



TECHNOLOGY VENTURES

www.abb.com/ventures



ABB Overview



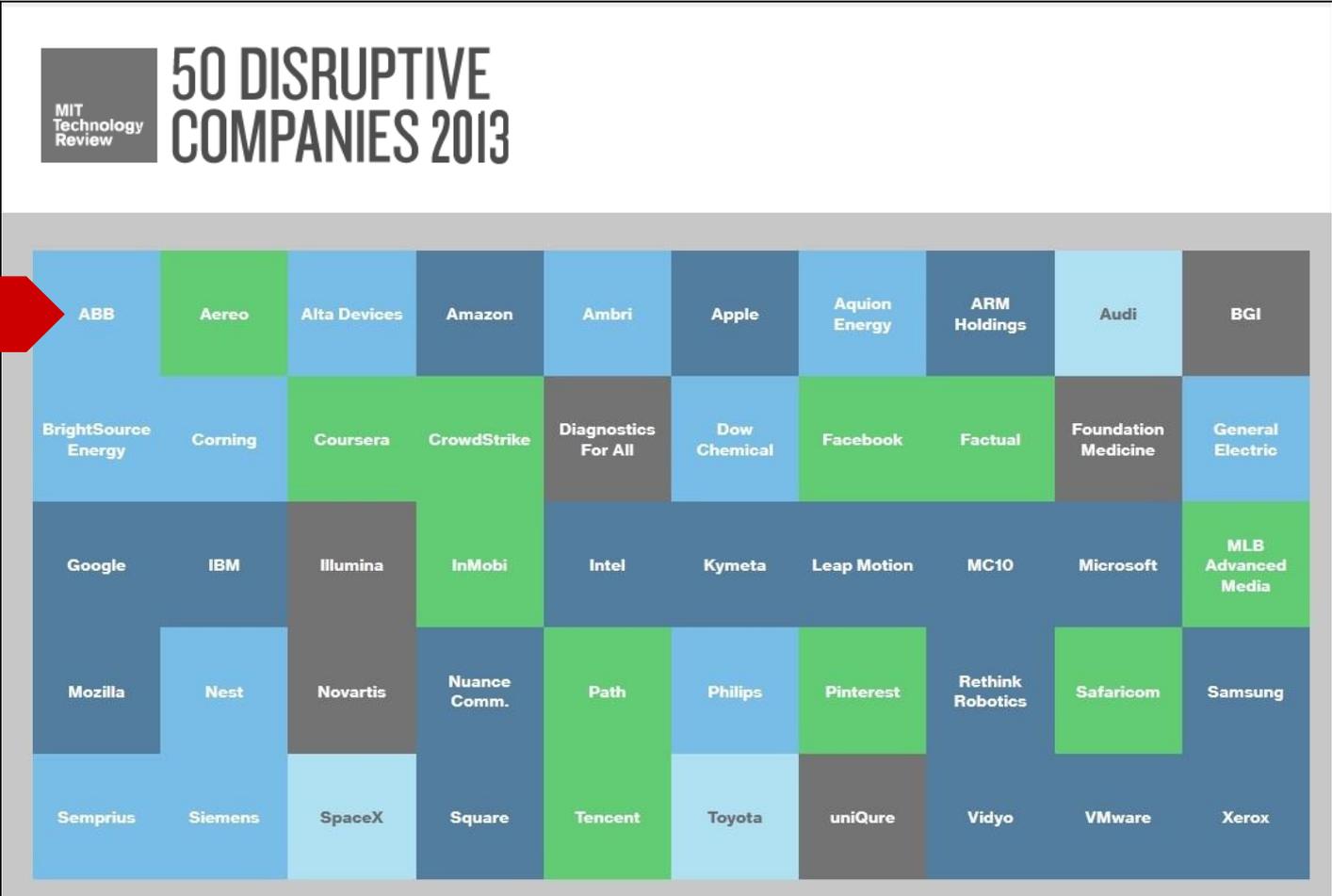
- \$57 billion¹ publicly owned power & automation technology company
- Product portfolio ranges from light switches to robots, and from huge electrical transformers to control systems that manage entire power networks and factories
- ~150,000 employees in 100 countries
- \$39 billion in revenue²
- \$8.5 billion in cash³
- Recent M&A: Ventyx (\$1B), Baldor (\$4B), Thomas & Betts (\$4B), Power-One (\$1B)
- Formed by 1988 merger of Swiss & Swedish companies
 - Predecessors founded in 1883 and 1891
 - Strong focus today on core research and engineering excellence
- Headquarters in Zürich; U.S. headquarters in Cary, NC

