Grant Conversion to eGrants

Program Description:

The Pennsylvania Department of Environmental Protection (DEP) is offering up to $320 million in grant funding for industrial decarbonization projects at Industrial Facilities through the Reducing Industrial Sector Emissions in Pennsylvania (RISE PA) program. RISE PA is funded through the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants. The primary goals of RISE PA are to reduce greenhouse gas (GHG) and co-pollutant emissions from Pennsylvania's industrial sector by funding medium- and large-scale decarbonization projects that deploy energy efficiency, electrification, industrial process emissions reduction, fuel-switching, on-site renewable energy, carbon capture, utilization, and storage, and fugitive emissions reduction technologies.

For further information on the program, see Reducing Industrial Sector Emissions in Pennsylvania website. Please read the Program Guidelines and Program Specific Instructions before applying.

Application Tab

Applicant Entity Type:

- Limited Liability Partnership
- Partnership
- Government
- Non-Profit Corporation
- Sole Proprietorship
- Limited Liability Company
- S Corporation
- C Corporation

Applicant Name: XYZ Dairy Corporation

NAICS Code: 311511

FEIN/SSN Number: 123456789

*Please enter SSN/FEIN as 9 digits, no dash.

UEI Number: OI1234567891

Top Official/Signing Authority: John Smith

Title: Senior Project Manager

SAP Vender #: #

Contact Name: Patricia Johnson

Contact Title: Lead Engineer

Phone: 123-456-7890 Ext.: 1

Alternate Phone: 123-456-7891

E-mail: Patricia.Johnson@XYZDairy.com

Mailing Address: 621 N Broad St

City: York

State: PA

Zip Code: 17403

Enterprise Type: Agri-Processor, Industrial, Food Processing, Manufacturing

Project Site Tab

Address: 621 N Broad Street

City: York

State: PA

Zip Code: 17403

County: York County

Municipality: City of York

PA House: 95th Legislative District

PA Senate: 28th Senatorial District

Designated Areas:

- Act 47 Distressed Community
- Enterprise Zone
- Keystone Innovation Zone
- Prime Agricultural Area
- Brownfield
- Greenfield
- Keystone Opportunity Zone
- Uses PA Port

Project Narrative Tab

Provide a brief description of the proposed project and emissions reduction technology or technologies that will be implemented. This should be a short and concise description of your project. More detailed project information will be required in the Supplemental Application on the addenda tab.

XYZ Dairy Corporation's proposed project involves an integrated approach to energy efficiency and emissions reduction at its York, Pennsylvania facility. The project will implement heat recovery technology to capture and reuse waste heat from production processes, significantly improving overall energy efficiency. Solar panels will be installed to generate renewable energy on-site, reducing reliance on grid electricity and lowering carbon emissions. Additionally, the project includes replacing one of the facility's aging natural gas-fired steam boilers with a new, high-efficiency electric boiler. This transition from fossil fuel-based heating systems to electric boilers will further reduce greenhouse gas emissions and enhance the facility's sustainability going into the future. Together, these measures aim to decrease energy consumption and associated emissions, setting an example for energy efficiency in the dairy processing industry.

Budget Tab

	Reducing Industrial Sector Emissions in Pennsylvania (RISE PA)	Match Private	Total
RISE PA Program	$0.00	$0.00	
Personnel	$0.00	$0.00	$0.00
Equipment (over $5,000/item)	$2,374,860	$1,583,240	$3,958,100
Supplies (under $5,000/item)	$1,200	$800	$2,000
Contractual	$288,690	$192,460	$481,150
Total	$2,664,750	$1,776,500	$4,441,250
		Budget Total:	$4,441,250

Addenda Tab

ADDENDA

Supplemental Application

Instructions: All Applicants must complete the following sections of the Supplemental Application: Company Overview, Project Scope, Project Team, Permitting, Project Benefits and Impact, and Project Innovation/Transformative Impact.

Project Overview

1. Indicate the selected Award Track (select one):

    a. ✓ Medium-scale Award Track
    b. Large-scale Award Track

2. List the total project cost:

    $4,441,250

3. Indicate the amount of funding being requested from RISE PA. Provide the funding request in dollars and as a percentage of total eligible project costs:

    a. $2,664,750
    b. 60%

4. Select the bonus awards that apply to the RISE PA funding request if applicable:
    a. ✓Community Benefits Bonus
    b. ✓Fair Labor Bonus
    c. ✓Greenhouse Gas Emissions Reduction Bonus

5. Select the project type(s) that describe the RISE PA funding request. Select all that apply:
    a. ✓Energy efficiency
    b. ✓Electrification
    c. Industrial process emissions reduction
    d. Fuel-switching to low-carbon fuels
    e. ✓On-site renewable energy
    f. Carbon capture, utilization, and storage
    g. Fugitive emissions reduction technology
    h. Other
    i. If “Other”, briefly describe the proposed project:

6. Scope 1 and Scope 2 GHG reduction summary (See *Definitions* section of the Program Guidance for Scope 1 and Scope 2 definitions):

Total Facility GHG Emissions – Current Baseline	1,886 MT CO_2e/year
Total Facility GHG Emissions – After Project Implementation	1,063 MT CO_2e/year
Difference	_824_ MT CO_2e/year
Percentage Reduction	44%

7. For each selected project type, list the lifespan [in number of years] for the emissions reduction technology:

a. Energy efficiency __25_ years
b. Electrification __25_ years
c. Industrial process emissions reduction _____ years
d. Fuel-switching _____ years
e. On-site renewable energy __30_ years
f. Carbon capture, utilization, and storage _____ years
g. Fugitive emissions reduction technology _____ years
h. Other _____ years

8. State the estimated total co-pollutant emissions reduced [in metric tons per year] for the whole facility (facilities). Only list values for pollutants for which there is an anticipated reduction in emissions:

Criteria Air Pollutants

Pollutant	**Current Emissions (MT/year)**	**Anticipated Reduction in Emissions (MT/year)**	**Estimated Percentage Reduction**
Ozone	0	0	0
Particulate Matter	0.075	0.035	46.7%
Carbon Monoxide	0.832	0.386	46.4%
Lead	0	0	0
Sulfur Dioxide	0.006	0.003	50.0%
Nitrogen Dioxide	0.990_	0.459	46.4%
Volatile Organic Compounds	0.054	0.025	46.3%

Hazardous Air Pollutants

Pollutant	Current Emissions (MT/year)	Anticipated Reduction in Emissions (MT/year)	Estimated Percentage Reduction
Hydrogen sulfide	0	0	0
Benzene	0	0	0
Toluene	0	0	0
Ethylbenzene	0	0	0
Xylene	0	0	0
Hexane	0.018	0.010	55.6%
Ethane	0	0	0
Pentane	0	0	0
Formaldehyde	0.001	0	100%
Butane	0	0	0
Dichlorobenzene	0	0	0
Propane	0	0	0

9. List the change in energy use (if applicable):

Energy Source	Units	Consumption Prior to Project Implementation	Consumption After Project Implementation	Difference	Estimated Percentage Reduction
Electricity	MWh	2,650	4,862	+2,212	+183%
Natural Gas	MMBtu	20,573	11,028	-9,545	53.6%
Other Fuel	MMBtu	0	0	0	0
Other Fuel	MMBtu	0	0	0	0
Other Fuel	MMBtu	0	0	0	0

10. Indicate how many months after the grant agreement is executed the project will break ground: 13 months

11. List the proposed/estimated date when the project will be fully commissioned: 32 months

12. List the project duration in months: 19 months

13. List the electric utility serving the project location: First Energy Electric

14. List the gas utility serving the project location: Columbia Gas of PA Inc.

15. Indicate whether the Applicant has completed an energy audit: Yes

    a. If "yes", list the date of the audit: October 1, 2025

16. Indicate whether the Applicant has applied to DEP for an Industrial Energy Assessment: Yes

    a. If "yes", indicate whether the Industrial Energy Assessment has been completed: November 1, 2025

17. Indicate whether the Industrial Facility location, where the project will occur, is currently subject to any state or federal law, regulation, or legally binding mandate regarding energy consumption and/or air pollutant emissions amounts? Yes

    a. If "yes", describe each state or federal law, regulation, or legally binding mandate:

    As stipulated by the Pennsylvania Department of Environmental Protection (DEP), facilities must comply with emissions permits that limit pollutants such as CO2, NOx, and SOx.

    Additionally, the facility is subject to federal emissions standards under the Clean Air Act, administered by the Environmental Protection Agency (EPA). The proposed equipment will exceed these requirements by significantly reducing emissions of greenhouse gases and other pollutants.

18. Indicate if the project is located in a EPA IRA Disadvantaged Community. Click the link and enter the Industrial Facility's address into the mapping tool to determine whether the project is located in a Disadvantaged Community.

    Yes, in Census Block Group 421330103001.

19. Indicate whether the Applicant has any outstanding obligations to the Commonwealth: No

20. Indicate whether the Applicant has any unresolved compliance issues with DEP: No

Company Overview

1. Describe your company and existing industrial or manufacturing capabilities, including the operations and processes at the facility where the proposed project is planned for implementation. Include a detailed description of the equipment and processes employed at the facility.

    XYZ Dairy Corporation specializes in the production of high-quality milk and yogurt products, consisting of twenty dairy processing plants across the continental United States. The proposed project will be implemented at our primary facility located at 621 N Broad Street, York, PA,

17403. This facility encompasses a comprehensive suite of operations designed to handle the entire production process, from raw milk intake to finished yogurt products.

Our company's main operations and processes:

- **Milk Reception and Storage**: Raw milk is delivered to the facility via refrigerated tankers and unloaded into our receiving bay. The milk is then stored in large, stainless-steel tanks with temperature control to ensure freshness and extended shelf life.
- **Pasteurization**: Pasteurization involves heating the milk to at least 162F for at least 16 seconds. This is accomplished using advanced plate heat exchangers and will be further enhanced with our planned boiler electrification. Currently boilers are fueled by natural gas.
- **Homogenization**: In this process, fat molecules in the milk are broken down to achieve a uniform consistency and prevent separation, which is crucial for yogurt production. This is done using high-pressure homogenizers.
- **Fermentation**: Cultures are added to the milk in fermentation tanks to produce yogurt.
- **Cooling and Packaging**: After fermentation, the products are cooled to maintain quality and safety. Automated filling machines in our facility then package the milk and yogurt products into various containers, ranging from bottles to cartons and tubs.
- **Quality Control**: Rigorous quality assurance tests are conducted at multiple stages of production in our facility to ensure product safety, consistency, and quality.
- **Cold Storage**: Final products are stored in temperature-controlled refrigeration units before distribution to maintain freshness.

Heating processes at our facility are currently powered by two natural gas-fired steam boilers, one of which is nearing the end of its life, and the other which has been purchased in the past 5 years. This project would seek to electrify the boiler nearing the end of its life and retrofit the other boiler with feedwater economizers to recover heat created from processes.

2. Describe the products currently produced at the facility and average annual output in appropriate units (e.g., tons of steel). Explain whether the project will alter the capacity or output of the facility, including whether the project will shift output from one product to another.

Milk Products: The primary product we produce is pasteurized milk. This process involves heating the milk to a specific temperature to eliminate harmful bacteria while preserving essential nutrients and flavor. On average, our facility produces 50 million pounds of pasteurized milk each year. These milk products are packaged in various formats, including bottles, cartons, and jugs.

Yogurt Products: In addition to milk, we produce a variety of yogurt products. The yogurt production process involves the fermentation of milk with specific bacterial cultures in tightly controlled environments to achieve the desired texture and flavor. Our facility produces approximately 20 million pounds of yogurt annually. This yogurt is available in multiple forms, such as plain, flavored, and Greek yogurt, and is packaged in various sizes and formats, including cups, tubs, and bottles.

Impact of the Proposed Project on Production Capacity: The proposed project focuses on three key areas: boiler electrification, on-site solar panels, and heat recovery retrofits on an existing boiler. These initiatives are designed to enhance the sustainability and energy efficiency of our operations.

The proposed sustainability project will not impact production at this facility, but seeks to enhance our operational efficiency and reduce our environmental impact per product produced. By leveraging advanced processes and equipment, our facility will maintain high standards of production while striving to minimize its carbon footprint, ultimately setting a benchmark for sustainable practices in the dairy industry.

Project Scope

1. Provide a detailed project plan, including the specific work tasks to be completed, the implementation timeline with key phases and milestones along with estimated dates for completion, the technological scope of the project, and any potential inflection points (go/no-go decisions) where project completion may be reconsidered. Project milestones should include the project start date, design phase, equipment purchase, construction, installation, commissioning, measuring monitoring and verification (both before project work commences and after project completion), and any other relevant milestones.

Detailed Project Milestones

- **Project Start Date**: October 1, 2025 (Estimated Grant award)
- **Design Phase Completion**: Estimated five months for Grant award
- **Baseline Measurement, Monitoring and Verification (MMV) Completion**: Estimated eight months from grant award
- **Equipment Procurement Completion**: Estimated 13 months from grant award
- **Site Preparation Completion**: Estimated 17 months from grant award
- **System Installation Completion**: Estimated 25 months from grant award
- **System Commissioning and Staff Training Completion**: Estimated 26 months from grant award
- **Post-Implementation MMV Completion**: Estimated 32 months from grant award

Detailed Project Plan and Timeline:

Task 1: Project Initiation and Planning: 2 months (October 1, 2025 – November 30, 2025, assuming 2025 grant award)

- Establish project team and assign responsibilities
- Develop detailed project scope and objectives
- Conduct initial feasibility study

Task 2: Design Phase: 3 months (December 1, 2025 – February 28, 2026, assuming 2025 grant award)

- Engage engineering design firm to create detailed design and layout plans for the heat recovery system, solar panels, and electric boilers
- Confirm boiler size and solar panel system size, based on available rooftop and parking lot space
- Review and approve designs with stakeholders
- Identify relevant permit processes

Task 3: Pre-implementation Measuring, Monitoring, and Verification (MMV): 5 months (March 1, 2026 – July 30, 2026, assuming 2025 grant award)

- Establish baseline energy consumption and emissions data from current boilers and processes
- Deploy monitoring equipment for data collection

Task 4: Equipment Procurement – 5 months (August 1, 2026 – December 31, 2026, assuming 2025 grant award)

- Identify and select suppliers for heat exchangers, solar panels, and electric boilers
- Place orders for equipment and materials
- Coordinate with suppliers for delivery schedules

Task 5: Construction and Site Preparation: 4 months (January 1, 2027 – April 30, 2027, assuming 2025 grant award)

- Prepare the site for installation (e.g., foundation work, structural modifications)
- Install necessary infrastructure (e.g., piping, electrical work)

Task 6: Installation: 8 months (May 1, 2027 – December 31, 2027, assuming 2025 grant award)

- Deliver and inspect equipment upon arrival
- Install heat exchangers and connect to existing processes
- Install solar panels on facility rooftops and parking lot space and connect to the electrical grid
- Retire natural gas boiler; replace with electric boiler and integrate with current systems
- Conduct initial system testing and calibration for all systems

Task 7: Commissioning: 1 month (January 1, 2028 – January 31, 2028, assuming 2025 grant award)

- Perform final system checks and adjustments for all systems
- Verify system performance against design specifications
- Train facility staff on operation and maintenance of new systems

Task 8: Post-implementation Measuring, Monitoring, and Verification (MMV): 6 months (February 1, 2028 – July 31, 2028, assuming 2025 grant award)

- Monitor energy consumption and system performance (heat recovery, solar panels, and electric boilers)
- Compare data with baseline to assess impact
- Document findings and recommendations for optimization

Technological Scope:

The project encompasses the installation of heat recovery technology, high-efficiency solar panels, and an electric boiler at our 100,000 square-foot dairy processing facility. The heat recovery system will capture and reuse waste heat from our production processes, reducing natural gas consumption. Solar panels, installed on facility rooftops, will generate renewable energy to offset electricity usage and power the new electric boiler, which will replace our older traditional fossil-fuel boiler. These integrated systems will be monitored and controlled through advanced control systems, ensuring seamless operation and optimized energy use across the facility.

