



U.S. DEPARTMENT OF  
**ENERGY**

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# **High Energy Physics Advisory Panel**

**August 27, 2012**

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US Department of Energy**

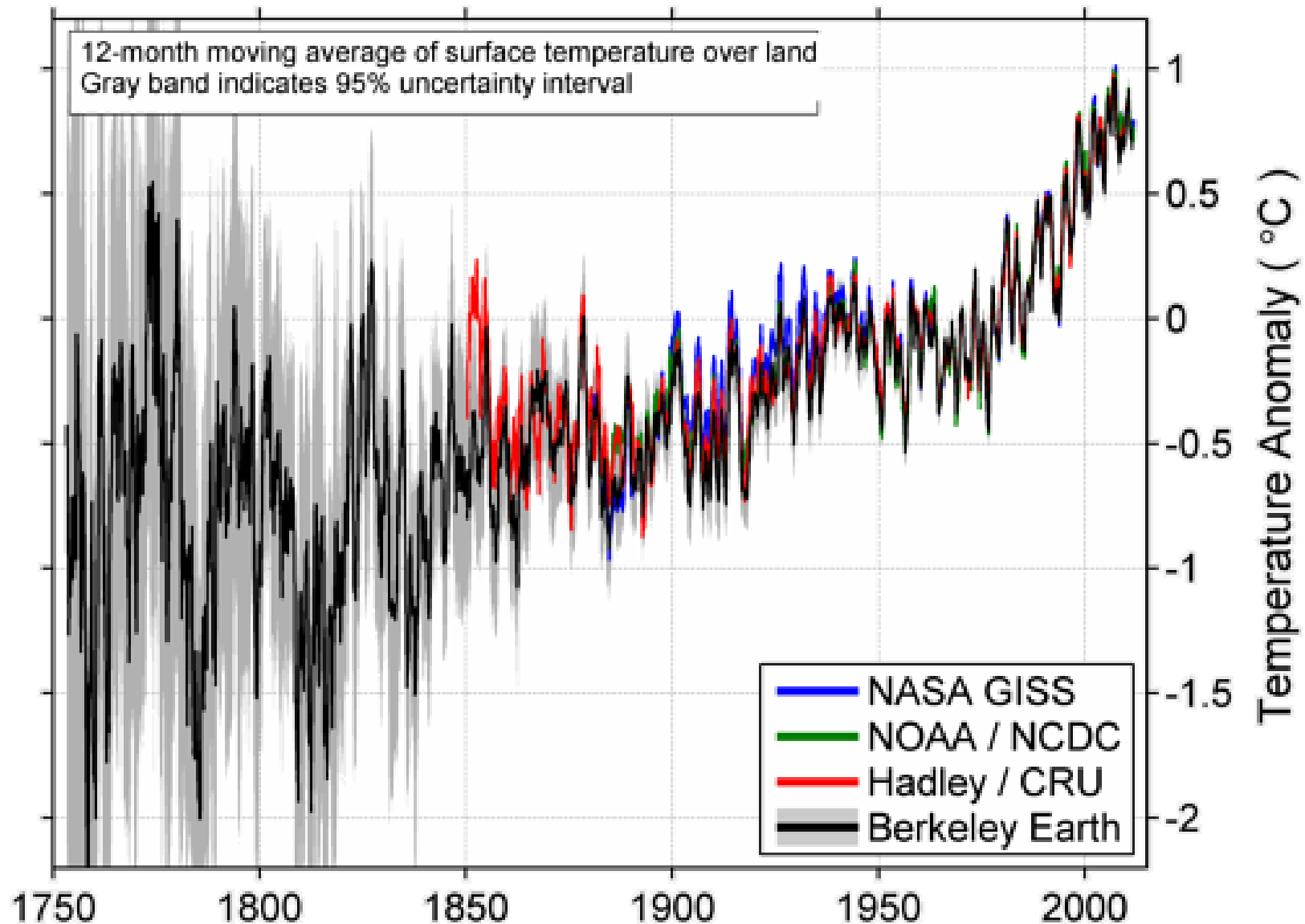


# FY 2012 Budget and FY 2013 Marks

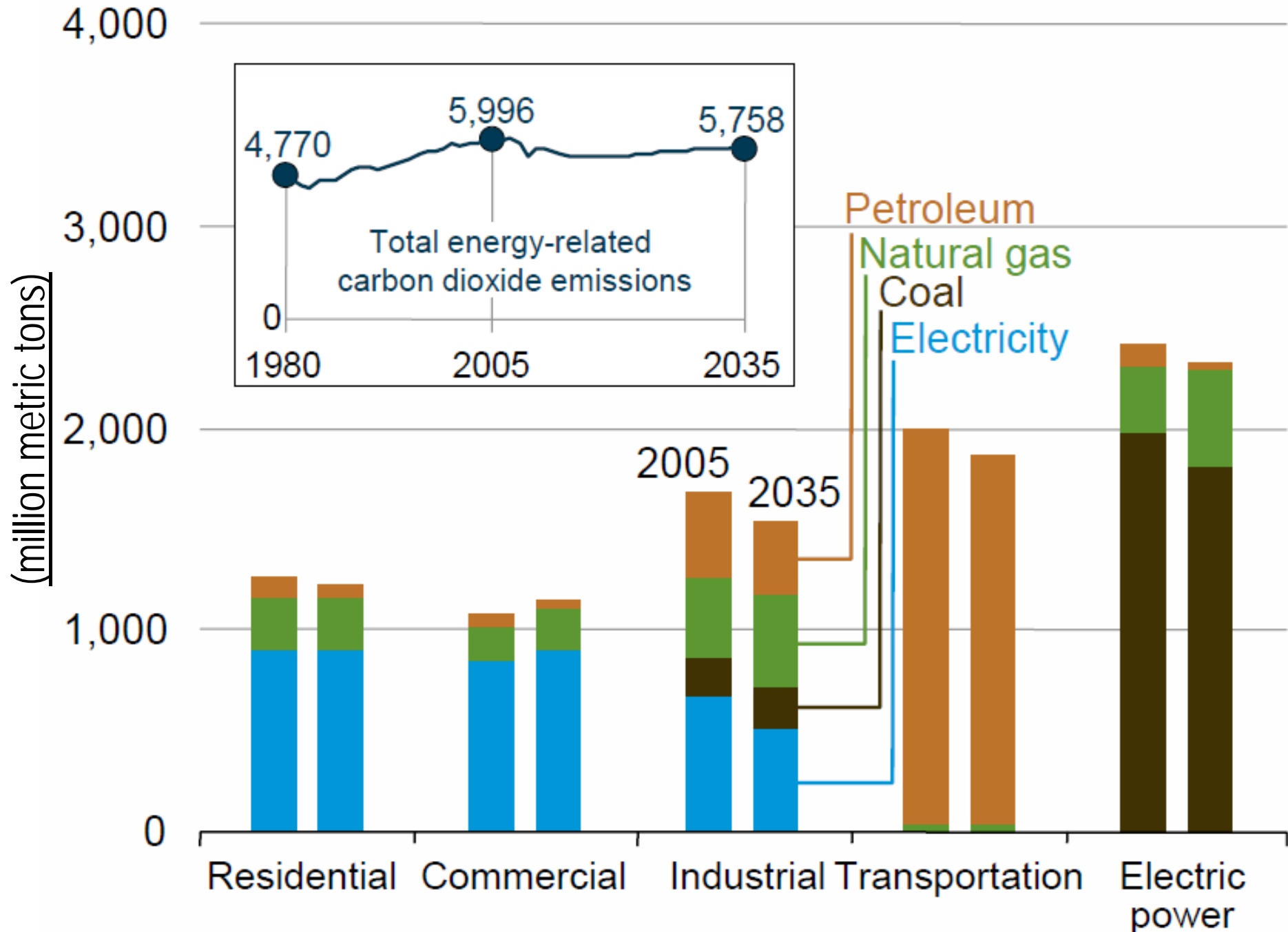
Office of Science												
FY 2013 House and Senate Mark												
(B/A in thousands)												
	FY 2012	FY 2013										
	Current Approp.	President's Request	House Mark	House Mark vs. FY12 Approp.	House Mark vs. President's Request	Senate Mark	Senate Mark vs. FY12 Approp.	Senate Mark vs. President's 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 CO<sub>2</sub>

