Instructions and Summary

Award Number:
Award Recipient: Delaware Electric Cooperative

Date of Submission: 3/17/2023
Form submitted by: Delaware Electric Cooperative
(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	$0	$314,385			$314,385	100.00%	11/01/2023 - 10/31/2024
Budget Period 2	$0	$315,760			$315,760	100.00%	11/01/2024 - 10/31/2025
Budget Period 3	$0	$537,113			$537,113	100.00%	11/01/2025 - 10/31/2026
Budget Period 4	$0	$560,336			$560,336	100.00%	11/01/2026 - 10/31/2027
Budget Period 5	$0	$580,459			$580,459	100.00%	11/01/2027 - 10/31/2028
Total	$0	$2,308,053			$2,308,053	100.00%	

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	$238,750	$234,000	$286,250	$291,000	$295,750	$1,345,750	58.31%	
b. Fringe Benefits	$0	$0	$0	$0	$0	$0	0.00%	
c. Travel	$0	$0	$0	$0	$0	$0	0.00%	
d. Equipment	$0	$0	$0	$0	$0	$0	0.00%	
e. Supplies	$9,875	$0	$169,103	$184,476	$199,849	$563,303	24.41%	
f. Contractual								
Sub-recipient	$0	$0	$0	$0	$0	$0	0.00%	
Contractor	$0	$0	$0	$0	$0	$0	0.00%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$0	$0	$0	$0	$0	$0	0.00%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$65,760	$81,760	$81,760	$84,860	$84,860	$399,000	17.29%	
Total Direct Costs	$314,385	$315,760	$537,113	$560,336	$580,459	$2,308,053	100.00%	
i. Indirect Charges	$0	$0	$0	$0	$0	$0	0.00%	
Total Costs	$314,385	$315,760	$537,113	$560,336	$580,459	$2,308,053	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 #	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	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	
2	Technicians (2)	4000	$20.00	$80,000	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	4000	$80,000	1-5
1-5		780	$300.00	$234,000	780	$300.00	$234,000	780	$300.00	$234,000	780	$300.00	$234,000	780	$300.00	$234,000	3900	$1,170,000	Negotiated rate
1-5		50	$95.00	$4,750	0	$95.00	$0	550	$95.00	$52,250	600	$95.00	$57,000	650	$95.00	$61,750	1850	$175,750	Negotiated rate
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
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				$0			$0			$0			$0			$0	0	$0	
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				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
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				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
	Total Personnel Costs	**830**		**$238,750**	**780**		**$234,000**	**1330**		**$286,250**	**1380**		**$291,000**	**1430**		**$295,750**	**5750**	**$1,345,750**	

Additional Explanation (as needed):

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	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
Total:	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**

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.

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	
	Budget Period 1 Total									**$0**	
	Domestic Travel	**Budget Period 2**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 2 Total									**$0**	
	Domestic Travel	**Budget Period 3**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 3 Total									**$0**	
	Domestic Travel	**Budget Period 4**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 4 Total									**$0**	
	Domestic Travel	**Budget Period 5**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 5 Total									**$0**	
	PROJECT TOTAL									**$0**	

Additional Explanation (as needed):

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
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 1 Total			$0		
Budget Period 2						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
Budget Period 3						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$0		
Budget Period 4						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$0		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	TOTAL EQUIPMENT			**$0**		

Additional Explanation (as needed):

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. 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.

2. 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.

3. 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.

4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

5. 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
1	LCR	50	$197.50	$9,875	Purchase price	to support project energy data collection and transmission tasks 1 -5
\						
				$0		
				$0		
	Budget Period 1 Total			**$9,875**		
Budget Period 2						
2	LCR	0	$197.50	$0		to support project energy data collection and transmission tasks 1 -5
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
Budget Period 3						
3	LCR	550	$197.50	$108,625		to support project energy data collection and transmission tasks 1 -5
3	Meter	550	$109.96	$60,478		to support project energy data collection and transmission tasks 1 -5
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$169,103		
Budget Period 4						
4	LCR	600	$197.50	$118,500		to support project energy data collection and transmission tasks 1 -5
4	Meter	600	$109.96	$65,976		to support project energy data collection and transmission tasks 1 -5
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$184,476		
Budget Period 5						
5	LCR	650	$197.50	$128,375		to support project energy data collection and transmission tasks 1 -5
5	Meter	650	$109.96	$71,474		to support project energy data collection and transmission tasks 1 -5
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$199,849		
	TOTAL SUPPLIES			**$563,303**		

Additional Explanation (as needed):

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
									$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**
								$0
								$0
								$0
								$0
								$0
		Sub-total	$0	$0	$0	$0	$0	$0

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

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
Total Contractual	$0	$0	$0	$0	$0	$0

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
1				Support for enhancing project participant recruitment and community engagement costs:
		$1,700	Established costs	
		$560	Established costs	
		$500	Established costs	
		$5,000	Established costs	
		$0	Established costs	
		$0	Established costs	
1		$33,000	Established costs	Software license to support metering and load control system for Tasks 1 - 5
1		$25,000	Established costs	To support support security of program data collection - Tasks 1 -5
	Budget Period 1 Total	$65,760		
		Budget Period 2		
2				Support for enhancing project participant recruitment and community engagement costs:
		$1,700	Established costs	
		$560	Established costs	
		$500	Established costs	
		$5,000	Established costs	
		$10,000	Established costs	
		$6,000	Established costs	
2		$33,000	Established costs	Software license to support metering and load control system for Tasks 1 - 5
2		$25,000	Established costs	To support support security of program data collection - Tasks 1 -5
	Budget Period 2 Total	$81,760		
		Budget Period 3		
3				Support for enhancing project participant recruitment and community engagement costs:
		$1,700	Established costs	
		$560	Established costs	
		$500	Established costs	
		$5,000	Established costs	
		$10,000	Established costs	
		$6,000	Established costs	
3		$33,000	Established costs	Software license to support metering and load control system for Tasks 1 - 5
3		$25,000	Established costs	To support support security of program data collection - Tasks 1 -5
	Budget Period 3 Total	$81,760		
		Budget Period 4		
4				Support for enhancing project participant recruitment and community engagement costs:
		$1,700	Established costs	
		$560	Established costs	
		$600	Established costs	
		$6,000	Established costs	
		$10,000	Established costs	
		$8,000	Established costs	
4		$33,000	Established costs	Software license to support metering and load control system for Tasks 1 - 5
4		$25,000	Established costs	To support support security of program data collection - Tasks 1 -5
	Budget Period 4 Total	$84,860		
		Budget Period 5		
5				Support for enhancing project participant recruitment and community engagement costs:
		$1,700	Established costs	
		$560	Established costs	
		$600	Established costs	
		$6,000	Established costs	
		$10,000	Established costs	
		$8,000	Established costs	
5		$33,000	Established costs	Software license to support metering and load control system for Tasks 1 - 5
5		$25,000	Established costs	To support support security of program data collection - Tasks 1 -5
	Budget Period 5 Total	$84,860		
	TOTAL OTHER DIRECT COSTS	**$399,000**		

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 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 orgnaization, 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:							
Overhead Rate	0.00%	0.00%	0.00%	0.00%	0.00%		*Example: Labor + Fringe*
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs						**$0**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs						**$0**	
Total indirect costs requested:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	

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).

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**
Delaware Electric Cooperation	Cash		$238,750	$234,000	$286,250	$291,000	$295,750	**$1,345,750**
Delaware Electric Cooperation	Cash		$58,000	$58,000	$58,000	$58,000	$58,000	**$290,000**
Delaware Electric Cooperation	Cash		$9,875	$0	$169,103	$184,476	$199,849	**$563,303**
Delaware Electric Cooperation	Cash		$7,760	$23,760	$23,760	$26,860	$26,860	**$109,000**
								$0
								$0
								$0
								$0
								$0
								$0
		TOTAL COST SHARE	**$314,385**	**$315,760**	**$537,113**	**$560,336**	**$580,459**	**$2,308,053**

Total Project Cost: $2,308,053 **Cost Share Percent of Award: 100.0%**

Additional Explanation (as needed):

Applicant Name: Delaware Electric Cooperative Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity	Catalog of Federal Domestic Assistance Number	Estimated Unobligated Funds		New or Revised Budget			
		Federal	Non-Federal	Federal	Non-Federal		Total
(a)	(b)	(c)	(d)	(e)	(f)		(g)
1. Budget Period 1				$0	$314,385		$314,385
2. Budget Period 2				$0	$315,760		$315,760
3. Budget Period 3				$0	$537,113		$537,113
4. Budget Period 4				$0	$560,336		$560,336
5. Budget Period 5				$0	$580,459		$580,459
6. Totals				$0	$2,308,053		$2,308,053

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	$238,750	$234,000	$286,250	$291,000	$295,750	$1,345,750
b. Fringe Benefits	$0	$0	$0	$0	$0	$0
c. Travel	$0	$0	$0	$0	$0	$0
d. Equipment	$0	$0	$0	$0	$0	$0
e. Supplies	$9,875	$0	$169,103	$184,476	$199,849	$563,303
f. Contractual	$0	$0	$0	$0	$0	$0
g. Construction	$0	$0	$0	$0	$0	$0
h. Other	$65,760	$81,760	$81,760	$84,860	$84,860	$399,000
i. Total Direct Charges (sum of 6a-6h)	$314,385	$315,760	$537,113	$560,336	$580,459	$2,308,053
j. Indirect Charges	$0	$0	$0	$0	$0	$0
k. **Totals** (sum of 6i-6j)	$314,385	$315,760	$537,113	$560,336	$580,459	$2,308,053
7. Program Income						$0

Other Attachment File(s)

*** Mandatory Other Attachment Filename:** 1234-TechnicalVolume.pdf

Add Mandatory Other Attachment | Delete Mandatory Other Attachment | View Mandatory Other Attachment

To add more "Other Attachment" attachments, please use the attachment buttons below.

Add Optional Other Attachment | Delete Optional Other Attachment | View Optional Other Attachment

Project/Performance Site Location(s)

Project/Performance Site Primary Location

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: Pecan Street Inc.
UEI: YPJDF7HHXFY3
* Street1: 3924 Berkman Dr.
Street2:
* City: Austin
County: Texas
* State: TX: Texas
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 78723-4590
* Project/ Performance Site Congressional District: TX-010

Project/Performance Site Location 1

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: Delaware Electric Cooperative
UEI: T72NHKM259N3
* Street1: 14198 Sussex Hwy,
Street2:
* City: Greenwood
County:
* State: DE: Delaware
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 19950-6009
* Project/ Performance Site Congressional District: DE-001

Project/Performance Site Location 2

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: University of Delaware
UEI: T72NHKM259N3
* Street1: 210 Hullihen Hall
Street2:
* City: Newark
County:
* State: DE: Delaware
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 19716-0099
* Project/ Performance Site Congressional District: DE-001

Additional Location(s)

Add Attachment | Delete Attachment | View Attachment

OMB Number: 4040-0004
Expiration Date: 11/30/2025

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 03/16/2023

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: PECAN STREET INC.

* b. Employer/Taxpayer Identification Number (EIN/TIN): 27-0744614

* c. UEI: YPJDF7HHXFY3

d. Address:

* Street1: 3924 Berkman Dr.

Street2:

* City: Austin

County/Parish: Travis

* State: TX: Texas

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 78723-4590

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

* First Name: (b) (6)

Middle Name:

* Last Name: (b) (6)

Suffix:

Title: CFO & GENERAL COUNSEL

Organizational Affiliation: PECAN STREET INC.

* Telephone Number: (b) (6)

Fax Number:

* Email: (b) (6)

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

National Energy Technology Laboratory

11. Catalog of Federal Domestic Assistance Number:

81.254

CFDA Title:

Grid Infrastructure Deployment and Resilience

*** 12. Funding Opportunity Number:**

DE-FOA-0002740

* Title:

BIL Grid Resilience and Innovation Partnerships (GRIP)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Seasonal Solar Congestion Management (SEASCOM)

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: TX-25 * b. Program/Project: DE-001

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 11/01/2023 * b. End Date: 10/31/2028

18. Estimated Funding ($):

* a. Federal	7,989,987.00
* b. Applicant	7,989,987.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	15,979,974.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name: (b) (6)

Middle Name:

* Last Name: (b) (6)

Suffix:

* Title: CFO & GENERAL COUNSEL

* Telephone Number: (b) (6) Fax Number:

* Email: (b) (6)

* Signature of Authorized Representative: (b) (6) * Date Signed: 03/16/2023

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2025

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	81.254	$ 0.00	$ 0.00	$ 4,548,129.00	$ 4,476,698.00	$ 9,024,827.00
2.						
3.						
4.						
5. Totals		$ 0.00	$ 0.00	$ 4,548,129.00	$ 4,476,698.00	$ 9,024,827.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Budget Period 1	(2)	(3)	(4)	Total (5)
a. Personnel	$ 614,415.00	$	$	$	$ 614,415.00
b. Fringe Benefits	172,405.00				172,405.00
c. Travel	0.00				0.00
d. Equipment	94,399.00				94,399.00
e. Supplies	1,428,600.00				1,428,600.00
f. Contractual	1,358,177.00				1,358,177.00
g. Construction	0.00				0.00
h. Other	3,500,000.00				3,500,000.00
i. Total Direct Charges (sum of 6a-6h)	7,167,996.00				$ 7,167,996.00
j. Indirect Charges	1,856,830.00				$ 1,856,830.00
k. TOTALS (sum of 6i and 6j)	$ 9,024,826.00	$	$	$	$ 9,024,826.00
7. Program Income	$ 0.00	$	$	$	$ 0.00

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. Budget Period 1	$ 4,476,698.00	$ 0.00	$ 0.00	$ 4,476,698.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$ 4,476,698.00	$ 0.00	$ 0.00	$ 4,476,698.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 4,548,128.00	$ 2,000,000.00	$ 849,376.00	$ 849,376.00	$ 849,376.00
14. Non-Federal	$ 4,476,698.00	3,500,000.00	325,566.00	325,566.00	325,566.00
15. TOTAL (sum of lines 13 and 14)	$ 9,024,826.00	$ 5,500,000.00	$ 1,174,942.00	$ 1,174,942.00	$ 1,174,942.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16. Budget Period 1	$ 2,457,530.00	$ 464,905.00	$ 340,750.00	$ 178,673.00
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$ 2,457,530.00	$ 464,905.00	$ 340,750.00	$ 178,673.00

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: 12,551,605 (Total Project); 7,167,966 (BP1)

22. Indirect Charges: 3,428,369 (Total Project); 1,856,830 (BP1)

23. Remarks: Majority of the project costs will be incurred in the first two years of the project as the materials acquisition, installations, and community relationships that will serve as foundation for the rest of the project must necessarily occur earlier.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

** Name:* PECAN STREET INC.

** Street 1:* 3924 Berkman Dr. *Street 2:*

** City:* Austin *State:* TX: Texas *Zip:* 78723

Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:

DEPARTMENT OF ENERGY

7. * Federal Program Name/Description:

Grid Infrastructure Deployment and Resilience

CFDA Number, *if applicable:* 81.254

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* N/A *Street 2:*

** City:* N/A *State:* *Zip:*

b. Individual Performing Services (including address if different from No. 10a)

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* N/A *Street 2:*

** City:* N/A *State:* *Zip:*

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** (b) (6)

***Name:** *Prefix:* ** First Name:* (b) (6) *Middle Name:*

** Last Name:* (b) (6) *Suffix:*

Title: CFO & GENERAL COUNSEL **Telephone No.:** (b) (6) **Date:** 03/16/2023

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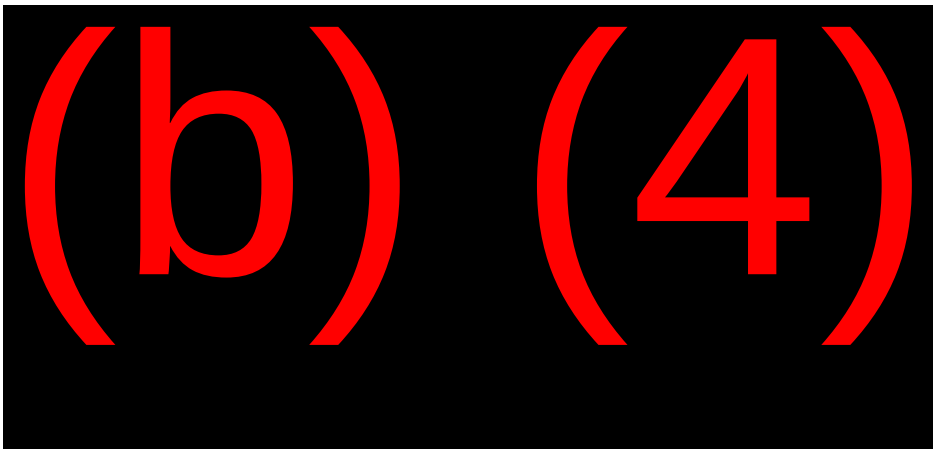
Standard Form - LLL (Rev. 7-97)

Seasonal Solar Congestion Management (SEASCOM)

DE-FOA-0002740

Topic Area 2: Smart Grid Grants (40107)



Team Member Organizations:

Pecan Street, Inc., Austin, TX 78723 (Nonprofit)

Delaware Electric Cooperative, Greenwood, DE 19950 (Distribution Utility Cooperative)

University of Delaware, Newark, DE 19716 (Public University)

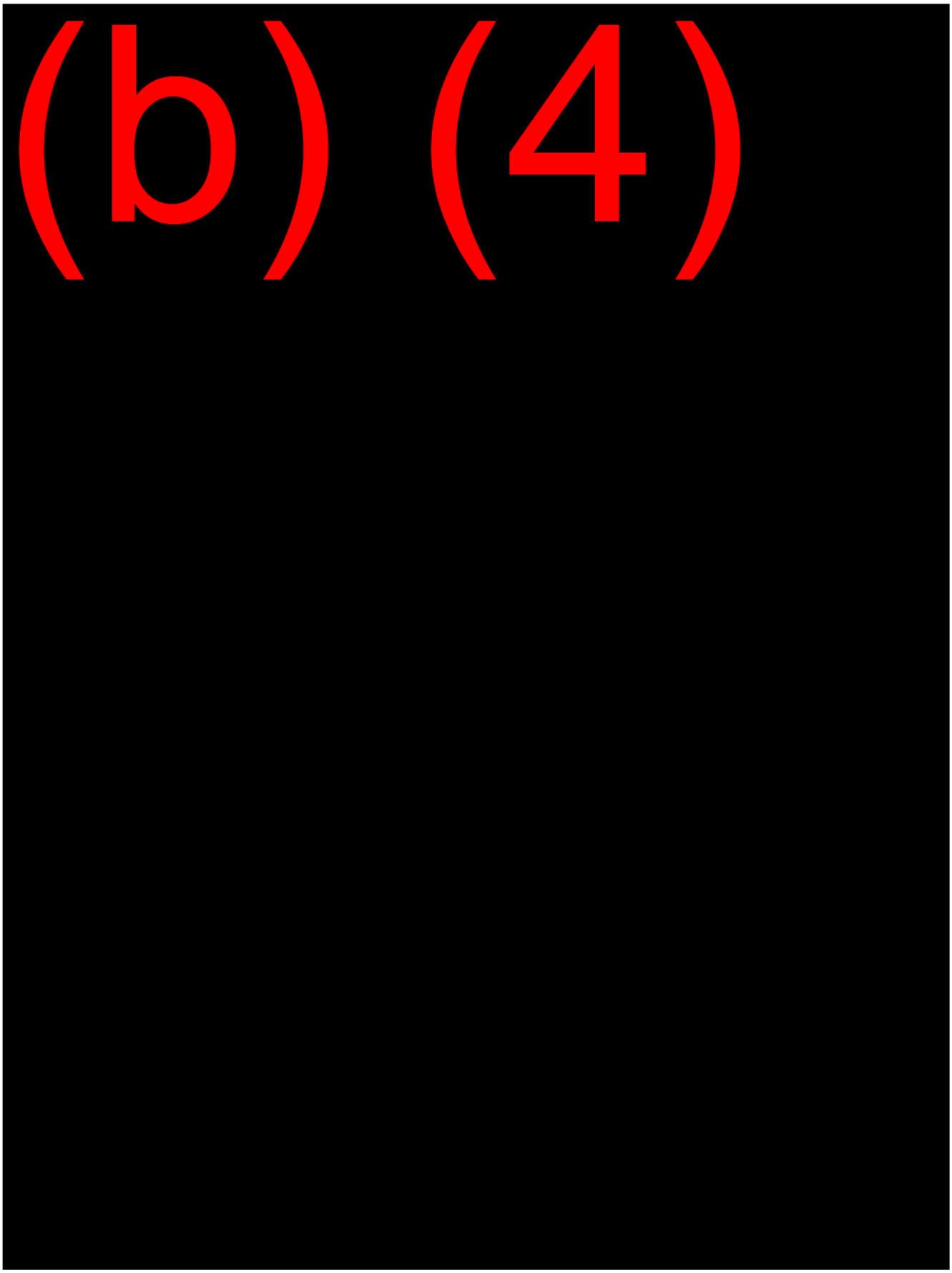
Imani Energy, Wilmington, DE 19801 (Solar Energy, Workforce Development, Community Activist)
Community Partner

Clean Energy USA, Rehoboth Beach, DE 19971 (Solar Energy Company)
Community Partner

Energize Delaware, Dover, DE 19904 (Nonprofit)
Community Partner

Additional Locations of Project Work:

Delaware - Statewide


(b) (4)

NETL F 451.1-1/3
Revised: 12/3/2014
Reviewed: 12/3/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

The proposer shall prepare this Environmental Questionnaire (EQ) as accurately and completely as possible. Supporting information can be provided as attachments. The proposer must identify the location of the project and specifically describe the activities that would occur at that location. The proposer must provide specific information and quantities, regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer must submit with this EQ a FINAL copy of the project's statement of work (SOW) or statement of project objective (SOPO) that will be used in the contract/agreement between the proposer and the U.S Department of Energy (DOE).

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: DE-FOA-0002740 Proposer: PECAN STREET INC.
2. This Environmental Questionnaire pertains to a: ☒ Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: (b) (6) Telephone Number: (b) (6)
4. Project Title: Seasonal Solar Congestion Management (SEASCOM)
5. Expected Project Duration: 11/01/2023-10/31/2028
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
   Austin, Travis County, TX
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
   Project management, administrative and reporting tasks
8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project
Delaware Electric Cooperative	Kent and Sussex Counties, Delaware
University of Delaware	Newark, Delaware/USA

9. Identify and select the checkbox with the predominant project work activities under Group A, B, or C

Group A

☑ Routine administrative, procurement, training, and personnel actions. Contract activities/awards for management support, financial assistance, and technical services in support of agency business, programs, projects, and goals. Literature searches and information gathering, material inventories, property surveys; data analysis, computer modeling, analytical reviews, technical summary, conceptual design, feasibility studies, document preparation, data dissemination, and paper studies. Technical assistance including financial planning, assistance, classroom training, public meetings, management training, survey participation, academic contribution, technical consultation, and stakeholders surveys. Workshop and conference planning, preparation, and implementation which may involve promoting energy efficiency, renewable energy, and energy conservation.

