

# Roll of Non-Profits in H<sub>2</sub>@Airports

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U.S. Department of Energy  
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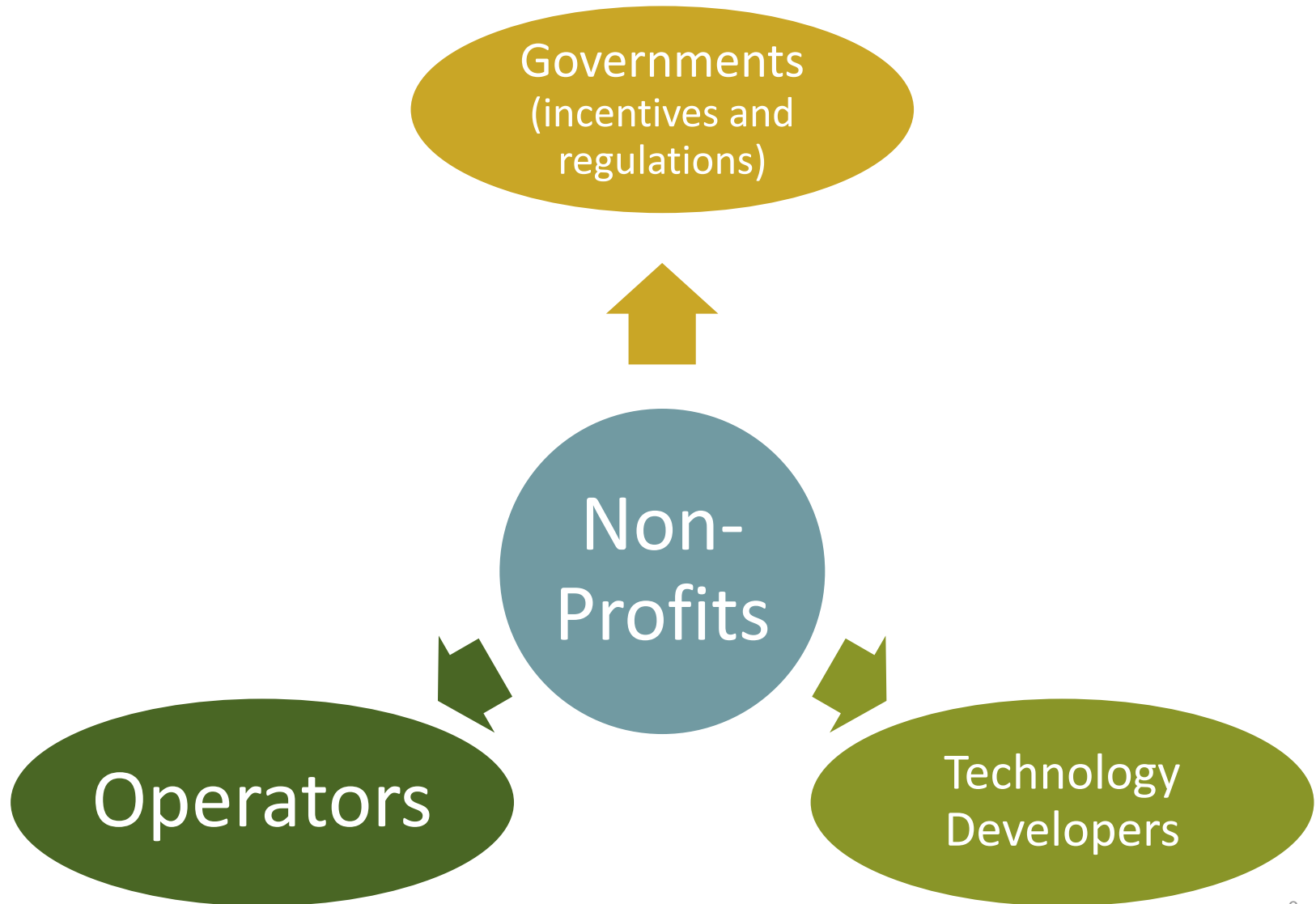
# Major Players in H2@Airports Initiatives

