STATEMENT OF WORK (SOW) TEMPLATE
COMBINED EIR/ICE SUPPORT CONTRACTOR

The template presented below is a Statement of Work (SOW) for services of an EIR/ICE Support Contractor for assisting OECM in conducting a combined EIR/ICE at CD-2. Project and review specific information should be incorporated. Explanatory text appears in italics, while information that should be selected appears in <<brackets>>. *The format and contents of this SOW is not compulsory, and the use is at the discretion of the OECM Analysts, tailored as appropriate for the desired contractor support activities. If no contractor support is required, this appendix is not used.*

Statement of Work for
External Independent Review (EIR) and Independent Cost Estimate (ICE)
<<Project Name>>
Establish Performance Baseline (CD-2)
<<Site>>
<<Date>>

Project Background:
Project Name:
Project ID**:**
Project Site:
Lead Office:
FPD:
Project Type:
Total Project Cost:
Prime Contractor:

Project Description:

Add project background description and related information to allow the EIR/ICE contractor to plan the work activities and staffing and to estimate task cost and schedule.

Points of Contact:

Name	Organization/Position	Phone/Email
	OECM Lead	
	FPD	
	PMSO/Program Point-of-Contact	

Purpose:

The DOE Office of Engineering and Construction Management (OECM) requires the services of a Contractor to support an External Independent Review (EIR) to validate the performance baseline for the Project and an Independent Cost Estimate (ICE) to confirm

the reasonableness of the project cost and schedule estimates for the CD-2 milestone. The purpose of an independent, non-proponent entity conducting an EIR/ICE is intended to provide confidence to the Acquisition Executive and senior leadership within the Department of Energy, with minimal bias, that the project can be executed within scope, schedule and cost commitments, while meeting its key performance parameters and ultimately fulfilling its mission need. The work will be performed pursuant to reference (a), which requires that an EIR/ICE be performed for projects with a Total Project Cost (TPC) greater than or equal to $100M, or as designated by the SAE, and which further specifies that OECM be responsible for performing the EIR/ICE. Unless otherwise indicated by project risk and performance, a Type III/IV ICE is expected for a CD-2 milestone.

DOE O 413.3B requires an EIR be performed prior to approval of a project's Performance Baseline at CD-2. The EIR should provide a recommendation whether the performance baseline can be validated (i.e., that the proposed scope of the project can be completed within the proposed cost and schedule, and that it is supported by factual and accurate data). Based on the EIR, the OECM must issue a Performance Baseline Validation Letter to the DOE Program Secretarial Officer describing the cost, schedule and scope being validated.

Requirements\Deliverables and Scope:

The EIR/ICE shall be performed in accordance with references (a), (b), (c), (d) and (e). These documents are general in nature, and OECM expects the EIR/ ICE contractor to exercise its professional judgment in appropriately tailoring the numerous detailed requirements to the specific requirements of the Project. The integrated EIR/ICE assumes one combined review and estimate plan, a separate ICE report, and an EIR report incorporating a summary of the ICE results in the cost section.
Below is a notional schedule for the EIR/ICE:

Activity	**Notional Schedule**
Receipt of project materials for sufficiency review	*Time 0*
On-site data collection, if required	*TBD*
Sufficiency review & Notification to Proceed	*1-2 weeks after receipt of documents*
Draft Integrated Review and Estimate Plan	*1 week*
Final Integrated Review and Estimate Plan	*1 week after OECM approval of Draft*
Detailed documentation review	*1-2 weeks*
On-Site Review and Data Collection	*1-2 weeks*
Initial List of EIR findings with recommendations; ICE open items	*At On-site Closeout*
Additional document review	*1 week*
Final List of EIR findings with recommendations	*1 week*
Draft EIR Report (exclusive of cost input)	*2 weeks after on-site review*
Updated Draft (Pre-final) EIR Report (exclusive of cost) with CAP response	*1 week after project comments and CAP response*
Complete Draft Estimate	*1-4 weeks (or as specified in the approved estimate plan)*
Submit Draft ICE Report	*1 week*

Reconciliation *2-3 weeks after receiving Project comments*
Submit Final ICE Report *1 week after completion of reconciliation*
Final EIR Report with ICE cost results summary *3 days after Final ICE Report*
Documentation CD/DVD with EIR/ICE electronic records *1 week after the final reports*
Corrective Action Review *1-2 weeks after receipt of project CAP evidence files*
EIR Report Update *1 week after completion of the CAP review*

Note: OECM Lead should modify the nominal schedule if other than a Type III/IV estimate is to be performed. The EIR/ICE support contractor should comment on the schedule in the proposal response.

