DOE SBIR/STTR Fiscal Year 2015
Phase I Release 2 FOA (DE-FOA-0001227)
EERE Topics (11 through 19) Question & Answer (Q&A)

The U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE) supports research and development (R&D) that increases energy efficiency and renewable energy in all sectors of the economy. This document provides answers to questions EERE received about its topics in DOE's Phase I Release 2 Funding Opportunity Announcement (DE-FOA-0001227). Questions are grouped by topic and subtopic, and are combined when multiple, similar questions were received. In some cases, EERE edited questions to generalize them or for brevity. Questions not of general interest are omitted.

There will be an update to this document after January 12, 2015—and before the FOA application deadline on February 3, 2015. If you submitted a question that is not included here, please check again after January 12, 2015. Please send new questions that have not already been addressed to the topic's point of contact, whose email information is included in this document as well as in the Topics Announcement.

Important links with information about this FOA and DOE's SBIR/STTR programs are provided in the following table, as well as on EERE's SBIR website: http://energy.gov/eere/sbir. If you are unable to find the information you need, please email T2M@ee.doe.gov.

Important SBIR/STTR Links	
Topics Announcement	science.energy.gov/~/media/sbir/pdf/TechnicalTopics/FY2015_Phase_1_Release_2_Topics.pdf
DOE Topics Webinar (includes EERE topics) (November 7, 2014)	cc.readytalk.com/play?id=al5y38
DOE FOA Webinar (December 1, 2014)	https://cc.readytalk.com/cc/playback/Playback.do?id=eh95j1
EERE Cleantech SBIR Webinar (December 8, 2014)	energy.gov/exit?url=https%3A//www1.gotomeeting.com/register/367038449
DOE SBIR Fiscal Year 2015 Overview Webinar (August 15, 2014)	cc.readytalk.com/play?id=77r1v
EERE's All-in-One Application Tool	energy.gov/eere/small-business-research-all-one-application-tool
DOE SBIR/STTR FAQs	science.energy.gov/sbir/about/faqs/
DOE SBIR/STTR	science.energy.gov/sbir/

Important Dates for this FOA	
Letters of Intent (LOI) were Due	December 15, 2014
Updated Topic Q&As Posted	January 2015
Full Applications Due	February 3, 2015
Award Notification	April 2015
Grant Start Date	June 2015

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	General	
1	Is there an 'other' subtopic we can submit to for this solicitation?	No. None of Topics 11-19 has an "other" subtopic.
2	As part of our project's feasibility study, we need to refine our theoretical model through empirical measurements of a handful of scaled prototypes. These prototypes can either be 3-D printed by commercial companies (~$30K) or our team can purchase the needed 3D printing equipment and create the prototypes at a third of the cost (~$10K). Would DOE recommend that we base our proposal's budget on the services of commercial companies or on our own purchase of the equipment?	Please listen to the archived FOA Webinar or email DOE-SBIR at sbir-sttr@science.doe.gov.
3	What if I am interested in working with a national lab or a university as part of my application?	For SBIR applications, lab or university (research institution) contributions may not exceed 1/3 in the Phase I application. For an STTR application, the research institution involvement must be at least 30% but not more than 60%. Please listen to the archived FOA Webinar for more details.
4	We are currently 37.5% funded by venture capital. We anticipate that we be >50% funded by venture capital by the application date of February 3, 2015. We will not have revenue at that point. Are we qualified to submit an application?	Please listen to the archived FOA Webinar or email DOE-SBIR at sbir-sttr@science.doe.gov. (In FY 14, firms>50% VC funded were ineligible).
	Advanced Manufacturing (11a-d)	
	11(a) Wide Bandgap Semiconductors for Energy Efficiency and Renewable Energy	**anant.agarwal@ee.doe.gov**
1	Is EERE focusing on vertical GaN devices built on GaN substrates and vertical AlN or AlGaN devices built on AlN substrates?	Yes. Vertical LEDs on GaN and AlN or AlGaN substrates have two key advantages: (1) They are much brighter (2-3x) and can handle higher currents due to the reduced defect density in the active layers as they are grown on the substrate of the same material (as opposed to some foreign substrate like Si or SiC or sapphire); (2) The chips are smaller and cheaper as the two current-carrying terminals are on the front and back as opposed to having the two contacts on the front. The LED substrates have to be optically transparent and electrically conducting. These properties are controlled by point defects in the substrates—identifying these point defects and eliminating them during the growth of the substrate are the key goals of this subtopic. The same arguments apply to power devices except the transparency is not needed.
	11(b) Natural Gas Feedstock and Fuel Substitution for Energy Efficient Manufacturing	**stephen.sikirica@ee.doe.gov**
1	11(b) Do applicants have to demonstrate an ability to produce products such as acetylene, carbon black, or high performance carbon materials?	Applicants should demonstrate reactor technology that produces a valuable product from natural gas with favorable economics compared to the baseline conventional technology. The applicant has the choice of which high-value product to produce.

