty Moore. Gordon Moore is co-founder of Intel Corporation and is most widely known for his 1965 prediction that the number of transistors the semi-conductor industry would be able to place on a computer chip would double every two years. What was

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intended as a rule of thumb, quickly became known as "Moore's Law" and a guiding principle for the delivery of ever more powerful computer chips at proportionately lower costs. The foundation seeks to advance environmental conservation and scientific research around the world and improve the quality of life in the San Francisco Bay Area. Gordon and Betty Moore have committed to The Giving Pledge, and have pledged to give away at least half of their wealth to philanthropy.

Limitations

Giving on a worldwide basis (North Pacific Rim and Andes-Amazon), with some focus on the San Francisco Bay Area, CA, for selected projects.

No grants to individuals, or for arts, building/renovation, endowments, capital campaigns, labor issues, or for sports programs.

Purpose and Activities

As responsible stewards of the resources entrusted to them, the foundation forms and invests in partnerships to achieve significant, lasting and measurable results in environmental conservation, science and the San Francisco Bay Area. The majority of funding is directed to organizations whose work supports the foundation's initiatives in its three major program areas.

Program Area(s)

The grantmaker has identified the following area(s) of interest:

Environment Conservation

The program balances long-term conservation with sustainable use. It protects critical ecosystems, establishes models for collaboration that can be replicated and expanded around the globe, seeks to create lasting change in how land, freshwater and coastal marine ecosystems are managed. There are currently three focus areas: 1) Andes-Amazon: Conserves the Amazonian forests by supporting the establishment of protected areas, transforming frontier economies and addressing the root causes of deforestation and forest degradation; 2) Marine Conservation: Supports healthy ocean ecosystems that can sustain food, jobs and recreation over the long term by aligning economic incentives with conservation goals; 3) Wild Salmon Ecosystems: Collaborates with partners from Alaska, British Columbia and Russia to protect a healthy habitat for wild salmon throughout the North Pacific.

Patient Care Program

Through the program, the foundation will eliminate preventable harms and unnecessary health care costs by engaging patients and families within a redesigned, supportive health care system. The foundation will partner with leading academic medical centers to design and test solutions that will serve as proven models of care that other health care organizations can implement to eliminate preventable harms and avoidable costs. Through the Libretto ICU Consortium, the

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foundation and its partners will work together to integrate technologies and create tools and models that eliminate preventable harms and enable meaningful engagement of patients and families. Through the Betty Irene Moore Nursing Initiative the foundation has improved patient care in more than 80 percent of the region's adult acute care hospitals and through the Betty Irene Moore School of Nursing the foundation is dedicated to educate, train and prepare nurse leaders in new care models that will enhance and advance overall health care for generations to come.

San Francisco Bay Area

The goals of the foundation's San Francisco Bay Area Program are to improve the quality of life by sustaining healthy Bay Area ecosystems and conserving critical landscapes; enhancing science education and learning especially for children, and improving the quality of care provided to adults during and following hospitalization.

Science

The program invests in the development of new technologies, supports the world's top research scientists and brings together new-often groundbreaking-scientific partnerships. It funds research that does the following: a) Acquires new knowledge and asks questions not previously possible; b) Enables new science through technology; c) Breaks down barriers and cultivates new collaborations that might not otherwise happen; d) Enhances society's understanding of the inherent value of science.

Fields of Interest

Subjects

- Environment
- Science

Geographic Focus

- National, International

Types of Support

- Conferences/seminars
- Land acquisition
- Program development
- Program-related investments/loans
- Research

Publications

- Financial statement

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- Grants list

Application Information

The foundation does not accept unsolicited proposals.

Application form not required.

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- Gordon E. Moore
- Betty I. Moore

Officers and Trustees

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **Gordon E. Moore ***, Chair.
- **Paul Gray, Ph.D.**, Vice-Chair. and Interim Pres.
- **Nancy J. Koch**, Genl. Counsel and Secy.
- **Denise Strack**, C.I.O.
- **Kenneth G. Moore ***, Dir., San Francisco Bay Area Prog.
- **Bruce Alberts, Ph.D.**
- **Rosina Bierbaum, Ph.D.**
- **James C. Gaither**
- **John Hennessy, Ph.D.**
- **Kathleen Justice-Moore**
- **Kristen L. Moore**
- **Steven E. Moore**
- **Kenneth F. Siebel**

Memberships

Regional Associations of Grantmakers

- Northern California Grantmakers

Affinity Groups

- BoardSource
- Canadian Environmental Grantmakers Network

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- Communications Network
- Consultative Group on Biodiversity
- Emerging Practitioners in Philanthropy
- Environmental Grantmakers Association
- Grantmakers for Effective Organizations
- Grantmakers In Health
- Mission Investors Exchange

Associations and Other Philanthropic Organizations

- Council on Foundations
- Grants Managers Network
- GuideStar USA
- Independent Sector

Financial Data

Year ended 2012-12-31

Assets: \$5,697,258,026 (market value)

Expenditures: \$286,605,357

Total giving: \$233,047,309

Qualifying distributions: \$259,717,649

Giving activities include:

\$233,047,309 for 1146 grants (high: \$7,500,000; low: \$50)

\$1,935,000 for foundation-administered programs

Additional Location Information

County: Santa Clara

Metropolitan area: San Jose-Sunnyvale-Santa Clara, CA

Congressional district: California District 18

Selected Grants

The following grants are a representative sample of this grantmaker's funding activity:

- \$9,372,943 to Johns Hopkins University, Baltimore, MD, in 2012. For Intensive Care Unit (ICU)/Acute Care Multi-site Demonstration Project in Maryland and San Francisco
- \$7,500,000 to University of California, Oakland, CA, in 2012. Toward completion of the early construction phase of the Thirty Meter Telescope, built on Mauna Kea volcano on the island of Hawaii. Telescope will be the first of the next-generation giant optical/infrared ground-based telescopes capable of peering into the beginning of the universe

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- \$7,500,000 to California Institute of Technology, Pasadena, CA, in 2012. Toward completion of the early construction phase of the Thirty Meter Telescope, built on Mauna Kea volcano on the island of Hawaii. Telescope will be the first of the next-generation giant optical/infrared ground-based telescopes capable of peering into the beginning of the universe
- \$5,000,000 to Resources Legacy Fund Foundation, Sacramento, CA, in 2012. For continued implementation of the Marine Life Protection Act (MLPA) in California, including MPA Monitoring Enterprise
- \$4,793,230 to Wildlife Conservation Society, Bronx, NY, in 2012. To develop and consolidate national and regional protected area monitoring programs in Bolivia, Peru, Ecuador, Colombia, and Brazil; to continue implementing management and infrastructure mitigation practices in protected areas of the Madidi Landscape in Bolivia; and to integrate protected area management plans with municipal and state level development plans in Pastaza, Ecuador and Loreto, Peru
- \$4,272,740 to World Wildlife Fund, Washington, DC, in 2012. To complete implementation of protected area management strategies, monitoring, and sustainable finance tools in eight protected areas covering approximately 10.5 million hectares in the Amazon Headwaters region of Peru, Bolivia and Brazil
- \$893,000 to Oregon State University, Corvallis, OR, in 2012. To create a deeper understanding of how the food choices of marine microbes contribute to carbon cycling off of the coast of California. High precision isotope techniques and molecular biology methods will be combined in new ways to characterize the flow of nutrients in marine microbial ecosystems to identify which microbes prefer which types of food molecules and how microeukaryote-bacterium food web interactions influence carbon use patterns
- \$567,300 to Skeena Watershed Conservation Coalition, Hazelton, Canada, in 2012. To increase effectiveness of Skeena First Nations and other communities in promoting precautionary and planned approach to industrial development in sensitive upper watershed areas
- \$536,509 to Veterans Affairs Palo Alto Health Care System, Palo Alto, CA, in 2012. To work to achieve and sustain a 30% reduction in 30-day readmissions and a 15% reduction in 90-day readmissions for patients discharged from the acute inpatient units at the hospital as part of Project RED
- \$511,020 to Wildlife Conservation Society, Bronx, NY, in 2012. To enhance Conservation Trust Fund Investment Survey in order to improve the effectiveness and increase funding of conservation trust funds

6.2.6 Rockefeller Foundation

The following is the summary from the Foundation Center.

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The Rockefeller Foundation



420 5th Ave.

New York, NY United States 10018-2702

Telephone: (212) 869-8500

URL: www.rockefellerfoundation.org

Type of Grantmaker

Independent foundation

Additional Descriptor

- Celebrity: Business

Financial Data

(yr. ended 2012-12-31)

Assets: \$3,695,617,868

Total giving: \$135,082,747

EIN

131659629

990

[2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2004](#) [2003](#) [2002](#) [2001](#) [2000](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

×

990 and 990-PF Forms

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Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010.

Close

Background

Incorporated in 1913 in NY.

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Founded by the late John D. Rockefeller, a prominent industrialist who founded the Standard Oil Co. and who defined the structure of modern philanthropy. His fortune was mainly used to create the modern systematic approach of targeted philanthropy with foundations that have had a major impact on medicine, education, and scientific research. He is also the founder of both The University of Chicago and Rockefeller University.

Limitations

Giving primarily in New York City, Africa, North America, and Southeast Asia.

No grants to individuals for personal aid, or, except in rare cases, for endowment funds or building or operating funds.

Purpose and Activities

Operating both within the United States and around the world, the Rockefeller Foundation supports work that expands opportunity and strengthens resilience to social, economic, health and environmental challenges, affirming its pioneering philanthropic mission since 1913 to "promote the well-being" of humanity.

