



# ENERGY AND SUSTAINABILITY MASTER PLAN



EXECUTIVE SUMMARY  
OCTOBER 2022



PREPARED BY



TETRA TECH



DONOVAN  
ENERGY

**Energy and Sustainability Master Plan**

Airports today are challenged to manage safety, operational costs and capacity, reduce environmental risks and liability, ensure employee and customer satisfaction, while demonstrating a commitment to the economic impact, health, and vitality of the communities they serve. As the aviation industry establishes goals for decarbonization, key stakeholders and investors have high expectations for how airports reduce environmental impacts. To address this challenge, the CVG Airport Authority developed an Energy and Sustainability Master Plan. The plan aligns ongoing efforts and models how the CVG Airport Authority can adopt and adapt sustainable actions, innovative technologies and strategies.

**CVG Airport Authority's Commitment to Sustainability**

In this Energy & Sustainability Master Plan, the CVG Airport Authority is committing to continuous sustainability improvements. The definition of sustainability in the context of aviation developed by Airports Council International (ACI) is a comprehensive approach to **Economic Viability, Operational Efficiency, Natural Resource Conservation, and Social Responsibility** (EONS) across all operations of an airport.

The CVG Airport Authority is pledging to achieve the following goals:

1. Align with the ACI's airport industry goal of Net Zero Carbon by 2050 by providing a roadmap for an efficient, practical, cost-effective, and robust energy reduction implementation plan to achieve this goal.
2. Become an active participant in ACI's Airport Carbon Accreditation Program to manage and ultimately reduce CVG's carbon emissions.
3. Support the efforts of our aviation industry partners in making Sustainable Aviation Fuel (SAF) more widely available in North America and across the globe by enhancing the ability for aircraft operators to use SAF at CVG.
4. Develop and adopt an Environmental, Social, and Governance (ESG) reporting framework.



Through the implementation of this plan, the CVG Airport Authority will be a catalyst for our region, the aviation industry, and beyond by demonstrating how to achieve carbon reduction effectively in a fiscally responsible and attainable manner.

**Process for Developing the Plan**

The CVG Airport Authority initiated a holistic review of all processes, utility consumption, and facility conditions to reflect the current operational efficiency and environmental impact at CVG. This process started with engaging teams from across the organization through departmental team listening sessions and an executive leadership charette. The results of these listening sessions provided a clear message: Sustainability is already in action at CVG. Sustainability is embedded into CVG's long-standing culture of dedication to operational efficiency and continual improvement. There is already an understanding that each person has a role in moving sustainability forward. This plan will strengthen that culture.

## Energy and Sustainability Master Plan

This plan contains a comprehensive high-level set of recommendations to achieve energy reduction, reduce carbon emissions, and water-use reduction, through enhanced land management, vehicle and equipment transitions, and sustainable design and construction practices. The CVG Airport Authority is also committed to enhancing the human experience through programs and initiatives for employees, passengers, and our surrounding communities. This high-level sustainability road map is presented in conjunction with a detailed energy reduction and transition plan.

### Carbon Emission Reduction Plan

To ensure the goal to achieve net zero carbon emissions by 2050 is attainable, a detailed strategy has been developed specific to CVG’s onsite operations. The overarching strategy of this plan is to reduce energy consumption through reducing our energy usage by optimizing HVAC and facility infrastructure. The plan also encompasses the electrification of the campus which includes our buildings and vehicles, and then production of energy through the application of solar, geothermal, and micro-grids. We will focus on maximizing the energy reductions realized by energy conservation, energy efficiency, and sustainable construction before establishing renewable energy production. This is the most cost-effective approach to achieving a net zero emission goal. Figure 1 provides an overview of this implementation roadmap of holistic emission reduction.

Guiding Principle		Sustainability Categories and Key Initiatives
E	Economic Viability	<ul style="list-style-type: none"> <li>Energy Management: Pathway to Carbon Neutrality</li> <li>Life Cycle Cost Focus</li> <li>Funding Partnerships</li> <li>Environmental Social Governance (ESG) Reporting Plan</li> </ul>
O	Operational Efficiency	<ul style="list-style-type: none"> <li>Waste</li> <li>Vehicles &amp; Equipment</li> <li>Design and Construction Practices</li> <li>Sustainable Aviation Fuel (SAF) Logistics</li> </ul>
N	Natural Resource Conservation	<ul style="list-style-type: none"> <li>Water</li> <li>Stormwater</li> <li>Land Management</li> </ul>
S	Social Responsibility	<ul style="list-style-type: none"> <li>Human Experience: Passengers, Employees, and Community Outreach</li> <li>Sustainability Certifications</li> <li>Airport Carbon Accreditation</li> <li>Internal Culture of Sustainability</li> </ul>

