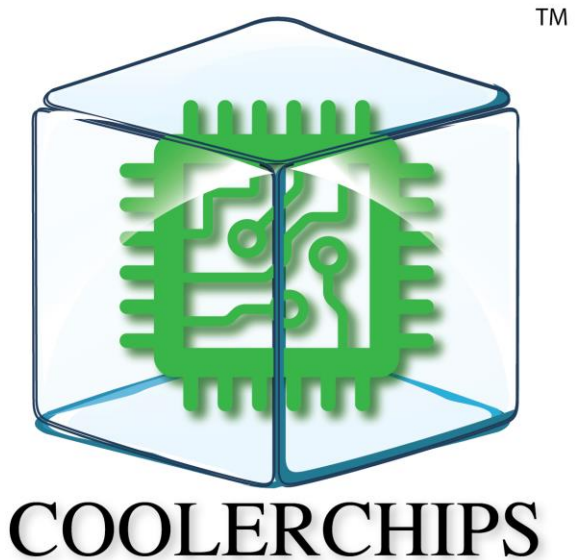


Cooling Operations Optimized for Leaps in Energy, Reliability and Carbon Hyperefficiency for Information Processing Systems

ARPA-E COOLERCHIPS

Project Management Overview, Expectations, and Lessons Learned

COOLERCHIPS Kick-Off Meeting
Thursday, October 19, 2023



Topics for Discussion

- ▶ Active Program Management
- ▶ ePIC Project Management System
- ▶ Quarterly Reporting
- ▶ Lessons Learned

ARPA-E Active Program Management

Most of the COOLERCHIPS awards are Cooperative Agreements

- ▶ **ARPA-E carefully tracks technical and T2M progress** against the project milestones and offers feedback/recommendations for the project
- ▶ **Pivots and redirections may be necessary** during the project to ensure **technical & commercial success**
- ▶ **ARPA-E may end projects** that are not going to meet the goals of the award so that the remaining funds can be re-deployed

Reporting requirements are found in Attachment 4 of your award agreement

ATTACHMENT 4: ARPA-E REPORTING CHECKLIST AND INSTRUCTIONS

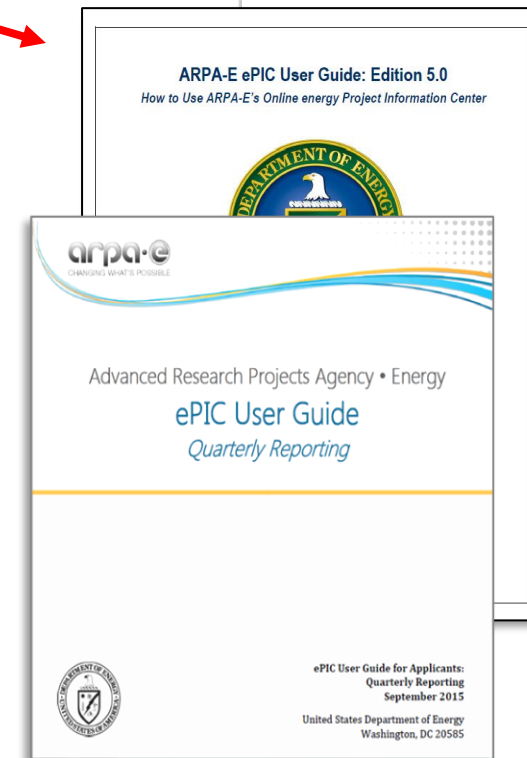
1. Identification Number: DE-AR0000XXX		2. Program/Project Title: The Best Energy Technology Ever!	
3. Recipient: Awesome Energy, Inc.			
4. Reporting Requirements (see attached "ARPA-E Reporting Instructions"):			
I. PROJECT MANAGEMENT REPORTING (DURING AWARD)			
<input checked="" type="checkbox"/> A. Research Performance Progress Reports	QR	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> B. Financial Reports	QR	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> C. Scientific/Technical Conference Papers/Proceedings	Y	1	http://www.osti.gov/eliink-2413
<input checked="" type="checkbox"/> D. Intellectual Property Reporting	Y	1	See block 5 for instructions
<input checked="" type="checkbox"/> E. Intellectual Property & Data Management Plan	X	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> F. Subject Invention Utilization Reporting	A	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> G. Lobbying Activities Reporting	Y	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> H. Special Status Reports	Y	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> I. Annual Indirect Cost Proposals	FY	1	See block 5 for instructions
<input checked="" type="checkbox"/> J. Annual Audit of For-Profit Recipients	RFY	1	See block 5 for instructions
<input checked="" type="checkbox"/> K. Annual Property Inventories	A	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> L. Subaward/Subcontract Reports	Y	1	See block 5 for instructions
<input checked="" type="checkbox"/> M. Human Subjects Research Reporting	A	1	See block 5 for instructions
<input checked="" type="checkbox"/> N. Animal Subjects Research Reporting	A	1	See block 5 for instructions
II. CLOSEOUT REPORTING (UPON CLOSEOUT OF AWARD)			
<input checked="" type="checkbox"/> A. Final Scientific/Technical Report	F	1	http://www.osti.gov/eliink-2413
<input checked="" type="checkbox"/> B. Final Invention and Patent Report	F	1	See block 5 for instructions
<input checked="" type="checkbox"/> C. Final Property Report	F	1	https://arpa-e-epic.energy.gov
<input checked="" type="checkbox"/> D. Software Deliverable Submission	F	1	http://www.osti.gov/estsc/241-4pre.isp
III. POST-AWARD REPORTING (FOLLOWING CLOSEOUT OF AWARD)			
<input checked="" type="checkbox"/> A. Subject Invention Utilization Reporting (see Section I.F above)	A	1	https://arpa-e-epic.energy.gov
FREQUENCY CODES AND DUE DATES:			
A – Annually; within 90 calendar days after the end of the annual reporting period.			
F – Final; within 90 calendar days after closeout of the award.			
FY – Annually; within 180 calendar days after the close of the fiscal year.			
QR – Quarterly; within 30 calendar days after end of the quarterly reporting period.			
RFY – Recipient's Fiscal Year; within the earlier of 30 days after receipt of the auditor's report or 9 months after end of the audit period.			
X – Within six (6) weeks of the effective date of ARPA-E Award.			
Y – Within five (5) calendar days after the event or as specified.			