"As one of the world's leading engineering companies, we help our customers to **use electrical power efficiently**, to **increase industrial productivity** and to **lower environmental impact** in a sustainable way."

¹ Market capitalization of ABB Ltd. (holding company of ABB Group) as of 2/13/2014; NYSE: ABB ² FY2013 ³ Gross cash equiv. as of 12/31/2013

MIT Technology Review

ABB Among Top 50 Disruptive Companies of 2013



*“**ABB** – Swiss-based, this company is at the forefront of developing high-voltage DC circuit breakers for integrating renewable energy into power grids.”*

ABB in the “sweet spot” of energy efficiency

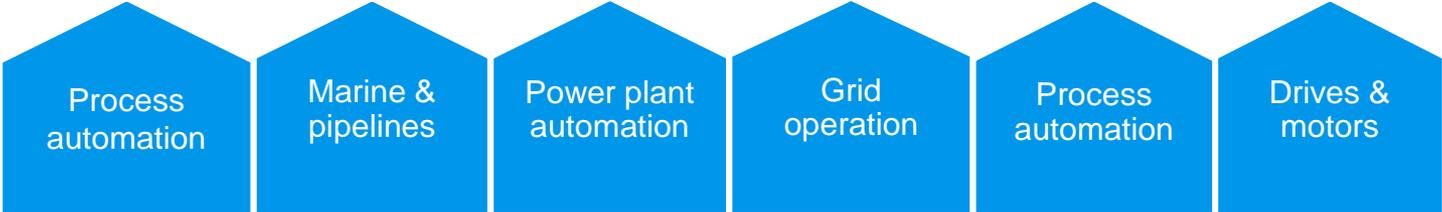
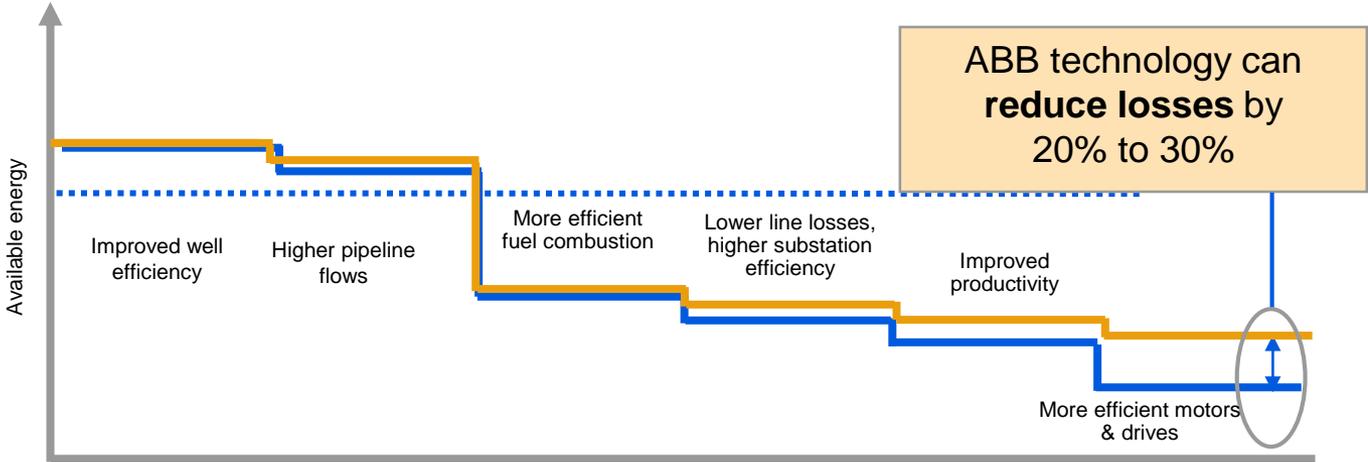


