

Instructions and Summary

Award Number: _____
Award Recipient: American Electric Power Service Corporation

Date of Submission: 3/15/2023

Form submitted by: American Electric Power Service Corporation

(May be award recipient or sub-recipient)

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your DOE contact!
Do not modify this template or any cells for formulas!

1. If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs.
2. Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
3. Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
4. The total budget presented on tabs a. through i. must include both Federal (DOE) and Non-Federal (cost share) portions.
5. All costs incurred by the preparer's sub-recipients, contractors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
6. Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
7. Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your DOE contact before adding additional budget period rows and columns.
8. **ALL budget period cost categories are rounded to the nearest dollar.**

BURDEN DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry

Section A - Budget Summary								
		Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
	Budget Period 1	\$23,577,961	\$23,577,961			\$47,155,922	50.00%	2024 (Calendar Year)
	Budget Period 2	\$4,271,802	\$4,271,802			\$8,543,604	50.00%	2025 (Calendar Year)
	Budget Period 3	\$0	\$0			\$0	0.00%	2026 (Calendar Year)
	Budget Period 4	\$0	\$0			\$0	0.00%	2027 (Calendar Year)
	Budget Period 5	\$0	\$0			\$0	0.00%	2028 (Calendar Year)
	Total	\$27,849,763	\$27,849,763			\$55,699,525	50.00%	
Section B - Budget Categories								
CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	\$8,112,130	\$1,214,169	\$0	\$0	\$0	\$9,326,299	16.74%	
b. Fringe Benefits	\$4,362,291	\$652,918	\$0	\$0	\$0	\$5,015,209	9.00%	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	Site visit plans for the Project are currently being
d. Equipment	\$7,128,660	\$500,000	\$0	\$0	\$0	\$7,628,660	13.70%	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	Supply requirements for the Project are currently
f. Contractual								
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Contractor	\$20,810,938	\$5,147,668	\$0	\$0	\$0	\$25,958,606	46.60%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Contractual	\$20,810,938	\$5,147,668	\$0	\$0	\$0	\$25,958,606	46.60%	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Direct Costs	\$40,414,019	\$7,514,755	\$0	\$0	\$0	\$47,928,774	86.05%	
i. Indirect Charges	\$6,741,903	\$1,028,848	\$0	\$0	\$0	\$7,770,751	13.95%	
Total Costs	\$47,155,922	\$8,543,604	\$0	\$0	\$0	\$55,699,525	100.00%	

Additional Explanation (as needed):