Requirements\Deliverables:

- *Review of the OECM EIR and ICE SOPs*

  The EIR/ICE contractor will review and understand the OECM EIR SOP, reference (b), and the OECM Cost Review and Estimate (ICR/ICE) SOP, reference (c).

- *Receipt of Project Materials for Sufficiency Review and Onsite Readiness Assessment (if necessary)*

  In advance of the on-site review, the support contractor will determine if the project documentation is sufficiently complete to conduct a meaningful EIR/ICE. The receipt of project materials for sufficiency review should be submitted to the team members in adequate time to allow review prior to the on-site readiness assessment (if necessary). The support contractor will notify in writing the Contracting Officer's Representative (COR) and OECM that the documentation provided is satisfactory to proceed with the EIR/ICE. If the supporting documentation is not satisfactory to proceed with the review, then the team lead will notify the COR and OECM for decision to either suspend or proceed with a partial review.

- *Review and Estimate Plan*

  If the documentation is satisfactory, the EIR/ICE team will develop an integrated review and estimate plan for OECM review (including a list of proposed EIR/ICE Team members). The EIR/ICE contractor will develop the plan in accordance with the OECM EIR SOP and ICR/ICE SOP. OECM will approve the plan prior to conducting the EIR/ICE. The plan should include the developed Lines of Inquiry (LOIs) for the EIR. The EIR/ICE Contractor's Plan shall clearly indicate which lines of inquiry will receive the highest levels of scrutiny and which are considered of less significance.

  EIR Scope: The core competencies that should be addressed for the EIR are identified below. The review plan developed by the EIR Team, coordinated with

the Program and project team, and approved by the OECM Lead, will identify any additional core competencies as well as LOIs supporting those core competencies. LOIs should be developed using subject matter expertise on the team, using guidance provided in references (b) and (d). The EIR team should request documentation required to support the LOI and to ensure a complete and accurate review is performed. Additional resources for LOIs, including typical required documentation and example LOI, as well as LOIs in selected Program Office (NA, SC and EM) Independent Project Reviews' guidance, are listed in the OECM EIR SOP (reference a), and can be consulted in the construction of the LOIs. Also, it should be emphasized that DOE Guides are a resource for best practices, but are not requirements. Alternative methods may be employed, but the methodology and assumptions should be explained and have a supporting basis.

Core Competencies (EIR in support of Project Performance Baseline Validation, CD-2, and other Core Competency questions available in the EIR SOP):

1. Are the scope, cost, and schedule firmly supported and integrated with sound underlying technical, economic, and programmatic bases, assumptions, and front-end planning (i.e., Project Definition Rating Index)?
2. Has the design matured to the appropriate degree and been validated through appropriate and credible processes?
3. Is new technology, or technology applied in new application, mature enough to support definition and development of credible current Technology Readiness Level definition, WBS elements development and contingency/Management Reserve planning, and to support to the resolution of constructability issues?
4. Have design review comments, integration issues (with Operations and other projects) and constructability constraints been addressed sufficiently?
5. Does the IPT have an appropriate complement of personnel possessing the requisite skill set, commitment, and effectiveness in place and prepared to successfully execute the project (i.e. utilizing best practices such as DOE's Staffing Guide or other appropriate staffing model)?
6. Is the FPD certified at the appropriate level, and prepared and capable to manage the project or program?
7. Have relevant and comprehensive risk and contingency analyses and Risk Management Plans been conducted by DOE and its contractor?
8. Did the funding profile remain intact and viable?
9. Are the Acquisition Strategy and Plan appropriate, support project delivery and provide the best value to the Government?
10. Is the contract aligned with the project and are contractual incentives aligned with project team success metrics?
11. Are appropriate management systems in place and functional (i.e. PARS II, EVMS, etc.) to allow for FPD and IPT to have clear communication throughout organization to ensure authority, accountability and responsibility?
12. Are there processes in place to ensure personnel (Feds and Contractors) are held accountable?

