VTP Analysis Activities: AMR Plenary Overview

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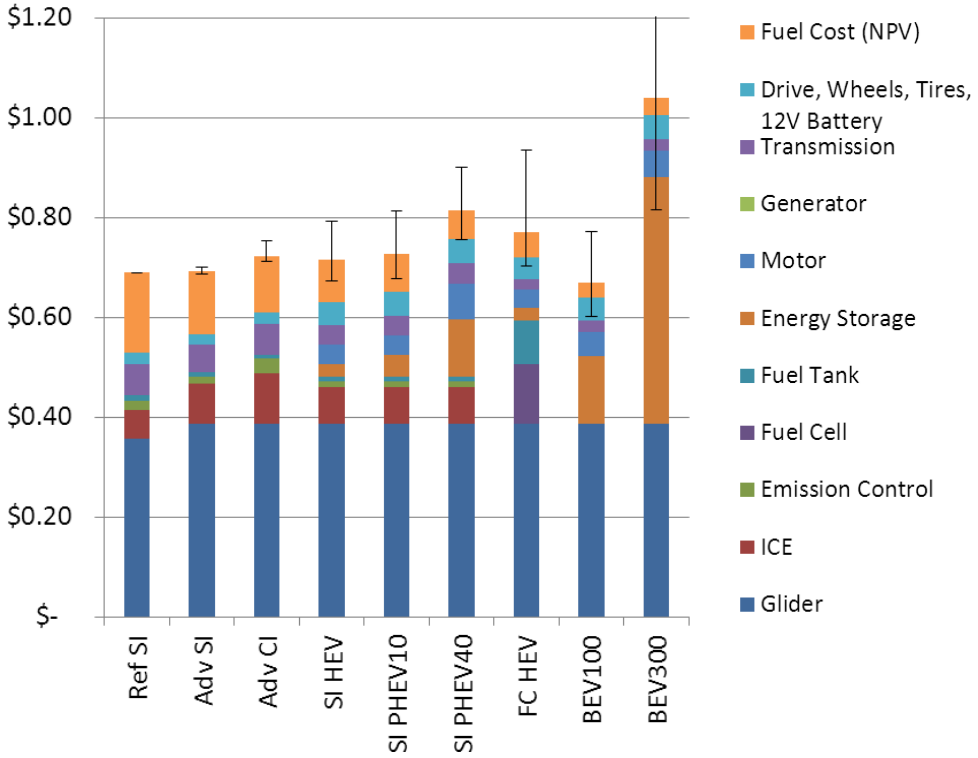
Outline

- U.S. DRIVE
- Modeling
- Consumer choice
- GPRA
- Publications

"VTP Analysis activities offer a framework in which to evaluate the requirements and benefits of vehicle technology progress."

U.S. DRIVE – Target-Setting

- Standardized elicitation (Tech Teams)
- Autonomie vehicle modeling and simulation *(Namdoo Kim, Ayman Moawad, Phil Sharer, ANL)*
- Levelized-cost analytical framework
- *Potential for analogous contributions to EV-Everywhere*

