

**Climate Pollution Reduction Grant Implementation Grants  
Bill and Hillary Clinton National Airport**

**Workplan**  
**April 1, 2024**

## Table of Contents

1. Overall Project Summary and Approach.....	1
1.a Description of GHG Reduction Measures.....	1
1.b Demonstration of Funding Need.....	2
1.c Transformative Impact.....	4
2. Impact of GHG Reduction Measures.....	4
2.a Magnitude of GHG Reductions from 2025 through 2030.....	5
2.b Magnitude of GHG Reductions from 2025 through 2050.....	6
2.c Cost Effectiveness of GHG Reductions.....	6
2.d Documentation of GHG Reduction Assumptions.....	7
3. Environmental Results – Outputs, Outcomes, and Performance Measures.....	8
3.a Expected Outputs and Outcomes .....	8
3.b Performance Measures and Plans.....	10
3.c Authorities, Implementation Timeline, and Milestones.....	10
4. Low-Income and Disadvantaged Communities.....	11
4.a Community Benefits.....	11
4.b Community Engagement.....	13
5. Job Quality .....	13
6. Programmatic Capability and Past Performance .....	14
6.a Past Performance .....	14
6.b Reporting Requirements .....	16
6.c Staff Expertise.....	16

## Table of Figures

Figure 1 - LIT GHG Emissions from 2025-2030.....	5
Figure 2 - LIT GHG Emissions from 2025 to 2050.....	6

## Table of Authorities

Table 1 – AVERT Results: Annual Emissions Reductions for Midwest Region.....	5
--	---

Table 2 – Environmental Impacts .....	8
Table 3 – CUP Timeline.....	10
Table 4 – LIT Past Performances.....	15
Table 5 – Summary of Key Team Members.....	16

## 1. Overall Project Summary and Approach

The Bill and Hillary Clinton National Airport (LIT) is proposing a geothermal Heating, Venting, and Air-Conditioning (HVAC) Central Utility Plant (CUP) to reduce greenhouse gas (GHG) emissions in and around the airport. The CUP project aligns with E&E's PCAP, where net zero (carbon buildings) were identified as a priority measure in the Appendix J Supplement, prepared by Arkansas' Metroplan and LIT as a partner agency. While E&E's PCAP mentions solar technologies as one potential method to achieve net zero buildings, LIT's geothermal project provides another solution to reach the same goal of decarbonization in building facilities.

### 1.a Description of GHG Reduction Measures

The proposed CUP will service a 280,000 square feet terminal and provide a natural water loop heat exchange for the HVAC system at the LIT terminal. This natural water loop heat exchange will leverage drilled geothermal wells to replace the natural gas fired boilers and refrigerant chillers that are currently being used. By implementing the proposed CUP, LIT anticipates significant reductions in greenhouse gas emissions, through a 100% natural gas usage reduction and a 25% electricity usage reduction relative to the current HVAC system. The CUP would also result in an 85% decrease of natural gas usage throughout the terminal, as the only remaining natural gas-powered equipment in the terminal would be three remaining restaurant grills. With this reduction in natural gas and electricity usage, LIT anticipates that GHG reductions of 10,203 MT CO<sub>2</sub>e from 2025 to 2030 and 48,073 MT CO<sub>2</sub>e from 2025 to 2050 would be achieved as a result of CPRG funding. This would be the equivalent of removing almost 11,900 gasoline-powered passenger vehicles from circulation between 2025 and 2050.<sup>1</sup> These GHG reductions align with CPRG's first program goal of implementing "ambitious measures that will achieve significant GHG reductions by 2030 and beyond", as well as the EPA's first strategic goal, "tackling the climate crisis".

This CUP would have a positive effect on industrialized and economically disadvantaged communities surrounding LIT. The project aims to improve the surrounding environment through GHG reductions, reducing electrical utility demand, and enhancing jobs by separating out implementation tasks to allow for more businesses to be involved in the project. This will also encourage maximum participation from small, diverse, and/or disadvantaged businesses. These activities and outcomes align with CPRG's second goal, to "pursue measures that will achieve substantial community benefits, particularly in low-income and disadvantaged communities" as well as the EPA's strategic goals 4 and 6, to "ensure clean and healthy air for all communities" and "safeguard and revitalize communities", respectively.

This geothermal CUP project also aligns with E&E's PCAP, which identifies net-zero (carbon buildings) as a priority for the region, as they cause significant strain on the current electric grid, leading to increased GHG emissions, especially during peak times. LIT's CUP would be the largest vertical bore geothermal airport project in the United States and would help to decarbonize a key piece of critical infrastructure in the state. While the project is defined as building sector project, given the reduction in electricity usage, the power sector will also be impacted. The electric grid contributes to the majority of LIT's terminal emissions, which are difficult to reduce. The CUP will remove reliance on the electric grid and accomplish GHG reductions that would be challenging to achieve otherwise.

Implementation of the proposed measure will consist of two key phases: (1) design and (2) construction. The design phase will last about 39 weeks with key milestones including schematic design documents, followed by design development, and concluding with construction document preparation. LIT will begin

---

<sup>1</sup> [Greenhouse Gases Equivalencies Calculator - Calculations and References | US EPA](#)

the construction phase following the issue of construction documents and expects this phase to last 12-18 months. Key milestones within this phase include mobilization and obtaining a notice to proceed followed by construction activities at the airport facility.

LIT has received FAA funding for the planning and design portions of the project that directly serve the movement of passengers. Because of the FAA program guidelines, the airport lacks additional eligible funding that can be allocated to implement and construct the proposed geothermal CUP. Some design phase activities are already underway, with the CUP schematic design currently being drafted. This schematic design is due to be completed by 4/19/24, with the design development phase beginning shortly thereafter on 4/22/24. By the expected CPRG award announcement date (10/1/24), LIT expects to finalize the design phase and begin construction. CPRG funding would be used directly for implementing the CUP through construction activities, meaning that GHG reductions will be realized in the near-term. Construction on the CUP is expected to be finalized between December 2025 and April 2026. A detailed implementation timeline is included in Section 3.c.