Program Area(s)

The grantmaker has identified the following area(s) of interest:

Advancing Innovation Processes to Solve Social Problems

This initiative uses private-sector innovation tools and methods to discover social breakthroughs that development organizations and social entrepreneurs can use to respond to the complex circumstances facing poor and vulnerable populations. It supports four primary areas of activity: 1) Testing the value and applicability of commercial innovation models for addressing social problems; 2) Scaling up or replicating existing socially-focused or not-for-profit innovation models; 3) Influencing providers of innovation platforms and techniques to sustainably and systematically provide their services to the social sector; and 4) Encouraging NGOs, researchers, funders, and entrepreneurs focused on pro-poor innovation to use open-innovation models. The program expects to achieve four key outcomes: 1) Test and prove which existing commercial-market models of innovation (such as crowdsourcing, design-thinking, and user-driven innovation) work as effective innovation tools for development; 2) Provide NGOs and other pro-poor, not-for-profit development organizations with the necessary local and global knowledge and capacity to use innovation models to enhance the efficiency and productivity of their work; 3) Enable both users and providers to replicate and scale up the use of and demand for innovation models that have a proven track record of success in addressing development problems to benefit poor communities; and 4) Foster partnerships between developers and providers of innovation tools and the social sector to continue sharing and demonstrating the effectiveness of socially-focused or not-for-profit innovation models.

6.2.6.1.1 Bellagio Center Residency Programs

The residency program offers a serene setting conducive to focused, goal-oriented work, and the unparalleled opportunity to establish new connections with fellow residents from a

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stimulating array of disciplines and geographies. 1) The writing residency is for university and think tank-based academics, researchers, professors, and scientists working in any discipline. The program typically offers one-month residencies for no more than 12 residents at a time. Individuals based at a university or a think tank in any discipline and from any part of the world are welcome to apply. To ensure an intellectually diverse and stimulating environment, the program welcomes projects from all academic disciplines. 2) The arts and literary arts residencies are for composers, fiction and non-fiction writers, playwrights, poets, video/filmmakers, and visual artists who share in the foundation's mission of promoting the well-being of humankind and whose work is inspired by or relates to global or social issues. The program typically offers one-month stays for about three to five artists at a time. Artists of significant achievement from any country are welcome to apply. 3) The practitioner residencies are open to professionals in fields and institutions relevant to the foundation's work. The Center has a strong interest in proposals that align with the foundation's mission to expand opportunities and to strengthen resilience for poor or vulnerable people, in particular projects relevant to the foundation's core issue areas. The foundation works on global health; climate change resilience; urbanization; social and economic security; and food, water, and housing. The program seeks practitioner applicants with demonstrated leadership qualities and the capacity to contribute to the intellectual life at the center. See web site for application guidelines.

Bellagio Creative Arts Fellowships

The program awards fellowships to visual artists whose work demonstrates exceptional originality and is inspired or informs global or social issues. The two-month residency is in a private apartment complete with studio space on the peaceful grounds of the Rockefeller Foundation Bellagio Center, adjacent to Northern Italy's Lake Como. In addition to room and board, each fellow will receive a cash award, round-trip travel expenses to Bellagio, and a printed publication of artwork to be produced after the residency. Each year, an advisory panel of leading international curators and artists identifies nominees from all over the world.

Centennial Innovation Challenge

In celebration of the foundation's centennial, the Centennial Innovation Challenge seeks solutions that will improve livelihoods for workers in the informal economy. It is often out of necessity that 1.8 billion people find their livelihoods in the informal economy -- the business enterprises and jobs that exist partially or fully outside of government regulation. Informal workers lack basic safety nets like pensions and health insurance, and are typically without recourse if denied pay or asked to work in unsafe conditions. Informal employment is a significant and growing part of the world's economy; it accounts for around 50% of employment in North Africa and in Latin America, 65% of employment in Asia and 72% in Sub-Saharan Africa. Given the vast number of informal workers, it is important to spur new innovations that improve workers' livelihoods. As many as ten finalists will or have been considered for a chance to apply for a grant of up to US \$100,000 and win support in proposal-writing to enable the further development of submitted ideas.

6.2.6.1.2 Climate Change Resilience

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The foundation has announced a five-year, \$70 million commitment to build the resilience of communities most likely to be affected by climate change. The foundation's Climate Change Resilience initiative aims to develop the ability of communities to manage and plan for the effects of climate change and to make sure that planning includes the most vulnerable citizens. One component of the initiative will focus on Asian cities. According to the Population Reference Bureau, more than 60% of the increase in the world's urban population in the next thirty years will occur in Asia, which already has a larger urban population than all other regions of the world combined. In addition, a recent study of populations at risk for sea-level rise noted that eight of the top ten countries likely to be affected are in Asia. Another component will focus on raising awareness in the United States and exploring relevant solutions. The destruction in recent years caused by hurricanes, record heat waves, and wildfires, as well as the introduction of climate adaptation plans in Seattle, New York City, and California, underscores the foundation's belief in the increasing importance of the need to expand domestic efforts to build resilience to climate change. Part of the effort will require developing a shared agenda between groups working on climate change mitigation as well as those working on building resilience to climate change. Africa, where vulnerability to climate change is very high, will also be a focal point of the initiative. Given the dependence on rain-fed agriculture in parts of sub-Saharan Africa, the growing season there could decrease as much as 20 percent.

Helping Build an Impact Investing Industry

The initiative aims to overcome the major obstacle to the growth of the impact investing industry using 4 strategies: 1) Catalyzing platforms for collective action that enable leading impact investors and intermediaries to coordinate efforts, such as disseminating standards, and sharing information; 2) Supporting the development of scaled intermediation vehicles that help absorb impact investments at a scale necessary to attract the institutional investors who control the lion's share of global capital; 3) Building industry-wide infrastructure that enables broader and more effective participation in the impact investing industry; 4) Supporting research and advocacy efforts that promote an analytical understanding of the impact investing industry and take necessary steps to facilitate its maturation. Key outcomes sought include: 1) Spark collective action platforms for impact investing industry leaders; 2) Develop industry infrastructure that can sustainably support impact investors; 3) Support scaling of organizations and structures (such as private equity funds and investment clubs)

Jane Jacobs Medal

In 2007, the year after the visionary urban activist Jane Jacobs died, the foundation launched the Jane Jacobs annual award to honor her work. This medal reaffirms the foundation's commitment to New York City by recognizing those whose creative uses of the urban environment build a more diverse, dynamic and equitable city. Medals are awarded to two living persons whose accomplishments represent Jane Jacobs' principles and practices in action in New York City. The selection of the winners and allocation of the prize money—totaling \$200,000—are decided by the members of a medal selection jury. The first award recognizes leadership and lifetime contribution. The second award recognizes new ideas and activism. Together the medalists represent the creativity, innovation and dynamism of New York City.

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Linking Global Disease Surveillance Networks

The initiative is working to establish transnational detection, monitoring and communications systems to strengthen disease prevention. This initiative aims to mitigate the impact of disease outbreaks through three strategies: 1) Optimizing individual and institutional capacity for disease surveillance in two regions at highest risk-the Mekong region in Asia and both Eastern and Southern Africa; 2) Promoting collaboration in disease surveillance and response across countries and within regions to improve horizontal communication and knowledge sharing; 3) Building bridges between disease surveillance networks and international agencies-and connections between animal health, human health and environmental health-through the One Health approach-increasing the efficiency of global systems for disease surveillance and response. Key outcomes the program works toward include: 1) Set up transboundary disease surveillance networks in Southeast Asia, and in Eastern and Southern Africa; 2) Give disease surveillance practitioners and their institutions better capacity; 3) Provide disease surveillance practitioners with better access to improved tools; and 4) Ensure that policymakers, human health and veterinary practitioners take a trans-disciplinary approach.

New York City Opportunities Fund

Through the fund the Foundation supports three primary projects. 1) The NYC Cultural Innovation Fund supports creativity and the arts, with an emphasis on innovation. It awards two-year grants, ranging from \$50,000 to \$250,000, for groundbreaking creative work that enriches the city's cultural life and strengthens the role that the arts will play in the future of New York. 2) The Jane Jacobs Medal honors the work of Jane Jacobs by recognizing those whose creative uses of the urban environment build a more diverse, dynamic and equitable city. 3) Opportunity NYC, which recognizes the day-to-day challenges faced by low-income people. The program provides payment to low-income families and individuals to increase participation in three targeted activities-education, health and employment-to maximize their chances of breaking the inter-generational cycle of poverty.

Promoting Equitable, Sustainable Transportation Policies

The initiative advocates for investment in affordable, environmentally-responsible transit. This initiative supports strategies at the national and local level. At the federal level, the program funds policy analysis and research that informs a new transportation policy for America, encourages national leaders and grassroots leaders to embrace a new policy agenda and promotes and coordinates philanthropic participation in transportation work. On the state and local level, the program resources advocacy efforts to encourage state/metro reform, builds the internal capacity of state departments of transportation and metro planning organizations, and encourages sustainability and equity through market and consumer levers. The initiative seeks three key outcomes: 1) Policy: Policymakers at all levels of government in the United States will have actionable and practical research and analytical support to advance equitable, sustainable and economically beneficial transportation policies; 2) Capacity: A diverse constituency of national and grassroots leaders will be able to influence debates, positions and issues in transportation, and to hold leaders accountable; 3) Expanded Partnerships: An ongoing network of philanthropic and major donor partners will continue to support federal efforts in sustainable

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transportation solutions, sustain regional ones and maintain reform infrastructure beyond the conclusion of the initiative's support.

Protecting American Workers Economic Security: Campaign for American Workers

The Campaign for American Workers initiative recognizes that there is danger in the growth of economic insecurity, but there is also opportunity. The initiative focuses on three primary strategies: 1) Promoting policies and tools to increase savings and retirement security; 2) Fostering demonstrations that ensure more secure and portable health care coverage; and 3) Supporting evidence-based analysis of proposed and current policies on economic security of American workers, particularly the most vulnerable and disadvantaged workers. Key outcomes the initiative is working to achieve include: 1) Improve knowledge and understanding among policymakers and thought leaders of the need for and pathways to a new social contract to improve economic security; 2) Implement public-private partnerships, new institutional arrangements and pilot projects that result in workers having greater access to health care, predictable savings and retirement income; and 3) Explore policy and program innovations that help guide federal and state legislators on workable options to increase economic security through access to quality jobs and health care, and easier, more effective ways to save for today and in retirement.

