



Energy Efficiency &
Renewable Energy

EERE G 413.001

**Peer Review
Guidance**

December 2020

Table of Contents

What Has Changed?	3
Executive Summary	3
1 Introduction.....	4
1.1 Background and Purpose of the Guidance.....	4
1.2 Strategic Importance of Peer Reviews.....	4
1.3 Project Level Peer Reviews vs. Office Level Peer Reviews	4
2 Peer Review Roles and Responsibilities	5
2.1 Corporate Responsibilities	5
2.2 Peer Review Leader (PRL).....	6
2.3 Peer Review Chairperson (Optional)	7
2.4 Peer Reviewers (Reviewers).....	7
3 Overview of EERE Peer Review Requirements.....	7
3.1 Scope and Frequency of Review.....	7
3.2 Timely Preparation	8
3.3 Evaluation Criteria	8
3.4 Reviewers	8
3.5 Collect Reviewer Data	8
3.6 Producing the Reviewer Report, Peer Review Report and Distribution	8
3.7 Maintain Peer Review Record and Conduct Post-Review Feedback Evaluation	9
4 Implementation Phase 1 – Preparation: Purpose, Criteria, and Process.....	9
4.1 Purpose and Scope of a Peer Review.....	9
4.2 Evaluation Criteria and Questions	9
4.2.1 Core Criteria.....	9
4.2.1.1 Quality	9
4.2.1.2 Productivity and Accomplishment	10
4.2.1.3 Relevance.....	10
4.2.1.4 Management.....	10
4.2.2 Review Questions.....	10
4.3 Independence of the Review	10
4.4 Federal Advisory Committee Act (FACA).....	11
4.5 Public vs. Closed Review Sessions	11
4.6 Selection of Reviewers and Conflict of Interest/Nondisclosure	12
5 Implementation Phase 2 – Pre-Review: Logistics, Evaluation Tools and Preparation Materials.....	13
5.1 Evaluation Guidance and Tools	13
5.2 Reviewer Training	14
5.3 Materials for Reviewers.....	14
5.4 Peer Review Record	15

	<i>Preparation Stage</i>	15
	<i>Pre-Review Stage</i>	15
	<i>Review Stage</i>	15
	<i>Post-Review Stage:</i>	15
6	Implementation Phase 3 – Review Stage.....	16
6.1	Instructions to Peer Reviewers	16
6.2	Facilitating the Review	16
6.3	Data Collection	16
7	Implementation Phase 4 – Post-Review Activities.....	17
7.1	Analysis and Summary of Evaluation Data	17
	7.1.1 <i>Reviewer Report</i>	17
	7.1.2 <i>The Peer Review Report</i>	17
7.2	Finalizing the Office Response and Follow-Up Actions	18
7.3	Evaluating the Peer Review Process.....	18
8	Conclusion	19
	Appendix A: Reviewer Qualifications	20
	Appendix B: Sample Peer Review Agenda and Session Time Variation	21
	Appendix C: Data Management Plan Guidance	22
	A. Background Information.....	22
	B. Evaluating Data Management Plans/Suggested Elements for a Data Management Plan	22
	Appendix D: Examples of Review Questions	23
	Appendix E: Approaches for Nominating and Selecting Reviewers	24
	Appendix F: Sample Project Information Sheet.....	25
	Appendix G: Sample Script for Facilitators	26
	Appendix H: Sample Actionable Response Tracking	27
	Appendix I: Sample Post Review Evaluation and Feedback.....	28
	Appendix J: Hosting Virtual Peer Reviews.....	31

What Has Changed?

This document is an update to guidance issued in 2004 and serves to provide the minimum requirements for Energy Efficiency and Renewable Energy (EERE) Offices to develop and maintain In-Progress Peer Reviews as part of their program management process. Updates were made based on feedback and information collected from EERE Offices.

The information included herein integrates good practices gleaned from these efforts. This guidance is a streamlined version of the original document and maintains the primary key focus areas. This document also reflects changes in terminology from previous guidance.

Considerable flexibility is necessary in how EERE Offices conduct Peer Reviews. To ensure independence, quality and rigor while still allowing flexibility, minimum requirements are set as key guides for EERE's practice of Peer Review.

Executive Summary

Objective review and advice from peers—Peer Review—provides managers, staff, or researchers, a powerful and effective tool for enhancing the management, relevance, effectiveness, and productivity of all of the Office of Energy Efficiency and Renewable Energy (EERE) research, development, demonstration, and deployment (RD3) programs.

In-progress Peer Review (or simply “Peer Review”) findings will be considered by DOE/EERE managers, staff, and researchers in setting priorities, conducting operations, and improving projects. Peer review efforts will succeed in the long term only to the extent that they provide useful input for managers' decision-making.

This guidance provides information and examples useful for planning, conducting, and utilizing Peer Reviews based on best practices. Best practices are those that are (1) utilized with the most success by EERE's own programs or by other institutions, or (2) identified as such by multiple widely recognized experts outside of EERE, including experts at the Government Accountability Office (GAO) and Office of Management and Budget (OMB).

The guidance describes EERE peer review minimum requirements in the following planning and implementation areas:

- Scope and Frequency of Review
- Timely Preparation
- Core Evaluation Criteria
- Independent External Reviewers
- Collect Reviewer Data
- Produce the peer review reports – Reviewer Report and Peer Review Report, and their Distribution
- Maintain Peer Review Record and Conduct Post-review Feedback Evaluation

1 Introduction

1.1 Background and Purpose of the Guidance¹

Executive, Congressional and Departmental guidance all underscore the need for effective planning and management. As such, it is imperative for EERE Offices to clearly articulate and communicate their plans and priorities, both internally and externally.

This guide focuses only on the Peer Review process and does not cover merit review, stage-gate, and Go/No-Go reviews. Peer Review may include reviews at the project level and/or the Office level. This guidance focuses primarily on project-level review.

EERE Offices should use the output of Peer Reviews in combination with other considerations² to determine whether projects should continue as is or continue with adjustments; or no longer considered for future funding. Results of Peer Reviews should inform Office planning, including [Multi-Year Program Plan \(MYPP\) development](#), Lab and Annual Operating Plans (AOP) Planning, and Funding Opportunity Announcement (FOA) Planning.

Peer Review is a rigorous, formal, and documented evaluation process using objective criteria and qualified and independent reviewers to make a judgment of the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of an Office's portfolio of projects.³

1.2 Strategic Importance of Peer Reviews

Objective review and advice from peers are established mechanisms for the effective management of highly complex and/or technically challenging projects and programs and are widely used in industry, government, and academia. Peer Review is a powerful and effective tool for enhancing the relevance, effectiveness and productivity of EERE's projects that the people best qualified to judge a program or project are experts in that or related fields of knowledge. Peer review is essential in providing robust, documented feedback to inform EERE program planning. Assessments of the quality and effectiveness of current projects and programs is essential to designing future programs and/or enhancing existing efforts.

1.3 Project Level Peer Reviews vs. Office Level Peer Reviews

Peer Reviews may include two levels of analysis and evaluation: (1) project level; and (2) Office level. Project Level Peer Reviews focus on whether the projects are executed correctly, and therefore the reviewers should have a high level of subject matter expertise. Office Level Peer Reviews focus on whether the right projects are being done. Reviewers at this level typically include subject matter experts as well as those with broader expertise, experience and vision. Project Level and Office Level Peer Reviews may be done

¹ For questions about the EERE peer review guidance, please contact the peer review subject matter expert in EERE's Office of Strategic Programs at EERE.Evaluation@ee.doe.gov.