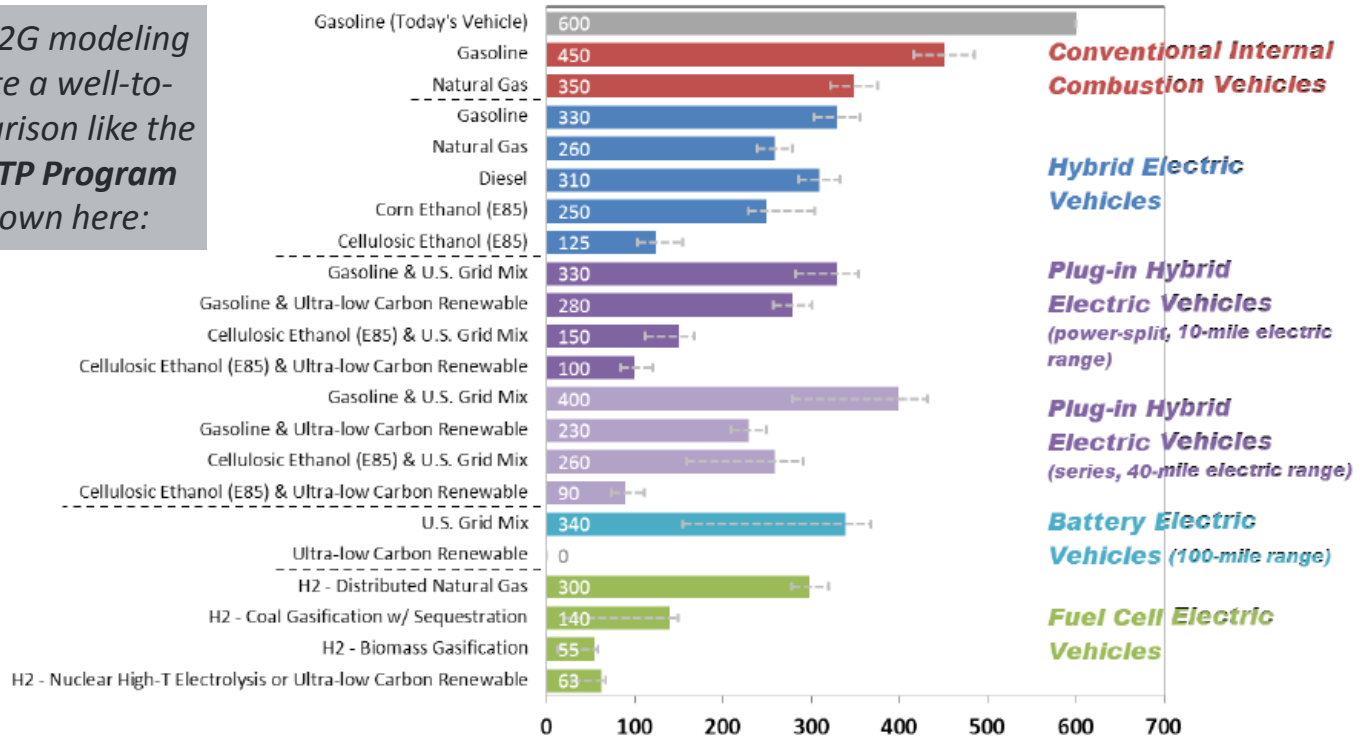


*U.S. DRIVE modeling facilitated a levelized-cost comparison like the **GPRA14 preliminary results** shown here.*

U.S. DRIVE – Cradle-to-Grave

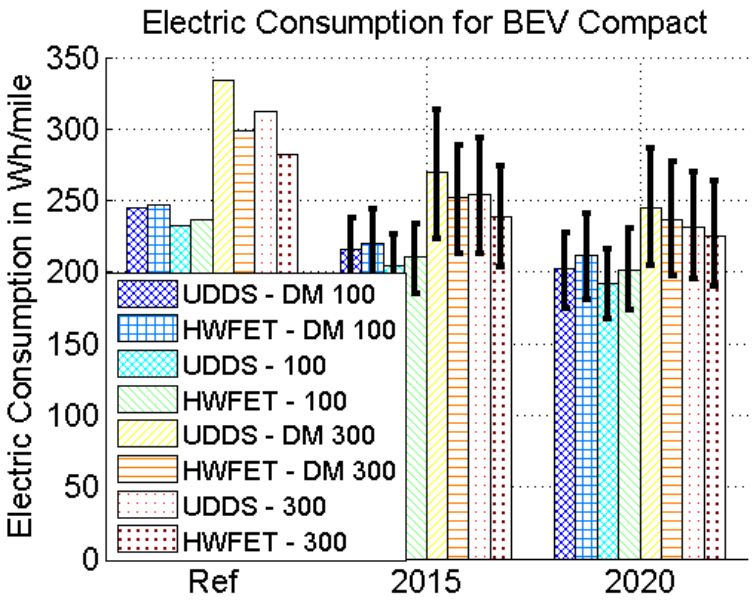
- Improve and execute GREET lifecycle energy/emissions modeling *(Michael Wang, Amgad Elgowainy, ANL)*

*U.S. DRIVE C2G modeling will facilitate a well-to-wheel comparison like the **FY11 FCT/VTP Program Record** shown here:*



