



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



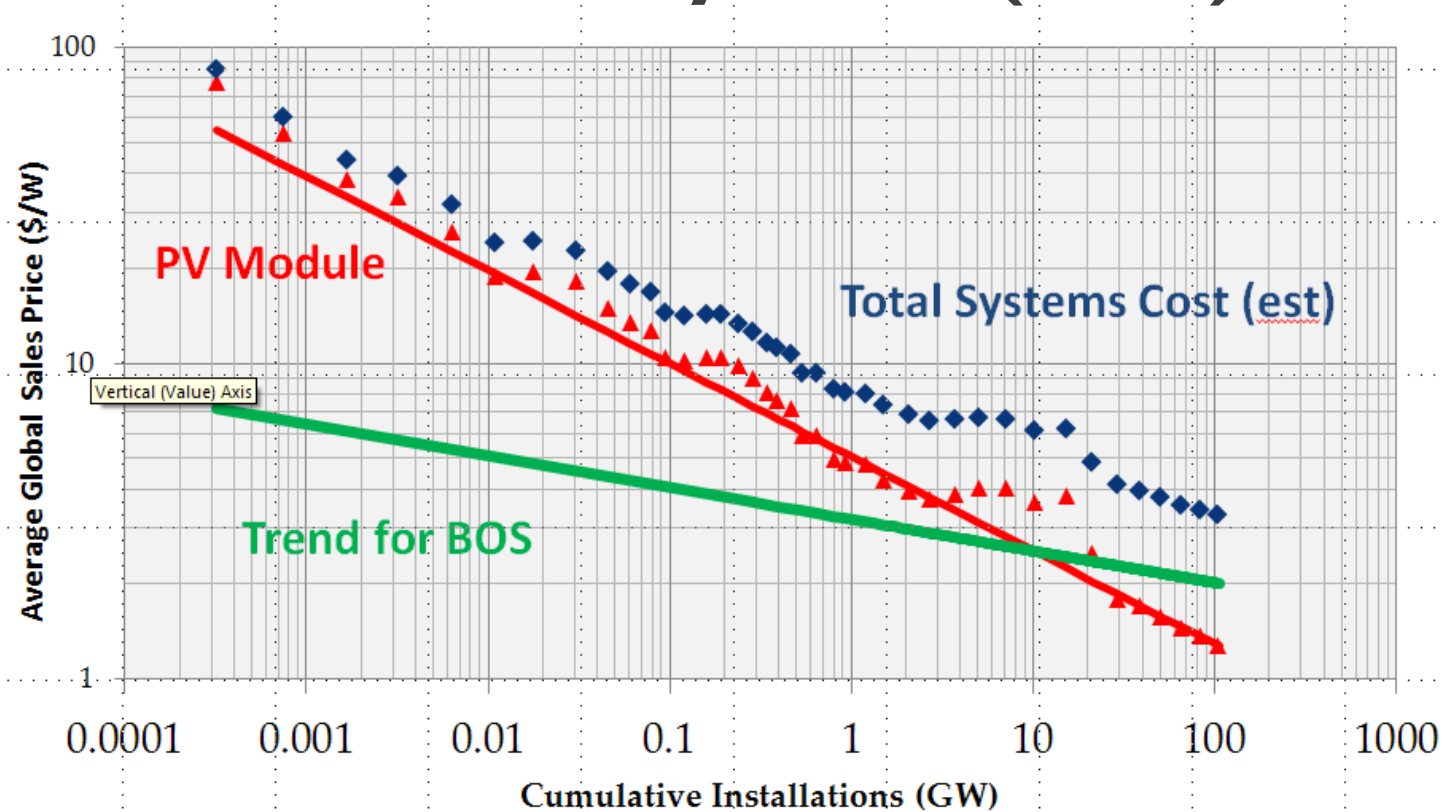
President Obama announced the EV Everywhere Challenge on March 7, 2012

