Alternative Fuel Vehicles in State Energy Assurance Planning

July 17, 2014

Webinar hosted by the National Association of State Energy Officials (NASEO), with support from the U.S. Department of Energy’s Clean Cities Program
About NASEO

A national non-profit representing the 56 governor-designated energy officials from each state and territory.

State Energy Offices invest $4 billion annually in a variety of priority areas, including:

- Efficiency in residential, multifamily, commercial and industrial buildings;
- Renewable energy;
- Oil, gas, electricity production and distribution;
- New and emerging technologies and services;
- Energy emergency preparedness and resiliency; and
- Advanced transportation technologies, fuels, and infrastructure, among others.

Committees

- Buildings
- Government Affairs
- Industrial and Advanced Manufacturing
- Energy Security
- Financing
- Transportation
- Fuels and Grid Integration
NASEO’s Affiliates

A robust and engaged network of +60 private-sector partners, including representatives from business, trade associations, nonprofit organizations, educational institutions, laboratories, and government.
Unlocking Private Sector Financing for Alternative Fuel Vehicles and Infrastructure

A multi-pronged, multi-partner approach supported by the U.S. Department of Energy Clean Cities Program

Assisting states in developing comprehensive energy and energy security plans that support public and private sector investment in AFVs and associated infrastructure.

Enabling utilities and policy-makers to fund AFV and infrastructure incentives and investments with ratepayer dollars.

Developing innovative vehicle and infrastructure financing models to make AFVs more accessible to consumers and fleet operators.

Supporting communications and outreach to Clean Cities stakeholders. Will be hosting two regional workshops in fall/winter 2014.

To learn more, visit [www.naseo.org/committee-transportation](http://www.naseo.org/committee-transportation) or contact Sandy Fazeli at sfazeli@naseo.org.
AFVs in Energy Assurance Planning

Preliminary findings from NASEO analysis show there is significant interest and understanding of the benefits of AFVs in supporting energy assurance planning; and meaningful opportunities to further enhance these plans.

Of the existing energy assurance plans that do address the role of AFVs, they only do so in a limited way. Almost across the board, there is an opportunity to incorporate more discussion of the benefits of AFVs in energy assurance planning and stronger recommendations for realizing these benefits.

Lack of data can be a barrier to more fully incorporating AFVs in energy assurance plans. Planners need both qualitative and quantitative data about the vehicle and infrastructure market in their state (and potentially in surrounding states), to optimize the use and coordination of AFVs in the event of an emergency. To access needed data, energy assurance planners should engage state and local stakeholders.

There is also a need to share more specific examples of how AFVs can be used to respond to shortages of petroleum products and ensure that essential public service needs can be met.
Video screenshots courtesy of CleanCities TV
http://www.youtube.com/watch?v=fV4S-7sPge0
Presenters

- **State Energy Assurance: Fundamentals and Links to Alternative Fuel Vehicles**
  
  Jeff Pillon, Director of Energy Assurance and Midwest Regional Coordinator, National Association of State Energy Officials

- **Alternative Fuels, Clean Cities, State Energy Offices, and Disaster Planning: Resiliency and Energy Assurance**
  
  Linda Bluestein, Clean Cities Co-Director, U.S. Department of Energy

- **Next Steps, Q&A, and Becoming Involved**
  
  Sandy Fazeli, Program Manager, National Association of State Energy Officials
Using the Webinar Software

All participants are muted.

If you have a question for the presenters or are having difficulty with the webinar software, please submit your question via the sidebar chat anytime during the webinar.

Slides and webinar recording will be available on NASEO’s website at http://naseo.org/committee-transportation.
Energy Assurance is the Capability to:

- **Plan and Respond** to events that disrupt energy supply and assuring a rapid return to normal conditions. This is a coordinated effort involving the private energy sector’s response, augmented by Local, State and Federal governments as needed; and

- **Mitigate Risks** through policies, programs and investments that provide for a more secure and resilient energy infrastructure that also reduces interdependencies impacts.