STOP! ***If all work activities related to this project can be classified and described within categories under Group A, proceed directly to Section III CERTIFICATION BY PROPOSER. No additional information is required.***
If project work activities are described in either Group(s) B or C; then continue filling out questionnaire.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

Group B

☐ Laboratory Scale Research, Bench Scale Research, Pilot Scale Research, Proof-of-Concept Scale Research, or Field Test Research. Work DOES NOT involve new building/facilities construction and site excavation/groundbreaking activities. This work typically involves routine operation of existing laboratories, commercial buildings/properties, offices and homes, project test facilities, factories/power plants, vehicles test stands and components, refueling facilities, utility systems, or other existing structures/facilities. Work will NOT involve major change in facilities missions and operations, land use planning, new/modified regulatory/operating permit requirements. Includes work specific to routine DOE Site operations and Lab research work activities, but NOT building construction and site preparation. DOE work typically involves laboratory facilities and lab equipment operations, buildings and grounds management activities; and buildings and facilities maintenance, repairs, reconfiguration, remodeling, equipment use and replacement.

Group C

☐ Pilot Test Facilities Construction, Pilot Scale Research, Field Scale Demonstration, or Commercial Scale Application. Work typically involves facility construction, site preparation/excavation/groundbreaking, and/or demolition. This work would include construction, retrofit, replacement, and/or major modifications of laboratories, test facilities, energy system prototypes, and power generation infrastructure. Work may also involve construction and maintenance of utilities system right-of-ways, roads, vehicle test facilities, commercial buildings/properties, fuel refinery/mixing facilities, refueling facility, power plants, underground wells, and pipelines, and other types of energy research related facilities. This work may require new or modified regulatory permits, environmental sampling and monitoring requirements, master planning, public involvement, and environmental impact review. Includes work specific to DOE Site Operations and Lab operation activities involving building and facilities construction, replacement, decommissioning/demolition, site preparation, land use changes, or change in research facilities mission or operations.

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).

n/a - see attached two subrecipient questionnaires.

2. **Attach** a project site location map of the project work area.

D. ENVIRONMENTAL IMPACTS

NEPA procedures require evaluations of possible effects (including land use, energy resource use, natural, historic and cultural resources, and pollutants) from proposed projects on the environment.

1. Land Use

a. Characterize present land use where the proposed project would be located.

☐ Urban ☐ Industrial ☐ Commercial ☐ Agricultural
☐ Suburban ☐ Rural ☐ Residential ☐ Research Facilities
☐ Forest ☐ University Campus ☐ Other: _____

b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Describe planned construction, installation, and/or demolition activities, i.e., roads, utilities system right-of-ways, parking lots, buildings, laboratories, storage tanks, fueling facilities, underground wells, pipelines, or other structures.
☐ No construction would be anticipated for this project.

d. Describe how land use would be affected by operational activities associated with the proposed project.
☐ No land areas would be affected.

e. Describe any plans to reclaim areas that would be affected by the proposed project.
☐ No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?
☐ No ☐ Yes (describe)

g. Would the proposed project be located in or near local, state, or federal parks; forests; monuments; scenic waterways; wilderness; recreation facilities; or tribal lands? ☐ No ☐ Yes (describe)

2. Construction Activities and/or Operation

a. Identify project structure(s), power line(s), pipeline(s), utilities system(s), right-of-way(s) or road(s) that will be constructed and clearly mark them on a project site map or topographic map as appropriate. ☐ None

b. Would the proposed project require the construction of waste pits or settling ponds?
☐ No ☐ Yes (describe and identify location, and estimate surface area disturbed)

c. Would the proposed project affect any existing body of water? ☐ No ☐ Yes (describe)

d. Would the proposed project impact a floodplain or wetland? ☐ No ☐ Yes (describe)

e. Would the proposed project potentially cause runoff/sedimentation/erosion? ☐ No ☐ Yes (describe)

f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?
☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. Would the proposed project involve any of the following: nanotechnology; recombinant DNA or genetic engineering; facility decommissioning or disposition of equipment/materials; or management of radioactive wastes/materials?
☐ No ☐ Yes (describe)

3. Biological Resources

a. Identify any State or Federally listed endangered or threatened plant or animal species potentially affected by the proposed project.
☐ None

b. Would any designated critical habitat be affected by the proposed project? ☐ No ☐ Yes (describe)

c. Describe any impacts that construction would have on any other types of sensitive or unique habitats.
☐ No planned construction ☐ No habitats ☐ None ☐ Impact (describe)

d. Would any foreign substances/materials be introduced into ground or surface waters, soil, or other earth/geologic resource because of project activities? How would these foreign substances/materials affect the water, soil, biota, and geologic resources? ☐ No ☐ Yes (describe)

e. Would any migratory animal corridors be impacted or disrupted by the proposed project? ☐ No ☐ Yes (describe)

4. Socioeconomic and Infrastructure Conditions

a. Would local socio-economic changes result from the proposed project? ☐ No ☐ Yes (describe)

b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas?
☐ No ☐ Yes (describe)

c. Would the proposed project require new transportation access (roads, rail, etc.)? Describe location, impacts, costs.
☐ No ☐ Yes (describe)

d. Would the proposed project create a significant increase in local energy usage? ☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

5. Historical/Cultural Resources

a. Describe any historical, archaeological, or cultural sites in the vicinity of the proposed project; note any sites included on the National Register of Historic Places. ☐ None

b. Would construction or operational activities planned under the proposed project disturb any historical, archaeological, or cultural sites? ☐ No planned construction ☐ No historic sites ☐ Yes (describe) ☐ No Impact (discuss)

c. Has the State Historic Preservation Office been contacted with regard to this project? ☐ No ☐ Yes (describe)

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☐ No ☐ Yes (describe)

e. Would the proposed project be located on or adjacent to tribal lands, lands considered to be sacred, or lands used for traditional purposes? Describe any known tribal sensitivities for the proposed project area.

6. Atmospheric Conditions/Air Quality

a. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards (NAAQS). This information is available under the Green Book Non-Attainment Areas for Criteria Pollutants located at http://www.epa.gov/air/oaqps/greenbk/astate.html

	Attainment	Non-Attainment
O_3 - 1 Hour	☐	☐
O_3 - 8 Hour	☐	☐
SO_x	☐	☐
PM - 2.5	☐	☐
PM - 10	☐	☐
CO	☐	☐
NO_2	☐	☐
Lead	☐	☐

b. Would proposed project require issuance of new or modified local, state, or federal air permits to perform project related work and activities? ☐ No ☐ Yes (describe)

c. Would the proposed project be in compliance with local and state air quality requirements? ☐ Yes
If not, please explain.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
☐ No ☐ Yes (describe)

e. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the maximum annual rate of emissions for the project?

	Maximum per Year	Total for Project
☐ SO_x		
☐ NO_x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO_2		
☐ Lead		
☐ H_2S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☐ None		

f. Would any types of emission control or particulate collection devices be used?
☐ No ☐ Yes (describe, including collection efficiencies)

g. How would emissions be vented?

7. Hydrologic Conditions/Water Quality

a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.

b. What sources would supply potable and process water for the proposed project?

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Quantify the wastewater that would be generated by the proposed project.

	Gallons/day	Gallons/year
☐ Non-contact cooling water		
☐ Process water		
☐ Sanitary		
☐ Other -- describe:		
☐ None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? ☐ No wastewater produced

e. Identify the local treatment facility that would receive wastewater from the proposed project.
☐ No discharges to local treatment facility

f. Describe how wastewater would be collected and treated. ☐ No wastewater produced

g. Would any run-off or leachates be produced from storage piles or waste disposal sites? ☐ No ☐ Yes (describe source)

h. Would project require issuance of new or modified water permits to perform project work or site development activities?
☐ No ☐ Yes (describe)

i. Where would wastewater effluents from the proposed project be discharged? ☐ No wastewater produced

j. Would the proposed project be permitted to discharge effluents into an existing body of water?
☐ No ☐ Yes (describe water use and effluent impact)

k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?
☐ No ☐ Yes (describe)

l. Would the proposed project adversely affect the quality or movement of groundwater? ☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?

☐ No ☐ Yes (describe)

n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?

☐ No ☐ Yes (describe)

8. Solid and Hazardous Wastes

a. Identify and estimate wastes that would be generated from the project. Solid wastes are defined as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (See EPA Municipal Solid Waste and Municipal Solid Waste by State).

	Annual Quantity
☐ **Municipal solid waste (e.g., paper, plastic, etc.)**	
☐ **Coal or coal by-products**	
☐ **Other -- Identify:**	
☐ **Hazardous waste – Identify:**	
☐ **None**	

b. Would project require issuance of new or modified solid waste and/or hazardous waste related permits to perform project work activities? ☐ No ☐ Yes (explain)

c. How and where would solid waste disposal be accomplished?

☐ None generated
☐ On-site (identify and describe location)
☐ Off-site (identify location and describe facility and treatment)

d. How would wastes for disposal be transported?

e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at EPA Hazardous Waste website. ☐ None

f. How would hazardous or toxic waste be collected and stored? ☐ None used or produced

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☐ Not required ☐ Arrangements not yet made ☐ Arrangements made with a certified TSD facility (identify)

9. Health/Safety Factors

a. Identify hazardous or toxic materials that would be used in the proposed project.

☐ None ☐ Hazardous or toxic materials that would be used (identify):

b. Describe the potential impacts of this project's hazardous materials on human health and the environment.

☐ None

c. Would there be any special physical hazards or health risks associated with the project? ☐ No ☐ Yes (describe)

d. Does a worker safety program exist at the location of the proposed project? ☐ No ☐ Yes (describe)

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?

☐ No ☐ Yes (describe)

f. Describe any increases in ambient noise levels to the public from construction and operational activities.

☐ None ☐ Increase in ambient noise level (describe)

g. Would project construction result in the removal of natural or other barriers that act as noise screens?

☐ No construction planned ☐ No ☐ Yes (describe)

h. Would hearing protection be required for workers? ☐ No ☐ Yes (describe)

10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?

☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities? ☐ No ☐ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
☐ No ☐ Yes (describe)

d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? ☐ No ☐ Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any existing permits, new or modified permits, manifests, responsible authorities or agencies, contacts, etc., that would be required for the proposed project

a. Resource Conservation and Recovery Act (RCRA): ☐ None ☐ New Required ☐ Modification Required
Describe:

b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
☐ None ☐ New Required ☐ Modification Required
Describe:

c. Toxic Substance Control Act (TSCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

d. Clean Water Act (CWA): ☐ None ☐ New Required ☐ Modification Required
Describe:

e. Underground Storage Tank Control Program (UST): ☐ None ☐ New Required ☐ Modification Required
Describe:

f. Underground Injection Control Program (UIC): ☐ None ☐ New Required ☐ Modification Required
Describe:

g. Clean Air Act (CAA): ☐ None ☐ New Required ☐ Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): ☐ None ☐ New Required ☐ Modification Required
Describe:

i. Floodplains and Wetlands Regulations: ☐ None ☐ New Required ☐ Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

k. National Historic Preservation Act (NHPA): ☐ None ☐ New Required ☐ Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): ☐ None ☐ New Required ☐ Modification Required
Describe:

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT. ☐ None

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?

☐ No ☐ Yes (describe)

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.

☐ None (provide supporting detail) ☐ Significant impacts (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. PROVIDE A DESCRIPTION OF HOW THE PROJECT WOULD BE DECOMMISSIONED, INCLUDING THE DISPOSITION OF EQUIPMENT AND MATERIALS.

III. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

Signature: (b) (6) Date (mm/dd/yyyy): 03/15/2023

Typed Name: (b) (6)

Title: CFO & GENERAL COUNSEL

Organization: PECAN STREET INC.

IV. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

DOE Project Manager

Signature: Date (mm/dd/yyyy):

Typed Name:

NETL F 451.1-1/3
Revised: 12/3/2014
Reviewed: 12/3/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

The proposer shall prepare this Environmental Questionnaire (EQ) as accurately and completely as possible. Supporting information can be provided as attachments. The proposer must identify the location of the project and specifically describe the activities that would occur at that location. The proposer must provide specific information and quantities, regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer must submit with this EQ a FINAL copy of the project's statement of work (SOW) or statement of project objective (SOPO) that will be used in the contract/agreement between the proposer and the U.S Department of Energy (DOE).

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: DE-FOA-0002740 Proposer: University of Delaware
2. This Environmental Questionnaire pertains to a: ☒ Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: (b) (6) Telephone Number: (b) (6)
4. Project Title: Seasonal Solar Congestion Management (SEASCOM)
5. Expected Project Duration: 11/01/2023-10/31/2028
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
   Newark, Delaware/USA
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
   Photovoltaic (PV) solar inverters will be installed in University of Delaware Smart Inverter Test Lab. Performance and remote communication will be evaluated including debugging hardware, software and networked communications. Equipment will duplicate what is to be installed in homes in the Delaware Electric Coop (DEC) service territory.
8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project

9. Identify and select the checkbox with the predominant project work activities under Group A, B, or C

Group A

☑ Routine administrative, procurement, training, and personnel actions. Contract activities/awards for management support, financial assistance, and technical services in support of agency business, programs, projects, and goals. Literature searches and information gathering, material inventories, property surveys; data analysis, computer modeling, analytical reviews, technical summary, conceptual design, feasibility studies, document preparation, data dissemination, and paper studies. Technical assistance including financial planning, assistance, classroom training, public meetings, management training, survey participation, academic contribution, technical consultation, and stakeholders surveys. Workshop and conference planning, preparation, and implementation which may involve promoting energy efficiency, renewable energy, and energy conservation.

STOP! ***If all work activities related to this project can be classified and described within categories under Group A, proceed directly to Section III CERTIFICATION BY PROPOSER. No additional information is required.***
If project work activities are described in either Group(s) B or C; then continue filling out questionnaire.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

Group B

☐ Laboratory Scale Research, Bench Scale Research, Pilot Scale Research, Proof-of-Concept Scale Research, or Field Test Research. Work DOES NOT involve new building/facilities construction and site excavation/groundbreaking activities. This work typically involves routine operation of existing laboratories, commercial buildings/properties, offices and homes, project test facilities, factories/power plants, vehicles test stands and components, refueling facilities, utility systems, or other existing structures/facilities. Work will NOT involve major change in facilities missions and operations, land use planning, new/modified regulatory/operating permit requirements. Includes work specific to routine DOE Site operations and Lab research work activities, but NOT building construction and site preparation. DOE work typically involves laboratory facilities and lab equipment operations, buildings and grounds management activities; and buildings and facilities maintenance, repairs, reconfiguration, remodeling, equipment use and replacement.

Group C

☐ Pilot Test Facilities Construction, Pilot Scale Research, Field Scale Demonstration, or Commercial Scale Application. Work typically involves facility construction, site preparation/excavation/groundbreaking, and/or demolition. This work would include construction, retrofit, replacement, and/or major modifications of laboratories, test facilities, energy system prototypes, and power generation infrastructure. Work may also involve construction and maintenance of utilities system right-of-ways, roads, vehicle test facilities, commercial buildings/properties, fuel refinery/mixing facilities, refueling facility, power plants, underground wells, and pipelines, and other types of energy research related facilities. This work may require new or modified regulatory permits, environmental sampling and monitoring requirements, master planning, public involvement, and environmental impact review. Includes work specific to DOE Site Operations and Lab operation activities involving building and facilities construction, replacement, decommissioning/demolition, site preparation, land use changes, or change in research facilities mission or operations.

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.

none

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).

Room 191 of the Institute of Energy Conversion at U Delaware. It is a 40 year old solar cell research lab. That room has had similar equipment operating in it for 4 years.

2. **Attach** a project site location map of the project work area.

D. ENVIRONMENTAL IMPACTS

NEPA procedures require evaluations of possible effects (including land use, energy resource use, natural, historic and cultural resources, and pollutants) from proposed projects on the environment.

1. Land Use

a. Characterize present land use where the proposed project would be located.

☐ Urban ☐ Industrial ☐ Commercial ☐ Agricultural
☐ Suburban ☐ Rural ☐ Residential ☐ Research Facilities
☐ Forest ☐ University Campus ☐ Other: _____

b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.

40,000 sq ft building. We are using 1 room about 30x40 feet.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Describe planned construction, installation, and/or demolition activities, i.e., roads, utilities system right-of-ways, parking lots, buildings, laboratories, storage tanks, fueling facilities, underground wells, pipelines, or other structures.
☐ No construction would be anticipated for this project.

d. Describe how land use would be affected by operational activities associated with the proposed project.
☐ No land areas would be affected.

e. Describe any plans to reclaim areas that would be affected by the proposed project.
☐ No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?
☐ No ☐ Yes (describe)

g. Would the proposed project be located in or near local, state, or federal parks; forests; monuments; scenic waterways; wilderness; recreation facilities; or tribal lands? ☐ No ☐ Yes (describe)

2. Construction Activities and/or Operation

a. Identify project structure(s), power line(s), pipeline(s), utilities system(s), right-of-way(s) or road(s) that will be constructed and clearly mark them on a project site map or topographic map as appropriate. ☐ None

b. Would the proposed project require the construction of waste pits or settling ponds?
☐ No ☐ Yes (describe and identify location, and estimate surface area disturbed)

c. Would the proposed project affect any existing body of water? ☐ No ☐ Yes (describe)

d. Would the proposed project impact a floodplain or wetland? ☐ No ☐ Yes (describe)

e. Would the proposed project potentially cause runoff/sedimentation/erosion? ☐ No ☐ Yes (describe)

f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?
☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. Would the proposed project involve any of the following: nanotechnology; recombinant DNA or genetic engineering; facility decommissioning or disposition of equipment/materials; or management of radioactive wastes/materials?
☐ No ☐ Yes (describe)

3. Biological Resources

a. Identify any State or Federally listed endangered or threatened plant or animal species potentially affected by the proposed project.
☐ None

b. Would any designated critical habitat be affected by the proposed project? ☐ No ☐ Yes (describe)

c. Describe any impacts that construction would have on any other types of sensitive or unique habitats.
☐ No planned construction ☐ No habitats ☐ None ☐ Impact (describe)

d. Would any foreign substances/materials be introduced into ground or surface waters, soil, or other earth/geologic resource because of project activities? How would these foreign substances/materials affect the water, soil, biota, and geologic resources? ☐ No ☐ Yes (describe)

e. Would any migratory animal corridors be impacted or disrupted by the proposed project? ☐ No ☐ Yes (describe)

4. Socioeconomic and Infrastructure Conditions

a. Would local socio-economic changes result from the proposed project? ☐ No ☐ Yes (describe)

b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas?
☐ No ☐ Yes (describe)

c. Would the proposed project require new transportation access (roads, rail, etc.)? Describe location, impacts, costs.
☐ No ☐ Yes (describe)

d. Would the proposed project create a significant increase in local energy usage? ☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

5. Historical/Cultural Resources

a. Describe any historical, archaeological, or cultural sites in the vicinity of the proposed project; note any sites included on the National Register of Historic Places. ☐ None

b. Would construction or operational activities planned under the proposed project disturb any historical, archaeological, or cultural sites? ☐ No planned construction ☐ No historic sites ☐ Yes (describe) ☐ No Impact (discuss)

c. Has the State Historic Preservation Office been contacted with regard to this project? ☐ No ☐ Yes (describe)

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☐ No ☐ Yes (describe)

e. Would the proposed project be located on or adjacent to tribal lands, lands considered to be sacred, or lands used for traditional purposes? Describe any known tribal sensitivities for the proposed project area.

none

6. Atmospheric Conditions/Air Quality

a. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards (NAAQS). This information is available under the Green Book Non-Attainment Areas for Criteria Pollutants located at http://www.epa.gov/air/oaqps/greenbk/astate.html

	Attainment	Non-Attainment
O_3 - 1 Hour	☐	☐
O_3 - 8 Hour	☐	☐
SO_x	☐	☐
PM - 2.5	☐	☐
PM - 10	☐	☐
CO	☐	☐
NO_2	☐	☐
Lead	☐	☐

b. Would proposed project require issuance of new or modified local, state, or federal air permits to perform project related work and activities? ☐ No ☐ Yes (describe)

c. Would the proposed project be in compliance with local and state air quality requirements? ☐ Yes
If not, please explain.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
☐ No ☐ Yes (describe)

e. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the maximum annual rate of emissions for the project?

	Maximum per Year	Total for Project
☐ SO_x		
☐ NO_x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO_2		
☐ Lead		
☐ H_2S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☐ None		

f. Would any types of emission control or particulate collection devices be used?
☐ No ☐ Yes (describe, including collection efficiencies)

g. How would emissions be vented?

none to be vented.

7. Hydrologic Conditions/Water Quality

a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.

none

b. What sources would supply potable and process water for the proposed project?

none

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Quantify the wastewater that would be generated by the proposed project.

	Gallons/day	Gallons/year
☐ Non-contact cooling water		
☐ Process water		
☐ Sanitary		
☐ Other -- describe:		
☐ None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? ☐ No wastewater produced

e. Identify the local treatment facility that would receive wastewater from the proposed project.
☐ No discharges to local treatment facility

f. Describe how wastewater would be collected and treated. ☐ No wastewater produced

g. Would any run-off or leachates be produced from storage piles or waste disposal sites? ☐ No ☐ Yes (describe source)

h. Would project require issuance of new or modified water permits to perform project work or site development activities?
☐ No ☐ Yes (describe)

i. Where would wastewater effluents from the proposed project be discharged? ☐ No wastewater produced

j. Would the proposed project be permitted to discharge effluents into an existing body of water?
☐ No ☐ Yes (describe water use and effluent impact)

k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?
☐ No ☐ Yes (describe)

l. Would the proposed project adversely affect the quality or movement of groundwater? ☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?

☐ No ☐ Yes (describe)

n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?

☐ No ☐ Yes (describe)

8. Solid and Hazardous Wastes

a. Identify and estimate wastes that would be generated from the project. Solid wastes are defined as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (See EPA Municipal Solid Waste and Municipal Solid Waste by State).

	Annual Quantity
☐ **Municipal solid waste (e.g., paper, plastic, etc.)**	
☐ **Coal or coal by-products**	
☐ **Other -- Identify:**	
☐ **Hazardous waste – Identify:**	
☐ **None**	

b. Would project require issuance of new or modified solid waste and/or hazardous waste related permits to perform project work activities? ☐ No ☐ Yes (explain)

c. How and where would solid waste disposal be accomplished?

☐ None generated
☐ On-site (identify and describe location)
☐ Off-site (identify location and describe facility and treatment)

d. How would wastes for disposal be transported?

none

e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at EPA Hazardous Waste website. ☐ None

f. How would hazardous or toxic waste be collected and stored? ☐ None used or produced

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☐ Not required ☐ Arrangements not yet made ☐ Arrangements made with a certified TSD facility (identify)

9. Health/Safety Factors

a. Identify hazardous or toxic materials that would be used in the proposed project.

☐ None ☐ Hazardous or toxic materials that would be used (identify):

b. Describe the potential impacts of this project's hazardous materials on human health and the environment.

☐ None

c. Would there be any special physical hazards or health risks associated with the project? ☐ No ☐ Yes (describe)

d. Does a worker safety program exist at the location of the proposed project? ☐ No ☐ Yes (describe)

We have a department safety committee that does quarterly instpections and annual RTK training. The Univeristy EHS dpeartment inspects once per year.

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?

☐ No ☐ Yes (describe)

f. Describe any increases in ambient noise levels to the public from construction and operational activities.

☐ None ☐ Increase in ambient noise level (describe)

g. Would project construction result in the removal of natural or other barriers that act as noise screens?

☐ No construction planned ☐ No ☐ Yes (describe)

h. Would hearing protection be required for workers? ☐ No ☐ Yes (describe)

10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?

☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities? ☐ No ☐ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
☐ No ☐ Yes (describe)

d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? ☐ No ☐ Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any existing permits, new or modified permits, manifests, responsible authorities or agencies, contacts, etc., that would be required for the proposed project

a. Resource Conservation and Recovery Act (RCRA): ☐ None ☐ New Required ☐ Modification Required
Describe:

b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
☐ None ☐ New Required ☐ Modification Required
Describe:

c. Toxic Substance Control Act (TSCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

d. Clean Water Act (CWA): ☐ None ☐ New Required ☐ Modification Required
Describe:

e. Underground Storage Tank Control Program (UST): ☐ None ☐ New Required ☐ Modification Required
Describe:

f. Underground Injection Control Program (UIC): ☐ None ☐ New Required ☐ Modification Required
Describe:

g. Clean Air Act (CAA): ☐ None ☐ New Required ☐ Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): ☐ None ☐ New Required ☐ Modification Required
Describe:

i. Floodplains and Wetlands Regulations: ☐ None ☐ New Required ☐ Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

k. National Historic Preservation Act (NHPA): ☐ None ☐ New Required ☐ Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): ☐ None ☐ New Required ☐ Modification Required
Describe:

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.

none

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT. ☐ None

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?

☐ No ☐ Yes (describe)

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.

☐ None (provide supporting detail) ☐ Significant impacts (describe)

Installing small (1x2 foot size) residential consumer appliances in a lab already testing same product.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. PROVIDE A DESCRIPTION OF HOW THE PROJECT WOULD BE DECOMMISSIONED, INCLUDING THE DISPOSITION OF EQUIPMENT AND MATERIALS.

Equipment is expected to be in operation for > 10 years. Upon completion the electronic equipment at U Delaware is removed by licensed waste disposal company.

III. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

Signature: (b) (6) Date (mm/dd/yyyy): 03/10/2023

Typed Name: (b) (6)

Title: (b) (6)

Organization: University of Delaware

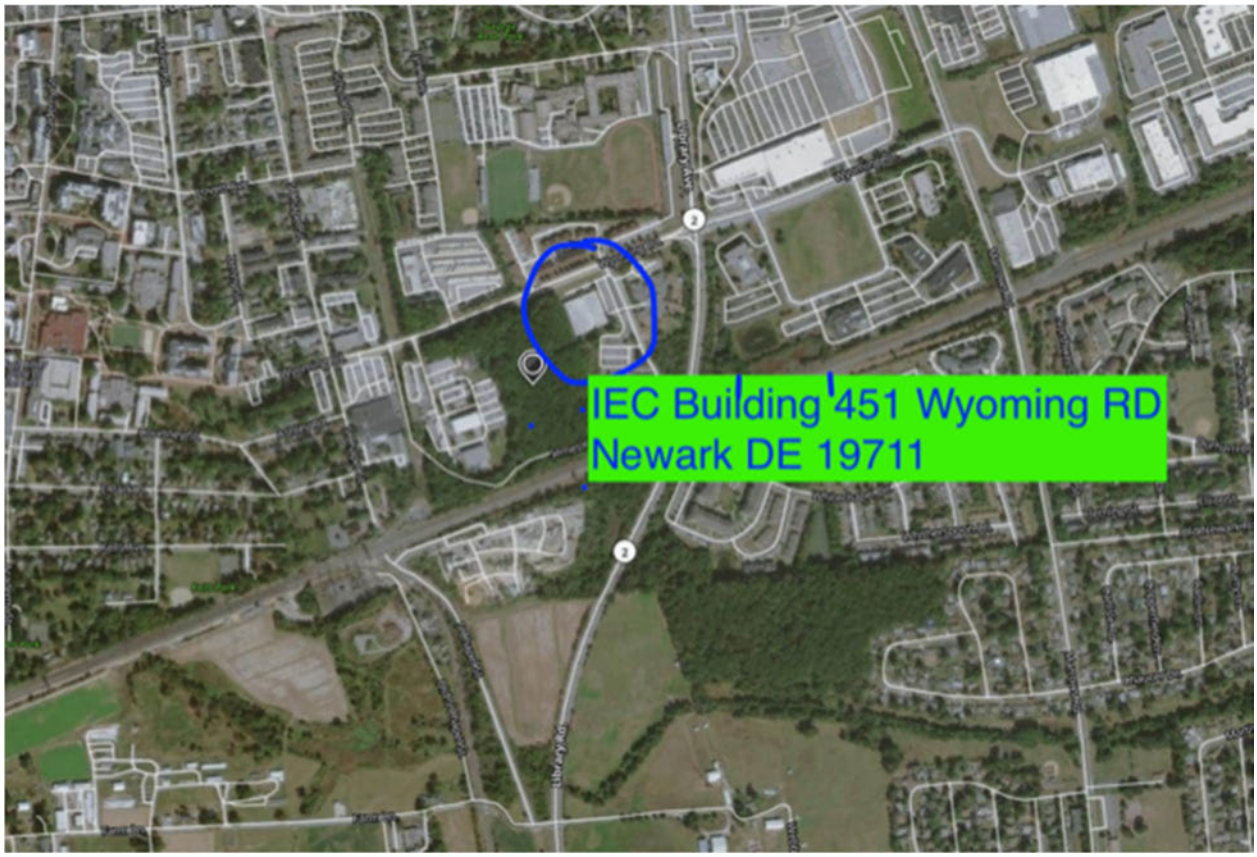
IV. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

DOE Project Manager

Signature: Date (mm/dd/yyyy):

Typed Name:


IEC Building 451 Wyoming RD
Newark DE 19711

NETL F 451.1-1/3
Revised: 12/3/2014
Reviewed: 12/3/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

The proposer shall prepare this Environmental Questionnaire (EQ) as accurately and completely as possible. Supporting information can be provided as attachments. The proposer must identify the location of the project and specifically describe the activities that would occur at that location. The proposer must provide specific information and quantities, regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer must submit with this EQ a FINAL copy of the project's statement of work (SOW) or statement of project objective (SOPO) that will be used in the contract/agreement between the proposer and the U.S Department of Energy (DOE).

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: DE-FOA-0002740 Proposer: Delaware Electric Cooperative
2. This Environmental Questionnaire pertains to a: ☒ Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: (b) (6) Telephone Number: (b) (6)
4. Project Title: Seasonal Solar Congestion Management (SEASCOM)
5. Expected Project Duration: 2023-2028
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
   Kent and Sussex Counties, Delaware
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
   Installation of SEASCOM switches on the side of 1,800 Homes and Businesses
8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project
Delaware Electric Cooperative	Kent and Sussex Counties, Delaware
University of Delaware	Newark, Delaware/USA

9. Identify and select the checkbox with the predominant project work activities under Group A, B, or C

Group A

☑ Routine administrative, procurement, training, and personnel actions. Contract activities/awards for management support, financial assistance, and technical services in support of agency business, programs, projects, and goals. Literature searches and information gathering, material inventories, property surveys; data analysis, computer modeling, analytical reviews, technical summary, conceptual design, feasibility studies, document preparation, data dissemination, and paper studies. Technical assistance including financial planning, assistance, classroom training, public meetings, management training, survey participation, academic contribution, technical consultation, and stakeholders surveys. Workshop and conference planning, preparation, and implementation which may involve promoting energy efficiency, renewable energy, and energy conservation.

STOP! ***If all work activities related to this project can be classified and described within categories under Group A, proceed directly to Section III CERTIFICATION BY PROPOSER. No additional information is required.***
If project work activities are described in either Group(s) B or C; then continue filling out questionnaire.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

Group B

☐ Laboratory Scale Research, Bench Scale Research, Pilot Scale Research, Proof-of-Concept Scale Research, or Field Test Research. Work DOES NOT involve new building/facilities construction and site excavation/groundbreaking activities. This work typically involves routine operation of existing laboratories, commercial buildings/properties, offices and homes, project test facilities, factories/power plants, vehicles test stands and components, refueling facilities, utility systems, or other existing structures/facilities. Work will NOT involve major change in facilities missions and operations, land use planning, new/modified regulatory/operating permit requirements. Includes work specific to routine DOE Site operations and Lab research work activities, but NOT building construction and site preparation. DOE work typically involves laboratory facilities and lab equipment operations, buildings and grounds management activities; and buildings and facilities maintenance, repairs, reconfiguration, remodeling, equipment use and replacement.

Group C

☐ Pilot Test Facilities Construction, Pilot Scale Research, Field Scale Demonstration, or Commercial Scale Application. Work typically involves facility construction, site preparation/excavation/groundbreaking, and/or demolition. This work would include construction, retrofit, replacement, and/or major modifications of laboratories, test facilities, energy system prototypes, and power generation infrastructure. Work may also involve construction and maintenance of utilities system right-of-ways, roads, vehicle test facilities, commercial buildings/properties, fuel refinery/mixing facilities, refueling facility, power plants, underground wells, and pipelines, and other types of energy research related facilities. This work may require new or modified regulatory permits, environmental sampling and monitoring requirements, master planning, public involvement, and environmental impact review. Includes work specific to DOE Site Operations and Lab operation activities involving building and facilities construction, replacement, decommissioning/demolition, site preparation, land use changes, or change in research facilities mission or operations.

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).

1,800 Homes and Businesses around Kent and Sussex Counties

2. **Attach** a project site location map of the project work area.

N/A

D. ENVIRONMENTAL IMPACTS

NEPA procedures require evaluations of possible effects (including land use, energy resource use, natural, historic and cultural resources, and pollutants) from proposed projects on the environment.

1. Land Use

a. Characterize present land use where the proposed project would be located.

☐ Urban ☐ Industrial ☐ Commercial ☐ Agricultural
☐ Suburban ☐ Rural ☐ Residential ☐ Research Facilities
☐ Forest ☐ University Campus ☐ Other: _____

b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.

N/A

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Describe planned construction, installation, and/or demolition activities, i.e., roads, utilities system right-of-ways, parking lots, buildings, laboratories, storage tanks, fueling facilities, underground wells, pipelines, or other structures.
☐ No construction would be anticipated for this project.

d. Describe how land use would be affected by operational activities associated with the proposed project.
☐ No land areas would be affected.

e. Describe any plans to reclaim areas that would be affected by the proposed project.
☐ No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?
☐ No ☐ Yes (describe)

g. Would the proposed project be located in or near local, state, or federal parks; forests; monuments; scenic waterways; wilderness; recreation facilities; or tribal lands? ☐ No ☐ Yes (describe)

2. Construction Activities and/or Operation

a. Identify project structure(s), power line(s), pipeline(s), utilities system(s), right-of-way(s) or road(s) that will be constructed and clearly mark them on a project site map or topographic map as appropriate. ☐ None

b. Would the proposed project require the construction of waste pits or settling ponds?
☐ No ☐ Yes (describe and identify location, and estimate surface area disturbed)

c. Would the proposed project affect any existing body of water? ☐ No ☐ Yes (describe)

d. Would the proposed project impact a floodplain or wetland? ☐ No ☐ Yes (describe)

e. Would the proposed project potentially cause runoff/sedimentation/erosion? ☐ No ☐ Yes (describe)

f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?
☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. Would the proposed project involve any of the following: nanotechnology; recombinant DNA or genetic engineering; facility decommissioning or disposition of equipment/materials; or management of radioactive wastes/materials?
☐ No ☐ Yes (describe)

3. Biological Resources

a. Identify any State or Federally listed endangered or threatened plant or animal species potentially affected by the proposed project.
☐ None

b. Would any designated critical habitat be affected by the proposed project? ☐ No ☐ Yes (describe)

c. Describe any impacts that construction would have on any other types of sensitive or unique habitats.
☐ No planned construction ☐ No habitats ☐ None ☐ Impact (describe)

d. Would any foreign substances/materials be introduced into ground or surface waters, soil, or other earth/geologic resource because of project activities? How would these foreign substances/materials affect the water, soil, biota, and geologic resources? ☐ No ☐ Yes (describe)

e. Would any migratory animal corridors be impacted or disrupted by the proposed project? ☐ No ☐ Yes (describe)

4. Socioeconomic and Infrastructure Conditions

a. Would local socio-economic changes result from the proposed project? ☐ No ☐ Yes (describe)

The project includes workforce development targeted in under-served and disadvantaged communites.

b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas?
☐ No ☐ Yes (describe)

c. Would the proposed project require new transportation access (roads, rail, etc.)? Describe location, impacts, costs.
☐ No ☐ Yes (describe)

d. Would the proposed project create a significant increase in local energy usage? ☐ No ☐ Yes (describe)

No. Decrease through energy awareness and conservation.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

5. Historical/Cultural Resources

a. Describe any historical, archaeological, or cultural sites in the vicinity of the proposed project; note any sites included on the National Register of Historic Places. ☐ None

b. Would construction or operational activities planned under the proposed project disturb any historical, archaeological, or cultural sites? ☐ No planned construction ☐ No historic sites ☐ Yes (describe) ☐ No Impact (discuss)

c. Has the State Historic Preservation Office been contacted with regard to this project? ☐ No ☐ Yes (describe)

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☐ No ☐ Yes (describe)

e. Would the proposed project be located on or adjacent to tribal lands, lands considered to be sacred, or lands used for traditional purposes? Describe any known tribal sensitivities for the proposed project area.

None.

6. Atmospheric Conditions/Air Quality

a. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards (NAAQS). This information is available under the Green Book Non-Attainment Areas for Criteria Pollutants located at http://www.epa.gov/air/oaqps/greenbk/astate.html

	Attainment	Non-Attainment
O_3 - 1 Hour	☐	☐
O_3 - 8 Hour	☐	☐
SO_x	☐	☐
PM - 2.5	☐	☐
PM - 10	☐	☐
CO	☐	☐
NO_2	☐	☐
Lead	☐	☐

b. Would proposed project require issuance of new or modified local, state, or federal air permits to perform project related work and activities? ☐ No ☐ Yes (describe)

c. Would the proposed project be in compliance with local and state air quality requirements? ☐ Yes
If not, please explain.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
☐ No ☐ Yes (describe)

e. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the maximum annual rate of emissions for the project?

	Maximum per Year	Total for Project
☐ SO_x		
☐ NO_x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO_2		
☐ Lead		
☐ H_2S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☐ None		

f. Would any types of emission control or particulate collection devices be used?
☐ No ☐ Yes (describe, including collection efficiencies)

g. How would emissions be vented?

N/A

7. Hydrologic Conditions/Water Quality

a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.

None

b. What sources would supply potable and process water for the proposed project?

N/A

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Quantify the wastewater that would be generated by the proposed project.

	Gallons/day	Gallons/year
☐ Non-contact cooling water		
☐ Process water		
☐ Sanitary		
☐ Other -- describe:		
☐ None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? ☐ No wastewater produced

e. Identify the local treatment facility that would receive wastewater from the proposed project.
☐ No discharges to local treatment facility

f. Describe how wastewater would be collected and treated. ☐ No wastewater produced

g. Would any run-off or leachates be produced from storage piles or waste disposal sites? ☐ No ☐ Yes (describe source)

h. Would project require issuance of new or modified water permits to perform project work or site development activities?
☐ No ☐ Yes (describe)

i. Where would wastewater effluents from the proposed project be discharged? ☐ No wastewater produced

j. Would the proposed project be permitted to discharge effluents into an existing body of water?
☐ No ☐ Yes (describe water use and effluent impact)

k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?
☐ No ☐ Yes (describe)

l. Would the proposed project adversely affect the quality or movement of groundwater? ☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?

☐ No ☐ Yes (describe)

n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?

☐ No ☐ Yes (describe)

8. Solid and Hazardous Wastes

a. Identify and estimate wastes that would be generated from the project. Solid wastes are defined as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (See EPA Municipal Solid Waste and Municipal Solid Waste by State).

	Annual Quantity
☐ **Municipal solid waste (e.g., paper, plastic, etc.)**	
☐ **Coal or coal by-products**	
☐ **Other -- Identify:**	
☐ **Hazardous waste – Identify:**	
☐ **None**	

b. Would project require issuance of new or modified solid waste and/or hazardous waste related permits to perform project work activities? ☐ No ☐ Yes (explain)

c. How and where would solid waste disposal be accomplished?

☐ None generated
☐ On-site (identify and describe location)
☐ Off-site (identify location and describe facility and treatment)

d. How would wastes for disposal be transported?

N/A

e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at EPA Hazardous Waste website. ☐ None

f. How would hazardous or toxic waste be collected and stored? ☐ None used or produced

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☐ Not required ☐ Arrangements not yet made ☐ Arrangements made with a certified TSD facility (identify)

9. Health/Safety Factors

a. Identify hazardous or toxic materials that would be used in the proposed project.

☐ None ☐ Hazardous or toxic materials that would be used (identify):

b. Describe the potential impacts of this project's hazardous materials on human health and the environment.

☐ None

c. Would there be any special physical hazards or health risks associated with the project? ☐ No ☐ Yes (describe)

d. Does a worker safety program exist at the location of the proposed project? ☐ No ☐ Yes (describe)

All DEC employees performing the installations are at minimum OSHA 10 certified.

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?

☐ No ☐ Yes (describe)

The University of Delaware will perform all necessary training to undergraduates, graduates, and researchers working inside their laboratory.

f. Describe any increases in ambient noise levels to the public from construction and operational activities.

☐ None ☐ Increase in ambient noise level (describe)

g. Would project construction result in the removal of natural or other barriers that act as noise screens?

☐ No construction planned ☐ No ☐ Yes (describe)

h. Would hearing protection be required for workers? ☐ No ☐ Yes (describe)

10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?

☐ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities? ☐ No ☐ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
☐ No ☐ Yes (describe)

d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? ☐ No ☐ Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any existing permits, new or modified permits, manifests, responsible authorities or agencies, contacts, etc., that would be required for the proposed project

a. Resource Conservation and Recovery Act (RCRA): ☐ None ☐ New Required ☐ Modification Required
Describe:

b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
☐ None ☐ New Required ☐ Modification Required
Describe:

c. Toxic Substance Control Act (TSCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

d. Clean Water Act (CWA): ☐ None ☐ New Required ☐ Modification Required
Describe:

e. Underground Storage Tank Control Program (UST): ☐ None ☐ New Required ☐ Modification Required
Describe:

f. Underground Injection Control Program (UIC): ☐ None ☐ New Required ☐ Modification Required
Describe:

g. Clean Air Act (CAA): ☐ None ☐ New Required ☐ Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): ☐ None ☐ New Required ☐ Modification Required
Describe:

i. Floodplains and Wetlands Regulations: ☐ None ☐ New Required ☐ Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): ☐ None ☐ New Required ☐ Modification Required
Describe:

k. National Historic Preservation Act (NHPA): ☐ None ☐ New Required ☐ Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): ☐ None ☐ New Required ☐ Modification Required
Describe:

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.

None

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT. ☐ None

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?

☐ No ☐ Yes (describe)

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.

☐ None (provide supporting detail) ☐ Significant impacts (describe)

The project if successful will allow additional rooftop solar installations to be installed across Kent and Sussex Counties removing the technological barriers that exist today. This project would decrease the reliance of the Indian River Coal Power Plant as well as other nearby natural gas energy generation facilities.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. PROVIDE A DESCRIPTION OF HOW THE PROJECT WOULD BE DECOMMISSIONED, INCLUDING THE DISPOSITION OF EQUIPMENT AND MATERIALS.

If the program is unsuccessful all equipment will be sent to a electronic recycling facility that Delaware Electric Cooperative currently works with.

III. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

Signature: (b) (6) Date (mm/dd/yyyy): 03/09/2023

Typed Name: (b) (6)

Title: (b) (6)

Organization: Delaware Electric Cooperative

IV. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

DOE Project Manager

Signature: Date (mm/dd/yyyy):

Typed Name:

Locations of Work (DE-FOA-0002740)				
Prime or Sub	**Name**	**City**	**State**	**Zip Code + 4**
Prime	Pecan Street Inc.	Austin	Texas	78723-4590
Sub	Delaware Electric Cooperative	Greenwood	Delaware	19950-6009
Sub	University of Delaware, Newark	Newark	Delaware	19716-6210

PECAN STREET

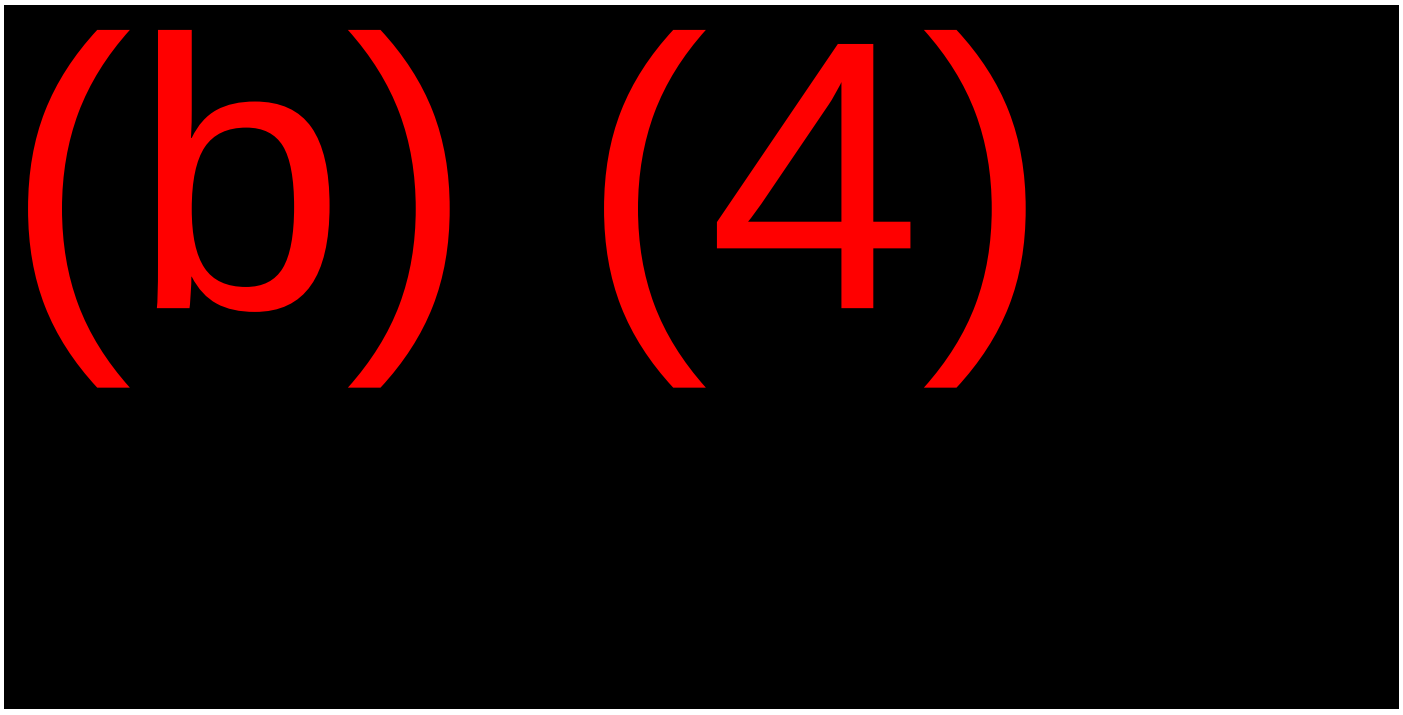
March 15, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

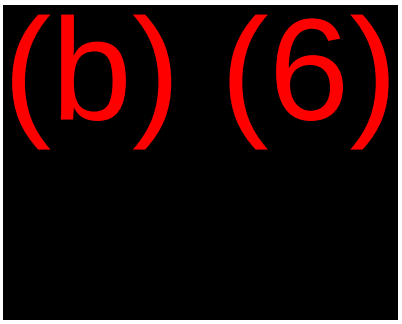
Re: DOE DE-FOA-0002740 “Seasonal Solar Congestion Management (SEASCOM)”.

Dear Secretary Granholm,

Pecan Street is pleased to provide this letter to confirm our cost-share commitment to our proposal to the U.S. Department of Energy (DOE), titled, *Seasonal Solar Congestion Management (SEASCOM).*



We look forward to working on this cutting-edge project.



