U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

# U-MD APPs Workshop: Observations and Possible Next Steps
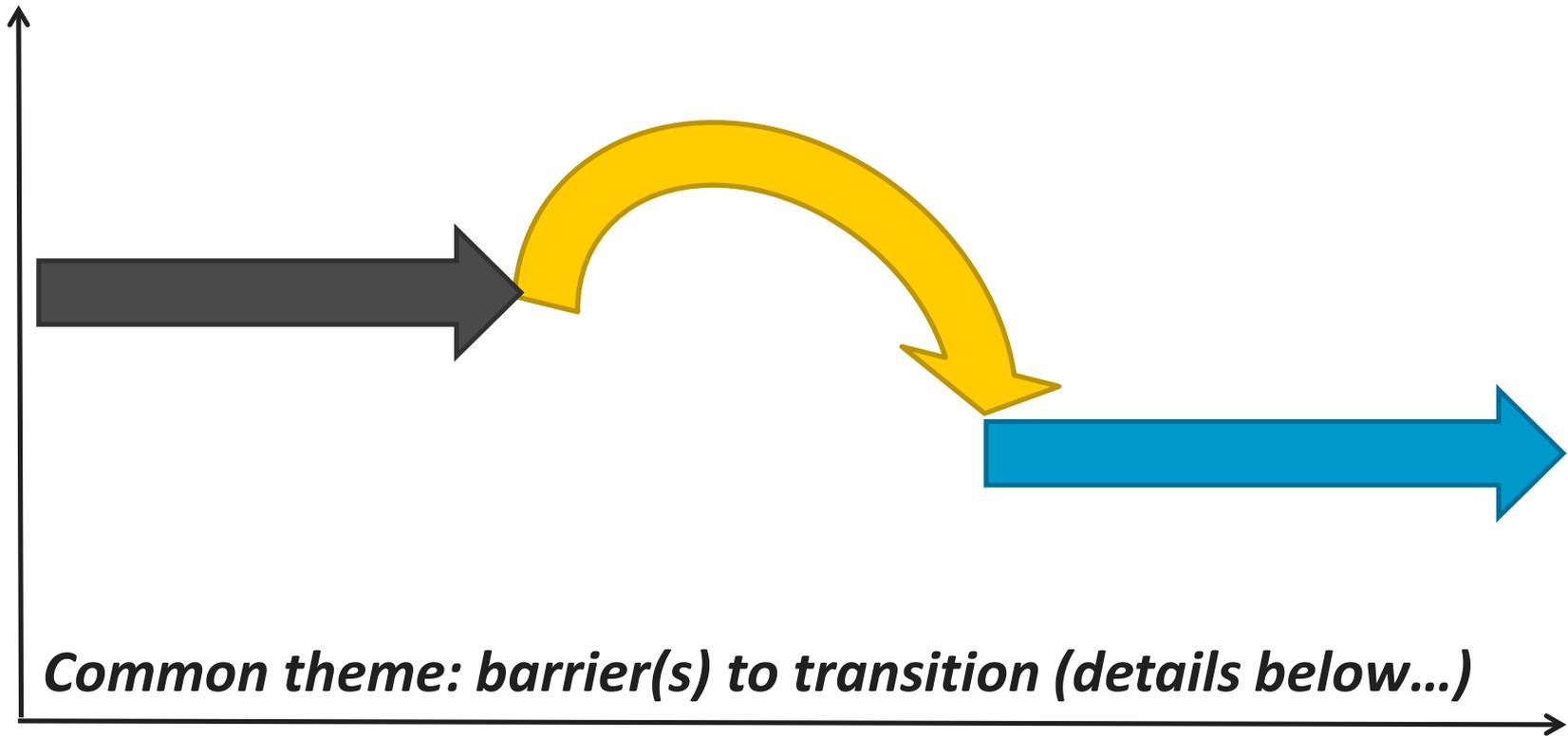
January 16, 2015

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# Today's Presentations

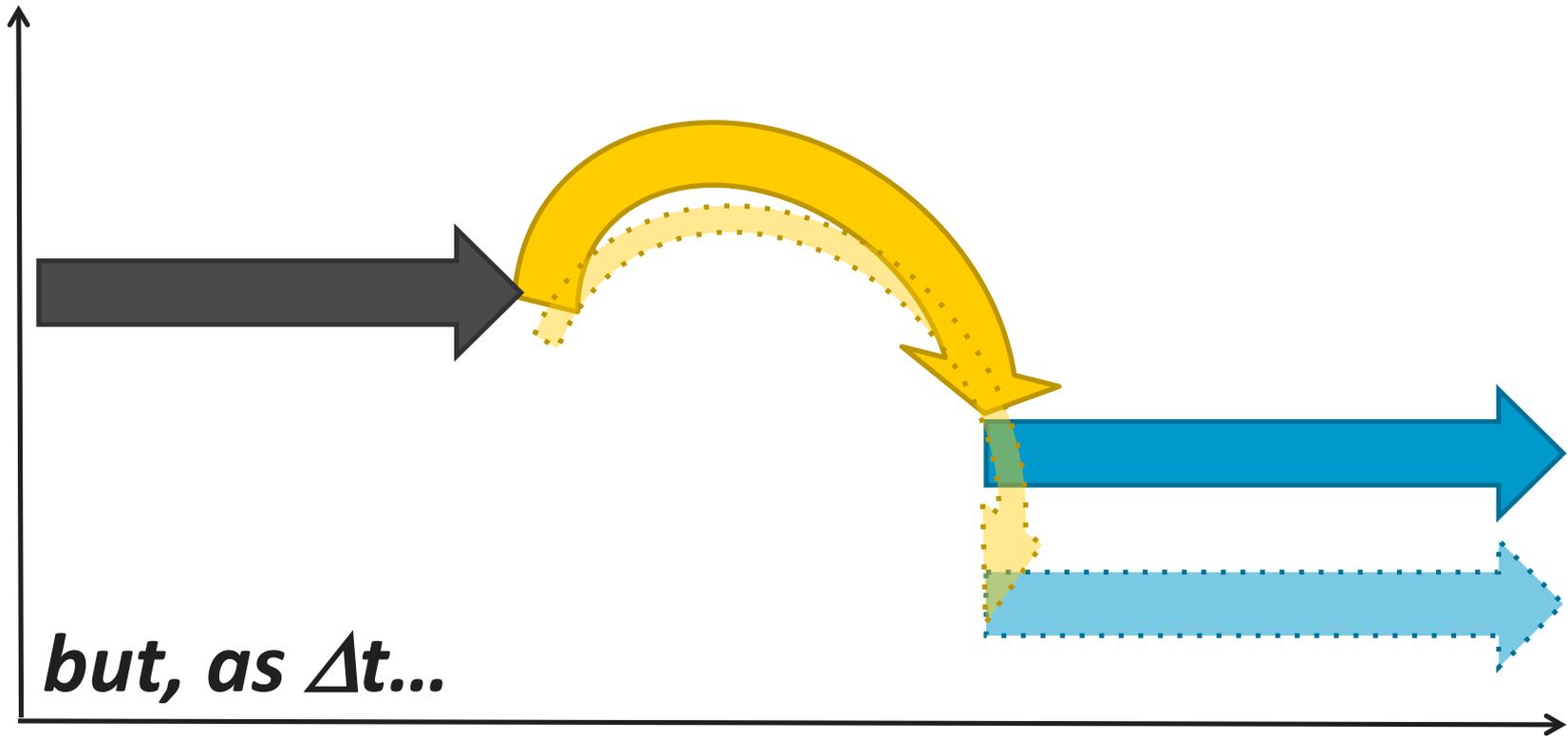| Scale | Study/Presentation | Driving Factors (and associated uncertainties) |
|---|---|---|
| **MACRO (U.S./national)** | • Economic, demographic, and transportation-specific incumbent scenario (Greene, Pickrell) | • Vehicle Ownership<br>• Mobility Needs/Preferences<br>• WTP (CAVs and more generally)<br>• Technology Experience (Cherchi) |
| **MESO (city/region)** | • Air quality and school bus transportation (Gao) | |
| **MICRO (individual)** | • CAV WTP (Daziano)<br>• Household vehicle use (Cirillo)<br>• PEV experience (Cherchi) | $\square \Delta t$ |

# Transportation and "Activation Energy"



*Common theme: barrier(s) to transition (details below...)*

| MACRO | • **National** policy/technology intervention | Benefits— |
|-------|----------------------------------------------|-----------|
| MESO | • **Regional** policy/technology intervention | • GHG<br>• Petroleum<br>• Cost |
| | • **Vehicle/HH** | |

# Transportation and "Activation Energy"



*but, as △t...*

| MACRO | • Changing national trends **(economy, preferences)** | |
|-------|-------------------------------------------------------|---|
| MESO | • Changing regional needs/preferences **(i.e. income geog. distribution)** | **Exogenous △end-state—**<br>• **i.e. grid decarbonization** |
| MICRO | • **Changing individual preferences/experience** | |