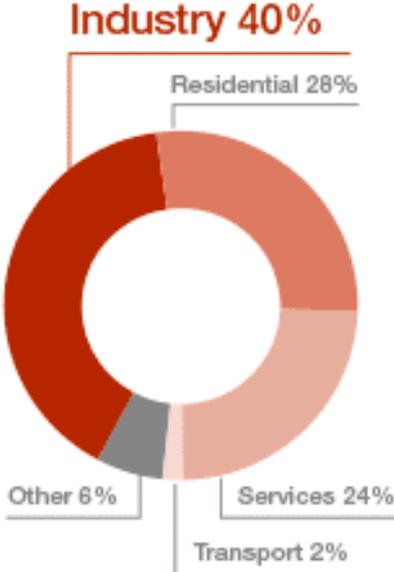
ABB in the “sweet spot” of energy efficiency

The real numbers behind the challenge:

industries consume about **40%** of all electricity and about **40%** of all electricity is produced by coal.



Motors consume about 28% of the world's electricity.



Source: IEA World Energy Outlook 2012

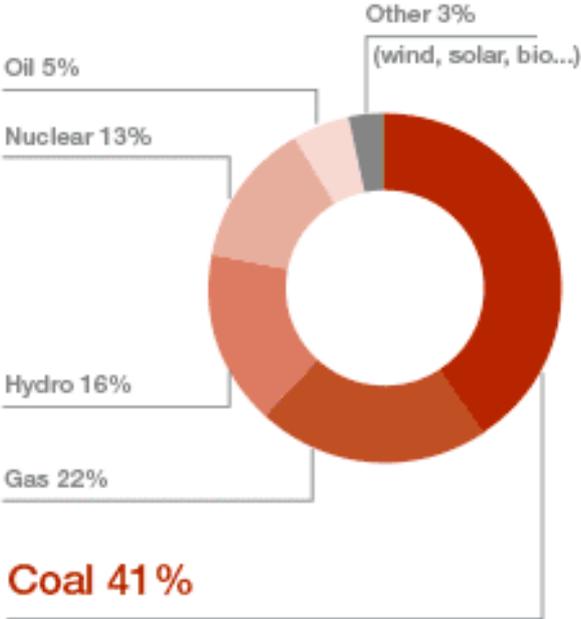
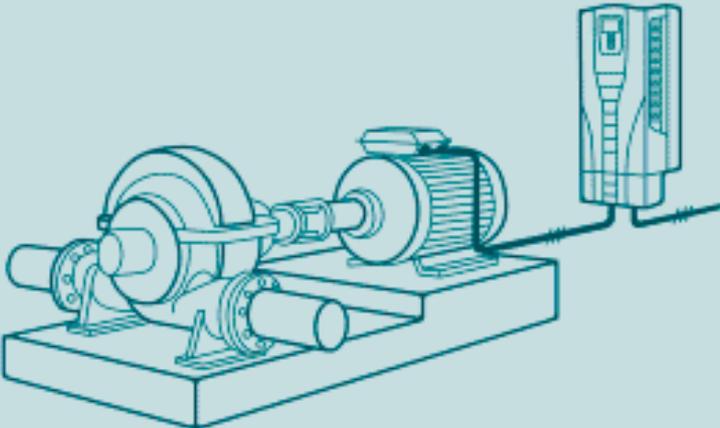


ABB in the “sweet spot” of energy efficiency

Let's look at water industry



Many motors in pump applications are **oversized** to cope with a maximum demand that rarely occurs. With traditional mechanical valves, the motor often runs at a nominal speed regardless of the actual demand and the flow is mechanically restricted, which **wastes energy**. The variable speed drive brings motor speed down to match the actual demand.

