

Barriers to Private Finance in AFV and Fueling Infrastructure Deployment

Sarah Dougherty

NASEO Transportation Committee Meeting



CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

C2ES.ORG



- **Independent, nonpartisan, nonprofit organization**
- **Working to advance strong policy and action to address the twin challenges of energy and climate change**
- **Founded in 1998 as the Pew Center on Global Climate Change**
- **Became C2ES in 2011**
- **Named one of the world's top environmental think tanks in 2012 (Univ. of Pennsylvania survey)**

Business Environmental Leadership Council (BELC)



Barriers to Private Finance in AFV and Fueling Infrastructure Deployment



- Project overview
- Cost of capital
- Barriers to private investment in AFVs
- Starting to think about solutions



- **Public benefits of alternative fuels not captured in private market today**
 - Greenhouse gas reductions
 - Energy security
 - Local air quality
- **Lack of available public funds for deployment; need new private funding mechanisms**
- **Exciting finance models are accelerating deployment of building efficiency and renewable energy technology**



Identify Financial Barriers to Benefits

- Energy efficiency improvements
- Fuel savings
- Cost Savings
- Consumer undervaluing of operating cost savings
- Environmental & energy security benefits



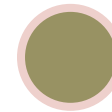
Prepare 2 Case Studies

- Existing AFVs or fueling infrastructure project
- Apply financing for energy efficiency savings from buildings to transportation



Develop Innovative Business Models

- Fuel & vehicle value proposition
- Target market
- Cost structures & revenue streams
- Implementation and/or demonstration guidance.
- Test procedures



Create Strategic Plans for Implementation

- Location or market-specific challenges & opportunities
- Business model application to a particular market
- Guidance including key players, policy actions, cost & benefit, & anticipated results.

Year 1

Year 2

- **What is the cost of capital?**
- **What increases the cost of capital for AFVs and infrastructure?**
 - Legal, regulatory, and institutional barriers
 - Information-related barriers
 - Risk barriers
 - Scale barriers



- **ESCO and energy efficiency performance contracts**
 - Used for building energy efficiency upgrades
 - Higher upfront cost of the technology, but lower operating cost
 - Finance bridges gap
 - Especially useful in the public sector
- **Possible AFV use: natural gas vehicles**



- **Green banks**

- Connecticut started green bank in 2011
- NY has announced \$1 billion green bank
- Leverage public money to attract larger private investment
- Credit Enhancements
 - What are they?
 - How do they help?
- Creating markets for new financial instruments

- **Possible AFV use: new financial instruments like securitized assets**



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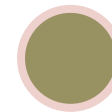
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