Rebuilding New Orleans

The Rebuilding New Orleans Initiative, which has supported the successful process to develop a Unified New Orleans Plan, is in its final phase. Over the next years, the foundation will support the implementation of many of the ideas in the UNOP and build thriving and diverse neighborhoods including: working closely with Greater New Orleans Foundation, providing strategic support for professional staff, and supporting national and community-based organizations working to rebuild the city.

Strengthening Food Security: Alliance for Green Revolution in Africa

This initiative helps make food supplies secure by working with smallholder farmers to achieve rapid and sustainable agricultural growth with their staple crops. The focus of the program is on: 1) Improving access to more resilient seeds that produce higher and more stable yields; 2) Promoting soil health and productivity; 3) Building more efficient local, national and regional, agriculture markets; and 4) Promoting improved policies and building partnerships to develop the technological and institutional changes needed to achieve a Green Revolution. The program seeks four outcomes: 1) Science, knowledge and technology are disseminated and used by African small-scale farmers to rapidly increase agricultural productivity in ways that are sustainable and environmentally friendly; 2) Small-scale farmers achieve Increased productivity, income and profit in 10 or more African countries by giving them greater access to markets for their staple crops; 3) Policies, infrastructure and financial incentive mechanisms are in place regionally and nationally to provide a supportive and sustainable environment for agricultural transformations; and 4) Alliances and platforms are developed collaboratively with bilateral and multilateral partners, national governments, research organizations, farmers' organizations and others to address the need for greater agricultural productivity, resource mobilization, and human resources to achieve food security.

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Transforming Health Systems

This initiative helps improve the health of more people through greater access to timely, appropriate, and affordable health services through four strategies: 1) Fostering health systems research and agenda setting for universal health coverage; 2) Enhancing professional capacity to plan and manage high-performing health systems; 3) Harnessing the resources of the private sector to finance and deliver health services; and 4) Leveraging interoperable eHealth systems. Key outcomes the program strives for are: 1) Inform leadership and public policy so that universal health coverage is accepted as a feasible and desirable goal and is adopted by a growing number of national governments; 2) Build capacity in both public and private sectors for enhanced development and stewardship of health systems in selected countries; and 3) Support innovation, tools, and global public-private partnerships and networks to develop interoperable eHealth systems that improve quality, access and affordability of health services in selected countries.

Fields of Interest

Subjects

- Community/economic development
- Environment, climate change/global warming
- Health care
- International economic development

International Interests

- Global Programs

Geographic Focus

- National, International
- New York

Types of Support

- Conferences/seminars
- Continuing support
- Curriculum development
- Employee matching gifts
- Fellowships
- General/operating support
- Program development
- Program-related investments/loans
- Publication
- Research

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- Scholarships--to individuals
- Seed money
- Technical assistance

Publications

- Annual report (including application guidelines)
- Financial statement
- Grants list

Application Information

Organizations submitting inquiries that foundation staff thinks might contribute to a defined area of work will be asked to submit a full proposal. Please do not send a proposal by mail or e-mail unless invited to do so. See foundation web site for the Ballagio Center application information.

Application form not required.

Initial approach: Online funding inquiry form

Copies of proposal: 1

Board meeting date(s): Apr., Aug., and Dec.

Deadline(s): April 1 for Centennial Innovation Challenge

Final notification: 6 to 8 weeks

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- John D. Rockefeller, Sr. ‡

Officers and Trustees

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **David Rockefeller, Jr. ***, Chair.

Affiliation(s):

Rockefeller &

Co., Dir.

MoMA, Tr.

Asian Cultural Council, Tr.

Council on Foreign Relations, Member

- **Dr. Judith Rodin ***, Pres.

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Affiliation(s):

Citigroup Inc., Dir.

The White House Council for Community Solutions, Council Member

Comcast Corp., Dir.

- **Peter Madonia**, C.O.O.
- **Neill Coleman**, V.P., Global Communications
- **Zia Khan**, V.P., Initiatives and Strategy

Affiliation(s):

Spark, Board Member

- **Shari L. Patrick**, Genl. Counsel and Corp. Secy.
- **Ellen Taus**, C.F.O. and Treas.

Affiliation(s):

Common Ground, Board Member

- **Donna Dean**, C.I.O.

Affiliation(s):

Queens University of Charlotte, Tr.

- **Dominick Impemba**, Cont.

Affiliation(s):

The Foundation Center, Trustee

- **Ann M. Fudge**

Affiliation(s):

Young &

Rubicam, Retired Chair. and C.E.O.

General Electr, Dir.

Novartis, Dir.

Unilever, Non-Exec. Dir.

Brookings Institution, Tr.

Council on Foreign Relations, Dir.

- **Helene D. Gayle**

Affiliation(s):

CARE USA, C.E.O. and Pres.

Center for Strategic and International Studies, Tr.

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ONE, Dir.

American Museum of Natural History, Tr.

Council on Foreign Relations, Member

- **Alice S. Huang**

Affiliation(s):

California Institute of Technology, Professor

Waksman Foundation for Microbiology, Tr.

- **Martin L. Leibowitz**

Affiliation(s):

Morgan Stanley, Managing Dir.

- **Yifei Li**

Affiliation(s):

Man Group China, Country Chair.

GAVI, Global Board Member

China International Alternative Investment Association, Founder and Secretary-General

- **Monica Lozano**

Affiliation(s):

impreMedia, C.E.O.

La Opinion, C.E.O. and Publisher

President's Council on Jobs and Competitiveness, Member

Bank of America, Dir.

Walt Disney Company, Dir.

University of Southern California, Tr.

- **Strive Masiyiwa**

Affiliation(s):

Econet Wireless International, C.E.O.

- **Diana Natalicio**

Affiliation(s):

University of Texas at El Paso, Pres.

American Council on Education, Board Member

- **Dr. Ngozi Okonjo-Iweala**

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Affiliation(s):

*Federal Republic of Nigeria, Coordinating Minister for the Economy and Minister of Finance
ONE, Dir.*

Nelson Mandela Institution, Chair.

Friends of the Global Fund Africa, Dir.

Center for Global Development, Dir.

- **Richard D. Parsons**

Affiliation(s):

Providence Equity Partners LLC, Sr. Advisor

Apollo Theater, Chair.

MoMA, Tr.

Estee Lauder, Dir.

President's Council on Jobs and Competitiveness, Member

- **John W. Rowe**

Affiliation(s):

Columbia University Mailman School of Public Health, Prof.

Marine Biological Laboratory in Woods Hole, Chair., Board of Trustees

- **Ravi Venkatesan**

Staff

Number of Staff

171 full-time professional

2 part-time professional

Key Staff

Note: Does not include officers.

- **Michael Berkowitz**, Managing Dir., 100 Resilient Cities
- **Mamadou Biteye**, Managing Dir., Africa
- **Fred Boltz**, Managing Dir., Ecosystems
- **Ashvin Dayal**, Managing Dir., Asia
- **Pamela Foster**, Managing Dir., Prog. Oper. and Assoc. Genl. Counsel
- **Robert Garris**, Managing Dir.
- **John Irons**, Managing Dir.
- **Claudia Juech**, Managing Dir.
- **Nancy Kete**, Managing Dir.

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- **Scott Leeb**, Managing Dir.
- **Nancy MacPherson**, Managing Dir.
- **Saadia Madsbjerg**, Managing Dir.
- **Michael Myers**, Sr. Policy Off. and Dir. of Central Programming
- **Pilar Palacia**, Managing Dir.
- **Gary H. Toenniessen**, Managing Dir.
- **Jeanette Vega**, Managing Dir., Health Prog.
- **Maxwell Young**, Comm. Dir., 100 Resilient Cities

Memberships

Regional Associations of Grantmakers

- Philanthropy New York

Affinity Groups

- Africa Grantmakers' Affinity Group
- Environmental Grantmakers Association
- Funders' Network for Smart Growth and Livable Communities
- Grantmakers for Effective Organizations
- Grantmakers In the Arts
- International Human Rights Funders Group
- Mission Investors Exchange
- National Committee for Responsive Philanthropy
- Neighborhood Funders Group

Associations and Other Philanthropic Organizations

- Council on Foundations
- GuideStar USA
- Independent Sector
- Women & Philanthropy

Financial Data

Year ended 2012-12-31

Assets: \$3,695,617,868 (market value)

Expenditures: \$203,195,149

Total giving: \$135,082,747

Qualifying distributions: \$183,007,418

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Giving activities include:

\$128,785,586 for 634 grants (high: \$5,000,000; low: \$1,000)

\$196,989 for 8 grants to individuals (high: \$50,000; low: \$11,400)

\$1,674,474 for 350 employee matching gifts

\$4,425,698 for 1 foundation-administered program

\$3,557,463 for 7 loans/program-related investments

Additional Location Information

County: New York

Metropolitan area: New York-Northern New Jersey-Long Island, NY-NJ-PA

Congressional district: New York District 12

Selected Grants

The following grants are a representative sample of this grantmaker's funding activity:

- \$5,000,000 to Alliance for a Green Revolution in Africa, Nairobi, Kenya, in 2012. Toward initiating work relevant to new strategy and Rockefeller Foundation's new Issue Areas
- \$2,150,000 to Smart Growth America, Washington, DC, in 2012. Toward advocacy campaign, Transportation for America (T4 America), that seeks to advance more sustainable and equitable national transportation policies to improve the lives of low-income and vulnerable people
- \$1,999,965 to Wildlife Conservation Society, Bronx, NY, in 2012. For collaboration with Harvard University and other partners to conduct pilot projects in Indonesia and Madagascar examining the relationship between conserved ecosystems and improved human health, ultimately resulting in the identification of policy and management changes that would improve both the state of the environment and the health of poor or vulnerable people
- \$1,641,250 to World Health Organization, Geneva, Switzerland, in 2012. To develop a strategy toward a United Nations General Assembly resolution on Universal Health Coverage and embedding it within the post-2015 agenda, developing a framework for its definition, goals, indicators, targets, timelines and monitoring mechanisms, and conducting consultations to implement country-level strategies for achieving it
- \$1,250,000 to Social Finance, Boston, MA, in 2012. Toward a guarantee facility to leverage commercially-oriented capital to capitalize a social impact bond addressing workforce development for formerly incarcerated individuals in New York and to ensure the catalytic use of philanthropic funds to engage the broader capital markets in creating a sustainable social impact bond market to scale solutions to poor or vulnerable populations in the U.S
- \$325,000 to Indian Council for Research on International Economic Relations, New Delhi, India, in 2012. For research in four Asian Cities Climate Change Resilience Network cities in India (Surat, Gorakhpur, Pune and Cochin) to enable a robust policy dialogue with