A 50 kW pump that runs 48 weeks per year consumes

403 200
kWh / year

With variable speed drives, the saving potential is

 **40 %**,

equivalent to **161.280 kWh of energy saved**. With this energy saving, CO₂ savings amount to **80.640 kg/year**.

This means savings of

19 354
eur / year

Emission factor 0.5 kg/kWh
Assumed cost for energy 0.2 €/kWh

Targeted product development & investment scoping

Example Development Areas: Maintaining the lead in conventional technologies, opening new areas

Software



New automation system for higher marine energy efficiency

Power electronics



New power electronic solutions for higher energy efficiency in rail

Smart buildings



New door entry systems for the European market

Wireless



Using waste energy for wireless applications in oil & gas

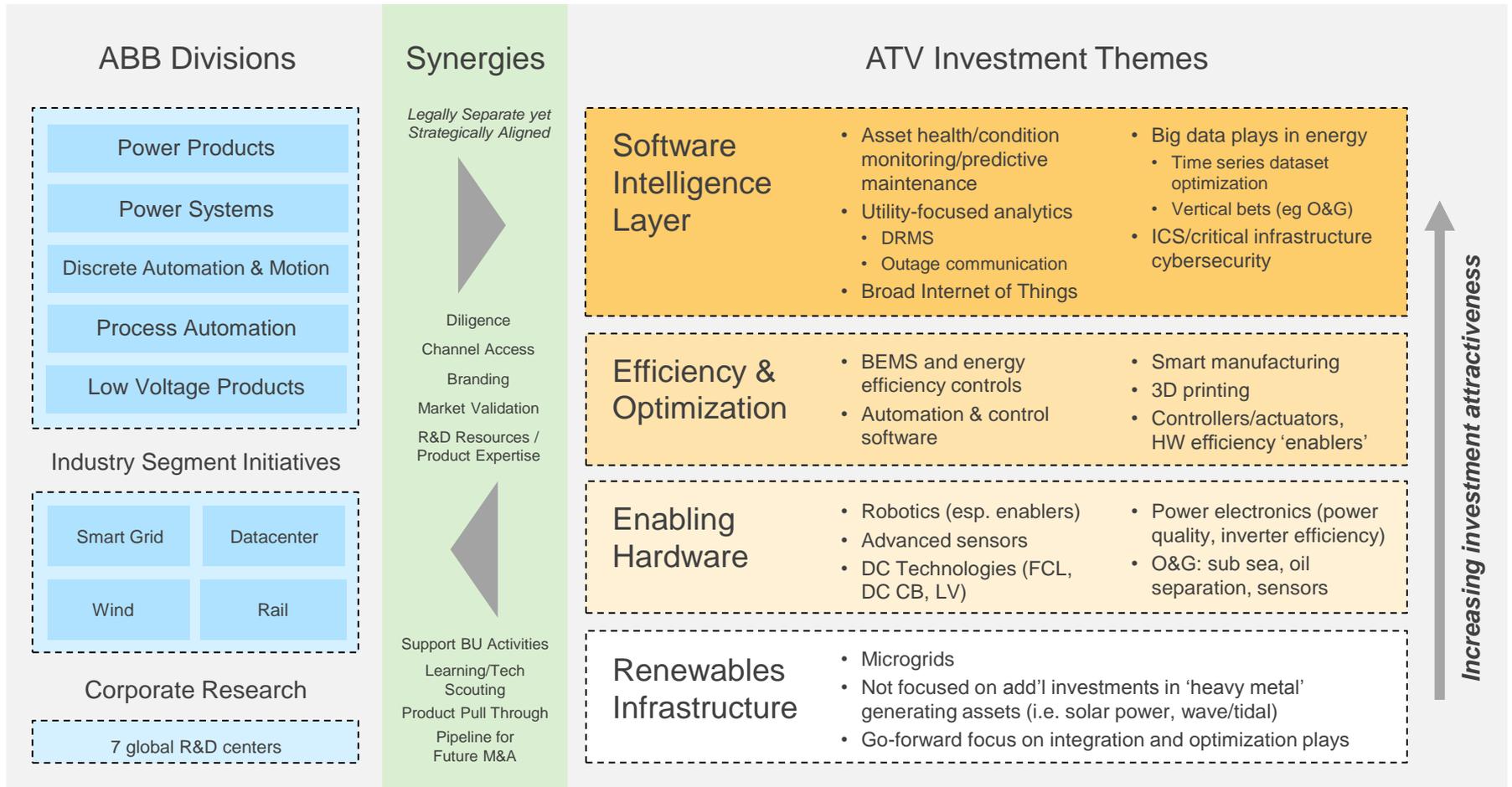
- Still, major innovation occurring out in the marketplace
- **ABB Technology Ventures (ATV)** is a critical strategic tool for finding, assessing, investing in, and integrating the best of these leading edge energy technologies
- Look to Silicon Valley, Washington (ARPA-E etc.), research institutions & labs, as well as ABB's global network of entrepreneurs and partners for opportunities
- Tight linkages with ABB business units and R&D functions to ensure additional investment value-add, product pull-through and accelerated R&D