Key Decisions and Approval Dates:

1. **Post Feasibility Study Completion**: Decision based on feasibility study and ROI analysis.
    - Go/No-Go Decision Date: **November 30, 2025**
2. **Design Review and Approval**: Based on final design approval from stakeholders.
    - Go/No-Go Decision Date: **February 28, 2026**
3. **Equipment Delivery Inspection**: Ensuring all ordered equipment (heat recovery, solar panels, electric boilers) meets specifications before installation.
    - Go/No-Go Decision Date: **January 1, 2027**
4. **Initial System Testing**: Verification of system performance during initial tests.
    - Go/No-Go Decision Date: **January 1, 2028**

2. Describe the equipment used to facilitate the GHG emissions reductions, and the extent to which best-in-class technologies will be deployed. Where multiple emissions-reducing technologies are deployed, describe each.

Boiler Electrification: We are transitioning from a natural gas-fired boiler to an electric boiler for our low-temperature heating processes, such as pasteurization and homogenization. This change aims to reduce greenhouse gas emissions, increase efficiency, and offer more precise temperature control. Electrification will make our heating processes more environmentally friendly but will not alter the capacity or output of the facility. We are planning to replace one of our two boilers with an electric alternative. The second boiler, which is a relatively new and efficient model, will remain using natural gas, but will be retrofitted with heat recovery technology to increase efficiency. As the electric grid decarbonizes in the future, an electric boiler will help our facility to take advantage of a greener grid and aid in the transition away from reliance on fossil fuels.

On-site Solar Panels: To support the immediate increased electricity demand from electrification of the older boiler, we are installing solar panels on our facility's rooftop and parking lot. These panels, strategically placed on facility rooftops and open spaces, will capture sunlight to generate renewable energy. This integration will help offset our electricity footprint and reduce reliance on the grid without influencing production capacity or shifting output from one product to another.

Heat Recovery Technology (Feedstock Economizer Retrofit): Installation of a feedstock economizer will allow us to reuse heat generated during the pasteurization process, improving the overall energy efficiency of our natural gas-fired boiler and reducing annual fuel consumption by an expected 7.5%.

3. Indicate the expected lifespan of the equipment to be installed and current age of equipment to be replaced (as applicable). State whether the equipment proposed to be replaced is within three years of the end of its estimated lifespan and whether a like-for-like (e.g. same horsepower, fuel type, etc.) replacement would have been sought.

1. **Heat Recovery Technology (Feedstock Economizer Retrofit)**
   - Expected Lifespan: 15-20 years
   - Replacement Considerations: The existing natural gas boiler which is being retrofitted is only five years old. Rather than replacing this newer, efficient boiler model, we are adding heat recovery technology to enhance its efficiency and reduce its required fuel use for the rest of its useful life.

2. On-site Solar Panels
   - Expected Lifespan: 25-30 years
   - Description: High-efficiency mono-crystalline or poly-crystalline solar panels are durable and come with performance warranties for 25 years or more.
   - Replacement Considerations: The decision to install solar panels reflects the facility's commitment to reducing electricity consumption from non-renewable sources.

3. Electric Boilers
   - Expected Lifespan: 20-25 years
   - Replacement Considerations: The current boiler to be replaced is within three years of the end of its useful life. Through this project, we seek to replace it with an electric boiler to reduce greenhouse gas emissions, increase efficiency, and also align with long-term

sustainability goals of the facility. Electric boilers are expected to last between 20-25 years (a longer lifespan than traditional boilers) and will allow us to take advantage of a greener grid as the electric grid becomes less carbon intensive. The strategic decision to adopt these technologies will be crucial in reducing operational costs, minimizing environmental impact, and exceeding regulatory requirements, positioning our facility favorably for future compliance in environmental regulations. Should this grant proposal not move forward, we would likely replace the boiler with an efficient gas-fired steam boiler.

4. Provide a measuring, monitoring, and verification (MMV) plan that includes a description of the MMV protocol that will be employed to establish the GHG and co-pollutant emissions baselines before project work commences and verify the actual energy savings and emissions reduced after project completion. Include a description of the data the Applicant plans to collect and track.

1. Establishing Baselines

- **Protocol Standard:** The project will utilize the International Performance Measurement and Verification Protocol (IPMVP), specifically Option C: Whole Facility. This protocol is recognized for its robust approach to measuring and verifying energy savings and emissions reductions.

Baseline Data Collection:

- **Duration:** Baseline data on emissions from our gas and electricity usage has been collected on an annual basis for the past three years and will continue to be monitored prior to project implementation.
- **Instrumentation:** Boilers are individually metered to track fuel usage; electricity usage is also tracked through metered systems.

Baseline Data Metrics:

- **Energy Consumption:**
  - **Natural Gas Usage:** Record total MMBtu consumed by the existing natural gas boilers, for both processes and facility heating needs.
  - **Electricity Usage:** Record total kWh consumed by the facility.
- **Emissions:**
  - **GHG Emissions:** Calculate CO2, CH4, and N2O emissions from natural gas usage using EPA's emission factors.
  - **Co-pollutant Emissions:** Measure NOx, SOx, and particulate matter (PM) emissions using appropriate sensors and EPA emission factors.

2. Data Collection During Project

Installation and Monitoring Instruments:

- **Energy Meters:** Install energy meters on new equipment (electric boilers, existing natural gas boiler, and solar panels) to monitor real-time performance.
- **Emission Sensors:** Place sensors to measure direct air emissions from the new equipment and facility operations.
- **Monitoring System:** Implement a centralized data monitoring system to collect, store, and analyze data.

3. Verification of Actual Energy Savings and Emissions Reductions

Post-installation Data Collection:

- **Duration:** Post-installation data will be collected continuously on an ongoing basis after project completion.

- **Instrumentation:** Ensure that the same high-precision meters and sensors used during the baseline period continue to operate and collect data.

Post-installation Data Metrics:

- **Energy Consumption:**
  - Record total MMBtu saved due to reduced natural gas usage from heat recovery technology installed on the existing boiler.
  - Record total renewable energy generated by the solar panels (kWh).
  - Record total kWh consumed by the new electric boiler.
- **Emissions:**
  - **GHG Emissions:** Calculate emissions reductions by comparing pre- and post-installation CO2, CH4, and N2O emissions.
  - **Co-pollutant Emissions:** Measure and compare reductions in NOx, SOx, and PM emissions.

4. Data Collection and Tracking

- **Frequency:** Data will be collected continuously and aggregated monthly
- **Tools:** Utilize energy management software to automate data collection, storage, and analysis.

Data to be Collected and Tracked:

- **Energy Usage:**
  - Average daily and monthly natural gas consumption (MMBtu)
  - Average daily and monthly electricity consumption (kWh) from the grid and solar panels
  - Peak energy demand and load profiles
- **Emissions Data:**
  - Monthly CO2, CH4, N2O emissions (in metric tons)
  - Monthly NOx, SOx, and PM emissions (in metric tons)
- **Operational Data:**
  - Equipment performance metrics (e.g., efficiency, output)
  - Maintenance logs and any operational downtime

5. Reporting and Verification

- **Third-party Verification:** Engage an independent third-party verification body to validate the collected data and verify the energy savings and emissions reductions.
- **Reporting:** Compile comprehensive MMV reports at regular intervals (e.g., quarterly and annually) documenting the energy savings, emissions reductions, equipment performance, and any deviations from expected outcomes.

This MMV plan employs the IPMVP protocol to establish robust GHG and co-pollutant emissions baselines before project work begins. By leveraging high-precision meters, sensors, and centralized data monitoring systems, the plan ensures reliable data collection and tracking of actual energy savings and emissions reductions post-project completion. The use of third-party verification strengthens the credibility of the results, demonstrating the project's success in enhancing energy efficiency and environmental performance.

5. Indicate whether the proposed equipment is required to be installed by a current local, state, or federal regulation or building standard and when the installation is required. If the project location or facility is currently subject to state or federal law(s), regulation(s), or legally binding mandate(s) regarding energy consumption and/or air pollutant emissions limits, explain how all

resulting air pollutant and/or energy reduction benefits are in excess of existing reduction or efficiency requirements, or that the reductions will occur at least one year before the requirements mandate.

While the installation of the proposed heat recovery technology, solar panels, and electric boilers is not mandated by current local, state, or federal regulations specifically for dairy manufacturing facilities in Pennsylvania, the equipment aligns with broader regulatory goals of enhancing energy efficiency and reducing greenhouse gas emissions. The resulting air pollutant and energy reduction benefits will exceed existing requirements and anticipate any potential future mandates. The installation timeline for the heat recovery technology, solar panels, and electric boiler extends from May 1, 2027 – December 31, 2027, before any potential future regulatory requirements, showcasing the facility's proactive commitment to environmental sustainability and compliance.

This facility is currently subject to state and federal air emissions regulations:

- **Pennsylvania Department of Environmental Protection (DEP):** Facilities must comply with emissions permits that limit pollutants such as CO2, NOx, and SOx. The proposed installations will help the facility remain well within these permitted limits.
- **Clean Air Act**: The facility is subject to federal emissions standards under the Clean Air Act, administered by the Environmental Protection Agency (EPA). The proposed equipment will exceed these requirements by significantly reducing emissions of greenhouse gases and other pollutants.

Additionally, the proposed project will provide benefits exceeding existing requirements:

- **Air Pollution Reductions:** The new systems will reduce CO2 emissions by capturing and reusing waste heat, generating renewable energy, and replacing fossil-fuel boilers with electric boilers. These reductions are above and beyond the facility's existing permitted emission limits, contributing to improved air quality and compliance with future stricter regulations. Moving away from gas-fired boilers also reduces associated emissions from criteria air and hazardous air pollutants.
- **Energy Consumption Reductions:** The heat recovery technology is expected to recover and reuse approximately 7.5% of the annual energy consumed by the boilers, leading to reduced use of natural gas. Solar panels will generate renewable electricity, reducing the facility's reliance on grid electricity derived from non-renewable sources. While there are no currently anticipated mandates around renewable energy usage, this anticipates any future regulatory requirements around reducing reliance on fossil fuels.

6. Identify project risks or challenges, including legal, financial, engineering, procurement, supply chain, and construction risks, that may delay, interrupt, or prevent the implementation of the proposed project should it be awarded. Describe the proactive steps and risk mitigation strategies the Applicant has and/or will take to reduce and manage such risks.

There are several potential risks associated with the project, which we feel can be reasonable managed:

Financial Risks

- Budget Overruns:
  - Challenge: Unexpected costs can arise, leading to budget overruns.

- Mitigation Strategy: Establish a comprehensive budget with contingencies for unexpected expenses. Regularly review financial progress against the budget and make adjustments as necessary.

Engineering Risks

- Design Flaws:
  - Challenge: Potential design flaws could lead to operational inefficiencies and project delays.
  - Mitigation Strategy: Conduct thorough design reviews and engage experienced engineering consultants. Implement a peer review process to validate designs before final approval.

Procurement Risks

- Equipment Availability:
  - Challenge: Delays in obtaining necessary equipment could disrupt the project timeline.
  - Mitigation Strategy: Identify and secure reliable suppliers early in the project. Place orders well in advance and establish contracts that include penalties for late deliveries.
- Cost Fluctuations:
  - Challenge: Volatility in equipment and material costs could impact the budget.
  - Mitigation Strategy: Lock in prices through fixed-price contracts where possible and maintain a contingency fund to address cost variations.

Supply Chain Risks

- Supply Chain Disruptions:
  - Challenge: Global supply chain disruptions, such as those caused by geopolitical issues or pandemics, could lead to delays.
  - Mitigation Strategy: Diversify supply chains by identifying multiple potential suppliers for needed equipment. Source locally where possible. Maintain close communication with suppliers to anticipate and mitigate potential disruptions.

Construction Risks

- Labor Shortages:
  - Challenge: Skilled labor shortages could impact the project timeline and quality.
  - Mitigation Strategy: Partner with reputable construction firms known for reliability. Offer competitive wages and incentives to retain skilled workers.

7. Disclose whether there currently is or potentially could be any appearance of or actual conflicts of interest in connection to the Commonwealth, DEP, EPA, or the RISE PA and CPRG programs.

   There is not currently any risk of appearance of or actual conflicts of interest in connection to the Commonwealth, DEP, EPA, or the RISE PA and CPRG programs

Project Team

1. List key management and senior personnel for the project, including the names, positions or titles, unique qualifications and expertise that will lead to a successful project, and relevant experience,

including administrative and technical capacity and successful management of other project(s) of similar size and scope.

- **John Smith, Senior Project Manager**
  - **Unique Qualifications and Expertise:** Mechanical Engineering, Project Management (PMP Certified), energy efficiency upgrades, renewable energy installations, multi-disciplinary team coordination, regulatory compliance
  - **Relevant Experience:** Managed installation of a 1 MW solar farm at a food processing plant, led retrofit of HVAC and boiler systems in commercial buildings, achieving 30% energy reduction.
- **Patricia Johnson, Lead Engineer**
  - **Unique Qualifications and Expertise:** Electrical Engineering (PE Licensed), renewable energy systems, industrial heat recovery systems, electrical system integration.
  - **Relevant Experience:** Designed electrical integration for a 5 MW solar installation at a manufacturing facility, engineered a waste heat recovery system for a chemical plant, improving energy efficiency by 25%.
- **Michael Davis, Environmental Compliance Manager**
  - **Unique Qualifications and Expertise:** Environmental Science, Sustainability (LEED Accredited Professional), environmental compliance, permitting processes.
  - **Relevant Experience:** Managed regulatory compliance and environmental impact assessments for large-scale construction projects; led a team to achieve ISO14001 certification for an dairy processing plant.
- **Susan Martinez, Financial Controller**
  - **Unique Qualifications and Expertise:** Finance (CPA Certified), budgeting and cost control, securing funding and grants, financial reporting.
  - **Relevant Experience:** Managed multi-million dollar budgets for industrial retrofit projects, including energy efficiency and renewable energy installations; secured $5 million in grants and incentives for a green building project.
- **David Lee, Senior Procurement Manager**
  - **Unique Qualifications and Expertise:** Supply Chain Management (CSCP Certified), vendor negotiations, contract management, supply chain optimization.
  - **Relevant Experience:** Managed procurement for electric boilers and heat recovery systems in dairy facilities, successfully negotiated supplier contracts for renewable energy projects, ensuring cost savings and timely delivery.

2. Describe the unique capabilities and expertise of the applying organization and any major project partner organizations, including debt or equity sponsors, contractors/vendors (if known), and any other counterparty that the applicant believes will enable the project to be successful, as well as the prior experience of the applicant and any major project partners in similar undertakings to the proposed project.