UNIVERSITY OF DELAWARE

RESEARCH OFFICE

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

March 1, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: DOE DE-FOA-0002740 "*Seasonal Solar Congestion Management (SEASCOM)*".

Dear Secretary Granholm,

University of Delaware is pleased to provide this letter to confirm our commitment to participate in Pecan Street's proposal to the U.S. Department of Energy (DOE), entitled, "*Seasonal Solar Congestion Management (SEASCOM*)."

(b) (4)

We will participate in team meetings to discuss ongoing progress and coordinate performance of the tasks and subtasks.

We look forward to working with Pecan Street on this leading-edge project.

(b) (6)

DELAWARE ELECTRIC CO-OP
"We Keep the Lights On"

P.O. Box 600
14198 Sussex Highway
Greenwood, Delaware 19950
855-DEC-9090
www.delaware.coop

March 17, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: DOE DE-FOA-0002740 "*Seasonal Solar Congestion Management (SEASCOM)*".

Dear Secretary Granholm,

Delaware Electric Cooperative is pleased to provide this letter to confirm our commitment to participate in Pecan Street's proposal to the U.S. Department of Energy (DOE), entitled, "*Seasonal Solar Congestion Management (SEASCOM*)."

(b) (4)

We will participate in team meetings to discuss ongoing progress and coordinate performance of the tasks and subtasks.

We look forward to working with Pecan Street on this leading-edge project.

(b) (6)

March 17, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: DOE DE-FOA-0002740 "*Seasonal Solar Congestion Management (SEASCOM)".*

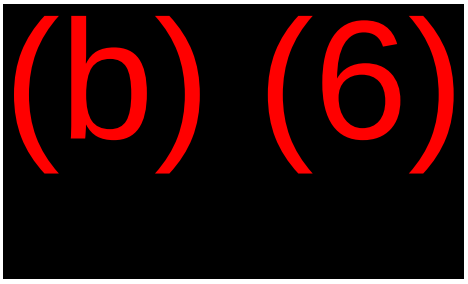
Dear Secretary Granholm,

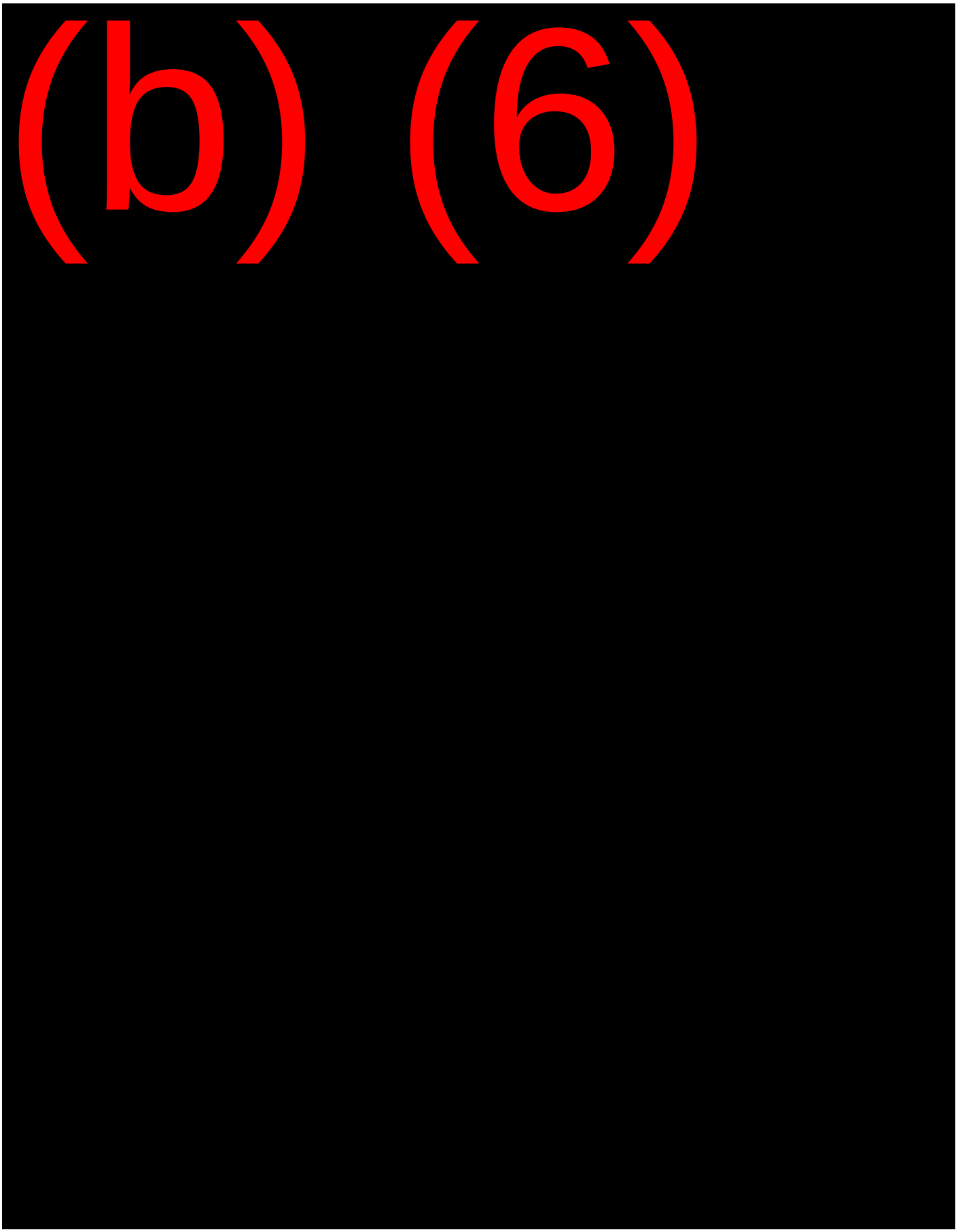
Clean Energy USA is pleased to provide this letter to confirm our commitment to participate in Pecan Street's proposal to the U.S. Department of Energy (DOE), entitled, "*Seasonal Solar Congestion Management (SEASCOM*)."

Clean Energy USA is excited to work with Pecan Street, Delaware Electric Cooperative, and other team members to perform the tasks detailed in the proposal. Our company will provide advice on the rollout of the intended solution for solar installers and participate in workforce development activities outline tin the Community Benefits Plan.

We will participate in team meetings to discuss ongoing progress and coordinate performance of the tasks and subtasks.

We look forward to working with Pecan Street on this leading-edge project.




(b) (6)

PROJECT DESCRIPTION AND ASSURANCES DOCUMENT (PDAD)

Project Title: Seasonal Solar Congestion Management (SEASCOM)

Applicant Name: Pecan Street Inc.

Applicant Address: 3924 Berkman Dr., Austin, TX, 78723

Names of all team member organizations (if applicable):

- Pecan Street, Inc., Austin, TX 78723 (Nonprofit)
- Delaware Electric Cooperative, Greenwood, DE 19950 (Distribution Utility Cooperative)
- University of Delaware, Newark, DE 19716 (Public University)
- Imani Energy, Wilmington, DE 19801 (Solar Energy, Workforce Development, Community Activist)
- Clean Energy USA, Rehoboth Beach, DE 19971 (Solar Energy Company)
- Energize Delaware, Dover, DE 19904 (Nonprofit)

Federal Share: $7,989,987

Cost Share: $7,989,987

Total Estimated Project Cost: $15,979,974

Item 1: Specify (mark with "X")" the FOA Topic Area and as applicable the Area of Interest (AOI):

_____Topic Area 1: Grid Resilience Grants (BIL section 40101(c))

___X___Topic Area 2: Smart Grid Grants (BIL section 40107)

_____Topic Area 3: Grid Innovation Program (BIL section 40103(b)) – Area of Interest 1 (Transmission System Applications)

_____Topic Area 3: Grid Innovation Program (BIL section 40103(b)) – Area of Interest 2 (Distribution System Applications)

_____Topic Area 3: Grid Innovation Program (BIL section 40103(b)) – Area of Interest 3 (Combination System Applications)

TOPIC AREA 1 Specific Items:

Item 2: Specify (mark with "X")" the entity type of the applicant organization:

_____electric grid operator

_____electricity storage operator

_____electricity generator

_____transmission owner or operator

_____distribution provider

_____fuel supplier

If further description is needed for the specified entity type, please provide below:

Item 3: Please provide the total amount (USD) of qualifying resilience investments (as outlined in DE-FOA-00002740) that has been spent for the previous 3 years. Please also provide the time period utilized for calculation of this amount.

Total Amount:

Time Period for Resilience Investments:

Note: Topic Area 1 applicants must submit as part of their application, a report detailing past, current, and future efforts by the eligible entity to reduce the likelihood and consequences of disruptive events. This report should include efforts over at least the previous 3 years and at least the next 3 years and any broader resilience strategy used by the applicant.

Item 4: Is the eligible entity a Small Utility as defined in DE-FOA-0002740 (sells no more than 4,000,000 MWh of electricity per year)? If NO is selected, skip to Item 7.

_____Yes

_____No

Note: If YES, applicant must provide their Form 861 for the last reporting year submitted to the Energy Information Administration (EIA)

Item 5: Per BIL section 40101(e)(2) (C) APPLICATION LIMITATIONS.—An eligible entity may not submit an application for a grant provided by the Secretary under subsection (c) and a grant provided by a State or Indian Tribe pursuant to subsection (d) during the same application cycle.

Therefore, is the eligible entity a Subaward/Subcontract recipient for an application submitted under IIJA Section 40101(d), ALRD 2736? If “YES”, please describe the differences between the GRIP FOA 2740 application [40101(c)] and the ALRD 2736 [40101(d)] applications in the box below:

_____Yes

_____No

TOPIC AREA 2 Specific

No items

TOPIC AREA 3 Specific

Item 6: Specify (mark with "X")" the entity type of the applicant organization:

_____a State

_____a combination of 2 or more States

_____an Indian Tribe

_____a unit of local government

_____a public utility commission

If further description is needed for the specified entity type, please provide below:

Item 7: Authorized Organizational Representative (AOR): please provide name, address, phone number and e- mail address for the authorized agent to bind the entity

Authorized Organizational Representative (AOR):

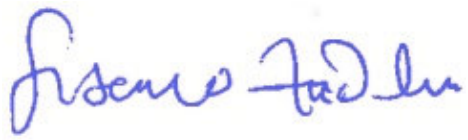
Name: Fisayo Fadelu

Address: 3924 Berkman Dr., Austin, TX, 78723

Phone: 254-214-1517

E-mail: ffadelu@pecanstreet.org

Item 8: Signature of Authorized Organizational Representative (AOR)



Summary/Abstract for Public Release

Seasonal Solar Congestion Management (SEASCOM)

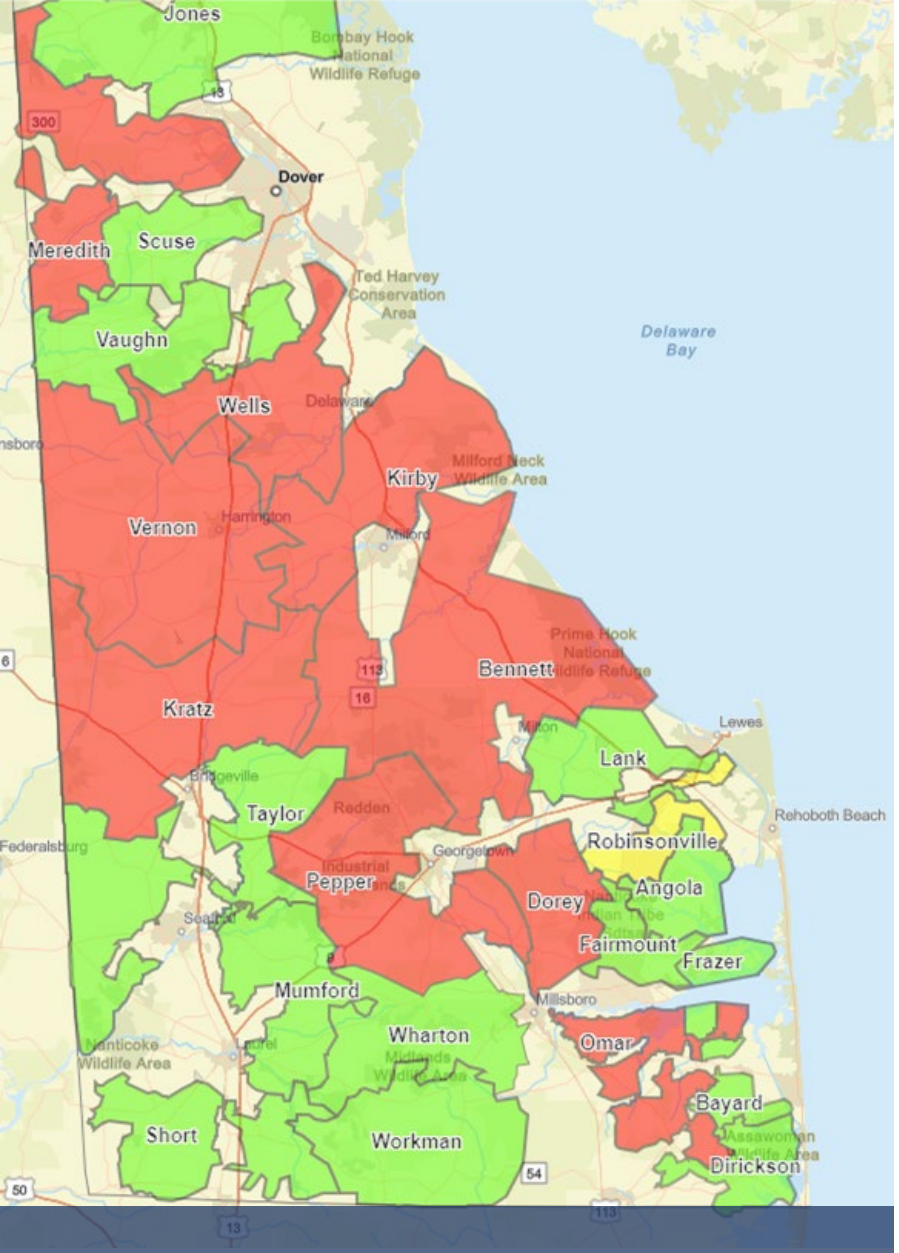
Lead Entity: Pecan Street, Inc. **Principal Investigator:** Scott Hinson, CTO

Project Participants: Delaware Electric Cooperative (DEC), University of Delaware (UDEL), Imani Energy, Clean Energy USA, Energize Delaware

The goal for the deployment of the SEASCOM system is to accelerate Delaware's clean energy transition. High solar production and low load during a few hours of a few days during shoulder seasons (i.e., mild sunny days in the spring and fall) creates congestion on several substations and prevents DEC from approving new interconnection requests from residential members across much of its service area. The SEASCOM solution bypasses the need to wait for lengthy and expensive upgrades to distribution and transmission system infrastructure to remove this barrier and instead leverages the communications capacity of smart inverters that are already installed as an integral part of every solar system. Custom configuration of a low-cost, commercially available energy monitoring and communications device known as an eGauge enables responsive, just-in-time, curtailment of solar net export based on an automated signal, without inconveniencing members or increasing risk of substation overloading for the utility.

A load control scenario will be developed for DEC's Yukon metering and load control system to activate a radio frequency switch when substation loading is less than 200 kW, closing the relay contact for that substation group. Custom scripting will be developed to enable the eGauge device to read the relay contact, along with the solar production and total home load and send a SUNSPEC Modbus command to tell the inverter whether to limit solar production to match home load or allow full nameplate production. The communications system will be validated in the UDEL's Smart Inverter Test Lab before implementing an initial proof-of-concept deployment with incentivized existing solar members. The SEASCOM solution will become a requirement for any new solar installation DEC's service territory, thus removing member frustration caused by having red zones (increasing in size) where solar cannot be accommodated and green zones (decreasing in size) where a lucky few homes can still make a clean energy transition.

Potential Impact: Curtailing a small amount of solar production during periods of low consumption to prevent reverse flow represents from .5 to 1.5% of total home production but has significant community impact. Deployment of the SEASCOM system provides 40,000 households who live in DEC red zones with a pathway to install residential solar and creates opportunities for members to take advantage of current incentives, rebates, and grant programs to make an affordable transition to renewable energy. Pairing this solution with community-centered outreach and education about solar funding and energy management strategies can further help put solar within reach for low income and underserved communities. High-quality jobs with local solar installers, who for several years have had to look elsewhere for contracts due on-going grid constraints, are expected to increase. Moreover, getting more solar onto the grid in Delaware quickly will help to bolster the case that the coal fired Indian River Power Plant can be decommissioned ahead of the current 2026 schedule or at minimum avoid further delays if planned transmission upgrades fall behind schedule.



high solar production and low load during a few hours of a few shoulder season days prevents new solar interconnection in growing “red zone”

Seasonal Solar Congestion Management (SEASCOM)

Key Take Away: Custom load control scenario + special scripting on low-cost, commercially-available energy monitoring device = communications system that leverages capacity of smart inverters already installed as part of every solar system. Result is responsive, just in time, curtailment of net export to remove seasonal solar congestion as a barrier to equitable solar adoption.

Prime Applicant: Pecan Street, Inc.

Principal Investigator: Scott Hinson, CTO

Partners & Key Personnel:

Delaware Electric Cooperative, CJ Myers

University of Delaware, Steven Hegedus

Imani Energy, Jeffrey Richardson

Clean Energy USA, Lyn Mox

Energize Delaware, Drew Slater

DoE Funds Requested: $7,989,987

Proposed Cost Share: $7,989,987

(b) (4)

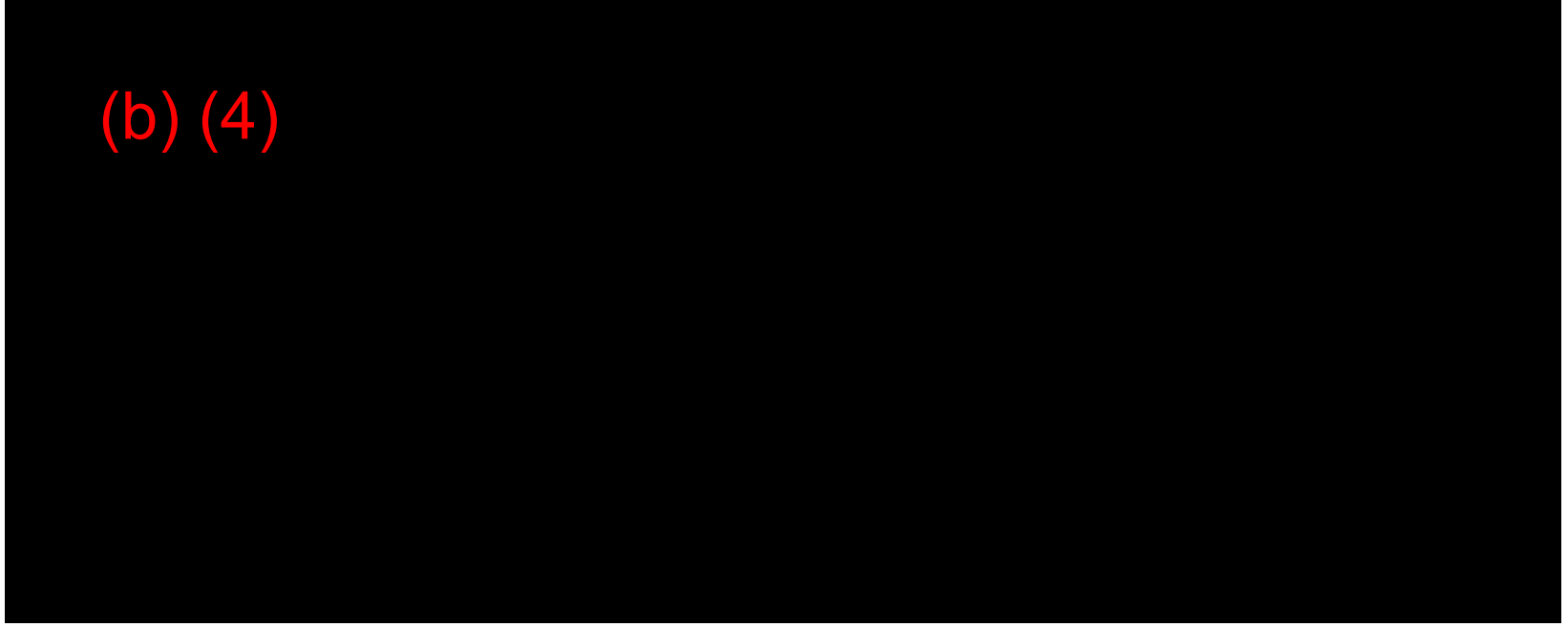
Project Goal

To accelerate Delaware's clean energy transition

SEASCOM will remove seasonal congestion as a barrier to the integration of variable renewable resources (i.e., residential solar) at the distribution level.

It will be easy and cost effective to deploy, immediately contribute to the flexibility, reliability, and resilience of Delaware Electric Cooperative systems, and be transferable to other utilities experiencing or worried about intermittent solar hosting capacity limitations.

The project will move rapidly through custom configuration and integration of commercially-available products, lab validation, and pilot deployment before becoming a requirement for any new residential solar installation in Delaware Electric Cooperative's service territory.



Impacts

Residential solar interconnections increase

Members take advantage of incentives, rebates, and grants to make an affordable transition to renewable energy.

Technology + community-centered outreach and education put solar within reach for low income and underserved communities.

High-quality jobs with local solar installers increase.

More solar onto the grid reduces dependence on coal-fired Indian River Power Plant during summer peaks

STATEMENT OF PROJECT OBJECTIVES (SOPO)

Seasonal Solar Congestion Management (SEASCOM)

A. OBJECTIVES

The recipient seeks to remove seasonal congestion as a barrier to the integration of variable renewable resources (i.e., residential solar) at the distribution utility level in Delaware, using a technology solution that is easy and cost effective to deploy, contributes utility system flexibility, reliability, and resilience, and is transferable to other geographies experiencing or worried about intermittent solar hosting capacity limitations. The SEASCOM solution will leverage the communications capacity of smart inverters that are already installed as an integral part of every solar system through the addition of a low-cost, commercially available energy monitoring and communications device known as an eGauge to enable responsive, just-in-time, curtailment of solar net export based on an automated signal, without inconveniencing the household or increasing risk of substation overloading for the utility. Technology will be deployed with community benefits in-mind, including opportunities to learn about solar technology, funding/financing options, and careers in the solar industry.

B. SCOPE OF WORK

A custom scenario will be developed within the partnering utility's metering and load control software to activate a radio frequency load control switch (RF switch) when substation loading is less than 200 kW, closing the relay contact for that substation group. Custom scripting will also be developed to enable eGauge energy monitoring and communications devices to read this relay contact, along with the solar production and total load of the home. The eGauge sends SUNSPEC Modbus command to tell the inverter whether to limit solar production to match home load or allow full inverter nameplate production. The SEASCOM system will be validated in a smart inverter test lab before implementing an initial proof-of-concept deployment with incentivized existing solar members. The hardware will then become a requirement for any new residential solar installation in partnering utility's service territory.

E. BRIEFINGS/TECHNICAL PRESENTATIONS
The Recipient shall prepare, and present periodic briefings, technical presentations and demonstrations as requested by the Federal Project Officer, which may be held at a DOE or the Recipient's facility, other mutually agreeable location, or via webinar. Such meetings may include all or a combination of the following:

Kickoff Briefing - Not more than 30 days after submission of the PMP, the Recipient shall prepare and present a project summary briefing as part of a Project Kickoff Meeting.

