

Alternative Fuel and Electrification Panel

Presented By:
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C&S Companies



MAAE
Michigan Association
of Airport Executives

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Relevant Aviation Goals:

FAA

Net-zero GHG emissions
from
U.S. Aviation Sector
by 2050

Source: [United States 2021 Aviation Climate Action Plan](#)

ICAO

Net-zero carbon emissions
from
international aviation
by 2050

Source: [International Civil Aviation Organization \(ICAO\)](#)

ATAG

Mission to drive air transport towards
net-zero carbon emissions
by 2050

Source: [Air Transport Action Group \(ATAG\)](#)

ACI

Net-zero carbon emissions
from
ACI member airports
by 2050

Source: [Airport Council International \(ACI\) Long-Term Carbon Goal Study for Airports Executive Summary](#)

Electrification at Airports

- Aircraft
 - Gate Power and Pre-Conditioned Air (PCA)
 - Electric Aircraft
- Vehicles and Equipment
 - Passenger and Employee Vehicles
 - Ground Support Equipment
 - Shuttle Buses
 - Rental Car Facilities
 - Cargo Areas
 - Stationary Sources
- Buildings and Grounds
 - Geothermal Heating and Cooling
 - Solar Installations
 - Energy Efficient Buildings

Aircraft



Vehicles and Equipment

Hertz Plans to Buy 175,000 Electric Vehicles From GM Over Five Years

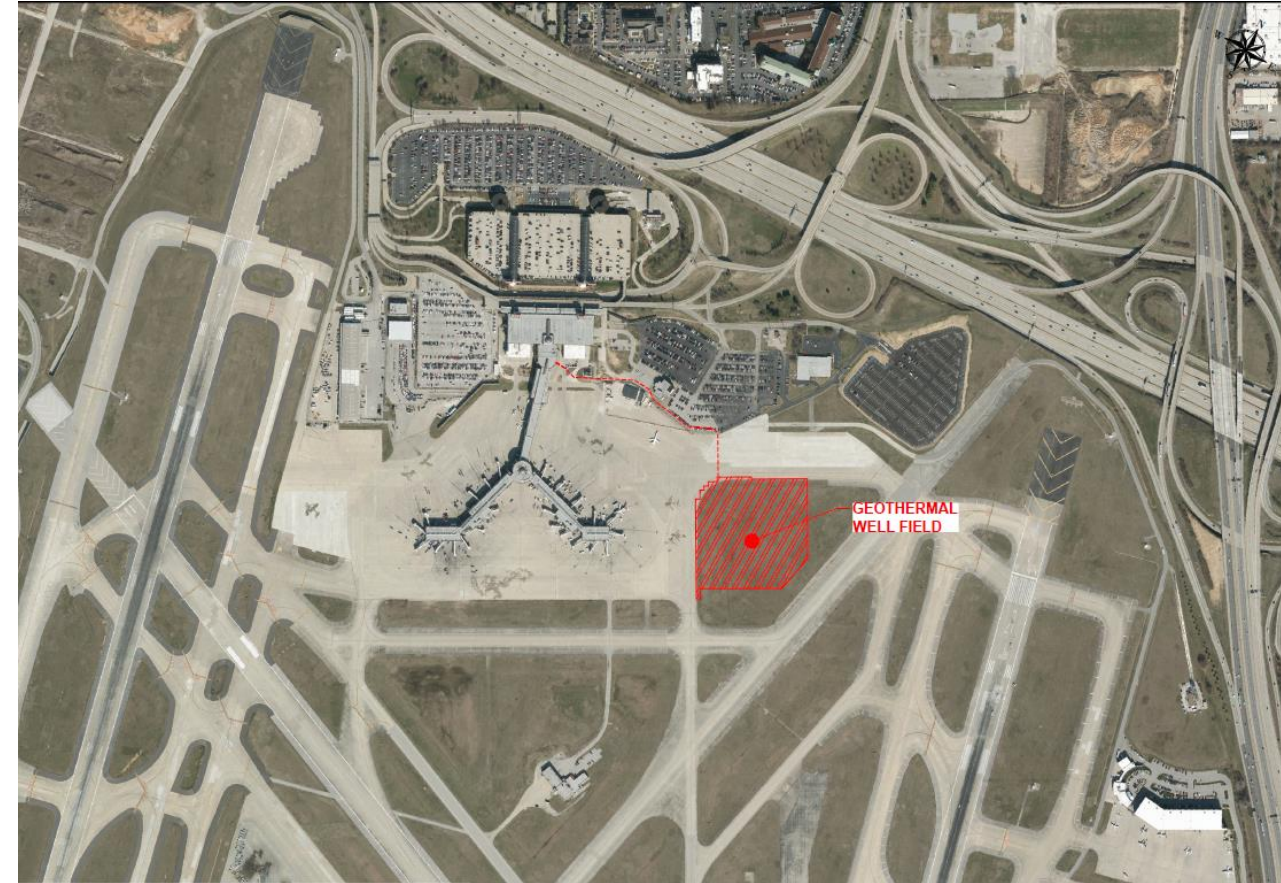
- Deliveries to begin with Bolt models in first quarter 2023
- Rental company previously signed deals with Tesla, Polestar