ARPA-E ePIC Project Management System

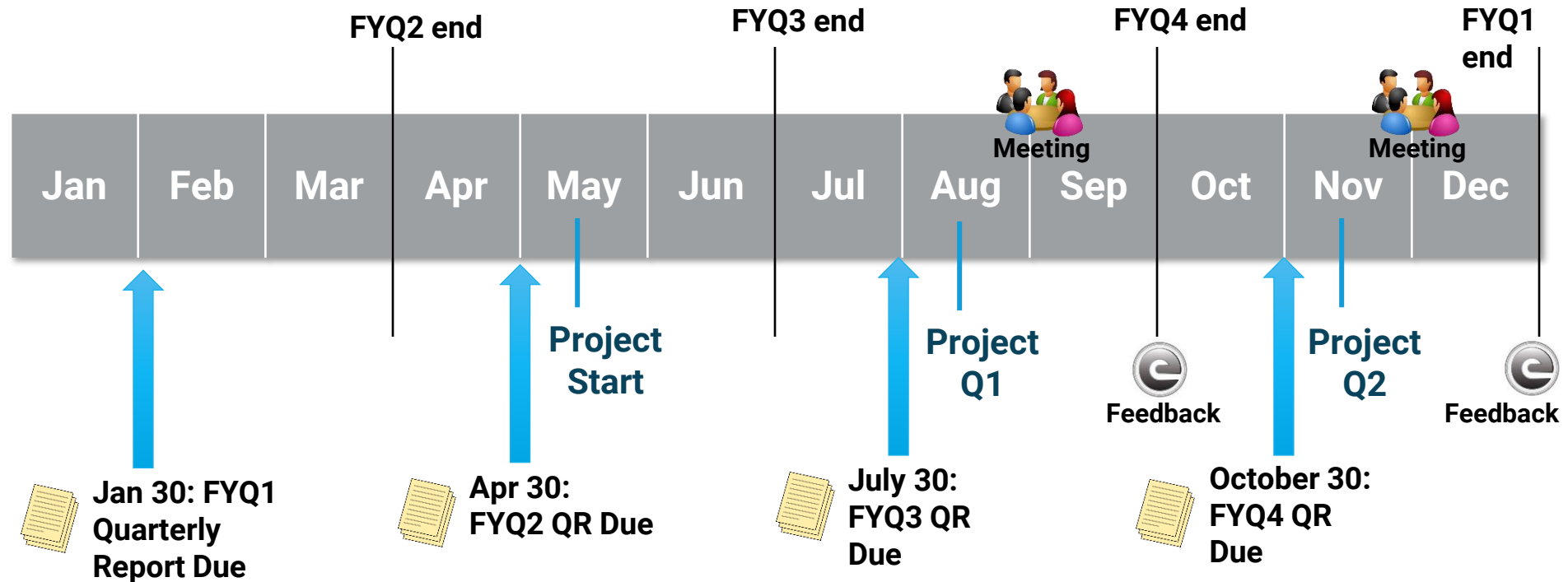
<https://arpa-e-epic.energy.gov/>



- ▶ **energy Program Information Center (ePIC)** is ARPA-E's project management tool available to both performers and ARPA-E staff
- ▶ **ePIC** is used to:
 - Submit quarterly technical reports
 - Submit quarterly financial report (SF-425)
 - Submit most annual reports + closeout reports
 - Review ARPA-E technical/T2M status feedback
 - View ARPA-E tracking of expenditures, invoice status



Project/FY Schedule and Reporting Offset



- ▶ Timing of quarterly report (QR) submission follows the Fiscal Year (FY) calendar
- ▶ Report progress against milestones due according to Project Quarters

Expectations for Quarterly Written Reports

- ▶ Technical report submission in ePIC consists of:
 1. Summary milestone status (*including % complete*)
 2. Technical narrative
- ▶ Technical Narrative Structure
 - Executive Summary