	11(c) Carbon Fiber Production Processes		**kelly.visconti@ee.doe.gov**
1	11(c)	Can any carbon source (such as bacteria, tunicates, and algae) be considered in the production of carbon fiber? What about catalytically grown ultra-long carbon nanotubes and/or nanofibers? What about production from biogas?	Yes, all such projects likely would be responsive, subject to the requirements of (1) showing that the technology could feasibly synthesize carbon fiber, (2) showing cost-competitive energy-savings with practical economies of scale, and (3) providing a path to demonstration of carbon fiber synthesis. The baseline for the energy savings is commercial PAN-based carbon fiber.
2	11(c)	On Pages 7-8 concerning the topic "Low Energy Conversion of PAN to CF," it states that applications involving the use of atmospheric plasma are outside the scope of this topic area. Does this include atmospheric plasma surface treatment?	Atmospheric plasma for surface treatment would be considered responsive to subtopic 11.c.
3	11(c)	Although Topic 11.c appears to be focused on downstream processing of carbon fiber, the introductory paragraph seems to support other actions that may result in lower carbon fiber costs. According to a presentation by Oak Ridge National Laboratory (ORNL), the PAN precursor is 55% of the cost of carbon fiber. Would a strategy to potentially lower the cost of carbon fiber based on feedstock to polyacrylonitrile or other precursors be responsive to this topic?	The goal of the first focus area is to lower energy use in the conversion process of polyacrylonitrile to carbon fiber; therefore, a strategy to lower cost based on feedstock materials is unlikely to be responsive in this focus area. Under the second area of interest in this subtopic—aimed at direct synthesis of carbon fiber from unspecified starting materials—such a strategy that proposes lower energy production pathways might be responsive.
	11(d) Novel Low Cost Recovery from Low Temperature Industrial Waste Heat		**bob.gemmer@ee.doe.gov**
1	11(d)	The references cited in the topics were missing.	The full set of references is: [1] Energy Information Administration 2014 Annual Energy Outlook, http://www.eia.gov/forecasts/aeo/ [2] BCS, Inc., 2008, Waste Heat Recovery: Technology and Opportunities in U.S. Industry [3] BCS, Inc., 2008, page 54 [4] http://link.springer.com/journal/11468 [5] https://quantum.soe.ucsc.edu/research/tec.html [6] http://www.me.vt.edu/cehms/ [7] Electricity output measured as a fraction of thermal energy input
2	11(d)	We have a method of storing energy as liquid nitrogen, then expanding the fluid from liquid to gas in an engine. In our scheme, low-grade heat from any process can be used to heat anti-freeze, which is subsequently injected into the liquid nitrogen, sparking an expansion that can be harnessed. We are interested in and have specific ideas about how to improve the practicality of the system and render it significantly more valuable in the marketplace. Could our method be considered?	Yes, as long as the specific goals of the SBIR are correctly addressed. The topic is not technology-specific.