To confirm that LIT can effectively implement the proposed CUP measure, four potential risks and associated mitigation strategies have been identified. These risks and mitigation strategies are as follows:

1. **Heat Exchange Effectiveness\*:** Certain soil and groundwater conditions could reduce the effectiveness of the heat exchange system within the geothermal wells, thus reducing the effectiveness of the CUP. To reduce the risk associated with suboptimal soil and groundwater conditions, LIT will conduct a geotechnical investigation, including the drilling of test wells, and produce a detailed analysis to determine the appropriate location, depth, and density of wells to increase the CUPs energy and efficiency output.
2. **Safety:** Capital improvement projects often carry risks to the safety of employees involved with construction, as well as those that work in the airfield and in airport operations. To reduce this risk, we will develop a detailed construction safety and phasing plan (CSPP) in conjunction with the airport operations department and other relevant stakeholders.
3. **Airspace Impacts:** An airspace study request was submitted to the Federal Aviation Administration (FAA) to determine what impact construction of the CUP might have on air traffic. A final determination of no hazard to air navigation was received on 10/13/2022.
4. **Environmental Impacts:** While geothermal construction may have environmental impacts, the required NEPA documentation has already been submitted, and the project has received a categorical exclusion from the FAA to proceed with construction.

\*Note construction of the well-field is being proposed for funding under the Arkansas Regional Coalition application led by Metroplan.

With this scale of impressive GHG emissions reductions, advanced and ongoing timeline, and proactive risk mitigation strategies, LIT's proposed CUP is an enticing opportunity to permanently change the airport's energy infrastructure, paving the way towards a more sustainable and environmentally friendly future.

## 1.b Demonstration of Funding Need

Federal funding for the CUP is crucial to advancing sustainable energy solutions and reducing the airport's dependence on fossil fuels. Geothermal energy is a complex renewable source that requires specific conditions and designs that will provide a reliable and consistent energy supply.

LIT has limited revenue streams as an entity, primarily relying on non-airline revenues such as rental cars, parking fees, and concession options to fund the majority of the airport's budget. Due to the limited growth of LIT's general revenue, the airport has a finite amount of capital to allocate to projects outside of normal airport operations. Due to the intricate nature of this project, LIT explored numerous funding opportunities that could fund, or partially fund, the CUP for the airport. LIT applies for and receives funding from legacy FAA programs which have been administered for decades and fund traditional airport activities, yet these programs will not fully fund the CUP. LIT explored the following programs but determined these would not satisfy the necessary funding for the full CUP project:

- **Airport Terminals Program (ATP):** This program is a competitive FAA program for which the airport has received funding in the FY23 iteration. LIT received \$8M for enabling construction of drainage and utility relocation to support the development of a new CUP. Additionally, this program only covers project costs that directly serve the movement of passengers (e.g., staff rooms, administrative offices, etc.) leaving a percentage of the enabling construction unfunded.
- **Airport Infrastructure Grants (AIG):** This program is an FAA program established by the Infrastructure Investment and Jobs Act (IIJA) which apportions fundings to airports based upon enplanements and cargo volume. This program focuses on runways, taxiways, as well as terminal, airport-transit connections, and roadway projects. LIT most recently received \$623,756 funding through the FY22 iteration for improvements and modifications for a terminal building. The airport used the funds to accomplish planning and design work for the Central Utility Plant. As with ATP, the funds from this program can only be used for portions of the project that directly serve the movement of passengers and does not provide the entire amount of funding needed.
- **Airport Improvement Program (AIP):** This program is a legacy FAA program for which the airport has received funding for over 20 years. LIT most recently received \$3.2M funding through the FY23 iteration to reconstruct a taxiway. The airport explored this opportunity for the CUP but determined the project scope would not be eligible under the guidelines of this program, which focuses on runways, taxiways, airport signage, airport lighting, and airport markings.
- **Airport Zero Emissions Vehicle (ZEV):** This program is an FAA program established in 2012 that allows AIP funding to purchase ZEVs to construct or modify infrastructure needs. While this program is focused on sustainability and the removal of GHGs, LIT determined the scope of the CUP project would not be eligible under this program as it specifically funds light and heavy-duty vehicles and trucks.
- **Voluntary Airport Low Emissions Program:** This program is an FAA program established in 2004 that allows AIP funding to finance low emission vehicles, refueling and recharging stations, gate electrification, and other airport air quality improvements. LIT analyzed this program and due to the finite number of awards and amount of funding per year, this program would not provide the necessary funding required for the CUP project.

In addition to the federal funding opportunities above, LIT evaluated tax incentives bolstered by the Inflation Reduction Act. While many could be applicable to this specific project, these credits would not provide a proactive approach in providing the initial funding required for the design and construction of the CUP. LIT understands that these credits would be beneficial to offset ongoing costs after installation

of the project and intends to pursue these opportunities once the requested CUP funding is fulfilled. LIT evaluated the following tax credits for the CUP:

- **48C – Advanced Energy Project Credit**
- **48E – Clean Electricity Investment Tax Credits**
- **179D – Energy Efficient Commercial Buildings Deduction**

The CPRG Implementation Grants provide a unique and directly applicable opportunity for the LIT airport to fund the CUP project. The airport exhausted many avenues when analyzing federal and non-federal opportunities, and this specific funding stream will alleviate the GHG emissions that the LIT airport emits with its current mechanical systems. While the FAA provides funding to the airport for airfield capital projects, industry operations and safety, there are limited funding sources for certain operational upgrades essential to the facilities, its patrons, and the low-income disadvantaged communities in the surrounding areas. This project will implement and directly align with the strategic goals of both the CPRG program and the EPA.

### **1.c Transformative Impact**

While the CUP will provide a high return on investment in GHG reductions (see Section 2c), the project also can promote future decarbonization projects across the state and at other leading airports. If implemented, this project would be largest vertical bore geothermal airport project in the United States, making LIT a leader in the state in the deployment of energy efficiency and innovative technology measures. Also, this project can serve as a leading example in innovative carbon reduction technologies that may be replicated at other airports across the country, reducing dependence on the electrical grid, which is still a high source of emissions. Implementing a geothermal CUP could aid other facilities that produce a high quantity of GHG emission from dated heating and cooling systems, particularly in south Arkansas, where the high ground temperatures have also been targeted by lithium extractors. Through the implementation of the CUP, workers will also be trained in the construction, maintenance, and operation of geothermal utilities. Geothermal energy is a promising yet more novel method to reduce emissions across the United States. As a result, workforce training and expertise in geothermal through the implementation of the CUP could support the adoption of geothermal utilities and produce long-lasting job prospects for these skilled workers.