ATV Overview

- **ABB Technology Ventures (ATV)** is the corporate venture capital arm of ABB (NYSE: ABB), the leading power & automation technology provider
- Goals:
 - Gain access to leading edge technologies and businesses of strategic interest to ABB
 - Increase the pace of internal innovation
 - Generate venture class financial returns on ABB assets
- Began investing in **2010**
- **\$165+ million** deployed
- **17** investments to date:
 - **14** investments into companies/projects
 - **3** investments as Limited Partners into other VC funds
- **3** investment professionals, **1** technologist
- Technology/market due diligence and portfolio company support from businesses, industry sectors and corporate research
- Report into a Board consisting of ABB CEO, CFO, CTO and 3 other executives

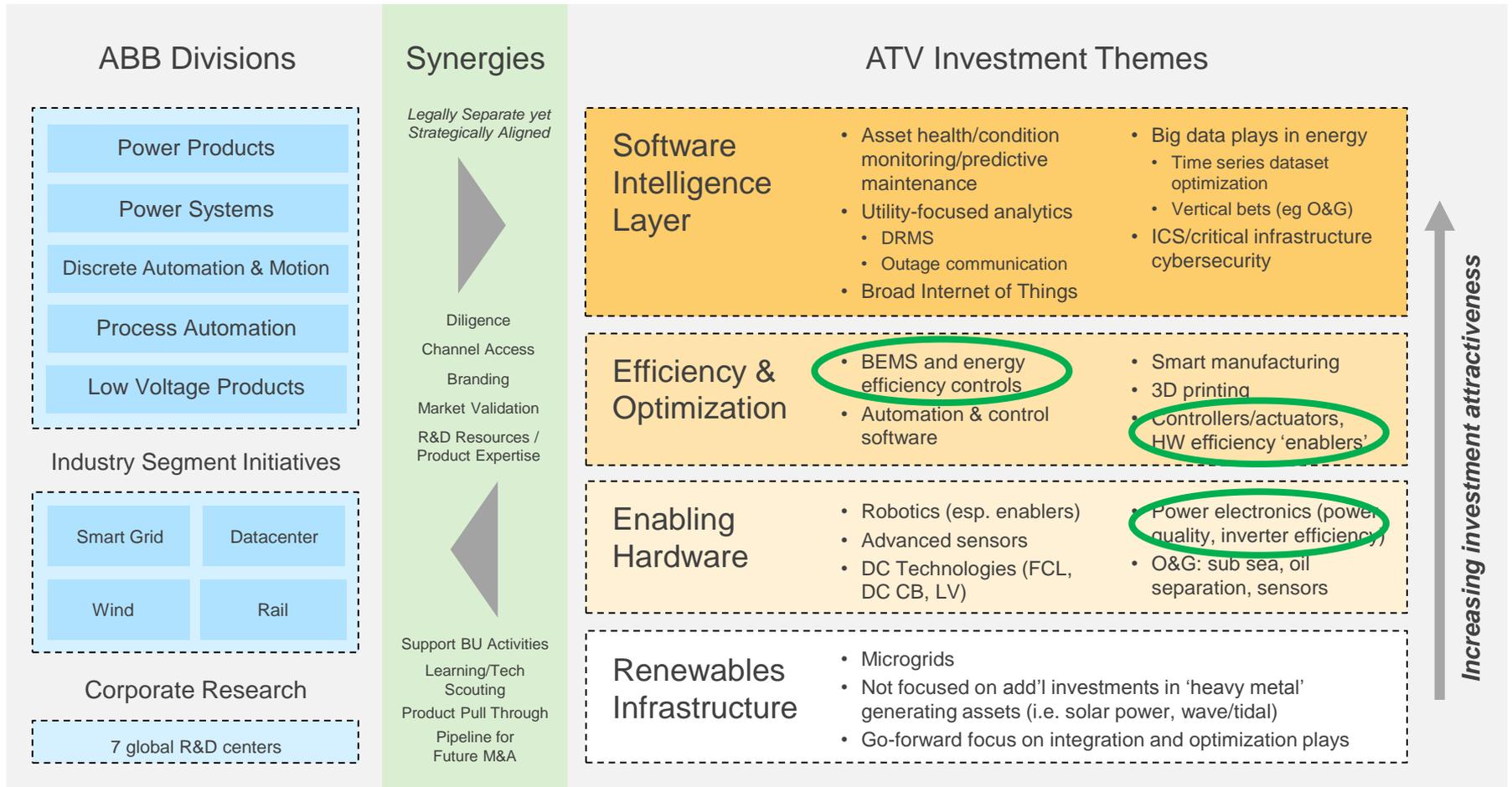
ATV Investment Focus

Broad Strategic Mandate: Power and automation technologies to improve utility and industrial customer performance and to lower environmental impact



ATV Investment Focus

Broad Strategic Mandate: Power and automation technologies to improve utility and industrial customer performance and to lower environmental impact



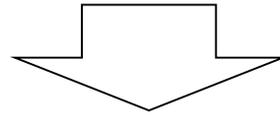
Did We Miss Nest?

"We knew that there were billions and billions of dollars being spent on energy efficiency, and they weren't really getting anywhere."

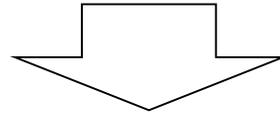
Tony Faddell, CEO, Nest



Energy Efficiency Themes

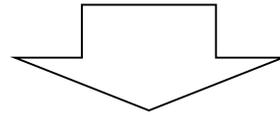


Intelligent Efficiency: Data > IT+OT

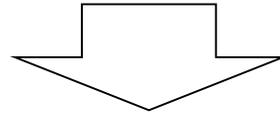


Conviction around
'Negawatt Economy'