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government and the private sector on strengthening the economic competitiveness of cities by investing in urban climate change resilience

- \$310,504 to Georgetown University, Washington, DC, in 2012. To establish secretariat for the Joint Action and Learning Initiative on National and Global Responsibilities for Health international multi-organization effort to foster universal health coverage research, policy and framework development
- \$300,000 to Piedmont Environmental Council, Warrenton, VA, in 2012. For project, Coalition for Smarter Growth, to conduct a public education and communications campaign to help build support for Bus Rapid Transit investments in Montgomery County, Maryland and to extract lessons about effective communications strategies around Bus Rapid Transit projects
- \$200,000 to Villgro, Chennai, India, in 2012. Toward Social Entrepreneur and Enterprise Development (SEED), program which trains early-stage social entrepreneurs to refine their business model and scale their social impact to create positive benefits for poor or vulnerable people in India

6.2.7 United Nations Foundation

The following is the summary found at The Foundation Center.

United Nations Foundation

1750 Pennsylvania Ave. N.W., Ste. 300

Washington, DC United States 20006

Telephone: (202) 887-9040

Fax: (202) 887-9021

URL: www.unfoundation.org

Type of Grantmaker

Public charity

Additional Descriptor

- Celebrity: Business; Entertainment
- Organization that normally receives a substantial part of its support from a governmental unit or from the general public

Financial Data

(yr. ended 2012-12-31)

Assets: \$270,882,893

Total giving: \$83,162,074

EIN

582368165

990

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[2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#) [2004](#) [2003](#) [2002](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

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990 and 990-PF Forms

The Foundation Center displays Forms 990 and 990-PF in the form displayed by the Internal Revenue Service (IRS) as filed by the applicable nonprofit organization. The Foundation Center does not control information in the tax returns that it receives from the IRS. If a user believes any information in a return should not be displayed or is incorrect, we encourage you to contact the organization that prepared the return. You may also inform the [Foundation Center](#), which will use reasonable efforts to remove information, where appropriate. The Foundation Center makes no warranty of any nature about any information in tax returns displayed on its web site.

Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010.

Close

Background

Established in 1998 in NY.

Founded by R.E. "Ted" Turner III, the businessman and activist who founded cable television network CNN in 1980, which became the first dedicated 24-hour cable news channel. Turner also founded the cable channels TNT (in 1998), and Turner Classic Movies (in 1994). In 1986 he established Turner Entertainment Co. to oversee film properties that he owned, and also started Turner Broadcasting System, Inc. (TBS) which is the company managing the collection of cable networks and properties he started in the mid-1970's. In addition, Mr. Turner is the founder of The Goodwill Games, and in 1991 he was named Time Magazine's Man of the Year. In 1998 he made headlines by announcing a \$1 billion donation to the United Nations. Ted Turner has committed to The Giving Pledge, and has pledged to give away at least half of his wealth to philanthropy.

Limitations

Giving on an international basis.

No grants to individuals.

Purpose and Activities

The foundation promotes a more peaceful, prosperous, and just world through the support of the United Nations.

Fields of Interest

Subjects

- Civil liberties, reproductive rights
- Civil/human rights

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- Environment
- International affairs, U.N.
- International development
- International human rights
- Population studies
- Reproductive health

Geographic Focus

- International

Types of Support

- Program development
- Program evaluation

Application Information

Unsolicited requests for funds not considered or acknowledged.
Application form not required.

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- R.E. "Ted" Turner, III

Officers and Directors

Note: An asterisk () following an individual's name indicates an officer who is also a trustee or director.*

- **R.E. Turner, III ***, Chair.

Affiliation(s):

Turner Foundation, Inc., Chair.

Nuclear Threat Initiative, Co-Founder and Co-Chair.

Ted Turner Pictures, Founder

Ted Turner Documentaries, Founder

Turner Enterprises, Inc., Chair.

- **Timothy E. Wirth ***, Vice-Chair.
- **Kathy Calvin ***, Pres. and C.E.O.

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- **Andrew Axelrod ***, V.P.
- **Reid Detchon ***, V.P.
- **Elizabeth Gore ***, V.P.
- **Jennifer Kim Field ***, V.P., Global Partnerships
- **Susan Myers ***, V.P.
- **Aaron Sherinian ***, V.P.
- **Peter Yeo ***, V.P.
- **Shamir Shahi**, Exec. Dir.
- **Walter Cortes ***, C.F.O.
- **Richard S. Parnell ***, C.O.O.
- **H.M. Queen Rania Al-Abdullah**

Affiliation(s):

Better World Fund, Tr.

Jordan River Foundation, Chair.

FINCA International, Inc., Dir. Emeritus

International Youth Foundation, Dir.

UNICEF, Eminent Global Advocate for Children

- **Kofi Annan**
- **Fabio Colletti Barbosa**

Affiliation(s):

Abril Group, C.E.O.

- **Gro Harlem Brundtland**
- **Igor Ivanov**

Affiliation(s):

Moscow State Institute for International Relations, Prof.

Nuclear Threat Initiative, Dir.

Luxembourg Forum on Preventing Nuclear Catastrophe, Dir.

- **Yuan Ming**

Affiliation(s):

Peking University, Vice-Dean, School of International Studies, and Dir., Institute of International Rels.

Chinese People's Political Consultative Conference, Member

- **N.R. Narayana Murthy**

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Affiliation(s):

Infosys Technologies Limited, Chair. and Chief Mentor

Indian Institute of Information Technology, Chair.

Indian Institute of Management, Chair.

University of Pennsylvania, Member, Board of Overseers, Wharton School

Cornell University, Tr.

Singapore Management University, Tr.

Tuck School of Business, Member, Board of Advisors, William F. Ahtmeier Ctr. for Global Leadership

Stanford Graduate School of Business, Member, Advisory Council

Yale University, Member, President's Council on Intl. Activities

DBS Bank, Dir.

Reserve Bank of India, Dir., Central Board

Indo-British Partnership, Co-Chair.

Prime Minister of India's Council of Trade and Industry, Member

British Telecommunications Plc., Member, Asia Pacific Advisory Board

New Delhi Television Ltd., Board Member

- **Amb. Hisashi Owada**

Affiliation(s):

Institute of International Law (Associe de L'Institut de Droit International), Assoc. Member

- **Emma Rothschild**

Affiliation(s):

Harvard University, Prof., History

- **Nafis Sadik, M.D.**

Affiliation(s):

United Nations, Special Adviser to the Secy.-Genl.

- **Andrew J. Young**

Affiliation(s):

GoodWorks International, Chair.

- **Muhammad Yunus**

Affiliation(s):

Grameen Foundation, Chair.

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Memberships

Affinity Groups

- Africa Grantmakers' Affinity Group
- Environmental Grantmakers Association
- Funders Concerned About AIDS
- Funders Network on Population, Reproductive Health and Rights
- International Human Rights Funders Group
- Peace and Security Funders Group
- The Nonprofit Technology Network

Associations and Other Philanthropic Organizations

- Council on Foundations
- Independent Sector
- Women & Philanthropy

Financial Data

Year ended 2012-12-31

Assets: \$270,882,893 (market value)

Gifts received: \$122,162,810

Expenditures: \$134,850,608

Total giving: \$83,162,074

Qualifying distributions: N/A

Giving activities include:

\$11,923,745 for grants

Additional Location Information

County: District of Columbia

Metropolitan area: Washington-Arlington-Alexandria, DC-VA-MD-WV

Congressional district: District of Columbia District At-large

6.2.8 Qatar Foundation

The following is from the Qatar Foundation website:

Vision

Through education and research, Qatar Foundation leads human, social, and economic development of Qatar; making Qatar a nation that can be a vanguard for productive change in the region and a role model for the broader international community.

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Mission

Qatar Foundation for Education, Science and Community Development is a private, non-profit organization that serves the people of Qatar by supporting and operating programs in three core mission areas: education, science and research, and community development. The Foundation strives to nurture the future leaders of Qatar. By example and by sharing its experience, the Foundation also contributes to human development nationally, regionally, and internationally. In all of its activities, the Foundation promotes a culture of excellence in Qatar and furthers its role in supporting an innovative and open society that aspires to develop sustainable human capacity, social, and economic prosperity for a knowledge-based economy.

6.2.9 Schmidt Ocean Institute

Schmidt Ocean Institute

555 Bryant St., Ste. 374
Palo Alto, CA United States 94301
URL: www.schmidtocean.org

Type of Grantmaker

Independent foundation

Financial Data

(yr. ended 2011-12-31)
Assets: \$87,705,398
Total giving: \$0

EIN

264562328

990

[2012](#) [2011](#) [2010](#) [2009](#)

[Learn more](#) about the information displayed in Forms 990 and 990-PF, as well as processing errors announced by the IRS.

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990 and 990-PF Forms

The Foundation Center displays Forms 990 and 990-PF in the form displayed by the Internal Revenue Service (IRS) as filed by the applicable nonprofit organization. The Foundation Center does not control information in the tax returns that it receives from the IRS. If a user believes any information in a return should not be displayed or is incorrect, we encourage you to contact the organization that prepared the return. You may also inform the [Foundation Center](#), which will use reasonable efforts to remove information, where appropriate. The Foundation Center makes no warranty of any nature about any information in tax returns displayed on its web site.

