VMEP--A Key Facet in the Continuing Evolution of Mobile Source Regulation

- Credit generation is from *voluntary* effort, which may be seasonal or episodic

- Means of quantifying the benefit must be reliable and defensible

- Must be accompanied by any necessary adjustments for compliance and/or programmatic uncertainty

# Criteria Pollutant Emission Reduction Credits for AFVs

- Many air quality non-attainment and maintenance areas still need to find new emission reductions for implementation plans under *existing* standards

- EPA's VMEP program has been very helpful in this quest for new credits, but time is fast approaching that VMEP-based reductions need to be locked in

- AFVs have thus far provided consistent, durable, reliable, and defensible reductions in this program

Just How do AFVs Meet This Need?
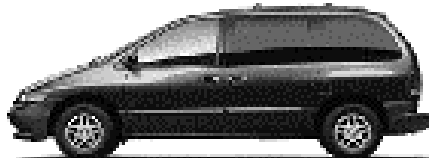
- **Extremely low NMHC emissions, especially with NGV, LPG, and electrics , and gaseous fuels generate virtually no evaporative hydrocarbons**

- **No morning cold starts mean less VOC added to the precursor "soup"**

- **NOx can be lower than for diesel-powered counterparts**

- **Fleet operations are often densest close to the urban center, where NMHC reductions are of greatest value**

Background Of EPA/OTAQ Interaction with Clean Cities under VMEP Rubric

- Why has EPA been involved with AFV initiatives under EPACT?

- Clear that certain AFVs are environmentally friendly

- EPA interested in encouraging use of AFVs

- A mechanism EPA can utilize to encourage use of AFVs is giving SIP credit for AFV usage

The Need for an Estimation Tool

- **Alternative Fuel Vehicle emission credits are relatively small on a per vehicle basis**

- **Currently there are low numbers of operating alt fuel vehicles**

- **State and Regional Air Quality staff are very busy with multiple programs**

- **Thus, need to minimize the effort needed to calculate emission benefits**

The Assist

- **In order to minimize the effort in calculating emission benefits, EPA and DOE have developed a user-friendly emission software tool (in Visual Basic run off a standard PC) to calculate emission benefits with a minimal amount of data input**
- **Based on existing EPA data**

AirCred : One Approved Method for Reduction Credit Estimation

- **Certified by EPA/OTAQ in 2000 for application to VMEP and SIP emission reduction calculations attributable to on-road AFVs**

- **Approved by DOT for estimating program effectiveness in CMAQ grant applications**

- **Over 1,000 users and other interested parties have downloaded the tool from its web site over the past year and a half**

http://appserver.es.anl.gov/aircred.html

Clean Cities Have Embarked on a Long-term Commitment to AFVs, but Coalitions Have Had Few Tools Available to Track Relevant Benefits

- **Interest is shifting increasingly to heavy-duty AF vehicle acquisitions, especially buses (motivated by concerns about fine PM exposure)**

- **Evidence that buses and heavy trucks powered by natural gas surpass counterpart diesels in NOx reduction capability per unit of travel distance**

- **MOBILE6 calculation does not show this to be the case either today or in the future; thus, Clean Cities in ozone non-attainment areas will be denied ability to demonstrate net heavy-duty AFV benefits if they apply only regulatory tools to inventory estimates**

CONCLUSIONS/OBSERVATIONS

- **Mobile source emissions estimation at a fine grain is still needed because most measures we define as voluntary produce only small additional reductions**

- **Mobile source emissions assessment tools usable by the AFV fleet owner/manager are regularly requested**

- **Voluntary efforts like Clean Cities need a boost from consistent, reliable quantification on an ongoing basis of the benefits they provide**

- **Because some portion of each fleet turns over annually, only regular updating of benefit estimates with current data can meet this need; today's regulatory models are not structured to do that**