Pre-Continuation Briefing - Not less than 90 days prior to the planned start of a budget period, the Recipient shall brief the DOE on the results to date, and their plans for the subsequent periods of work. The DOE will consider the information from this briefing, as well as the content of deliverables submitted to date, prior to authorizing continuing the project.

Final Project Briefing - Not less than 30 days prior to the end of the project, the Recipient shall prepare and present a Final Project Briefing on the results and accomplishments of the entire project.

Other Briefings – The Recipient shall prepare and present technical, financial, and/or administrative briefings as requested by the DOE. Additionally, the DOE may require Recipients to make technical presentations at national and/or industry conferences.

March 17, 2023

Secretary Jennifer M. Granholm US
Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: Pecan Street Inc. proposal entitled "*Seasonal Solar Congestion Management (SEASCOM)"* in response *to* DE-FOA-0002740

Dear Secretary Granholm,

Clean Energy USA is pleased confirm our commitment to participate in workforce development activities described in the Community Benefits Plan associated with Pecan Street, "*Seasonal Solar Congestion Management (SEASCOM*)" proposal.

Clean Energy USA is the largest solar installation company active in Delaware Electric Cooperative's service area. We have been unable to respond to residential requests for new solar installation in a number of neighborhoods for some time because of the constraints the utility faces around season congestion. Reopening these areas will create a surge of new business opportunities for our Company and other installers in the area.

One of the key challenges for our company is attracting employees to be part of our install crews. We are excited to partner with the team involved in the SEASCOM Community Benefits Plan to identify strategies to enhance our recruitment efforts and plan for activities that can help build a more stable and diverse pipeline of skilled labor for the future.

Sincerely,

Lyn Mox

March 17, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: Pecan Street Inc. proposal entitled *"Seasonal Solar Congestion Management {SEASCOM}"* in response *to* DE-FOA-0002740

Dear Secretary Granholm,

Imani Energy is pleased confirm our commitment to participate in community engagement and workforce development activities described in the Community Benefits Plan associated with Pecan Street, *"Seasonal Solar Congestion Management (SEASCOM)"* proposal.

An important part of Imani Energy's mission is to support community benefits planning and advocacy activities, as well as to increase employment opportunities for Low-income and People of Color communities.

Imani Energy will serve as a consultant to guide the team's intended community listening sessions and the subsequent design of educational offerings as detailed in the Community Benefits Plan, leveraging our extensive network of community groups and faith-based organizations.

Sincerely,

Jeffrey Richardson
President/CEO

ENERGIZE DELAWARE
SUSTAINABLE ENERGY UTILITY

March 16, 2023

Secretary Jennifer M. Granholm
US Department of Energy
1000 Independence Ave. SW
Washington, DC, 20585

Re: Pecan Street Inc. proposal entitled "*Seasonal Solar Congestion Management (SEASCOM)*" in response *to* DE-FOA-0002740

Dear Secretary Granholm,

Energize Delaware is pleased to confirm our commitment to participate in community engagement and workforce development activities described in the Community Benefits Plan associated with Pecan Street, "*Seasonal Solar Congestion Management (SEASCOM)*" proposal.

Energize Delaware is a nonprofit that continues to partner with state and local government, public-advocacy, community-action groups, utilities, and other organizations. We are Delaware's largest provider of renewable and energy-efficiency programs.

Our commitment aligns with the Justice40 Initiative to ensure all disadvantaged communities benefit from the energy transition. Moving forward, we are excited to hear the community's perspective through listening sessions and labor outreach. Working together we support education and workforce development opportunities that inspire new career choices and contemplate expanding our grant programs to help make solar and energy efficiency more accessible to residents of underserved communities.

Sincerely,

Drew Slater
Executive Director

500 W. Loockerman St., Suite 400, Dover, DE 19904 Office: 302-883-3048 Drew.Slater@deseu.org

Seasonal Solar Congestion Management (SEASCOM)

Community Benefits Plan

Community and Labor Engagement

The project installs a small energy monitoring and communications device in homes to control net solar export on just a few days per year. Only those Delaware Electric Cooperative (DEC) members who wish to adopt solar will be affected directly, although community benefits from a greener, more stable grid will be widespread. Unlike large infrastructure development or improvement projects, there will be no complex construction, land use, service disruption, transportation, or negative environmental impacts to navigate with communities. Equally, although quality jobs will be created to meet increased demand for solar installations, the relatively small scale of the required additional workforce, as compared with large-scale construction projects will likely mean that formal Project Labor Agreements are unwarranted.

Acknowledging these realities, the project team remains deeply committed to exploring a broad range of community and labor needs and opportunities to deliver benefits. Engagement activities will include outreach to help DEC members understand that solar interconnections are now possible and ensure transparency regarding how curtailment of net solar export could impact homeowners' payback period, as a well as strategically designed informational resources and learning events related to solar technology and opportunities to access programs to provide low or no-cost capital to support installation of residential rooftop solar systems. Through the support and partnership of Energize Delaware, there will be opportunities to help community members learn about programs that can provide funding for home energy audits, weatherization, and energy efficiency upgrades as part of understanding a pathway to use solar to decrease energy burden. The project budget includes funding to host community listening and learning sessions, including participation incentives, as well as to develop informational and educational materials.

Community Engagement Goal 1: Provide transparent information to help current and potential solar customers understand how much net solar export will be curtailed and plan strategies to realize energy savings at other times to maximize benefits.

It is important that potential users of the SEASCOM solution understand the extent to which their ability to receive credit for excess solar exported to the grid may be constrained. It is not DEC's intention to hinder the benefits that any member realizes from net metering. Controls will be put in place for the minimal amount of time required to ensure grid safety and stability – usually no more than a few hours on a few days per year and DEC will adapt its widely recognized Beat the Peak messaging system to alert members in advance of likely curtailment events. Community engagement will help ensure that participants understand how to use the data from the eGauges installed in their home to see the effect of these modest interventions and, if they choose, to maximize load (i.e., adjusting the timing of EV charging and home chores such as laundry that may use more electricity) during control event windows to avoid any loss of value from solar generation capacity. Pecan Street will draw on its community-based

research across the country to help inform these discussions. There is also an opportunity to help participants learn to use the data to understand how particular appliances or behaviors shape energy consumption so that they can maximize the value of their home's solar capacity use throughout the year. Initial listening sessions will help determine content and delivery mechanisms for community outreach and educational sessions on how to interpret and use eGauge data for energy use decisions and planning for efficiency upgrades.

Community Engagement Goal 2: Increase solar awareness among DEC members

The opportunity for more of DEC's members to be able to finally meet their desire to install solar is a community benefit, but it will be important to ensure that this benefit is distributed equitably. Residential solar interconnections have not been possible in a portion of DEC's service area for some time, and many members may not be actively considering investments at the projects' inception and may not be tracking new programs that could help to improve affordability. Early listening sessions will help shape outreach and education that may include resources to decide whether solar is a fit for their family and how to navigate funding and financing options.

The project will be deeply attentive to securing community agreement on the nature of resources required to help lower income households understand solar options and take advantage of current rebate, incentive, and grant programs**.** These efforts will build on DEC's history of supporting member-owned residential solar generation. Since 2007, DEC has provided more than $5 million in grants to assist members with covering a portion of the cost of installing rooftop solar.

Imani Energy has agreed to join the project team as a paid consultant to guide community and labor engagement efforts. Imani is a respected solar provider and works with a large number of community groups and faith-based organizations on planning and advocacy activities. Imani's President Jeffrey Richardson also Chairs the Executive for Delaware's Community Benefit Agreement Coalition and draws on the Coalition's experience and networks. During the first budget period, the focus will be on hosting listening sessions in underserved communities within DEC's service area to refine understanding of the knowledge gaps and real perceived barriers to solar adoption. These sessions will also explore other questions and concerns members have about energy affordability, resilience, and home decarbonization options. During these sessions the team will collect input on the desirability of potential solutions and/or ways that community members might prefer information or services be delivered. Based on this input, the team will then develop content and delivery mechanisms for future budget periods.

The team will also coordinate with Energize Delaware to extend outreach, community listening, and delivery of resulting education information and learning events. Energize Delaware partners with utilities, public-advocacy and community-action groups, and other organizations and serves as a major provider of renewable and energy-efficiency programs statewide, both direct to homes and via funding to support nonprofits providing a range of energy support services. Energize Delaware's staff has expressed excitement about working with the project team to both learn from and contribute to Community Benefits Plan activities. There is a shared understanding that an opportunity exists to leverage Energize Delaware's

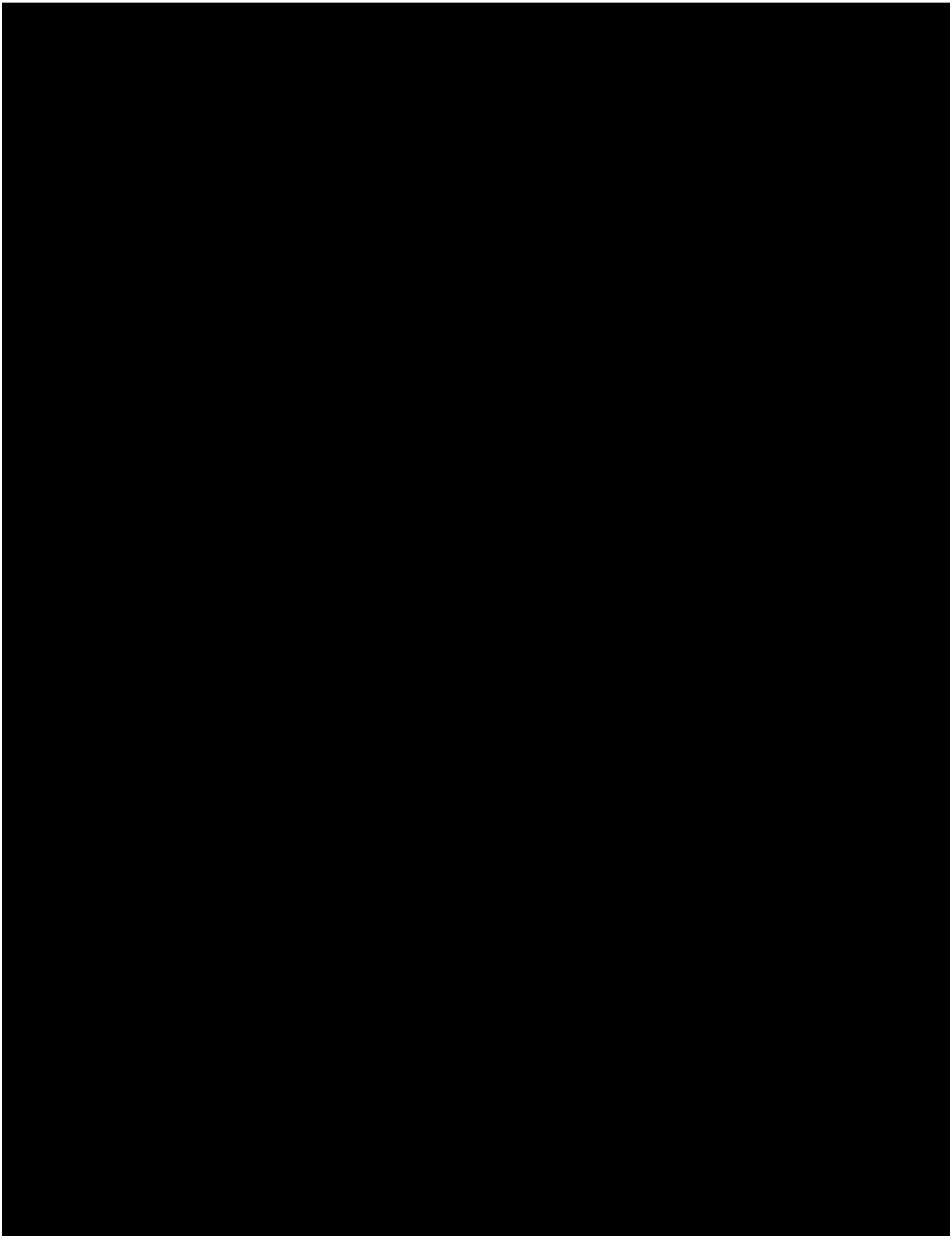
backbone of existing partnerships and programs to address the needs that emerge from community listening sessions. Moreover, the organization is ideally positioned to translate community input into planning and delivery of new programs that put state funding to work for low-income communities. A key opportunity will be to use community input to tailor future grant programs to make solar more accessible for low-income resident and/or Justice40 communities.

Labor Engagement Goal 1: Engage current and future solar workers in quality jobs, with an emphasis on attracting talent from underserved communities.

Labor engagement may include a mix of training programs to help current solar technicians learn to install eGauges, combined with informational events and presentations, tailored to reach potential workers in underserved communities who could train into the field. The team will also consider engagement activities that have potential to expand the solar workforce pipeline from a secondary school age. Clean Energy USA, the state's largest solar installer, will help to inform labor strategies. The company already offers competitive wages, benefits, and robust training programs. Company leaders are eager to find strategies to change up their recruitment strategies to find workers more easily for its installation crews. The project will marry a retrospective of prior Clean Energy USA recruitment and hiring strategies with Imani's unique understanding of providing solar training and employment to residents of low-income and Black, Indigenous, and People of Color (BIPOC) communities.

Part of what the project hopes to accomplish is understanding and addressing where future workforce development efforts should be targeted. Delaware Technical Community College already offers a two-year degree program in Solar Energy, and many solar companies already support their workers with training programs. Still, solar companies like Clean Energy USA face a challenge to find and retain skilled workers for solar installation crews. The team will collect community and company input to test a hypothesis that different types of recruitment strategies and events, changes to hiring practices, or employee resources may be needed. Presentations in secondary schools will also be explored to expand the pipeline of potential workers from an earlier age.

The team is planning for the following mix of tasks, with additional detail on subtasks in out years to be refined through the early community listening sessions.



More broadly, Pecan Street and DEC are nonprofits and as such have missions centered on realizing community benefits. DEC, in particular, is directly accountable to its local members, not remote shareholders. Seven cooperative principles guide all its operational, financial, and labor decision making, including the proposed project:

1. *Open and Voluntary Membership* - Membership in a cooperative is open to all people who can reasonably use its services and stand willing to accept the responsibilities of membership, regardless of race, religion, gender, or economic circumstances.
2. *Democratic Member Control* - Cooperatives are democratic organizations controlled by members who actively participate in setting policies and making decisions. Representatives (directors/trustees) are elected among the membership and are accountable to them.
3. *Members' Economic Participation* - Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital remains the common property of the cooperative. Members allocate surpluses for any or all of the following purposes: developing the cooperative, setting up reserves, benefiting members in proportion to their transactions with the cooperative, and supporting other activities approved by the membership.
4. *Autonomy and Independence* - Cooperatives are autonomous self-help organizations controlled by their members. If they enter into agreements with other organizations,

including governments, or raise capital from external sources, they do so on terms that ensure democratic control as well as their unique identity.

5. *Education, Training, and Information* - Education and training for members, elected representatives (directors/trustees), CEOs, and employees help them effectively contribute to the development of their cooperatives. Communications about the nature and benefits of cooperatives, particularly with the general public and opinion leaders, help boost cooperative understanding.
6. *Cooperation Among Cooperatives* - By working together through local, national, regional and international structures, cooperatives improve services, bolster local economies and deal more effectively with social and community needs.
7. Concern for Community - Cooperatives work for the sustainable development of their communities through policies supported by the membership.

Investing in the American Workforce

1) Neither Pecan Street nor DEC Cooperative anticipates a significant number of new direct hires or contracted services. Academic partner University of Delaware also will not need to add faculty or staff positions but will provide direct student research opportunities throughout the project, thus supporting career development. All project partners will maintain supportive and flexible work environments for their respective employees, including providing competitive wages, benefits, flexible working environments, and assisting employees to access training and continuing education needed to deliver the program and/or pursue career advancement opportunities.

DEC Cooperative is already a unionized company and will continue to support its employees in this regard. Approximately 70% of its workforce are members of the IBEW Local 2201. DEC strives to recruit the most qualified employees who share its commitment to serving members. The cooperative runs an internship program that not only provides college students with real-world experience but has also resulted in full-time employment for many participants after graduation. Once employees become part of the DEC family, they are provided with opportunities for professional development. DEC encourages and offers reimbursement to employees who seek to further their education by obtaining advanced degrees. DEC also encourages employees to participate in, and covers the cost of, numerous certifications, leadership training, and other courses that create a more skilled and responsive workforce.

Safety is the Cooperative's top priority, and DEC's safety initiatives are led and implemented by an employee safety committee. The committee is composed of employees from various departments who have different levels of experience and expertise. The diversity of the committee is helpful in implementing a strategic approach to improving safety and designing actions that keep employees and DEC members safe.

Because the project does not involve a large construction or infrastructure development effort, additional Project Labor Agreements are unlikely to be relevant, however the project is likely to result in new jobs with solar installers in the region. Constraints on the acceptance of

residential solar interconnection for several years have caused installers to downsize their team or move away from providing services in the region entirely. It is likely that companies will now need to regrowth their installation team to meet increasing demand.

For example, Clean Energy USA estimates that their solar installations could grow by more than 20% as a result of this project, with a significant initial surge in demand. Labor engagement activities will engage one of the largest solar installers in the region and a company built on providing training and employment opportunities in low income and People of Color communities, to compare current practices to expressed community needs. The results will help illuminate strategies to expand near term recruitment and long-term workforce pipeline development, as well as suggestions to make hiring practices more inclusive, including developing clear and inclusive job descriptions, advertising and sharing openings on job and message boards, social media, and through networks utilized by under-represented groups, structuring a straightforward, transparent, and welcoming application process with clear instructions, coaching hiring managers on strategies to prevent implicit biases during applicant review and interviews, and allowing reasonable adjustments at interview. Community input will help guide design of relevant and highly desired training opportunities.

2) No project partner has violations to report related to the National Labor Relations Act, Fair Labor Standards Act, Service Contract Act, Davis-Bacon Act, or Title VII of the Civil Rights Act. DEC received an “Other than Serious” citation from Occupational Safety and Health Act in 2022 related to lack of trench box and egress. The cooperative has worked diligently to address concerns raised by the filing. With input from workers, safety protocols and training programs have been revamped. All field employees have since received an OSHA 10 certification and all engineering/operations supervisors and managers an OSHA 30 certification.

3) The project will provide both specific training necessary to enable solar installers to deploy the SEASCOM system, as well as broader events designed to increase interest in solar jobs. These activities will be driven by input from listening sessions and prior experience of Community Benefit Plan partners but may include outreach events designed to look beyond the traditional application pool in terms of venue choice and ability to showcase culturally relevant role models. The team will consider strategies to look beyond the current pool of skilled workers to build the long-term pipeline through events at secondary and vocational schools in low-income neighborhoods or programs designed to help adult learners with career re-pathing. Activities will help solar companies think freshly about training pathways that may range from online learning modules to hands-on exposure to power tools, and the experience and safety consideration for being up on a roof in different season to traditional electrical apprenticeship programs.

Diversity Equity Inclusion and Access

The project team seeks to address four critical four tenets of energy justice in its approach to the project:

- Recognition: understanding and acknowledging historic and ongoing inequalities in energy generation and access to programs to support a clean energy transition

- Procedural: enabling diverse mix of stakeholders to participate in community benefits planning
- Distributional: working to ensure the benefits prioritized by the community stakeholder flow to the families who live and work in these areas
- Restorative: working to remove as many barriers as possible to enable solar adoption by households in Justice40 tracts and increasing opportunities for workers of color to find good quality jobs in the workforce needed to support this transition.

The project team will actively consider venues, formats, content, languages, representation in the design of outreach materials, listening sessions, education resources, and learning events to ensure that low-income, and individuals who identify as BIPOC, women, LBGTQ, veteran, or/and disabled can receive the information and support needed to take advantage of the clean energy opportunity created by this smart grid innovation.

More broadly, the project advances the participating organization's internal DEIA objectives. Several members of the technical team chosen for the project identify as Black, Hispanic, female, and LBGTQ. The project provides meaningful work to advance their STEM careers. Pecan Street's Center for Race, Energy, and Climate Justice explicitly recognizes that climate investments have often failed to leverage the wisdom of BIPOC individuals and communities and stop short of promoting actions to repair a legacy of damage to health, economic well-being, and quality of life. Now in its third year of operation, the Center seeks to bring the organizations' strengths with data, technology development and demonstration, and community-based research to bear on these critical and complicated challenges. With its partners, Pecan Street is working to illuminate new opportunities to achieve energy justice and an equitable transition. This project furthers Center goals to develop options that not only reduce climate and local air pollution, but also address pervasive energy inequities.

DEC equally values diversity and is committed to an inclusive and comfortable work environment. Women make up more than one-third of the cooperative's workforce. Twenty percent of employees are minorities. The project provides meaningful work to advance their STEM careers in the context of the cooperative's commitment to providing programs and services that benefit its communities, including the many low income and neighborhoods of color across its service area. The opportunity to be part of an impactful real-world solution applies to its interns as well.

DEC employees live in the communities that the cooperative powers and are always looking for ways to give back. The cooperative encourages employees to volunteer for causes they are passionate about. Many volunteer for charities, serve on committees, or help to direct the activities of nonprofits by serving on their board of directors. Part of our community benefits planning will involve seeking to understand how the project might be used as a focal point for continuing education for employees to ensure workforce continuity and/or support volunteering activities.

Imani Energy is a Black founded and black led company, that specifically seeks to provide training and employment opportunities for low income and communities of color. This project helps to further that mission.

Justice 40 Initiative

DEC service areas that are currently locked out to residential solar overlap include Justice40 tracts: 10005050503 (Georgetown), Tract 10001040700 (Dover), Tract 10001042500 (Milford), Tract 10005050200 (Ellendale) which together represent a population of about 18,100. Moreover, the Indian River power plant is located adjacent to Justice40 tracts 10005050703 and 10005050602 of which DEC serves over 6,500 members. Air and ground water pollution from the plant have long been associated with negative health outcomes and concerns about a cancer cluster and high rates of asthma. Residents of these communities often feel marginalized and left out of opportunities to participate in the clean energy transition.

Specific Benefit	Flow of Benefits	Measurement Strategy
Decrease in energy burden	Expected by solar adopters Indirect effect on keeping DEC rate low	Participant bill data; eGauge energy use/generation date Reduction in average monthly cost per customer to sustain Indian River Plant idling for summer peak demand
Decrease in environmental exposure	Indirect related to decreased reliance on coal plant for peak loading	Not directly measurable. Proxy through peak hour support used and status of plant decommissioning date
Increase in access to low-cost capital	Expected as a result of Community Benefit Plan activities	Self-reported by customers and/or data provided by programs
Increase in high-quality job creation, the clean energy job pipeline, and job training for individuals	Expected through increased demand for residential roof-top solar	Self-report by solar installation companies
Increases in clean energy enterprise creation and contracting (e.g., minority-owned or disadvantaged business enterprises)	Indirect	Self-reported policies by solar installation companies
Increases in energy democracy, including community ownership	Continues DEC Cooperative's membership model and democratic processes with deeper understanding of disadvantaged community needs and prioritized solutions	Participation by and representation of disadvantaged communities in DEC's democratic processes.
Increased parity in clean energy technology access and adoption	Direct primary benefit, though allowability of solar and support to find funding opportunities	Number of solar installations in J4 Tracts (target 160+ during project period)
Increase in energy resilience, including reduced outage frequency and/or duration	Indirect, decreases need for feeder load reconfiguration, as well as events related to summer peak demand as more solar comes online.	Number of outages related to grid congestion or peak demand.