## **2. Impact of GHG Reduction Measures**

This section will explain the GHG reductions attributable to CPRG funding for LIT's proposed CUP. This section will analyze these emissions reductions within the timeframes of 2025 to 2030 and 2025 to 2050, as well as analyze the project's cost effectiveness and provide further documentation regarding calculations and methodologies. LIT's terminal emissions result primarily from terminal utility usage. With the implementation of the CUP, LIT estimates a 100% reduction in natural gas emissions and a 25% reduction in electricity usage relative to the legacy HVAC system in use currently, resulting in overall energy savings for the airport of over 35%. If this application request is fully funded, CPRG funds would contribute to 68% of the total CUP reductions, meaning that CPRG would be responsible for reducing LIT's total energy usage (both terminal and non-terminal) by about a quarter (24%) from the 2019 baseline. Avoided Emissions and Generation Tool (AVERT) results demonstrate that this project could produce a significant impact, leading to electricity savings of nearly 2,000,000 kwh per year. The AVERT results demonstrate the wide range of emissions that would be decreased due to electricity reductions from the proposed CUP. AVERT results for the project are the following:

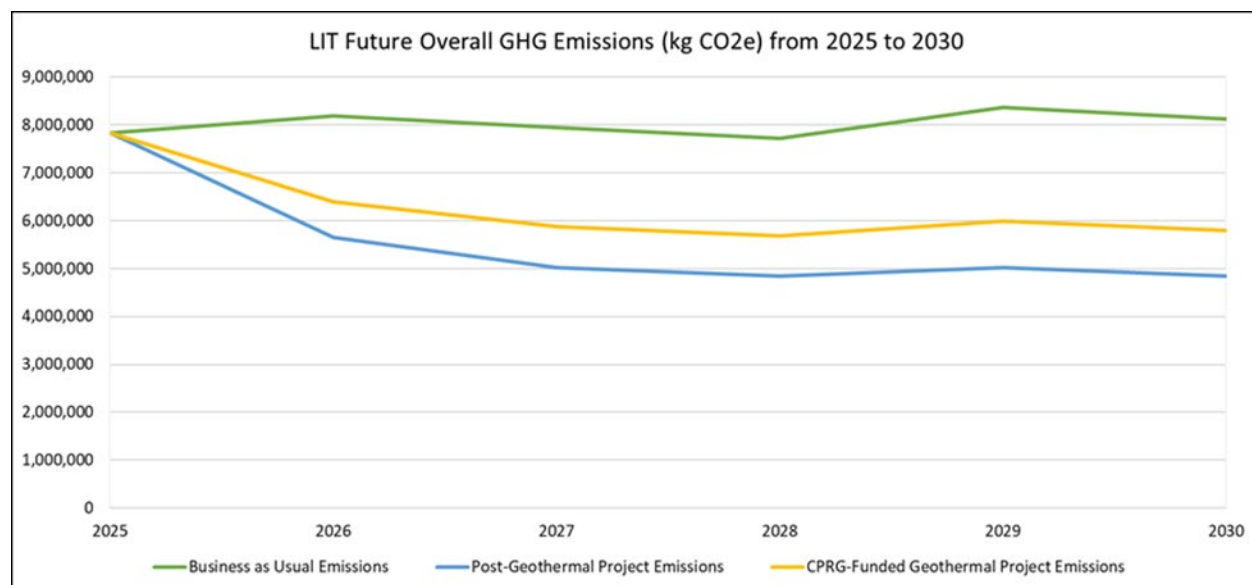
**Table 1 – AVERT Results: Annual Emissions Reductions for Midwest Region**

	Change in Emissions	Change Attributable to CPRG (68% of Project Cost)
Generation (MWh)	-2,130	-1,452
<b>Total Emissions Reductions from Fossil Generation Fleet</b>		
SO <sub>2</sub> (lb)	-2,500	-1,705
NO <sub>x</sub> (lb)	-1,970	-1,344
Ozone season NO <sub>x</sub> (lb)	-790	-539
CO <sub>2</sub> (tons)	-1,660	-1,132
PM <sub>2.5</sub> (lb)	-200	-136
VOCs (lb)	-60	-41
NH <sub>3</sub> (lb)	-60	-41

It should be noted that these are not direct reductions from LIT, but instead are reductions from GHG emissions that would have been produced at electricity generation plants.

## 2.a Magnitude of GHG Reductions from 2025 through 2030

The CUP will provide ample GHG reductions from 2025 through 2030, especially if construction is completed by 2026. We estimate that GHG reductions resulting from the requested CPRG funds would be 10,203 MT CO<sub>2</sub>e from 2025 to 2030, which equates to just under 27% of the airport's total GHG emissions relative to the 2019 baseline. This means that the CPRG funding will be responsible for an estimated average yearly emissions reduction of over 2,040 MT CO<sub>2</sub>e. These reductions will be permanent as the CUP will reduce natural gas and electricity consumption well-beyond 2030.

**Figure 1 - LIT GHG Emissions from 2025-2030**

The graph above illustrates LIT's total emissions under three different scenarios:

