

## GENERAL FEEDBACK AND LESSONS LEARNED

In planning the 2019 Peer Review, the Water Power Technologies Office (WPTO) aimed to gather in-depth feedback from the reviewers while offering all attendees the opportunity to share their thoughts on WPTO-funded work and the future of water power research and development (R&D). Attendees were given multiple opportunities to directly or anonymously share feedback—on both the programs and the peer review process—through the following mechanisms: (1) dedicated networking breaks and discussion time throughout the week, in addition to Q&A sessions; (2) comment boxes in all session rooms for attendees to submit feedback anonymously; (3) a town hall-style open feedback forum with WPTO staff and all attendees; and (4) a post-event survey via email to submit feedback anonymously.

The end-of-session networking activities ensured that all reviewer questions were answered and enabled the audience to ask any remaining questions to all previous presenters in a session. The additional time at the end of each session also served as an opportunity for WPTO to gather feedback from the audience, noting any themes, takeaways, or recommendations shared. Comment cards were also provided to allow the audience to submit anonymous feedback on the program, such as gaps in WPTO's research portfolio or recommendations for building partnerships, and event execution. The comment cards and session notes informed the agenda for the town hall at the end of peer review, which brought together reviewers, WPTO staff, PIs, and the general audience to discuss key themes, takeaways, and recommendations to inform the program's future direction and approaches. The town hall provoked a lively discussion and sharing of ideas after days of attendees learning about the programs. Finally, the post-event survey focused on the peer review process to evaluate WPTO's efforts and improve future reviews.

The following is a sample of comments and actionable recommendations made by individual review panelists, general peer review attendees, and PIs aimed at improving both the program and the peer review process.

### Summary of Feedback from all Attendees on the Programs

#### Office-Level (Relevant to Both Programs)

- WPTO's use of a variety of funding mechanisms is exciting. Early stage R&D often requires flexible funding mechanisms that allow people to fail fast and small.
- Meaningful, early, and frequent stakeholder engagement and impactful dissemination is important.
- WPTO may need to do more in the areas of performance metrics, quantifying WPTO's impact and ROI, as well as tracking commercialization. There should be more focus on translating R&D into near-term commercial market success.

#### Hydropower Program

- It will be impossible to build new hydropower if we keep doing it the same way, and trying new things is not only promising, it's necessary.
- HydroWIRES is an important area of research for the program, and there are opportunities to further expand and refine the scope of research.
- More engagement of ISOs and RTOs and other grid/power system stakeholders would be valuable to the success of the program, especially for HydroWIRES.
- More specificity is needed for performance metrics, especially related to environmental performance.
- The FERC eLibrary is difficult for hydropower stakeholders to use, and it would be helpful if the Hydropower Program could in any way collaborate with FERC to make this more valuable.

## Marine and Hydrokinetic (MHK) Program

- The national labs are doing great work and have proven responsive to feedback from stakeholders. Industry wants to work with them, but industry members also need easy and cost-effective mechanisms to do so. TEAMER is a step in the right direction.
- We need specificity in performance metrics, and if not LCOE, what else?
- There is a lot of interest in risk management strategies, including how to track, record, document, and share mitigation strategies and lessons learned.
- Marine energy developers face supply chain challenges; it is difficult to incentivize vendors to reduce costs without the guarantee of scaling. It would be valuable if WPTO could help address this.
- The MHK Program could do more to coordinate with offshore wind researchers and stakeholders, including on environmental research and regulator engagement, as well as with BOEM's research arms, but also on the foundational research side of the program, like on materials.
- Powering the Blue Economy (PBE) has the potential to “grow the pie” for the PBE markets by bringing greater visibility to the critical missions that they support. With the potential to scale these “win-win” opportunities, WPTO, in coordination with other federal agencies and philanthropic organizations, is in an excellent position to spur MHK industry growth.
- Despite a general optimism around the PBE approach, there are inherent challenges in developing technologies for markets that are in early stages of development and have unclear growth potential. Strong partnerships should be continuously pursued, and a clear vision of the near, mid and long-term applications of MHK should be regularly refined to ensure that MHK development efforts remain in sync with PBE markets.

## Summary of Feedback from all Attendees on the Peer Review Process

- Review instructions were provided in a timely manner and were clear and well described. The WPTO team did a great job organizing information, and sufficient resources and tools were provided to prepare reviewers for assigned tasks. The peer review was very well organized and executed. The WPTO team did a great job communicating and setting expectations.
- The accessibility to all WPTO and lab staff prior to the review was impressive. Clearly, there are good people involved in this program. The team did a tremendous job. During a meeting at the end of the week between reviewers and WPTO staff, several reviewers expressed ideas they thought could improve the process and we heard that some of these ideas had been tried in the past with mixed results. Overall, reviewers would not change much about the process.
- The process improves with every iteration, and overall, this was an excellent job by the WPTO team. The peer review process was well-organized and well-supported by the staff managing the process.
- WPTO staff running the event were great, and the balance struck between sticking to the agenda and having flexibility for a discussion running over was appreciated. All staff members were very open and approachable, and the work put into this event by everyone was truly appreciated.
- The peer review tool worked great for reviewers, and the scoring seemed clear. The agenda for the peer review event was much better than expected, and the morning panels were fantastic.
- WPTO has built a tremendous peer review process and should be proud of the method of project evaluation.

