



# EV Everywhere Grand Challenge

U.S. Department of Energy, Energy Efficiency and Renewable Energy

**Dr. David Danielson, Assistant Secretary**

# EV Everywhere Grand Challenge

## “Big Hairy Audacious Goal”:

Enable U.S. companies to produce plug-in electric vehicles that are as affordable and convenient as today’s gas-powered vehicles by 2022



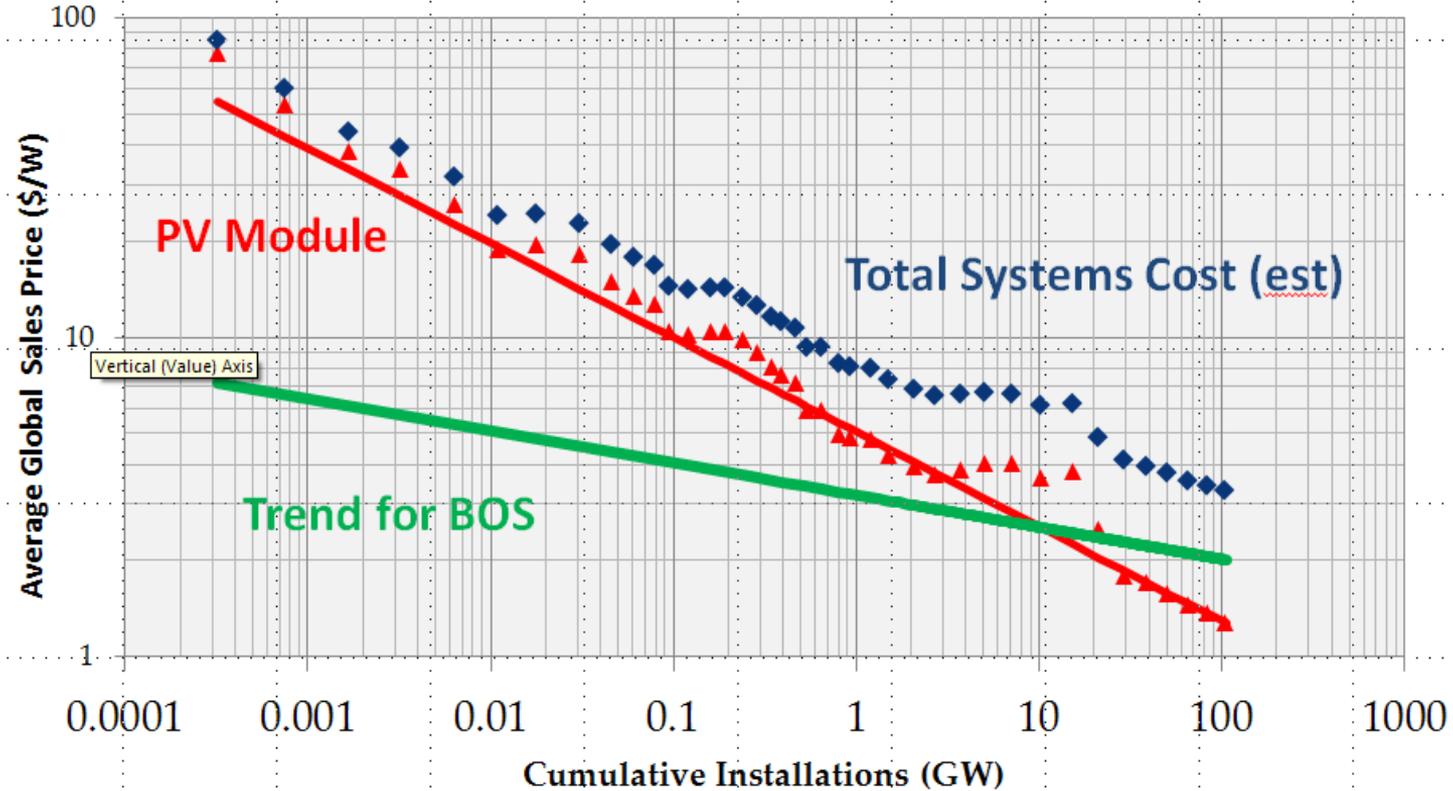
President Obama announced the EV Everywhere Challenge on March 7, 2012