Our Unique Capabilities and Expertise:

XYZ Dairy Corporation has over 50 years of experience in dairy processing and manufacturing and has a deep understanding of the operational requirements, regulatory landscape, and technological advancements in the dairy industry. Given this changing landscape, we are also committed to reducing our environmental footprint and have successfully begun work to integrate

sustainable practices into our current operations. We utilize robust project management practices, including detailed planning, risk assessment, stakeholder engagement, and performance monitoring, which will be useful as we embark on larger, more complex projects. Lastly, our project management team is experienced in coordinating complex projects from inception to completion, ensuring timely and successful delivery.

Major Project Partners:

1. LMNO Energy Solutions, Inc.
Unique Capabilities and Expertise:

- Renewable Energy Focus: LMNO Energy Solutions, Inc. specializes in designing and implementing renewable energy systems, including electric boiler installations. The company has a proven track record of delivering high-quality, efficient, and cost-effective energy solutions.
- Experience with Dairy Industry: The firm has specific experience working with dairy facilities, understanding the unique energy needs and regulatory requirements of the industry. This expertise ensures tailored solutions that maximize energy savings and operational efficiency.
- LMNO is also a 100% Veteran Owned Business

2. EnviroTech Engineering, Ltd.
Unique Capabilities and Expertise:

- Environmental Compliance: EnviroTech Engineering, Ltd. specializes in environmental consulting and engineering services, with extensive experience in navigating complex regulatory landscapes. The firm has successfully managed environmental compliance for numerous industrial projects, ensuring adherence to federal, state, and local regulations.
- Sustainability Expertise: The company offers expertise in sustainability assessments, environmental impact analyses, and the design of eco-friendly solutions. EnviroTech Engineering, Ltd. has a history of helping clients achieve environmental certifications, such as LEED and ISO 14001 and provides comprehensive engineering services, including the design and implementation of heat recovery technology.

3. SolarTech Contractors, LLC
Unique Capabilities and Expertise:

- Solar Panel Installation: SolarTech Contractors, LLC specializes in the installation of solar panel systems for industrial and commercial clients. The company has installed over 100 MW of solar capacity across various sectors, demonstrating expertise in project execution and management.
- Certified Installers: The company's installers are certified by the North American Board of Certified Energy Practitioners (NABCEP), ensuring high standards of quality and safety in all installations.

Prior Experience with Similar Undertakings:

- XYZ Dairy Corporation's Previous Projects:
  - Retrofitted the HVAC systems in multiple facilities, resulting in a 30% reduction in energy consumption.
  - Installed heat recovery technology at a similarly sized facility in New York, leading to a 10% reduction in natural gas demand from boilers.

- Retrofitted the existing lighting systems across all facilities with energy-efficient LED lighting to reduce electricity consumption for lighting by 45%.
- LMNO Energy Solutions, Inc.'s Previous Projects:
  - Electric Boiler Installation: Installed electric boilers in several industrial facilities, replacing fossil-fuel-based systems and achieving significant energy savings.
- EnviroTech Engineering, Ltd.'s Previous Projects:
  - Environmental Compliance for Dairy Plants: Managed environmental permitting and compliance for multiple dairy facilities, ensuring adherence to all relevant regulations.
  - ISO 14001 Certification: Assisted a manufacturing plant in achieving ISO 14001 certification by implementing effective environmental management systems.
- SolarTech Contractors, LLC's Previous Projects:
  - Dairy Facility Solar Integration: Designed and implemented a 2 MW solar panel system for a dairy processing plant, optimizing energy use and reducing carbon emissions.

3. Indicate whether the Applicant has been awarded any other state or federal grants, the amount of the grant, and whether the grant work was successfully completed. Enter "N/A" if not applicable.

   N/A

4. Upload the resumes or CVs for the key management and senior personnel listed above. Combine all resumes/CVs into a single PDF before uploading.

   N/A

Permitting

1. Provide a complete list of all federal, state, and local permits, including environmental authorizations (if applicable) or reviews necessary to commence construction of the project. State whether all the necessary permits have been secured. For permits that have not yet been secured, list by what date they will be obtained.

   Federal Permits and Authorizations

   1. EPA Air Quality Permit
      - Description: Required if project activities result in significant emissions or alterations to existing air quality permits.
      - Status: Already secured (Permit # 34-02283A)

   State Permits and Authorizations (Pennsylvania)

   1. Pennsylvania Department of Environmental Protection (DEP) Air Quality Permit
      - Description: Authorizes emissions of air pollutants and ensures compliance with state air quality standards.
      - Status: Already secured (Permit # 75-18303B)
   2. Pennsylvania DEP Waste Management Permit
      - Description: Ensures proper handling, storage, and disposal of waste generated by the facility.

- Status: Already secured (Permit # 36-70673C)

3. Pennsylvania Public Utility Commission (PUC) Interconnection Agreement
    - Description: Required for the installation of solar panels to ensure proper interconnection with the local utility grid.
    - Status: Not yet secured
    - Estimated Date for Securing Agreement: April 1, 2025

Local Permits and Authorizations

1. Local Building Permit
    - Description: Required for any construction activities, ensuring compliance with local building codes and regulations.
    - Status: Secured for current facility. Not yet secured for project construction
    - Estimated Date for Securing Permit: May 31, 2025
2. Zoning Permit
    - Description: Required to ensure the project complies with local zoning laws.
    - Status: Secured for current facility. Not yet secured for project construction
    - Estimated Date for Securing Permit: May 31, 2025
3. Electrical Permit
    - Description: Required for the installation of new electrical systems, including electric boilers and solar panels.
    - Status: Secured for current facility. Not yet secured for project construction
    - Estimated Date for Securing Permit: May 31, 2025

2. State whether the proposed project requires any notifications, compliance with land use plans, zoning codes, permits, utility authorizations, or other approvals. Specify the notifications, permits, or authorizations needed, including any governmental or utility requirements. Additionally, outline the steps taken or planned to ensure compliance, including where the project currently stands in the permitting or authorization process.

Notifications and Compliance with Land Use Plans and Zoning Codes:

1. Land Use Plans and Zoning Codes
    - Requirement: Compliance with local land use plans and zoning codes is mandatory to ensure that the proposed project fits within the designated land use and zoning regulations.
    - Planned Steps:
        - Consultation: Engage with local planning and zoning boards to review the project's compatibility with existing land use plans.
        - Documentation: Submit necessary documentation to demonstrate that the project adheres to zoning codes.
    - Current Status: Preliminary discussions with local zoning authorities will be initiated in October 2025 to ensure project alignment.

Permits and Utility Authorizations:

1. Local Building Permit
    - Requirement: Required for any new construction activities, ensuring compliance with local building codes and regulations.
    - Steps Taken/Planned:
        - Site Assessment: Complete a thorough site assessment to determine building permit requirements.

        - Application Submission: Submit building permit applications along with necessary engineering plans.
    - Current Status: In progress, with applications expected to be submitted by February 28, 2026.
2. Zoning Permit
    - Requirement: Ensures project compliance with local zoning laws.
    - Steps Taken/Planned:
        - Consultation: Engage with local zoning authorities to confirm zoning compliance.
        - Application Submission: Provide necessary documentation to obtain zoning permits.
    - Current Status: In progress, with permits expected to be secured by February 28, 2026.
3. Electrical Permit
    - Requirement: Required for the installation of new electrical systems, including electric boilers and solar panels.
    - Steps Taken/Planned:
        - Engineering Plans: Develop detailed electrical engineering plans.
        - Application Submission: Submit electrical permit applications.
    - Current Status: In progress, with applications expected to be submitted by February 28, 2026.
4. Pennsylvania DEP Air Quality Permit
    - Requirement: Required for any modifications affecting emissions from the facility.
    - Steps Taken/Planned:
        - Emissions Assessment: Conduct an emissions impact assessment.
        - Application Submission: Submit modifications to existing air quality permits if necessary.
    - Current Status: In progress, with amendments expected to be secured by February 28, 2026.
5. Pennsylvania Public Utility Commission (PUC) Interconnection Agreement
    - Requirement: Required for the installation of solar panels to ensure proper interconnection with the local utility grid.
    - Steps Taken/Planned:
        - Utility Consultation: Consult with the local utility provider to understand interconnection requirements.
        - Application Submission: Submit interconnection agreement applications.
    - Current Status: In progress, with agreements expected to be secured by February 28, 2026.
6. EPA Air Quality Permit (if modifications required)
    - Requirement: Necessary if project activities result in significant emissions or alterations to existing air quality permits.
    - Steps Taken/Planned:
        - Consultation: Engage with EPA to determine if modifications are needed.
        - Application Submission: Submit permit modifications if necessary.

- Current Status: In progress, with amendments expected to be secured by February 28, 2026.

3. If selected for funding, does the project have the necessary permits that will allow it to break ground/commence installation immediately following the execution of the grant agreement? [Yes/No]

   Yes

   a. If no, explain what else is needed prior to implementation:

      N/A

Project Benefits and Impact

1. Describe the project's expected community outputs, outcomes, and performance measures. Specify any benefits that will flow to Low-Income and Disadvantaged Communities (LIDACs) as defined by the EPA IRA Disadvantaged Communities map and identify the applicable LIDACs. This section should include any measurable community benefits expected, expected economic benefits and avoided disbenefits, extent of meaningful community engagement, and specific, high-quality actions to support LIDACs. Include an estimate of the proportion of total benefits occurring in each identified community. In addition to GHG emission reductions, examples of priority benefits include reductions in co-pollutants, creation of high-quality jobs and workforce development opportunities, increased public awareness and community capacity building, improved access to services and amenities, decreased energy costs and improved energy security, and reduced noise pollution.

   The project is expected to deliver community outputs and outcomes to the area surrounding the project site, the Spring Garden Township. These outputs and outcomes will be particularly beneficial to the Low-Income and Disadvantaged Communities (LIDACs) in the Spring Garden Township, as identified by the EPA IRA Disadvantaged Communities, and Climate and Economic Justice Screening Tool (CEJST) map. XYZ Dairy Company has discussed the location with Spring Garden Township's manager, secretary, and treasurer, to ensure that the community is on board with the project. The one-mile radius surrounding the project site has a population of 14,984, with 55% of residents being low-income and 63% being people of color. The area also has a high unemployment rate of 12% and 21% of the residents have disabilities. The primary community outputs include reductions in greenhouse gas (GHG) emissions through the transition to electric boilers and the installation of solar panels. This shift will also lead to a decrease in co-pollutants such as nitrogen oxides (NO_x) and carbon monoxide (CO), contributing to improved air quality. The project will also make XYZ Dairy Corporation more energy resilient and set a precedent for renewable energy in the community, which in turn may lead to an amelioration of high energy burden in the community.

   The project will create jobs in construction, maintenance, and operations, providing potential employment opportunities for residents of nearby LIDACs. Public awareness and community capacity building will be fostered through outreach and educational programs, increasing understanding of sustainable practices. Energy security will be enhanced by reducing dependency on the grid through on-site renewable energy generation, and noise pollution will be reduced as electric boilers are quieter than their fossil-fuel counterparts.

Specific benefits to LIDACs include potential job opportunities accessible to residents, workforce development through training programs in renewable energy and sustainable practices, and economic uplift from increased employment rates and economic activity. Health benefits may arise from reduced exposure to harmful pollutants, which could lead to better community health outcomes. Meaningful community engagement will be ensured through active involvement of LIDAC residents in project planning and implementation. As 66% of the census tracts within a one-mile radius of the site are LIDACs, it is reasonable to conclude that at least 40% of the total benefits will occur in identified LIDACs.

2. Describe how the project will enhance workforce and job quality, including commitments to ensure job quality and a diverse workforce and potential to create and/or retain high-quality, good-paying jobs. Characterize and estimate the number of Full Time Equivalent jobs the project will create, including the total number of new jobs created, number of new construction jobs created, and number of new operations jobs created. This response must also confirm how Applicants will meet the apprenticeship requirements. See *General Eligibility* section of the Program Guidance for a description of what training would fulfill this requirement.

   The project is committed to enhancing workforce and job quality by creating and retaining jobs. A diverse workforce will be ensured through initiatives that include outreach to underrepresented groups, such Disability-Owned Business Enterprises, LGBT Business Enterprises, Minority Business Enterprises, Veteran-Owned Business Enterprises, and Women-Owned Business Enterprises. The project will collaborate and partner with local Workforce Development Boards and American Job Centers to enhance the impact of our Dairy Plant Decarbonization and Renewable Energy Initiative to meet apprenticeship requirements, providing hands-on training and career pathways. Contractors will be required to demonstrate that at least 15% of the expected construction hours on this project will be performed by qualified apprentices. It is estimated that the project will create approximately 3-5 jobs by contractors, including around 2-3 new construction jobs for the installation of the solar array and approximately 1-2 new operations and maintenance jobs to manage and sustain the new solar system. The community has a significant portion of residents with less than a high school education (19%) and limited English-speaking households (9%), highlighting the importance of workforce development and training programs to ensure these residents can access the new job opportunities created by the project. As commercial and residential solar installations expand across PA, apprenticeship hours spent on these types of projects will be particularly valuable.

3. Describe any other environmental benefits that will result from the project implementation.

   In addition to the primary environmental benefits, the project will also further reduce waste through improved efficiency in production processes, leading to less waste generation. Resource efficiency will be enhanced through energy management systems that optimize resource use, minimizing the environmental footprint. The area currently faces environmental burdens such as high levels of particulate matter (8.97 $\mu g/m^3$) and nitrogen dioxide (8.2 ppbv), which are above state and national averages. The project's initiatives to reduce emissions and improve air quality will directly address these issues.

4. Describe any potential negative impacts, direct, indirect, or cumulative, related to the implementation of this project, whether they be economic, social, health, or environmental. Clearly identify all such impacts, addressing each economic, social, health, and environmental impact separately. Outline any mitigation strategies that have been developed for each impact.

   There may be some short-term negative impacts associated with the initial construction and installation phases, but these will be mitigated through dust control measures, monitoring compliance with health standards, and recycling and proper disposal of old equipment. Other potential negative impacts, such as construction-related traffic and noise, will be managed through coordinated planning with local authorities to minimize disruption. By addressing these potential impacts with targeted mitigation strategies, the project aims to enhance its positive contributions while minimizing any adverse effects on the community and environment.

5. Describe how the proposed project aligns with any of the Applicant's existing sustainability/decarbonization initiatives.

   The proposed project to install heat recovery technology, solar panels, and electric boiler at our facility in York aligns with the company's longstanding commitment to sustainability and decarbonization. For years, XYZ Dairy Corporation has actively pursued energy efficiency improvements; for example, we have installed LED lights at all manufacturing facilities and use energy management systems to optimize energy use. We have a comprehensive recycling program in our facility and office spaces.

   One of the core pillars of XYZ Dairy Corporation's sustainability efforts is energy efficiency. The company has already undertaken numerous upgrades, such as retrofitting facilities with LED lighting, which has led to substantial reductions in energy consumption. The proposed project at the York facility represents a new level of ambition go beyond efficiency, electrifying our operations and moving towards renewable power. The replacement of traditional fossil fuel-based boilers with electric ones, paired with the ability to capture and reuse waste heat, will enhance energy savings and reduce greenhouse gas emissions.

   Additionally, the proposed large-scale solar panel installation will exponentially expand this capacity, enabling the facility to generate a considerable amount of electricity from clean, renewable sources. This will not only reduce dependency on grid electricity but also diminish overall carbon emissions, propelling XYZ Dairy Corporation further along its renewable energy journey.

   Moreover, employee engagement and fostering a culture of sustainability are key elements of the company's initiative. Through regular sustainability training programs, XYZ Dairy Corporation has promoted energy conservation, waste reduction, and responsible resource use among our workforce. The proposed project will offer a practical extension to these efforts, providing employees with firsthand experience of advanced sustainable technologies and reinforcing the company's commitment to environmental stewardship.

