



U.S. DEPARTMENT OF
ENERGY

Basic Energy Sciences

Advisory Committee

July 26, 2012

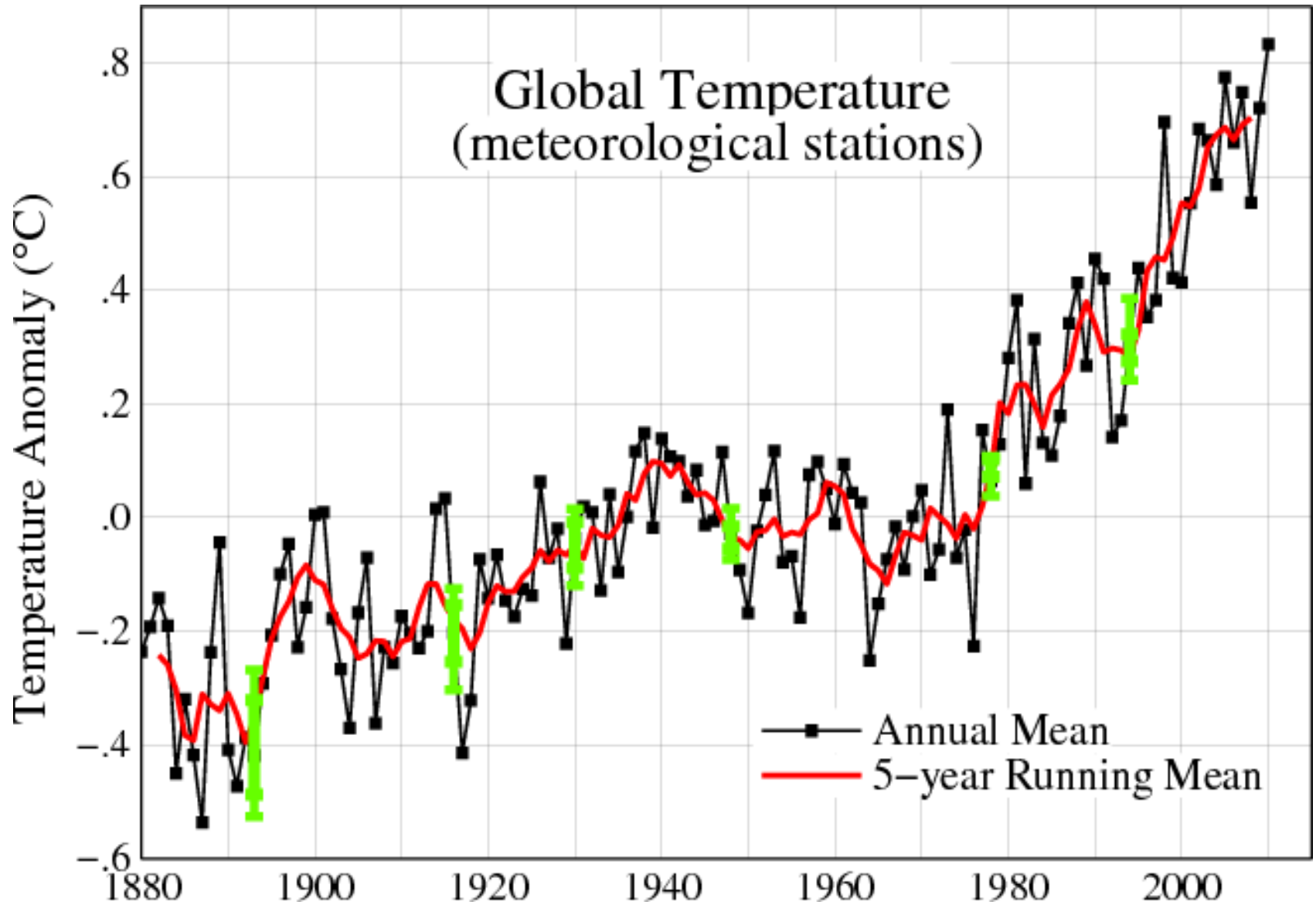
Dr. William Brinkman
Director, Office of Science
US Department of Energy