13. Is the project team cognizant of and complying with DOE policy and guidance?
14. Does the IPT have an appropriate definition and understanding of their role in effectively providing project oversight?

ICE Scope: Perform a Type III (parametric estimate approach) and/or Type IV (sampling estimate approach) independent cost estimate in support of a CD-2, Approve Performance Baseline, milestone. The independent estimate should be prepared using an unconstrained-budget assumption.

- *EIR Reports (Draft, Pre-Final, Final, and Corrective Action Plan Review)*

<<(if applicable, please customize per EIR needs)>>
Contractor shall prepare and submit the following reports to OECM:

- Draft EIR Report
- Pre-Final (Updated Draft) EIR Report (with CAP response, without cost results)
- Final EIR Report (including ICE cost results)
- Corrective Action Plan (CAP) Review Report and Addendum to Final EIR Report, if necessary

The EIR Report shall be organized into the sections, shown below, modified as necessary and appropriate. OECM and the EIR Contractor may mutually agree to add or delete particular sections, based upon the scope of the final EIR Review Plan. The EIR Report shall indicate that all lines of inquiry suggested in reference (b) have been considered; however, not all such lines of inquiry warrant the same level of incorporation and investigation.

Acronyms
Key Definitions
Executive Summary
1.0 Cost (use ICE results)
2.0 Schedule (use ICE results)
3.0 Scope
4.0 Risk
5.0 Management (Contract and Project)
6.0 ES&H, QA, Safety
Report Appendices:
A. EIR Team Members, Assignments, and Biographical Sketches
B. Detailed Comments on Project Execution Plan *(if applicable)*
C. Detailed Comments on Other Documents *(if applicable)*
D. Corrective Action Plan (CAP) Recommendations

The Executive Summary of the EIR Report shall include the EIR Team's overall assessment and shall convey a clear recommendation using the "i", "ii" or "iii" options and associated wording described below:

i. The overall assessment of the EIR Team is that the Total Project Cost (TPC) and Project Completion Date for the project scope are reasonable, and that the project as planned and managed can be successfully executed. Accordingly, the EIR Team recommends that OECM validate the Performance Baseline (or verify the Project is ready to proceed to construction). The baseline recommended for validation is defined by: Total Project Cost $ _____, Project Completion Date (CD-4) _____, and Technical Scope/Key Performance Parameters listed below that define project completion.

ii. The overall assessment of the EIR team is that there are deficiencies in the cost and schedule estimates and/or the project as planned and managed cannot be successfully executed. Accordingly, the EIR Team recommends that the baseline not be validated until these deficiencies are corrected.

iii. The overall assessment is that there is insufficient information to assess the Performance Baseline (or Construction Readiness). The EIR Team recommends that the Performance Baseline not be validated. The following information needs to be provided ... *(information should reference the various review elements)*.

Major findings will be summarized in an appropriate form depending upon the number of major findings. For purposes of the EIR Report, the following definitions will be followed:

A ***Major Finding*** is any deficiency, condition, shortcoming, error, or omission that affects the project mission, the proposed performance baseline scope (Key Performance Parameters), TPC, and/or CD-4 schedule, or in the professional judgment of the EIR team, is of such significance that safety, quality, risk management, planning, funding, other documented basis, or the ability of the project team to successfully execute the baseline is jeopardized. Major Findings can also include Critical Decision or baseline change prerequisites.