Project Innovation/Transformative Impact

1. Describe how the project or aspects of the project are innovative and how the project could be transformative for the sector/subsector as a whole or for the specific production process being undertaken by the applicant.

   This proposed project combines heat recovery technology, large-scale solar energy generation, and electrification of low-temperature heating processes to make our processes more efficient, sustainable, and cost-effective in the long run. This integrated approach ensures that waste heat is captured and reused, reducing the overall energy demand of the facility. At the same time, the electrification of boilers shifts the energy source from fossil fuels to electricity, which is increasingly generated from renewable sources. On-site solar panels will provide an immediate reduction in Scope 2 emissions from electricity use, which are expected to decrease over time as the grid decarbonizes. This synergy between renewable energy and energy-efficient technologies enhances the sustainability impact of each individual component and demonstrates the ways in which other dairy manufacturers can follow suit in their own sustainable initiatives.

   Environmental and Operational Impact: The project will drastically reduce GHG emissions by shifting energy use from fossil fuels to renewable electricity. The innovative use of heat recovery systems maximizes energy utilization, leading to substantial cost savings and improved operational efficiency. This represents a breakthrough for the traditionally energy-intensive dairy processing industry.

   Replicability and Scalability: The combination of renewable energy and electrification for low-temperature heating processes is designed to be scalable and replicable so other dairy processors can adopt similar technologies, collectively reducing the sector's emissions footprint.

   Sector-wide and Industry-wide Transformation: The project demonstrates the economic viability of sustainable practices by showcasing significant cost savings through improved energy efficiency and reduced reliance on fossil fuels. If widely adopted, this approach could dramatically lower emissions across the sector, contributing to national and global climate goals.

   Standard Setting and Knowledge Sharing: XYZ Dairy Corporation can establish new industry standards and best practices by documenting the project's process, challenges, and successes, and sharing this information with other industry players. Workshops, webinars, and industry conferences can be used to educate and encourage other dairy processors to replicate the model. Partnerships with industry associations can further promote the widespread adoption of the paired renewable energy and electrification approach.

2. Describe the extent to which the proposed project has the potential to create transformative opportunities or impacts that can lead to significant additional GHG emission reductions. Transformative impacts could include: Pioneering, replicable, and scalable projects to increase the deployment of existing GHG emission reduction technologies or mitigation approaches; GHG emission reductions from hard-to-abate subsectors where GHG emission reduction measures are not widely adopted; or, Market transformations that accelerate the deployment and market adoption of emerging GHG emission reduction technologies or practices.

   XYZ Dairy Corporation's proposed project harnesses a pioneering and integrative approach by combining heat recovery technology, large-scale solar panels, and the electrification of fossil fuel boilers. This approach sets a precedent for energy optimization and emissions reduction within the dairy industry and can inspire other companies to replicate these technologies to reduce their own GHG emissions as well.

Replicability and Scalability

- The project's integrative strategy provides an adaptable framework for diverse facilities.
- Well-established technologies can be tailored and scaled for companies of various sizes, energy needs, and regional conditions.

Electrification of Boilers

- Significant GHG emissions reduction over time by replacing fossil-fuel boilers with electric boilers, especially when powered by solar panels.
- Electric boilers offer precise temperature control, improving operational efficiency and reducing energy waste.

Market Transformations and Accelerated Adoption

- Integration of heat recovery systems, solar panels, and electric boilers demonstrates the commercial viability of comprehensive energy efficiency projects in industrial settings.
- Engagement with policymakers can advocate for supportive regulations and incentives, enhancing market attractiveness for these technologies. XYZ Dairy Corporation can establish new benchmarks for environmental responsibility in the dairy processing industry, promoting higher sustainability standards.

3. Describe how this project has the potential for replicability and what steps the Applicant will take to stimulate industrial interest and potential adoption through its implementation.

The proposed project at XYZ Dairy Corporation's Pennsylvania facility has strong potential for replicability across the dairy processing and broader food and beverage sector due to several key factors:

1. **Proven Technologies**: The project employs well-established technologies like heat recovery technology, solar panels, and electric boilers, which have demonstrated their efficacy in similar industrial settings. This ensures that the project can be easily adapted and implemented in other facilities.
2. **Integrated Approach**: The combination of waste heat recovery, renewable energy generation, and electrification of heating processes offers a holistic solution for energy efficiency and emissions reduction.

Steps to Stimulate Industrial Interest and Potential Adoption:

XYZ Dairy Corporation is committed to stimulating industrial interest and fostering the adoption of innovative energy efficiency and emissions reduction technologies. The company plans to collaborate with PA Dairymen's Association and The American Dairy Association's sustainability sector to promote the project's model and share best practices. By partnering with universities like PSU and York College of Pennsylvania, XYZ Dairy Corporation aims to further study the project's impact and explore additional innovations for energy efficiency. To demonstrate the practical benefits of the installed technologies, the company will organize site visits and facility tours for industry stakeholders in the community including PA County Conservation Districts (York, Lancaster, Harrisburg, etc.) and the agriculture extension departments of nearby universities. This initiative will allow them to see the technologies in action and understand their potential for replication. There is also the potential to include local school or engineering programs into the mix, offering student tours to give more visibility into the facility's operations and sustainable initiatives. Through these partnerships and collaborative efforts, XYZ Dairy Corporation

seeks to establish new benchmarks for environmental responsibility and drive widespread adoption of renewable energy and electrification approaches in the dairy processing industry.

4. Describe the Technology Readiness Level of the technology to be installed. Describe the technology's performance in a relevant environment and potential risks associated with implementing a full-scale demonstration in an operational environment.

1. Heat Recovery Technology (Feedstock Economizer)

Technology Readiness Level: **TRL 7** - System/process prototype demonstration in an operational environment

- Description: The heat recovery technology has been extensively tested in operational environments like those at XYZ Dairy Corporation. These systems are at or near full scale, with most functions available for demonstration and testing.
- Performance in Relevant Environment: The heat recovery systems have demonstrated effective performance in industrial settings, capturing waste heat and improving energy efficiency. They have consistently delivered substantial energy savings and emissions reductions during operational tests.
- Potential Risks:
    - Integration Challenges: Combining new technologies in with existing systems in the facility may require more effort and diligent monitoring to ensure integration goes smoothly
    - Mitigation Strategy: Conduct thorough pre-installation assessments, engage experienced engineers, and establish monitoring protocols.

2. Solar Panels

Technology Readiness Level: **TRL 8** - Actual system/process completed and qualified through test and demonstration

- Description: Solar panel technology is fully mature and has been extensively deployed in operational environments. The full-scale system is fully integrated into operational environments with entirely operational hardware and software systems.
- Performance in Relevant Environment: Solar panels have demonstrated excellent performance in diverse climatic conditions, consistently generating renewable energy and reducing reliance on grid electricity.
- Potential Risks:
    - Weather Dependence: Performance may vary based on local weather conditions and seasonal variations.
    - Maintenance Needs: Regular cleaning and maintenance are required to ensure optimal performance and access to sunlight.
    - Mitigation Strategy: Implement weather monitoring systems, establish maintenance schedules, and use predictive analytics for performance forecasting.

3. Electric Boilers

Technology Readiness Level: **TRL 7** - System/process prototype demonstration in an operational environment

- Description: The electric boiler systems are at TRL 7, indicating that prototype systems have been demonstrated in operational environments. These systems are at or near full scale, with most functions available for demonstration and testing in an operational setting.

- Performance in Relevant Environment: Electric boilers have shown effective performance in various industrial settings, providing precise temperature control and significant emissions reductions when powered by renewable energy sources.
- Potential Risks:
    - Grid Reliability: Dependence on local electrical grids, requiring both grid stability and capacity to meet demand.
    - Integration with Renewable Energy: Ensuring that electric boilers effectively utilize electricity generated from on-site solar panels.
    - Mitigation Strategy: Conduct grid impact assessments and use energy storage solutions when necessary.

Stakeholder Engagement

1. Provide a comprehensive list of stakeholders that the project plans to engage from local governments, labor unions, environmental groups, and community-based organizations. Describe current and planned efforts to engage with listed stakeholders and the extent of the engagement that will be conducted, including as it relates to the ability to complete the project in the shortest time and with adequate workforce.

List of stakeholders and planned efforts to engage through at least one comprehensive webinar or virtual meeting with anticipated participation from organization listed:

- Local Governments:
    - York City Council: To ensure compliance with local regulations and to seek potential incentives for renewable energy projects.
    - PA Department of Environmental Protection: For guidance on environmental standards and to collaborate on sustainability initiatives.
    - Planned efforts to engage: Conducting regular meetings with York City Council members and PA DEP representatives to align the project with local and state objectives, and to facilitate any required permitting processes.
- Labor Unions:
    - International Brotherhood of Electrical Workers (IBEW) Local 229: For skilled labor in electrification efforts and to discuss fair labor practices.
    - United Food and Commercial Workers (UFCW): Representing workers in the dairy plant, ensuring their interests are considered in project planning.
    - United Association of Plumbers and Pipefitters (UA) Local Union: Recognizing the need for skilled pipefitters for the boiler electrification process and other related tasks, we have reached out to the UA Local Union.
    - Planned efforts to engage: Initiating conversation with IBEW Local 229, UA, and UFCW to help ensure the availability of a skilled and fair-wage workforce for construction and operational phases. Plans include labor peace agreements to prevent disputes as described in the collective bargaining bonus section.
- Educational Institutions:
    - Local Schools and Universities: York College of Pennsylvania and the York County School of Technology .
    - Planned efforts to engage: Engage with institutions such as the York College of Pennsylvania and the York County School of Technology for research partnerships on

sustainable practices and internship programs for students, providing a workforce pipeline and fostering innovation.

- Industry Associations:
  - Dairy Processors Association
  - Planned efforts to engage: Collaborate on best practices for sustainability within the dairy industry and leverage association networks for technical expertise and advocacy.

2. Provide a qualitative discussion of how input by LIDACs has been incorporated into this application and how meaningful engagement with LIDACs will be continuously included in the implementation of the project throughout its lifetime.

We will hold virtual and in-person meetings with the residents of York to highlight our project goals/objectives and environmental impact. We aim to highlight the downstream impacts that reducing emissions may have on our communities, including the Low-Income and Disadvantaged Communities (LIDACS). Beyond the direct benefits that people would receive from this project, there are residual benefits that could promote other manufacturers and similar projects that can enhance environmental and workforce benefits to LIDACS.

We have actively integrated input from Low-Income and Disadvantaged Communities (LIDACs) around York, PA, including the Olive, Parkway, and Salem Square neighborhoods. Our commitment to their continuous engagement is detailed below:

LIDAC Input Incorporation:

One webinar that will include community outreach that will provide the residents of Olive, Parkway, and Salem Square the opportunity to gathering insights on environmental benefits and employment opportunities while providing them with a forum to voice any questions/concerns.

Continuous Engagement Plans:

Community Advisory Board with LIDAC Representatives: Including voices from Olive, Parkway, and Salem Square to provide ongoing guidance and feedback.

Communication Channels:

Bilingual Project Website and Community Hotline: Ensuring accessible, ongoing dialogue with LIDACs, managed in partnership with organizations such as the York Community Progress Council.

Workforce Development:

New contracts will be issued to the named contractors previously listed in our application (LMNO Energy Solutions, Inc., EnviroTech Engineering, Ltd., and SolarTech Contractor, LLC). for the operations and maintenance of the boilers and solar panels, with a stipulation that the workers reside in a LIDAC community. This will provide XYZ a workforce that is in close proximity to our project and able to maintain the equipment in the event the equipment goes down. Additionally, as further detailed within our Good Neighbor Agreement, we will support the development of on-the-job training and apprentices through partnerships with local vocational schools and colleges, prioritizing low-income and disadvantaged communities (LIDAC), specifically with the York County School of Technology and York College.

Our team, along with our partnership organizations through these efforts, will increase LIDAC workforce involvement and help promote interest with the various trades needed to implement and maintain clean energy equipment. This will allow us to achieve of goal of promoting and building the LIDAC workforce of the future, and supporting the development of a talent pipeline through internships and job shadowing postings that will allow for direct hire and apprenticeship opportunities.

Environmental and Health Assessments:

Prioritizing the Olive, Parkway, and Salem Square neighborhoods to address specific environmental health concerns, with findings shared in forums held at local venues such as the York City Ice Arena for broader accessibility.

Community Benefit Initiatives:

Considering a community benefit fund or direct investments in local sustainability projects in Olive, Parkway, and Salem Square areas, enhancing living conditions and community resilience.

Project-specific Questions

Instructions: Complete all relevant sections based on the applicable project type(s) (Energy efficiency, Electrification, Fuel-switching to low-carbon fuels, On-site renewable energy, Carbon capture, utilization, and storage, Industrial process emissions reductions, Fugitive emissions reductions). Leave blank any section that does not apply to the project.

Energy Efficiency

1. Provide a brief summary of the proposed energy efficiency project. If fully described in the narrative section, simply provide 1-2 sentences to refresh the reviewer's memory.

   XYZ Dairy Corporation proposes the installation of heat recovery technology, large-scale solar panels, and electric boilers at its Pennsylvania facility. This integrated energy efficiency project aims to enhance operational sustainability by capturing waste heat, generating renewable energy, and replacing fossil fuel-based heating with efficient electric boilers, thereby significantly reducing energy consumption and greenhouse gas emissions.

2. GHG Calculation Summary (Electricity)

Fuel/Source	Electricity
Before Project Implementation (kWh/year)	— —
After Project Implementation (kWh/year)	_____
Difference (+/-) (kWh/year)	_____
Conversion Factor (CO_2e/kWh)	_____
Difference (+/-) (CO_2e/year)	_____
Improvement (%)	_____

3. GHG Calculation Summary (Fuels)

Fuel/Source	Natural Gas	Other Fuel: _____	Other Fuel: _____
Before Project Implementation (MMBtu/year)	20,573	0	0
After Project Implementation (MMBtu/year)	11,028	0	0
Difference (+/-) (MMBtu/year)	-9,545	0	0
Conversion Factor (MT CO_2e/MMBtu	__0.053___	0	0
Difference (+/-) (MT CO_2e/year)	__-507___	0	0

Improvement (%)	__46%___	0	0

Electrification

1. Provide a brief summary of the proposed electrification project. Include any related process energy efficiency improvements that will be undertaken in conjunction with the strategic electrification.

   XYZ Dairy Corporation proposes a strategic electrification project aimed at enhancing energy efficiency and reducing greenhouse gas emissions at its Pennsylvania facility. The project will replace one aging gas-fired steam boiler with a high-efficiency electric boiler. To offset the increase in electricity demand, we will additionally install an on-site solar array at the facility.