Notice: The IRS has announced processing errors on electronically filed Forms 990 for filing years 2007-2010. [Learn more »](#)

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Close

Application Information

Unsolicited requests for funds not accepted.

Application form not required.

Donor(s)

Note: If a donor is deceased, the symbol (‡) follows the name.

- Schwab Charitable Fund
- Big Hen Group I LLC.

Officers

- **Eric Schmidt**, Pres.
- **Wendy Schmidt**, V.P.
- **John Kelly**, C.F.O.
- **Teling Peterson**, Secy.
- **Henry Chik**, Treas.

Financial Data

Year ended 2011-12-31

Assets: \$87,705,398 (market value)

Gifts received: \$27,000,000

Expenditures: \$11,745,086

Total giving: \$0

Qualifying distributions: \$27,017,691

Additional Location Information

County: Santa Clara

Metropolitan area: San Jose-Sunnyvale-Santa Clara, CA

Congressional district: California District 18

From their website <http://schmidtocean.org/story/show/366>

Vision and Mission

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[R/V Falkor during the first sea trials. "The purpose of this ship, as she leaves on her various missions, is to communicate about the science of the oceans to people so that they can care about it. We can't take care of something that we don't understand and we can't care if we don't know." - Wendy Schmidt, March 6, 2012. Image credit: Heidi Elaine](#)

Schmidt Ocean Institute was established to advance the frontiers of ocean research and exploration through innovative technologies, intelligent observation and analysis, and open sharing of information.

Vision

The world's oceans understood through technological advancement, intelligent observation, and open sharing of information.

Mission

We combine advanced science with state-of-the-art technology to achieve lasting results in ocean research, to catalyze sharing of the information, and to communicate this knowledge to audiences around the world. We foster a deeper understanding of our environment.

Focus Areas

We approach oceanographic research from the technological, operational, and informational perspectives: We maintain and operate R/V Falkor as a technologically advanced scientific platform suitable to support multidisciplinary oceanographic research and technology development. We provide our collaborators with free access to R/V Falkor with her on-board research facilities and expert technical support in exchange for a commitment to openly share and communicate the outcomes of their research, including the raw observations and data. Our

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oceanographic research and technology development program is structured around the following focus areas:

1. Advancing At-Sea Research Infrastructure

Due to the large scale of the ocean, substantial infrastructural innovations will be necessary to instrument and characterize it pervasively, e.g. innovative instrument delivery vehicles, communications, control and power autonomy, etc. This mission area emphasized oceanographic research projects that make effective use of innovative methods and technologies for cost-efficient characterization of the ocean, such as, for example, robotic remotely controlled or autonomous research platforms and vehicles.

Metrics of Success: Reduction of efforts and costs necessary to support oceanographic data collection or instrument operation while maintaining or improving the data collection capabilities. Examples may include the reduction of efforts or costs associated with the deployment, operation, maintenance / provisioning, and data exchange with deployed instruments attributable to the research infrastructure improvements.

2. Instrumenting the Ocean

The ocean is notoriously under-sampled. Large volumes of ocean are poorly characterized. This mission area emphasizes oceanographic research projects that promise to make effective exemplary use of or facilitate further development of capabilities for pervasive ocean data collection with high spatial and temporal resolution.

Metrics of Success: Improvement in spatial and temporal resolution of acquired oceanographic sensor data; Increase in ocean characterization coverage with deployed instruments.

3. Technology Innovation for Ocean Sciences

Due to the large scale of the ocean, enabling pervasive ocean sensing would require innovative cost-efficient sensors and instruments suitable for being mass-produced, deployed, and reliably operated at sea over extended periods of time without human support. This focus area emphasizes projects that facilitate or exemplify technical innovation in sensor and instrument design, fabrication, operation, and maintenance aiming to make pervasive ocean characterization more feasible technically and/or economically.

Metrics of Success: Sensor and instrument capability and utility advancement while reducing the costs of their design, fabrication, deployment, operation, and maintenance through the improvements in the instrument technology and design.

4. Open Sharing of Information

Limited availability of information about the oceans inhibits the growth of its user community and development of new applications for this information. By openly sharing the ocean data, we can help create new applications that use this data, which will in turn stimulate the growth

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of user community, and trigger further exploration, discovery, and deeper understanding of the oceans.

Metrics of Success: Degree of open availability of collected oceanographic information and data and its utility for the user community.

5. Supporting Hi-Tech Science at Sea

This focus area aims to leverage the SOI research fleet to provide access to sea to our collaborators carrying out oceanographic research as well as development of new methods and technologies for oceanographic data collection, analysis, interpretation, and open sharing.

Metrics of Success: Number and impact of established effective examples of using technologically advanced innovative scientific methods to support more productive marine science at sea.

6. Training the Next Generation of Researchers and Technology Developers

This area focuses on providing opportunities for at-sea training of the next generation of researchers, technology developers, and ocean scientists, who will continue to advance the state of the art in oceanographic research technologies and open sharing of the data about the oceans in the future.

Metrics of Success: Number and cumulative impact of ocean research and technology development experts inspired by SOI projects and programs.

Values

The following values embody our culture and work practices:

- **Integrity:** We are committed to the highest ethical standards.
- **Accountability:** We honor our commitments.
- **Professionalism:** We take disciplined and informed approach in planning our activities. We are diligent in execution and performance evaluations. We learn from both our successes and failures.
- **Collaboration:** We appreciate that our impact is leveraged by the efforts, knowledge, and resources of our collaborators.
- **Sharing:** We openly share our knowledge and discoveries.
- **Open-mindedness:** We keep our minds open to perspectives that are different from our own.

6.3 Appendix 3: Government Agencies

6.3.1 United States Agencies

6.3.1.1 United States Funding Programs

A listing containing over 1700 programs funded by the United States Government can be found at <http://funding-programs.idilogic.aidpage.com/>. The following listing was redacted from the primary list to those programs that were focused on science and technology.

This resulted in focusing on those agencies most involved in the funding of science and technology.

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Program Purpose	Organization	Applicability	Web Reference
To increase the effectiveness of research and the quality of education in the environmental sciences by facilitating cooperation between government, university, and nonprofit research institutions	DoC, NOAA	Possible	http://office-of-oceanic-and-atmospheric-research-oar-joint-and-cooper.idilogic.aidpage.com/office-of-oceanic-and-atmospheric-research-oar-joint-and-cooperative-institutes/
To mitigate earthquake losses that can occur in many parts of the nation providing earth science data and assessments essential for warning of imminent damaging earthquakes, land-use planning, engineering design, and emergency preparedness decisions.	DoI, Geological Survey	Possible	http://earthquake-hazards-reduction-program.idilogic.aidpage.com/earthquake-hazards-reduction-program/
To provide financial and technical assistance via partnerships to identify, protect, and restore habitats in priority coastal areas.	DoInterior, US Fish and Wildlife Service	Possible	http://coastal-program.idilogic.aidpage.com/coastal-program/
Support research (1) to determine the environmental effects of air quality, drinking water, water quality, hazardous waste, toxic substances and pesticides; (2) to identify, develop and demonstrate necessary and effective pollution control techniques; and (3) to explore and develop strategies and mechanisms for those in the economic, social, governmental and environmental systems to use in environmental management decisions.	EPA, Office of Research and Development	Possible	http://environmental-protection-consolidated-research.idilogic.aidpage.com/environmental-protection-consolidated-research/
To expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay. EPA's funding priority is to achieve the goals and commitments established in the Chesapeake 2000 agreement. As a means to achieve the goals and commitments of the historic 1983 Chesapeake Bay Agreement to the current Chesapeake 2000 Agreement, assistance agreements are awarded to: Nonprofit organizations, State and local governments, colleges, universities, and interstate agencies. The type of projects that are awarded range from monitoring of bay toxins to environmental education. Funding Priority: The five overarching commitments laid out in the Chesapeake 2000 agreement define the funding priorities for the Chesapeake Bay Program.	EPA, Office of Water	Possible	http://chesapeake-bay-program.idilogic.aidpage.com/chesapeake-bay-program/
To work in partnership with industry to foster the development and broad dissemination of challenging, high-risk technologies that offer the potential for significant, broad-based economic benefits for the nation.	Dept of Commerce, NIS&T	YES	http://advanced-technology-program.idilogic.aidpage.com/advanced-technology-program/
NOAA's Coastal Ocean Program in the Center for Sponsored Coastal Ocean Research (CSCOR/COP) is a unique Federal- academic partnership designed to provide predictive capability for managing coastal ecosystems.	DoC, NOAA	YES	http://center-for-sponsored-coastal-ocean-research-coastal-ocean-program.idilogic.aidpage.com/center-for-sponsored-coastal-ocean-research-coastal-ocean-program/
To develop the knowledge required to establish a predictive capability for short and long-term climate fluctuations and trends.	DoC, NOAA	YES	http://climate-and-atmospheric-research.idilogic.aidpage.com/climate-and-atmospheric-research/
To support projects aimed at developing a science-based, multi-dimensional approach that will allow for the maintenance or improvement of environmental quality while at the same time allowing for economic growth	DoC, NOAA	YES	http://coastal-services-center.idilogic.aidpage.com/coastal-services-center/
To support studies relevant to the diagnosis and prediction of short-term climate fluctuations.	DoC, NOAA	YES	http://short-term-climate-fluctuations.idilogic.aidpage.com/short-term-climate-fluctuations/
As indicated in NOAA special announcements or applicable reports supportive of the Department's goal to expand knowledge of and to manage effectively the Nation's oceanic and atmospheric resources.	DoC, NOAA	YES	http://special-oceanic-and-atmospheric-projects.idilogic.aidpage.com/special-oceanic-and-atmospheric-projects/
To strengthen and enhance the national scientific enterprise through the expansion of fundamental knowledge and increased understanding of the integrated Earth system through the support of basic research in the atmospheric, earth and ocean sciences. Major objectives include the discovery of new knowledge of the atmosphere from the sun to the Earth's surface over the entire spectrum of physical and chemical phenomena; a better understanding of the physical, chemical, and biological character of the Earth and the processes that govern its evolution; and increased insight into the world's oceans, their composition, structure, behavior, and tectonics. Support is also provided for science and technology centers, undergraduate Student research, facility enhancement, instrumentation, and laboratory equipment; and for research opportunities for women, minority, and disabled scientists and engineers.	NSF	YES	http://geosciences.idilogic.aidpage.com/geosciences/
To strengthen and enhance the national scientific enterprise through the expansion of fundamental knowledge and increased understanding of the polar regions. To encourage and support basic research in the Arctic and Antarctic focused on the solid earth, glacial and sea ice, terrestrial ecosystems, the oceans, the atmosphere and beyond. Major objectives include understanding of the natural phenomena and processes in the Antarctic and Arctic regions and their role in global systems. To provide postdoctoral fellowships for the development and training of new investigators in polar regions research with goals to support innovative research in emerging areas, encourage interdisciplinary research, foster activities that create broader impacts for science and society, and to increase the participation of underrepresented groups. Support is also provided for science and technology centers, undergraduate student research, facility enhancement, instrumentation, and laboratory equipment; and for research opportunities for women, minority, and disabled scientists and engineers	NSF	YES	http://polar-programs.idilogic.aidpage.com/polar-programs/