3	11(d)	The Phase 1 Release 2 Topic states that responses outside of the examples are welcome, but we noticed that most of the references that you cite use quantum physics or a quantum effect to advance the efficiency using thermoelectrics. Would an approach that improves the understanding of classical physics of the thermocouple be outside of this topic?	As long as the specific goals of the SBIR are correctly addressed. The topic is not technology-specific.
4	11(d)	Although the topic description seems to focus on energy conversion technologies other than thermoelectrics, is there any interest in pursuing new thermoelectric research concepts that may lead to higher efficiencies?	Yes, as long as the specific goals of the SBIR are correctly addressed. The topic is not technology-specific.
5	11(d)	A question was posed regarding thermal energy storage and the use of an Organic Rankine Cycle (ORC). Would a proposal involving these be responsive to the solicitation?	Yes, as long as the specific goals of the SBIR are correctly addressed. The topic is not technology-specific.
6	11(d)	Please let me know if this is the only waste heat opportunity now available.	This is the only waste heat recovery solicitation currently available under the SBIR program. However, other areas of the government may be seeking waste heat recovery technology. Please review the contents of www.Grants.gov to determine if there are other opportunities available.
7	11(d)	The performance targets for "Novel Low Cost Recovery from Low Temperature Industrial Waste Heat" include a conversion efficiency >30%. Does it mean the efficiency relative to the Carnot limit (42% for 450F and 30% for 300F, which is more common) or the absolute efficiency (percent of power converted), which reaches the thermodynamic limit if the ambient temperature is in the range 22-25C?	Neither. Subtopic reference 7 states: "Electricity output measured as a fraction of thermal [primary] energy input." While electricity is the most likely output for a heat recovery device, it is not the only one. Any form of useful work would be considered a valid output if it equals or exceeds 30% of the thermal energy input. Thus, a better wording would be "Useful work output measured as a fraction of thermal energy input." Since the devices are unlikely to be closed cycle heat engines, the theoretical limits of the Carnot cycle are not relevant.
8	11(d)	How important is the manufacturing cost <1$/W (i.e. return of investment in less than 1 min)? Does it include the entire system or only the heat-to-electricity converting component?	This goal is essential. We recognize that manufacturing cost estimates of an early stage technology are necessarily uncertain. Even so, the cost estimate needs to be as credible as possible, given the level of development. In addition, because each application will have its own associated costs, the cost target is for the heat-to-electricity (or other useful work) converting component only.
	Bioenergy (12a-c) {Fast-Track}		
	12(a) Design and Fabrication of Solids Handling for Biomass Conversion Systems		**mark.elless@ee.doe.gov**
1	12(a)	For biomass collection and metering, is this available for system sizes down to that of an individual farm?	This is not for biomass handling at the site of the biomass growing (farm etc.); rather it is at the industrial (reactor) site.