2. Will the proposed project(s) require electrical system upgrades at the facility? Yes

3. Is funding for the installation of a renewable energy system sought to aid in strategic electrification project adoption? Yes

4. State whether RISE PA funding is also being sought for renewable energy: Yes

   a. If "yes", describe the role of the renewable energy system in facilitating the electrification project, and indicate whether the renewable energy system is integral to meeting energy demands or achieving emissions reduction goals:

   The strategic electrification project at XYZ Dairy Corporation requires the installation of large-scale solar panels to ensure the project's success and emissions reductions. Pennsylvania currently has a carbon-intensive grid, and electrifying boilers without on-site renewable energy would increase the facility's overall emissions. The large-scale solar panels will generate clean, renewable electricity on-site to power the new high-efficiency electric boilers, replacing aging fossil fuel boilers. This avoids dependency on grid electricity that is partially sourced from non-renewable energy. The solar panels are crucial for meeting increased energy demands and achieving substantial reductions in greenhouse gas emissions, ensuring energy security and a lower carbon footprint. Their integration is essential for making the transition to electric boilers both sustainable and impactful specifically for the following reasons:

   1. **Meeting Energy Demands:** The renewable energy system is integral to meeting the increased energy demands resulting from the switch to electric boilers. It ensures that the facility has sufficient power to operate efficiently without relying solely on the grid.
   2. **Achieving Emissions Reduction Goals:** The solar panels are essential for achieving the project's emissions reduction goals. Without the renewable energy component, the project would reduce emissions from burning fossil fuels but might still depend on grid electricity, some of which is sourced from non-renewable energy.

5. If the strategic electrification project will result in an increase in electricity demand, will a utility service upgrade be needed?

   No – there is adequate capacity in the grid to allow for times when the solar panels are not operating at full capacity.

6. Will this electrification project allow for load shifting or demand response? No

   a. If "yes", describe how load shifting will be implemented and indicate the estimated amount of load that can be shifted. N/A

7. Will the project enable the facility to become fully electric? No

8. GHG Calculation Summary

Fuel Use Before Project Implementation (MMBtu/year)	20,573
Fuel Use After Project Implementation (MMBtu/year)	11,028
Difference in Fuel Consumption (+/-) (MMBtu/year)	-9,545
Conversion Factor (MT CO_{2e}/MMBtu)	0.053
Difference in GHG Due to Change in Fuel Use (+/-) (MT CO_{2e}/year)	-507
Electricity Use Before Project Implementation (MWh/year)	2,650
Electricity Use After Project Implementation (MWh/year)	4,862
Difference in Electricity Consumption (+/-) (MWh/year)	+2,212
Conversion Factor (MT CO_{2e}/MWh)	0.30
Difference in GHG Due to Change in Electricity Use (+/-) (MT CO_{2e}/year)	+662
Net Difference in GHG (+/-) (MT CO_{2e}/year)	+155

Improvement (%)	-16%

On-site Renewable Energy

1. Describe the type of renewable energy system that will be deployed:

   The installation of a Solar Photovoltaic (PV) System at the facility will be the renewable energy system that will be deployed. These high-efficiency panels have a total capacity of approximately 2500 kW and will convert sunlight into electricity to power operations at the dairy manufacturing facility; including the new electric boilers that will be installed with them. The solar PV system will produce clean, renewable electricity on-site, reducing the need for grid electricity and lowering the facility's carbon footprint.

   - **Mounting Structure:** Panels will be installed primarily on rooftops; additional ground-mounted panels may be used if needed.
   - **Inverters:** Devices that convert the solar-generated direct current (DC) into alternating current (AC) for use by the facility.
   - **Monitoring System:** A system to track the performance and efficiency of the solar panels in real-time.

2. State the capacity of the renewable energy system. (For PV systems, give both the DC and AC capacity): _2.1___ MW-AC ___2.5__ MW-DC

3. Is it anticipated that the renewable energy system will send any energy to the grid (i.e. exceed consumption on an instantaneous basis? [Yes/no]

   No

   a. If "yes", state how much renewable energy will be exported to the grid: _____ MWh

      N/A

   b. If "yes", describe the arrangement under which the applicant is compensated for such exported electricity.

   N/A

4. State the percentage of the Industrial Facility's annual electricity consumption that will be met by the renewable energy source post-project installation on a net basis: ___67___ %

5. Will battery energy storage be included? [Yes/No]

   No

a. If “yes”, describe how the battery energy storage will contribute to GHG emissions reductions.

N/A

b. If “yes”, indicate the battery energy storage system’s capacity: _____ MWh

N/A

c. If “yes”, provide a justification for the amount of storage required.

N/A

6. GHG Calculation Summary

Anticipated System Energy Production (MWh/year)	3,269
System Energy Used On-Site + System Energy Exported to Grid (MWh/year)	3,269
Conversion Factor (MT CO_2e/MWh)	0.030
Difference in GHG (+/-) (MT CO_2e/year)	-979

Technical Appendix

Instructions: Applicants must complete the following technical appendix section and detail how their estimates of GHG emissions reductions were calculated. Applicants are encouraged to include sufficient detail so that DEP can understand the basis for the greenhouse gas (GHG) emission reductions estimated. Applicants should use the latest available information whenever possible and provide detailed and specific references for any models and/or tools used.

Baseline GHG Emissions Estimates

1. Report annual GHG emissions for each of the last three calendar years including related co-pollutants from the Industrial Facility. State the average of the total Scope 1 and 2 emissions data over the last three calendar years. This should include all Scope 1 and Scope 2 emissions facility wide. Reported emissions must accurately represent how the facility is currently operated. If there have been significant fluctuations in your emissions data over the last three calendar years, please provide a brief explanation as to the cause of the changes. Describe the boundaries of the Industrial Facility, defining a logical boundary for the entire facility. If an Applicant has more than one building within the footprint of their property, the boundaries of the Industrial Facility can include a single, multiple, or all the buildings within the footprint of the property. If an Applicant is the owner or operator of an active underground or surface coal mine, abandoned underground mine, or coal processing operation, the Industrial Facility can include a single, multiple, or all the boreholes or ventilation shafts within the footprint of the Applicant's property.

   The boundary of the York facility is the property line. Emissions sources includes the energy use at the physical processing plant as well as some outdoor lighting for parking. Scope 1 emissions include those associated with natural gas use in boilers for our industrial process and heating. Scope 2 emissions come from electricity use. Our emissions for the past 3 years are as follows:

	2022	2023	2024
Scope 1 (MTCO2e)	1,050	1,123	1,093
Scope 2 (MTCO2e)	795	789	794
Total (MTCO2e)	**1,845**	**1,912**	**1,886**

   Our average annual emissions over the past three calendar years is **1,881 MTCO2e**.

   We calculated the average using the following formula:
   (1,845 + 1,912 + 1,886) / 3 years = 1,881

   Our copollutant emissions for the past three years are as follows:

Criteria Air Pollutants	2022	2023	2024
PM	0.074	0.076	0.075
PM10	0.074	0.076	0.075
PM2.5	0.074	0.076	0.075

SOx	0.005	0.007	0.006
NOx	0.989	0.991	0.990
VOC	0.052	0.055	0.054
CO	0.831	0.833	0.832
Hazardous Air Pollutants			
Formaldehyde	0.001	0.001	0.001
Hexane	0.017	0.019	0.018

2. Explain to what extent the three-year baseline period used to calculate the annual GHG emissions for Number 1 accurately represents current and projected near-future operational conditions at the project location. Discuss any significant changes in operations, production levels, or energy use since the three-year baseline period that may affect the accuracy of the baseline data in assessing the impact of the proposed project.

   In the past three years, there have been no significant operational changes to our facility. All relevant energy efficiency projects were implemented prior to the three-year baseline. It is therefore expected that the baseline is a good indicator of future year emissions, with no expected growth in production or other major operational changes anticipated in the coming years.

3. Provide a detailed explanation of how the three-year baseline emissions were derived. Emissions should be calculated from a Bureau of Air Quality (BAQ) certified continuous emissions monitoring system (CEMS) and/or collected from an approved source test. If unable to perform a source test, Applicants should provide an explanation why the source test is unable to be performed and develop a baseline emission estimate. Baseline emission estimates must be supported by sufficient calculations and explanation for RISE PA to determine the accuracy and uncertainty of the estimate. Reported emissions must accurately represent how the facility is currently operated.

   Scope 1 emissions are calculated based on metered natural gas usage at our facility. Annual natural gas usage, measured in MMBtu, is multiplied by an appropriate emissions factor for natural gas, published by the EPA Emissions Factor Hub. A CO2e factor for natural gas is derived by multiplying the CO2, CH4, and N2O factors by their respective global warming potentials, sourced from the IPCC 5th Assessment AR Report.

   Scope 1 Calculations

   Where: (Activity Data) x (Emission Factor) = (Emissions)

   The emission factor for natural gas use is first converted to CO2e by adding the respective CO2, CH4, and N2O factors and applying GWPs, and then converted into MTCO2e/MMBtu by applying unit conversion.

   Emission Factor Conversion to CO2e:

CO2 x GWP + CH4 x GWP x Unit Conversion + N2O x GWP x Unit Conversion = CO2e.

(53.06 kgCO2/mmbtu x 1) + (1.0 g CH4/mmbtu x 28 x 0.001) + (0.10 g N2O/mmbtu x 265 x 0.001) = 53.11 kg CO2e/mmbtu

Emission Factor Conversion to MTCO2e/mmbtu:
53.11 kgCO2e/mmbtu x 0.001 kg/MT = **0.053 MTCO2e**/mmbtu

Year	Natural Gas Use (MMBtu)	Emission Factor (MTCO2e/MMBtu)	Emissions (MTCO2e)
2022	19,769	0.053	1,050
2023	21,143	0.053	1,123
2024	20,573	0.053	1,093

Scope 2 emissions are calculated annually based on metered electricity use. Emissions are multiplied by the eGrid 2022 subregional CO2e output rate. Our facility is located in the RFCE subregion, as determined by eGrid.

Scope 2 Calculations

Where: (Activity Data) x (Emission Factor) = (Emissions)

The emission factor for electricity is converted from lbsCO2e/MWh to MTCO2e/MWh by applying unit conversion.

Emission Factor Conversion to MTCO2e/MWh:

660.31 lbsCO2e/MWh x 0.000453592 lbs/MT = 0.30 MTCO2e/MWh

Year	Electricity Use (MWh)	Emission Factor	Emissions (MTCO2e)
2022	2,654	0.30	795
2023	2,634	0.30	789
2024	2,650	0.30	794

Copollutant emissions are determined based on an online tool developed for boilers, published by the Minnesota Pollution Control Agency (https://www.pca.state.mn.us/business-with-us/air-emissions-calculators). Copollutants are estimated in the tool based on EPA emissions factors and actual natural gas fuel consumption.

GHG Emissions Reduction Estimates

1. Provide the estimated annual GHG emission reduction (in metric tons of CO_2 equivalent [$MTCO_2e$]) and the estimated annual GHG emission reduction percentage. Use an average of the three years of baseline emissions data provided as the baseline for calculating these reductions. If applicable, provide the reduction per unit of production, which measures how many MT CO_2e will be reduced per output unit (e.g. tons of steel produced) compared to the current process.
   a. 824 MT CO_2e
   b. -44 %
   c. 11.77 MT CO_2e / output unit

2. Provide the cumulative GHG emissions reductions for the periods 2025-2030 and 2025-2050.
   a. __4,942____MT CO_2e 2025-2030
   b. __21,415____ MT CO_2e 2025-2050

3. List or describe the specific methodology or tools used to develop the GHG emission reduction estimate; the name of the developer/provider of the model/tool (e.g., EPA); and, any other detailed references (e.g., specific versions of the model or tool), as appropriate.

   Emissions reductions modeling was performed manually. See a description of the process for reach reduction measure below:

   Boiler electrification calculation:

   The current facility uses two boilers with equal natural gas demand. To account for the electrification of one boiler, the associated natural gas emissions from this boiler were subtracted from the business-as-usual scenario.

   Annual power demand from the second boiler was converted from MMBtu to MWh to approximate the necessary size of the electric boiler. This MWh demand was then multiplied by the relevant Scope 2 factor to get the added Scope 2 emissions associated with the additional electricity demand. This led to a net **increase** in emissions, due to the relative carbon intensity of Pennsylvania's grid. This increase in emissions is then offset by adding in on-site solar panels.

   On-site solar panels:

   A 2500kW array was sized based on available rooftop and open land space for solar installation. The PVWatts tool was utilized to estimate the annual output of a solar array sized at 2500kW and located at our address in York, PA. This gave an average annual energy output of 3,269,103 kWh. This value was multiplied by the relevant Scope 2 factor to get the avoided emissions associated with energy production from the on-site solar panels, offsetting the increase in electricity demand from the boilers.

   Heat recovery technology:

   Based on an assumption from a source document from the Department of Energy, it was assumed that on average, adding a feedstock economizer to a natural gas-fired steam boiler leads to a 7.5% reduction in fuel demand. The projected natural gas demand of the retrofitted boiler was reduced proportionally and then multiplied by the subregional eGrid factor for York, PA to approximate the Scope 2 emissions reductions from this technology.

   The above calculations were summed as follows to get the emissions reductions in the project start year:
   (Scope 1 Emissions: Heating) + (Scope 1 Emissions: Boiler 1 with Heat Recovery) – (Scope 1: Boiler 2) + (Scope 2: General Electricity Demand) + (Scope 2: Electric Boiler Demand) – (Scope 2: On-site Solar Generation) = Net Emissions Reduction.

4. Provide key assumptions used as part of the method for estimating GHG emission reductions (e.g., emission rates; emission factors; input assumptions if modeling is used, such as cost and performance data, energy prices).

   Emissions factors sourced from the 2024 EPA GHG Emissions Factors Hub and the 2024 eGrid subregional factors.

   Co-pollutant calculations are performed using the boiler air emissions worksheet from the Minnesota Department of Pollution Control.

   Solar panel output is assumed based on the PVWatts calculator, sized for a 2500kW system located at our address in York, PA, with all other input options set to default.

5. Describe the reference scenario that is used to quantify GHG emission reductions for each measure, as applicable. The type of reference scenario may differ depending upon the type of project.

   In a business-as-usual scenario, the facility would continue to rely on natural gas-fired boilers for heating processes, with no efficiency improvements. The reference scenario assumed consistent energy demand of the facility out to 2050 and a consistent emission factor based on available 2024 emission factor sources. The reference case assumes the facility to continues to emit 1,886 MTCO2e annually, with a cumulative emissions amount of 49,047 MTCO2e from 2025-2050.

6. Describe the relevant activity data that is used for estimating GHG emission reductions for each measure. This may include data such as energy savings (e.g., MMBtu by fuel or MWh saved), electrical output (e.g., MWh), units of equipment installed, or other metrics used to calculate effects of a GHG reduction measure.

   Natural gas usage (MMBtu) and electricity usage (MWh) saved annually.

7. Upload any additional important information, including quantitative tables, graphs, charts, and/or other data. Combine any additional information into a single PDF before uploading.

   N/A

Detailed Budget Information

Instructions: All Applicants must download and complete the RISE PA Detailed Budget Table. Upload once completed. Please respond to all the questions in the Budget Narrative section.

Budget Narrative

1. Demonstrate the reasonableness of the budget by providing a detailed breakout of requested funding for each work component or task. Provide a detailed description of every itemized budget item/cost, including how every budget item/cost relates to the specific emissions reduction activities. Applicants may either enter this information in narrative form in the textbox below or upload an Excel spreadsheet. If uploading only an Excel spreadsheet, please put "N/A" in the text box.