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6.3.1.2 United States Government Agencies Listing

AGENCY	WEBSITE	DESCRIPTION
National Oceanic and Atmospheric Administration	www.noaa.gov	
Office of Oceanic and Atmospheric Research	http://research.noaa.gov/	Provides the research foundation for understanding the complex systems that support our planet. Working in partnership with other organizational units of the National Oceanic and Atmospheric Administration , a bureau of the Department of Commerce , NOAA Research enables better forecasts, earlier warnings for natural disasters, and a greater understanding of the Earth. Our role is to provide unbiased science to better manage the environment, nationally, and globally.
Office of Ocean Exploration and Research	http://explore.noaa.gov/	Vision Statement: The Office of Ocean Exploration and Research catalyzes discovery to transform understanding of the global ocean. Mission Statement: OER explores the ocean to enhance research, policy and management decisions, to develop new lines of scientific inquiry, and to advise NOAA and the Nation on critical issues
Ocean Acidification Program	http://oceanacidification.noaa.gov/	Ocean acidification refers to a reduction in the pH of the ocean over an extended period, typically decades or longer, which is caused primarily by uptake of carbon dioxide from the atmosphere, but can also be caused by other chemical additions or subtractions from the ocean.
Aquisition and Grants Office	http://www.ago.noaa.gov/grants/policy.html	In fiscal year 2012 the Grants Management Division (GMD) of the Acquisition and Grants Office (AGO) issued 2,000 financial assistant awards for research and conservation initiatives coordinated by state and local governments, non-profits, and colleges and universities. GMD awarded funds totaling \$750 million to over 800 recipient organizations. Approximately 25 % of NOAA's annual budget was committed to making progress in understanding the link between our global economy and our planet's environment. GMD was also responsible for completing 1,500 administrative actions
National Science Foundation	http://www.nsf.gov/	The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."
Proposal and Award Policies and Procedures Guide	http://www.nsf.gov/pubs/policydocs/pappguide/nsf14001/index.html	NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research. The Foundation considers proposals submitted by organizations on behalf of individuals or groups for support in most fields of research. Interdisciplinary proposals also are eligible for consideration
		NSF does not normally support technical assistance, pilot plant efforts, research requiring security classification, the development of products for commercial marketing, or market research for a particular project or invention. Research with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, is normally not supported.
		NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

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US Geological Survey	http://www.usgs.gov/	
Climate and Land Use Change	http://www.usgs.gov/climate_landuse/	
Research and Development Program (R&D)	http://www.usgs.gov/climate_landuse/clu_rd/	The USGS Climate and Land Use Change Research and Development Program supports fundamental scientific research to: 1) understand processes controlling Earth system responses to global change over broad temporal and spatial scales; and 2) understand and model impacts of climate and land-cover change on ecosystems and other natural resources.
Earth Resources Observation and Science Center (EROS)	http://eros.usgs.gov/	The USGS Earth Resources Observation and Science Center (EROS) contributes to the Climate and Land Use Change Mission Area through research and operational activities that enable the understanding of local to global land change. The EROS multidisciplinary staff uses their unique expertise in remote sensing-based science and technologies to carry out basic and applied research, data acquisition, systems engineering, information access and management, and archive preservation to address the Nation's most critical needs.
Department of the Interior - US Fish and wildlife Service	http://www.fws.gov/	
Conservation in a Changing Climate	http://www.fws.gov/home/climatechange/	
Environmental Protection Agency	www.epa.gov	
Science and Technology	http://www.epa.gov/research	
Climate Change	http://www.epa.gov/research/climatescience/	EPA conducts research to understand the environmental and health impacts of climate change and to provide sustainable solutions for adapting to and reducing the impact from a changing climate
Department of Commerce - Economic Development Administration	www.eda.gov	EDA is committed to helping foster connected, innovation-centric economic sectors which support commercialization and entrepreneurship as described in the America COMPETES Reauthorization Act of 2010. Working with regions across the country to develop regional innovation strategies, including regional innovation clusters, is also a Strategic Goal of the DOC's FY 2014-2018 Strategic Plan and a keystone of the Secretary's commitment to building globally competitive regions.
Department of Defense - Office of Naval Research	http://www.onr.navy.mil/About-ONR.aspx	

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6.3.2 European Agencies

A Wikipedia Listing was used to identify international organizations in Europe.

http://en.wikipedia.org/wiki/Category:International_organizations_of_Europe

This listing was reviewed and redacted into promising agencies that fund science and technology, resulting in the following listing.

Organization	Mission	Website	Applicable
		http://en.wikipedia.org/wiki/Category:International_organizations_of_Europe	
Science Foundation	ESF is committed to achieving the highest quality science in Europe to drive progress in research and innovation. We help our Member Organisations collaborate internationally on research programmes that we coordinate in almost every scientific domain. We provide services to the science community, including peer	http://www.esf.org/	NO
Cooperation in Science and Technology		http://www.cost.eu/	
System Science and Environmental Management (ESSEM)		http://www.cost.eu/domains_actions/essem	
Research Council	Supporting top researchers from anywhere in the world	http://erc.europa.eu/	
	European Research Council (ERC) grants support individual researchers of any nationality and age who wish to pursue their frontier research. The ERC encourages in particular proposals that cross disciplinary boundaries, pioneering ideas that address new and emerging fields and applications that introduce unconventional, innovative approaches.	http://erc.europa.eu/funding-and-grants	
Commission Research Centre			
Institute for Environment and Sustainability	The Institute for Environment and Sustainability (IES) is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC). Its mission is to provide scientific and technical support to EU policies for the protection of the European and global environment	http://ies.jrc.ec.europa.eu/	Yes
Air and Climate Unit		http://ies.jrc.ec.europa.eu/the-institute/units/air-and-clim	
Climate Risk Management Unit	The Climate Risk Management Unit contributes to the observation, evaluation, anticipation and communication of the impacts of current weather extremes and future climate change, and evaluates the effectiveness of policies and measures that reduce their risks towards sustainable development.	http://ies.jrc.ec.europa.eu/the-institute/units	Yes
Mediterranean Science Commission	The Commission, with headquarters in Monaco, has grown from the eight founding countries of its origin to 23 Member States today. These support a network of several thousand marine researchers, applying the latest scientific tools to better understand, monitor and protect a fast-changing, highly impacted Mediterranean Sea. Structured in six committees and various taskforces, CIESM runs expert workshops, collaborative programs and regular congresses, delivering authoritative, independent advice to national and international agencies	http://www.ciesm.org/	Yes
Marine Research Fund			
European Science Centre		http://www.scienceeurope.org/	
Multidisciplinary Seafloor and Water Column Observatory		www.emso-eu.org	Yes

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6.3.3 Canada Government Agencies

A listing of possible Canada Government Agencies that might fund science and technology was developed.

AGENCY	MISSION	WEBSITE	APPLICABLE
Social Sciences and Humanities Research Council		http://www.sshrc-crsh.gc.ca/home-accueil-eng.aspx	
Institute for Ocean Research Enterprise	The Institute for Ocean Research Enterprise (IORE) exists to align these assets to benefit the region and the marine science and marine technology sectors. By brokering partnerships among industry, universities, government and private institutions, IORE is working to enhance both the competitiveness of ocean industries and our knowledge base	http://iore.ca/	
National Research Council (Canada)	the primary national research and technology organization (RTO) of the Government of Canada, ^[1] in science and technology research and development. ^[1] The Minister of Industry is responsible for the National Research Council (NRC).	www.nrc-cnrc.gc.ca	
Natural Sciences and Engineering Research Council of Canada (NSERC)	a Canadian government agency that provides grants for research in the natural sciences and in engineering. Its mandate is to promote and assist research	http://www.nserc-crsng.gc.ca/index_eng.asp	
Department of the Environment	legally incorporated as the Department of the Environment under the <i>Department of the Environment Act</i> (R.S., 1985, c. E-10), is the department of the Government of Canada with responsibility for coordinating environmental policies and programs as well as preserving and enhancing the natural environment and renewable resources.	http://www.ec.gc.ca/default.asp?lang=en&n=FD9B0E51-1	YES
Climate Change Science and Research	environment Canada is a national focal point for Canadian research on the climate system and the science of climate change.	http://www.ec.gc.ca/sc-cs/Default.asp?lang=En&n=56010B4	YES
Climate Research Activities	Environment Canada's climate research program is an integral part of national and international efforts to understand climate system behaviour, the human influence on climate and future climate change. The results and knowledge produced from these activities provide the scientific basis for services to Canadians and for the development of timely actions to confront the challenges of climate change.	http://www.ec.gc.ca/sc-cs/default.asp?lang=En&n=1F78864	YES
Funding	Environment Canada offers funding through various Grants and Contributions programs. These programs offer funding to eligible groups, organizations and individuals for local action projects that protect or conserve our natural environment and to create employment opportunities for young scientists and post-secondary graduates seeking hands-on training	http://www.ec.gc.ca/financement-funding/Default.asp?lang=	YES
Fisheries and Oceans Canada, frequently referred to as DFO (Department of Fisheries and Oceans)	responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and inland waters. Its mandate includes responsibility for the conservation and sustainable use of Canada's fisheries resources while continuing to provide safe, effective and environmentally sound marine services that are responsive to the needs of Canadians in a global economy. The stated vision of the department is "Excellence in service to Canadians to ensure the sustainable development and safe use of Canadian waters."	http://www.dfo-mpo.gc.ca/index-eng.htm	
Science and Research	Aquatic issues related to climate change, such as ecosystem shifts, ocean acidification, hypoxia (low oxygen), changes to ocean currents, sea ice variability and other factors impact fisheries resources. Rising sea levels, severe storms, inundations and erosion that threaten coastal communities and coastal infrastructure concern researchers. A five year science program is underway to assess climate change impacts as emerging risks or opportunities, and to devise tools and technologies to help the Department adapt appropriately.	http://www.dfo-mpo.gc.ca/science/oceanography-oceanogr	YES

6.3.4 Coastal Nations Listing

A listing of 146 coastal nations was compiled, and then redacted to countries with the financial capability and social interest in potentially funding the ITU JTF Initiative. These are listed in the following table.