A ***Finding*** is any lesser deficiency, condition, shortcoming, error, or omission, which does not impact the project mission, scope, KPPs, TPC, or CD-4 schedule, but in the professional judgment of the EIR team, could diminish safety, quality, risk management, planning, funding, other documented basis, or the ability of the project team to successfully execute the proposed performance baseline, unless corrected

An ***Observation*** is not a finding, but a comment on a project aspect that was evaluated by the EIR team. Observations may be positive, neutral, or negative. Negative Observations typically identify actual or potential project management issues (not considered Findings). The EIR team will provide a recommendation for negative Observations that the project team should consider for improving project planning, management, or performance. Positive Observations give credit for project management measures taken by the project team that merit recognition

and may serve as a "lessons learned" for other project teams. Neutral Observations, while neither negative nor positive, are included in the EIR report to show that an area was, in fact, reviewed by the EIR team. Negative Observations of a prevalent or systemic nature will result in a Finding with an associated recommendation.

The EIR Team will review the Corrective Action Plan and updated documentation after it is submitted by the Project Team to ensure all Major Findings are properly closed or have an approved/acceptable path to resolution. A CAP Review Report shall be submitted to OECM following this effort documenting the EIR Team's updated assessment and recommendation.

The EIR report will include a summary tabulation of the costs and schedules for the baselines, and identify any major findings, findings, and observations as defined in the OECM EIR SOP, based on the independent estimate performed and variance analysis from the ICE Report. The report will also identify the team's overall assessment of the baseline, and provide a clear recommendation regarding validation of the baseline. The EIR report narrative should discuss the relative value and percent Management Reserve (MR) expected to be held by the Contractor for the project and relate these values to what would be expected for a similar project. Additional tables include, if applicable, the Project Definition Rating Index (PDRI) and the Technology Readiness Assessment (TRA) summary tables.

Specifically, the Cost section of the EIR Report shall indicate that the cost estimating methodology was reviewed utilizing best practices, specifically reference (e), the GAO *Cost Estimating and Assessment Guide*, and shall identify any significant deviations from GAO guidelines. The EIR Report will also present Project cost information in the following tables (with the Fiscal Year columns adjusted as appropriate to fit the project schedule and funding profile). Additional information pertaining to these tables is provided in references (b) and (c).

It is expected that the EIR team will also complete a Project Definition Rating Index (PDRI) assessment for projects with a TPC of $100M or greater and a Technology Readiness Assessment (TRA) for Major System Projects. PDRI and Technology Readiness Level (TRL) summary scoring tables are expected in the final EIR report. Also, a Project staffing comparison table should be included in the EIR report.

Provide a completed project cost profile table; see example table at the end of this SOW. Completed project cost profile summary tables are expected in all EIR reports. Additionally, the EIR Team should include a milestone schedule graphic or milestone table to accompany the cost profile table.

Based on the project cost profile table, develop summary baseline cost tables of the proposed costs (i.e., PED, TEC, OPC, TPC, Contract Budget Base, Fee, DOE Direct Costs, and Contingency) for the EIR report (examples below, Tables 1-4). The EIR report narrative should discuss the relative value and percent Management Reserve (MR) expected to be held by the Contractor for the project and relate these values to what would be expected for a similar project. Provide TPC and CD-4 dates for the planned (constrained funding) case and for an unconstrained funding case, see Tables 5 and 6 for samples. Provide an updated life-cycle cost estimate compared to the CD-1 data (see Table 7). Other sample tables are provided for milestones, KPPs, PDRI, TRLs, and staffing levels (Tables 8-12).

Project Cost/Funding Summary Tables

Table 1 – Budget Cost Breakdown – Funding Source Specific (future and sunk)

Description	<FY11	FY11	FY12	FY13	FY14	FY15	FY16	Total
PED								
Construction								
TEC								
OPC								
TPC								

(Note: above values include MR/Contingency)

Table 2– Project Data Sheet Cost Breakdown – Funding Source Specific

Description	Costs to Date (as of _____)	Costs to Go	Total
PED			
Construction			
TEC			
OPC			
TPC			

Table 3 – Earned Value Management System Breakdown – Funding Source Neutral

Description	<FY11	FY11	FY12	FY13	FY14	FY15	FY16	Total
*Contract Budget Base								
Fee/Profit								
Other DOE Direct Costs								
Contingency								
Performance baseline (TPC)								