² Milestone performance reviews, stage gate process, and other project monitoring is taken into consideration when making final project decisions.

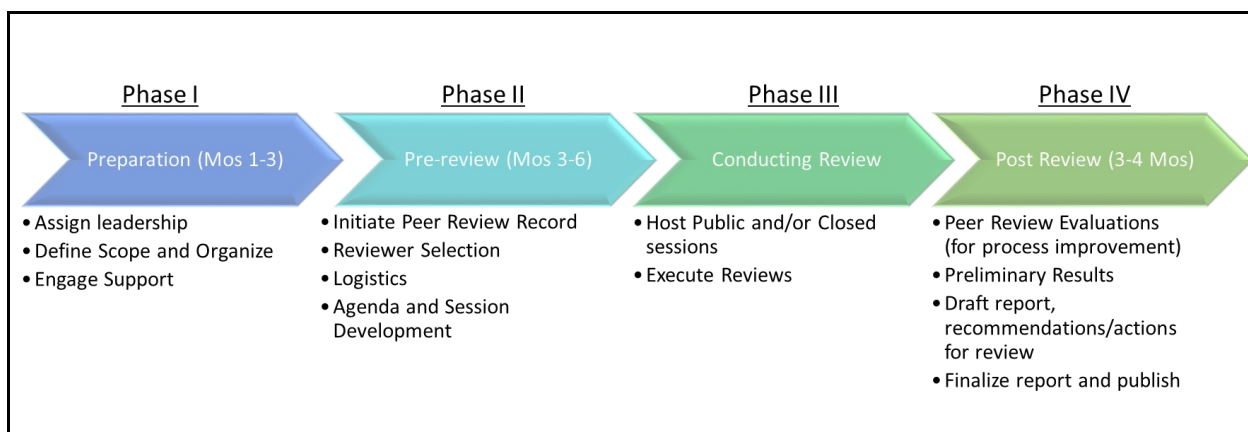
³ Drawn from definitions used by the DOE, the National Academy of Sciences (NAS), the White House Office of Management and Budget (OMB), the General Accounting Office (GAO), and other Federal agencies and institutions.

simultaneously or sequentially. While this guide focuses on Project Level Peer Review, the results and information collected may inform an Office Level review.

Each Peer Review should be tailored to the specific Office’s characteristics and should encompass considerations including budget, management structure and complexity, type of program, stakeholder participation, and information needed to support management decisions.

This guidance is organized by the process flow for conducting peer reviews. The major planning and implementation phases for project-level peer review and activities are illustrated in **Figure 1** below. Phases 1 and 2 are not necessarily sequential—they may overlap.

Figure 1: EERE Peer Review Guidance Organization



2 Peer Review Roles and Responsibilities

2.1 Corporate Responsibilities

EERE is committed to utilizing the Peer Review process to assist Offices in executing on their mission. Key roles and responsibilities are outlined below in **Table 1: Key Roles and Responsibilities**. Please ensure you adhere to the guidance from the Office of Federal Procurement Policy (OFPP) regarding inherently governmental functions when assigning responsibilities to individuals.

Table 1: Key Roles and Responsibilities

Key Role	Assignment	Responsibility
Office Director/Program Manager	Appoints the Peer Review Leader (PRL)	Ensures Peer Reviews are conducted in a rigorous, independent, and transparent manner according to EERE defined requirements.
Peer Review Leader (PRL)	Delegated by the Office Director/Program Manager – must be a federal employee	Leads the team in the coordination, planning, and execution of the Peer Review.
Peer Review	Appointment by the PRL	Independent expert external to the

Chairperson(s) ⁴ (Optional)		Program. Performs direction and oversight in the coordination, planning, and execution of the Peer Review. May not have an actual or apparent conflict of interest (COI) and may not perform any inherently governmental responsibilities.
Peer Review Support Team	Technology Managers, Technical Project Officers, analysts, support contractors, and/or others supporting the Office	Supports the PRL in the planning, executions, and documentation of the Peer Review.
Peer Review Members (Reviewers)	Reviewers should be high-quality and impartial.	Reviewers will review materials provided, participate in the review, and provide independent evaluations and scoring for each project. Reviewers are not to seek to obtain consensus with other reviewers.

2.2 Peer Review Leader (PRL)

A Peer Review Leader (PRL) from the Office is appointed by the Director to facilitate the Peer Review process, which includes selecting a Review Chairperson(s) and Peer Review members, as described below.

It is recommended that the PRL establish a Steering Panel composed of internal and external staff. This is an optional step. If a Steering panel is created, the PRL should be clear in seeking only individual (non-consensus) advice from each of the members of the group. The Steering Panel may consult with internal and external experts and stakeholders to develop broad perspectives in the design and implementation of the review; help define the review process and evaluation criteria, and help select the Review Chairperson(s), as well as possibly other members of the review panel.

It is recommended that the PRL role be rotated periodically. The incoming PRL should shadow an experienced PRL for at least one cycle prior to taking over full PRL responsibilities.

Areas where the PRL provides direction and oversight may include the following:

- Selection of reviewers; emphasis is on independence and transparency in the selection process;
- Establishing review criteria;
- Establishing the content and scope of material submitted by research teams;
- Ensuring independence of the panel members during the review and the independence of the review more generally;
- Ensuring effective time management of resources involved;
- Guiding a professional facilitator if one is used;
- Ensuring that the Peer Review is focused on substance; and
- Overseeing the production of Peer Review Reports and signing off on the final Peer Review Report.⁵

⁴ There could be more than one Chairperson. There could be a Chairperson for each subject matter review. Project level peer reviews often are organized by subject topic sessions. Some offices use Review Chairpersons to lead a review topic.

⁵ There are two reports – the Reviewer Report and the Peer Review Report (see Phase 4).

2.3 Peer Review Chairperson (Optional)

The chairperson of the review is an objective, unbiased and independent expert from outside the Office. Since a project level review is often broken into subject matter topic sessions, there could be more than one Review Chairperson for a review, e.g., one Review Chair for each panel. Areas where the chairperson provides direction and oversight may include:

- Select other independent external reviewers for the panel;
- Establish review criteria;
- Establish the content and scope of material submitted by Principal Investigators (PI) and project teams;
- Facilitate the review process during the subject matter session; and
- Ensure the review has a rigorous question-and-answer period.

There is some overlap in the roles of PRL and Review Chairperson(s). Essentially, the PRL is responsible for oversight and general management of the entire peer review, while the Review Chairperson only focuses on his/her specific subject matter topic panel. External Peer Review Chairpersons should have a clear understanding of the duties required. Clear lines of distinction in responsibilities should be drawn. The chairperson must not perform inherently governmental functions.

2.4 Peer Reviewers (Reviewers)

Reviewers are selected based on their expertise and experience in their respective fields and provide independent and objective feedback. Reviewers participate in the Peer Review, provide rigorous questioning of presenters, and provide ratings and justifications to support their ratings for reviewed projects.

3 Overview of EERE Peer Review Requirements

To ensure independence, transparency, quality and rigor while also allowing for flexibility, the following minimum requirements are key to ensuring the integrity of EERE's Peer Review process.

3.1 Scope and Frequency of Review

Offices will Peer Review 80-90% of their office funding for the total active project portfolio (based upon dollar value), and 100% of key projects.⁶ All projects should be considered for review a minimum of every two years. With Director or DAS approval, an office has flexibility to exclude projects from review, as appropriate. Examples of reasons for excluding a project may include:

- Project recently awarded and not started;
- Project is being closed out/retired;
- SBIR project; or
- Congressionally-Directed Projects (CDP).