a. Personnel

INSTRUCTIONS - PLEASE READ																				
1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and contractors must be included under f. Contractual.																				
2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, labor distribution report, state civil service rates, etc.) must also be identified.																				
3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).																				
4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.																				
5. Each budget period is rounded to the nearest dollar.																				
SOPO Task #	SOPO SubTask #	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Project Total Hours	Project Total Dollars	Rate Basis
			Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 1	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 2	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 3	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 4	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 5			
1		Dr. Engineer (EAM/PLM)	2000	\$85.00	\$170,000	200	\$80.00	\$16,000	200	\$90.00	\$18,000	200	\$90.00	\$18,000	200	\$90.00	\$18,000		\$160,000	
2		Technicians (C)	4000	\$20.00	\$80,000	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0		\$30,000	
3	3.1.3.6	Solution Engineer																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	Audit Services Manager																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	SME / Consultant																		Rates based on similar projects performed
2	2.1.2.2	Not Available																		Rates based on similar projects performed
1	1.1	Director																		Rates based on similar projects performed
7	7.1	Product Owner																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	Auditor																		Rates based on similar projects performed
1	1.1	Not Available																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	SME / Consultant																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	SME / Consultant																		Rates based on similar projects performed
1	1.1	Director DRTO																		Rates based on similar projects performed
1	1.1	Cost Analyst																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	SME / Consultant																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Architect																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	DERMS Product Owner																		Rates based on similar projects performed
3	3.3	SME / Consultant																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	DMS Product Owner																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	DMS Product Owner																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Scrum Analyst																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Scrum Analyst																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Product Manager																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	Business Process Lead																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	Business Process Representative																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	ODC End Users OpCo (6-7)																		Rates based on similar projects performed
2	2.1.2.2	IT Solution Arch-Infrastructure																		Rates based on similar projects performed
2	2.1.2.2	SME / Consultant																		Rates based on similar projects performed
2	2.1.2.2	SME / Consultant																		Rates based on similar projects performed
2	2.1.2.2	SME / Consultant																		Rates based on similar projects performed
2	2.1.2.2	End User Analyst																		Rates based on similar projects performed
2	2.1.2.2	End User Analyst																		Rates based on similar projects performed
2	2.1.2.2	End User Analyst																		Rates based on similar projects performed
2	2.1.2.2	Project Managers																		Rates based on similar projects performed
1	1.3	Security Analyst																		Rates based on similar projects performed
2	2.1.2.2	SME / Consultant																		Rates based on similar projects performed
2	2.1.2.2	Data Center Engineer																		Rates based on similar projects performed
2	2.1.2.2	Server Tech																		Rates based on similar projects performed
2	2.1.2.2	Workstation Engineer																		Rates based on similar projects performed
2	2.1.2.2	Server Engineer																		Rates based on similar projects performed
2	2.1.2.2	DBA/Firewall																		Rates based on similar projects performed
2	2.1.2.2	Security Ambassador																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	Ops SCADA Supervisor																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	Ops SCADA Supervisor																		Rates based on similar projects performed
11	11.1.1.2.11.3.11.4	Business Architect																		Rates based on similar projects performed
10	10.1.10.2.10.3	Performance Testing Scripter																		Rates based on similar projects performed
10	10.1.10.2.10.3	Performance Testing Engineer																		Rates based on similar projects performed
10	10.1.10.2.10.3	Performance Testing Engineer																		Rates based on similar projects performed
7	7.1	Scrum Analyst 10																		Rates based on similar projects performed
7	7.1	Scrum Analyst																		Rates based on similar projects performed
7	7.1	Scrum Analyst 8																		Rates based on similar projects performed
7	7.1	Scrum Analyst 9																		Rates based on similar projects performed
7	7.1	Scrum Analyst 1																		Rates based on similar projects performed
7	7.1	Scrum Analyst 2																		Rates based on similar projects performed
7	7.1	Scrum Analyst 3																		Rates based on similar projects performed
7	7.1	Scrum Analyst 4																		Rates based on similar projects performed
7	7.1	Scrum Analyst 5																		Rates based on similar projects performed
7	7.1	Scrum Analyst 6																		Rates based on similar projects performed
7	7.1	Scrum Analyst 7																		Rates based on similar projects performed
7	7.1	Product Owner																		Rates based on similar projects performed
5	5.1	Product Manager																		Rates based on similar projects performed
5	5.1	Product Owner																		Rates based on similar projects performed
5	5.1	Scrum Analyst 1																		Rates based on similar projects performed
5	5.1	Scrum Analyst																		Rates based on similar projects performed
5	5.1	Scrum Analyst 3																		Rates based on similar projects performed
5	5.2.5.3.5.4	Product Owner																		Rates based on similar projects performed
5	5.2.5.3.5.4	Product Owner																		Rates based on similar projects performed
5	5.2.5.3.5.4	Scrum Analyst 1																		Rates based on similar projects performed
5	5.2.5.3.5.4	Scrum Analyst 3																		Rates based on similar projects performed
5	5.2.5.3.5.4	Scrum Analyst 4																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Change Management Lead																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Change Management SMEs																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Corp Comm Liaison																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Training Lead																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Training Coordinator																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Trainers																		Rates based on similar projects performed
9	9.1.9.2.9.3.9.4.9.5.9.6.9.7	Training Data Prep																		Rates based on similar projects performed
1	1.1	OT Delivery Manager																		Rates based on similar projects performed
1	1.1	IT Delivery Manager																		Rates based on similar projects performed
1	1.1	OT Solution Architect																		Rates based on similar projects performed
1	1.1	IT Solution Arch																		Rates based on similar projects performed
1	1.1	IT Delivery Lead																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	Product Manager																		Rates based on similar projects performed
1	1.1	OT Delivery Lead																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	ODC End Users OpCo (6)																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	SCADA Database Product Owner																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	ODC End Users OpCo (6)																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	SME / Consultant																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	SME / Consultant																		Rates based on similar projects performed
1	1.1	Director Trans Operations Technology																		Rates based on similar projects performed
6	6.1.6.2.6.3.6.4	SCADA Database Product Owner																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Scrum Analyst 2																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Scrum Analyst 1																		Rates based on similar projects performed
3	3.1.3.2.3.3.3.4.3.5.3.6	Solution Engineer																		

b. Fringe Benefits

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below by position title. If all employees receive the same fringe benefits, you can show "Total Personnel" in the Labor Type column instead of listing out all position titles.