	12(b) Low-Cost Coatings for Advanced Thermal Processes in Metal Combustors		**neil.rossmeissl@ee.doe.gov**
	12(c) Solid-Liquid Separations for Algal Systems		**neil.rossmeissl@ee.doe.gov**
1	12(c)	Would a responsive application contain a method for harvesting and separating algae from an environmentally sensitive inland lake where algal blooms frequently cause environmental issues?	This is not for biomass handling at the site of the biomass growing (farm etc.); rather it is at the industrial (reactor) site.
	Buildings (13a-b)		
	13(a) Energy Efficient Solid-State Lighting Luminaires, Products, and Systems		**james.brodrick@ee.doe.gov**
1	13(a)	What are the areas of interest for this subtopic?	The three areas of interest are: 1) SSL Luminaires and Lamps; 2) SSL Components, contributing materials, constituents or integral products; 3) SSL Systems—especially those taking advantage of direct current (DC) operation.
2	13(a)	For technology regarding LED lighting, which national laboratory is recommended to attempt to obtain a Collaborative Agreement, CRADA, or other agreement to facilitate a SBIR grant application, Phase 1, or Fast Track?	For technology relating to this topic, it is not necessary to team with a national laboratory to be considered responsive. You may certainly choose to partner with a lab using IP belonging to them by submitting a STTR application. Conversely, you may take advantage of the various user facilities and national resources such as are found at SNL, LANL, or NREL to perform testing and evaluations that you would otherwise not be able to accomplish. In these cases, participation by the lab of your choice may be proposed under a SBIR as a subcontractor or a vendor.
3	13(a)	We would like to submit an application based on patent pending applications and a working model of an LED lamp made without a printed circuit board.	Should you choose to submit an application with your patent pending concept for a PCB-less LED design, you may do so but please submit only new and novel ideas that are truly innovative and represent a significant step forward in the evolution of energy efficient solid-state lighting. Please note that the section of the FOA corresponding to topic 13(a) clearly states: > Designs that are already under development or that represent incremental or evolutionary improvements over current products are not of interest under this topic. Thus, if your concept is already in production or is nearing production, it would not be considered responsive to this opportunity. It is also important to demonstrate how your research and development effort will increase market penetration of SSL products and by so doing, produce substantive reductions in building energy use.
4	13(a)	We would like to explore evaporative cooling strategies for thermal management in solid-state lighting. Leveraging our existing knowledge of multiphase liquid interactions with light, we believe that we can integrate microfluidic heat pipes into existing LED	Thermal management remains a high R&D priority for LED development as detailed in the SSL Multi-Year Program Plan (MYPP). Accordingly, the SSL program has sponsored considerable work in this area over the past ten years, including a number of SBIR-STTR awards. Some have included various schemes to employ heat pipes and all

		encapsulation materials. This would improve chip efficiency and reliability, while reducing the need for expensive heat sinks in high-intensity SSL products.	sorts of working fluids. While each approach has exhibited some promise, none has evolved to a point where it is a commercially viable solution. Cost and complexity are the most common among myriad reasons for failure. Should you believe however, that your approach is indeed a novel one that is simultaneously technically feasible yet inexpensive enough to be considered for wide-spread commercial use by manufacturers of LEDs for general illumination purposes, you should briefly explain your reasoning.
	13(b) Integrated Storage and Distributed Generation for Buildings		**karma.sawyer@ee.doe.gov**
1	13(b)	What are the areas of interest for this subtopic?	The two areas of interest are: 1) Integrated thermal and/or electrical energy storage systems for buildings that could reduce carbon emissions from the building sector. 2) Building-Integrated Solar Electricity Generator (SEG) technologies to offset fossil-fuel primary energy consumption in residential and commercial buildings by 10% and 5%, respectively.
2	13(b)	Does this subtopic include technologies along the lines of DE-FOA-0001166 for "Non-vapor compression HVAC technologies" and "Advanced vapor compression HVAC technologies"?	No. See above.
3	13(b)	Building-integrated solar and vertical-axis wind systems could make us energy-independent at wartime speed and provide millions of green jobs at every skill level. Can we make this an implemented urgent plan standard for our building codes and permits?	This is outside of the scope of the SBIR program and should be directed toward the codes and standards program.
4	13(b)	Is Phase I for paper study/analysis only and Phase II for actual demonstration? If we can identify customers who can demonstrate 25% reduction in operating carbon emissions with our storage systems integrated, can we apply Phase I for actual storage project demonstration?	No. Phase I is R&D, most likely a proof of concept.
5	13(b)	Does a distributed network of residential energy storage meet the goal if it provides peak shifting?	No, unless energy savings are substantial.
	Fuel Cells Hydrogen (14a-b)		
	14(a) Fuel Cell-Battery Electric Hybrid for Utility or Municipal MD or HD Bucket Trucks		**peter.devlin@ee.doe.gov**
1	14(a)	What are expected outcomes for this subtopic?	For Phase I, a design feasibility analysis and plan describing the power system and truck designs and specifics; and an economic assessment, including a payback analysis.