The overarching strategy of this plan is to reduce energy consumption through reducing our energy usage by optimizing HVAC and facility infrastructure. The plan also encompasses the electrification of the campus which includes our buildings and vehicles, and then production of energy through the application of solar, geothermal, and micro-grids. We will focus on maximizing the energy reductions realized by energy conservation, energy efficiency, and sustainable construction before establishing renewable energy production. This is the most cost-effective approach to achieving a net zero emission goal. Figure 1 provides an overview of this implementation roadmap of holistic emission reduction.

Holistic Carbon Emission Reduction Approach

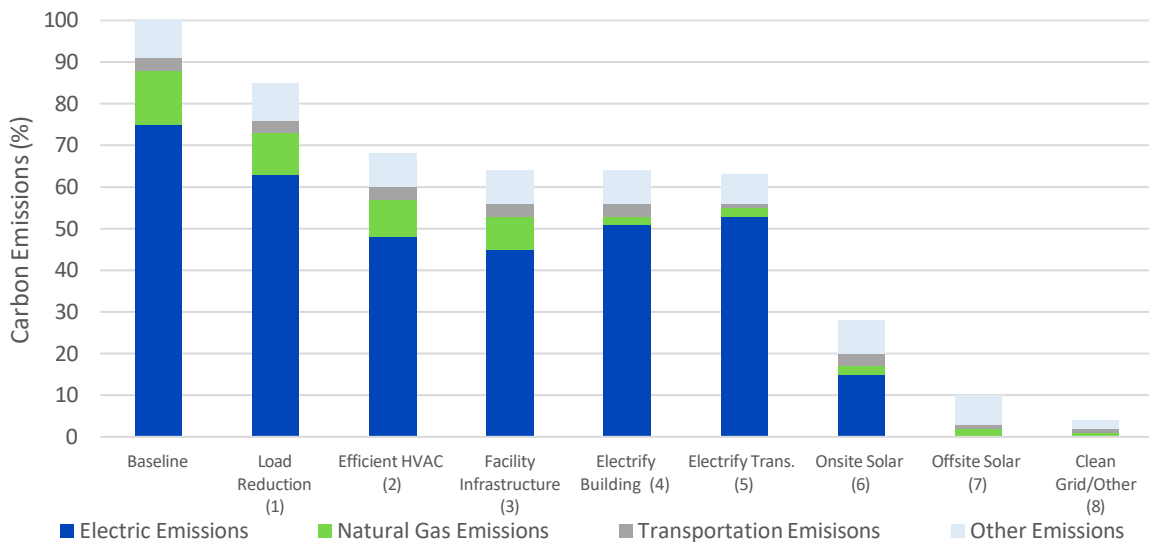



Figure 1. Systematic Approach to Net Zero Carbon Emissions and Investment Overview

## Energy and Sustainability Master Plan

Figure 2 shows a list of projects that will be considered.

Energy Infrastructure Project Scope Highlights	
<ul style="list-style-type: none"> <li>• Complete LED lighting upgrades across the entire campus</li> <li>• Renovation of Concourse A’s HVAC infrastructure</li> <li>• Full geothermal HVAC renovation for the Police Department</li> <li>• Full HVAC renovations at Airfield Maintenance Building #3</li> <li>• HVAC controls upgrade at CVG Centre, as well as multiple other facilities on campus</li> <li>• Upgrades to the chilled water plants at Main Terminal and Concourse B</li> <li>• Heating plant upgrades at CVG Centre, Main Terminal, Concourse B</li> <li>• Infrastructure upgrades to water metering system</li> </ul>	

*Figure 2. Energy Infrastructure Project Scope Highlights*

## Energy and Sustainability Master Plan

### Conclusion

Sustainability is critical to the CVG Airport Authority’s mission to create a viable future for our community and our industry. Each person and every role can have a responsibility in moving sustainability forward. This plan lays out the roadmap for our sustainability journey which will set the CVG Airport Authority on a path to reduce carbon emissions in line with Airport Council International’s Net Zero by 2050 goal through the ACI’s Carbon Accreditation Program. This roadmap will help us help us support our aviation partners through bringing sustainable aviation fuels to CVG while creating a vibrant and thriving campus through our ESG program. We are excited to start this journey with our employees, partners, and stakeholders as this program will drive our airports, our region, and our industry forward.