# DOE Transportation Analysis Tools

**Models and Tools:**

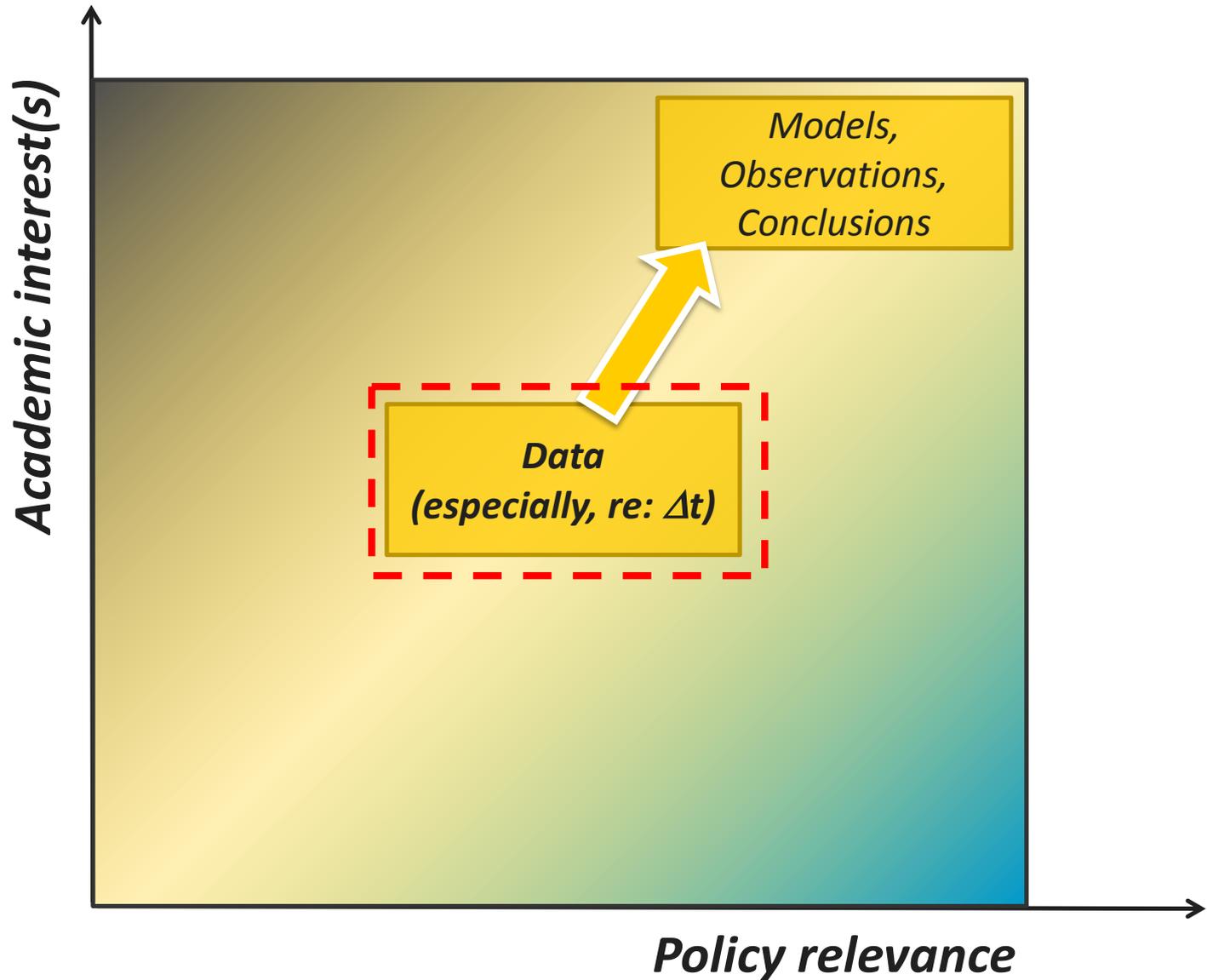| | |
|---|---|
| VISION, NEAT | *Macro-econ. Accounting* |
| ADOPT, LV Choice, MA$^3$T, ParaChoice, StoCo, TRUCK | **Market Penetration** |
| GREET | **Emissions and Environmental Modeling** |
| Autonomie, FASTSim HTEB | *Vehicle Modeling and Simulation* |
| TEDB, Market Report xEV data, TREND | *Technology and Market Data* |

*Integrated Analysis*

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# Opportunities for Future Study/Collaboration (?)

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*Presented to:*

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