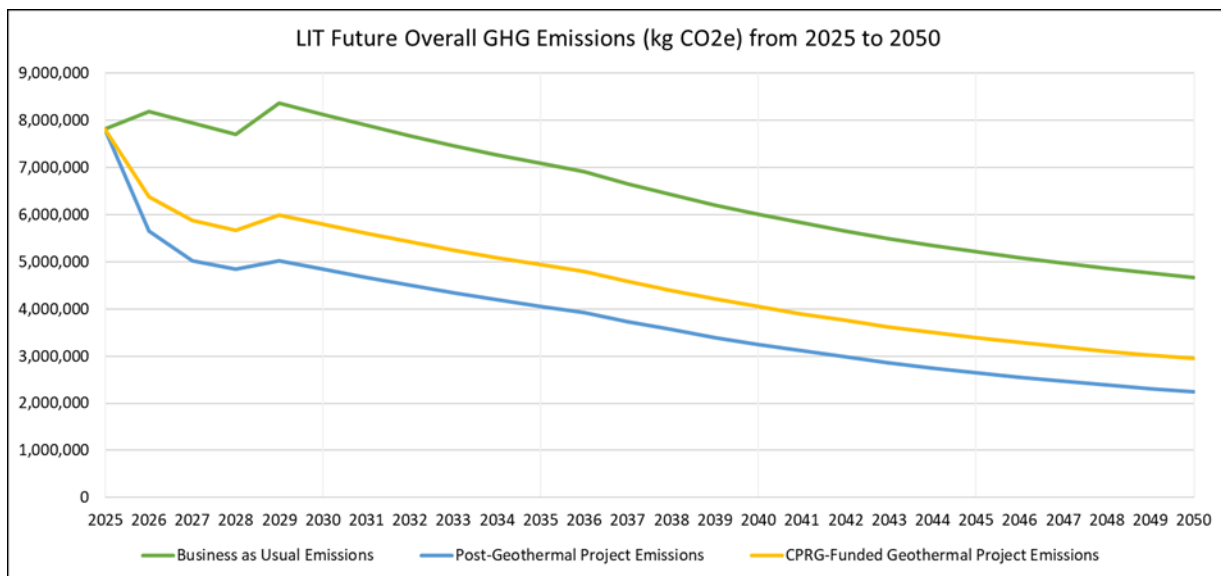
1. The green line demonstrates LIT's emissions if it continues with its current Business as Usual (BAU) practices.



2. The blue line represents the estimated total GHG reductions that will result from the full implementation of the CUP project.
3. The yellow line indicates total GHG emission reductions that are attributable to CPRG funding specifically.

## 2.b Magnitude of GHG Reductions from 2025 through 2050

The CUP will provide even further GHG reductions from 2025 to 2050. Utilizing the same assumptions and methodologies explained in 2.a, we estimate cumulative GHG reduction of 70,488 MT CO<sub>2</sub>e for the entire project, of which 48,073 MT CO<sub>2</sub>e would be directly funded by the CPRG program. This would mean that by 2050, the CPRG program funding is projected to be responsible for the reduction of 49% of LIT's emissions relative to their 2019 baseline, nearly halving LIT's GHG emissions. These reductions will be permanent as the CUP will reduce natural gas and electricity consumption well-beyond 2050.



**Figure 2 - LIT GHG Emissions from 2025 to 2050**

The graph above illustrates LIT's total emissions under three different scenarios:

1. The green line demonstrates LIT's emissions if it continues with its current Business as Usual (BAU) practices.
2. The blue line represents the estimated total GHG reductions that will result from the full implementation of the CUP project.
3. The yellow line indicates total GHG emission reductions that are attributable to CPRG funding specifically.

## 2.c Cost Effectiveness of GHG Reductions

Bringing the CUP project online has an estimated construction cost of \$24,374,000, and this application requests \$16,624,000 from the CPRG program to fund it. Since the CPRG program is only partially funding the project under this application, it would only be responsible for a portion of the total GHG reductions that come from the CUP's completion. In this case, the CPRG program funding will be responsible for preventing the output of an estimated 10,203 MT CO<sub>2</sub>e into the environment from 2025

to 2030 and 48,073 MT CO<sub>2</sub>e from 2025 to 2050. This would yield a cost of just over \$1,629 per MT of CO<sub>2</sub>e reduced from 2025 to 2030 and just under \$346 for every MT of CO<sub>2</sub>e reduced from 2025 to 2050.

There is \$7,750,000 remaining in the CUP project cost that LIT is not requesting under this application, specifically to fund the drilling of the well fields to provide geothermal water for the CUP. These funds are being requested under a different application that is expected to be submitted by an Arkansas Regional Coalition led by Metroplan. LIT is fully committed to funding and completing the full CUP project even if funding is only awarded under this application; however, this would result in project delays and would prevent LIT from being able to carry out future mission-critical terminal projects.

## 2.d Documentation of GHG Reduction Assumptions

The following section documents the methodology, assumptions, and calculations associated with the GHG reductions.

### Methodology

**GHG Emissions Projections:** Usage data from January 2019 to September 2022 for natural gas, propane, diesel, gasoline, electricity, and fugitive emissions were pulled from utilities companies and other reports available to LIT. To standardize emissions across categories, these baseline statistics were converted into kg of CO<sub>2</sub>e utilizing standardized emissions factors. The emissions were then projected over time, considering expected changes in natural gas and electricity usage based on future terminal square footage increases, which will go into effect beginning 2026.

### Assumptions

**GHG Emissions Projections Constants:** Since the CUP will not affect the airport's usage of propane, diesel, gasoline, or fugitive emissions, we assume that these will stay constant through 2050.

**Terminal Square Footage Increase:** There are currently two projects that are projected to increase the terminal's square footage causing increased long-term energy usage. From 2026 to 2028, the airport will construct an Arrivals Hall project that will expand the square footage of the terminal to over 335K sq ft. From 2028 to 2030, there is a Terminal Commons project, which will further expand the terminal square footage to over 406K sq ft. The proportion of these new expected terminal sizes to the current terminal size is used to estimate baseline usage over time more effectively.

**CUP Electricity Savings:** The new CUP is estimated to reduce the airport terminal's electricity consumption by 25% relative to current consumption with the legacy HVAC system.