Anticipated Negative and Cumulative Environmental Impacts: The team acknowledges that solar energy is not entirely without environmental consequence. Photovoltaic panel production is linked to toxic waste, unsustainable mining practices, and habitat loss. Manufacture of solar cells and other components require large amounts of energy and water. However, the environmental and climate benefits of moving away from fossil fuel fired power plants is generally accepted and most experts believe that solar systems can produce the equivalent amount of energy that was used to manufacture the systems within 1 to 4 years[1]. The project does not involve other environmental risks. In contrast, the project has the potential to help accelerate or at least keep on track the decommission target date for this Indian River Power Plant. The plant is coal fire and kept idling for the single purpose of supporting peak demand. Currently, only 15% of the summer peaks are supported by solar. This project would help reverse this trend. The Indian River power plant is located adjacent to a Justice40 tract. Air and ground water pollution from the plant have long been associated with negative health outcomes and concerns about a cancer cluster and high rates of asthma.

Anticipated Flow of Benefits: Benefits will flow to households in disadvantaged communities both directly and indirectly. The proposed project is currently the only near-term pathway to allow households in areas experiencing seasonal solar congestion to install grid connected solar systems, including those in Justice 40 tracts identified above. Community-informed outreach, informational materials, and learning events will help residents of disadvantaged tracts become more familiar with solar technology, incentives, rebates, grants, and low interest financing programs.

The project will contribute to DEC's goal to move more of its portfolio toward clean, renewable energy (Figure 1), thus decreasing climate impacts and negative effects of air pollution. It also helps to keep energy rates affordable for DEC's membership. DEC's residential rates are among the lowest in the Mid-Atlantic. Increasing solar is an important part of the cooperative strategy to sustain this. As a not-for-profit utility, any year-end margins or profits are allocated to our members and are eventually paid out in cash in

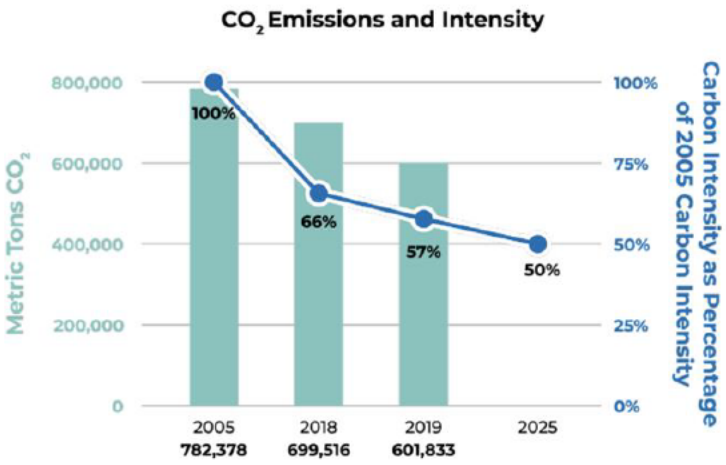


Fig. 1 DEC's progress and plan for to move more of its portfolio renewable energy.

[1] https://www.eia.gov/energyexplained/solar/solar-energy-and-the-environment.php

what are called capital credits. Over the past decade, DEC has returned over $60 million in capital credits to its members.[2]

While the timeline for decommissioning the Indian River power plant is not within DEC's control, its need to ensure summer capacity requires the average DEC member to spend $6.45 per month to keep this plant online. The plant is currently operating under a "reliability must run agreement." Having more residential solar online and helping members access data to inform energy use decisions, will help ensure power from the coal plant will no longer be needed. The avoided cost for this power will become part of the capacity that is democratically controlled by the cooperative and helps to keep energy rates affordable for members.

[2]Environmental, Social & Governance Report. (2021). In *Delaware.Coop*. DEC Cooperative. https://www.delaware.coop/sites/default/files/2021-11/ESGReport.pdf

Instructions and Summary

Award Number:
Award Recipient: PECAN STREET INC.

Date of Submission: 16-Mar-23
Form submitted by: PECAN STREET INC.
(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	$4,548,129	$4,476,698			$9,024,826	49.60%	11/01/2023 - 10/31/2024
Budget Period 2	$2,457,530	$1,154,348			$3,611,878	31.96%	11/01/2024 - 10/31/2025
Budget Period 3	$464,905	$734,848			$1,199,753	61.25%	11/01/2025 - 10/31/2026
Budget Period 4	$340,750	$800,864			$1,141,613	70.15%	11/01/2026 - 10/31/2027
Budget Period 5	$178,673	$823,230			$1,001,904	82.17%	11/01/2027 - 10/31/2028
Total	$7,989,987	$7,989,987			$15,979,974	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	$614,415	$632,847	$179,539	$124,370	$64,051	$1,615,222	10.11%	
b. Fringe Benefits	$172,405	$177,577	$50,379	$34,898	$17,973	$453,231	2.84%	
c. Travel	$0	$0	$0	$0	$0	$0	0.00%	
d. Equipment	$94,399	$0	$0	$0	$0	$94,399	0.59%	
e. Supplies	$1,428,600	$12,000	$12,000	$7,200	$0	$1,459,800	9.14%	
f. Contractual								
Sub-recipient	$439,177	$428,952	$661,017	$670,001	$685,300	$2,884,447	18.05%	
Contractor	$919,000	$1,145,000	$65,000	$76,000	$54,000	$2,259,000	14.14%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$1,358,177	$1,573,952	$726,017	$746,001	$739,300	$5,143,447	32.19%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$3,500,000	$50,000	$50,000	$85,506	$100,000	$3,785,506	23.69%	
Total Direct Costs	$7,167,996	$2,446,376	$1,017,935	$997,975	$921,323	$12,551,605	78.55%	
i. Indirect Charges	$1,856,830	$1,165,502	$181,818	$143,638	$80,580	$3,428,369	21.45%	
Total Costs	$9,024,826	$3,611,878	$1,199,753	$1,141,613	$1,001,904	$15,979,974	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 #	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	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	
2	Technicians (2)	4000	$20.00	$80,000	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	4000	$80,000	
	(b) (4) [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
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				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
	Total Personnel Costs	**8200**		**$614,415**	**8200**		**$632,847**	**2235**		**$179,539**	**1500**		**$124,370**	**750**		**$64,051**	**20885**	**$1,615,222**	

Additional Explanation (as needed):

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	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
TOTAL PERSONNEL	614,415	28.06%	$172,405	632,847	28.06%	$177,577	179,539	28.06%	$50,379	124,370	28.06%	$34,898	64,051	28.06%	$17,973	$453,231
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
Total:	**$614,415**		**$172,405**	**$632,847**		**$177,577**	**$179,539**		**$50,379**	**$124,370**		**$34,898**	**$64,051**		**$17,973**	**$453,231**

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.

__x____ 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.

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	
	Budget Period 1 Total									**$0**	
	Domestic Travel	**Budget Period 2**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 2 Total									**$0**	
	Domestic Travel	**Budget Period 3**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 3 Total									**$0**	
	Domestic Travel	**Budget Period 4**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 4 Total									**$0**	
	Domestic Travel	**Budget Period 5**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 5 Total									**$0**	
	PROJECT TOTAL									**$0**	

Additional Explanation (as needed):

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
				$0		
				$0		
	Budget Period 1 Total			$94,399		
Budget Period 2						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
Budget Period 3						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$0		
Budget Period 4						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$0		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	TOTAL EQUIPMENT			**$94,399**		

Additional Explanation (as needed):

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. 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.
2. 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.
3. 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.
4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.
5. 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		
Budget Period 1 Total				**$1,428,600**		
Budget Period 2						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
Budget Period 2 Total				$12,000		
Budget Period 3						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
Budget Period 3 Total				$12,000		
Budget Period 4						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
Budget Period 4 Total				$7,200		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
Budget Period 5 Total				$0		
TOTAL SUPPLIES				**$1,459,800**		

Additional Explanation (as needed):

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
			Sub-total	**$439,177**	**$428,952**	**$661,017**	**$670,001**	**$685,300**	**$2,884,447**

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**
								$0
		Sub-total	**$919,000**	**$1,145,000**	**$65,000**	**$76,000**	**$54,000**	**$2,259,000**

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	**$1,358,177**	**$1,573,952**	**$726,017**	**$746,001**	**$739,300**	**$5,143,447**

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	$3,500,000		
		Budget Period 2		
	Budget Period 2 Total	$50,000		
		Budget Period 3		
	Budget Period 3 Total	$50,000		
		Budget Period 4		
	Budget Period 4 Total	$85,506		
		Budget Period 5		
	Budget Period 5 Total	$100,000		
	TOTAL OTHER DIRECT COSTS	**$3,785,506**		

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 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 orgnaization, 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:							
Indirect Rate (Cost Share)	59.24%	59.24%	59.24%	59.24%	59.24%		*Example: Labor + Fringe*
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	59.24%	59.24%	59.24%	59.24%	59.24%		**MTDC**
Indirect Costs (As Applicable):							
Indirect Costs (Cost Share)	$544,416	$678,298	$38,506	$45,022	$31,990	**$1,338,232**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs	$1,312,415	$487,204	$143,312	$98,616	$48,591	**$2,090,137**	
Total indirect costs requested:	**$1,856,830**	**$1,165,502**	**$181,818**	**$143,638**	**$80,580**	**$3,428,369**	

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.

__x____ 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).

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**
								$0
								$0
								$0
								$0
		TOTAL COST SHARE	$4,476,698	$1,154,348	$734,848	$800,864	$823,230	$7,989,987

Total Project Cost: $15,979,974 **Cost Share Percent of Award: 50.0%**

Additional Explanation (as needed):

Applicant Name: PECAN STREET INC. 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: Federal (c)	Estimated Unobligated Funds: Non-Federal (d)	New or Revised Budget: Federal (e)	New or Revised Budget: Non-Federal (f)	New or Revised Budget: (blank)	Total (g)
1. Budget Period 1				$4,548,129	$4,476,698		$9,024,826
2. Budget Period 2				$2,457,530	$1,154,348		$3,611,878
3. Budget Period 3				$464,905	$734,848		$1,199,753
4. Budget Period 4				$340,750	$800,864		$1,141,613
5. Budget Period 5				$178,673	$823,230		$1,001,904
6. Totals				$7,989,987	$7,989,987		$15,979,974

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity: Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total (5)
a. Personnel	$614,415	$632,847	$179,539	$124,370	$64,051	$1,615,222
b. Fringe Benefits	$172,405	$177,577	$50,379	$34,898	$17,973	$453,231
c. Travel	$0	$0	$0	$0	$0	$0
d. Equipment	$94,399	$0	$0	$0	$0	$94,399
e. Supplies	$1,428,600	$12,000	$12,000	$7,200	$0	$1,459,800
f. Contractual	$1,358,177	$1,573,952	$726,017	$746,001	$739,300	$5,143,447
g. Construction	$0	$0	$0	$0	$0	$0
h. Other	$3,500,000	$50,000	$50,000	$85,506	$100,000	$3,785,506
i. Total Direct Charges (sum of 6a-6h)	$7,167,996	$2,446,376	$1,017,935	$997,975	$921,323	$12,551,605
j. Indirect Charges	$1,856,830	$1,165,502	$181,818	$143,638	$80,580	$3,428,369
k. **Totals** (sum of 6i-6j)	$9,024,826	$3,611,878	$1,199,753	$1,141,613	$1,001,904	$15,979,974
7. Program Income						$0

U.S. DEPARTMENT OF ENERGY

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

NATIONAL ENERGY TECHNOLOGY LABORATORY

NON-PROFIT ORGANIZATION
INDIRECT COST NEGOTIATION AGREEMENT

ORGANIZATION:

Pecan Street, Inc.
3924 Berkman Dr.
Austin, TX 78723

DATE: August 17, 2022

FILE REFERENCE: This Rate Agreement is based on the proposal the dated January 26, 2022.

The rates approved in this Agreement are for use on grants, contracts, and other agreements with the Federal Government to which 2 CFR Part 200 - Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards applies, subject to the conditions in Section II, A, below. The rate(s) were negotiated by the U.S. Department of Energy in accordance with the authority cited in Subpart E – Cost Principles, and Appendix IV - Indirect (F&A) Costs Identification and Assignment, and Rate Determination for Nonprofit Organizations, of 2 CFR Part 200.

SECTION I: RATES

TYPE	EFFECTIVE PERIOD FROM	TO	RATE*	APPLICABLE TO
Fringe Benefits:				
Final	10/01/2020	09/30/2021	28.06%	All Programs
Overhead:				
Final	10/01/2020	09/30/2021	59.24%	All Programs

*Basis for Allocation:

Fringe Benefits: Total Labor Dollars

Overhead: Modified Total Direct Costs (excludes Equipment and Subcontract or Subaward Payments)

E. SPECIAL REMARKS:

1. Indirect costs charged to Federal grants/contracts by means other than the rate(s) cited in this Agreement should be adjusted to the applicable rate(s) cited herein which should be applied to the appropriate base to identify the proper amount of indirect costs allocable to the program.

2. Grants/contracts providing for ceilings as to the indirect cost rate(s) or amount(s) which are indicated in Section I above, will be subject to the ceilings stipulated in the grant or contract agreements. The ceiling rate(s) or the rate(s) cited in this Agreement, whichever is lower, will be used to determine the maximum allowable indirect cost on the grant or contract agreement.

3. The components of the Fringe Benefits expense pool include the following:

   Payroll Taxes & Insurance
   Holidays
   Paid Time Off
   Health Insurance
   Parking Passes
   Federal Unemployment Insurance
   State Unemployment Insurance
   Worker's Compensation

4. The components of Indirect expense benefits expense pool include the following:

   Indirect Salaries
   Fringe Benefits
   Benefits Administration Fee (Human Resources)
   Travel
   Supplies
   Communications
   Miscellaneous Indirect Expenses

5. Treatment of Paid Absences:

   Vacation, holiday, sick leave and other paid absences are included in the organization's fringe benefit pool of expenses and are not included in the direct cost of salaries and wages.

SECTION II: GENERAL

A. LIMITATIONS: Use of the rate(s) contained in the Agreement is subject to all statutory or administrative limitations and is applicable to a given grant or contract only to the extent that funds are available. Acceptance of the rate(s) agreed to herein is predicated upon the following conditions:

1. That no costs other than those incurred by the grantee/contractor or allocated to the grantee/contractor via an approved central service cost allocation plan were included in its indirect cost pool as finally accepted and that such incurred costs are legal obligations of the grantee/contractor and allowable under the governing cost principles,

2. That the same costs that have been treated as indirect costs have not been claimed as direct costs,

3. That similar types of costs have been accorded consistent treatment, and

4. That the information provided by the grantee/contractor which was used as a basis for acceptance of the rate(s) agreed to herein is not subsequently found to be materially inaccurate.

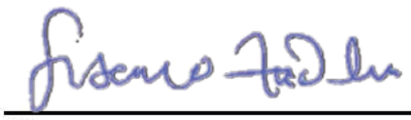
   The elements of indirect cost and the type of distribution base(s) used in computing provisional rates are subject to revision when final rates are negotiated. Also, the rates cited in this Agreement are subject to audit.

B. CHANGES: The grantee/contractor is required to provide written notification to the indirect cost negotiator prior to implementing any changes which could affect the applicability of the approved rates. Changes in the indirect cost recovery plan, which may result from changes such as the method of accounting or organizational structure, require the prior written approval of the Contracting Officer for Indirect Cost Management. Failure to obtain such prior written approval may result in cost disallowance.

C. NOTIFICATION TO FEDERAL AGENCIES: A copy of this document is to be provided by this organization to other Federal funding sources as a means of notifying them of the Agreement contained herein.

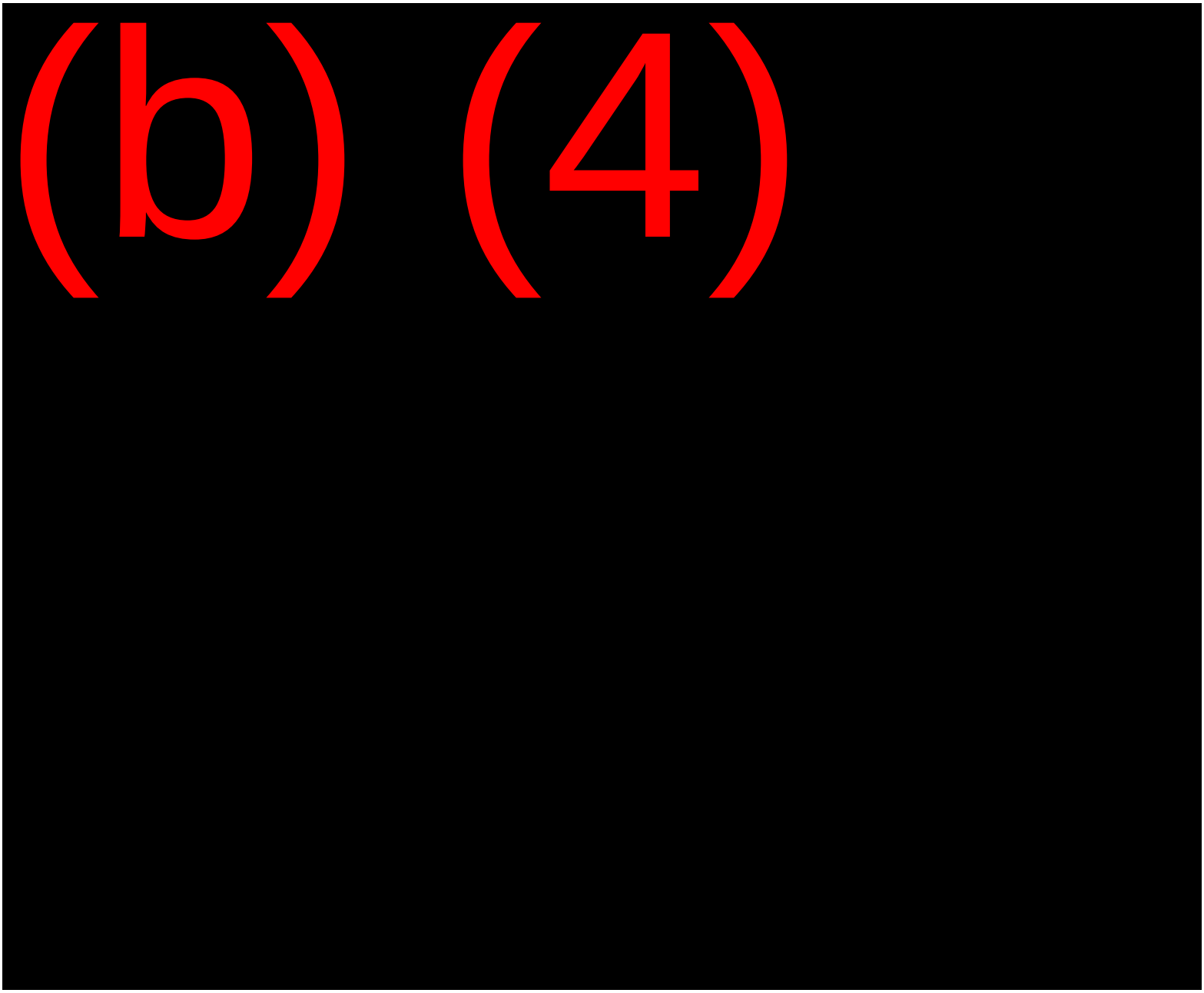
D. PROVISIONAL / FINAL RATES: The grantee/contractor must submit a proposal to establish a final rate within six months after their fiscal year end. Billings and charges to Federal awards must be adjusted if the final rate varies from the provisional rate. If the final rate is greater than the provisional rate and there are no funds available to cover the additional indirect costs, the organization may not recover all indirect costs. Conversely, if the final rate is less than the provisional rate, the organization will be required to pay back the difference to the funding agency.

ACCEPTANCE

FOR THE NON-PROFIT ORGANIZATION	FOR THE COGNIZANT AGENCY ON BEHALF OF THE FEDERAL GOVT.
Pecan Street Inc.	U.S. Department of Energy
Organization	Agency
	Raymond R. Jarr Digitally signed by Raymond R. Jarr Date: 2022.08.18 11:27:04 -04'00'
Signature	Signature
Fisayo Fadelu	Raymond R. Jarr
Name	Name
CFO & General Counsel	Contracting Officer, Finance & Acquisition Center
Title	Title
August 23, 2022	
Date	Date
	(304) 285-4088
	Phone

SCHEDULE OF COST REIMBURSABLE AWARDS
FISCAL YEAR 2021

AGENCY	AWARD NUMBER
DEPARTMENT OF ENERGY	
NETL	DE-EE0008258
GOLDEN FIELD OFFICE	DE-EE0008776 DE-EE0009023
ARPA-E	DE-AR0001061
NATIONAL SCIENCE FOUNDATION	1951927


(b) (4)

(b) (4)

QUOTATION

Imani Energy will facilitate a series of community listening sessions in support of the Delaware Electric Cooperative and its solar and energy efficiency initiative. Imani Energy will provide consulting services for the project in the form of outreach process guidance and facilitation of the Community Listening Sessions. Imani will coordinate a team of outreach workers focused on garnering participation through multiple levels of direct contact. DEC will provide the energy efficiency and solar program content to residents through its social media channels.

Imani Energy, which will bring its energy sector experience, presentation and community organization and participation expertise to the listening sessions to encourage participation and engagement that leads to the identification of key concerns and needs of residents related to energy usage and also increased understanding of options available to provide energy savings. Residents will also be able to discuss and think through some of the challenges in the current energy environment. The specific nature of the outreach will include phone calls and strategic use of direct contact such as door-to-door and or follow up at specific events where direct contact is possible. These efforts will also be rooted in coordination with existing community networks and resident relationships.

The budget for facilitation includes the 1) facilitation of Listening Sessions (four in the first year, four in year two, four in year three, and six in year four) 2) preparation for each meeting, including analysis of key lessons from previous sessions and 3) note taking, processing and transcription.

The outreach will involve communication with community residents, based upon existing and newly developed networks of relationships. Phone calls, strategic use of door-to-door follow up, leveraging of established community networks and creative measures to generate excitement and interest in the Listening Sessions will be employed.

Costs for year one are the highest to account for the tedious work of developing relationships and the communication and follow up required to build momentum for a new initiative. Years two and three will benefit from the base building that has occurred. Year Four includes additional sessions summation

(b) (4)

Type text here installation contractor budget justification (total divided by 25 = average historical cost per home

Reviewed FF

INVOICE

Clean Energy USA
20184 Phillips Street
Rehoboth, DE 19971
Phone: (302) 227-1337 Fax: (302) 727-5047

BILL TO:

Pecan Street Inc.
3924 Berkman Drive
Austin, TX 78723

Document Date:	7/25/2022
Reference Number:	017226
Customer ID:	E-GAUGE
Terms:	Due on Receipt

(b) (4)

TOTAL: **27,485.50**

eGauge Systems LLC
720.545.9767
1644 CONESTOGA ST
STE 2
BOULDER CO 80301-2705

estimated cost per home
is Gross amount divided by quantity;
plus estimated 5% shipping & handling

Estimate
#9248

(b) (4)

9248

eGauge Systems LLC
720.545.9767
1644 CONESTOGA ST
STE 2
BOULDER CO 80301-2705
United States

Estimate

#9248
3/14/2023

Merchandise may be returned within 30 days of the receipt of the product (excluding special order items). Returns are subject to a 15% restocking fee. Please see www.egauge.net/policy/ for more details.

Orders typically ship within 3-5 business days, however, items on back order have longer than usual lead times due to supply chain disruptions. Please reach out to sales@egauge.net for lead times for back ordered items.