Modeling – Systems Analysis

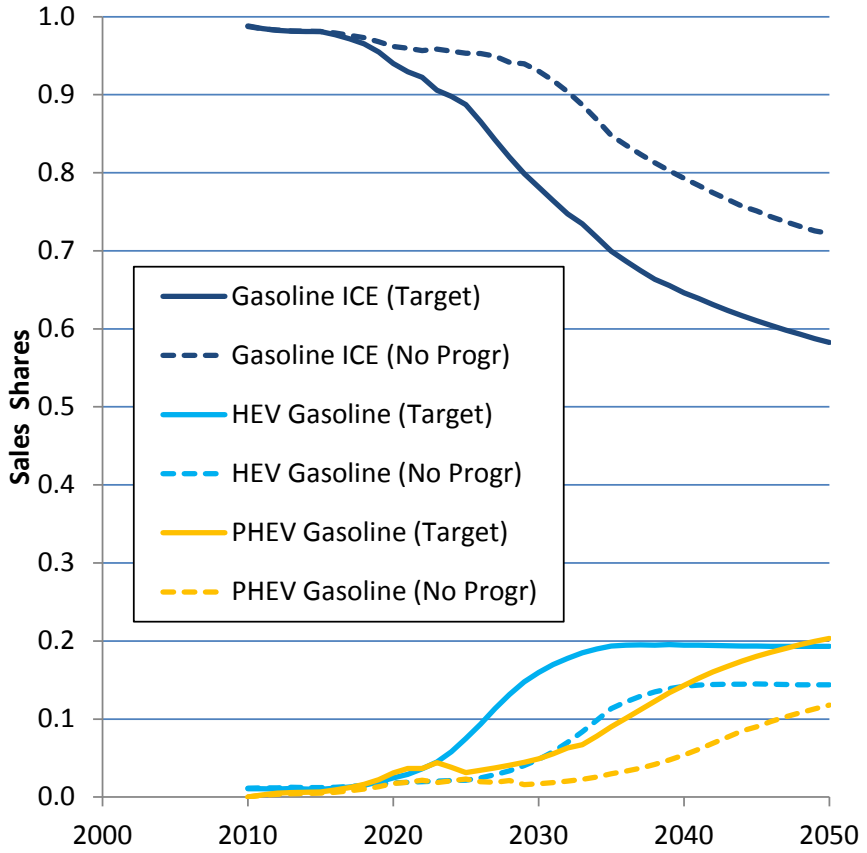
- Vehicle System Modeling and Simulation
  - Autonomie *(Aymeric Rousseau, ANL)*
  - FASTSim *(Aaron Brooker, NREL)*
  - TRUCK *(Alicia Birky, TA Engineering)*
- Complex Energy System Accounting
  - GREET *(Michael Wang, Amgad Elgowainy, ANL)*
  - VISION *(Anant Vyas, JoAnn Zhou, ANL)*



BEV energy consumption *for city (UDDS) and highway (HWFET) drive cycles as estimated using Autonomie to support GPRA14 (preliminary results).*

Consumer Choice

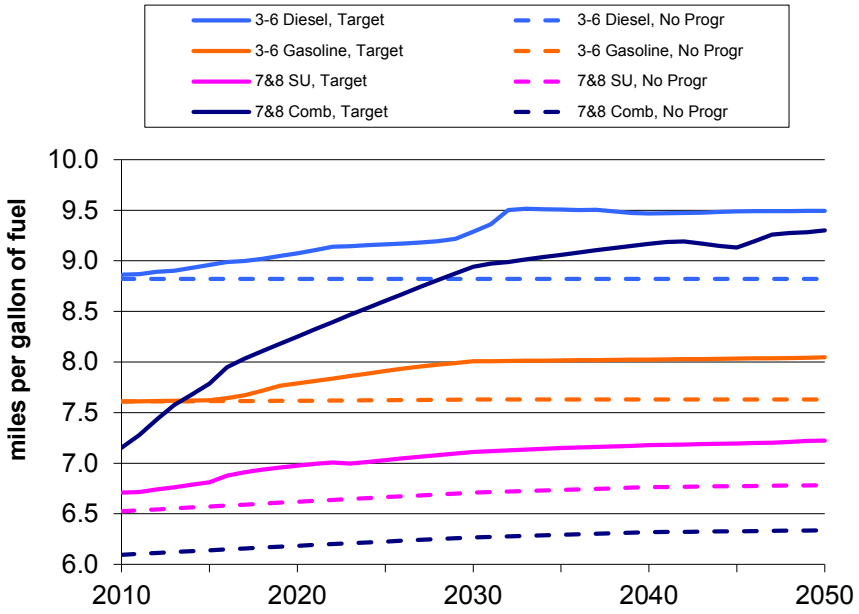
- MA^{3}T – Market Adoption of Advanced Automotive Technologies *(Zhenhong Lin, David Greene, ORNL)*
- ADOPT *(Aaron Brooker, NREL)*



