Technical Reference Manuals

• Define Energy and Transportation Efficiency

Users:
• Utilities
• Public Utility Commissions
• State Energy Offices
• Transportation Planning Agencies
Approaches to Measuring Cost Effectiveness

- **Societal Cost**
- Program Administrator Cost
- Participant Cost
- Rate Payer Impact

**Consumer costs**
- Incremental cost of efficiency measure
- Operation and maintenance, energy costs

**Utility Costs**
- Impact on peak load

**Societal Costs**
- GHG emissions
- Health impacts
- Congestion impacts
Factors included in this analysis:

- Prices of gasoline, diesel, electricity
- Avoided electricity costs
- Gasoline GHG emissions per gallon
- Electricity GHG emissions per kWh
- Societal cost of GHG emissions per ton
- Health costs of vehicle emissions
- Health costs of electricity generation
- Annual vehicle miles traveled
- Cost of Level 1 EVSE
- Cost of Level 2 EVSE
- Cost of ‘smart’ commercial Level 2 EVSE
- Cost of DC Fast Charging station
Assistance for Low Income Households

- Average Household:
  - Energy and utility expenditures: 6%
  - Transportation expenditures: 16%

- Low Income Household:
  - Energy and utility expenditures: 23%
  - Transportation expenditures: 33%
Transportation Efficiency Measures

- All Electric Vehicle

- Commercial/Public Level 2 Electric Vehicle Supply Equipment

- Residential Level 2 Electric Vehicle Supply Equipment
TRMs can be used to assess the energy and non-energy benefits of:

- bicycling
- walking
- conventional vehicles, and
- natural gas vehicles.

TRMs provide energy and transportation planners a comprehensive means of measuring efficiency.
Thank You

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Transportation Energy Profiles for State Energy Offices

Assistance for SEOs

- Developing goals and metrics
- Tracking
  - Energy use
  - GHG emissions
  - AFV use and fueling infrastructure
  - Travel mode and mobility

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Transportation energy analysis is a critical piece of any comprehensive energy planning. The transportation sector accounts for 28% of primary energy use. State specific data is available to assist State Energy Offices in their important energy planning work.

The National Association of State Energy Officials (NASEO) and the Vermont Energy Investment Corporation (VEIC) can help states develop the transportation section of their comprehensive energy plans and track progress towards goals by developing meaningful metrics for:

- Transportation energy use;
- Greenhouse gas emissions;
- Alternative vehicle use and fueling infrastructure;
- Travel modes, and mobility.

Available data and sources include:

- Energy Information Administration
- The National Household Travel Survey
- The American Time Use Survey
- The American Community Survey
- State-level data from Federal Highway Administration
- Gasoline and diesel tax revenue
- Locations of electric vehicle charging infrastructure
- Locally available data (e.g., transit ridership, fuel expenditures by state agencies and school districts, travel surveys)

Through collaboration with state agencies, additional data may be available, including:

- Activity levels and active transportation (Behavioral Risk Factor Surveillance System);
- Number and geographic distribution of electric vehicles, hybrids and fleet efficiency (vehicle registrations)

Clients will be provided a State Transportation Energy Profile, detailing current trends in state transportation energy use, identification of efficiency gains in the transportation system and policy recommendations.