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eGauge Systems accepts payments in the form of credit cards, check, or wire transfers.

To pay with a credit card, please call our sales department at (877) 342-8431.

To pay with PayPal, please send funds to ar@egauge.net.

To pay by check, please mail to the following address:

eGauge Systems LLC
1644 Conestoga St, Suite 2
Boulder, CO 80301 US

(Please reference your transaction number in the memo field of the check)

To pay by wire transfer, please use the below bank information. Customers are responsible for all fees associated with wire transfers, so please indicate this on the wire transfer form.

First Citizens Bank
Branch Routing: 102089644
eGauge Account: 009560159571

100 E. Tyron Road
Raleigh, NC 27603
ABA # 053100300
SWIFT/BIC FCBTUS33

9248

eGauge Systems LLC
720.545.9767
1644 CONESTOGA ST
STE 2
BOULDER CO 80301-2705
United States

Estimate

#9248

3/14/2023

Equipment costs c

Please be sure to read **important installation documentation** by visiting: egauge net/help/overview

Installer provides the following:

4 wire - 3 phase voltage reference for each eGauge device.

LAN Network connection for each eGauge device.

Suitable enclosure for each meter.

eGauge device configuration, verification, and network connection.

The installer is responsible for the configuration and commissioning of the eGauge system.

Disclaimer:
Plan Review Release of liability- This estimate is based on information provided by the customer. This is a complimentary service offered by eGauge Systems. eGauge Systems is released of liability should the hardware prove insufficient for the project. eGauge Systems is not responsible for the accuracy of plans. Materials in the estimate are, to the best of our knowledge, what eGauge can supply for the completion of this project. It is the customer's responsibility to review the materials provided by eGauge Systems and to supply any materials that are not included. eGauge Systems is not an electrical engineering PE design firm.

The customer is required to configure each eGauge device and verify the accuracy of the data.

9248

THINKMATE

Equipment costs quote #1

READY TO BUY?
1-800-371-1212

STX-JB JE24-0420-SH

My System March 13th, 1:28 pm EDT

Thinkmate Config ID 633982

Equipment c

Configured Price: **$7,179.00**

Selection Summary

Chassis	Thinkmate® STX-4324 4U Chassis - 24x 3.5" SATA3/SAS3 - 12Gb/s SAS Dual Expander - 550W 1+1 Redundant Power
Storage Drive	5 x 22TB SATA 6.0Gb/s 7200RPM - 3.5" - Ultrastar™ DC HC570 (512e/4Kn)
Controller Card	Broadcom MegaRAID 9580-8i8e SAS3/SATA 8+8-Port RAID Controller - 8GB Cache - PCIe 4.0 x8
Cables	4 x 3-Meter External SAS Cable - 12Gb/s to 6Gb/s SAS - SFF-8644 to SFF-8088
Warranty	Thinkmate® 3 Year Advanced Parts Replacement Warranty (Zone 0)

Tech Specs

Chassis	
Form Factor	4U Rackmount JBOD
Color	Black
Watts	550W
External Drive Bays	24x 3.5" Hot-swap SAS/SATA
Front Panel	Clear front panel LED indicators
Cooling Fans	4 x 60x56mm hot swap fans
Dimensions (WxHxD)	17.2" x 6.9" x 15.1"
Storage Drive	
Storage Capacity	5 x 22TB
Interface	6.0Gb/s Serial ATA
Rotational Speed	7200RPM
Cache	512MB
Format	512e/4Kn
Controller Card	
Product Type	SAS RAID Controller
Data Transfer Rate	12Gb/s SAS
Internal Ports	8 Ports
External Ports	8 Ports
I/O Processor	LSI SAS3916
Cache Memory	8 GB
RAID Levels	0, 1, 5, 6, 10, 50, 60
Max Devices	SAS/SATA: 240

Quotation Date: March 13th, 2023, 01:31 PM EDT. All prices subject to change.

Configured Price: **$7,179.00**

READY TO BUY?

CONFIGURATION ID

1-800-371-1212 **633982**

THINKMATE

Thinkmate is a world-class provider of custom computer and server equipment since 1986. Our business was formed around assisting our customers in planning, budgeting, and implementing complete solutions. We provide a broad range of customized server, storage and cluster solutions to governments, universities, corporations and high performance computing markets. Our commitment to superior customer service and cutting edge technology has kept us the number one white box server solutions provider for nearly twenty years.

Equipment costs quote #2

THINKMATE

READY TO BUY?
1-800-371-1212

XDAS FX21

My System March 13th, 1:42 pm EDT

Thinkmate Config ID 633988

Configured Price: **$16,384.00**

Selection Summary

Barebone	Infortrend 9575SCBM-0010 Cache Backup Module Super Capacitor+Charger Board
	Infortrend DS3012GU0000F-0030 2U 12-bay Single Controller SAS 12Gb/s DAS
Storage Drive	12 x 1.92TB Solidigm SSD D3-S4620 Series 2.5" SATA 6.0Gb/s Solid State Drive
I/O Modules - Networking	Infortrend RER10G1HIO2-0010 Eonstor Host Board with 2 x 10Gb/s iSCSI (RJ-45)
Warranty	5 Year Aberdeen Server and Storage Warranty (Zone 0)

Tech Specs

Barebone

Series	XDAS
Storage Type	Direct Attched Storage
Form Factor	2U
Controller	Single
Host Ports	Onboard host ports 4 x 1Gb/s iSCSI ports More host options: 8 x 8Gb/s Fibre Channel ports 4 x 16Gb/s Fibre Channel ports 8 x 16Gb/s Fibre Channel ports (no Remote Replication support) 8 x 10Gb/s FCoE ports 8 x 1Gb/s iSCSI ports 4 or 8 x 10Gb/s iSCSI ports (SFP+) 4 x 10Gb/s iSCSI ports (RJ-45) 4 x 25Gb/s iSCSI ports (SFP28) 4 x 40Gb/s iSCSI ports (QSFP+) 4 x 56Gb/s InfiniBand ports (for Linux only) 4 x 12Gb/s SAS ports
Cache Memory	Super Capacitor + Flash module 16GB default Upgradeble to 8, 16, 32, 64GB
Maximum Drive of Numbers	Via expansion enclosure: 448
Drive Connectivity	12Gb/s SAS
RAID Functionality	Global, designated or enclosure hot-spare RAID levels supported : RAID 0, 1, (1+0), 3, 5, 6, 10, 30, 50, 60
Data Services	Default software features include: SED Support (Self-encrypting drives) Thin-provisioning Snapshot: 64 per volume/ 128 per system Replication: Replication pairs per source volume: 4; Replication pairs per system: 16 Optional software features require additional license: SSD cache Automated tiering (2/ 4 tiers) Advanced snapshot: 256 per volume/ 4096 per system Advanced local replication: Replication pairs per source volume: 8 ; Relication pairs per system: 256 Advanced remote replication: Replication pairs per source volume: 8 ; Relication pairs per system: 64
Availability and Reliability	Redundant, hot-swappable hardware modules/ CacheSafe technology/ Multi-pathing support (EonPath)/ Device mapper support
Management	Web-based SANWatch management software RS232 serial port for local access to firmware-embedded utility Automated cache flush and caching mode operation per enclosure status

	Telnet and SSH system monitoring via Ethernet Platform-independent firmware management GUI LCD keypad panel for monitoring and access to all configuration options Module status LED indicators: component presence detection & thermal sensors via I2C bus
Power	Redundant/hot-swappable 460W x 2 AC voltage: 100VAC @ 8A to 240VAC @ 4A with PFC (auto-switching) Frequency: 50-60 Hz
Environmental	Temperature: Operating: 0 to 40°C without BBU or CBM / 0 to 35°C with BBU or CBM Non-operating: -40 to 60° Altitude: Sea level to 3048m(10000ft) operating / sea level to 12,192m (40,000ft) non-operating Relative humidity: 5 to 95% non-condensing, operating and non-operating
Regulatory	Safety: UL, BSMI, CB, EAC Electromagnetic Compatibility: CE, BSMI, FCC, KC
Dimensions	448mm (W) x 88mm (H) x 500mm (D) (Without chassis ears / protrusions)
Weight	13.60kg/ 29.98lbs
Storage Drive	
Storage Capacity	12 x 1.92TB
Interface	6.0Gb/s Serial ATA
Endurance	4.0 DWPD
Read Speed	550 MB/s
Write Speed	510 MB/s
NAND	144-Layer 3D TLC NAND

Quotation Date: March 13th, 2023, 01:45 PM EDT. All prices subject to change.

Configured Price: **$16,384.00**

READY TO BUY?
1-800-371-1212

CONFIGURATION ID
633988

THINKMATE

Thinkmate is a world-class provider of custom computer and server equipment since 1986. Our business was formed around assisting our customers in planning, budgeting, and implementing complete solutions. We provide a broad range of customized server, storage and cluster solutions to governments, universities, corporations and high performance computing markets. Our commitment to superior customer service and cutting edge technology has kept us the number one white box server solutions provider for nearly twenty years.

THINKMATE

Equipment costs quote #3

READY TO BUY?
1-800-371-1212

STX-NL XE24-14S3-10G

My System March 13th, 1:33 pm EDT

Thinkmate Config ID 633986

Configured Price: **$17,990.00**

Selection Summary

Motherboard	Intel® C621A Chipset - 8x SATA3 - 1x M.2 NVMe - Dual Intel® 10-Gigabit Ethernet (RJ45)
Processor	Intel® Xeon® Gold 6342 Processor 24-Core 2.8GHz 36MB Cache (230W)
Memory	8 x 64GB PC4-25600 3200MHz DDR4 ECC RDIMM
Chassis	Thinkmate® STX-4324 4U Chassis - 24x Hot-Swap 3.5" SATA/SAS3 - 12Gb/s SAS Single Expander - 1200W 1+1 Redundant Power
M.2 Drive	480GB Micron 7450 PRO Series M.2 PCIe 4.0 x4 NVMe Solid State Drive (80mm)
Storage Drive	24 x 12TB SAS 3.0 12.0Gb/s 7200RPM - 3.5" - Ultrastar™ DC HC520 (512e)
Controller Card	Broadcom MegaRAID 9580-8i8e SAS3/SATA 8+8-Port RAID Controller - 8GB Cache - PCIe 4.0 x8
Network Adapter	Broadcom NetXtreme 10-Gigabit Ethernet Network Adapter P210P - PCIe 3.0 x8 - 2x SFP+
Operating System	No Operating System
Warranty	Thinkmate® 3 Year Advanced Parts Replacement Warranty (Zone 0)

Tech Specs

Motherboard

North Bridge	Intel C621A
Memory Technology	DDR4 ECC Registered
Memory Slots	16x 288-pin DIMM sockets
Expansion Slots	Slot_7: 1 x PCIe x16 (Gen4 x16 bus) slot Slot_6: 1 x PCIe x16 (Gen4 x16 or x8 bus) slot, shared with Slot_5 Slot_5: 1 x PCIe x16 (Gen4 x0 or x8 bus) slot Slot_4: 1 x PCIe x16 (Gen4 x16 or x8 bus) slot, shared with Slot_3 Slot_3: 1 x PCIe x16 (Gen4 x0 or x8 bus) slot Slot_2: 1 x PCIe x16 (Gen4 x16 or x8 bus) slot, shared with Slot_1 Slot_1: 1 x PCIe x16 (Gen4 x0 or x8 bus) slot
Graphics Controller	Integrated in Aspeed® AST2500 2D Video Graphic Adapter with PCIe bus interface 1920x1200@60Hz 32bpp, DDR4 SDRAM
Network Controller(s)	2 x 10Gb/s BASE-T LAN ports (Intel® X710-AT2) 1 x 10/100/1000 management LAN
Back-panel Interfaces	2x USB 3.0 1x VGA 1x COM 2x RJ45 1x MLAN 1x ID button with LED
On-Board Interfaces	1x 24-pin ATX main power connector 2x 8-pin ATX 12V power connectors 2x SlimSAS connectors 2x 7-pin SATA connectors 1x M.2 slot 2x CPU fan headers 5x System fan headers 1x USB 3.0 header 1x TPM header 1x VROC connector 1x Front panel header 1x PMBus connector 1x IPMB connector 1x Clear CMOS jumper 1x BIOS recovery jumper 1x Case open header 1x Buzzer
LAN Ports	2 x 10Gb/s BASE-T LAN ports (Intel® X710-AT2) 1 x 10/100/1000 management LAN
VGA Ports	1x VGA

Processor

Product Line	Xeon Scalable 3rd Gen
Socket	LGA4189
Clock Speed	2.80 GHz

HyperTransport	yes
Cores/Threads	24C / 48T
Intel Virtualization Technology	Yes
Intel Hyper-Threading	Yes
TDP Wattage	230
Memory	
Technology	DDR4
Type	288-pin DIMM
Capacity	8 x 64 GB
Speed	3200 MHz
Error Checking	ECC
Signal Processing	Registered
Chassis	
Form Factor	4U Rackmount
Color	Black
Watts	1200
External Drive Bays	24 x 3.5" hot swap 2 x 2.5" hot swap (external) OR 2 x 2.5" (internal)
Front Panel	System power on/off System reset 2 x USB 3.0 port LED Indicators: Power, LAN, Drive, Alert
Cooling Fans	3 x 120x25mm PWM hot swap fans
Dimensions (WxHxD)	16.9" (430mm) x 6.9" (174.3mm) x 26.8" (680mm)
M.2 Drive	
Storage Capacity	480GB
Interface	PCIe 4.0 x4 NVMe
Endurance	1 DWPD
Read IOPS	280,000 IOPS
Write IOPS	40,000 IOPS
Read Speed	5000 MB/s
Write Speed	700 MB/s
NAND	Micron 176-layer 3D TLC NAND
Storage Drive	
Storage Capacity	24 x 12TB
Interface	12.0Gb/s SAS
Rotational Speed	7200RPM
Cache	256MB
Format	512e
Controller Card	
Product Type	SAS RAID Controller
Data Transfer Rate	12Gb/s SAS
Internal Ports	8 Ports
External Ports	8 Ports
I/O Processor	LSI SAS3916
Cache Memory	8 GB
RAID Levels	0, 1, 5, 6, 10, 50, 60
Max Devices	SAS/SATA: 240
Network Adapter	
Speed	10Gb Ethernet
Connector	SFP+
Interface	PCI Express 3.0 x8
Cable Medium	Copper

Quotation Date: March 13th, 2023, 01:41 PM EDT. All prices subject to change.

Configured Price: **$17,990.00**

READY TO BUY?
1-800-371-1212

CONFIGURATION ID
633986

THINKMATE

Thinkmate is a world-class provider of custom computer and server equipment since 1986. Our business was formed around assisting our customers in planning, budgeting, and implementing complete solutions. We provide a broad range of customized server, storage and cluster solutions to governments, universities, corporations and high performance computing markets. Our commitment to superior customer service and cutting edge technology has kept us the number one white box server solutions provider for nearly twenty years.

Equipment costs quote #4

Live chat

Photo is representative

9PX8KSP

Eaton 9PX UPS, Network card included, 6U, 8 kVA, 7.2 kW, Hardwired input, Outputs: (1) L6-30R, (2) L14-30R, Hardwired, 120/208V

List price $11,293

* List Prices are not a reflection of the actual product Street Price. Check with your Eaton reseller or partner to get actual pricing

Contact me about this product

View Spiceworks reviews

View StorageReview.com review

Read the StorageReview.com review of the 9PX lithium-ion UPSs

Recitals

WHEREAS, Pecan Street has extensive expertise in the creation and development of technical information, ideas, and concepts relating to electricity, water and natural gas use, distribution, generation and business operations, and has applied this expertise to the creation of, without limitation, data, copyrights, trade secrets, plans, source codes, object codes, prototypes, working models, and production models (the "Confidential Information").

WHEREAS, Licensee desires to obtain a license to access and use a portion of the Confidential Information for internal business purposes.

NOW THEREFORE, in consideration of the mutual covenants contained herein, the Parties intending to be legally bound, hereby agree to the terms and conditions that shall govern their licensing arrangement.

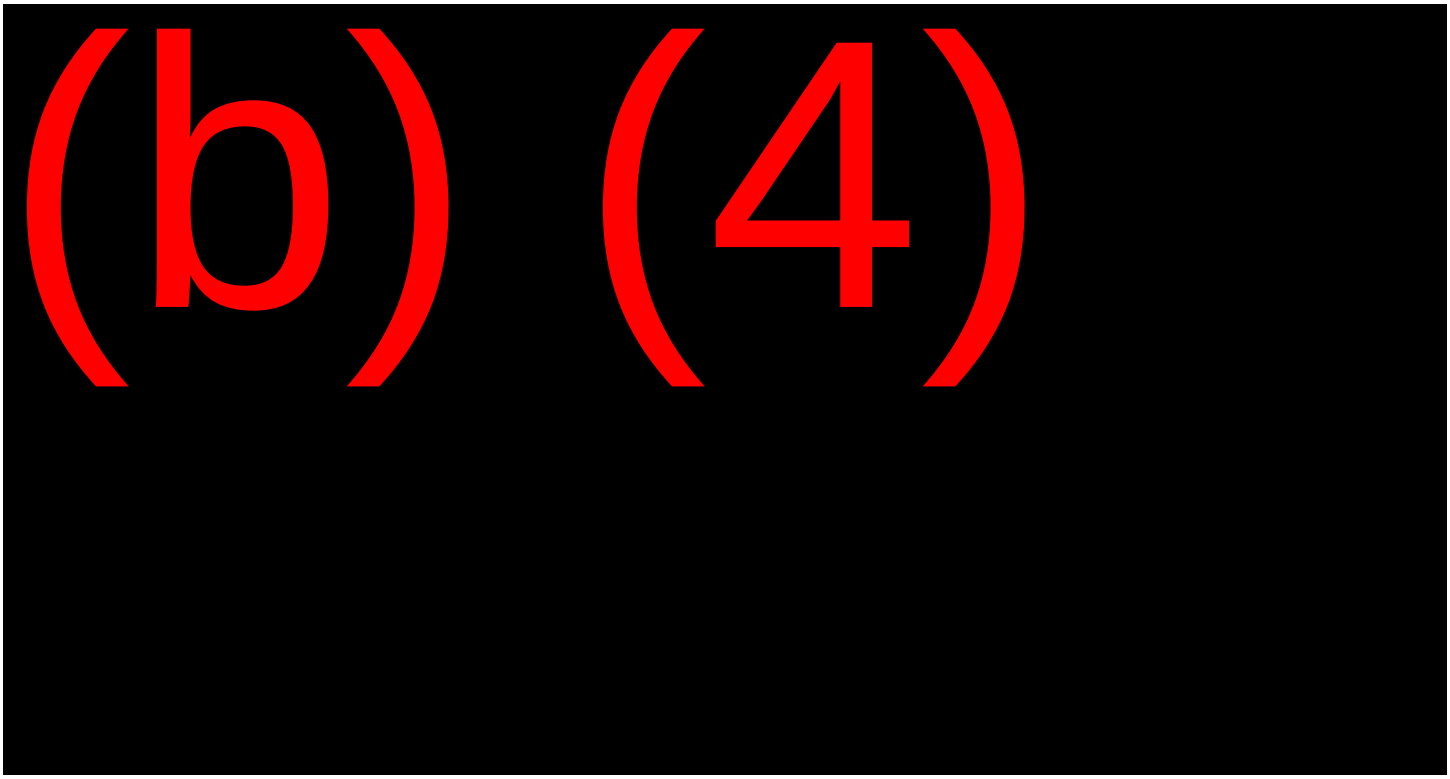
Definitions

For purpose of this Agreement, the following definitions apply:

1. "Access Level" is the scope of Licensed Confidential Information that Pecan Street discloses to Licensee based on the purpose for which the data will used.
2. "Confidential Information" is as defined above, and more specifically, includes all data and information contained in the secured access portions of Pecan Street's Dataport web portal, all data and information in Pecan Street's Dataport databases, and all data and information contained in Pecan Street's other databases.
3. "Dataport" is the suite of content, data, and services provided by Pecan Street, operated under and/or in association with the Pecan Street brand name, and made available

through: (a) Pecan Street's Dataport web portal; (b) Pecan Street's Dataport databases; and (c) other media.

4. Derivative Works" means all notes, analyses, studies, summaries, and other materials (tangible or intangible), however documented, containing or based, in whole or in part, on the Licensed Confidential Information.
5. "Licensed Confidential Information" is the subset of Confidential Information disclosed to Licensee through secured access to Pecan Street's Dataport web portal, the Pecan Street's Dataport databases, or through downloaded data files into any accessible medium, and more specifically described in the attached Exhibit A. Licensed Confidential Information includes any Derivative Works created based on the Licensed Confidential Information, but specifically excludes any algorithms of Licensee that may be enhanced through the use of the Licensed Confidential Information.
6. "Licensee Personnel" means Licensee's employees, and Licensee's contractors expressly approved in writing by Pecan Street.
7. "Use" means: (a) any and all use, access and display of the Licensed Confidential Information; (b) creating any Derivative Works based on the Licensed Confidential Information; and/or (c) failure to delete and destroy Licensed Confidential Information upon termination of this Agreement or upon Pecan Street's request.



3. Licensee understands that this Agreement provides for data access only and not for any other service(s). Any technical or support services needed by Licensee in order to use or analyze the data is only available under a separately negotiated services agreement between the Parties.

4. As part of the mutual consideration forming this Agreement, Licensee agrees:

   a. to use the Licensed Confidential Information for Internal Business Purposes only;

   b. that Licensee will not resell or reuse the Licensed Confidential Information for any purpose or service not expressly pre-approved by Pecan Street in writing;

   c. to treat all Licensed Confidential Information as confidential and that Licensee, including Licensee Personnel, shall not disclose Licensed Confidential Information except as allowed under this Agreement;

   d. that all data reasonably identified as being provided to Licensee pursuant to this Agreement, as opposed to information regularly shared between the Parties, shall be deemed Licensed Confidential Information;

   e. that Licensee does not acquire any title, ownership, or other intellectual property right or license under this Agreement;

   f. not to make externally accessible copies of the Licensed Confidential Information, unless agreed to in advance in writing by Pecan Street;

   g. to store Licensed Confidential Information in a secure place with adequate safeguards to ensure that unauthorized persons do not have access to the Licensed Confidential Information;

   h. to immediately notify Pecan Street in writing of Licensee's disclosure of Licensed Confidential Information, or data breach potentially involving the Licensed Confidential Information, or violation of this Agreement that may come to Licensee's attention;

   i. to protect the confidentiality of the Licensed Confidential Information, including any works created by Licensee incorporating the Licensed Confidential Information;

   j. to comply with all applicable laws regarding protection of confidential information and to use the same standard of care that Licensee uses to protect its own confidential information, and will in no event use less than a reasonable standard of care;

   k. that immediately upon termination of this License Agreement, Licensee shall promptly destroy all of the Licensed Confidential Information and certify to Pecan Street, in writing

with content substantially similar to the attached Appendix 2, that all Licensed Confidential Information and copies or extracts thereof have been entirely destroyed and removed from Licensee's systems;

l. that Licensee (including Licensee Personnel authorized hereunder) shall only Use Licensed Confidential Information for the Term of this Agreement;

m. that Licensee shall make no attempt whatsoever to reidentify or reverse engineer any part of the Licensed Confidential Information.

n. that Licensee shall be responsible and liable for compliance with, and any breach of, this Agreement by Licensee Personnel; and

o. that unless Licensee renews this Agreement or executes a new data license agreement with Pecan Street, Licensee shall immediately cease Use of the Licensed Confidential Information at the expiration of this Agreement.