FY 2012 Budget and FY 2013 Marks

Office of Science												
FY 2013 House and Senate Mark												
(B/A in thousands)												
	FY 2012	FY 2013										
	Current Approp.	President's Request	House Mark	House Mark vs. FY12 Approp.	House Mark vs. President's Request	Senate Mark	Senate Mark vs. FY12 Approp.	Senate Mark vs. President's Request				
ASCR.....	440,868	455,593	442,000	+1,132	+0.3%	-13,593	-3.0%	455,593	+14,725	+3.3%	—	—
BES.....	1,688,093	1,799,592	1,657,146	-30,947	-1.8%	-142,446	-7.9%	1,712,091	+23,998	+1.4%	-87,501	-4.9%
BER.....	609,557	625,347	542,000	-67,557	-11.1%	-83,347	-13.3%	625,347	+15,790	+2.6%	—	—
FES.....	400,996	398,324	474,617	+73,621	+18.4%	+76,293	+19.2%	398,324	-2,672	-0.7%	—	—
HEP.....	790,860	776,521	776,521	-14,339	-1.8%	—	—	781,521	-9,339	-1.2%	+5,000	+0.6%
NP.....	547,387	526,938	547,938	+551	+0.1%	+21,000	+4.0%	539,938	-7,449	-1.4%	+13,000	+2.5%
WDTS.....	18,500	14,500	14,500	-4,000	-21.6%	—	—	14,500	-4,000	-21.6%	—	—
SLI.....	111,800	117,790	112,313	+513	+0.5%	-5,477	-4.6%	117,790	+5,990	+5.4%	—	—
S&S.....	80,573	84,000	82,000	+1,427	+1.8%	-2,000	-2.4%	83,000	+2,427	+3.0%	-1,000	-1.2%
PD.....	185,000	202,551	185,000	—	—	-17,551	-8.7%	190,000	+5,000	+2.7%	-12,551	-6.2%
SBIR/STTR (SC).....	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal, Science.....	4,873,634	5,001,156	4,834,035	-39,599	-0.8%	-167,121	-3.3%	4,918,104	+44,470	+0.9%	-83,052	-1.7%
SBIR/STTR (DOE).....	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal, Science.....	4,873,634	5,001,156	4,834,035	-39,599	-0.8%	-167,121	-3.3%	4,918,104	+44,470	+0.9%	-83,052	-1.7%
Rescission.....	—	—	-23,500	-23,500	—	-23,500	—	—	—	—	—	—
Use of PY Bal.....	—	-9,104	-9,104	-9,104	—	—	—	-9,104	-9,104	—	—	—
Total, Science Approp...	4,873,634	4,992,052	4,801,431	-72,203	-1.5%	-190,621	-3.8%	4,909,000	+35,366	+0.7%	-83,052	-1.7%