** Contract Budget Base is inclusive of the Performance Measurement Baseline, any Undistributed Budget, and, Management Reserve.*

Table 4– Earned Value Management System Breakdown – Funding Source Neutral

Description	Costs to Date (as of _____)	Costs to Go	Total
PMB			
Undistributed Budget			
MR			

*Contract Budget Base			
Fee/Profit			
Other DOE Direct Costs			
Contingency			
Performance baseline (TPC)			

** Contract Budget Base is inclusive of the Performance Measurement Baseline, any Undistributed Budget, and, Management Reserve.*

Table 5 – Funding Constrained TPC versus Unconstrained TPC

Description	<FY11	FY11	FY12	FY13	FY14	FY15	FY16	Total
TPC (as funded, constrained)								
TPC (if unconstrained funding available)								
Difference								

Table 6- CD-4 Date – Funding Constrained versus Unconstrained

Element	Date (or Months)
Constrained (as currently planned) CD-4 date)	
Unconstrained CD-4 date (if funding available)	
Difference in Months	

Table 7-Life Cycle Cost Estimate - Updated

Cost Element	Original CD-1	Updated
Design		
Construction		
Startup-Testing-Commissioning		
Operations (over _____ years)		
Shutdown, Dismantling, Decommissioning		
Total Life Cycle Cost		

Table 8. Summary Critical Decisions and Other Key Milestones

Milestone	Description	Scheduled Date	Actual Date
Critical Decision 0	Approval of Mission Need		
Critical Decision 1	Approve Alternative Selection		
Critical Decision 2	Approve Performance Baseline		
Critical Decision 3	Approve Start of Construction		
Critical Decision 4	Approve Start of Operations		

Table 9 - EIR Team Evaluation of Project Key Performance Parameters

KPP	EIR Team Evaluation	
	Measurable at CD-4?	Critical Requirement or Function
	yes/no	yes/no
	yes/no	yes/no

	yes/no	yes/no
	yes/no	yes/no

Add additional explanation notes, if needed.

Table 10. Comparison of EIR Team and Project Team PDRI Scores

PDRI Review Area	EIR Team Scores	Project Team Scores
Cost		
Schedule		
Scope/Technical		
Management Planning and Control		
Safety		
Total Score		

Table 11. Comparison of EIR Team and Project Team TRLs of new or newly applied technologies

New or newly applied technologies	EIR Team assessed TRLs	Project Team assessed TRLs
New Technology A	TRL X	TRL Y
New Technology B		

Table 12. Comparison of EIR Team and Project recommended staffing level

	EIR Team recommended Federal staffing level[1]	Project recommended Federal staffing level[2]	Current Federal staffing level (at the time of the EIR)
Integrated Project Team*			

** Table should decompose Integrated Project Team (IPT) (Federal and Federal Support Staff only) in terms of the number of personnel and skill set, as appropriate, and differentiate between full and part-time IPT members.*

[1] DOE G 413.3-19, *Staffing Guide for Project Management*

[2] Specify the basis for project recommended staffing level

- *ICE Reports (Draft, Final)*

  Contractor shall prepare and submit the following reports to OECM:
  - Draft ICE Report
  - Final ICE Report (following reconciliation)

  The ICE Report shall be organized into the following sections, as necessary and appropriate. OECM and the ICE Contractor may mutually agree to add or delete particular sections, based upon the scope of the final ICE Review Plan.