2. The rates and how they are applied should not be averaged to get one fringe cost percentage. Complex calculations should be described/provided in the Additional Explanation section below.

3. The fringe benefit rates should be applied to all positions, regardless of whether those funds will be supported by Federal Share or Recipient Cost Share.

4. Each budget period is rounded to the nearest dollar.

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
Total Personnel			\$0			\$0			\$0			\$0			\$0	\$0
American Electric Power Service Corporation Labor Fringe Rate	\$8,112,130	38%	\$3,114,113	\$1,214,169	38%	\$466,099	\$0	38.39%	\$0	\$0	38.39%	\$0	\$0	38.39%	\$0	\$3,580,212
American Electric Power Service Corporation Labor Non-Productive Fringe Rate	\$8,112,130	15%	\$1,248,178	\$1,214,169	15%	\$186,819	0	15.39%	\$0	0	15.39%	\$0	0	15.39%	\$0	\$1,434,997
			\$0			\$0			\$0			\$0			\$0	\$0
Total:			\$4,362,291			\$652,918			\$0			\$0			\$0	\$5,015,209

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required at the time of award negotiation if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information if not previously submitted.

☐ A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is/was included with the project application.*

☒ There is not a current federally approved rate agreement negotiated and available.**

*Unless the organization has submitted an indirect rate proposal which encompasses the fringe pool of costs, please provide the organization's benefit package and/or a list of the components/elements that comprise the fringe pool and the cost or percentage of each component/element allocated to the labor costs identified in the Budget Justification (Form EERE 335.1).

**When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided in the Sample Rate Proposal at <https://www.energy.gov/eere/funding/downloads/sample-indirect-rate-proposal-and-profit-compliance-audit>, or a format that provides the same level of information and which will support the rates being proposed for use in the performance of the proposed project.

Additional Explanation (as necessary): Please use this box (or an attachment) to list the elements that comprise your fringe benefits and how they are applied to your base (e.g. Personnel) to arrive at your fringe benefit rate

See i. Indirect tab for AEP Service Company's indirect rate proposal, which includes additional details on the development and application of indirect rates.

c. Travel

INSTRUCTIONS - PLEASE READ!!!

1. Identify Foreign and Domestic Travel as separate items. Examples of Purpose of Travel are subrecipient site visits, DOE meetings, project mgmt. meetings, etc. Examples of Basis for Estimating Costs are past trips, travel quotes, GSA rates, etc.
2. All listed travel must be necessary for performance of the Statement of Project Objectives.
3. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. Travel costs should remain consistent with travel costs incurred by an organization during normal business operations as a result of the organizations written travel policy. In absence of a written travel policy, organizations must follow the regulations prescribed by the General Services Administration.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of the day of departure and the day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. Each budget period is rounded to the nearest dollar.

SOPO Task #	Purpose of Travel	Depart From	Destination	No. of Days	No. of Travelers	Lodging per Traveler	Flight per Traveler	Vehicle per Traveler	Per Diem Per Traveler	Cost per Trip	Basis for Estimating Costs
	Domestic Travel	Budget Period 1									
1	EXAMPLE!!! Visit to PV manufacturer			2	2	\$250	\$500	\$100	\$160	\$2,020	Current GSA rates
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 1 Total									\$0	
	Domestic Travel	Budget Period 2									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 2 Total									\$0	
	Domestic Travel	Budget Period 3									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 3 Total									\$0	
	Domestic Travel	Budget Period 4									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 4 Total									\$0	
	Domestic Travel	Budget Period 5									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 5 Total									\$0	
	PROJECT TOTAL									\$0	

Additional Explanation (as needed): Site visit plans for the Project are currently being developed, as such, applicable costs will be calculated once this is completed.