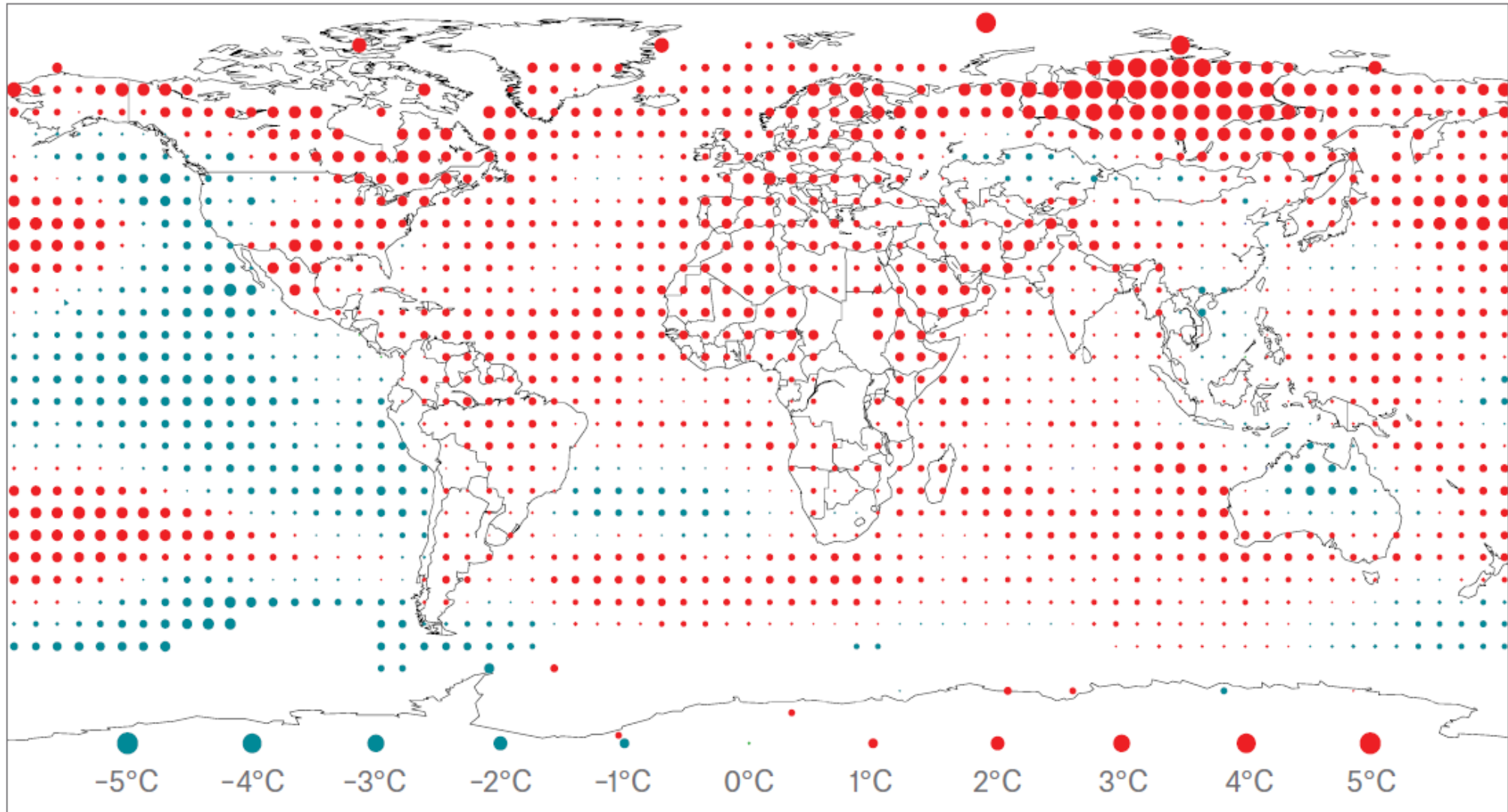
## Annual Land-Surface Average Temperature