Global Average Temperature Increases with CO₂

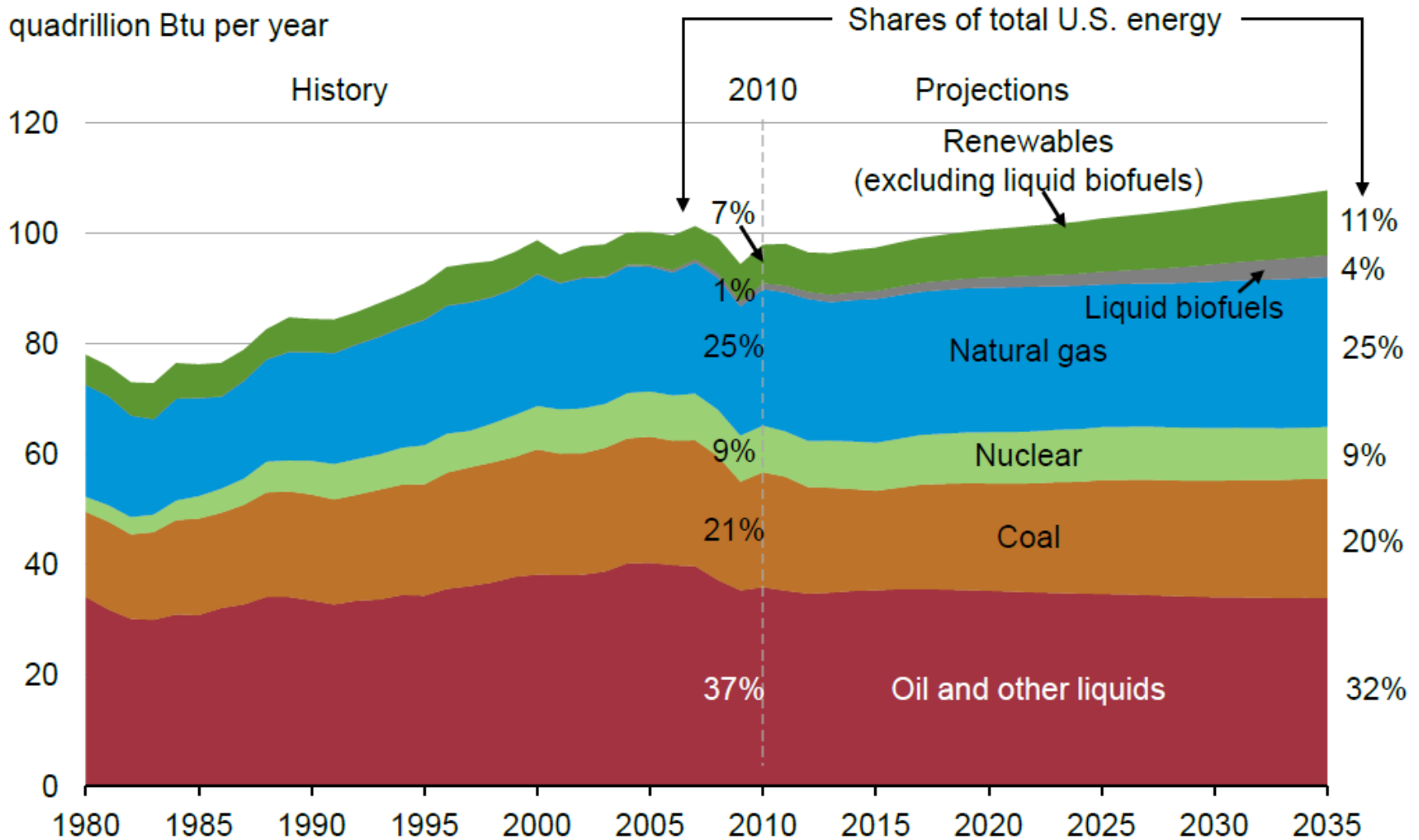


Anomaly is
deviation from 1951-
1980 mean

[NASA GISS, update of Hansen et al., J. Geophys. Res., 106, 23947-23963, 2001](#)

US energy consumption by source

U.S. primary energy consumption
quadrillion Btu per year



Source: EIA, Annual Energy Outlook 2012 Early Release

Tesla – 300 miles per charge car

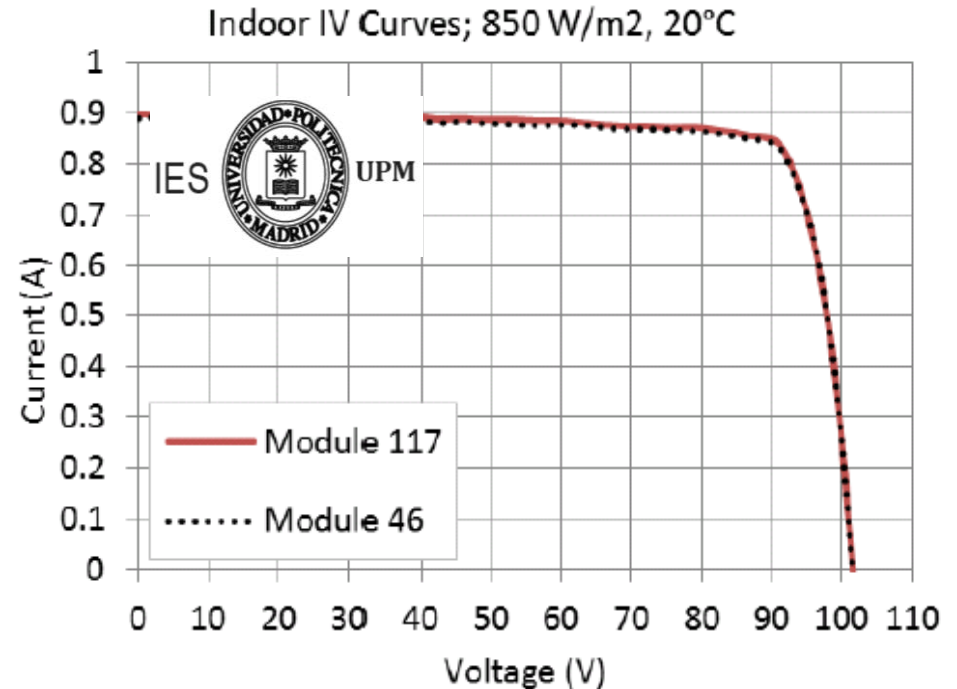


The Tesla Is One Hot Car

Four models

40 kWh	60 kWh	85kWh	85 kWh	
			performance	
160mi	230 mi	300 mi	300 mi	
6.5 sec	5.9 sec	5.6 sec	4.4sec	zero to sixty
110 mph	120mph	125mph	130mph	

Recharges at 62 miles per hour-has a supercharger



	MODULE 46	MODULE 117
Voc (V)	101.1	101.3
Isc (A)	0.890	0.898
FF	0.84	0.84
Eff (%)	33.6	33.9

These modules represent the highest-efficiency photovoltaic modules measured by the IES, and we are not aware of any published reports of a photovoltaic module with greater than 33% efficiency. To our knowledge, this Semprius technology constitutes a world record in module-level photovoltaic efficiency.