**CUP Natural Gas Savings:** The new CUP is estimated to reduce the airport terminal's natural gas usage entirely.

### Calculations

#### **Total GHG Emissions:**

Natural Gas Emissions (kg CO<sub>2</sub>e, see below for calculations that contribute to this figure) + Electricity Emissions (kg CO<sub>2</sub>e, see below for calculations that contribute to this figure) + Propane Emissions (kg CO<sub>2</sub>e, assumed constant) + Diesel Emissions (kg CO<sub>2</sub>e, assumed constant) + Gasoline Emissions (kg CO<sub>2</sub>e, assumed constant) + Fugitive Emissions (kg CO<sub>2</sub>e, assumed constant)

**Natural Gas Emissions:**

(Terminal natural gas usage (MMBtu) + non-terminal gas usage (MMBtu)) \* 53.11 (kg CO<sub>2</sub>e per unit, emission factor for natural gas)

- **Business-As-Usual (No CUP) Terminal Natural Gas Usage:**

New terminal square footage/current terminal square footage \* 2019 baseline natural gas usage (MMBtu)

- **Post-CUP Terminal Natural Gas Usage:**

0 (since the CUP will eliminate 100% of the current HVAC's gas usage) + terminal grills natural gas usage

**Electricity Emissions:**

(Terminal electricity usage (kwh) + non-terminal electricity usage (kwh)) \* 0.3659 (kg CO<sub>2</sub>e per unit, emission factor for electricity)

- **Business-As-Usual (No CUP) Terminal Electricity Usage:**

New terminal square footage/current terminal square footage \* 2019 baseline electricity usage (kwh)

- **Post-CUP Terminal Electricity Usage:**

Business-as-usual terminal natural gas usage \* (1 - 0.25 (estimated CUP electricity savings))

Further information on the methodology and assumptions used to develop the GHG reductions can be found in the attached Technical Appendix and the GHG Calcs excel sheet in the Other Attachments folder.

**3. Environmental Results – Outputs, Outcomes, and Performance Measures****3.a Expected Outputs and Outcomes**

LIT's proposed GHG reduction measure has several well-defined environmental outputs and outcomes that will meaningfully contribute to EPA's strategic goals. A summary of specific outputs, outcomes, and proposed performance measures that may be used for tracking are provided in Table 2 below. Further detail on outputs and outcomes listed in the table are provided in Sections 3.a and 3.b. The performance measures will be reviewed and refined prior to implementation.

**Table 2 – Environmental Impacts**

Expected Outputs	Expected Outcomes	Proposed Performance Measures
<ul style="list-style-type: none"> <li>• 10 Heat Recovery Chillers</li> <li>• Workforce Training and Capability Building</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced GHG emissions</li> <li>• Reduced HAP/CAP</li> <li>• Decreased electricity rates in surrounding LIDACs</li> <li>• Additional workers trained in geothermal</li> </ul>	<ul style="list-style-type: none"> <li>• MT of CO<sub>2</sub>e reduced</li> <li>• Tons of co-pollutants reduced</li> <li>• Dollars saved on utility bills</li> <li>• Number of workers trained in geothermal</li> </ul>

Under Goal 1, “Tackle the Climate Crisis,” Objective 1.1, “Reduce Emissions that Cause Climate Change”, EPA is aiming to “aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy.” Currently, the majority of terminal emissions at Little Rock airport come from utility usage including natural gas usage and electricity for HVAC needs. As a result, the airport’s energy utilization index is well above the national airport average. In an effort to align with EPA’s objectives, LIT’s CUP will eliminate natural gas usage for HVAC and reduce electricity usage by 25%, resulting in GHG reductions of 10,203 MT CO<sub>2</sub>e from 2025 to 2030 and 48,073 MT CO<sub>2</sub>e from 2025 to 2050. This would be a 85% natural gas reduction throughout the terminal.

Implementation of the CUP also supports EPA’s 4<sup>th</sup> Strategic Goal, “Ensure Clean and Healthy Air for All Communities,” Objective 4.1, “Improve Air Quality and Reduce Localized Pollution and Health Impacts.” In addition to high-percentage GHG emissions reductions, the CUP will result in significant Criteria Air Pollutant (CAP) and Hazardous Air Pollutant (HAP) emissions reductions that will benefit the health of the surrounding communities. Per the Avoided Emissions and Generation Tool (AVERT), CAP reductions will total 3.64 tons/year including sulfur dioxide reductions of 1.26 tons/year, nitrogen dioxide reductions of 2.19 tons/year, and fine particulate matter reductions of 0.19 tons/year. HAP reductions will also total 0.1 tons/year.

Per a CO-Benefits Risk Assessment (COBRA), the CAP and HAP reductions contribute to a decrease in various health effects including but not limited to heart attacks, asthma, upper and lower respiratory illness, and acute bronchitis. Per the Climate and Economic Justice Screening Tool (CEJST), LIT is in a low-income and disadvantaged community identified as particularly disadvantaged as it relates to health burdens:

- This area is in the 86<sup>th</sup> percentile of people with asthma.
- This area is in the 84<sup>th</sup> percentile of people ages 18 years and older with heart disease.
- This area is in the 89<sup>th</sup> percentile of the average number of years a person can expect to live.

The COBRA health effects summary estimates that in just one year, CAP and HAP emission reductions at the airport will meaningfully decrease health risk to nearby residents. Specific health benefits include reduced asthma exacerbation and asthma related emergency room visits. Additionally, COBRA estimates a decrease in cardiovascular-related hospital visits and non-fatal heart attacks for the surrounding communities.

In addition to emission-related outcomes, other outcomes that may occur following implementation of the CUP project include:

- Decreased electricity rates in surrounding low-income and disadvantaged communities (LIDAC) due to reduced electricity demand at the airport facility.
- Increase in workforce capacity and capability related to geothermal system operations and maintenance in Little Rock and the state of Arkansas.
- Increased building resilience due to less reliance on local energy production.

These outcomes are strongly focused on benefiting LIDACs and the state’s operations and economy. The outcomes are expected to occur at the end of the grant funding period and beyond.

### 3.b Performance Measures and Plans

In 2022, LIT completed a Sustainability Management Plan (SMP) to direct airport activities and development towards its sustainability goals. LIT will establish data collection and reporting methods to track, measure, and report on progress toward achieving the environmental outputs and outcomes throughout the funding period. LIT will implement an annual scorecard tracking system that will be compiled to report Key Performance Indicators (KPIs) included in the SMP. Proposed performance measures have been outlined in Table 2 above and will be refined in project implementation. LIT in coordination with contractors will track natural gas and electricity utilities usage as well as maintain an updated inventory of equipment and each's contribution to the emissions to maintain GHG tracking. LIT will also coordinate with neighboring communities to document metrics such as utility bills and co-pollutant reductions. Furthermore, LIT will track workforce training programs and additional staff trained in geothermal technologies. Periodic reviews will be conducted by sub-consultants including environmental, mechanical, and construction contractors tasked with tracking. Methodologies will continue to be refined and updated. LIT will provide EPA with regular updates through in-progress reports on a semi-annual basis. LIT will share final output and outcome results with EPA in a final report.