	14(b) TECHNOLOGY TRANSFER OPPORTUNITY: In-line Quality Control Devices Applicable to PEM Fuel Cell MEA Materials		nancy.garland@ee.doe.gov
1	14(b)	What are expected outcomes for this subtopic?	For Phase I: Technical plans for the QC technique fully describing its operational parameters; design, manufacturing, quality, marketing, and cost plans for the proposed QC device and a final feasibility assessment for the production and marketing of the proposed QC device.
	Geothermal (15a-b)		
	15(a) Innovative Products or Technologies that Develop New Markets/Revenue Streams for Geothermal Energy		joshua.mengers@ee.doe.gov
1	15(a)	If a project were to advance the efforts of at least one of the cited roadmaps, does GTO consider the GHP Roadmap (http://www1.eere.energy.gov/buildings/pdfs/ghp_rd_roadmap2012.pdf) to be relevant for the 15a topic?	The Geothermal Heat Pump roadmap referenced is not relevant for topic 15. We are seeking innovations in geothermal energy that address the efforts cited in the roadmaps, which are referenced in the topic and in the question. But, if the proposed innovation has auxiliary applications in geothermal ground source heat pumps, the language "solely improvements to GSHPs" is intended to prevent automatic disqualification of applications that include GSHPs.
2	15(a)	I am a bit confused on how much of the focus is on ground source heat pumps (GSHPs), both vertical and horizontal loop systems. I would like some clarification on what "direct use applications" means in this context; also what it means (excluding products that are "solely improvements to geothermal ground source heat pumps".) Would DOE like to see proposals on GSHPs that are also focused on generation integration as well as improvements to heat pumps?	Direct use is the use of geothermal energy without a power plant or heat pump to provide heating for buildings and industrial processes. Examples of direct use include drying processes, aquaculture, greenhouse uses, and concrete curing. The exclusion of GSHPs that you highlighted includes both vertical and horizontal loop ground source heat pumps. The statement about "all innovations" is subject to all previous definitions and exclusions described earlier in the subtopic. The language "solely improvements to GSHPs" is intended to keep from automatically disqualifying an application that includes GSHPs, but still convey that we are interested in innovations to other applications of geothermal energy.
3	15(a)	Is subsurface thermal energy storage responsive to this subtopic?	We do not have insight regarding the likelihood of success for a subsurface thermal energy storage application. From your brief description, the innovation may use geothermal energy.
4	15(a)	My prospective submission is based on my research on horizontal GSHPs combined with the idea of recycled tire-derived aggregates (TDA) in the soil for higher insulation and increased efficiency. My understanding is that you are strictly not looking for any heat pump applications but would like to know if the TDA would qualify as an innovative approach.	From the brief description, the innovation sounds like it does not have any applications in geothermal energy aside from GSHPs.
5	15(a)	I am aware that the technology I am interested in (Kalina Cycle) has previously been the recipient of DOE grant funds for various R&D related applications. Would this previous funding preclude the technology for being the	Previous DOE funding does not preclude Kalina Cycle technology from this SBIR/STTR topic, but we will consider the scope of previously funded projects when selecting new awards. In response to your question about multi-pronged projects with dual objectives, we allow applicants