Energy Effectiveness

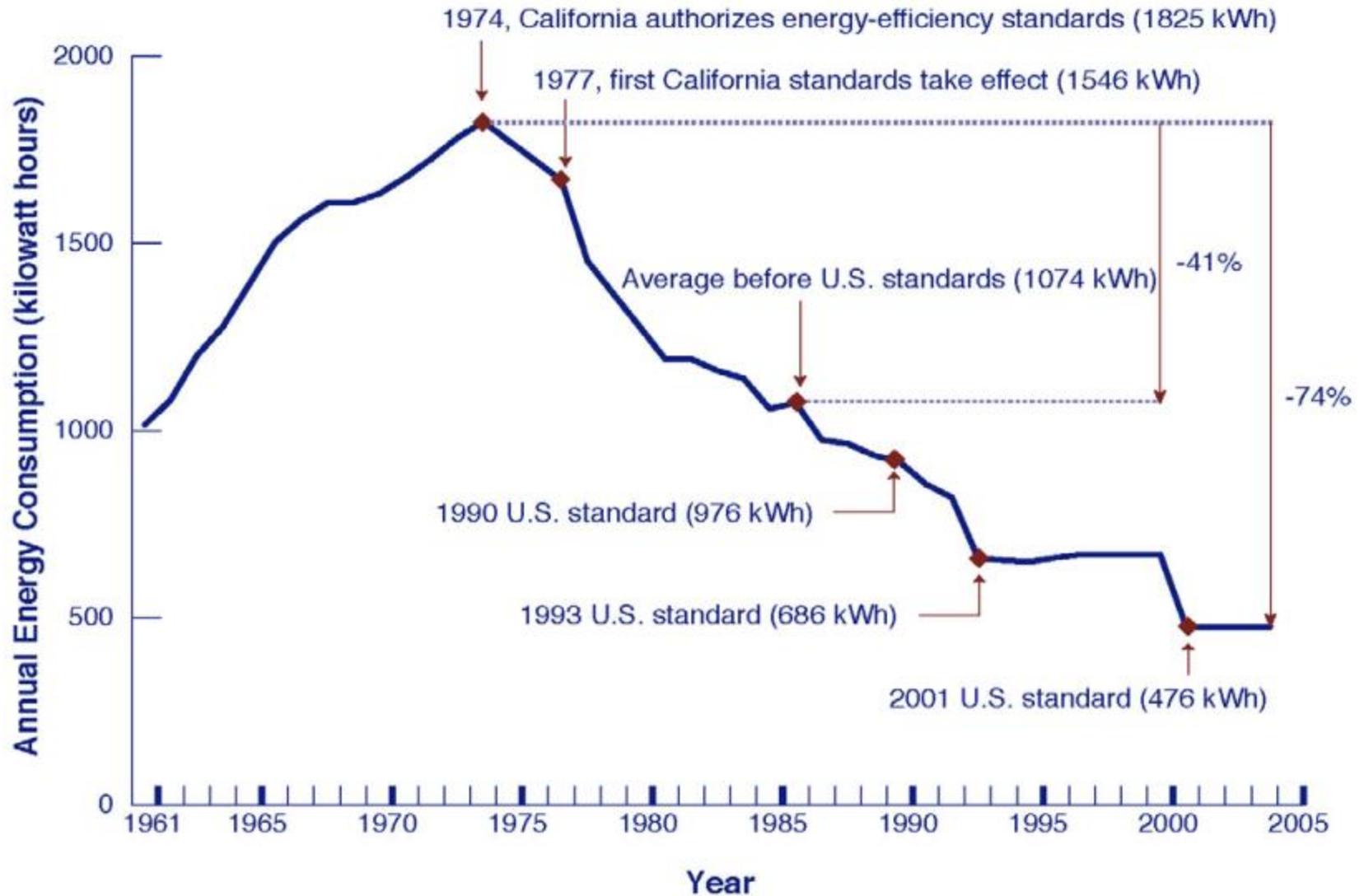


Load Reduction... *sometimes*



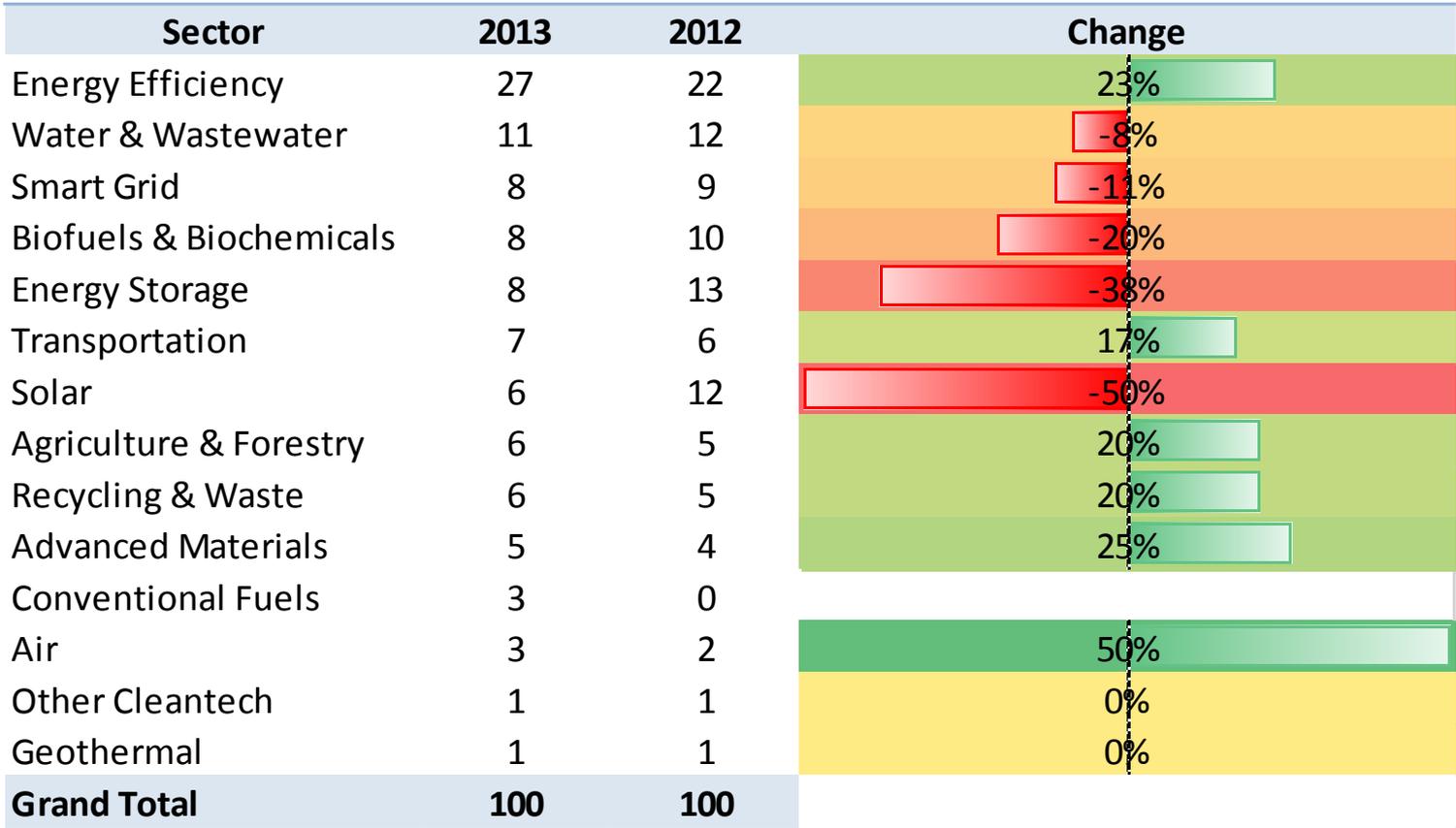
Savings over a *long, long* time

The humble refrigerator...



Government
Green Banks
Project Financiers > VC
Private Mkts.

Energy Efficiency Companies are Cropping Up



Power and productivity
for a better world™