⁶ Key project criteria: 1) projects of high relevance; 2) importance of research; 3) amount of project funding; 4) stage of project; 5) projects having a long duration threshold; 6) complex, broader research efforts; 7) projects deemed to have technical, operational or other challenges; 8) high risk projects; and 9) projects deemed to require careful scrutiny (e.g., projects having low scores from a previous peer review).

3.2 Timely Preparation

Preparation for a Peer Review includes the designation of the PRL, determination of the purpose and scope of the Peer Review and development of the Peer Review agenda. Peer Review documents and instructions should be sent to the reviewers at minimum of two weeks ahead of the review. It is recommended that documents be sent to reviewers three weeks ahead of the review date (see sections [4](#) and [5](#) for additional information).

3.3 Evaluation Criteria

Clear criteria for evaluating the projects must be defined prior to the Peer Review. At minimum, projects should be assessed on **quality; productivity and accomplishments; relevance** of project success to EERE and programmatic goals, including alignment with EERE Strategic Goals; and **project management** (planning, executing, monitoring, and controlling). Offices may choose to identify and define additional criteria. Examples may include:

- Approach to performing the work;
- Accomplishments, results and progress;
- Collaboration and coordination with other institutions; and
- Proposed future work.

3.4 Reviewers

Emphasis should be placed on independence and transparency when nominating and selecting reviewers. External experts should be used as reviewers to ensure independence and fresh perspectives are taken into consideration. A minimum of three reviewers is recommended for each discrete subject matter area. Reviewers should have appropriate qualifications and be independent with no actual or apparent conflicts of interest. See **Appendix A: Reviewer Qualifications** for more information on reviewer selection.

3.5 Collect Reviewer Data

PRLs will plan how review inputs are documented, analyzed and reported, and how individual reviewer comments will be tracked while maintaining their public anonymity. Data should be collected using real time data collection software to capture both quantitative numerical scoring and qualitative responses and allow for rapid analysis of reviewer findings.

The Peer Review agenda should allow sufficient time for PI presentations and rigorous Q&A. Each subject topic session should be between 40 and 60 minutes in duration, but not less than 30 minutes. The duration should take into account the project's characteristics, e.g., budgetary priority; high technical risk; high dollar value; multiple project partners. It is recommended that the Q&A time be of the same duration as the PI presentations. Reviewers should support any comments made during sessions with citations or data whenever possible. See **Appendix B: Sample Peer Review Agenda** for a template.

3.6 Producing the Reviewer Report, Peer Review Report and Distribution

Refer to section 7 for more detail.

3.7 Maintain Peer Review Record and Conduct Post-Review Feedback Evaluation

The PRL should maintain a **Peer Review Record** containing the full documentation of the Peer Review process. The Peer Review Record will be used to help manage subsequent reviews and ensure continuous improvement in the Peer Review process. The PRL may obtain post-review feedback through the use of a short survey to PI and reviewers, and/or through informal meetings.

4 Implementation Phase 1 – Preparation: Purpose, Criteria, and Process

The preparation for a Peer Review should begin well in advance and will depend upon the complexity of the review. Use of a [Gantt chart](#) may be beneficial to the planning and scheduling process. The preparation should be established early enough to allow the results to be used in Office planning efforts (e.g., Multi-Year Program Plans, Annual Operating Plans, etc.).

4.1 Purpose and Scope of a Peer Review

The first step in preparing a Peer Review is to determine the purpose and scope of the review. The primary intent of a Peer Review is to review the technical, scientific and business merit of the projects, the actual or anticipated results, and the productivity and management effectiveness of the projects. Peer Review findings, combined with other data, help provide the basis on which managers:

- Decide to select, continue, modify, or redirect Office portfolios;
- Assess Office performance and productivity; and
- Identify closures or new opportunities;

4.2 Evaluation Criteria and Questions

Reviewers should provide detailed written comments and numerical ratings of predetermined evaluation criteria. Reviewers should understand the Office's intentions with regard to the level of desired risk, timing of benefits and other dimensions of "success" so projects may be judged accordingly. Otherwise, there may be a tendency to support more traditional projects at the expense of innovative ones. Background information that elaborates on the Office's intention may be provided as part of the advance set of materials to reviewers.

Peer Review Criteria should focus on the questions that most need to be discussed by an objective, expert group. Criteria need to be stated as clearly and succinctly as possible to reduce the likelihood of misinterpretation.

4.2.1 Core Criteria

Certain core criteria are recommended for use by DOE, Office of Management and Budget, and others. Although Offices may choose to define additional criteria, at minimum all EERE Offices are expected to use the following criteria (referred to as "core criteria"). The four core criteria are:

4.2.1.1 Quality

Quality is a measure of the inputs: the quality of the technical approach, the quality of the people, and the quality of the facilities and other resources involved.

4.2.1.2 Productivity and Accomplishment

Productivity is a measure of the activity underway and the outputs: what has been achieved and what is the value of the Office's output compared to costs? This criterion examines if projects are making progress in meeting targets and goals commensurate with funding levels and degrees of risk. Accomplishments are a measure of the outputs: what has been achieved?

4.2.1.3 Relevance

Relevance evaluates whether the activities under review provide an actual or potential contribution to the Office and the Department's mission, goals and strategy. Activities should address current known or anticipated technical, market or policy barriers, or business management or communications support challenges.⁷

4.2.1.4 Management

Management evaluates all areas of the project, including the level of effort and work performed (e.g., testing, data analysis, etc.) that may determine the success of the project. A project's Data Management Plan (DMP) should also be reviewed to ensure that the data is managed as planned and is adequate. For more information on Data Management Plans and requirements, see **Appendix C: Data Management Plans**. Additional criteria may be added by the office at their discretion.

4.2.2 Review Questions

Asking specific questions based on the criteria makes it easier for the reviewer to do the job requested of him/her. Questions should go as deep and as technical as necessary to meet management information and decision-making needs. See **Appendix D: Examples of Review Questions**.

4.3 Independence of the Review

Achieving a high level of independence is crucial to the success of the review. A key concept underlying Peer Review is the use of an independent process for identifying and selecting reviewers and the eventual selection of independent external reviewers.

Another key concept is the level of perceived independence in managing and executing the review. A decision must be made on the level of independence and external control on the outset. External management will result in a higher level of perceived independence using an appropriate level of direction and support from the Office.

Other independent sources (e.g., third party steering panel, identified Review Chairpersons, use of a co-nomination process) may be used for nomination and selection of reviewers. Employing a reviewer nomination process relying on input from independent experts ensures that fresh perspectives are taken into consideration. Office staff involvement in nominating reviewers is often necessary and is acceptable, as long as reviewers are not nominated and selected entirely by Office staff, with no involvement of third party experts in the nomination process. Final selection may be made by the PRL or Office Director, or a Review Chair(s) if Review Chairperson(s) are used. See **Appendix E. Approaches for Nominating and Selecting reviewers**.

⁷ It is understood that for longer term, high risk research, specific contributions may not yet be well-defined or known.