Work Component/Task	Total Cost	Requested Funding Amount from PA DEP	Match from XYZ Dairy Co	Detailed Description
Solar panels	$3,667,500	$2,200,500	$1,467,000	5,000 500kW solar panels to create a 2.5MW solar array.
Solar panel installation	$407,500	$244,500	$163,000	Cost related to labor for solar array installation.
Feedstock economizer	$2,000	$1,200	$800	Equipment for heat recovery to be installed on gas-fired boiler.
Feedstock Economizer installation	$1,000	$600	$400	Cost of labor for feedstock economizer installation.
Electric boiler	$290,600	$174,360	$116,240	Equipment cost for purchase of electric steam boiler.
Electric boiler installation	$72,650	$43,590	$29,060	Cost of labor for decommissioning of existing natural gas boiler and installation of new electric boiler.
Total	$4,441,250	$2,664,750	$1,776,500	

2. State the project's projected return on investment: 6%

3. List the weighted average cost of capital: 9.10%

4. State the projected project payback period: 25 years

5. List the percentage of debt in the project capital stack: 30%

6. State the cost effectiveness of GHG emissions reduction: $ 5,392 / MT CO_2e
   Note: To calculate the cost effectiveness, divide the total project cost by the total GHG emissions reduced.

7. Provide a cash flow analysis of the project over its estimated period of performance, including equipment and process life expectancies, payback estimates, and net present value. Applicants may either enter this information in narrative form in the textbox below or upload an Excel spreadsheet. If uploading only an Excel spreadsheet, please put "N/A" in the text box.

   The period of performance for this project is 25 years, aligned to the lifetime of the boiler replacement and solar panels.

   Capital expenditures for the project total to $4,441,250.

   Operation cashflows include the following:
   - Annual energy cost savings: $172,672
   - Annual O&M cost: (45,275)
   - One-time ITC Bonus: $1,630,000
   - Total Revenues Over 25 Year Project Period: $4,687,536

   IRR is 44.77%.
   NPV of the project is $1,460,753.

8. Describe the amount of equity that will be invested in the project, including the sources of such equity and their strengths. Indicate the percentage of anticipated equity from outside sources. Describe any additional partnerships that will be leveraged to assist in financing the proposed project.

   The amount of equity invested in the project will be $444,125. This equity will come from cash set aside by XYZ Dairy Company for capital projects and is readily available for deployment.

9. Describe any local, state, or other federal incentives or funds that are being pursued or have been awarded for the proposed project, such as grants, loan guarantees, or tax credits and indicate which incentives have already been secured.

   The federal solar ITC of 40% will be pursued for this project. The total value of this credit is $1,630,000, which will be applied as a credit to XYZ Dairy Company's taxes in the year following project deployment.

10. State whether the applicant intends to seek reimbursement for measuring, monitoring, and verification (MMV) costs and the anticipated amount of the reimbursement request. Applicants can apply for reimbursement of up to 1% of total project costs or $70,000, whichever is less, to offset MMV costs. If an Applicant already has source monitoring in place that complies, then they cannot apply for this additional funding.

    No additional funding is sought for MVV reimbursement.

11. If the applicant is applying for Bonus Award(s), is the project still financially viable if the applicant is only awarded the Base Grant Amount?

    XYZ Dairy Company is pursuing three Bonus Awards for this project. The project is still financially viable as long as two of the three bonuses are secured.

12. Provide a detailed written description of the applicant's approach, procedures, and controls for ensuring that awarded grant funds will be expended in a timely and efficient manner within the grant period. Include an expenditure plan for when the Applicant will draw down on grant funds and request reimbursement for eligible expenditures. Indicate what portions of the grant awarded funds will be spent by quarters during the requested period of performance.

Detailed Expenditure Plan:

Q1 2025: Project Initiation and Planning (October 1, 2025- November 30, 2025)

- Activities: Establish project team, develop detailed project scope and objectives, conduct initial feasibility study.
- Milestones: Signed contracts and agreements, finalized project scope.
- Grant Expenditure: $266,475 (10% of total grant)
- Control Measures: Regular status meetings, initial milestone reviews, detailed project planning and documentation.

Q2 2025: Design Phase (December 1, 2025- February 28, 2026)

- Activities: Engage engineering design firm, confirm design and layout plans, review and approve designs, identify permit processes.
- Milestones: Approved design plans, permit application submissions.
- Grant Expenditure: $399,713 (15% of total grant)
- Control Measures: Design reviews, stakeholder approvals, permit tracking and verification.

Q3 2025: Pre-implementation Measuring, Monitoring, and Verification (\March 1, 2026, July 31, 2026)

- Activities: Establish baseline data, deploy monitoring equipment.
- Milestones: Baseline data report, operational monitoring systems.
- Grant Expenditure: $399,713 (15% of total grant)
- Control Measures: Data verification, monitoring equipment calibration, baseline report review.

Q4 2025 – Q1 2026: Equipment Procurement (August 1, 2026- December 31, 2026)

- Activities: Identify and select suppliers, place orders, coordinate delivery schedules.
- Milestones: Signed contracts for equipment, confirmed delivery schedules.
- Grant Expenditure: $532,950 (20% of total grant)
- Control Measures: Supplier audits, delivery tracking, procurement reviews.

Q2 2026 – Q4 2026: Construction and Site Preparation (January 1, 2027 – April 30, 2027) and Installation (May 1, 2027 – December 31, 2027)

- Activities: Site preparation, infrastructure installation, equipment delivery and inspection, installation of heat exchangers, solar panels, and electric boiler, system testing and calibration.
- Milestones: Site ready for installation, equipment installed and tested.
- Grant Expenditure: $665,188 (25% of total grant)
- Control Measures: On-site inspections, milestone verification, test result reviews.

Q1 2027: Commissioning (January 1, 2028 – January 31, 2028)

- Activities: Final system checks, adjustments, staff training.
- Milestones: Verified system performance, staff trained.
- Grant Expenditure: $399,713 (15% of total grant)
- Control Measures: Performance verification, training assessments, final system audits.

Procedures for Grant Fund Drawdown and Reimbursement

At the beginning of each quarter, a drawdown request will be submitted specifying the expenditures incurred in the previous quarter. This includes itemized invoices, proof of expenditures, and progress reports. Detailed reports will be provided quarterly outlining project progress, funds expended, and any variances from the plan. All grant funds will be tracked separately within our accounting system to ensure

accurate reporting and compliance with grant requirements. Internal audits will be conducted quarterly to ensure that expenditures meet grant eligibility criteria and to verify the correctness and appropriateness of claims.

Controls for Ensuring Efficient Grant Fund Utilization

We have a dedicated team consisting of project managers, financial controllers, and procurement specialists who will oversee all aspects of the project. We will hold monthly progress and financial review meetings to track milestones, identify risks, and implement necessary corrective actions. Payments to suppliers and contractors will be tied to the achievement of predefined project milestones to ensure that funds are spent only when specific deliverables are met.

Financial Commitment Letters

Instructions: The applicant must submit letters documenting the financial commitment for any cost share claimed; these letters of commitment must include clear documentation of the amount of financial commitment from each source (both the Applicant and from any entity other than the Applicant). The letters must state:

a) Applicant acknowledges that the DEP does not consider the items listed in the ineligible cost section of this document as cost share funds nor as eligible costs for the use of this funding;
b) Applicant has funds available and in-hand to support the cost share identified in this application's budget either through an already approved loan or cash on hand; or
c) Applicant has a third-party agreement to support the cost share identified in this application's' budget. A letter from that organization identifying the amount available must be provided.
d) Combine all financial commitment letters into a single PDF before uploading.

Bonus Awards

Instructions: For Applicants pursuing the Community Benefits Bonus, Fair Labor Bonus, and/or Greenhouse Gas Emissions Reduction Bonus, complete the following applicable sections. Applicants not pursuing any bonus awards may leave this section blank.

Community Benefits Bonus Community Benefits Plan:

Instructions: Upload the Community Benefits Plan as a single PDF. Uploaded

Fair Labor Bonus

Instructions: Applicants applying to the Medium-scale Award Track must complete **two** of the three application elements (Good Neighbor Agreement, Collective Bargaining Commitment, or Commonwealth Workforce Transformation Program [CWTP]) detailed below. Applicants applying to the Large-scale Award Track must complete **all three** application elements detailed below (Good Neighbor Agreement, Collective Bargaining Commitment, and CWTP).

Good Neighbor Agreement Application

1. Access to jobs and business opportunities for local residents:
   a. Describe the Applicant's plan for ensuring access to jobs and business opportunities for local residents and the timeline for implementing the plan.

      Our commitment to sustainability extends beyond environmental stewardship to include fostering economic growth and opportunity within our local community in York, PA. As we embark on our Dairy Plant Decarbonization and Renewable Energy Initiative, we recognize the potential for this project to create meaningful employment and business opportunities for local residents, an addition to informing future decarbonization efforts locally. Our plan is therefore centered around workforce development, supplier diversity, and community engagement.

      Workforce Development:

      Understanding the specialized nature of our core decarbonization levers—boiler electrification and the installation of on-site solar panels—we are committed to developing a skilled local workforce capable of supporting these technologies. As part of our contracts with the contractors responsible for installation and maintenance of the boiler and solar array, we will require that additional jobs created to service the projects are filled locally. Our approach centers around developing on the job training and apprentices through partnerships with local vocational schools and colleges, prioritizing low-income and disadvantaged communities (LIDAC), specifically with the York County School of Technology and York College. In working with each entity's course

curriculum teams, students at each institution will have the chance to participate in internship programs and receive course credit by supporting the staff that will be assigned to the ongoing operations and maintenance of the electric boilers and solar panels installed. Additionally, with each institution we are also finalizing a select list of classes where the curriculum will include visits to our location each semester where they will get the chance to learn directly from the contractors we hired for our own installation project. In these cases, curriculum will focus on the installation process for electric boilers and solar panels, in addition ongoing maintenance and operational processes that are utilized.

Supplier Diversity:

To stimulate local economic growth and drive supplier diversity, we are dedicated to engaging local businesses and suppliers, especially those owned by minorities, women, veterans, and socially and economically disadvantaged individuals. To achieve this, we will organize an annual Local Supplier Engagement Program beginning in January 2027 (assuming 2025 grant award). This forum, with partner sponsoring organizations, will support local suppliers to learn about business opportunities related to both our own and similar decarbonization projects so that suppliers are informed about future business opportunities in the local decarbonization space. We will begin to market the forum in February 2027 (assuming 2025 grant award) to attract participants through online media channels and community engagement events (discussed in the following section) and will develop an online form for vendor sponsorship packages and participants.

Community Engagement:

We understand that maintaining open lines of communication with our community is critical for both short-term and long-term success of our project and to benefit the community effectively. We will therefore leverage the Community Advisory Board we discussed establishing previously in the *Stakeholder Engagement* section, consisting of LIDAC representatives and voices from voices from Olive, Parkway, and Salem Square**,** to additionally focus on forward-looking labor related engagement with the community. They will support, from an advisory role, the development of the workforce development and supplier diversity initiatives discussed in this application, in addition to providing ongoing feedback on our project's implementation and its impact on the community. Additionally, they will serve as a sounding board in the development of any future job fairs and information sessions which XYZ supports the development of regarding decarbonization technology.

b. What community and/or labor organizations will the Applicant engage and partner with to carry out the plan?

As discussed prior in our application, we will partner with Community Advisory Board with LIDAC Representative. Additionally, we have identified the following key organizations for partnership:

Community Organizations:

- XYZ County Community Foundation: We plan to collaborate with this foundation to leverage their extensive network and resources for community outreach programs. Their experience in local issues will guide our efforts in ensuring that the project benefits are equitably distributed, particularly in underserved areas.

- Sustainable XYZ County: As an organization dedicated to promoting sustainability in the region, Sustainable XYZ County will be a vital partner in raising awareness about the benefits of renewable energy and energy efficiency, helping to foster a culture of sustainability within the community.
- Pennsylvania Environmental Council (PEC): With a statewide presence, PEC will serve as a strategic partner in advocacy and education efforts, helping to amplify the project's environmental impact and engage citizens across Pennsylvania in discussions on clean energy transition and GHG reduction.
- Partnership with Local Vocational Schools and Community Colleges: We will collaborate with the York County School of Technology and Pennsylvania State University York Campus to develop training programs in renewable energy technologies and electrical engineering.
- Local Supplier Engagement Program: Our engagement strategy includes leveraging the **PA Business One-Stop Shop** as a resource for identifying potential local suppliers and businesses.

Labor Organizations:

We and our selected contractors will partner and communicate with the following organizations regarding these efforts:

- Central Pennsylvania Building & Construction Trades Council: This partnership will ensure that we have access to a skilled labor pool for the construction-related aspects of our project, from solar panel installation to infrastructure upgrades, promoting fair labor practices and high safety standards.
- Pennsylvania Association for Sustainable Agriculture (PASA): While not a labor organization per se, PASA will be a critical ally in engaging the agricultural community around the plant, including promoting practices that complement our decarbonization goals, such as energy efficiency and sustainability in dairy farming.

c. What is the timeline for engaging with the identified community and/or labor organizations to implement the plan, and has any engagement occurred to date?

At least one virtual or in person meeting has been held with each community and/or labor organization listed. Forwarding looking, we plan to follow the following timeline:

Implementation Plan:

Initial Engagement and MOUs: By December 31, 2026 (assuming 2025 grant award), we aim to secure Memorandums of Understanding (MOUs) with each of these organizations, outlining the scope of collaboration, mutual goals, and commitments.

Joint Workshops and Training Sessions: Starting in December 2026 (assuming 2025 grant award), we will co-host one workshop and training sessions with our labor partners for skill development and with our community partners for sustainability education.

Regular Coordination Meetings: To ensure alignment and adapt to evolving project needs and community feedback, we will hold biannual coordination meetings with all partner organizations throughout the project lifecycle.

December -February 2027 (assuming 2025 grant award),**: Outreach and MOU Finalization**

- Begin formal outreach to community and labor organizations.
- Finalize and sign Memorandums of Understanding (MOUs).

Ongoing: Regular Coordination and Engagement

Maintain regular coordination meetings bi-annually and develop virtual communication channels (e.g. virtual meetings and emails) to continually engage with organizations and adjust activities based on project progression and community needs.

d. How will the Applicant ensure access to jobs for local individuals who are underrepresented in the industry or are facing barriers to employment, such as women, those with disabilities, residents of disadvantaged communities, and returning citizens?

Recognizing the importance of addressing employment barriers faced by underrepresented groups, including women, individuals with disabilities, residents of disadvantaged communities, and returning citizens, XYZ will develop a fair labor policy that incorporates equitable access considerations for underrepresented communities that includes the following key tenets:

Inclusive Recruitment Strategies

- Partnerships with Local Organizations: Collaborate with community organizations in York, PA, that serve underrepresented groups, utilizing their networks for job outreach to ensure broad awareness of employment opportunities.
- Targeted Job Fairs: Attend and support at least two job fairs in partnership with local community centers, vocational schools, and organizations supporting underrepresented individuals, ensuring information about job openings is accessible to all.

Training and Skill Development Programs

- Customized Training Programs: Develop training programs in collaboration with local educational institution, York College, tailored to equip underrepresented individuals with the necessary skills for roles in our project. These programs will focus on renewable energy, electrical engineering, and other relevant skills, with accommodations made to ensure accessibility for all participants.
- Apprenticeships and Internships: Leveraging the apprenticeship and internship information listed our application prior and the collective bargaining section, offer apprenticeship and internship opportunities designed to provide hands-on experience, mentoring, and skill development, prioritizing the inclusion of underrepresented groups.