  - Where risk is a function of consequences, vulnerabilities and threats.
State & Local Energy Assurance Program

- Energy Offices and NASEO have a 3+ decades track record in planning responses to and mitigating impacts of energy supply disruptions

- 48 States, 2 Territories, the District of Columbia and 43 Cities have plans

- Activities:
  - Develop new or update existing State Energy Assurance Plans
  - Create State-level expertise on Smart Grid systems, cyber security, interdependencies, and communications
  - Develop processes for tracking energy supply disruptions
  - Conduct energy emergency exercises
  - Revise State policies, procedures and practices

- Benefits for States and Cities:
  - New or updated energy assurance plans
  - Improved coordination across State agencies, among States, and regions
  - Improved recovery and restoration capabilities and response times

http://energy.gov/oe/services/energy-assurance/emergency-preparedness/state-and-local-energy-assurance-planning
State Energy Emergency-Related Organizations

- Governor
  - Executive Office Staff
  - Attorney General
  - Other Depts. & Agencies
    - Public Utility Commission
    - State Energy Office
    - Emergency Management

Federal Government
Local Governments
Other State Governments
State Legislature
Homeland Security
Energy Assurance Plans

Common planning elements

- Description of energy sources, infrastructure, distribution, system capacity, utilization, flows and end uses
- Organizational roles, responsibilities and legal authorities
- Emergency communications procedures (internal and external)
- Methods for tracking supply disruption and historical events
- Contingency plans for responding to shortages of:
  - Petroleum, and alternative transportation fuels
  - natural gas
  - Electricity, and all sources of energy used for power generation
- Energy Infrastructure risk and vulnerability assessments
- Policies, programs and regulations that contribute to the security and resiliency of energy infrastructure and reduce risks
Consequences

- Consequence analysis should address both direct and indirect effects of any hazards including: natural disaster, infrastructure failure, pandemic, cyber or terrorist attack or other disruptive events.

- Under the National Infrastructure Protection Plan (2013 Update), the U.S. Department of Homeland Security works with Sector Specific Agencies and security partners to examine the inherent characteristics of assets, systems, or networks to identify “worst-case” consequences.

- Consequences for the national-level comparative risk assessment can be divided into four main categories:
  - Human impact, fatalities and injuries
  - Economic impacts, primary/secondary
  - Impact on public confidence
  - Impact on government capability
Why Invest in Reliability and Resilience?

To reduce human and economic consequences

- Weather-related power outages are estimated to have cost the U.S. economy an inflation-adjusted **annual average of $18 - $33 billion**.

- Since 1980, the United States has sustained 144 weather disasters whose damage costs reached, or exceeded, $1 billion and seven of the ten costliest storms in U.S. history occurred between 2004 and 2012.

- Annual costs fluctuate significantly and are greatest in the years of major storms such as Hurricane Ike in 2008, a year in which cost estimates range from $40 - $75 billion, and Superstorm Sandy in 2012, a year in which cost estimates range from $27 - $52 billion.


Addressing the Weak Link: Transportation Fuels

- State petroleum contingencies generally are less developed than electric and natural gas contingency plans which historically have been more regulated and centrally controlled.

- Petroleum products provide 92% of the total energy needed to supply the transportation sector in the United States.

- Planning and responding to petroleum shortages presents many challenges, supply infrastructure is diverse and with many players (disintegrated), anti-trust laws prohibit the sharing information that could result in a competitive advantage. No single entity fully knows the specific supply picture at the local, state or regional levels.

- Less regulatory authority over how petroleum is supplied and distributed generally market driven.

- Shortages can develop slowly over time or a major disaster can disrupt the petroleum supply chain.

- Less data, and more complexity requires more situational awareness and a wider range of tools to respond when shortages of petroleum products occur.
Integrating AFVs in Energy Assurance

Current Status of Plans
- Mention: 35
- No mention: 9

Most Common References to AFVs
- Information: 26
- Smart Grid: 14
- State Vehicles: 11
- Voluntary Measures: 9
- Clean Cities: 9
- Inventory: 8
- Mandatory Measures: 2
Building and Facilitating the Exchange of AFV Data for Energy Assurance Planning

<table>
<thead>
<tr>
<th>Data Point</th>
<th>Description/Rationale</th>
<th>Potential Data Sources</th>
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| **Number/location of AFVs**            | Data points capture the size and location of state-owned, municipally-owned, or privately-owned fleets that emergency responders may be able to use to assist in evacuation, debris removal, or other response/recovery efforts. | 1. State and municipal agencies that manage AFV fleets  
2. Local Clean Cities Coalitions       |
| **Ownership/management of AFVs**       | Data points capture the alternative fuel source of AFVs that may be deployed in the event of an energy emergency, in addition to their typical uses and capabilities (in terms of range, efficiency, fueling needs, and ability to carry cargo). | 1. State, local, and private fleet managers  
2. NREL TransAtlas                     |
| **Fuel source of AFVs**                | Data points capture the alternative fuel source of AFVs that may be deployed in the event of an energy emergency, in addition to their typical uses and capabilities (in terms of range, efficiency, fueling needs, and ability to carry cargo). | 1. State, local, and private fleet managers  
2. NREL TransAtlas                     |
| **Typical uses and capabilities of AFVs** | Data points pinpoint locations of AFV fueling and charging stations and other critical infrastructure.                                                                                                               | 1. AFDC  
2. NREL TransAtlas  
3. DHS OneView GIS                      |
| **Fueling/charging locations and fuel storage** | Data points support decision making and identify lifecycle costs and benefits of state, local, or private purchase of AFVs and/or fleet conversions.                                                                 | 1. AFDC  
2. Clean Cities Coalitions             |
| **Cost of AFVs**                       | Data points support decision making and identify lifecycle costs and benefits of state, local, or private purchase of AFVs and/or fleet conversions.                                                                 | 1. AFDC  
2. Clean Cities Coalitions             |
| **Partners and stakeholders**          | Data point enables energy assurance planners to engage other state and local agencies (such as departments of transportation or highway administration) and groups (such as businesses and Clean Cities Coalitions) in the energy assurance planning process. | 1. State and local energy offices  
2. Clean Cities Coalitions  
3. AFDC                                 |
# Data Sources

