



ALTERNATIVE ENERGY FEASIBILITY STUDY

INFORMATIONAL BRIEFING

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PHILLIP A. WASHINGTON, Chief Executive Officer

DAVE LAPORTE, Chief Operations Officer



To meet the goals of Vision 100 and Operation 2045, DEN is actively pursuing a variety of sustainable energy alternatives and implementing energy-efficient technologies.

Complimenting these efforts, DEN is exploring innovative power solutions to support the airport's critical growth projects that require large, reliable, and clean energy sources. This work has the potential to expand economic impact throughout the Rocky Mountain region.

CEEA Research & Innovation Overview



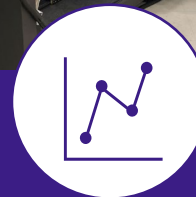
Collaborate
with university students
to research aviation
megatrends to
surface DEN specific
challenges and
opportunities.



Synthesize
insights into an annual
**Aviation Megatrends
Report** that provides
strategic
recommendations for
DEN.



Bring stakeholders
together to **collaborate**
and **solve**
aviation's greatest
challenges.



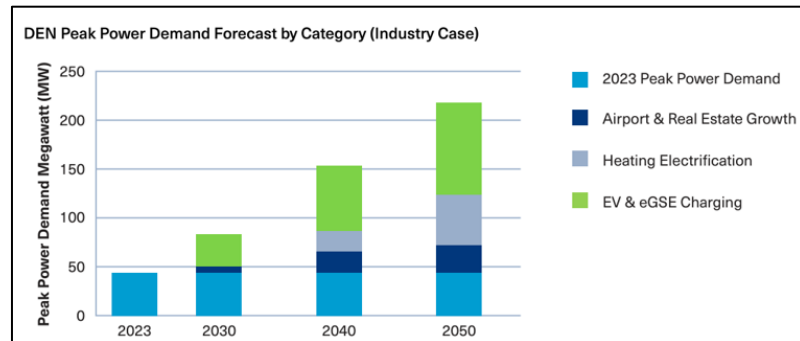
Test new technologies
and practices at DEN to
drive industry leadership
for the future of aviation.

DEN's CEEA Research and Innovation program will coordinate with other airport divisions to lead a study with an external consultant. The purpose of the study is to determine if a small modular reactor is a viable addition to our sustainable energy portfolio for meeting DEN's growing power capacity needs.

DEN's Estimated Power Needs



- Current electrical demand = 45 MW of load (DEN + Tenants)
- > 100+MW future approximate additional demands
 - 40 MW Consolidated Rental Car Facility (ConRAC)
 - 60 MW ground support equipment
 - Electric vehicle charging
 - DEN real estate development
- Demand not accounted for
 - New concourses
 - New runways
 - Advanced air mobility
 - Unknown future development



- Xcel study shows DEN requiring 235 MW
- High end estimate was 400 MW needed

Small Modular Reactor (SMR) Explained



- A nuclear fission reactor
- Factory-built-and-assembled modules
- Varying electrical output
- 1/10 to 1/4 the size of traditional nuclear power plants
- Advanced Safety features
 - Passive safety features such as gravity fed coolant, natural circulation
 - Can function without external power sources
 - Simpler designs
 - Lower core power
 - More coolant

Why Investigate a Small Modular Option?



- DEN is committed to becoming the greenest, most resilient airport in the world
- Carbon-free energy alternative
 - Contributes to City and County of Denver's goal of all existing infrastructure to be net zero by 2040
 - Helps meet the sustainability and resiliency goals for DEN's Vision 100 Strategic Plan
- Provides DEN flexibility in meeting its power needs
 - SMR power capability can grow as DEN demand grows
 - May support non-airport economic development and workforce opportunities
- DEN can control the schedule for additional modules based upon power capacity needs

- Colorado House Bill 25-1040, “Adding Nuclear Energy as Clean Energy Resource”
 - Signed into law March 31, 2025
 - Now part of state’s efforts to reduce CO2 emissions
 - Transition to a more sustainable energy system
 - Allows other entities to make use of clean energy
 - Added to the state’s statutory definition of “clean energy” and “clean energy resource”
- Presidential Actions
 - White House issued series of Executive Orders related to nuclear industry expansion on May 23, 2025
 - Promotes modular reactors
 - 18-month maximum time to approve/deny application to construct and operate a new reactor
- The study will review state and federal regulatory requirements for a modular reactor to operate on DEN property

- Opportunity to grow the workforce through job creation (Career Pathways)
 - Job estimates for SMR (1 unit, 110 MW capacity)
 - Construction: ~1,000 (estimates range from 1,000 - 3,600)
 - Site Staff: 50 – 100 full time staff (estimates vary)
 - Incremental increase if additional modules added
 - Opportunity for specialized job creation leading to higher wages and career pathways
- Adequate clean energy supply can support bringing in large companies to the area around DEN
 - Technology and Industrial companies with high energy requirements
 - Data Centers
 - Hydrogen fuel production facility

- Benefits of using DEN land:
 - Operates in a secured area
 - No additional funding necessary for land purchase
- Possible grant opportunities
- Ability to scale in size to produce additional electrical power
- Small footprint estimated at 10 – 100 acres*
- Co-generation
 - Use the heat generated to heat DEN facilities
- Can use the promise of clean, reliable energy to help attract new industry to the DEN area

** Not including what the government may require for safety zone*

Key Areas this Feasibility Study Will Examine



- Capacity and Integration with Existing Electrification Efforts
- Operations and Maintenance Considerations
- Regulatory Details
- Outreach Components
- SMR Functionality and Safety Considerations
- SMR Funding and Constructability

Estimated Timelines



- RFP release: Q3 2025
- Vendor Selection/Negotiations: Q4 2025
- Transportation & Infrastructure Committee: Q4 2025
- Council Approval: Q4 2025
- Contract Award: Q1 2026
- Contract Completion: Q2 2027

THANK YOU & QUESTIONS