Technology  
Developers

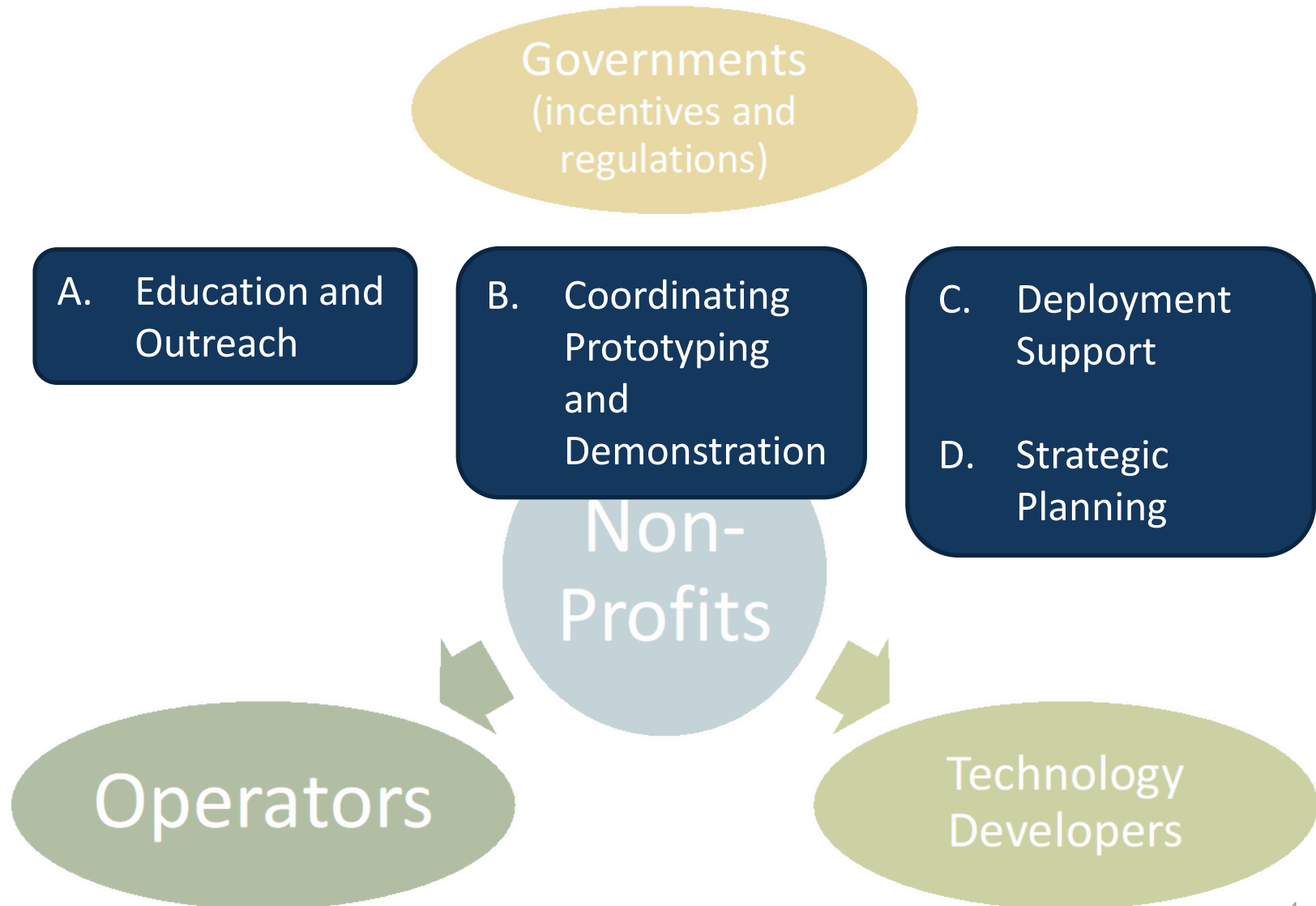
Governments  
(incentives and  
regulations)

Operators

# Non-Profits fill in the gaps



# Non-Profits fill in the gaps



# CTE's Perspective



## WHO WE ARE

501(c)(3) nonprofit engineering and planning firm



## OUR MISSION

Improve the health of our climate and communities by bringing people together to develop and commercialize clean, efficient, and sustainable transportation technologies



## PORTFOLIO

\$571 million

- *Zero-emission transportation research, demonstration, deployment and planning*
- *90 Active Projects totaling over \$316 million*



## NATIONAL PRESENCE

Atlanta, Berkeley, Los Angeles, St. Paul

# A. Education and Outreach

- Coordinate the H<sub>2</sub> transportation industry to:
  - Exchange best practices
  - Grow market volume to achieve economies of scale
  - Foster regional coordination to develop efficient local H<sub>2</sub> economies
- Advocate for support in DC and Sacramento



# Advocacy for Airport Zero Emission Equipment Funding

- In 2018 CTE successfully advocated for expansions to several FAA programs that support airport zero emission vehicles in the FAA reauthorization bill:
  - Voluntary Airport Low Emissions Grant Program (VALE)
  - Airport Zero Emissions Vehicle and Infrastructure Program
  - FAA Zero-Emission Technology Development Program



[FAA Home](#) ▶ [Airports](#) ▶ [Environmental Programs](#)

**Airport Zero Emissions Vehicle and Infrastructure Pilot Program**  
**Airports**

Image Sourced from content posted on FAA.gov

# FAA's Voluntary Airport Low Emissions (VALE) grant program Updates

- Funding for zero-emission vehicles no longer limited to airports in air quality (NAAQS) non-attainment areas
- Authorizes full 75-90% funding for zero-emission vehicles (vs. previous funding for incremental cost only)
- Equipment can operate off airport property (e.g. remote parking shuttles)
- Adds funding eligibility for micro-grids



# FAA ZEV Program Updates

- Expanded pilot program for zero-emission airport vehicles and infrastructure (75-90% federal cost share)
  - No longer limited to airports in air quality (NAAQS) non-attainment areas
  - Equipment can operate off airport property (e.g. remote parking shuttles)
  - 3<sup>rd</sup> party management and technical support can be included in the grant.