 - Summary table of milestones due/past-due (*generated by ePIC in #2*)
 - Major risks to future milestones and mitigation approaches
 - Supporting data & additional information (supporting text and data to substantiate any claims against milestones)
 - Budget summary
- ▶ Highly-sensitive confidential information can be saved for in-person or Teams meetings

Expectations for all Technical/T2M reports

- ▶ **Orient reporting around the milestones** in your Attachment 3
 - To us, this is the foundation of your project
- ▶ Emphasize charts and data on current or upcoming milestone completion over secondary efforts underway in your labs
 - Please be succinct, use charts/figures, provide key data
- ▶ **Remember to mark protected data as such in your reports**

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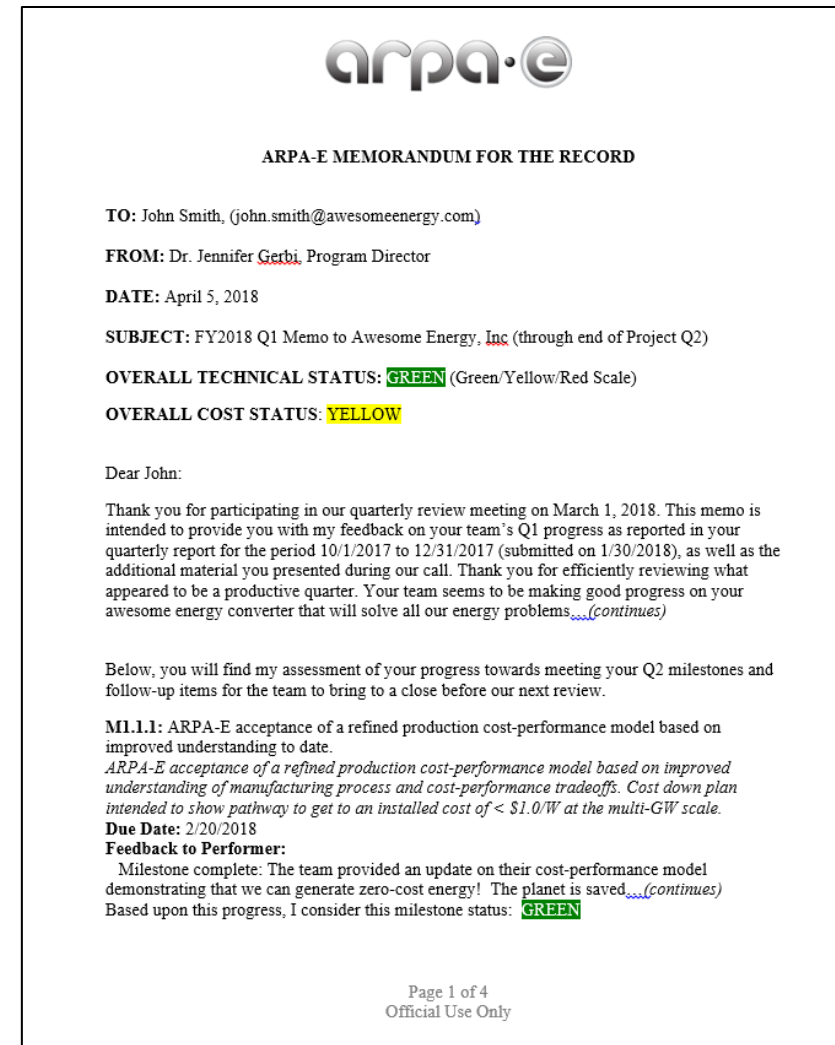
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Expectations for Quarterly Review Meetings