<table>
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<th>Data Source</th>
<th>Description</th>
<th>Accessibility</th>
<th>Website</th>
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<tbody>
<tr>
<td>Alternative Fuels Data Center (AFDC)</td>
<td>AFC datasets include AFV fueling and charging locations by state, boundaries and population coverage of Clean Cities Coalitions, truck stop electrification facilities, and efficiency/savings estimates of AFVs by type.</td>
<td>Publicly available</td>
<td><a href="http://www.afdc.energy.gov/">http://www.afdc.energy.gov/</a></td>
</tr>
<tr>
<td>National Renewable Energy Laboratory (NREL) TransAtlas</td>
<td>The TransAtlas mapping tool uses Google Maps and customized queries to display the locations of existing and planned alternative fueling stations, concentrations of different vehicle types, alternative fuel production facilities, roads and political boundaries</td>
<td>Publicly available</td>
<td><a href="http://maps.nrel.gov/transatlas">http://maps.nrel.gov/transatlas</a></td>
</tr>
<tr>
<td>Department of Homeland Security (DHS) OneView GIS System</td>
<td>OneView is a geospatial visualization tool operated by DHS and designed for the use of homeland security partners in protecting the nation’s critical infrastructure and key resources.</td>
<td>Limited access by those that have been authorized to access The Homeland Security Information Network (HSIN)</td>
<td><a href="https://gii.dhs.gov/oneview">https://gii.dhs.gov/oneview</a></td>
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Energy Assurance-Alt Fuel Vehicle Fact Sheet (2014)

Highlights important information about the links between alternative fuel vehicle deployment and state energy assurance planning, including a status update on how current state energy assurance plans address AFVs.

http://naseo.org/committee-transportation
NASEO Resources


Assesses state energy assurance plans and discusses strategies to more fully integrate and define the role of AFVs in these plans, with a focus on the crucial role Clean Cities coordinators and local stakeholders play in the energy assurance planning process.

http://naseo.org/committee-transportation
NASEO Resources

Petroleum Shortage Supply Management: Options for States (2012)

A resource for states developing energy assurance plans. Provides a template for petroleum response measures and longer term planning initiatives and further depth on effective planning elements.

State Energy Assurance Guidelines (2009)

Discusses pros and cons of various types of transportation technologies in energy assurance planning. Highlights strategies to use renewable and alternative fuels to enhance energy alternative options in Minnesota, Illinois, and Oregon.

AFVs in Energy Assurance Planning

NASEO’s next steps will engage state and Clean Cities stakeholders.

Hold conference calls to engage energy offices and Clean Cities stakeholders to develop a plug-and-play template to facilitate data exchange.

Use discussions to refine list of data needs and sources, develop strategies for collecting needed data, and facilitate introductions between Clean Cities partners and energy offices. (If you are interested in connecting with your local Clean Cities Coalition and/or State Energy Office, please contact Sandy Fazeli at sfazeli@naseo.org)

Present template and provide assistance to stakeholders interested in using it. Outreach will take place through a webinar and through NASEO’s next Transportation and Energy Security committees meetings in Savannah, Georgia (September 2014), as well as on a one-on-one basis.

More information available at http://annualmeeting.naseo.org/.
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On the microscale, making an up-front investment in safeguards that mitigate risk and consequences is far more cost-effective than paying for response and recovery after a foreseeable hazard. On the macro scale, a society’s level of resilience contributes to its global competitiveness.”

—Dr. Stephen Flynn

Founding co-director of the George J. Kostas Research Institute for Homeland Security at Northeastern University (Flynn and Burke 2011)
Thank you!

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