		basis of a SBIR/STTR funding application? Also, is it possible for the proposed Research Topic to be multi-pronged, i.e., include dual objectives? For instance, primary objective to improved bottoming-cycle efficiency, with the secondary objective being using the Kalina Cycle to bolt-on solar-thermal (economies of scale), or the other way around?	to propose their projects' scopes and objectives.
6	15(a)	I have a patent on Geothermal Magnetohydrodynamics (MHD) that I would like to field test. I have built a prototype but the cost of field-testing exceeds my budget allowance. Are you able to comment on the likelihood of an MHD proposal along those lines?	We do not have insight regarding the likelihood of success for a geothermal MHD proposal.
7	15(a)	We are developing a very innovative approach to drilling through bedrock in order to make drilling to deeper depths more affordable and hence more widespread. Is such a project applicable to this topic?	From your brief description, it sounds like deep geothermal development may constitute an under-utilized market.
8	15(a)	Is there interest in a design with the lowest geothermal flow that always will flow as long the wells last? Equipment is part of the fluid MSDS Resonator tank or Helium resonator extractor separator tank. Optimizing pressure, air ex-changer, and yields cleanest energy with co-production of an element.	From your brief description, it sounds like your idea might be responsive to this subtopic as long as you could identify a new or under-utilized market for geothermal energy that it would enable.
9	15(a)	We are investigating and developing low cost refrigerant lubricated bearings to be used in a down hole turbine coupled to a geothermal pump. This innovative bearing application allows a drive turbine to be close coupled to the pump within the well, providing some unique benefits to specific geothermal applications. Do innovative bearing designs for down hole operation in geothermal wells fall within the scope of this topic?	From your brief description, it sounds like your idea might be responsive to this subtopic as long as you could identify a new or under-utilized market for geothermal energy that it would enable.
10	15(a)	We will use augmented reality technology to educate residents of the Southeast about the use of geothermal energy for electricity products or direct use applications in the home. This technology will provide a visual understanding of the usefulness of applications for natural occurring heat from the earth. We will use market research to clearly define the target market and educate homeowners about geothermal products. Is this solution a fit for the project?	From your brief description, it sounds like your proposed project scope might be responsive to subtopic 15a, as long as you clearly identify new markets and/or revenue streams that your AR technology will enable.
11	15(a)	We have developed an innovative 300 kW ORC turbine generator unit (TGU). Specifically, we	From your brief description, it sounds like your idea would be responsive to our topic.

		are proposing the use of a binary system as a bottoming cycle on new or existing dry or flash steam geothermal plants. As the majority of cost and risk for these plants is in the drilling, a bottoming cycle would produce additional energy from existing assets with very little additional risk. The TGU consists of a close-coupled turbine and high-speed PM generator with magnetic bearings in a hermetically sealed package. The turbine itself utilizes a cartridge design allowing the gas path to be cost-effectively modified to accommodate a wide range of operating conditions and working fluids. This results in a compact, robust system with reduced maintenance and risk when compared to traditional open architecture ORC systems. Does this fit Topic 15?	
12	15(a)	We are experts in magnetic control, not in geothermal energy production. Do you think that we would be able to compete for funding in this DOE application? Would you know of any individuals or agencies we should talk to in order to become more familiar with the geothermal challenges?	For more information on geothermal energy please see our webpage http://geothermal.energy.gov, or read about our priorities in fiscal year 2015 at http://energy.gov/sites/prod/files/2014/03/f9/fy15_at-a-glance_gto.pdf. The Technology Transfer Opportunity (TTO) focuses on the use of co-produced geothermal resources. Further information about other areas of geothermal energy is available in two strategic roadmaps that our office published in 2013: http://www.eere.energy.gov/geothermal/pdfs/exploration_technical_roadmap2013.pdf, and http://www.eere.energy.gov/geothermal/pdfs/stanford_egs_technical_roadmap2013.pdf.
	15(b). TECHNOLOGY TRANSFER OPPORTUNITY: Enabling Geothermal Co-produced Applications by Employing Electromagnetic Manipulation of Magnetizable Oil		**joshua.mengers@ee.doe.gov**
	Solar (16a-e)		
	a. Analytical and Numerical Modeling and Data Aggregation		**solar.sbir@ee.doe.gov**
1	16(a)	Under which subtopic would solar integration technologies fit best?”	See answer to question 16(a) #2 below.
2	16(a)	What are the areas of interest for Analytical and Numerical Modeling and Data Aggregation?	(1) predictive analytics applied to solar resource forecasting, accurate technology adoption prediction, or operation and maintenance modeling; (2) advanced performance verification and validation tools; (3) novel techniques of and methods for capturing, aggregating, and analyzing structured or unstructured datasets; (4) aggregation and anonymization of solar performance and reliability data from residential, commercial, and utility scale installations to assign actionable, credible statistics for finance and underwriting; (5) consumer-facing decision-making platforms leveraging social and new media; and (6) incorporation of nearly real-time energy