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Country	Major Gov Science and Technology	Website
Australia	Australian Institute of Marine Science	http://www.aims.gov.au/
Australia	Australian Ocean Data Centre	http://www.aodc.gov.au/
Australia	Australian Science and Technolgoy	http://australia.gov.au/topics/science-and-technology
Australia	Commonwealth Scientific and Industrial Research Organization	http://www.csiro.au/
Australia	Defence Science and Technology Organization	http://www.dsto.defence.gov.au/
Australia	Geoscience Australia	http://www.ga.gov.au/
Bermuda	Bermuda Institute of Ocean Sciences	http://www.bios.edu/#/healthier-oceans
Bosnia and Herzegovina		
Brazil	Ministry of Science and Technology	http://www.brasil.gov.br/ciencia-e-tecnologia
Chile	Ministry of the Environment	http://portal.mma.gob.cl/
China	Ministry of Enviromental Protection	http://english.mep.gov.cn/
China	Ministry of Science and Technology	http://www.most.gov.cn/eng/
Costa Rica	Ministry of Science, Technology and Telecommunications	http://www.micit.go.cr/
Ecuador	Charles Darwin Foundation	http://www.darwinfoundation.org/en/
Ecuador	National Council for Science and Technology (CONACYT)	
Ecuador	Research center for monitoring of active volcanos and tectonic fault Ecuador	http://www.igepn.edu.ec/
Finland	Ministry of Education, Science, and Communications	http://www.minedu.fi/OPM/2lang=en http://www.agence-nationale-recherche.fr/en/project-based-funding-to-advance-french-research/
France	The French National Research Agency	
Germany	Federal Agency for Nature Conservation, Bonn	
Germany	Federal Institute for Geosciences and Natural Resources, Hannover	
Germany	Federal Maritime and Hydrographic Agency	
Germany	Federal Ministry of Education and Research	http://www.bmbf.de/en/6696.php?D=857&LANG=ENG&V=list#dtj
Greenland	RANNIS - Icelandic Centre for Research	http://en.rannis.is/
Iceland	Icelandic Research Council	
India	Department of Ocean Development	http://www.dod.nic.in/
India	Ministry of Earth Sciences	http://www.dod.nic.in/
India	Ministry of Enviroment	http://www.moef.nic.in/index.php/
India	Ministry of Science and Technology	http://www.dst.gov.in/
Indonesia	Agency for the Assessment and Application Technology	http://indonesia.go.id/en/lpnk/badan-pengkajian-dan-penerapan-teknologi/2455-profile/374-badan-pengkajiar-dan-penerapan-teknologi
Indonesia	Ministry of Research and Technology	http://www.ristek.go.id/english/home.html
Iran	Iranian Research Organization for Science and Technology	http://www.irost.org/en/
Ireland	Department of Jobs, Enterprise, and Innovation	http://www.enterprise.gov.ie/en/
Ireland	Ministry for Research and Innovation	
Ireland	Scienc Foundation Ireland	http://www.sfi.ie/
Ireland	Technology Strategy Board	www.innovateuk.org
Italy	Ministry Education, University and Research	www.miur.it
Italy	Ministry Environment, Land and Sea	www.minambiente.it
Jamaica		
Japan	Ministry of Environment	http://www.env.go.jp/en/
Kenya	National Commission for Science, Technolgoy, and Innovation	http://www.ncst.go.ke/
Malaysia	Ministry of Science, Technology, and Innovation	http://www.mosti.gov.my/
Mexico	Environment, Natural Resources & Fisheries Ministry	http://www.ine.gob.mx/
New Zealand	Ministry of Research, Science, and Technology	http://www.msi.govt.nz/ http://www.forskningssradet.no/servlet/Satellite?c=Page&cid=1177315753906&p=1177315753906&pagename=ForskningssradetEngelsk/Hovedsidedmal
Norway	The Research Council of Norway	
Oman		
Pakistan	Ministry of Science and Technology	http://www.most.gov.pk/
Philippines	Department of Environment and Natural Resources	http://www.denr.gov.ph/
Philippines	Department of Science and Technology	http://www.dost.gov.ph/
Portugal	National Institute of Engineering, Technology and Innovation	
Qatar	Qatar National Research Fund	http://qnrf.org/
Qatar	Qatar Science & Technology Park	http://www.qstp.org.qa/
Russia	Ministry of Education and Science	
Russia	Ministry of Natural Resources and Environment	
Sao Tíme and Principe		
Saudi Arabia	King Abdulaziz City for Science and Technology	http://www.kacst.edu.sa/en/about/Pages/default.aspx
Scotland	Environment	http://www.scotland.gov.uk/Topics/Environment
Scotland	Marine and Fisheries	http://www.scotland.gov.uk/Topics/marine
South Africa	Departmetn of Science and Technology	http://www.gov.za/aboutsa/science.htm
South Korea	Ministry of Environment	http://eng.me.go.kr/eng/web/main.do
South Korea	Ministry of Maritime Affairs and Fisheries	
South Korea	Ministry of Science, ICT and Future Planning	http://english.msip.go.kr/index.do
Spain	Ministry of Education and Culture	
Spain	Spanish Council on Scientific Research	http://www.csic.es/web/guest/home
Sweden	Ministry of the Environment	http://www.government.se/sb/d/2066
Sweden	Swedish Foundation for Strategic Research	http://www.stratresearch.se/en/ http://www.vr.se/inenglish.4.12fff4451215cbd83e4800015152.html
Sweden	Swedish Research Council	
Tahiti		http://taiwannoc.com/about-taiwan/science-and-technology/
Taiwan, China	Ministry of Science and Technology	
Tanzania		
Thailand	Ministry of Science and Technology of Thailand	http://www.most.go.th/eng2012/
United Kingdom	Technology Strategy Board	www.innovateuk.org
United Kingdom	United Kingdom Research Council - Engineering and Physical Sciences	http://www.epsrc.ac.uk/
United Kingdom	United Kingdom Research Council - Natural Environment	http://www.nerc.ac.uk/
United Kingdom	United Kingdom Research Council - Science and Technology	http://www.stfc.ac.uk/home.aspx
Venezuela	Venezuelan Institute for Scientific Research	http://www.ivic.gob.ve/
Vietnam	Ministry of Science and Technology	http://www.most.gov.vn/Desktop.aspx/Home-EN/

6.4 Appendix 4: Commercial Entities

Sponsoring and attending company listings for the OCEANS 2013 9 (<http://www.oceans13mteesandiego.org/index.cfm>) and OCEANOLOGY 2014 (<http://www.oceanologyinternational.com/>) Conferences were used as sources for potential companies that might have a vested interest in supporting the ITU JTF Initiative. This complete listing was reviewed, company websites visited, and then a redacted target list of companies was created for mailing a generic letter of interest to those companies explaining the ITU JTF Initiative and requesting follow-on dialogue.

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6.4.1 Redacted Target List

Company	Website	Description / Products and Services	Address	Key Individual
Aanderaa	http://www.aanderaa.com/index.php	Coastal Protection	Aanderaa Data Instruments AS Sanddalsringen 5b N-5225 Nesttun, Norway +47.55.60.48.00 +47.55.60.48.01	Gretchen W. McClain, CEO
AML Oceanographic Ltd.	www.amloceanographic.com	Manufacturer of Sound Velocity, CTD and Environmental sensors, probes and instruments. Our customers are located in more than 100 countries and include organizations in the fields of hydrography, science and research, and environmental monitoring.	2017 Malaview Avenue Sidney, B.C V8L 5X6 Canada Tel: +1.250.656.0771 Fax: +1.250.655.3655	Robert Haydock President and Owner
AXYS Technologies, Inc.	www.axystechnologies.com	Environmental monitoring services	AXYS Technologies Inc. 2045 Mills Road Sidney, BC V8L 5X2 Canada	Terry Tarle President and CEO
Bluefin Robotics Corp.	www.bluefinrobotics.com	AUVs - Possible future docking	Bluefin Robotics Corporation 553 South Street Quincy, MA 02169 USA	David Kelly, CEO and President Omar Poroy , VP of Business Development
Channel Technologies Group	www.channeltechgroup.com	global leader in the manufacturing of piezoelectric materials, transducers, systems and electro-optical technologies.	879 Ward Drive Santa Barbara, CA 93111, USA Tel: +1.805.967.0171 Fax: +1.805.683.3420	Ralph Phillips, CEO
Deep Ocean Engineering, Inc.	www.deepocean.com	Customized ROVS	Deep Ocean 2528 Qume Drive, Suite 11 San Jose, CA 95131, USA	Robert Sabo, President
DOER Marine	doermarine.com	ROVs	DOER Marine 1827 Clement Ave, Bldg 19 Alameda, CA 94501	Liz Taylor, President and CEO
EMO Marine Technologies	www.emomarine.com	Fiber Optic Subsea Communications	EMO Marine Technologies 7a Canal Street Dartmouth, Nova Scotia B2y 2W1, Canada	Tom Knox, President
Falmouth Scientific, Inc	http://www.falmouth.com/	Instruments and Instrumentation	Falmouth Scientific, Inc 1400 Route 28A PO Box 315 Cataumet, MA 02534, USA Tel: +1.508.564.7640 Fax: +1.508.564.7643	John Baker President and General Manager
High Tech, Inc.	http://www.hightechincusa.com/Main.html	Instruments and Instrumentation	High Tech, Inc 21120 Johnson Road Long Beach, MS 39560 USA Tel: +1.228.868.6632 Fax: +1.228.868.6645	Stephen Spychalski Founder and Chairman Brian Spychalski, President