4.4 Federal Advisory Committee Act (FACA)

The Department of Energy has chartered Federal Advisory Committees that are managed in accordance with the Federal Advisory Committee Act (FACA)⁸. FACA imposes certain requirements on Federal Advisory Committees (e.g., open meeting, balanced membership, formal opportunities for public participation, publicly available records, and committee chartering requirements). In addition to formally chartered Federal Advisory Committees, groups of peer reviewers may become subject to FACA requirements if they meet **all** the following criteria:

- Are established, controlled or managed by EERE;
- Include one or more individuals who are not full-time or permanent part-time federal employees; and
- Are intended to, or do, provide group or collective, rather than individual, advice.

The standard EERE peer review process is not intended to obtain consensus advice from non-federal sources. As such, EERE peer review processes typically meet the first two criteria, but not the third criterion. Therefore, EERE peer review processes are not generally subject to the FACA; however, EERE personnel could inadvertently invoke the FACA for peer reviews by requiring peer reviewers to reach consensus or creating the appearance that the peer reviewers are a consensus-making body.

Offices should carefully construct peer reviews in a manner that does not inadvertently invoke FACA. If EERE conducts a peer review where reviewers provide their individual views and recommendations and the reviewers do not vote or use other means to develop group advice, the peer review in most cases would not be subject to the FACA. However, if the peer review process seeks to obtain a product (e.g., recommendation, report etc.) from the group as a collective or consensus body or the peer reviewers provide collective or consensus (rather than individual) advice, the peer review process may be subject to the requirements of the FACA. Should an Office want to conduct a peer review where the reviewers act to provide collective or consensus advice, the Office should seek advice from the assigned Field Legal Counsel⁹ to ensure the FACA and other requirements are met.

When referring to the recommendations of the individual reviewers, EERE should **not** characterize these recommendations using such phrases as “the peer reviewers all agreed” or such terms as “collective” or “consensus.”

Direct questions concerning the applicability of FACA to peer review meetings to the assigned Field Legal Counsel for the Office conducting the peer review.

4.5 Public vs. Closed Review Sessions

It is up to the PRL in consultation with the Director and others to decide whether or not to have sessions that are open or closed to the public, or whether to employ a combination of both. Public sessions are encouraged, as appropriate, to provide transparency for the Office and its projects. Public sessions have the following benefits:

- Improve the transparency of the Peer Review process;
- Strengthen integration networks for research, deployment delivery, or business management;

⁸ 5 U.S.C. § App. 2.

⁹ Each EERE technology office is assigned Legal Counsel associated with the servicing procurement office at either the Golden Field Office or NETL.

- Broaden public learning by providing an opportunity for individuals to hear firsthand what others are accomplishing and how they manage their work; and
- Encourage participants to improve performance due to the pressures of presenting publicly to their peers.

Public sessions can be employed even when the work has involved proprietary, business sensitive, or confidential information by simply not disclosing such information.

Public sessions can create an opportunity for public written comments or an open Q&A session. This public input can be very useful.

In certain cases, closed sessions may be called for. For example, reviewers may meet with key researchers in a closed session for discussion of proprietary data. If proprietary, confidential or other protective information is being reviewed, additional mechanisms need to be in place regarding COI/NDA. Please seek advice from the assigned Field Legal Counsel. In addition, reviewers often meet in a closed session at the end of the review for discussion.

While Peer Reviews are typically held in-person, there are a variety of reasons why a technology office might consider moving their event to a virtual setting, if there are no obvious compromising to the quality of the PI-reviewer interaction or other elements of peer review execution. Appendix J provides further tips on hosting virtual peer reviews.

4.6 Selection of Reviewers and Conflict of Interest/Nondisclosure

The first step in ensuring a high-quality peer review process is the selection of high quality, diverse and impartial reviewers. Offices should consider a number of factors when selecting Peer Review reviewers, including individual reviewer qualifications and a balance of academic, industrial, governmental and non-governmental perspectives. To ensure participation of high quality reviewers, Offices are encouraged to pay for their services.

Reviewers should be assessed individually. Offices should scrutinize each reviewer's full resume to determine whether or not the reviewer is qualified. The type of project should also be considered. For example, deployment activities may require reviewers who have commercialization and business experience in addition to reviewers with the technical background to evaluate the feasibility of the technology. Bottom line: A high quality peer review can only be conducted if the experts have sufficient insight and knowledge of the subject area to provide meaningful feedback for more information.

Diversity of organizations and perspectives is another important factor in ensuring high quality reviews. Experts from a variety of sectors and organizations, including academia, industry, financial institutions, and other government entities, should be included, as appropriate. It is highly recommended to have an independent member of industry when tech-to-market is an important factor.

Confidentiality is a very important component of a review process. Reviewer names should never be attributed to specific project reviews or comments. This is critical to upholding the independence and rigor of the EERE Peer Review process and to preserving the integrity of the process. To maintain fresh reviews and encourage innovation and ideas Offices should only use the same reviewers for 2-3 cycles/years.

During reviewer selection, conflicts of interest (COI) may be discovered. A COI should be avoided or mitigated to the extent possible. Timely identification of an actual or apparent conflict of interest is critical to ensuring the integrity of the process. It also allows for adequate time to secure any required waivers or mitigation measures and minimize delays to the reviewer selection process.

The PRL should work with their assigned Field Legal Counsel to create a [COI/NDA form](#) specific to each Peer Review. Consideration should be given to unique scenarios, such as a closed review session, that should be addressed in the COI/NDA form. All participants in the Peer Review (e.g., PRL, Chairperson, reviewers, review team, and other support members) must submit a current, signed Conflict of Interest and Nondisclosure Acknowledgement (COI/NDA) form to the PRL before participating in the evaluation process. These should be stored and managed centrally in the appropriate EERE systems (e.g., technology office's internal files).

5 Implementation Phase 2 – Pre-Review: Logistics, Evaluation Tools and Preparation Materials

Offices should plan logistical details as early as possible. Whether your event will be in-person or virtual, review the [Event Determination Form](#) to determine if the event fits in to one of the conference exemptions. Peer Reviews typically fall under exemption E. If the event is exempt, it should be added to the EERE Exempt Event Tracker found on the [Conference Management SharePoint site](#). If you are unsure whether an event qualifies as a conference, the office should submit an [Event Determination Form](#) to the EERE Conference Team (eeeconfgmt@ee.doe.gov) for evaluation by General Counsel. Additional information on completing a conference exemption form can be found on EERE's Intranet site in the [Conference Management Section \(http://eere-intranet2.ee.doe.gov/WMO/ConferenceManagement\)](http://eere-intranet2.ee.doe.gov/WMO/ConferenceManagement).

Other critical external factors may affect the initial planned dates scheduled for the Peer Review. Determine if there are any seasonal influences or major events coinciding with the dates of the review. Also, determine if there will be an impact in the ability to secure space for the review.

Once the dates and location are secured, it is easier to identify and secure reviewers. Pre-review preparation includes logistics planning, developing evaluation guidelines and tools, and developing and distributing preparation materials to the reviewers and those being reviewed.

5.1 Evaluation Guidance and Tools

Reviewers and presenters should understand the objectives and guidelines of the review, the specific criteria, and how the projects are rated. The evaluation guidelines describe the purpose and scope, the evaluation criteria and questions, data presented, and how data is collected from reviewers, analyzed and reported. A clear description of the rating system is an important element of the Peer Review guidelines provided to reviewers.

All Offices will use a numerical scoring method with a uniform 1-4 rating scale. An office may opt for even greater granularity, if they so choose. The need for comparability of ratings across reviewers requires all reviewers to use the rating scale in the same way. The scale must be well defined to calibrate the numerical rating to represent the same cognitive appraisal by different reviewers.