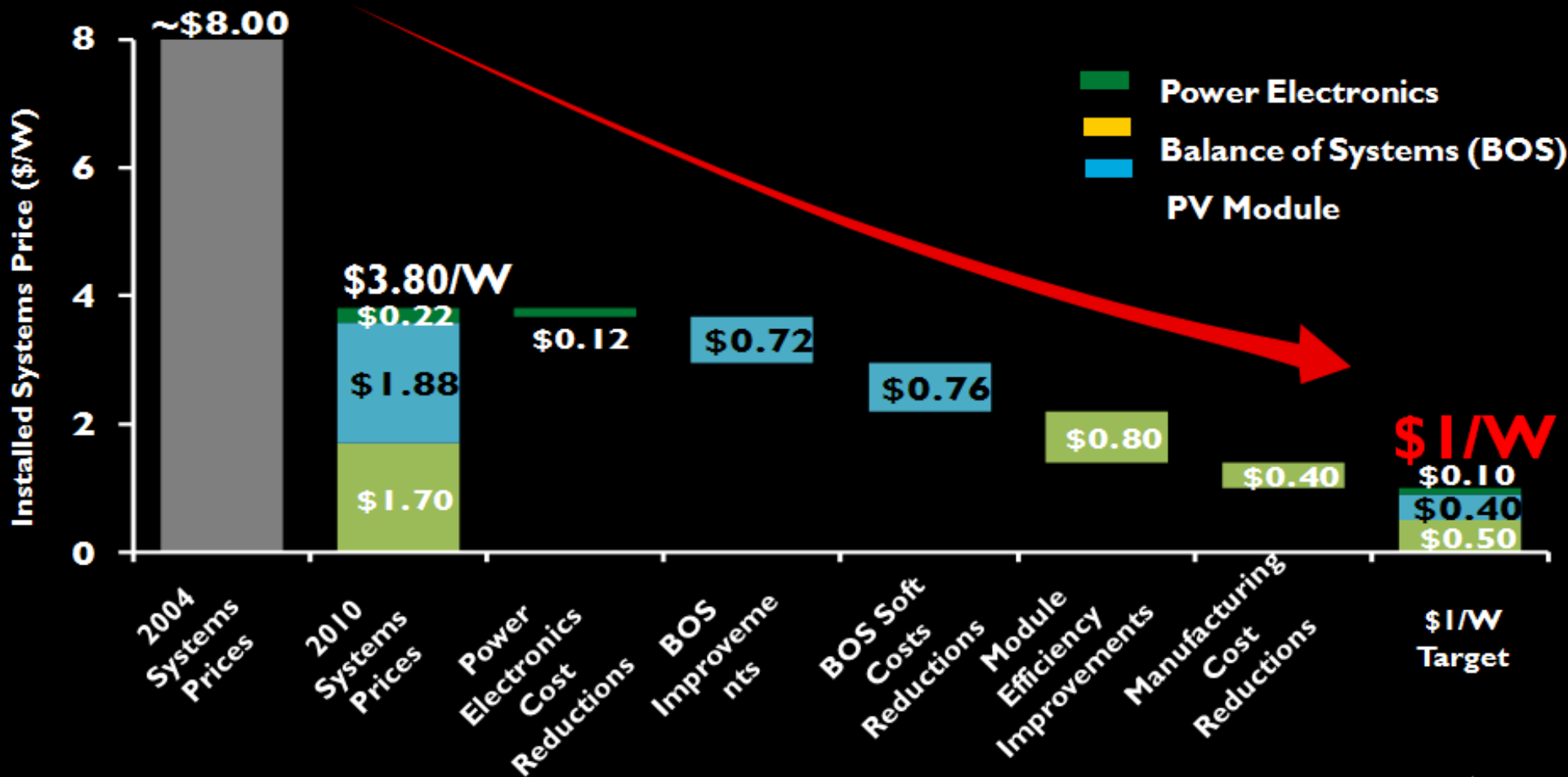
SunShot Grand Challenge

“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?

Completely new
drive-train
architectures?

Wide bandgap
crystal growth?

Novel thermal
materials/approaches?

New non-rare earth
magnet/motor
designs?

Disruptive approaches to
fast-charge/battery-swap?

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

Pack-level battery
innovation?

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

Beyond Li-ion
battery technology?

Innovations for grid
stability for fast charge?

New vehicle
ownership/usage models?