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Company	Website	Description / Products and Services	Address	Key Individual
Hydro Group plc	www.hydrogroupplc.com	Subsea cables, connectors, penetrators, glands, terminations, & Molds	Hydro Group PLC Hydro House, Claymore Avenue Aberdeen Energy Park Bridge of Don, Aberdeen AB23 8GW Scotland UK	Ian Smale
InterOcean Systems, Inc.	www.interoceansystems.com	design and manufacture of premier quality oceanographic and environmental equipment and systems	3738 Ruffin Road San Diego, CA 92123, USA Tel: +1.858.565.8400 +1.858.268.9695	Michael Pearlman, CEO
Kongsberg Underwater Technology	www.kongsberg.com	AUVs, Marine Ssystems, Oil and Gas	Kongsberg Gruppen ASA Kirkgardsveien 45 N)-3616 Kongsberg	Walter Qvam, CEO
L-3 Communications Klein Associates, Inc. L-3 Ocean Systems	www.L-3Klein.com	side scan sonar equipment and waterside security and surveillance systems	L-3 Klein Associates 11 Klein Drive Salem, NH 03079 USA	Frank Cobis, Vice President & General Manager
MacArtney Inc.	www.macartney.com	Various - Instruments	MacArtney A/S Headquarters Gl. Guldagervej 48 DK-6710 Esbjerg V CVR NO. 84 16 48 28 Tel: +45.7513.2000 Fax:+45.7511.7220	Glen MacArtney (Chairman)
MetOcean	www.metocean.com	ocean data collection (buoys) and comms	MetOcean Data Systems 21 Thornhill Drive Dartmouth, Nova Scotia B3B 1R9 Canada	Tom Chedray, President and CEO
Ocean Aero	www.oceanaero.us	Ocean Aero represents the next generation in unmanned ocean systems – the creation of autonomous, highly persistent, energy scavenging, wind/electric unmanned vessels packaged in a small, man-portable configuration. “Submaran” – a new class of Unmanned Underwater, Surface Vessel (UUSV)	Ocean Aero 10755 Scripps Poway Parkway Suite 367 San Diego CA 92131 USA	Eric Patten, CEO President
Ocean Innovations	www.o-innovations.com	represents the manufactures of many types of underwater equipment and marine technology	Ocean Innovations 7416 Cabrillo Avenue La Jolla, CA 92037, USA	Brock Rosenthal, President
Ocean Sonics	www.oceansonics.com	Hydrophone Company, Environmental Monitoring	Ocean Sonics Ltd. Hill House 11 Lornevale Road Great Village, Nova Scotia B0M 1L0, Canada Tel: +1.855.360.3003	Mark Wood, President
Oceanworks International	www.oceanworks.com		OceanWorks, International 11611 Tanner Road Houston, Texas 77041 USA Tel: +1.281.598.3940 Fax: +1.281.598.3948	Rod Stanley , CEO John Jacobson, President
Plante Ocean Ltd	http://planet-ocean.co.uk/wp/	Instruments and Instrumentation	Planet Ocean Ltd Camberley Business Center Unit 16 Bracebridge, Camberley GU15 3DP, UK +44(0) 845.108.1457 +44.(0)845.280.33.49	Terry Sloane, Managing Director

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6.4.2 Other Commercial Entities

In addition to the redacted list developed above, a listing of companies known to OCI Group which might be interested in the ITU JTF Initiative was also developed and is provided below.

Company	Website	Description	Address	Key Person
Leidos	www.leidos.com	Leidos develops marine products to meet today's challenges. These products monitor global climate change and marine meteorology, chart and analyze hydrographic data, and help to manage waste and control pollution.	Leidos, Inc. 11951 Freedom Drive Reston, VA 20190	Neil Rondorf Vice President, Maritime
Ocean Specialists, Inc	www.oceanspecialists.com	Ocean Specialists, Inc (OSI) serves the ocean industry by providing a broad range of capabilities and services to the Offshore Oil & Gas, Submarine Telecom, Government and Scientific markets	Ocean Specialists, Inc. 8502 SW Kansas Avenue Stuart, Florida 34997 USA	Jim Byous, President
Google	www.google.com		Google Belgrave House 76 Buckingham Palace Road London SW1W 9TQ United Kingdom	Doyle Barlow
General Cable, NSW	www.nsw.com	Undersea Cable Manufacturer for Telecom and Power	Norddeutsche Seekablewerke GmbH Kablestr. 9-11 26954 Nordenham, Germany	Matthias Hoch, Vice President, Project Implementation Peter Meiler, Senior Project Manager Tom Schmitz, Director, Project Support & Engineering
L3 - MariPro	www.L-3Com.com	For nearly five decades, L-3 MariPro has provided cabled maritime range systems to the US and foreign navies. L-3 MariPro has designed, manufactured and installed systems currently in operation into their 3rd decade in water depths up to 5,000 meters. L-3 MariPro also provides portable transponder based systems to support training and test and evaluation in forward areas. L-3 MariPro is a supplier of through water communication technology to the US Navy providing acoustic digital spread spectrum capability in support of communications at speed and depth and other applications. L-3 MariPro also provides deep sea observatories (power and data connectivity) for the science community. Finally L-3 MariPro provides engineering and offshore services to a variety of customers successfully supporting marine operations worldwide including telecommunications systems, power cables and other support in oceans from the tropics to the arctic. MariPro is certified to ISO 9001:2008 and currently seeking certification to AS9100C	L3 - MariPro 1522 Cook Place Santa Barbara, CA 93117 USA	Nazeeh Shaheen, Birector, Ocean Observing Systems John Reardon, Director of Programs, Regional Scale Nodes
Fugro Offshore Survey	www.fugro-pelagos.com	Specializing in offshore survey services, Fugro Pelagos provides innovative solutions that redefine the manner and quality in which the seafloor can be mapped and displayed. They integrate and enhance advanced technologies, such as multibeam bathymetry, multibeam backscatter "snippets" imagery, Lidar bathymetry and GIS.		Ryan Wopschall
EGS Americas Inc	www.egssurvey.com	EGS is a leading international group of companies and has offices in Europe, Americas, Asia and Australia and throughout South East Asia from its regional hub in Hong Kong. EGS provides global specialist multi-disciplinary marine survey support and delivers solutions to the Oil and Gas, Telecommunications, Energy & Renewables and Marine Infrastructure market sectors	EGS 8502 SW Kansas Avenue Stuart, Florida 34997 USA	Graham Eric Roach, General Manager
Battelle	www.battelle.org	Battelle is the world's largest nonprofit research and development organization, with over 22,000 employees at more than 60 locations globally. A 501(c)(3) charitable trust, Battelle was founded on industrialist Gordon Battelle's vision that business and scientific interests can go hand-in-hand as forces for positive change.	Battelle Laboratories 505 King Avenue Columbus, Ohio 43201 USA	James Trees, Program Manager, Special Programs Roland Bissonnette, Project Manager
Fujitsu	www.fujitsu.com	Submarine Cable System Hardware Supplier and Integrator	Fujitsu 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, 211-8588, Japan	Yasuo Mizutani, Director Sales & Marketing
Global Marine Systems	www.GlobalMarineSystems.com	Service Provider and Installer for Marine Infrastructure, including Subsea Telecom Cable and Power Systems	Global Marine Systems Limited New Saxon House 1 Winsford Way Boreham Interchange Chelmsford Essex CM2 5PD United Kingdom	Stephen Holder
e-marine	www.emarine.ae	Service Provider and Installer for Marine Infrastructure, including Subsea Telecom Cable and Power Systems	E-marine PJSC P.O>Box 282727 Dubai, UAE	Muhammed Shameer, Manager
Nexans	www.nexans.com	Submarine Cable System Hardware Supplier and Integrator	Nexans 8, rue du Général Foy 75008 Paris, France	Frederic Vincent Chariman and CEO

6.4.3 Generic Information Letter to Commercial Entities

COMPANY ADDRESS

ADDRESSEE and TITLE

Dear **ADDRESSEE**,

I am writing to you on behalf of the United Nations Joint Task Force established in 2012 by the International Telecommunication Union (ITU), the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO to examine novel uses for commercial submarine telecommunication cables to monitor the changing environment of the oceans (<http://www.itu.int/en/ITU-T/climatechange/task-force-sc/Pages/default.aspx>). Please see the attached letter from Chris Barnes introducing this effort and the role OCI Group (www.OCIGrp.com) has been engaged to perform on the JTF's behalf.

The JTF is developing a strategy and roadmap that could lead to enabling the availability of modified "green" submarine cable systems equipped with scientific sensors (such as temperature, pressure and acceleration) for climate monitoring and disaster risk reduction (particularly tsunamis) over much of the world's oceans. This effort was presented in London at Oceanology Conference held earlier this year.

OCI Group has been tasked by the JTF to identify potential industry support for this initiative, either in direct funding or in services. As Hydro Group has a vested commercial interest in the environment and the oceans, and possibly forming the requirements for green submarine cable system sensors, we would like to begin a conversation with you to further your understanding of the JTF initiative and Hydro Group possible support.

Please let me know when it would be convenient to speak with you about this matter.

Best regards,

Jerry Tourgee

Gerald Tourgee
CEO



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