Supportive Work Environment

- Inclusive Hiring Practices: Implement inclusive hiring practices that emphasize skills and potential, including flexible interview processes and consideration of non-traditional career paths.
- Workplace Accommodations: Ensure that our workplace is accessible and accommodating to employees with disabilities, fostering an inclusive and supportive work environment.
- Support Services: Provide access to support services, such as childcare assistance and transportation subsidies, to reduce employment barriers for individuals from disadvantaged communities.

e. Specify what actions the Applicant will take to support or partner with local businesses and the extent to which the Applicant intends to support Disability-Owned Business Enterprises, LGBT Business Enterprises, Minority Business Enterprises, Veteran-Owned Business Enterprises, and Women-Owned Business Enterprises.

We are dedicated to fostering a diverse and inclusive economic environment through our Dairy Plant Decarbonization and Renewable Energy Initiative. Understanding the crucial role local businesses play in the fabric of York, PA, and the broader Pennsylvania economy, we are committed to supporting and partnering with businesses representing a spectrum of communities. Our actions to engage and uplift Disability-Owned Business Enterprises, LGBT Business Enterprises, Minority Business Enterprises, Veteran-Owned Business Enterprises, and Women-Owned Business Enterprises are included.

As detailed on our application, we have already identified a veteran-owned project partner, and:

- The project is committed to enhancing workforce and job quality by creating and retaining jobs. A diverse workforce will be ensured through initiatives that include outreach to underrepresented groups, such Disability-Owned Business Enterprises, LGBT Business Enterprises, Minority Business Enterprises, Veteran-Owned Business Enterprises, and Women-Owned Business Enterprises.
- The project will collaborate and partner with the York County Community Action Corporation to enhance the impact of our Dairy Plant Decarbonization and Renewable Energy Initiative to meet apprenticeship requirements, providing hands-on training and career pathways. It is estimated that the project will create approximately 3-5 jobs related to the installation and maintenance of our 2.5MW solar array. This value is an estimate from our contractor based on the level of labor needed to ensure the success of the solar installation project.

Commitment to Supporting Diverse Business Enterprises

We plan to dedicate a significant portion of our contracting/procurement budget to partnerships with Disability-Owned, LGBT, Minority, Veteran-Owned, and Women-Owned Business Enterprises. Our goal is to:

- Allocate at least 15%-25% of our contracting budget to diverse local businesses.

Increase this allocation year over year based on the availability of capable enterprises and the growth of our project's needs.

- Continuously monitor and evaluate the economic impact of our support on these businesses and the broader community, including adhering to J40 requirements as outlined by the EPA.

f. Specify any other commitments the Applicant will make for local hiring, retention, contracting, collaboration, or workforce development.

Beyond our commitments to diversity and inclusion, we are also focused on broader strategies for local hiring, retention, contracting, collaboration, and workforce development. The following are our additional commitments:

Local Hiring and Retention

- Local First Hiring Policy: Implement a "Local First" hiring policy to prioritize qualified local candidates for new jobs created by the project. Our aim is to ensure that at least 60% of new hires come directly from the local community. Our contractors selected to implement this project are already locally based, and any new hiring associated with this project is required to be done within the local community.
- Retention Programs: Work with our contractors to ensure they develop comprehensive retention programs that include competitive wages, benefits, continuous professional development, and a supportive work environment to ensure long-term employment and career growth opportunities for local hires. This includes paying workers at or above a prevailing wage.

2. Investment in training for local workers:
   a. Characterize the quality of the jobs that will be offered in both construction and ongoing operations.

Below outlines how we characterize the quality of these jobs:

Construction Phase Jobs

- Skilled Labor: The construction phase will require a range of skilled labor, including electricians, solar panel installers, construction workers, and project managers. These positions will offer competitive wages above the industry standard in York, PA, reflecting the specialized skills required.

- Training and Certification Opportunities: For individuals looking to enter the renewable energy and construction fields, we will offer on-the-job training and certification opportunities, in partnership with our selected contractors and local vocational schools and trade unions such as the International Brotherhood of Electrical Workers (IBEW) Local 229. This ensures that workers not only gain employment but also build their qualifications for long-term career development.

- Safe and Inclusive Work Environment: Ensuring a safe work environment is paramount. We will adhere to all OSHA guidelines, provide comprehensive safety training, and foster an inclusive culture that values diversity and teamwork.

Ongoing Operations Jobs

- Stable and Long-term Employment: Jobs in ongoing operations, including system maintenance, dairy product processing, and quality assurance, will offer stability and long-term employment prospects. Employees will receive full benefits, including health insurance, retirement savings plans, and paid leave.

- Career Advancement: We are committed to internal promotion and professional development. Employees will have access to continuous training programs in advanced dairy processing technologies, renewable energy management, and environmental sustainability practices, enabling career advancement within the company.

- Competitive Compensation: Salaries for ongoing operations positions will be competitive and reflective of the skills and responsibilities required. We aim to provide wages that are

at or above a prevailing wage, and also provide overtime opportunities and performance-related bonuses and opportunities for financial growth.

b. Describe the types and level of investment the Applicant will provide for local workforce education and training.

Types of Investment in Workforce Education and Training

- Vocational Training Partnerships: We will invest in partnerships with local vocational schools and community colleges, such as the York County School of Technology and Pennsylvania State University York Campus, to develop specialized training programs in renewable energy technologies, electrical engineering, and sustainable dairy processing practices.

- On-the-Job Training Programs: A significant portion of our investment will be allocated to on-the-job training for new hires and existing employees. This includes mentorship programs and hands-on training in areas critical to our project, such as boiler electrification, solar panel installation, and heat recovery technology.

- Certification and Continuing Education: To ensure our workforce remains at the forefront of the industry, we will fund certification programs and continuing education opportunities in relevant fields. This includes covering the costs of courses, exams, and any requisite materials. A list of preapproved certification and courses will be formally defined.

- Safety Training: Investment in comprehensive safety training, adhering to OSHA guidelines and beyond, will be a priority. This ensures not only the physical safety of our workforce but also fosters a culture of mindfulness and responsibility.

- Soft Skills Development: Recognizing the importance of interpersonal communication, leadership, and teamwork, we will also provide training in soft skills essential for career advancement and fostering a positive workplace environment.

Level of Investment

- Resource Allocation: We will allocate significant company resources towards developing local workforce training programs. This includes dedicating personnel to manage training initiatives, providing access to company facilities for hands-on learning, and ensuring employees are given paid time off to pursue educational opportunities.

- Community Collaboration: Part of our investment will also go towards fostering collaborations with local businesses, non-profits, and educational institutions. This includes sponsoring community-wide educational events, workshops, and seminars focused on sustainable practices and technologies.

c. Indicate whether the Applicant will partner with any state or local Workforce Development Boards or American Job Centers. If so, state what will the partnership(s) will entail.

N/A

d. Describe the methods by which the Applicant will support workers' rights, including a free and fair chance to join a union, and how the Applicant will signal this commitment to workers' rights to the workers.

We outline our approach to ensuring workers' rights, including the right to unionize, as follows:

Supporting Workers' Rights

- Open Communication Policy: Implement an open-door policy that encourages workers to freely express concerns, ask questions, and discuss issues related to their employment, including unionization, without fear of retaliation.
- Union Awareness and Education: Provide new and existing employees with information about their rights to join a union, including educational materials during orientation sessions that detail the process of union organization and the benefits of union membership.
- Neutral Stance on Unionization: Maintain a neutral stance on unionization efforts, ensuring that management and supervisory staff are trained to respect workers' rights to organize and refrain from any form of coercion or intimidation.
- Facilitating Union Organizing: Where legally permissible, facilitate union organizing efforts by providing spaces for union meetings and allowing union representatives access to speak with workers on-site during non-work hours.

Signaling Commitment to Workers' Rights

- Workers' Rights Charter: Update as necessary, and publicly post a Workers' Rights Charter within the workplace and on the company website, clearly outlining our commitment to fair labor practices, including the right to unionize.
- Collaboration with Labor Organizations: Actively seek partnerships with local and national labor organizations to conduct workshops and training sessions for workers on labor rights, signaling our commitment to empowering our workforce.
- Feedback and Reporting Mechanisms: Establish clear feedback channels and a grievance procedure for workers to report any violations of labor rights or attempts to hinder their right to organize, ensuring swift and appropriate action is taken to address such issues. This includes a whistleblower hotline.

Please refer to the collective bargaining section for addition details on these policies and processes.

e. Specify how workplace health and safety will be supported in the workplace, in both construction and ongoing operations.

During Construction Phase

- Comprehensive Safety Training: All construction personnel will receive, or must have received, extensive safety training, covering OSHA standards, hazard recognition, and the proper use of personal protective equipment (PPE).

- Health and Safety Officer: Assign a designated qualified health and safety officer to oversee safety practices on the construction site, ensuring compliance with all regulatory standards and company policies.

During Ongoing Operations

- Continuous Safety Education: Leverage existing ongoing safety training programs for all operational staff, focusing on job-specific hazards, equipment safety, and emergency response.

- Health and Wellness Programs: Offer and or leverage existing health and wellness programs that support employees' physical and mental health, including access to fitness facilities, health screenings, and stress management resources.

- Regular Safety Reviews: Conduct regular safety meetings and reviews to discuss safety performance, encourage feedback from employees, and address any emerging safety concerns.

Across All Phases

- Safety Culture: Foster a culture of safety where all employees are encouraged to be proactive about their own safety and the safety of their colleagues, including the establishment of a reporting system for potential hazards without fear of retaliation.

- Personal Protective Equipment (PPE): Provide appropriate PPE to all employees, tailored to the specific risks associated with their role, and ensure training on proper PPE use.

- Compliance with Regulations: Adhere strictly to all applicable local, state, and federal health and safety regulations, ensuring that all practices are up-to-date with the latest standards.

- Open Communication: Maintain open lines of communication regarding health and safety, encouraging employees to report hazards and suggest improvements.

f. Describe the Applicant's plan or mechanism to address and track worker retention.

Worker Retention Plan

- Competitive Compensation and Benefits: Ensure that all employees receive competitive wages and comprehensive benefits, including health insurance, retirement savings plans, and paid time off, to foster job satisfaction and loyalty, and ae paid at or above a prevailing wage, maintaining certified payrolls.

- Positive Work Environment: Cultivate a positive and inclusive work environment that promotes teamwork, communication, and mutual respect. Implement employee recognition programs to acknowledge and reward contributions and achievements.

- Employee Engagement Surveys: Conduct annual employee engagement surveys to gather feedback on job satisfaction, work conditions, management effectiveness, and areas for improvement. Use this feedback to make informed adjustments to policies and practices.

- Work-Life Balance: Support work-life balance through flexible work schedules, offering recognized holidays, PTO, and sick-time, to reduce burnout and turnover.

Mechanism to Track Worker Retention

- Retention Rate Monitoring: Regularly monitor and analyze worker retention rates, identifying trends and areas of concern that may require targeted interventions.

- Exit Interviews: Conduct exit interviews with departing employees to understand their reasons for leaving and gather insights that can be used to improve retention strategies.

- Stay Interviews: Implement "stay interviews" with current employees to proactively identify potential issues and reasons employees may consider leaving, allowing for preemptive action to improve retention.

3. Commitment to pay wages and benefits above the prevailing wage rates for construction:
   a. The Applicant will commit to paying competitive wage and benefit rates benchmarked against local Davis-Bacon Act prevailing wages as follows:
      i. %__10__above posted prevailing wage per hour for base wages
      ii. Health insurance: $__600___ per __month_
      iii. Retirement contributions: $__5%___ per _month__
      iv. Paid Time Off: _80___hrs per ___year__

4. Commitments to pay above average wages and benefits for hourly (non-construction) workers:
   a. The Applicant will provide above-average wages and benefits, benchmarked to occupation and industry reported by the Bureau of Labor Statistics:
      i. The minimum starting wage for production workers is $_20___ per hour compared to the [90th] percentile of $__30__per hour for the [agriculture manufacturing] industry.
      ii. The minimum value of the following benefits offered to hourly workers is
         1. Health insurance: $__500___ per _month__
         2. Retirement contributions: $__5%___ per _year__
         3. PTO: __120__hours per ___year__
         4. Paid sick or family leave: __10 ___ days per __year___
         5. Childcare or other caregiving financial assistance: $___1,000_____per worker or provision of on/near-site care
         6. Transportation assistance: $ ___300_____per worker
         7. Education/tuition reimbursement or financial contribution: $____2,000_____
         8. Other: $_____500____per worker

5. The Applicant must include letters of support from participating stakeholders. Combine all letters of support into a single PDF before uploading.

   N/A

Collective Bargaining Commitment Application:

1. Commitment to negotiate a Project Labor Agreement (PLA) for construction activity. Although each PLA should be tailored to suit the needs of the particular project, the Applicant must provide a detailed description of what they will include in the following required five articles, as outlined in the North American Building Trades Unions Model PLA:

    i. Clearly defined scope/Article II
        - The scope of the PLA will encompass all construction work related to the Dairy Plant Decarbonization and Renewable Energy Initiative, including but not limited to the electrification of boilers, the installation of on-site solar panels, and any associated infrastructure improvements. This agreement will explicitly outline the types of work covered, the geographical boundaries of the project site in York, PA, and the project's duration. It will clarify that all contractors and subcontractors engaged in the project shall abide by the terms of the PLA, ensuring consistency and fairness in labor practices across the project.

    ii. Dispute and grievance resolution procedures/Article VI
        - Our PLA will incorporate a clear, step-by-step process for resolving disputes and grievances arising from the project's labor concerns. This will include an initial attempt at resolution through direct negotiation between the involved parties, followed by mediation with a neutral third party if necessary. Should these steps not lead to a satisfactory resolution, binding arbitration will be the final step. This structured approach aims to resolve disputes efficiently and maintain project progress.

    iii. Resolution of jurisdictional disputes/Article VII
        - To prevent and resolve jurisdictional disputes between different unions or trades, the PLA will adopt the plan for the settlement of jurisdictional disputes in the construction industry as approved by the National Labor Relations Board (NLRB). This includes procedures for timely and binding resolution, ensuring that work continues smoothly without disruptions caused by disputes over work assignments.

    iv. Subcontracting language/Article VIII
        - The subcontracting provisions within the PLA will ensure that any subcontractor brought onto the project agrees to adhere to the terms of the PLA, maintaining consistency in worker conditions and rights across primary and secondary contractors. This will include requirements for subcontractors to recognize unions, adhere to agreed-upon wage scales, and contribute to union benefit programs.

    v. Helmets to Hardhats language/Article IX
        - Our PLA will incorporate commitments to support the Helmets to Hardhats program, facilitating the entry of military veterans into the construction workforce this will include provisions for actively recruiting veterans for project positions, providing appropriate training and apprenticeships when necessary, and ensuring veterans are given fair consideration in the hiring process.

b. Describe what will be included in any other articles that the Applicant will incorporate into the PLA. For example, RISE PA encourages Applicants to incorporate diverse local hire provisions (also called "Economic Opportunity Plans" and "Community Workforce Agreements) as part of the PLA.

Economic Opportunity Plans

Article X - Economic Opportunity Plans: This article will detail our commitment to economic inclusivity by establishing Economic Opportunity Plans aimed at enhancing employment and training opportunities for historically underrepresented groups in the construction industry, including but not limited to racial minorities, women, and economically disadvantaged individuals in York, PA proximity. Key components will include:

- Local Hiring Goals: Setting specific targets for hiring local workers, ensuring that the project contributes directly to the local economy.
- Outreach and Recruitment: Implementing targeted outreach and recruitment strategies to connect with underrepresented workers and communities, including partnerships with local workforce development agencies, community organizations, and educational institutions.

Training and Apprenticeship Programs: Offering training and apprenticeship opportunities to local residents, particularly focusing on those with barriers to employment, to provide them with the skills necessary for long-term careers in the construction industry.