			consumption data.
	16(b) Concentrating Solar Power: Novel Solar Collectors		**solar.sbir@ee.doe.gov**
1	16(b)	For Concentrating Solar Power: Novel Solar Collectors, what are the relevant 2020 SunShot technical and cost targets for the solar collector subsystems?	Please see http://energy.gov/eere/sunshot/collectors-rd-csp-systems in concert with the thermal receiver targets (http://energy.gov/eere/sunshot/receiver-rd-csp-systems) and the heat transfer fluid targets (http://energy.gov/eere/sunshot/multidisciplinary-university-research-initiative-high-operating-temperature-fluids.)
	16(c) Concentrating Solar Thermal Desalination		**solar.sbir@ee.doe.gov**
1	16(c)	For Concentrating Solar Thermal Desalination—what methods are eligible?	Concentrating solar thermal multi-stage flash distillation (MSF) and multi-effect distillation (MED) methods could be considered.
	16(d) Grid Performance and Reliability		**solar.sbir@ee.doe.gov**
1	16(d)	What are the SunShot system integration target metrics for this subtopic?	High penetration of solar generation at levels greater than 100% of today's peak load; Reduced interconnection approval time for solar projects to less than 1 week on average; Reduced interconnection costs for solar projects to less than USD $1,000 on average; and Exceeding present and future ANSI, IEEE and NERC grid performance standards.
	16(e) Labor Efficiencies through Hardware Innovations		**solar.sbir@ee.doe.gov**
	Vehicles (17a-f)		
	17(a) Electric Drive Vehicle Batteries		**brian.cunningham@ee.doe.gov**
	17(b) SiC Schottky Diodes for Electric Drive Vehicle Power Electronics		**steven.boyd@ee.doe.gov**
	17(c) Onboard Fuel Separator or Reformer		**roland.gravel@ee.doe.gov**
	17(d) Alternative Crank Mechanisms for Internal Combustion Engines Leading to Improved Energy Efficiency		**leo.breton@ee.doe.gov**
	Water (18a-b)		
	18(a) Innovative Small, Low-head Hydropower Turbines		**rajesh.dham@ee.doe.gov**
1	18(a)	We have been developing a hydropower technology that may be a candidate for your 2015 SBIR Low-Head Turbine subtopic. Our technology may best enable operation at nameplate capacity over a broad range of flow rates, low initial cost, durability, and simple maintenance - in other words low cost per kW-hour. We can scale the technology and could explore slight variants suitable for higher head installations. Would this technology be a potential match for this subtopic?	Please note that the scope of this announcement is limited to low head hydropower applications. This topic area does not include Marine and Hydrokinetic applications.

	18(b) Prognostic & Health Monitoring of MHK devices		**rajesh.dham@ee.doe.gov**
	Wind (19a)		
1	19	There is no TTO mentioned under wind. Could you provide us with eligible TTOs for this sub-topic?	There is no TTO subtopic for the Wind Topic. Only Topics 14 and 15 have a TTO subtopic.
	19(a) Active Load Alleviation Strategies for Wind Turbine Blades		**shreyas.ananthan@ee.doe.gov**
1	19(a)	We are currently investing in a wind farm in upstate New York and are looking for additional funding.	SBIR applications must be for R&D, not demonstration or deployment as in this question.
2	19(a)	Is this topic focused on developing a device and/or developing its control system? If an aerodynamic/stress numerical analysis and an optimization of the design are addressing the issue, are a complete set of tests necessary to prove the benefits and reliability of the proposed device?	Given that mechanical reliability of an active control strategy is critical, this topic is focused on development of the actuator and its demonstration. Some prototype development and testing is necessary to demonstrate the potential of the innovation to translate into a commercial offering.