- Instructions were provided well in advance and were clear and well described. Enough time was allocated to deliberate and modify reviews, and there was plenty time for panels to confer. Evaluation criteria was quite good—meaningful and appropriate in most cases. Online tools/website were useful and well-designed.
- The many opportunities to provide feedback directly to PIs and WPTO were appreciated.
- The panels with outside speakers were inspiring and relevant. The end-of-review town hall really helped round out the week and tie everything together.
- There were great opportunities to network with a broad cross section of the industry, as well as WPTO and national lab staff.
- A few more dynamic sessions or more Q&A seemed warranted, as many participants want to ideate and could offer valuable direction in more formative sessions.
- It was not clear in the case of a few projects why they needed to be reviewed, especially very small or internal-facing projects that did not seem relevant for reviewing the program strategy/direction and impact.
- Several attendees and reviewers expressed that they would have appreciated more of an overview of the DOE budget process and timelines, the whole thing from appropriations to awards, as well as WPTO's project management (such as more information on the go/no-go decisions).
- WPTO could do a better job of managing the Q&A session (e.g., keeping time and not letting a few people dominate the Q&A).
- A few of the projects reviewed did not seem relevant for reviewing the program strategy/direction and impact.
- The peer review gave attendees a chance to show all the work WPTO funds and how the portfolio really fits together and supports the advancement of the industry.
- The dynamic viewpoints of the reviewers and audience were appreciated, and it allowed researchers to think of a different perspective and audience for their work.

### Lessons Learned and Opportunities for Improving the Peer Review Process

- **Set objectives from the beginning.** Whether planning a DOE program peer review or any other event, report, or public facing effort, it is important that a project team agree to key objectives or intentions for the process from the beginning. Doing so helped the WPTO team stay focused on the tasks they considered most important for achieving the office's vision for the review.
- **Review projects that are only relevant for a program-wide review.** WPTO acknowledges the feedback received that a few projects reviewed did not seem relevant for reviewing the program strategy and impact. For the 2019 WPTO Peer Review, the office followed an EERE guide to determine the percentage of the portfolio to review and the evaluation criteria to use. WPTO agrees that some projects, especially very small or internal-facing projects, likely do not need to be reviewed for the purpose of evaluating the program at a high level; alternatively, in some cases, WPTO staff could quickly cover certain projects in their own presentations. The office will incorporate this feedback when planning the next review while still adhering to organizational guidance.

- **Gather feedback from all attendees, not just the reviewers, for a valuable public review.** WPTO sought to provide many opportunities for all peer review participants—reviewers, PIs, and others—to provide feedback directly to WPTO anonymously or openly. This added significant value to discussions during the review. Also, this broadened the WPTO staff’s understanding of partners’ perspectives, as thoughtful suggestions were received from attendees with varying levels of familiarity with the programs. A town hall can be very productive and provoke lively discussion at the end of the week if organized well.
- **Offer a variety of sessions to maintain engagement at such a long event.** WPTO organized panels with outside speakers, networking sessions, an end-of-review town hall, and scheduled breaks as often as possible given the time constraints. These were all clearly appreciated by the attendees. WPTO would consider other ways to break up the agenda in the future, such as offering longer breaks, one-on-one speed networking sessions, sign-ups for meeting space, or lightning round sessions to introduce attendees to new researchers and ideas.
- **Consider the pace at which reviewers can work best.** WPTO deeply appreciates the substantial amount of time and effort required by the reviewers. In future reviews, the office will consider ways to structure the sessions so that reviewers have more time throughout the review week to record their comments and have closed-door, reviewer-only meetings. WPTO will also consider the 2019 reviewers’ recommendations to balance the amount of work required before, during, and after peer review.
- **Provide thorough presentations on programmatic decision-making and timelines.** WPTO heard from a number of attendees and reviewers that they would have appreciated more of an overview of the DOE budget process and timelines (the whole thing from appropriations to awards), as well as WPTO’s project management (such as more information on the Go/No-Go decisions). WPTO will work to emphasize these details in future reviews.
- **Encourage crosspollination among technology areas and disciplines.** The 2019 review week was busy, with almost three full days of four concurrent tracks. Attendees’ feedback suggested that they overwhelmingly agreed the tracks were organized logically in terms of subject matter, but WPTO recognizes this limited the number of sessions participants could attend. Most importantly, the tracks did not always encourage mixed audiences when it would have been advantageous, such as program areas where different stakeholder groups need to share varying perspectives. WPTO will try to improve this in future reviews, acknowledging that this could be challenging due to time and budget constraints.