All ratings should include well-written comments with supportive discussion. Comments should be based on sound technical analysis and should support the score. Comments should not be vague or include personal opinions or inflammatory language.

It is appropriate to assign weights to each criterion when some evaluation criteria are more important to a particular Office element. Offices retain flexibility in the weighting of and additions to the criteria. Peer Review participants are provided a clear description of the relative importance and weight of each criterion.

5.2 Reviewer Training

It is recommended that Reviewer training be made available. This training should address the following:

- Establish a common understanding of the objectives and the Peer Review process.
- Instruct reviewers to carefully review and strictly apply the Peer Review criteria to the project.
- Review this Peer Review Guidance.
- Reiterate examples of COIs, particularly those provided in the EERE COI/NDA.
- Emphasize the importance of strict adherence to the established schedule.
- Emphasize the importance of providing clear and concise comments that will be shared with the PI.
- Provide instruction on and examples of acceptable comments. All comments should be professional, factual and supported.

5.3 Materials for Reviewers

To ensure the Peer Review is fair, credible, useful, and cost effective, the PRL should provide adequate and timely preparation materials to the reviewers and to the presenters. Preparation materials need to be relevant to the objectives and review criteria. Materials should provide clear information about the mission of the Office and the work performed, the planned goals the work will accomplish, the schedule, and the key intermediate milestones.

Provide detailed instructions to the presenters appearing before reviewers. The instructions should outline the minimum requirements for material covered and a common content and format (template).

Materials should be delivered two to three weeks prior to the review to give the reviewers time to familiarize themselves with the projects to be presented. This includes an advance copy of the project summaries, reviewer instructions, evaluation forms for each project, an agenda, and an overall evaluation package specifically for that reviewer.

Materials must be sufficient for reviewers to judge the set of activities against the standards that have been set by the definition of the criteria and the specific questions. A balance must be struck between having too much data (because of the resources required to collect and review it) and not enough data. Standardized project information sheets should be provided to PIs and reviewers. A sample can be found in **Appendix F: Sample Project Information Sheet**.

To the extent possible, the burden on researchers should be minimized by using materials already developed or planned for other purposes, rather than developing new materials just for the Peer Review. Examples may include the following:

- Information sheets describing the Office or project mission, goals, and targets and milestones;

- Summary project reports and plans;
- Performer or project manager presentations;
- Lists of publications or patent applications and the results of citation analysis;
- Customer surveys, available impact studies;
- Various reports prepared by other external groups such as the Inspector General, GAO, or others; and/or
- Any additional data and information reviewers may request.

5.4 Peer Review Record

Establishing the **Peer Review Record** in the beginning and maintain the record throughout the entire review process. The record should contain all of the key documents of the Peer Review. This record provides transparency to the process and will aid EERE in continually improve the Peer Review process. Documentation is likely maintained in a variety of locations (e.g., electronic folders, websites, etc.). The following documents may be included in the Peer Review Record:

Preparation Stage

- Name of Peer Review Leader (PRL);
- Brief description of projects being reviewed;
- Evaluation criteria and review questions;
- Data collection and Analysis Plan review timeline;
- Copy of the detailed budget for the review; and
- Copy of the review agenda.

Pre-Review Stage

- Description of the reviewer nomination and selection process;
- Name, affiliation, and background of each reviewer;
- Guidelines sent to reviewers with criteria, etc.;
- Project Information Sheet prepared by Performer for each reviewed project;
- Copies of other data and materials provided and presented to reviewers (Data Management Plan background); and
- Signed Conflict of Interest/Non-disclosure forms for each reviewer.

Review Stage

- Copies of all slide presentations given by the Principal Investigator;
- Completed written comments from each reviewer; and
- Completed evaluation forms to obtain feedback to improve the Peer Review process.

Post-Review Stage:

- Reviewer Report(s) assembled by PRL for use by the PIs;
- Peer Review Report prepared by PRL with contribution from Review Chairperson(s), if Chair(s) are used, for the Director and the public;
- Office responses added to the Peer Review Report;
- Review actions taken in response to findings; and
- Summary feedback on the Peer Review process.

6 Implementation Phase 3 – Review Stage

6.1 Instructions to Peer Reviewers

The PRL should reinforce guidelines and provide final instructions to Reviewers at the opening of the review; and instruct reviewers to keep all evaluations strictly confidential during and after the review.

6.2 Facilitating the Review

The PRL for the Peer Review is the technical lead, ensuring the information requested is obtained and documented in the Peer Review report. The PRL should ensure all review sessions are effectively facilitated and ensure all points of view are heard and sessions are kept on schedule. Out of session discussions involving a PI and reviewers can further assist the reviewers in developing thorough and thoughtful comments. Reviewers should support their comments with citations or data wherever possible.

Time management is important to avoid situations where a PI spends too much time presenting. Having a large clock easily viewable by PIs as they proceed through their presentations, and for the PRL or facilitator to flag them when they are within 5 minutes from the stop time should be considered. Open Q&A periods following each presentation allow for clarification and better understanding of what was presented to thoroughly evaluate the material and its significance. The amount of time allotted for each presentation and Q&A periods should be based on the size and complexity of a project. The facilitator (e.g., Review Chairperson if used, or EERE technical manager) of a session should allow reviewers to ask questions to PIs first and exhaust all of their questions, before allowing the broader audience (non-reviewers) to ask questions. **Appendix G: Sample Script for Facilitators** contains a script to direct questions from the reviewers first.

6.3 Data Collection

All Offices shall use a peer review management IT tool to support efficient data collection, analysis and reporting. Software developed internally by EERE or any other existing information management technology (IT) software that offers peer review data management capability. Use of real time collection of reviewer data using a peer review IT management software tool also makes it possible to do quick turnaround analysis of reviewer findings for both written comments and numerical ratings.

Peer Review management IT tools should have the following capabilities:

- Electronic distribution of project documents/ products to reviewers;
- Collect reviewer comments and ratings (in real time if web access is available at the event) ;
- Analyze review results (compiles comments, performs scoring calculation);
- Report results submitted by reviewers – automated reporting and formats;
- Report results on screen or printout;
- Collect and compile reviewers' feedback and summarizes the feedback;
- Meet Government cyber security requirements;
- Available 24/7; and
- Web-based analysis.

7 Implementation Phase 4 – Post-Review Activities

7.1 Analysis and Summary of Evaluation Data

The reviewers' results collected at the completion of the Peer Review or forwarded to a designated contact within a specific time period. It is essential that written comments are received from all reviewers as an official record. PRLs should ensure that Peer Reviews results are documented and distributed as soon as possible.

Upon receipt of the evaluations, the PRL should prepare two reports: (1) the Reviewer Report(s) for PIs; and (2) a Peer Review Report for the Director and the public.

7.1.1 Reviewer Report

The **Reviewer Report** is a compilation of review ratings and comments from each reviewer in a given session. It is recommended that the PRL distribute Reviewer Reports to PIs within 5-6 weeks after conclusion of the Peer Review meeting in order to enable them to begin making recommended project improvements. To the extent possible, the PRL should provide the reviewers' comments as they were given. The PRL is responsible for ensuring comments are appropriate and relevant. Redactions may be necessary to remove inflammatory language prior to sending to PIs.