### 3.c Authorities, Implementation Timeline, and Milestones

Arkansas Code Annotated 14-359-101 et. Seq. – Little Rock City Code, Sec. 7-26 & 27 provides the Little Rock Municipal Airport Commission the proper authority to manage, operate, extended, and maintain the Bill & Hillary Clinton National Airport. This adopted code authorizes the staff at LIT to pursue funding through the CPRG program and design, construct, and implement the CUP outlined in this application.

As mentioned in Section 1.a, implementation of the proposed measure will consist of two key phases: (1) design and (2) construction. The design phase will last about 39 weeks and the construction phase is expected to last about 12-18 months. Some design phase activities are already underway, with the CUP schematic design currently being drafted. This work is being funded through the federal AIG program, which provides limited capacity to cover CUP planning and design costs but cannot cover the full cost of the CUP project per AIG guidelines that specify that funding must directly serve the movement of passengers. By the expected CPRG award announcement date (10/1/24) LIT expects to finalize the design phase and begin construction activities. A detailed implementation timeline is included below.

Design and construction activities for the CUP will be overseen by the LIT team. LIT has contracted with Architectural Alliance to lead architectural design and CMTA, Inc. to lead the mechanical system design. LIT will also engage a Construction Manager at Risk (CMAR) to lead the construction activities. The following table provides a breakdown of the phases and the associated tasks.

**Table 3 – CUP Timeline**

Project Phase	Project Task	Implementing Entity	Key Actions	Dates of Task Completion	Total Time for Completion
Design	Schematic Design	LIT Architectural Alliance	Preparation of 30% schematic design drawings	1/8/24 – 4/19/24	14 weeks
Design	Design Development	LIT CMTA, Inc. Architectural Alliance	Preparation of 60% and 90% design drawings	4/22/24 – 6/28/24	10 weeks

Project Phase	Project Task	Implementing Entity	Key Actions	Dates of Task Completion	Total Time for Completion
Design	Prepare Construction Documents	CMTA, Inc. Architectural Alliance LIT	Preparation of 100% and IFC drawings	7/1/24 – 9/13/24	10 weeks
Construction	Construction Mobilization & Preparation	LIT CMAR	Develop Quality Assurance Project Plan and Mobilize construction equipment	9/13/24 – 10/24	4 weeks
Construction	Obtain Notice to Proceed	CMAR	Obtain NTP	7/24 – 9/24	6 weeks
Construction	Preliminary CUP Enabling Work	CMAR	Begin construction activities at airport site	9/24 – 3/25	6 months
Construction	Geothermal Well Field*	CMAR	Geothermal well field construction activities	10/24 – 4/25 or 6/25	6-8 months
Construction	Remainder of CUP Construction	CMAR	Remaining CUP construction activities at LIT airport	10/24 – 12/25 or 4/26	14-18 months
Design & Construction	Reporting	LIT	Provide ongoing semi-annual reporting	4/25 – 10/29	66 months
Design & Construction	Reporting	LIT	Provide ongoing annual reporting	10/25 – 10/29	60 months

\*Note this element is being proposed for funding under the Arkansas Regional Coalition application led by Metroplan.

## 4. Low-Income and Disadvantaged Communities

### 4.a Community Benefits

LIT is located in an industrialized, economically distressed area, Track ID 05119000200, that is identified as disadvantaged per the CEJST. Communities adjacent to airports suffer various burdens including significant noise and air pollution, and these communities are often low-income. This is particularly true in the Little Rock area, as all seven communities bordering the airport are considered disadvantaged by CEJST. Understanding this, LIT has made concerted efforts in recent years to make sure airport construction projects have a positive impact on the surrounding neighborhoods. Additionally, LIT's SMP identifies "Social Stewardship" as one of the primary pillars of the plan, which focuses on providing benefit to the LIDACs surrounding the airport. Below are the direct benefits that will occur in the LIDAC associated with LIT, as well as all surrounding LIDACs that entirely encompass the project location:

- ✓ GHG emissions reductions in LIDACs
- ✓ Reduced co-pollutants in LIDACs and Improved public health resulting from reductions in co-pollutants in LIDACs (reduction in diabetes, asthma, heart disease, and low life expectancy)
- ✓ Increased housing quality through lower commodity costs in LIDACs

✓ Job enhancements through workforce development trainings in LIDACs

In addition to the immediate airport region, CEJST Tract ID 05119000200, every community bordering the airport is identified as disadvantaged. These communities are:

- CEJST Tract ID 05119002600, which borders the airport region to the north.
- CEJST Tract ID 05119002700, which borders the airport region to the northeast.
- CEJST Tract ID 05119004007, which borders the airport region to the southeast.
- CEJST Tract ID 05119004001, which borders the airport region to the south.
- CEJST Tract ID 05119000500, which borders the airport region to the southwest.
- CEJST Tract ID 05119004600, which borders the airport region to the west.

Additional information on these communities is provided in the Areas Excel file in Other Attachments.

✓ GHG emissions reductions in LIDACs

Several of the communities listed above exceed the burden threshold for climate change, energy, and legacy pollution. The CUP project is one of LIT's primary efforts to improve air quality and reduce GHG reductions. With the CUP's 85% reduction in terminal natural gas usage, the project will provide reduced exposure to toxic chemicals and improve air quality for the surrounding community. Additionally, the site preparation underway for the CUP is separating the aircraft ramp drainage from the parking lot drainage to isolate and capture possible pollution from aircraft fuel and chemicals. Incorporating sustainability, reducing emissions, and increasing efficiency in the CUP design and construction will reduce the negative impacts of airport operations on surrounding disadvantaged communities.

✓ Reduced co-pollutants in LIDACs and improved public health resulting from reductions in co-pollutants in LIDACS (reductions in diabetes, asthma, heart disease, and low life expectancy)

In addition to climate change, energy, and pollution burdens, almost all the surrounding communities listed above experience health burdens. These burdens include top percentiles for diabetes, asthma, heart disease, and low life expectancy. High-percentage GHG emissions reductions will contribute to reducing negative health effects of the nearby residents. Furthermore, the CUP will result in significant co-pollutant CAP and HAP emissions reductions including annual CAP reductions totaling 3.64 tons and annual HAP reductions of 0.1 tons. Per a COBRA health analysis, these reductions can contribute to reductions in asthma and heart-related conditions and increase life expectancy for LIT neighbors.