# US energy-related CO2 emissions by sector and fuel, 2005 and 2035

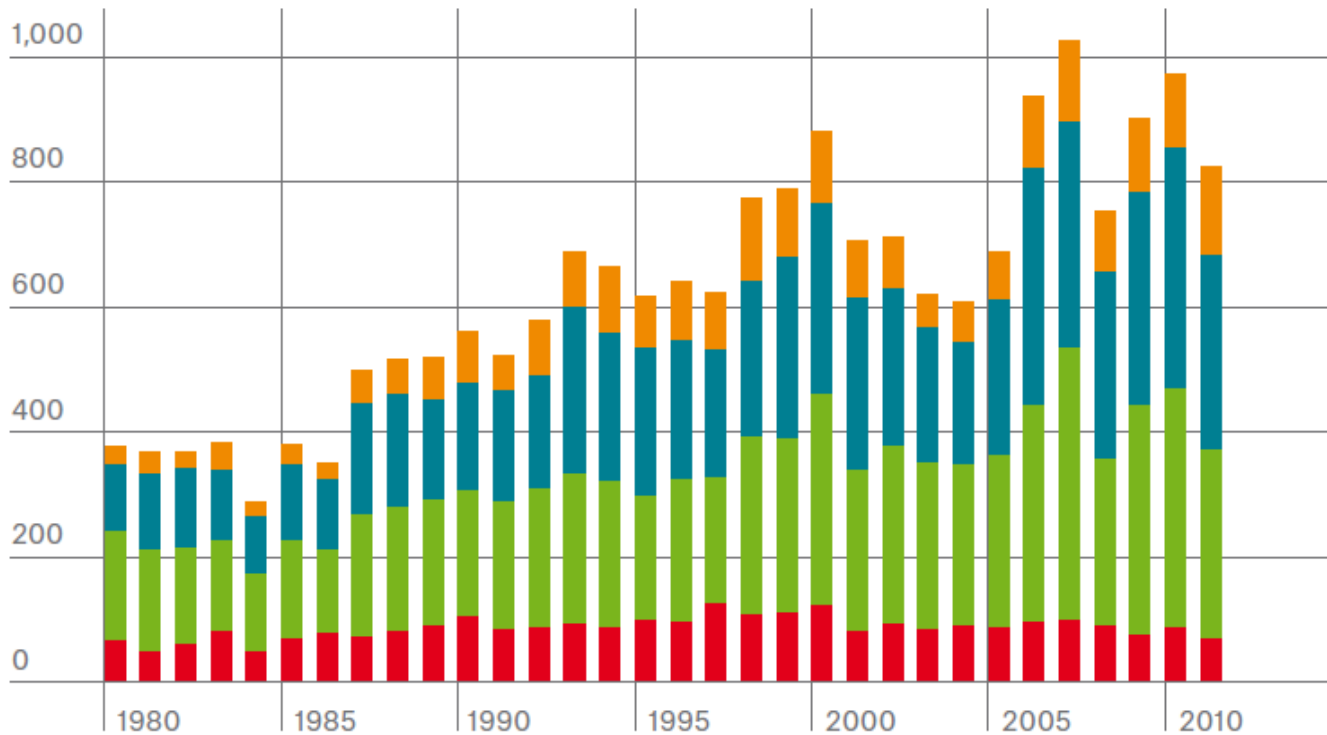


## Regional mean annual temperature anomalies for 2011 with respect to a 1971-2000 base period



# Number of Natural Catastrophes 1980-2011

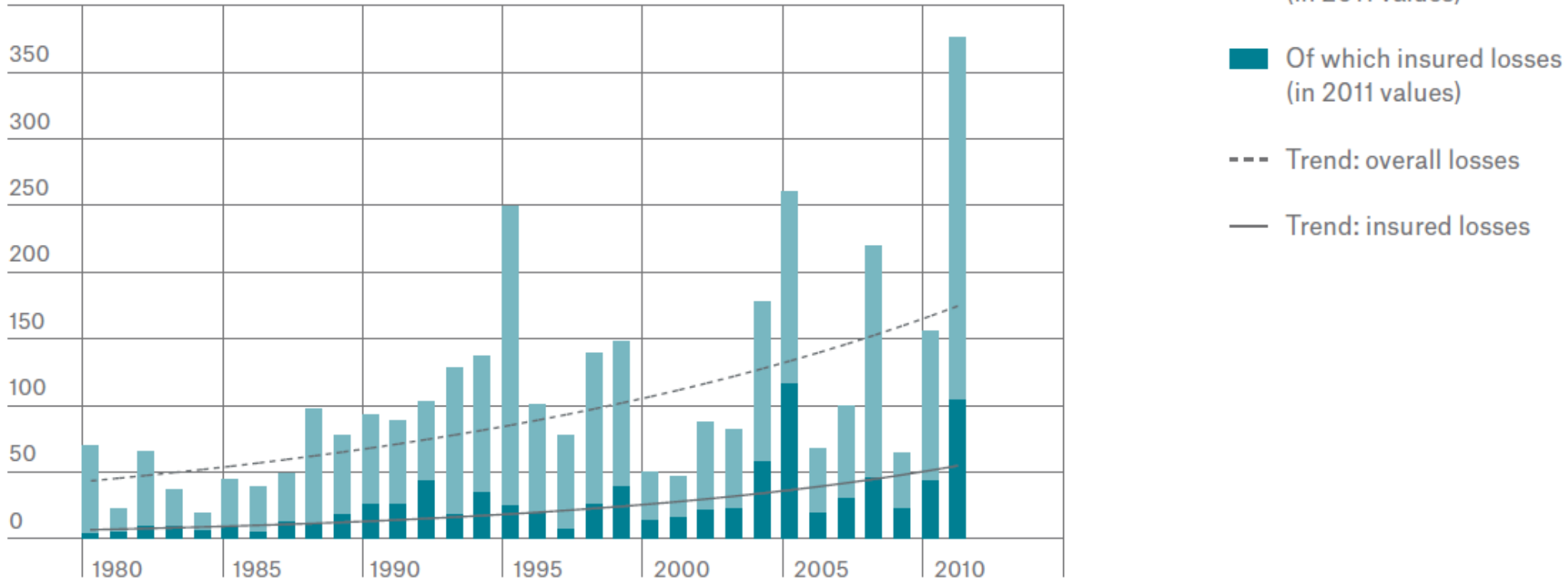
Number of natural catastrophes 1980-2011



- Geophysical events: Earthquake, volcanic eruption
- Meteorological events: Tropical storm, winter storm, severe weather, hail, tornado, local storm
- Hydrological events: Storm surge, river flood, flash flood, mass movement (landslide)
- Climatological events: Heat-wave, cold wave, wildfire, drought

# Overall Losses and Insured Losses 1980-2011 (\$ billion)

Overall losses and insured losses 1980-2011 (US\$ bn)



# 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

# Hybrid Sales 1999-2012 (per cent)

Per Cent of All Vehicles