Community Workforce Agreements

Article XI - Community Workforce Agreements (CWAs): This article will outline agreements made with local labor unions and community groups to prioritize the hiring of local workers and support workforce development initiatives within the community. Key features will include:

- Pre-Apprenticeship Programs: Supporting pre-apprenticeship programs that prepare local residents, especially those from disadvantaged backgrounds, for entry into formal apprenticeships and careers in the construction trades this will include partnerships with technical/vocational schools and college institutions such as those identified throughout our application.
- Union Collaboration: Working closely with unions to ensure that the terms of the PLA promote fair wages, safe working conditions, and access to benefits for all workers, while also supporting the unions' efforts to expand their membership among local and underrepresented populations.
- Monitoring and Reporting: This includes ongoing reporting such as those outlined in the RISE PA guidance documents e.g. FORM LM-10 Reports.

c. What assurances does the Applicant have or will the Applicant put in place to enable workers to have a free and fair right to workplace organizing and union representation without retaliation?

Established Policies and Practices

- Non-Retaliation Policy: We have instituted a non-retaliation policy explicitly protecting workers who choose to engage in workplace organizing or seek union representation. This

policy is communicated to all employees upon hire and annually thereafter. We allow labor organizations to post informational materials within common areas such as breakrooms.

- Open Door Policy: Our open-door policy encourages workers to voice concerns, questions, or suggestions regarding workplace conditions, including union representation, directly to management without fear of adverse consequences.

- Union Awareness and Education: During the onboarding of new employees, we will provide them with information on their rights to organize and the benefits of union representation. We will also present the opportunity for unions representatives to speak during the onboarding.

Mechanisms for Assurance

- Within our policy documentation, we will require our management and leadership teams to sign attestations that they will not retaliate.

- We will develop a whistle-blower hotline and will develop protections within our policies and procedures.

- Grievance Procedure: We will establish a clear grievance procedure that allows workers to report any instances of perceived retaliation related to union organizing efforts. This procedure will guarantee anonymity and a swift, transparent investigation process.

- Management and Supervisor Training: All levels of management, including supervisors, will receive training on workers' rights to organize and the importance of maintaining a neutral stance on unionization efforts. This training will emphasize the legal and ethical obligations to avoid any form of retaliation.

- Regular Communication: we will maintain regular communication with our workforce regarding their rights and our policies through newsletters, bulletins, and mandatory meetings to reinforce our commitment to a retaliation-free workplace.

- Feedback Loops: Implement feedback loops and regular surveys to understand worker sentiments on union representation and workplace conditions, ensuring that any issues can be proactively addressed.

- Collaboration with Labor Unions: Where appropriate, we will seek to collaborate directly with labor unions to facilitate a fair and open dialogue between workers and union representatives, ensuring that workers have access to unbiased information about union membership and activities.

d. What labor unions has the Applicant engaged in planning the construction activity related to the industrial decarbonization project, including any engagement with unions that represent employees of the Applicant or with unions that represent employees of contractors and subcontractors that are part of the proposal or might be part of the project if funded?

As outlined in the stakeholder engagement section, we will interact with the following unions on various aspects of our overall project and production:

Labor Unions Engagement

- International Brotherhood of Electrical Workers (IBEW) Local 229: As our project involves significant electrical work, including boiler electrification and the installation of on-site solar panels, we have engaged with IBEW Local 229, which represents skilled electricians. This engagement aims to ensure that we have access to a skilled labor force for the electrical aspects of our project and that workers are compensated fairly and work under safe conditions.

- United Association of Plumbers and Pipefitters (UA) Local Union: Recognizing the need for skilled pipefitters for the boiler electrification process and other related tasks, we have reached out to the UA Local Union. This engagement focuses on securing expertise in plumbing and pipefitting, crucial for the successful implementation of our decarbonization measures.

- United Food and Commercial Workers (UFCW): Representing workers in the dairy plant, ensuring their interests are considered in project planning.

Engagement with Unions Representing Applicant's Employees

If we have any directly employed workers who are union members, we ensure ongoing dialogue with their respective unions to align our project plans with the agreements in place. We aim to maintain transparency and cooperation, ensuring that our project supports both our environmental goals and the well-being of our workforce. We require that any contractors or subcontractors engaged for the project communicate their union engagements, especially if part of the proposal includes unionized labor. We advocate for a cohesive approach that respects collective bargaining agreements and promotes a harmonious working relationship across all project stages.

e. Has the Applicant worked with labor unions in the past? If no engagement has occurred to date, please explain briefly and describe plans, if any, for future labor engagement before project initiation and during the project.

As an entity with over 50 years of experience, we have collaborated with labor unions to deliver a positive workplace that allows and enables our employees to properly be represented. As we continue to enhance and update our facilities, we will continue to leverage our existing relationships and build new ones with the trades of the future in mind. The unions listed in the prior section are the ones we envision collaborating with.

f. What are the applicant’s plans to ensure project success and continuity by mitigating labor disputes or strikes (e.g., labor peace agreements; good faith negotiations)?

As we have done for over 50 years, below are the processes in place that have helped us deliver a strong working relationship with the various unions. We understand the impacts that strikes can have on our supply line and present downstream impacts to consumers. As we navigate the challenges, we plan to implement the following practices:

Labor Peace Agreements

- Proactive Engagement: Before project initiation, we will proactively engage with relevant labor unions to discuss and draft labor peace agreements. These agreements will aim to ensure that all parties commit to avoiding strikes, lockouts, and other disruptions that could impact project timelines and success.

- Fair Representation: Ensure that labor peace agreements include provisions for fair representation of workers' interests, allowing for collective bargaining and the resolution of any grievances that may arise during the project lifecycle.

Good Faith Negotiations

- Negotiation Framework: Leverage a clear framework for ongoing negotiations with labor unions, ensuring that any issues or disputes are addressed promptly and in good faith. This includes regular meetings with union representatives to discuss project progress, workforce conditions, and any emerging concerns.

- Dispute Resolution Mechanisms: Include specific dispute resolution mechanisms within labor agreements, detailing steps for mediation and arbitration if necessary. These mechanisms aim to resolve disputes efficiently and equitably, minimizing the potential for escalation to strikes or work stoppages.

Open Dialogue and Transparency

- Worker Feedback Channels: Implement open channels for worker feedback, allowing employees to voice concerns, suggestions, and grievances directly to project management without fear of retaliation. This could include anonymous feedback options to ensure workers feel safe in communicating openly, such as the whistle blower hotline previously described.

- Regular Updates and Meetings: Schedule regular updates and meetings with both union representatives and the broader workforce to maintain transparency about project progress, changes, and any challenges faced. This openness fosters a sense of inclusion and collaboration among all stakeholders.

2. Pledge to remain neutral during any union organizing campaigns:
   a. In the event that a union organizing campaign occurs during project period of performance, how will the Applicant ensure that they maintain neutrality?

Neutrality Agreement

- We will continue to refine our neutrality agreement at the outset of the project, which outlines our commitment to remain neutral during any union organizing efforts. This agreement will be communicated to all employees, management, and relevant stakeholders to ensure transparency.

Management and Employee Training

- While maintaining neutrality, we will facilitate information sessions run by a neutral third party for employees. These sessions will educate them on their rights under the National Labor Relations Act (NLRA), including the right to organize, ensuring employees can make informed decisions without company influence.

Open Communication Channels

- We will leverage the channels listed in the previous section (1.e).

3. Intention or willingness to permit union recognition through card check (as opposed to requiring union elections):
   a. What is the process by which the Applicant will allow union recognition through card check?

We recognize the importance of ensuring a fair and transparent process for union recognition. Should our employees choose to pursue union representation, we respect their right to do so and are committed to facilitating their choice through a recognized and lawful process. Here's our outlined process for allowing union recognition through card check:

Step 1: Employee Interest

- Employees interested in joining a union can initiate the process by collecting authorization cards (card check) in which employees indicate their desire for union representation.

Step 2: Neutral Third-Party Verification

- Once a significant portion of the workforce has expressed interest in union representation through signed authorization cards, we will engage a neutral third-party, such as an arbitrator or a mutually agreed-upon entity, to verify the authenticity and validity of the authorization cards. This step ensures transparency and fairness in the verification process.

Step 3: Voluntary Recognition

- If the neutral third-party verifies that a majority of the employees in the bargaining unit have signed authorization cards, we will voluntarily recognize the union as the representative of the employees for collective bargaining purposes. This recognition respects the employees' choice and initiates the process of negotiating a collective bargaining agreement.

Step 4: Communication with Employees

- Following union recognition, we will communicate the outcome to all employees, ensuring that they are informed of the new representation status and the next steps in the collective bargaining process.

Step 5: Good Faith Negotiations

- With the union now recognized, we commit to entering into good faith negotiations to establish a collective bargaining agreement (CBA) that addresses wages, working conditions, benefits, and other employment terms and conditions.

Step 6: Ongoing Engagement

- Throughout the process, we will maintain open lines of communication with employees and the newly recognized union to address any concerns or questions that arise, ensuring a smooth transition into this new phase of workplace representation.

4. Intention to enter into binding arbitration to settle first contracts:
   a. Describe the procedure by which the Applicant would enter into binding arbitration to settle first contracts.

In the event that initial negotiations reach an impasse, we are prepared to enter into binding arbitration to ensure a timely and equitable resolution. Here's our outlined procedure for entering into binding arbitration to settle first contracts:

Step 1: Initial Bargaining Period

- Upon union recognition, us and the union will engage in good faith bargaining for a defined period, typically up to 90 days, to attempt to reach a mutual agreement on the first contract. This period may be extended by mutual consent if progress is being made.

Step 2: Mediation

- If an agreement cannot be reached within the initial bargaining period, both parties will agree to enter mediation with a neutral mediator from an organization such as the Federal Mediation and Conciliation Service (FMCS) to help facilitate a resolution.

Step 3: Decision to Enter Binding Arbitration

- If mediation does not result in an agreement, both us and the union will agree to enter into binding arbitration as a final step to resolve the impasse. The decision to proceed to arbitration will require written consent from both parties, confirming their commitment to abide by the arbitrator's decision.

Step 4: Selection of Arbitrator

- The parties will jointly select a neutral arbitrator experienced in labor relations and contract negotiations. If the parties cannot agree on an arbitrator, they will request a list of qualified arbitrators from the American Arbitration Association (AAA) or a similar organization and select an arbitrator through an agreed-upon method, such as alternately striking names from the list.

Step 5: Arbitration Process

- The arbitration process will be structured to allow both parties to present their case, including proposals, counterproposals, and any relevant evidence supporting their positions. The arbitrator will establish a timeline and procedural rules for the arbitration hearings.

Step 6: Arbitrator's Decision

- After considering the presentations from both parties, the arbitrator will issue a binding decision on the terms of the first contract. This decision will be final and will establish the collective bargaining agreement (CBA) between us and the union.

Step 7: Implementation of the First Contract

- Following the arbitrator's decision, we and the union will promptly take steps to implement the terms of the newly established CBA, ensuring that all provisions are communicated clearly to the affected employees.

5. Pledge to allow union organizers access to appropriate onsite nonwork spaces (e.g., lunchrooms):
   a. How will the Applicant ensure that union organizers have access to appropriate onsite nonwork spaces?

As stated above, we have existing relationships with various unions in the Commonwealth of Pennsylvania. Historically, we provided an onsite meeting space to union organizers to conduct meetings and to meet with fellow members. We will continue to maintain our good faith agreements with members that will not prohibit them for accessing the functional spaces. We will continue to listen to feedback from our workers and evaluate responses via the survey mechanism listed above.

6. Pledge to refrain from holding captive audience meetings:
   a. Describe how the applicant will ensure that no captive audience meetings are held?

Policy Implementation and Communication

- Clear Policy Statement: We will draft a clear, unequivocal policy statement that defines captive audience meetings and explicitly prohibits their use within the company. This policy will be communicated to all levels of management and employees, emphasizing our commitment to a fair and intimidation-free workplace.

- Management and Supervisor Training: All management personnel and supervisors will undergo mandatory training on our policy against captive audience meetings. This training will cover the legal and ethical implications of such meetings and provide guidance on permissible forms of communication regarding unionization and collective bargaining.

Ongoing Review and Adjustment

- Feedback Sessions: Regular feedback sessions with employees will be held to assess the effectiveness of our policy and gather suggestions for improvement. This ensures our approach remains responsive to employee concerns and adheres to best practices. We will hold an annual session to incorporate feedback and updates to our policy. We will hold ad-hoc meetings as needed. We will provide the whistle blower hotline to notify if captive audience meetings are occurring.

- Policy Review and Update: The policy against captive audience meetings will be reviewed annually or more frequently if necessary. This review will consider legislative changes,

industry best practices, and feedback from employees and management to ensure the policy remains effective and relevant.

Commonwealth Workforce Transformation Program (CWTP) Letter of Intent

Applicants must submit a Letter of Intent stating that if awarded, the Applicant agrees to participate in the CWTP and adhere to the ongoing reporting requirements. See *CWTP Ongoing Reporting Requirements* section of the Program Guidance for a list of the reporting requirements. The Applicant should include the number of CWTP Trainees they intend to hire and list all the reporting requirements in the body of the letter. The Letter of Intent should be uploaded as a single PDF.

Greenhouse Gas Emissions Reduction Bonus:

Instructions: Indicate the GHG Emissions Reduction Range that the proposed project will achieve and calculate the anticipated Greenhouse Gas Emissions Reduction Bonus award size. Calculated GHG emission reduction percentages will not be rounded up (i.e., a GHG emission reduction of 34.6% will be considered 34%).

1. Select the anticipated GHG Emissions Reduction Percentage Range for the proposed project:

    a. 21-24%
    b. 25-29%
    c. 30-34%
    d. 35-40%
    e. 41%+

2. Calculate the Greenhouse Gas Emissions Reduction Bonus award amount by multiplying the Total Project Cost (TPC) by the applicable percentage:

    a. 21-24% = 2% of TPC = $ ____
    b. 25-29% = 4% of TPC = $ ____
    c. 30-34% = 6% of TPC = $ ____
    d. 35-40% = 8% of TPC = $ ____
    e. 41%+ = 10% of TPC = $ 444,125

Additional Information

1. How did you hear about RISE PA? Select all that apply. N/A
   a. RISE PA Webpage
   b. DEP Outreach
   c. Online Search Engine
   d. Social Media
   e. Conventional Media (Print, Radio, Online, etc.)
   f. Conference/Event
   g. Word of Mouth
   h. Third Party
   i. Other - please describe:

2. Please provide any additional information that you deem necessary for RISE PA to understand/consider when reviewing the proposed project. N/A

3. Please add any feedback or comments on the application process. N/A

Signed Consent Form Upload

Instructions: Applications must include a signed consent from the property owner and the operator of the industrial facility where the project will occur, demonstrating approval for the proposed project implementation. Applicants that are not owners or operators of the facility will be required to submit a copy of the service contract they have entered with the operator or owner of the facility where the project will occur.

Trade Secret/Confidential Proprietary Information Notice

Instructions: Applicants must submit a "Trade Secret/Confidential Proprietary Information Notice" to DEP if any portion of the application contains confidential business information (CBI). This notice requires Applicants to identify the specific portions of the application that contain CBI, with justification.

Note: Once a document is submitted through DCED's ESA system, it cannot be renamed, edited, or deleted. All applications will be evaluated internally by DEP. Uploads will not be visible to entities outside DEP.