    - Executive Summary
    - Background (including project cost/baseline history)
    - Project Status
    - Technical Baseline Description (include Scope statement)

- Information available to the ICE team
- Cost estimate method (s) used
- Assumptions (for both project team and ICE team)
- Cost estimate results (including life cycle cost estimate)
- Cost Variance Analysis (explanation of differences in Project and ICE estimates by WBS)
- Schedule Analysis/Variance
- Funding Profile Analysis/Variance
- Independent Risk Analysis and Contingency Analysis
- Reconciliation Results – open items (completed after reconciliation process) included in Final Report
- Reconciled Costs (in Final Report)
- Conclusions
- Report Appendices:
  A. ICE Team Members, Assignments, and Biographical Sketches of SMEs
  B. Detailed Comments on Cost Estimate *(if applicable)*
  C. Detailed Comments on Other Documents *(if applicable)*

  - The Executive Summary of the ICE Report shall include a summary discussion of the results of the ICE Team's estimate and compare it to the project team's estimate. Key differences should be highlighted. The draft report should highlight areas of agreement and areas to concentrate on during the reconciliation process. The final report should include the actions taken during reconciliation with any adjustment in the cost estimate.

  - The ICE report will include a summary tabulation of the costs and schedules for the ranges, and identify any other concerns or issues as defined in reference (c).

  - The cost estimates should be based on unconstrained funding (budget). If the ICE team is aware of constraints on funding this information should be included in the report.

- *Project Documentation CDs or DVDs.* The EIR and ICE final reports should be available to the OECM Team Lead in a format to enable loading into PARS II (Adobe—pdf—or alternative as required). In addition, all project documentation gathered during the review should be indexed and provided to OECM in a consolidated set of CDs or DVDs.

References

(a) DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* November 29, 2010

(b) External Independent Review (EIR) Standard Operating Procedure, DOE Office of Engineering and Construction Management, August 2011

(c) Department of Energy (DOE) Office of Engineering and Construction Management, *Cost Review and Estimate (ICR, ICE) Standard Operating Procedure* (Draft), August 2011

(d) DOE Guide 413.3-9A, *Project Review Guide for Capital Asset Projects*

(e) U.S. General Accountability Office, *GAO Cost Estimating and Assessment Guide*, GAO-09-3SP, March 2009.

(f) DOE Guide 413.3-21, *Cost Estimating Guide*, 5/9/11

(Additional documentation that may be applicable)

Sample Report or Review/Estimate Plan Title Page

<<DRAFT OR FINAL>>
<<REPORT OR REVIEW/ESTIMATE PLAN>>

EXTERNAL INDEPENDENT REVIEW AND INDEPENDENT COST ESTIMATE

OF

<<NAME >> PROJECT
<<PROJECT NUMBER>>
<<SITE>>
<<CITY, ST>>

<<DATE OF REPORT OR DATE OF REVIEW PLAN>>

U.S. Department of Energy
Office of Engineering and Construction Management
1000 Independence Avenue, SW
Washington, DC 20585

SAMPLE PROJECT COST PROFILE TABLE

Project Cost Profiles

Project Number(s):
Project Title:
Date updated:
TPC or range ($K):

Cost Element	FY PY-1 FY 2009	FY PY-2 FY 2010	Total Prior Years	FY BY-1 FY 2011	FYBY-2 FY 2012	FYBY-3 FY 2013	FYBY-4 FY 2014	Total Current Estimate
Critical Decision (approvals)	CD-0	CD-1		CD-2	CD-3		CD-4	
Total Estimated Cost (TEC)								
Design (PED)								
Design								
Contingency								
Total, PED								
Appropriations								
Obligations								
Costs								
Construction (Post CD-2)								
Site Preparation								
Equipment								
All Other Construction								
Contingency								
Total, Construction								
Appropriations								
Obligations								
Costs								
Total, TEC (Post CD-2)								

Cost Element (page 2)	FY PY-1 FY 2009	FY PY-2 FY 2010	Total Prior Years	FY BY-1 FY 2011	FYBY-2 FY 2012	FYBY-3 FY 2013	FYBY-4 FY 2014	Total Current Estimate
Other Project Cost (OPC)								
OPC except D&D								
Conceptual Planning								
Conceptual Design								
Start-Up								
Contingency								
Total, OPC except D&D								
Appropriations								
Obligations								
Costs								
D&D (Post CD-2)								
D&D								
Contingency								
Total, D&D								
Appropriations								
Obligations								
Costs								
Total, OPC								
Total, Contingency								
Appropriations								
Obligations								
Costs								
Total, TPC (Post CD-2)								