If an Office's Peer Review is organized by defined subject topic areas (e.g., subprograms) that each have different reviewer sessions, then the PRL should prepare one Reviewer Report for each area. The key audience is the PIs in the subject topic session and respective PMs/TMs. PIs should receive comments from reviewers as soon as possible so they can make necessary adjustments to their projects. If a Review Chairperson(s) is used, he/she should concur and sign off on the Reviewer Report, which could also be sent to reviewers for review of the record of their own response. The Office adds their response to reviewers' comments and recommendations. Office input can be in the form of a summary response in the summary section of the Peer Review Report. See **Appendix H: Sample Actionable Response Tracking**. Reviewer's assessments and recommendations along with Director's responses become part of the official Peer Review Report and record.

7.1.2 The Peer Review Report

The **Peer Review Report** serves as the final, full report containing all details of the review sessions, and the Office Director's responses. The Peer Review Report should include the following elements:

- Office/project identification, description, and budget;
- A narrative summarizing the salient features of the comments of the individual reviewers and the primary reasoning behind their judgments;
- Support of conclusions with specific observations;
- Summary of reviewers' rating or assessment on each individual criteria as well as the overall assessment;
- Recommendations aimed at improving performance of the Office's projects
- As appropriate, comments on the status of recommendations made at prior reviews; and
- Appendices with the full text of reviewer input.

To the extent possible, the PRL should provide the full range of reviewers' comments as they were given. The PRL is responsible for ensuring comments are appropriate and relevant. Redactions may be necessary to remove inflammatory or inappropriate language prior to publishing the final report.

The reporting format should ensure confidentiality of the individual reviewer's ratings and comments to encourage reviewer's to be candid. Individual ratings and comments should be disassociated from the reviewer so as not to reveal the identity of the reviewer. Proprietary information should be protected according to standard DOE/EERE procedures. This does not preclude careful reporting of the evaluation results for a project in which proprietary information was disclosed.

Appropriate experts, Office leadership and project teams should be consulted on the review findings and have time to discuss and respond prior to distributing the results to the Director. Reviewers' assessments and actionable responses to overall reviewer comments prepared by Office project teams are provided by the PRL to the Director and should be provided within two weeks of the conclusion of the onsite review.

The Director, with assistance from the PRL, adds a written response to the Peer Review Report that addresses the comments and specifies acceptance of, rebuttal, or non-acceptance of the findings.

The Director should provide a high-level debrief of the Peer Review to the DAS and/or EE-1 within 2-3 months of the conclusion of the onsite review.

The Peer Review Report should be made available to the public within 6 months after conclusion of the onsite review.

7.2 Finalizing the Office Response and Follow-Up Actions

Key issues identified and a timeline for implementing actions taken in response to specific review comments or recommendations should also be documented.

All Offices should document and track reviewer inputs and ensure they are taken into consideration with other project inputs and information for decision making. The Peer Review report and the Office response are packaged into one document for distribution to the performer, project team, and/or other presenters enabling effective decision-making.

Reports will be promptly communicated to senior management and all persons involved in the review. After information needed from the review has been provided to those who need it, the Office should track follow up actions. Documentation on actions taken and progress and results may be requested as part of the next Peer Review. See **Appendix H: Actionable Response Tracking Sample**.

Finally, it is important that reviewers be formally thanked for their efforts by the Office and any agreed upon payment provided. Participation in a Peer Review is often not recognized by their institutions.

The PRL should describe to the reviewers how EERE generally responded to the results of the review in a clear and transparent way. It should also include an explanation as to why certain comments may not have been used. This feedback will help ensure that reviewers feel their efforts are well spent and are more likely to participate in future reviews.

7.3 Evaluating the Peer Review Process

To support continuous improvement of the EERE Peer Review process, the PRL should ensure an evaluation of the Peer Review is completed at the end of the review. The PRL may supplement the completed post-review evaluation with an informal, documented discussion about the review process

covering what worked and what did not. This can be done onsite in an informal meeting led by the PRL with the reviewers and review chairperson and with those who have been reviewed. **See Appendix I: Sample Post Review Evaluation and Feedback Form**¹⁰

8 Conclusion

This Peer Review Guidance has been developed to raise the overall consistency and quality of the Peer Review process in EERE. Continuous improvement is a key factor in achieving success. The commitment to continuous process improvement involves:

- Establishing a mechanism to enable assessment of the progress being made in applying best practices in Peer Review in EERE and utilizing the results.
- Establishing a forum for active exchange of experiences with Peer Review.
- Gathering information on progress, experiences, and lessons learned to periodically provide feedback to Directors, office directors, and higher management on where to update and improve the best practices guide.

¹⁰ A feedback survey for peer review typically falls under the DOE Paperwork Reduction Act control number that covers financial assistance.


Appendix A: Reviewer Qualifications

EERE reviewer qualifications are identified below. Stronger qualifications may be needed for certain technology or funding areas. Reviewer selection criteria should be consistent with the high quality of science expected and the significant level of investment.

Reviewer qualifications for typical EERE Peer Reviews are:

- **At least 5 years of experience in a relevant field.** Experts with only five years of experience should also have some other strong credentials, e.g., a Ph.D. with a strong publication or patent record specific to the technology being evaluated, a young investigator award, or a strong pedigree (e.g., a Ph.D. from a high caliber institution or under a recognized leader in the field). If a newly-minted Ph.D. with a strong pedigree is being considered as a reviewer, he/she should have some additional accomplishments, such as a seminal paper in the field, or a recent presentation at a major conference. Experience can include technology commercialization or relevant business experience, project management expertise, and other relevant fields.
- **Publications and Patents.** Qualified experts often have a significant number of peer-reviewed publications and/or patents in the technology being evaluated. For those who have a lengthy and diverse publication history, the currency of publications and/or patents should reflect the reviewer's current knowledge of the technology.
- **Other evidence that the person is a recognized expert in the field.** Qualified experts have often managed a public policy program that has had a national impact, have a record of bringing innovations to the market, or hold key patents.
- **An advanced degree (Ph.D., Sc.D., D.Eng., M.S., or M.B.A.) in a relevant field.** Experts with only a Bachelor's degree should have other experience and/or a record of significant accomplishments indicating their expertise in the field.
- **Relevant awards.** Qualified experts may have received a prestigious award such as the National Medal of Science, American Chemical Society National Award, Young Investigator Award, R&D 100 Award, or other awards specific to a technology (e.g., Fuel Cell Seminar Award).
- **Key Society Membership.** Qualified experts may be members of a society like the National Academy of Sciences (NAS) or the National Academy of Engineering (NAE), the American Physics Society, a National Laboratory Fellow, etc.

Appendix B: Sample Peer Review Agenda and Session Time Variation

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy 				
EERE TECHNOLOGIES OFFICE				
Peer Review Agenda		MONDAY		
TRACK 3 - Big Showcase				
Start	End	Panel	Presentation	Presenter
8:00 AM	9:00 AM	Ballroom C&D	CONTINENTAL BREAKFAST & REGISTRATION	
9:00 AM	10:00 AM	Ballroom C&D	Plenary Session	Tom Smith, Patty Plenary
10:00 AM	10:30 AM	Ballroom C&D	Reviewer Meeting (Closed)	
10:30 AM	10:45 AM	Foyer	BREAK	
10:45 AM	11:15 AM	Economics	Decision Analysis for Enhanced Systems	Albert Einstein, Institute of Technology
11:15 AM	11:45 AM	Economics	Analysis of Resources	Bob Smith, University
11:45 AM	12:15 PM	Economics	Estimation and Analysis	Thomas, XYZ, LLC
12:15 PM	1:30 PM	Ballroom C&D	LUNCH DOE Data Provider	Jaimie Sway, NREL Uma Thurgood, DOE
1:30 PM	2:00 PM	Economics	Market Development	Greg Mines, Idaho National Laboratory
2:00 PM	2:30 PM	Economics	Hybrid and Advanced	Mike Smith, National Renewable Energy Laboratory
2:30 PM	3:00 PM	Policy	Policy	P. Butter, National Renewable Energy Laboratory
3:00 PM	3:15 PM	Foyer	BREAK	
3:15 PM	4:00 PM	Data	Data System Design, Testing and Maintenance	William White, Tulane

Appendix C: Data Management Plan Guidance

The following is included within the Peer Review Guidance document because Data Management Plans are now required at the time of award per Departmental policy. The information is provided to assist in determining acceptability of the Data Management Plan for the proposed research and the extent to which it supports the validation of research results.

