

Powering the Blue Economy: Financial Mechanisms

Water Power Peer Review

October 10, 2019



Goals of PBE

Goal 1: Understand end user needs and quantify the value of marine energy in emerging ocean markets uniquely suited to MHK technology attributes.

Goal 2: Accelerate marine energy technology readiness through near-term opportunities, supporting WPTO MHK strategy and mission.

Goal 3: Work directly with the private sector, across EERE offices, and other public sector partners to address blue economy energy system needs. Develop PBE specific investments that accelerate co-development of marine energy and blue technologies.



Myriad of Mechanisms

Externally Distributed Competitions – Vehicles to fund competitive solicitations that aim to identify and fund solutions or ideas that are developed by private industry.

- **FOAs** – Long term, multi-year, with serious funding commitment.
- **Prizes** – Focused application or attention-focusing, smaller funding awards and faster timeline. Often interdisciplinary, and attracts new performers.
- **Other Transaction Agreement (OTAs)** - Legally binding agreements but outside of the FAR. One common application of OTAs is a consortium, or direct R&D support. The authority for DOE to use OTAs will sunset Sept. 30, 2020. ARPA-e, however, has permanent authority.
- **SBIR/STTR** – Available to startups and small businesses, specific for prototyping and commercialization.

Lab-Led/Executed Solicitations with Industry Focused – Mechanisms that leverage the expertise and resources of the National Laboratories, with the intended recipient being industry or academia.

- **CRADAs** – Can be used as a vehicle for either support on competitive solicitations (light form), or through direct agreements between labs and industry. Could include small business vouchers.
- **SPPs** – Facilities access outside of appropriated funds.
- **Notice of Technical Assistance (NOTA)** – Funded support by DOE available to industry competitively.

National Lab - DOE Contract Only – Agreements between National Labs and the DOE, with the Labs being the recipient of the funds.

- **Lab Calls** – Competitive call to labs, with multi-year agreements.
- **Annual Operating Plans** – Annually reviewed plans, managed by DOE staff.
- **Request for Innovation** – Light competition to find new ideas to fund at the labs.
- **Technology Commercialization Fund (TCF)** – Commercialization funding available to labs to work directly with industry on tech transfer.

Other Mechanisms – Other contractual mechanisms to conduct work, including directed funding and contracting agreements.

- **DNFA**: Noncompetitive funding directed to a performer to conduct work specific to their expertise.
- **GSA Schedules** – Available services, vendors and contracts that allow for direct work without competition.
- **Indefinite Delivery/Indefinite Quantity Contract (IDIQ)** - Competitive process to establish a ceiling of funding that agency can access on as-needed basis, rather than continuous competition for service.

Mechanisms with Other Agencies – Mechanisms to conduct funded work with other federal agencies.

- **Broad Agency Announcements (BAA)** – Interagency call, typically for technologies.
- **Interagency Agreements (IAA)** – Agreements between agencies for joint work or solicitations.

PBE Portfolio: Multiple Mechanisms

Foundational
Lab R&D



Prizes



SBIR/STTR



Interagency



Cooperative
Agreements



Research

Early
Development

Prototype

Pilot Demo

Commercial
Demo

Market
Adoption

Mechanisms to Accomplish Each Goal – Goal 1 Examples

Goal 1: Understand end user needs and quantify the value of marine energy in emerging ocean markets uniquely suited to MHK technology attributes.

Foundational R&D

- Conduct surveys with end users, produce findings to the public and help to inform prize competitions
- Evaluate markets and develop analyses

Prizes

- Incorporate end-user requirements into rules for prizes
- Design prizes appropriate for the end-user

Interagency

- Leverage MOUs and groups like the NOPP to work with other agency partners to craft broad agency announcements to meet needs of federal end-users

Mechanisms to Accomplish Each Goal – Goal 2 Examples

Goal 2: Accelerate marine energy technology readiness through near-term opportunities, supporting WPTO MHK strategy and mission.

Foundational R&D

- Use lighter mechanisms, like Request for Innovation, to support short-term, quick wins to support PBE

Prizes

- Leverage the advantages of prizes to support a larger number of innovators and entrepreneurs, and administer prizes that lower the burden to apply & get funding.

SBIR/STTR

- In addition to funding via FOAs, increasing support of the use of SBIR/STTR to provide funding for prototype development, more commensurate with work in PBE.

Mechanisms to Accomplish Each Goal – Goal 3 Examples

Goal 3: Work directly with the private sector, across EERE offices, and other public sector partners to address blue economy energy system needs. Develop PBE specific investments that accelerate co-development of marine energy and blue technologies.

Foundational R&D

- Working within DOE, identify other offices with equities in the marine energy space, and identify R&D areas for collaboration. Use AOPs to specifically support joint work and RFI to identify collaboration opportunities.

Prizes

- Prizes specifically allow for additional sponsorship and collaboration activities. Leveraging relationships with federal partners, like NOAA, and actively seeking additional private sector funding and support to augment prizes.

FOAs/Other

- Use of FOAs or other mechanisms (like connector incentives via prizes) to support a broader connection of PBE developed prototypes to the customers who will use them.

Financing Mechanisms – Not in a Vacuum

Activity	Lab Mechanism	Industry/University Focused Mechanism	Other Mechanisms
Waves to Water Prize	<ul style="list-style-type: none"> AOP to support technical analysis and prize administration 	<ul style="list-style-type: none"> Cash Prizes Subcontracting for Testing Access 	
Ocean Obs Prize	<ul style="list-style-type: none"> AOP to support technical analysis and prize administration 	<ul style="list-style-type: none"> Cash Prizes Subcontracting for Testing Access 	<ul style="list-style-type: none"> Interagency Agreements – MOUs, potential IAAs, BAAs
Lab Research & Development	<ul style="list-style-type: none"> AOP/Lab Calls/Request for Innovation Energy I-Corps 	<ul style="list-style-type: none"> Technology Commercialization Fund CRADAs 	
Prototype Development	<ul style="list-style-type: none"> AOP/Lab Calls/Request for Innovation 	<ul style="list-style-type: none"> SBIRs/STTRs Prizes FOAs - CRADAs 	<ul style="list-style-type: none"> BAAs, IAAs

Some Key Questions

- Some prizes, like the DOE Solar Prize, offer additional incentives beyond cash prizes to support competitors. This includes commercialization assistance, vouchers for use at facilities, pitch coaching, and other mentorship activities.
 - In addition to cash prizes, what other incentives would help to attract industry to the prizes?
 - Are there other technical services beyond TEAMER that could be offered?
 - Would support like entrepreneurial training, introductions to investors, and other commercialization services support industry more broadly?
- Are there any other ways that we can make our program be more effective for supporting industry development?