- ▶ Generally scheduled following Project Quarters
- ▶ May be in-person (at your facilities or at ARPA-E) or virtual/Microsoft Teams
 - Typically 1-2 hours for a virtual review and 2-4 hours for an in-person review
 - Typical in-person visit will include the PD, Tech-SETA and T2M advisor
 - Lab/facility tours/project demo during on-site visits are strongly encouraged
- ▶ Please allow plenty of time for questions and discussion when preparing the slides, particularly around tasks/milestones with issues
- ▶ **Please provide briefing slides at least 24 h in advance to the PD, tech SETA, and T2M advisor** (w/o commercially-sensitive info)
- ▶ **Highly-sensitive** technical and commercial confidential information should be shown only in the **final version of the slide deck and NOT sent to ARPA-E**

ARPA-E Feedback is Provided Quarterly

- ▶ Provides you with our view of the status of the milestones
 - Output from quarterly report & quarterly review meeting
- ▶ Provides follow-up items and constructive feedback to aid in meeting short/long term goals
- ▶ Accessible in ePIC as “Feedback to Performer” on Technical tab (also sent to PI via email as a PDF document)



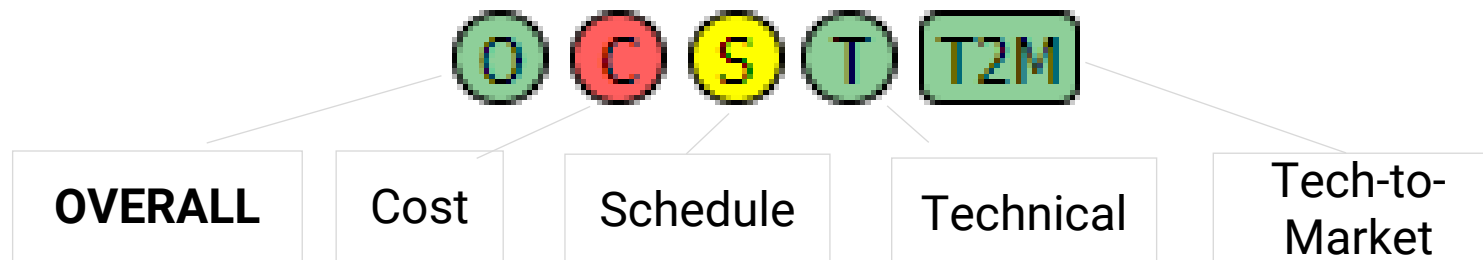
Project Color Status Interpretations



Rating	Individual Milestone	Overall Project
Green	Milestone complete , all requirements satisfied	Project on-track
Yellow	Milestone is incomplete , but still likely to be met at some time: performance may not quite meet the required target, it may be slightly behind-schedule, or there are outstanding questions about whether the milestone has been achieved.	Behind schedule , problems may have been encountered, but project appears to be recoverable
Red	Milestone not achieved, actual performance significantly worse than required performance , incomplete and significantly behind schedule	Overall project is unlikely to meet final targets or is significantly behind schedule, recovery is difficult or unlikely

Qualitative assessment based on performance data

Each project is assessed each quarter in four dimensions:



Best Practices

ARPA-E Project Status **GREEN**

- Meeting key **project milestones on time**
- Have a **clear project management structure** and dedicated personnel
- Maintain **regular communication with ARPA-E Program Director and SETAs**
- Identify and **engage additional help when needed** – internally and externally
- Are flexible enough to quickly redeploy personnel and adjust technical approaches when necessary
- Submitting succinct quarterly reports on time and with appropriate detail about milestone and project status



RED Flags for ARPA-E

- **Consistently missing milestones**
- **Lack of a sense of urgency**
- **Disregard for the milestones or reinterpretation** of milestones without discussing with ARPA-E
- **Omission of key data/results**, avoiding detailed technical conversations on milestone challenges
- Challenges in hiring personnel or getting key pieces of equipment running
- Significantly behind on invoicing
- Project funds spent out of proportion with work accomplished



Final Reminders/Suggestions

- ▶ Remember to **report subject inventions**, patents submitted/granted, and publications **in ePIC and iEdison**
- ▶ Please, send quarterly review slides at least 1 day in advance
- ▶ **Be transparent – talk to us!**
we know R&D is challenging and we are here to help



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