Refer to the [DOE Policy for Digital Research Data Management](http://www.energy.gov/datamanagement/doe-policy-digital-research-data-management), (<http://www.energy.gov/datamanagement/doe-policy-digital-research-data-management>), for further information.

A. Background Information

On February 22, 2013, the Director of the White House Office of Science and Technology Policy (OSTP), Dr. John Holdren, issued a memorandum to all agency and department heads entitled, “Increasing Access to the Results of Federally Funded Scientific Research.” The memo directed federal agencies with more than \$100 million in annual conduct of research and development to develop plans for increasing public access to peer-reviewed scientific publications and digital data resulting from federally funded research investments.

In response to the OSTP memo, DOE completed a Public Access Plan, which commits the Department to instituting data management principles and requirements that ultimately will apply to proposals for research funding submitted to all DOE program offices. EERE developed a Policy for Digital Research Data Management which can be found here: <http://www.energy.gov/eere/data-management>.

B. Evaluating Data Management Plans/Suggested Elements for a Data Management Plan

A project’s Data Management Plan (DMP) should be consistent with EERE’s Policy for Digital Research Data Management requirements and show how the project and performer is providing the information that will facilitate EERE compliance with these requirements. The EERE Digital Data Management website also includes suggested elements of a DMP.

Appendix D: Examples of Review Questions

Review Criteria	Examples of Questions
Quality	<ul style="list-style-type: none"> • What is the quality of research so far? • Are the methods used/proposed based on sound science? • Are the experimental and analytical methods used appropriate? • What is the level of insight and innovation demonstrated in relation to requirements of the project? • Are technological risk factors effectively assessed? • Are key research areas in the project receiving sufficient emphasis? • Are papers, reports & other publications, awards and patents resulted from the project of high quality?
Productivity and Accomplishments	<ul style="list-style-type: none"> • Are technical goals and milestones realistic? • Are the project’s goals and milestones being adequately pursued? • Is adequate progress made with achieving planned targets? • Will project meet its objectives as currently budgeted and scheduled? • Value of project relative to programmatic costs?
Relevance	<ul style="list-style-type: none"> • Is the importance of the project to the energy area, problem or need sufficiently high to justify the work? • Does the project adequately address industry [partner] goals? • Is the project relevant to programmatic goals? • Does the project adequately address a specific identified technical or market problem or need
Management	<p>Resources:</p> <ul style="list-style-type: none"> • Is the project appropriately funded to meet its goals? <p>Planning and Implementation:</p> <ul style="list-style-type: none"> • Is the project integrated with other projects in the program? • How would you assess the quality of R&D planning so far? • How well is the project being implemented? • Are there unintended (+/-) consequences (e.g., health, safety, & environmental issues) of the technology that are not being addressed? • Is the data management plan adequate to satisfy the requirements of the DOE Public Access Plan? • How well is the researcher (or team of researchers) following the approved data management plan? • Is data generated in the course of the research being shared and preserved? Was the data displayed in any publications resulting from the research open, machine-readable, and digitally accessible to the public at the time of publication? • Do any published articles indicate how these data can be accessed? <p>Teaming:</p> <ul style="list-style-type: none"> • How well has the project team leveraged resources (funds, capabilities) by teaming with private companies & other organizations?

Appendix E: Approaches for Nominating and Selecting Reviewers

This is a partial list of approaches to nominate and select reviewers. Offices may find other ways to nominate and select reviewers and preserve process independence. The selection and nomination process should be carefully and fully documented.

- Establish a steering panel composed of external and possibly some qualified internal EERE staff from other EERE or DOE offices. In working with the steering panel, the PRL should seek only individual (non-consensus) advice from each of the members of the group. This steering panel may help select the review chairperson, as well as possibly other members of the review panel. Use of a steering body can further increase the independence of the review process.
- Arrange for several independent, external, and objective groups familiar with the program to nominate candidates. These external groups may include; research institutions (including universities or university associations, such as the National Association of State Universities and Land-grant Colleges, and not-for-profit laboratories), management institutions (including public agencies), professional societies, or Advisory Boards.
- Identify potential Review Chairpersons and reviewers identified in a bibliometric search of published literature on the topic,
- Identify reviewers from their roles in research or management institutions or professional societies.
- Identify reviewer through the Exchange system.
- Employ a co-nomination approach:
 - Peer Review Leader (PRL), Chairperson(s) or Steering Committee develop a diverse initial list of recommended experts in the field(s) and creates a Level 1 list.
 - Level 1 Experts are asked to identify/nominate other experts in his/her area of expertise. Names that appear more than once or on both lists create a Level 2 list.
 - If no multiple recommendations appear, Level 2 experts are asked to nominate experts in order to create a new Level 3. Repeat as necessary.
- Select the Review Chairperson(s), who nominates candidate reviewers.

Appendix F: Sample Project Information Sheet

One example of a standardized project information template. PIs prepare and present a PowerPoint presentation using a template covering each of the following topics.

Standardized project information template

- Timeline
- Budget
- Barriers
- Partners
- Project Objectives
- Milestones
- Approach/Strategy
- Technical Accomplishments and Progress
- Review Comments and Response
- Collaboration and Coordination with Other Institutions
- Remaining Challenges and Barriers
- Proposed Future Work
- Summary

Appendix G: Sample Script for Facilitators

In an open review session, it is important to allow the reviewers to exhaust their questioning before opening up questions to the general audience. The following script has proven useful to office staff or Review Chairpersons facilitating a review session.

Recommended Script

Immediately after each PI presentation, the session facilitator may wish to state the following, using four Reviewer prompts before opening questions to audience.