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

1. Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.
2. List all equipment below, providing a basis of cost (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.
3. During award negotiations, provide a contractor quote for all equipment items over \$50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.
4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
3,4,5	EXAMPLE!!! Thermal shock chamber	2	\$70,000	\$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
8,9,10	O&M Hardware (LEASED)				Historical Based Parametric	Development of ADMS/DERMS
8,9,10	Recurring O&M Software -		\$0	\$0		
8,9,10	Recurring O&M Software - DIST DSN				Historical Based Parametric	Development of ADMS/DERMS
				\$0		
				\$0		
				\$0		
	Budget Period 1 Total			\$7,128,660		
Budget Period 2						
8,9,10	O&M Hardware (LEASED)		\$0	\$0		
8,9,10	Recurring O&M Software -		\$0	\$0		
8,9,10	Recurring O&M Software - DIST DSN				Historical Based Parametric	Development of ADMS/DERMS
				\$0		
				\$0		
				\$0		
	Budget Period 2 Total			\$500,000		
Budget Period 3						
	Budget Period 3 Total			\$0		
Budget Period 4						
	Budget Period 4 Total			\$0		
Budget Period 5						
	Budget Period 5 Total			\$0		
	TOTAL EQUIPMENT			\$7,628,660		

Additional Explanation (as needed):

e. Supplies**INSTRUCTIONS - PLEASE READ!!!**

- Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.
- List all proposed supplies below, providing a basis of costs (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.
- Multiple supply items valued at \$5,000 or less used to assemble an equipment item with a value greater than \$5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.
- Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.
- Each budget period is rounded to the nearest dollar.

SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
4,6	EXAMPLE!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 1 Total				\$0		
Budget Period 2						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 2 Total				\$0		
Budget Period 3						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 3 Total				\$0		
Budget Period 4						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 4 Total				\$0		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 5 Total				\$0		
TOTAL SUPPLIES				\$0		

Additional Explanation (as needed): Supply requirements for the Project are currently being developed, as such, applicable costs will be calculated once this is completed.

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, contractors, and FFRDC partners in the applicable boxes below.

2. Sub-recipients (partners, sub-awardees): Subrecipients shall submit a Budget Justification describing all project costs and calculations when their total proposed budget exceeds either (1) \$100,000 or (2) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient entries below. A subrecipient is a legal entity to which a subaward is made, who has performance measured against whether the objectives of the Federal program are met, is responsible for programmatic decision making, must adhere to applicable Federal program compliance requirements, and uses the Federal funds to carry out a program of the organization. All characteristics may not be present and judgment must be used to determine subrecipient vs. contractor status.

3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of \$100,000 or more, a Contractor quote must be provided. A contractor is a legal entity contracted to provide goods and services within normal business operations, provides similar goods or services to many different purchasers, operates in a competitive environment, provides goods or services that are ancillary to the operation of the Federal program, and is not subject to compliance requirements of the Federal program. All characteristics may not be present and judgment must be used to determine subrecipient vs. contractor status.

4. Federal Funded Research and Development Centers (FFRDCs): FFRDCs must submit a signed Field Work Proposal during award application. The award recipient may allow the FFRDC to provide this information directly to DOE, however project costs must also be provided below.

5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Sub-Recipient Name/Organization	Sub-Recipient Unique Entity Identifier (UEI)	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
2,4	EXAMPLE!!! XYZ Corp.		Partner to develop optimal lens for Gen 2 product. Cost estimate based on personnel hours.	\$48,000	\$32,000	\$16,000			\$96,000
									\$0
									\$0
									\$0
									\$0
									\$0
			Sub-total	\$0	\$0	\$0	\$0	\$0	\$0

SOPO Task #	Contractor Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
6	EXAMPLE!!! ABC Corp.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	\$32,900	\$86,500				\$119,400
1	Accenture	ADMS project management; [REDACTED]	(b) (4)		\$0	\$0	\$0	(b) (4)
1,2,3,5,6,7,8	Accenture	ADMS implementation; [REDACTED]			\$0	\$0	\$0	
1	OSI	ADMS software license and consulting services; vendor estimate			\$0	\$0	\$0	
1	OSI	ADMS consulting services travel; vendor estimate			\$0	\$0	\$0	
1	OSI	ADMS software license and support fees; vendor estimate			\$0	\$0	\$0	
1	IBM	ADMS professional services; vendor estimate			\$0	\$0	\$0	
1,3,5,6,11	External Labor	ADMS planning & implementation; [REDACTED]			\$0	\$0	\$0	
4,9	O&M IT Professional Services	ADMS professional services; vendor estimate			\$0	\$0	\$0	
1	Co-Source	ADMS planning & implementation; [REDACTED]			\$0	\$0	\$0	
1	EY	ADMS financial management and compliance						
		Sub-total	\$20,810,938	\$5,147,668	\$0	\$0	\$0	\$25,958,606

SOPO Task #	FFRDC Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
								\$0
								\$0
		Sub-total	\$0	\$0	\$0	\$0	\$0	\$0

Total Contractual	\$20,810,938	\$5,147,668	\$0	\$0	\$0	\$25,958,606
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Additional Explanation (as needed):

g. Construction

PLEASE READ!!!

1. Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a contractor or subrecipient should be entered under f. Contractual.

2. List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.

3. Each budget period is rounded to the nearest dollar.

Overall description of construction activities: Example Only!!! - Build wind turbine platform

SOPO Task #	General Description	Cost	Basis of Cost	Justification of need
Budget Period 1				
3	EXAMPLE ONLY!!! Three days of excavation for platform site	\$28,000	Engineering estimate	Site must be prepared for construction of platform.
Budget Period 1 Total		\$0		
Budget Period 2				
Budget Period 2 Total		\$0		
Budget Period 3				
Budget Period 3 Total		\$0		
Budget Period 4				
Budget Period 4 Total		\$0		
Budget Period 5				
Budget Period 5 Total		\$0		
TOTAL CONSTRUCTION		\$0		

Additional Explanation (as needed):

h. Other Direct Costs

INSTRUCTIONS - PLEASE READ!!!

1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).
2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.
3. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
Budget Period 1				
5	EXAMPLE!!! Grad student tuition - tasks 1-3	\$16,000	Established UCD costs	Support of graduate students working on project
Budget Period 1 Total		\$0		
Budget Period 2				
Budget Period 2 Total		\$0		
Budget Period 3				
Budget Period 3 Total		\$0		
Budget Period 4				
Budget Period 4 Total		\$0		
Budget Period 5				
Budget Period 5 Total		\$0		
TOTAL OTHER DIRECT COSTS		\$0		

Additional Explanation (as needed):

i. Indirect Costs

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.
2. The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.
3. The indirect rate should be applied to both the Federal Share and Recipient Cost Share.
4. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting cost as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution.** Neither of these costs can be reflected as actual indirect cost rates realized by the organization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (200.306(b)(1))
- 5.. **Each budget period is rounded to the nearest dollar.**

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
Provide ONLY Applicable Rates:							
American Electric Power Service Corporation (AEPSC) Indirect Fringe Rate	38.39%	38.39%	38.39%	38.39%	38.39%		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Non-Productive Fringe Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Internal Support Cost Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Departmental Overhead Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Cell Phone Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Incentive Compensation Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Transportation Rate							American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation (AEPSC) Indirect Government Programs Administration Rate							American Electric Power Company Inc. Total Direct Costs, Including Fringe, Incurred on Federal Government Awards
Indirect Costs (As Applicable):							
American Electric Power Service Corporation Indirect Internal Support Costs			\$0	\$0	\$0		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation Indirect Departmental Overhead Costs			\$0	\$0	\$0		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation Indirect Cell Phone Costs			\$0	\$0	\$0		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation Indirect Incentive Compensation Costs			\$0	\$0	\$0		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation Indirect Transportation Costs			\$0	\$0	\$0		American Electric Power Service Corporation Total Labor Dollars
American Electric Power Service Corporation Indirect Government Programs Administration Costs			\$0	\$0	\$0		American Electric Power Company Inc. Total Direct Costs, Including Fringe, Incurred on Federal Government Awards
Total indirect costs requested:	\$6,741,903	\$1,028,848	\$0	\$0	\$0	\$7,770,751	

A federally approved indirect rate agreement, or rate proposed (supported and agreed upon by DOE for estimating purposes) is required if reimbursement of indirect costs is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed.

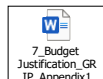
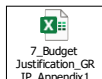
- ☐ An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application and will be provided electronically to the Contracting Officer for this project.
- ☒ The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.
- ☐ This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

You must provide an explanation (below or in a separate attachment) and show how your indirect cost rate was applied to this budget in order to come up with the indirect costs shown.

Additional Explanation (as needed): *IMPORTANT: Please use this box (or an attachment) to further explain how your total indirect costs were calculated. If the total indirect costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total).

See below for AEP Service Company's indirect rate proposal, which includes additional details on the development and application of indirect rates.

