

Take Away Messages

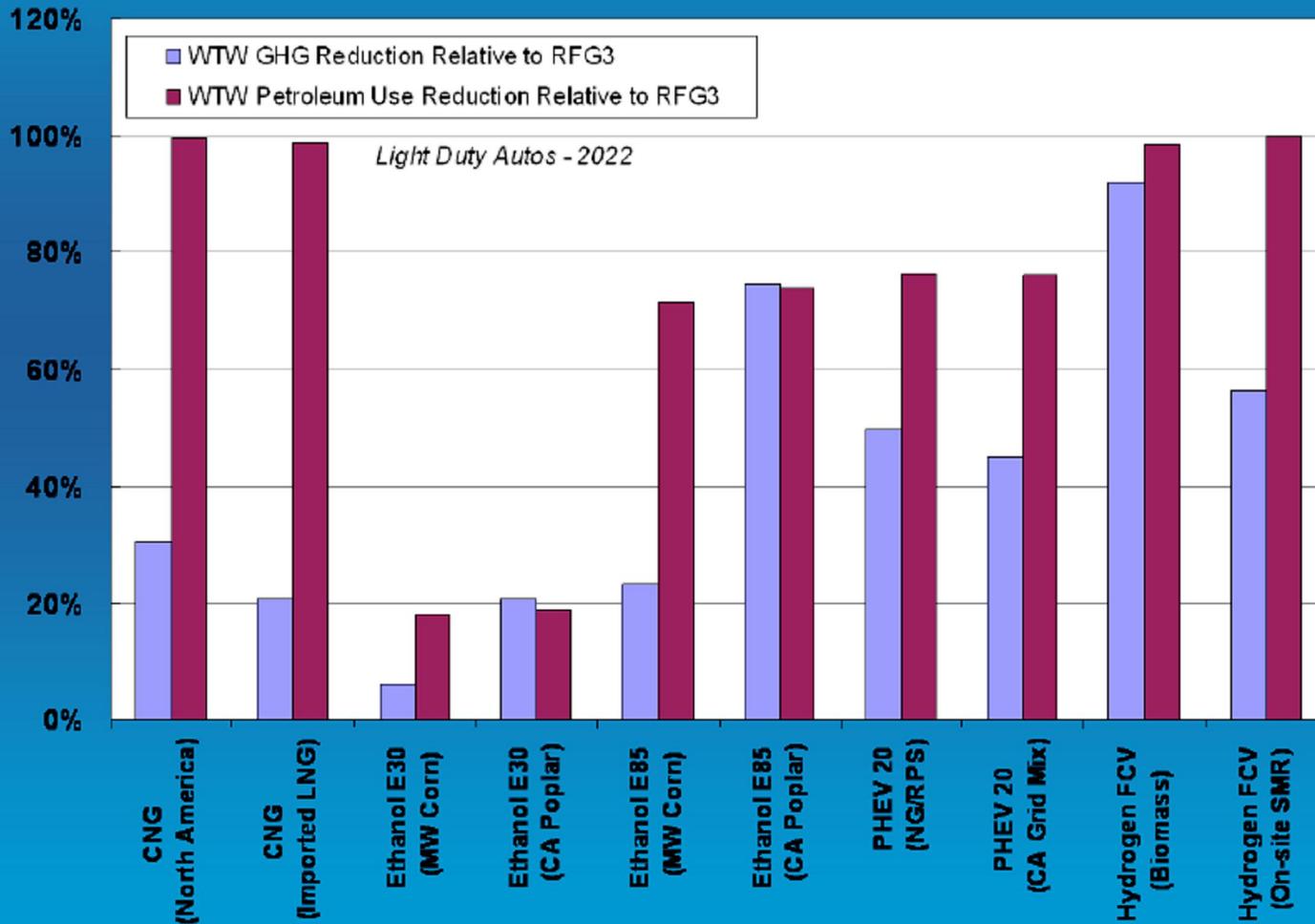
- California has made a decision to move toward a sustainable transportation (energy) future.
- That future embraces multiple low-carbon and cleaner transportation fuels.
- Four key policy actions embody California's transition to a sustainable transportation (energy) future:
 - The State Alternative Fuels Plan (AB 1007)
 - The California Global Warming Solutions Act of (AB 32)
 - California's Low Carbon Fuel Standard
 - The Alternative and Renewable Fuels and Vehicle Technology Funding Program (AB 118)

for California's Sustainable Transportation Energy Future

- AB 2076 – Report on Reducing Petroleum Dependence
- AB 1007 – State Plan to Increase Alternative Fuels
- AB 1493 – Regulates CA vehicle CO2 tail pipe emissions
- ZEV Mandate
- AB 32 – Caps CA CO2 emissions in 2020
- SB 1368 (Sets limits on power plant CO2 emissions)
- Executive Order S-03-05 – Caps CA CO2 emissions in 2050 to 80% below 1990 levels
- Low Carbon Fuel Standard (EO 3-01-07) – reduces fuel carbon intensity by 10 percent in 2020
- AB 118 funds alternative fuels and infrastructure at \$118 million/yr available for 8 years

Full Fuel Cycle Analysis

Vehicle Petroleum and GHG Performance of Alternative Fuels for Light-duty Vehicles as a Function of Feedstock



2007 Fuel Use Results

Maximum Feasible Alternative Fuel Use Results by Fuel (Moderate Case)

Mile Stone Year	2012		2017		2022	
	Fuel Use	GHG	Fuel Use	GHG	Fuel Use	GHG
Propane	48	<0.1	173	0.1	282	0.2
Natural Gas	306	1.5	518	2.5	885	4.4
E10 (MW Corn)	139					
	4	3.8	1354	3.8	1327	3.6
E85 (CA Poplar)	83	0.7	434	3.9	738	6.6
Hydrogen	40	0.3	80	0.6	440	4.4
Electricity	86	2.1	187	5.1	376	6.7
GTL, CTL, and PTL ¹	320	0	530	0	630	0
Renewable Diesel	130	1	310	2.4	530	4.2
Dimethyl Ether	13	0	62	0	101	0
Total	242	0	3648	18	5309	30

Fuel use measured in million gasoline gallon equivalent. For hydrogen and electricity, the petroleum displacement is greater than the fuel used due to the vehicle efficiency. GHG on a full fuel cycle basis and in million metric tons per year.

¹ PTL stands for petroleum coke-to-liquid fuel.