# FAA Zero-Emission Technology Development Program

- Authorizes a program to conduct airport-oriented zero-emission technology and infrastructure evaluation, research, and demonstration.
- Goals are to:
  - a. Facilitate zero-emission equipment deployment
  - b. Minimize risks of such deployments
- Program will cover up to 80% of the project costs.

# Status of Updates

- FAA has yet to implement the 2018 FAA reauthorization language to update these programs.
- CTE's member base is reaching out to congress to advocate for implementation.
- H2@Airports workshop attendees interested in supporting these advocacy efforts can contact me at [joel@cte.tv](mailto:joel@cte.tv)



October 5, 2020

The Honorable Rick Larsen  
Member of Congress  
2113 Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Larsen,

On behalf of the Center for Transportation and the Environment (CTE) and its membership, we are writing to thank you for your continued leadership on developing federal policies that will help U.S. airports deploy innovative and sustainable technologies to advance



## B. Coordinating Prototyping and Demonstration

- ID applications for new technology
- Conceptualize relevant projects and secure funding
- Assemble project teams
- Provide technical project oversight, coordination and administration

Kenworth-Ballard Fuel Cell Truck



Delta-CTE Repowered Beltloader



## C. Deployment Support

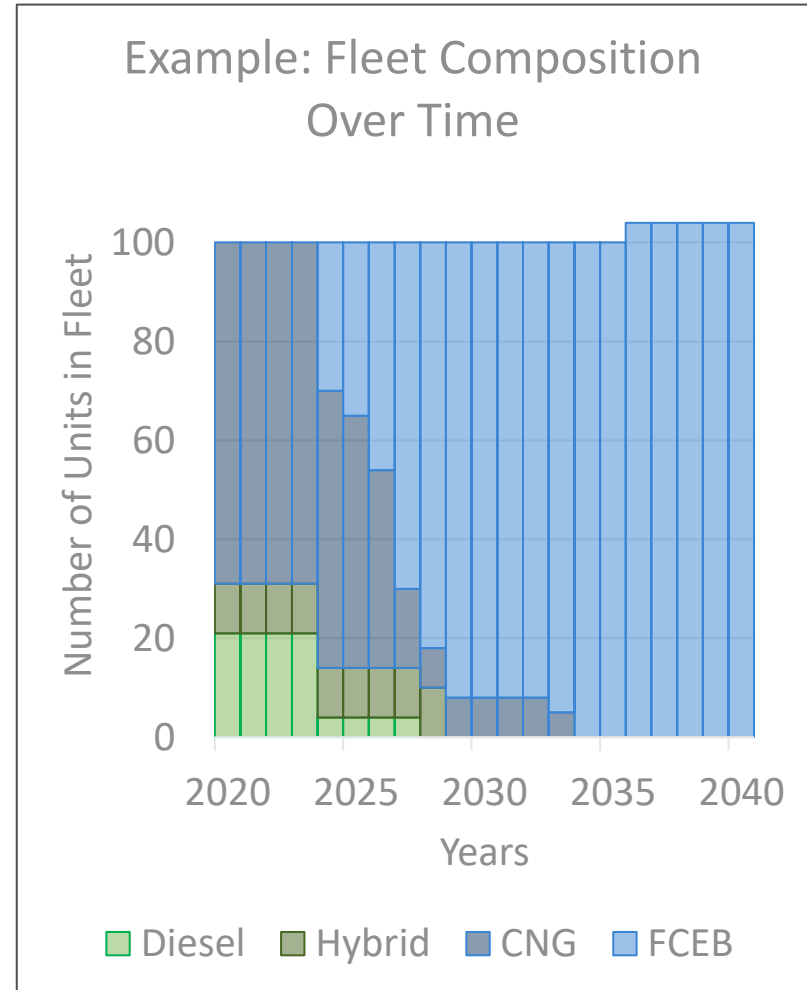
- Operations Planning
  - Tech specs required for target duty cycle
  - Fueling specs, logistics
- Operations Support
  - Monitor operations to evaluate trends, benefits and costs
  - Identify opportunities to improve usability, reduce cost and minimize risk.
- Procurement and Build Support
  - Grant funding identification and proposal support
  - Project management
  - Technical consulting



## D. Strategic Planning

### Typical Planning Assessments

1. Regulatory Reqs. (e.g. CARB Airport Shuttle reg.)
2. Operations and fuel requirement analysis
3. Fueling specs development and infrastructure assessment
4. Procurement and transition analysis
5. Total cost of ownership
6. H<sub>2</sub> equipment transition roadmap



# Questions

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