***LDV Market Penetration** as estimated using the MA^{3}T model in VTP's GPRA13 report.*

VTP Benefits Estimation

- GPRA (Government Performance and Results Act)
  (Tom Stephens, ANL, Alicia Birky, TA Engineering)



Impacts	Metric		Year 2015	2020	2030	2050
Energy security	Oil savings, cumulative (billion bbl)		0.8	2.5	8.3	27.0
	Oil savings, annual (million bpd)		0.64	1.12	1.91	2.86
	New vehicle mpg improvement (%)[b]	LDVs	19	17	32	33
		HTs	18	21	25	27
	On-road mpg improvement (%)[b]	LDVs	6.0	11	22	32
		HTs	8	14	21	26
Environmental	CO_2 emissions reduction, cumulative (million t CO_2)		348	1,137	3,700	11,682
	CO_2 emissions reduction, annual (million t CO_2/yr)	LDVs	80	137	224	289
		HTs	28	51	90	148
		Total	108	188	314	437
Economic	Primary energy savings, cumulative (quads)		4	13	44	138
	Primary energy savings, annual (quads/yr)		1.7	3.0	5.0	6.9

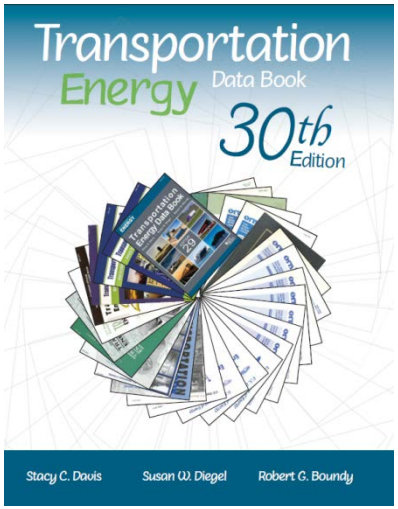
[a] "Reductions" and "savings" are calculated as the difference between the results from the baseline (No Program) case (i.e., in which there is no future DOE funding for this technology) and the results from the program case (i.e., in which requested DOE funding for this technology is received and is successful). All cumulative metrics are based on results beginning in 2011.

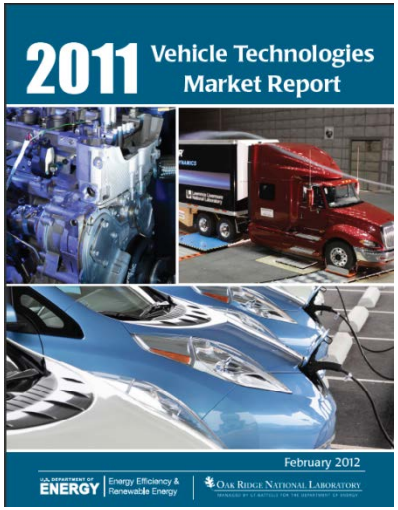
[b] Improvement relative to baseline (No Program) fleet in the same year. Note: LDV fuel economies shown here were revised to reflect LDV CAFE standards proposed for 2017 through 2025.

HT Fuel Economy (left) and total program benefit (right) *as estimated in VTP's GPRA13 report.*

Publications

- Transportation Energy Data Book
- Market Report
- Fact-of-the-Week





Fact #734 showcased the current gas guzzler tax *(shown below) and listed vehicles to which it applies.*