- 1) Begin Q&A:
 - *I'd like to now take questions from the reviewers*
- 2) Then ask reviewers:
 - *Do the Reviewers have any questions?*
- 3) Give reviewers the time they need for questioning the PIs. When there is a distinct pause that hints reviewers might be done, ask again:
 - *Are there any further questions from Reviewers?*
- 4) If no, only then take questions from the audience:
 - *Are there any questions from the audience?*

Appendix H: Sample Actionable Response Tracking

Project Number	Project Title Principal Investigator Name & Organization	Final Score	Continue	Further Review	Completed	Summary Comments
Project X-100	Heat and Mass Transfer <i>PI;</i> <i>State University</i>	3.1			X	The reviewers noted that the design is innovative and addresses critical issues such as weight, volume, and charging, addressing the impact on cost. While the reviewers were encouraged by the overall design concept, multiple reviewers raised concerns regarding the multiple setbacks and project delays observed during the last year of the project that significantly limited the project's progress. Specifically, they noted that the lack of any initial data from the system testing is particularly disappointing, given that the project is nearly over.
Project X-101	Reversible Formation <i>Mr. Smith;</i> <i>National Laboratory</i>	3.0	X			Most reviewers found the project to be targeting appropriate barriers to lowering the cost of production. Several reviewers suggested that the project team include more computational guidance and use a design of experiments approach. Reviewers noted that this material is more appropriate for low-to-medium-power applications. Reviewers recognized the close collaboration between project partners. They also recommended avoiding duplicative efforts.
Project X-102	Precursor for High-Strength, Low-Cost Fiber <i>Jane Doe; National Laboratory</i>	3.0		X		Reviewers commented that the project has a good potential to reduce cost. They expressed concern about the significant delay due to staffing and engineering issues. Reviewers commended the project for reaching out to previous BASF engineers and equipment vendors in dealing with the engineering issues. Reviewers suggested that the project develop a contingency plan and obtain additional external assistance to resolve the engineering issues. Reviewers also commented that the project needs to consider evaluating composite properties in addition to fiber properties. Reviewers recommended updating the cost model to better understand cost drivers.

Appendix I: Sample Post Review Evaluation and Feedback

EERE is committed to continuous improvement in its peer review progress. This questionnaire to evaluate the peer review process is designed to produce post-review information that can be applied to improve the effectiveness of reviews.

[Title of Project Peer Review and Date]

1.1.1.1.1.1.1.1 INSTRUCTIONS

Your answers to the questions below and any additional comments you may wish to provide will be very useful in this peer review quality enhancement process. We will be able to pay full attention to all responses and comments. Any opinions expressed will not be attributed to specific individuals. You should feel free to add written comments to any of the questions.

Thank you in advance for taking a few minutes to provide your feedback.

DEMOGRAPHIC QUESTIONS

A-1 What is your affiliation?

- Government agency directly sponsoring the program under review
- Government agency with interest in the sponsored work
- Academic with interest in the work
- In an industry directly involved in the program under review
- In an industry with interest in the work under review
- National or other government lab whose project is under review
- National or other government lab not being reviewed
- Other (please specify, e.g., --consultant, retired employee, public, etc.) _____

A-2 What was your role in the review? *(May check more than one)*

- Reviewer or Chairperson on the review panel
- Principal Investigator for project under review

ELEMENTS OF THE PEER REVIEW PROCESS

B-1	Purpose and scope of review were well defined.	<i>disagree</i>	<i>agree</i>	<i>N/A</i>
		1 2 3 4 5		

B-2	The evaluation criteria upon which the review was organized were clearly defined and used appropriately.	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	
B-3	The quality, breadth, and depth of the following was sufficient to contribute to a well-considered review:	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	
	1. Presentations	1 2 3 4 5		N/A
	2. Other data provided	1 2 3 4 5		N/A
	3. Question & Answer periods	1 2 3 4 5		N/A
	4. Answers provided concerning programmatic questions	1 2 3 4 5		N/A
	5. Answers provided concerning technical questions	1 2 3 4 5		N/A
B-4	Information was requested from PIs or information was provided to Reviewers in sufficient time prior to the review session.	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	N/A
B-5	Review instructions provided were sufficient and timely.	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	N/A
B-6	Enough time was allocated for presentations	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	N/A
B-7	Time allowed for the Question & Answer period following the presentations was adequate for a rigorous exchange.	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	N/A
B-8	Altogether, the preparatory materials, presentations, and the Question & Answer period provided sufficient depth of review	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	N/A
B-9	There were no problems with:	<i>disagree</i> 1 2 3 4 5	<i>agree</i> 4 5	
	1. Rating schemes	1 2 3 4 5		N/A
	2. Classification of projects (project groupings)	1 2 3 4 5		N/A
	3. Proprietary data	1 2 3 4 5		N/A

B-10 What was the most useful part of the review process?

B-11 What could have been done better?

B-12 Overall, how satisfied are you with the review process?	<i>Very unsatisfied</i>			<i>Very satisfied</i>		<i>N/A</i>
	1	2	3	4	5	

B-13 Please provide comments on the overall review process.

Appendix J: Hosting Virtual Peer Reviews

While Peer Reviews are typically held in-person, there may be extenuating circumstances why a technology office might consider moving their event to a virtual setting. In-person events allow for robust discussion and networking, however, virtual events can be an excellent alternative if extenuating circumstances (e.g., COVID-19) are prohibiting factors. Virtual events may also allow for participation from individuals who would otherwise be unable to attend.

When hosting a virtual Peer Review, there are unique considerations that should be addressed when planning the meeting, including what technology/platform to use, training staff/presenters before the meeting, agenda/schedule considerations, and how to facilitate the meeting as well as participant networking and knowledge sharing.

Technology

- Consider ways to create a visual representation of your meeting in a virtual environment, such as an event website with a “lobby” landing page. See below example.



- Attendees, presenters, and moderators will inevitably run in to technical issues throughout the event; consider designating someone to provide live technical assistance.
- Collect a copy of all presentations and ensure you are prepared to pull them up on the screen in case the presenter is experiencing technical difficulties. Where possible, duplicate roles in case a member of the support team or panel lead are experiencing phone or network connectivity issues.
- Create a tip sheet/quick guide for attendees, presenters, and moderators to troubleshoot common problems with the meeting platform you are using. For a sample, see [EERE Tip Sheet: Virtual Meetings](#).
- Train staff including all presenters and moderators on the meeting platform you are using. Ensure moderators are capable of completing the following virtual meeting tasks:

- sharing a screen
- selecting a new presenter
- muting/unmuting attendees
- enabling/disabling video
- monitoring raised hands
- monitoring chat and Q&A
- start/pause/stop recordings

Agenda & Schedule

- The meeting schedule should accommodate all of the time zones in attendance to the extent practicable.
- Participants may find it monotonous to sit through multiple days of virtual presentations, so consider ways to streamline the event agenda such as shortening your plenary session to the most high-impact speakers or most relevant topics that year.
- Poster sessions present unique challenges when hosted virtually. When deciding whether to host a virtual poster session, consider whether it will be valuable if the work is not being reviewed.

Facilitation

- If available, encourage speakers to use video when presenting to help engage the audience.
- Because the typical time limit cues, such as standing or holding a cue card, are not available in the virtual environment, the PRL should decide ahead of time how they will alert presenters to time limits. This could be anything from muting the presenter when they have reached their time limit to the moderator clearing their throat. Be sure to let the presenters know ahead of time how the time limit will be communicated to them.

Knowledge Sharing & Networking

- Virtual meetings may increase participant interaction and discussion during presentations as the format allows listeners to ask questions using the chat or question and answer (Q&A) function rather than standing and speaking in to a microphone.
- Consider assigning a co-moderator to monitor the chat and also suggest that presenters have another member of their team available to respond to chat questions.
- Reach out to the audience throughout the event with thoughtful Q&A or polling in order to help engage attendees.

Additional resources on how to host and facilitate virtual Peer Reviews can be found here:

- [Tip Sheet: Virtual Meetings \(Merit Reviews, Peer Reviews, Workshops\)](#)
- [WebEx Tip Sheet: Quick Reference \(Virtual Meetings\)](#)
- [WebEx Meetings, Trainings, and Events Comparison \(Virtual Meetings\)](#)
- [WebEx Meeting Center User Guide \(Virtual Meetings\)](#)
- Virtual Peer Review Lessons Learned section of the [Project Management Community of Practice](#) June 2020 meeting slides.