✓ Increased housing quality through lower commodity costs in LIDACs

In line with EPA's Strategic Goal 2, "Take Decisive Action to Advance Environmental Justice and Civil Rights," the new infrastructure improvements at the airport have the potential to decrease prices for utilities in the community. With the construction of the CUP, there will be reduced electricity demand at the airport. This is estimated to result in decreased electricity rates in surrounding LIDACs.

✓ Job enhancements through workforce development trainings in LIDACs

One of the main burdens experienced by surrounding communities is low income and unemployment. Several of these communities rank in the 98<sup>th</sup> and 99<sup>th</sup> percentile for unemployment. LIT will leverage the CUP project as an opportunity to maintain high-quality jobs to residents. These would be long-term positions with employment extending beyond the scope of the grant. Through the GHG reduction measure, current and new LIT employees would be provided training and working sessions that



strengthen their capacity related to geothermal technology and equipment. Additionally, since the CUP will include less equipment overall, training on geothermal-specific equipment can be more focused. By increasing the knowledge base of the renewable system, the successful implementation may drive geothermal adoption in other parts of the city, region, and state, which will directly increase job quality and growth in this specific area of renewables.

Construction of the CUP may result in various disbenefits to the surrounding community such as noise pollution, air pollution, and traffic. LIT has recognized these potential disbenefits and identified potential mitigation strategies such as limiting construction hours and requiring a dust management plan. Additionally, LIT will work to plan truck routes and construction access to avoid disturbing the nearby residential communities and to avoid disrupting the local business community.

#### 4.b Community Engagement

As a part of LIT's SMP, which was developed in conjunction with the CUP design, a robust outreach program was executed to engage airport employees and the broader community in planning airport projects. As an initial step of the CUP design and development of the SMP, LIT worked with its stakeholders to identify their sustainability priorities through an online survey where participants were asked to rate the importance of various sustainability categories, including energy efficiency, renewable energy usage, water reduction, air quality, noise pollution reduction, community economic impact, and community engagement. Signs advertising the sustainability survey were posted throughout the airport terminal, at the customer service desks, at airport-owned gates, and on tabletops throughout the terminal. All signs had a QR Link to the survey so people could participate on their smartphones. Digital signs, also with the survey QR link, were also posted on airport TV screens.

The LIT project team also attended the airport monthly tenant meeting to request survey responses and incorporate stakeholder input as the design continued. In addition, LIT contacted the East Little Rock, Hanger Hill, and the College Station Neighborhood Associations to ask for their input via survey responses. Furthermore, through participation in local community meetings, the LIT airport board serves as representatives of and a conduit to the surrounding neighborhoods. Through this outreach, it was shown that stakeholders prioritized resiliency, employee safety and wellness, air quality, accessibility, and economic viability as the top sustainability efforts to be pursued. This stakeholder input was considered in the design of the Central Utility Plant and was a key reason geothermal HVAC was selected. Geothermal benefits air quality and adds resilience to airport operations and the organization. Additionally, the CUP will provide improved working conditions and safety for employees with newer lower profile equipment that will require less maintenance and eliminates fall hazards.

Engagement will continue as the project is developed and constructed through continued participation in the neighborhood and tenant meetings and by the use of LIT's website and social media for project information and updates. The LIT website and social media provide customer access to provide comments and input which will continue to be collected and considered.

#### 5. Job Quality

LIT airport supports the creation of high-quality jobs by implementing various initiatives and practices that prioritizes the well-being and growth of its employees. The geothermal CUP project will follow these principles in totality when examining and employing the required internal and external entities that may be directly involved in the design and construction. These efforts include offering competitive salaries and benefits, providing opportunities for skill development and career advancement, fostering a



positive work environment that values diversity and inclusion, promoting work-life balance, and promoting a safe and healthy workplace. Additionally, we integrate these values when procuring services from consultants, designers, and general contractors for infrastructure projects that take place within the airport facilities.

The concrete strategies outlined below are specific examples of how LIT advances these principles of high-quality jobs:

- LIT adheres to all federal contract provisions outlined by the FAA as an obligated sponsor for airport projects. Examples include:
  - Affirmative Action – requirements for minority participation in airport funded projects exceeding \$10,000.
  - Disadvantaged Business Enterprises (DBE) – requirements to have an approved DBE program on file with the FAA for projects exceeding \$250,000.
  - Occupational Safety and Health (OSHA) - regulations that ensure safe and healthy work conditions by setting and enforcing standards and by providing training, outreach, education, and assistance in construction projects.
  - Veterans Preference – contractors and sub-tier contracts must give preference to covered veterans as defined by Title 49 U.S. Code Section 47112.
- LIT airport is an Equal Opportunity Employer and Drug-Free workplace.
- LIT adheres to the FAA Non-Discrimination Statement which outlines unlawful activities for airport operators to discriminate against any person because of race, color, national origin, sex, creed, or disability in public services and employment opportunities.
- LIT offers fair benefits packages that include family medical coverage and contributions to retirement accounts.
- LIT and their contractors adhere to federal Davis-Bacon requirements and use prevailing wages and benefits for its employees for projects on airport facilities.

Because of the unique skills associated with maintaining and sustaining a geothermal CUP, the implementation of this project will require ongoing learnings, trainings, and hands-on working sessions for new and current LIT employees that will specifically focus on the renewable system. Not only will these positions advance knowledge of the specific measures being implemented, but they will also increase awareness for renewable energy use in commercialized facilities. In addition to increasing the quality of jobs through this project, the new CUP will increase the economic impact of the surrounding areas. With the new sustainable system in place, LIT will cease the use of natural gas for their central utility plant. In doing so, demand in the surrounding low income and disadvantaged communities will decrease, potentially contributing to reduced cost pressure for this commodity. This reduction will positively impact the quality of living through increased purchasing power for residents in the LIDAC.