2023 Chevrolet Bolt electric vehicles. *Source: General Motors*



Buildings



LOUISVILLE
REGIONAL AIRPORT AUTHORITY
750 ADMINISTRATION DRIVE
LOUISVILLE, KY 40208
(502) 268-4524

LOUISVILLE
MUHAMMAD ALI
INTERNATIONAL AIRPORT

LOUISVILLE
REGIONAL AIRPORT AUTHORITY
750 ADMINISTRATION DRIVE
LOUISVILLE, KY 40208
(502) 268-4524

LOUISVILLE MUHAMMAD ALI INTERNATIONAL AIRPORT
GEO THERMAL WELL FIELD

DRAWN	CHECKED	SCALE	DATE	SHEET
CM	BS	N.T.S.	5/28/21	1 OF 1

VALE AND ZEV FUNDING



Voluntary Airport Low Emissions (VALE) Program

FEDERAL SUPPORT FOR CLEAN AIR AND AIRPORT EMISSIONS REDUCTION INITIATIVES

Commercial airports Only
Non-Attainment or Maintenance Area
Any Emission Reduction Projects



Airport Zero Emission Vehicle (ZEV) and Infrastructure Pilot Program

SUPPORTING AIRPORTS' EFFORTS TO IMPROVE LOCAL AIR QUALITY

Any Public Use Airport
AIP Eligible
Vehicles and Chargers

Multimodal Airport Charging Stations



#23-019

Michigan Department of Transportation
Multimodal Airport Charging Station
Deployment—Phase I

Final Work Plan



MDOT Multimodal Airport Charging Station

Deployment - Phase I

- Assessment
 - Applicable locations.
 - Economic, environmental, and community impacts.
 - Existing infrastructure.
 - Applicable regulatory and approval processes for deployment.
- Strategy
 - Establish/deploy an appropriate charging station structure.
 - Secure any federal/state approval.

MDOT Multimodal Airport Charging Station

How can airports assist in this effort?

- Initial Evaluation
 - Airport Contact Information
 - Current and planned operations
 - Physical characteristics of airport
 - Electrical load and ability to upgrade
 - Interest in a Multimodal Electrification
 - Short-List Evaluation
 - Site Visit
 - Review ALP
 - Detailed Electrical Analysis
 - Infrastructure Analysis
 - Economic Environmental and Community Impacts
- 
- A stylized illustration of an airport terminal building with the word 'AIRPORT' on its facade. In the foreground, there are several wind turbines. An airplane is flying in the sky above the terminal. The background features green hills and a blue sky with a few clouds.

Schedule of Research Activities

Research Activity		Estimated % of Total Budget	FY 2023												FY2024											
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep
Task 1	Kickoff Meeting & Project Management	10%	O																							
			X																							
			R																							
Task 2	Assessment of applicable locations	20%	O																							
			X																							
			R																							
Task 3	Assessment of economic, environmental, and community impacts	15%	O																							
			X																							
			R																							
Task 4	Assessment of existing infrastructure	30%	O																							
			X																							
			R																							
Task 5	Assessment of applicable regulatory and approval processes for deployment	15%	O																							
			X																							
			R																							
Task 6	Strategy for deploying appropriate charging station structure (incl. draft and final report)	10%	O																							
			X																							
			R																							



THANK YOU & QUESTIONS



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