5. *Reserved.*

6. Notwithstanding anything to the contrary herein, Licensee shall have no obligation to preserve the confidentiality of any information that:

   a. Was previously known to Licensee, prior to the execution of this Agreement, free of any obligation to keep it confidential as shown by the Licensee's written records; or

   b. Is or becomes publicly available, by other than unauthorized disclosure; or

   c. Is independently developed by Licensee without knowledge of the Licensed Confidential Information as shown by the Licensee's written records; or

   d. Is disclosed to third parties by Pecan Street without restriction; or

   e. Is lawfully received by Licensee from a third party whose disclosure did not violate any confidentiality or other legal obligation.

7. No liability shall arise under this Agreement due to the Licensee's disclosure of Licensed Confidential Information made pursuant to judicial or governmental order, provided the Licensee promptly notifies Pecan Street prior to such disclosure and cooperates with the Pecan Street in the event that Pecan Street elects to legally contest and avoid such disclosure.

8. Licensee agrees that it does not acquire any title, ownership, or other intellectual property right or license under this Agreement.

9. The obligations of this Agreement with respect to the disclosure of Licensed Confidential Information shall survive for a period of five years from the date of last disclosure. Licensee therefore recognizes and agrees that its obligations within this Agreement with respect to the confidentiality of Licensed Confidential Information shall survive the termination of this Agreement and Licensee shall be bound by all such obligations after termination of this Agreement.

10. The Term of this Agreement, and duration of Licensee's Use of the Licensed Confidential Information shall extend up to one year from the date of Licensee's receipt of the Licensed Confidential Information.

11. This Agreement may be terminated immediately and the return of all Licensed Confidential Information may be demanded by Pecan Street upon written notice, in the event that Licensee breaches any material term of this Agreement, or either Party is declared bankrupt, creates or permits an assignment for the benefit of its creditors, is dissolved, or ownership and control of said Party is transferred to a third party.

12. Licensee understands and agrees that the License Fee is nonrefundable and shall not be refunded to Licensee in part or in whole at any time after Pecan Street makes the Licensed Confidential Information available to Licensee, regardless of whether or not Licensee accesses or uses the Licensed Confidential Information or Licensee's termination of this Agreement.

13. Licensee acknowledges its obligations to control access to technical data under the United States Export Laws and Regulations and, where applicable, agrees to adhere to such laws and regulations with regard to any technical data received under this Agreement.

14. In the event that Licensee breaches or threatens to breach any of the covenants expressed herein, the damage to Pecan Street will be great and irreparable and difficult to quantify; therefore, Pecan Street may apply to a court of competent jurisdiction for injunctive or other equitable relief to restrain such breach or threat of breach, without disentitling Pecan Street from/to any other relief in either law or equity.

15. Licensee agrees to indemnify and hold harmless Pecan Street from all losses, damages, causes of action, and reasonable attorneys fees incurred by Pecan Street arising from the breach of this Agreement by Licensee.

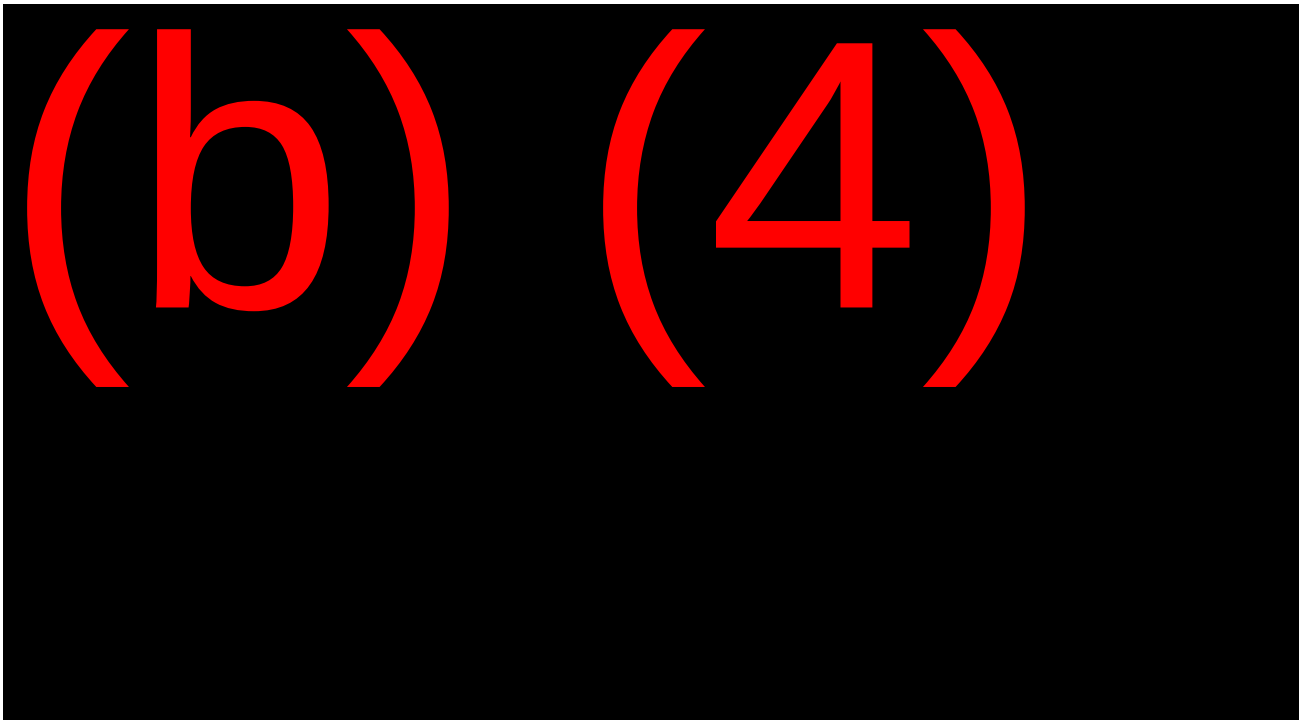
16. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Texas and of the United States of America, without regard to conflicts of laws

principles which would apply the law of any other jurisdiction. Venue for any dispute concerning this Agreement shall be proper and lie exclusively in Travis County, Texas.

17. This Agreement shall not be assigned by any Party hereto without the express prior written consent of the other Party.

18. The Parties understand that the Licensed Confidential Information disclosed hereunder may relate to products that are under development or planned for development. PECAN STREET DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ANY IMPLIED WARRANTY OF NON-INFRINGEMENT, AND ANY EXPRESS WARRANTY WITH RESPECT TO ANY INFORMATION DISCLOSED HEREUNDER. Pecan Street accepts no responsibility as a result of any expenses, losses, damages, or actions incurred or undertaken by the Licensee as a result of the Licensee's receipt or use of any information disclosed hereunder.

19. All notices and requests under this Agreement must be in writing and any changes to this Agreement must be in writing and signed by both parties to be effective. All written notices hereunder shall be deemed to be given to the other Party upon a certified or registered mailing if addressed as follows (unless such addresses are changed upon written notice):



20. The waiver by either Party hereto of any breach of the terms and conditions hereof will not be considered a modification of any provision, nor shall such a waiver act to bar the enforcement of any subsequent breach.

EXHIBIT A

LICENSED CONFIDENTIAL INFORMATION

Licensed Confidential Information under the Agreement means, the data described below:

Feature / Data	Description	Dataport Unlimited 2012-present $125,000
Audit Data	Household audit data for homes, including detailed information about each home, such as appliances, duct leakage testing, and over 100 other house measurements.	✓
Program Data	Data about homes from specific pricing trials.	✓
EV Meta Data	Data about electric vehicle makes & models	✓
Electricity Data 15 Min Intervals	Home electricity use (real power) and generation data at ground-truth circuit level.	✓
Electricity Data 1 Minute Intervals	Home electricity use (real power) and generation data at ground-truth circuit level.	✓
Electricity Data 1 Second Intervals	Home electricity use (real power) and generation data at ground-truth circuit level.	✓
Gas Data	Home gas use data.	✓
Indoor Temperature Data	Indoor temperature sensor readings.	✓
Sociodemographic Survey Data	Annual survey responses, including demographics and home features.	✓
Water Data	Home water use data.	✓
Weather Data	Various weather data for Austin.	✓

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

Review Public Burden Disclosure Statement

1. * Type of Federal Action:	2. * Status of Federal Action:	3. * Report Type:
☐ a. contract	☐ a. bid/offer/application	☒ a. initial filing
☒ b. grant	☒ b. initial award	☐ b. material change
☐ c. cooperative agreement	☐ c. post-award	
☐ d. loan		
☐ e. loan guarantee		
☐ f. loan insurance		

4. Name and Address of Reporting Entity:

☒ Prime ☐ SubAwardee

** Name:* PECAN STREET INC.

** Street 1:* 3924 BERKMAN DR *Street 2:*

** City:* AUSTIN *State:* TX: Texas *Zip:* 78723

Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency: DEPARTMENT OF ENERGY

7. * Federal Program Name/Description:

CFDA Number, *if applicable:*

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* *Street 2:*

** City:* *State:* *Zip:*

b. Individual Performing Services (including address if different from No. 10a)

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* *Street 2:*

** City:* *State:* *Zip:*

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** (b) (6)

***Name:** *Prefix:* ** First Name:* (b) (6) *Middle Name:*

** Last Name:* (b) (6) *Suffix:*

Title: CFO & GENERAL COUNSEL **Telephone No.:** **Date:** 03/15/2023

Federal Use Only:

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Standard Form - LLL (Rev. 7-97)

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [ ] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[ ] Prime [x] SubAwardee Tier if known:

*Name: University of Delaware
*Street 1: 210 Hullihan Hall Street 2: Research Office
*City: Newark State: DE: Delaware Zip: 19716-0099
Congressional District, if known: DE-001

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

*Name: Pecan Street Inc
*Street 1: 3924 Berkman Drive Street 2:
*City: Austin State: TX: Texas Zip: 78723
Congressional District, if known:

6. * Federal Department/Agency:

Department of Energy

7. * Federal Program Name/Description:

BIL - Grid Resilience and Innovation Partnerships (GRIP)

CFDA Number, *if applicable:*

8. Federal Action Number, *if known:*

DE-FOA-0002740

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: *First Name: N/A Middle Name:
*Last Name: N/A Suffix:
*Street 1: Street 2:
*City: State: DE: Delaware Zip: 19716

b. Individual Performing Services (including address if different from No. 10a)

Prefix: Mr. *First Name: Steven Middle Name:
*Last Name: Hegedus Suffix: PhD
*Street 1: Evans Hall Street 2:
*City: Newark State: DE: Delaware Zip: 19716

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** (b) (6)

***Name:** Prefix: *First Name: (b) (6) Middle Name: D.
*Last Name: (b) (6) Suffix:

Title: (b) (6) **Telephone No.:** (b) (6) **Date:**

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DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

Review Public Burden Disclosure Statement

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[ ] Prime [x] SubAwardee Tier if known:

* Name: Delaware Electric Cooperative
* Street 1: 14198 Sussex Highway
Street 2:
* City: Greenwood
State: DE: Delaware
Zip: 19950
Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

* Name: PECAN STREET INC.
* Street 1: 3924 BERKMAN DR
Street 2:
* City: AUSTIN
State: TX: Texas
Zip: 78723
Congressional District, if known:

6. * Federal Department/Agency:

DEPARTMENT OF ENERGY

7. * Federal Program Name/Description:

CFDA Number, *if applicable:*

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: * First Name: N/A Middle Name:
* Last Name: N/A Suffix:
* Street 1: Street 2:
* City: State: Zip:

b. Individual Performing Services (including address if different from No. 10a)

Prefix: * First Name: N/A Middle Name:
* Last Name: N/A Suffix:
* Street 1: Street 2:
* City: State: Zip:

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* Signature: (b) (6)

*Name: Prefix: * First Name: (b) (6) Middle Name:
* Last Name: (b) (6) Suffix:

Title: Manager of Metering and Cable Services Telephone No.: Date: 03/15/2023

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Instructions and Summary

Award Number:
Award Recipient: UNIVERSITY OF DELAWARE

Date of Submission: 3/8/2023
Form submitted by: UNIVERSITY OF DELAWARE

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your EERE contact!

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. If using this form for invoice submission, fill out tabs a. through j. with total costs for just the proposed invoice and fill out tab k. per the instructions on that tab.
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, vendors, 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 EERE contact before adding additional budget period rows or 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 3 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	$60,895	$63,897			$124,792	51.20%	11/01/2023 - 10/31/2024
Budget Period 2	$56,902	$56,290			$113,192	49.73%	11/01/2024 - 10/31/2025
Budget Period 3	$68,675	$55,229			$123,904	44.57%	11/01/2025 - 10/31/2026
Budget Period 4	$53,665	$56,000			$109,665	51.06%	11/01/2026 - 10/31/2027
Budget Period 5	$48,059	$56,782			$104,841	54.16%	11/01/2027 - 10/31/2028
Total	$288,197	$288,197			$576,394	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	$50,883	$47,688	$48,638	$49,614	$50,606	$247,429	42.93%	
b. Fringe Benefits	$12,040	$10,633	$10,845	$11,062	$11,284	$55,864	9.69%	
c. Travel	$2,667	$4,930	$5,028	$5,130	$2,887	$20,641	3.58%	
d. Equipment	$0	$0	$9,935	$0	$0	$9,935	1.72%	
e. Supplies	$3,000	$3,000	$1,000	$2,000	$0	$9,000	1.56%	
f. Contractual								
Sub-recipient	$0	$0	$0	$0	$0	$0	0.00%	
Vendor	$5,000	$0	$5,000	$0	$0	$10,000	1.73%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$5,000	$0	$5,000	$0	$0	$10,000	1.73%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$7,049	$7,190	$1,152	$1,175	$1,199	$17,765	3.08%	
Total Direct Costs	$80,639	$73,441	$81,598	$68,981	$65,975	$370,634	64.30%	
i. Indirect Charges	$44,154	$39,751	$42,306	$40,684	$38,866	$205,760	35.70%	
Total Costs	$124,792	$113,192	$123,904	$109,665	$104,841	$576,394	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 vendors 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 pay rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., actual salary, 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 #	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)	Pay Rate ($/Hr)	Total Budget Period 1	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 2	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 3	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 4	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 5			
1	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	Actual Salary
(b) (4)																			
				$0			$0			$0			$0			$0	0	$0

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	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
Professor	$20,670	39.10%	$8,082	$16,870	39.10%	$6,596	$17,204	39.10%	$6,727	$17,550	39.10%	$6,862	$17,902	39.10%	$7,000	$35,267
Graduate Student	$30,213	13.10%	$3,958	$30,818	13.10%	$4,037	$31,434	13.10%	$4,118	$32,063	13.10%	$4,200	$32,704	13.10%	$4,284	$20,597
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
Total:	**$50,883**		**$12,040**	**$47,688**		**$10,633**	**$48,638**		**$10,845**	**$49,614**		**$11,062**	**$50,606**		**$11,284**	**$55,864**

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.

__X____ 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 http://www1.eere.energy.gov/financing/resources.html, 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. *NREL's approved Standard Labor Rates includes Fringe. All rates are negotiated and approved by DOE.*

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. Federal travel regulations are contained within the applicable cost principles for all entity types. 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.

4. 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
	IEEE Power and Energy Society (PES)	DE	Orlando	5	1	$516	$540	$500	$1,111	$2,667	Current GSA rates; $800 registration
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 1 Total									**$2,667**	
	Domestic Travel	**Budget Period 2**									
	IEEE Power and Energy Society (PES)	DE	Orlando	5	2	$526	$551	$510	$878	$4,930	Current GSA rates; $1,100 registration
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 2 Total									**$4,930**	
	Domestic Travel	**Budget Period 3**									
	IEEE Power and Energy Society (PES)	DE	Orlando	5	2	$537	$562	$520	$895	$5,028	Current GSA rates; $1,100 registration
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 3 Total									**$5,028**	
	Domestic Travel	**Budget Period 4**									
	IEEE Power and Energy Society (PES)	DE	Orlando	5	2	$548	$573	$531	$913	$5,130	Current GSA rates; $1,100 registration
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 4 Total									**$5,130**	
	Domestic Travel	**Budget Period 5**									
	IEEE Power and Energy Society (PES)	DE	Orlando	5	1	$559	$585	$541	$1,202	$2,887	Current GSA rates; $800 registration
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 5 Total									**$2,887**	
	PROJECT TOTAL									**$20,641**	

Additional Explanation (as needed):

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. vendor 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 vendor quote for all equipment items over $50,000 in price. If the vendor quote is not an exact price match, provide an explanation in the additional explanation section below. If a vendor 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
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 1 Total			$0		
Budget Period 2						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
Budget Period 3						
	Programmable load to test power export limits	1	$9,935	$9,935	Vendor Quote - Attached	
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$9,935		
Budget Period 4						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$0		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	PROJECT TOTAL			**$9,935**		

Additional Explanation (as needed):

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. 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.

2. List all proposed supplies below, providing a basis of costs (e.g. vendor 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.

3. 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.

4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

5. 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
	Test cables, meters, hardware to accommodate new equipment, shelf, small tools	1	$3,000.00	$3,000	estimate based on recent contract and projects with similar scope	Installation of new electrical equipment and communication interfaces. UL listed cables/connectors that are not supplied to interface them to each other and control system are needed. Replacement of small tools and consumables
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 1 Total			**$3,000**		
Budget Period 2						
	Cables, wiring, software license for modeling grid, wireless communication devices	1	$3,000.00	$3,000	estimate based on recent contract and projects with similar scope	Installation of new electrical equipment and communication interfaces. UL listed cables/connectors that are not supplied to interface them to each other and control system are needed. Replacement of small tools and consumables. Digisilent license for utility industry software.
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$3,000		
Budget Period 3						
	Lab Supplies for Deliverables	1	$1,000.00	$1,000	Catalog price	Miscellaneous lab supplies
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$1,000		
Budget Period 4						
	Test cables, wiring, software license for modeling grid	1	$2,000.00	$2,000	estimate based on recent contract and projects with similar scope	Installation of new electrical equipment and communication interfaces. UL listed cables/connectors that are not supplied to interface them to each other and control system are needed. Replacement of small tools and consumables. Digisilent license for utility industry software.
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$2,000		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	PROJECT TOTAL			**$9,000**		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, vendors, 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) $250,000 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. vendor status.

3. Vendors (including contractors): List all vendors and contractors supplying commercial supplies or services used to support the project. For each Vendor cost with total project costs of $250,000 or more, a Vendor quote must be provided. A vendor 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. vendor 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	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
								$0
		Sub-total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

SOPO Task #	Vendor 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.	Vendor for developing robotics to perform lens inspection. Estimate provided by vendor.	$32,900	$86,500				**$119,400**
	CMI Solar and Electric; Newark, DE	Cost based on work they completed in a previous year	$5,000		$5,000			**$10,000**
								$0
								$0
								$0
								$0
		Sub-total	**$5,000**	**$0**	**$5,000**	**$0**	**$0**	**$10,000**

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		**$5,000**	**$0**	**$5,000**	**$0**	**$0**	**$10,000**

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 vendor 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		
	PROJECT TOTAL	**$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
	Grad student tuition	$7,049	Established UD costs	Support of graduate students working on project
	Budget Period 1 Total	$7,049		
	Budget Period 2			
	Grad student tuition	$7,190	Established UD costs	Support of graduate students working on project
	Budget Period 2 Total	$7,190		
	Budget Period 3			
	Grad student tuition	$1,152	Established UD costs	Support of graduate students working on project
	Budget Period 3 Total	$1,152		
	Budget Period 4			
	Grad student tuition	$1,175	Established UD costs	Support of graduate students working on project
	Budget Period 4 Total	$1,175		
	Budget Period 5			
	Grad student tuition	$1,199	Established UD costs	Support of graduate students working on project
	Budget Period 5 Total	$1,199		
	PROJECT TOTAL	**$17,765**		

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 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. 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:							
Overhead Rate	60.00%	60.00%	60.00%	60.00%	60.00%		
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs	$44,154	$39,751	$42,306	$40,684	$38,866	**$205,760**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs						**$0**	
Total indirect costs requested:	**$44,154**	**$39,751**	**$42,306**	**$40,684**	**$38,866**	**$205,760**	

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.

___x___ 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.

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

***When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided by your DOE contact, or a format that provides the same level of information and which will support the rates being proposed for use in performance of the proposed project. Additionally, any non-Federal entity that has never received a negotiated indirect cost rate, except for those non-Federal entities described in Appendix VII to Part 200—States and Local Government and Indian Tribe Indirect Cost Proposals, paragraph D.1.b, may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely.As described in §200.403 Factors affecting allowability of costs, costs must be consistently charged as either indirect or direct costs, but may not be double charged or inconsistently charged as both. If chosen, this methodology once elected must be used consistently for all Federal awards until such time as a non-Federal entity chooses to negotiate for a rate, which the non-Federal entity may apply to do at any time.**

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). *NREL operates as a cost recovery National Laboratory according to cost accounting standards. All applied rates are negotiated and approved by DOE.*

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. **Vendors 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. Vendors 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**
University of Delaware	Cash	Professor	$20,670	$16,870	$17,204	$17,550	$17,902	**$90,196**
University of Delaware	Cash	Fringe	$8,082	$6,596	$6,727	$6,862	$7,000	**$35,267**
University of Delaware	Cash	Graduate Student	$8,759	$9,175	$9,175	$9,175	$9,175	**$45,459**
University of Delaware	Cash	Fringe	$1,147	$1,202	$1,202	$1,202	$1,202	**$5,955**
University of Delaware	Cash	Graduate Student Tuition	$2,044	$2,141	$336	$336	$336	**$5,193**
University of Delaware	Cash	F&A	$23,195	$20,306	$20,585	$20,874	$21,167	**$106,127**
								$0
								$0
								$0
								$0
		Totals	**$63,897**	**$56,290**	**$55,229**	**$56,000**	**$56,782**	**$288,197**

Total Project Cost: $576,394 **Cost Share Percent of Award: 50.0%**

Additional Explanation (as needed):

Applicant Name: UNIVERSITY OF DELAWARE Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity	Catalog of Federal Domestic Assistance Number	Estimated Unobligated Funds		New or Revised Budget			
		Federal	Non-Federal	Federal	Non-Federal		Total
(a)	(b)	(c)	(d)	(e)	(f)		(g)
1. Budget Period 1				$60,895	$63,897		$124,792
2. Budget Period 2				$56,902	$56,290		$113,192
3. Budget Period 3				$68,675	$55,229		$123,904
4. Budget Period 4				$53,665	$56,000		$109,665
5. Budget Period 5				$48,059	$56,782		$104,841
6. Totals				$288,197	$288,197		$576,394

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	$50,883	$47,688	$48,638	$49,614	$50,606	$247,429
b. Fringe Benefits	$12,040	$10,633	$10,845	$11,062	$11,284	$55,864
c. Travel	$2,667	$4,930	$5,028	$5,130	$2,887	$20,641
d. Equipment	$0	$0	$9,935	$0	$0	$9,935
e. Supplies	$3,000	$3,000	$1,000	$2,000	$0	$9,000
f. Contractual	$5,000	$0	$5,000	$0	$0	$10,000
g. Construction	$0	$0	$0	$0	$0	$0
h. Other	$7,049	$7,190	$1,152	$1,175	$1,199	$17,765
i. Total Direct Charges (sum of 6a-6h)	$80,639	$73,441	$81,598	$68,981	$65,975	$370,634
j. Indirect Charges	$44,154	$39,751	$42,306	$40,684	$38,866	$205,760
k. **Totals** (sum of 6i-6j)	$124,792	$113,192	$123,904	$109,665	$104,841	$576,394
7. Program Income						$0