## 6. Programmatic Capability and Past Performance

### 6.a Past Performance

LIT has received and successfully implemented federal and non-federal grants for over 20 years, primarily with the FAA. The airport plays a crucial role in facilitating sustainability, economic growth, and

connectivity in the region and is a leader in administering related federal activities. This experience confirms that the airport is qualified and capable of managing and delivering the CPRG Implementation Grant program. Below is a list of past and current federal contracts that LIT has administered or is currently administering:

**Table 4 – LIT Past Performances**

Federal Program	Assistance Agreement Number	CFDA Number	Federal or Non-Federal	Administering Agency	Description of the Agreement (date)	Contact Information
Airport Infrastructure Grant	3-05-0035-105-2203	20.106	Federal	FAA	This agreement outlines the conditions, special conditions, and assurances that comprise the \$615,896 grant administered by the Airport Infrastructure Grant (March 2023)	Kathy Franklin (817) 222-5697
Airport Terminal Program	3-05-0035-107-2023	20.106	Federal	FAA	This agreement outlines the conditions, special conditions, and assurances that comprise the \$8,000,000 grant administered by the Airport Terminal Program (September 2023)	Kathy Franklin (817) 222-5697
Airport Improvement Program	3-05-035-095-2020	20.106	Federal	FAA	This agreement outlines the conditions, special conditions, and assurances that comprise the \$4,609,525 grant administered by the Airport Improvement Program (July 2020)	Kathy Franklin (817) 222-5697

The Airport successfully manages these federal programs through strategic and systematic approaches throughout the program's lifecycle. Effective communication and collaboration amongst airport personnel are key to verifying that all federal regulations and reporting requirements stay in compliance as outlined in each opportunity. LIT uses strong financial management practices, grant expenditures monitoring, and record detailing that promote accurate accounting and transparency with stakeholders. Regular monitoring and evaluation of the grant-funded activities are also required to track progress, identify challenges, and make required adjustments to provide successful outcomes. The programs mentioned in Table 4 fall under these guidelines and are standard when LIT receives federal and non-federal funding.

## 6.b Reporting Requirements

The three programs mentioned above are subject to federal reporting requirements for financial and performance-related activities. As a grant recipient, LIT complied with annual audit reporting requirements for funding that they directly received, as well as any sub-recipients involved with these programs. Additionally, LIT complied with the following financial reporting requirements:

- 2 CFR 180 – Office of Management and Budget (OMB) Guidelines to Agencies on Governmentwide Debarment and Suspension
- 2 CFR 200.328 – Financial Reporting
- SF – 425 – Federal Financial Report
- SF – 271 – Outlay Report and Request for Reimbursement for Construction Program
- SF – 270 – Request for Advance or Reimbursement

LIT's current staff has over 20 years of experience with federal and non-federal programs pertaining to reporting. The airport submitted acceptable final documentation of the requested reports on behalf of these agreements within a timely manner dictated by each of the program guidelines. Additionally, LIT has received and successfully closed out 95 federally funded grants over the past 40 years as an organization. LIT continues to evaluate their current reporting process to confirm required reporting documentation is both accurate and accountable for all entities involved in distribution, reception, and disbursement of all federal funding.

## 6.c Staff Expertise

The LIT airport team consists of industry experts that have a broad understanding of their organization responsibilities and strategic goals and provide a high impact for their stakeholders. The team includes staff with professional qualifications, construction management, project management, and financial management experience. Below is a summary of key team members. Full resumes for the project team with detailed background information are included as an attachment to this application.

**Table 5 – Summary of Key Team Members**

David Finnie – Manager, Design and Construction			
Organization	LIT	College Degree	Bachelor's degree in civil and environmental engineering
Years of Experience	25	Certifications	N/A
Brief Biography	David has 25 years of experience in design and construction. David is responsible for managing the design and construction of over \$125M of capital projects at the airport, with 75% of the funding coming from federal grants. David also has previous industry experience managing the design and construction of other capital projects totaling over \$1.4 Billion, an average value of over \$100 Million for each completed project. David has been instrumental in the completion of projects that include airports, high-rise office and apartment buildings, NFL football stadiums, educational facilities. David is proficient in construction management, scheduling, cost estimating and control, onsite construction coordination and management, LEED, and sustainability projects.		

**Laura Long – Manager, Capital Finance**

Organization	LIT	College Degree	Bachelor's degree in accounting
Years of Experience	10	Certifications	Certified Public Accountant (CPA)
Brief Biography	Laura has over 10 Years of experience in grant management and is responsible for managing the funding of all construction projects at LIT. Laura manages all aspects of the grant life cycle - application process, pre-award, post-award, and grant close-out activities. Laura has worked closely with federal agencies and senior management to provide support services to ensure compliance in accordance with grant agreements, airport procedures and federal agency requirements.		

**Suzanne Peyton – Director, Properties, Planning & Development**

Organization	LIT	College Degree	Bachelor's degree in civil engineering
Years of Experience	25	Certifications	<ul style="list-style-type: none"> <li>Professional Engineer (PE)</li> <li>Licensed Airport Planner</li> </ul>
Brief Biography	Suzanne has over 25 years of experience executing grant funded projects for airports in the region. She oversees a portfolio of \$150 million capital program that includes 40+projects. Suzanne oversees the pursuit of applications for federal grant funding for over 75% of capital program costs.		

**Tom Clarke – Deputy Executive Director**

Organization	LIT	College Degree	<ul style="list-style-type: none"> <li>Bachelor's and master's degree in civil engineering</li> <li>Master's degree in business administration</li> </ul>
Years of Experience	35	Certifications	Professional Engineer (PE)
Brief Biography	Tom has over 15 years of experience managing the capital program at LIT including the Phase 1 – Terminal Redevelopment Program. He has completed over \$200 million capital projects during tenure at LIT and has experience funding capital projects with FAA AIP grants, PFCs, CFCs, and local airport funds. Tom also has prior airport experience managing projects at Memphis International Airport (MEM).		

**David Mayer – Project Manager**

Organization	CMTA, inc.	College Degree	Bachelor's degree in electrical and computer engineering
Years of Experience	16	Certifications	N/A
Brief Biography	David leads the construction administration department for CMTA, inc. Since joining CMTA, inc. in 2014, David has led multiple high-profile projects in the commercial, education, and health care markets. Dave focuses on installation and verification of MEP systems and ensures complex, multi-phased projects are on schedule with the appropriate number of resources utilized.		