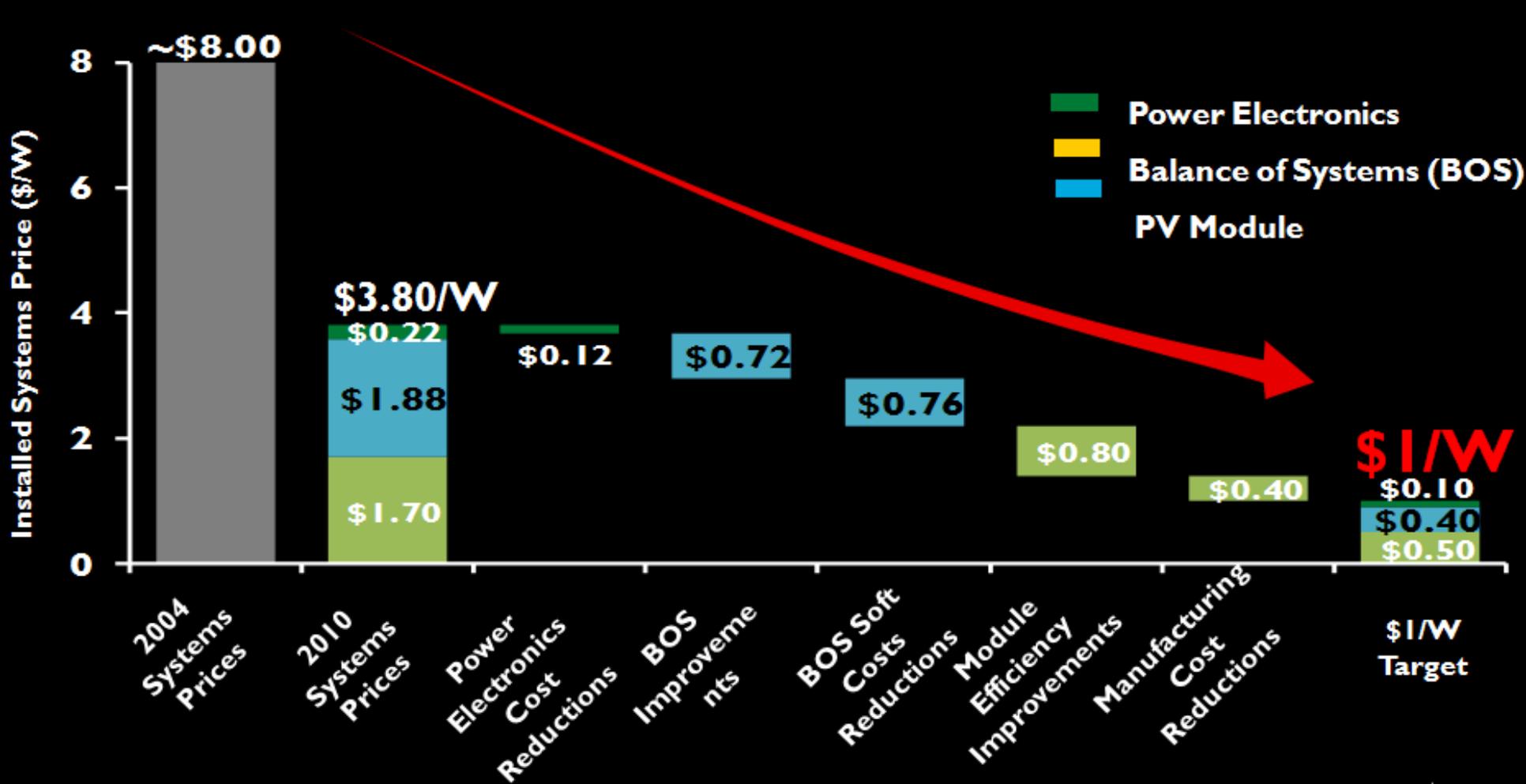
# SunShot Grand Challenge

## “Big Hairy Audacious Goal”

To achieve unsubsidized cost parity for solar power with traditional sources of electricity by 2020

# Balance of Systems (BOS)





# Far Reaching Impacts of SunShot - 2 years later -

- ✓ Set very aggressive goals for module and BOS costs that have spurred innovation at all companies.
- ✓ Recognized importance of reducing BOS and soft costs.
- ✓ Recognized the importance of understanding grid impacts at high penetration.

# EV-Everywhere Impacts? Who knows?

Beyond Li-ion  
battery technology?

Pack-level battery  
innovation?

Disruptive approaches to  
fast-charge/battery-swap?

Innovations for grid  
stability for fast charge?

Wide bandgap  
crystal growth?

Non-economic drivers/psychological  
factors of PEV consumer adoption?

New non-rare earth  
magnet/motor  
designs?

Workplace Charging  
Challenge?

New vehicle  
ownership/usage models?

HOV Access for EV's?

Autonomous vehicle control to  
enable ultra-lightweight PEV's?