Based on analysis of prior historical information we anticipate that our rates will remain constant for the duration of the grant activity. AEP expects any escalation in pool cost to be proportional to the base cost, therefore, no escalation factors are proposed in rate development for out-year consideration.



Cost Share

PLEASE READ!!!

1. A detailed presentation of the cash or cash value of all cost share proposed must be provided in the table below. All items in the chart below must be identified within the applicable cost category tabs a. through i. in addition to the detailed presentation of the cash or cash value of all cost share proposed provided in the table below. Identify the source organization & amount of each cost share item proposed in the award.
2. Cash Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project. **Contractors may not provide cost share.** Any partial donation of goods or services is considered a discount and is not allowable.
3. In Kind Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. In Kind cost share items include volunteer personnel hours, the donation of space or use of equipment, etc. The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section below. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out In Kind cost share in this section. **Contractors may not provide cost share.** Any partial donation of goods or services is considered a discount and is not allowable.
4. Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds. Cost sharing commitment letters from subrecipients and third parties must be provided with the original application.
5. Fee or profit, including foregone fee or profit, **are not allowable** as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
6. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim the resulting indirect costs as a Cost Share contribution.**
7. **NOTE:** A Recipient **cannot claim "unrecovered indirect costs"** as a Cost Share contribution, **without prior approval.**
8. Each budget period is rounded to the nearest dollar.

Organization/Source	Type (Cash or In Kind)	Cost Share Item	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Project Cost Share
ABC Company EXAMPLE!!!	Cash	Project partner ABC Company will provide 20 PV modules for product development at the price of \$680 per module	\$13,600					\$13,600
American Electric Power	Cash	Personnel	\$4,056,065	\$607,085	\$0	\$0	\$0	\$4,663,150
American Electric Power	Cash	Fringe	\$2,181,145	\$326,459	\$0	\$0	\$0	\$2,507,605
American Electric Power	Cash	Travel	\$0	\$0	\$0	\$0	\$0	\$0
American Electric Power	Cash	Equipment	\$3,564,330	\$250,000	\$0	\$0	\$0	\$3,814,330
American Electric Power	Cash	Supplies	\$0	\$0	\$0	\$0	\$0	\$0
American Electric Power	Cash	Contractual	\$10,405,469	\$2,573,834	\$0	\$0	\$0	\$12,979,303
American Electric Power	Cash	Construction	\$0	\$0	\$0	\$0	\$0	\$0
American Electric Power	Cash	Other	\$0	\$0	\$0	\$0	\$0	\$0
American Electric Power	Cash	Indirect	\$3,370,951	\$514,424	\$0	\$0	\$0	\$3,885,376
								\$0
		TOTAL COST SHARE	\$23,577,961	\$4,271,802	\$0	\$0	\$0	\$27,849,763

Total Project Cost: \$55,699,525

Cost Share Percent of Award:

50.0%

Additional Explanation (as needed):

Applicant Name: American Electric Power Service Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary							
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget			
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		Total (g)
1. Budget Period 1				\$23,577,961	\$23,577,961		\$47,155,922
2. Budget Period 2				\$4,271,802	\$4,271,802		\$8,543,604
3. Budget Period 3				\$0	\$0		\$0
4. Budget Period 4				\$0	\$0		\$0
5. Budget Period 5				\$0	\$0		\$0
6. Totals				\$27,849,763	\$27,849,763		\$55,699,526
Section B - Budget Categories							
6. Object Class Categories	Grant Program, Function or Activity					Total (5)	
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5		
a. Personnel	\$8,112,130	\$1,214,169	\$0	\$0	\$0	\$9,326,299	
b. Fringe Benefits	\$4,362,291	\$652,918	\$0	\$0	\$0	\$5,015,209	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	
d. Equipment	\$7,128,660	\$500,000	\$0	\$0	\$0	\$7,628,660	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	
f. Contractual	\$20,810,938	\$5,147,668	\$0	\$0	\$0	\$25,958,606	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	
h. Other	\$0	\$0	\$0	\$0	\$0	\$0	
i. Total Direct Charges (sum of 6a-6h)	\$40,414,019	\$7,514,755	\$0	\$0	\$0	\$47,928,774	
j. Indirect Charges	\$6,741,903	\$1,028,848	\$0	\$0	\$0	\$7,770,751	
k. Totals (sum of 6i-6j)	\$47,155,922	\$8,543,604	\$0	\$0	\$0	\$55,699,525	
7. Program Income						\$0	