



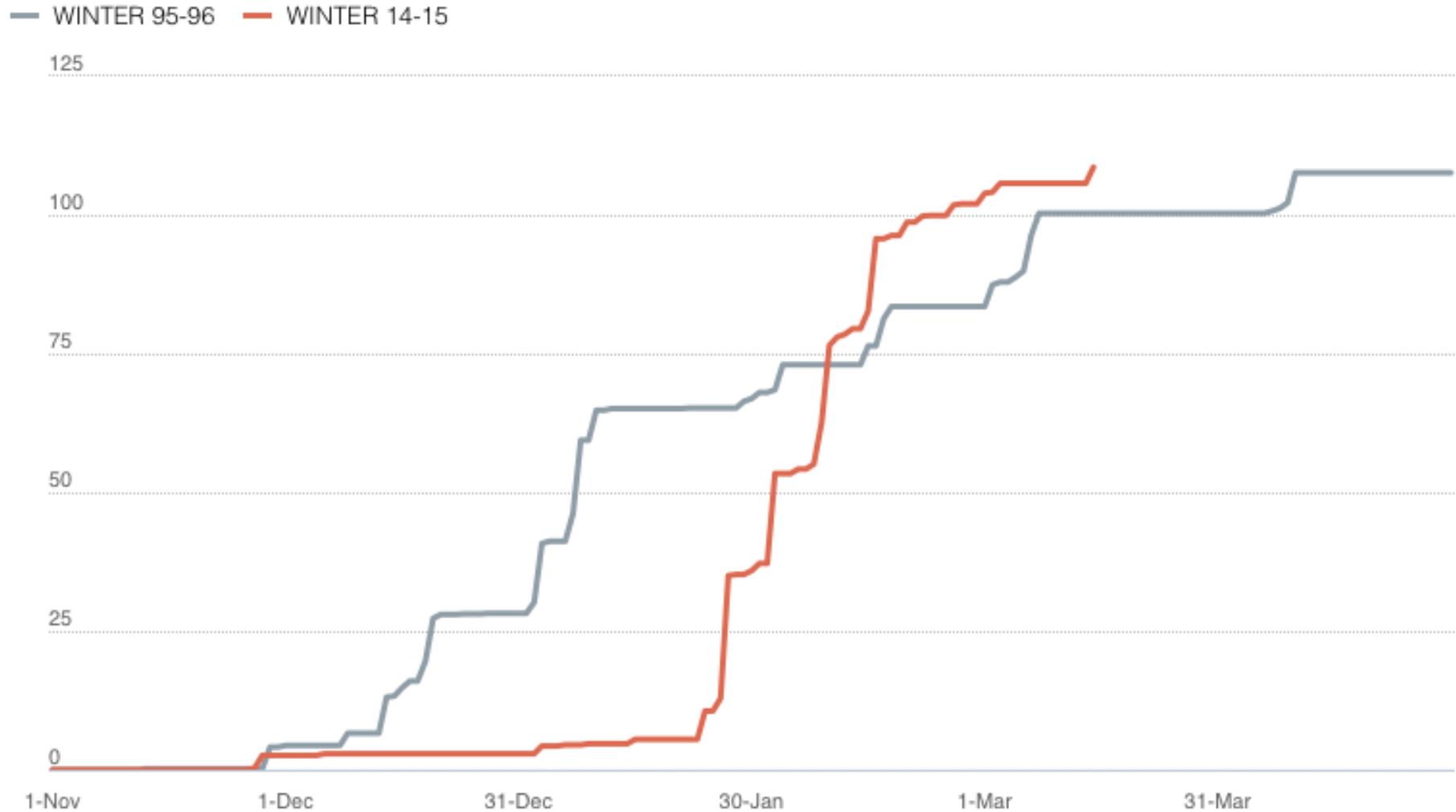
Ceres

*Mobilizing Business Leadership
for a Sustainable World*



Boston Sets Snowfall Record!

Data through Mar. 15, 2015 at 7 p.m.



DATA: National Weather Service, Boston; NOAA

GLOBE STAFF



Boston Sets Snowfall Record!





Who we are

Ceres is a non-profit organization advocating for sustainability leadership. Our mission is to mobilize investors and business to build a thriving, sustainable global economy.

Company Network

65 members in more than 20 sectors

Investor Network

100+ members representing \$13 trillion AUM

Business for Innovative Climate and Energy Policy (BICEP)

30+ members

The Ceres Coalition

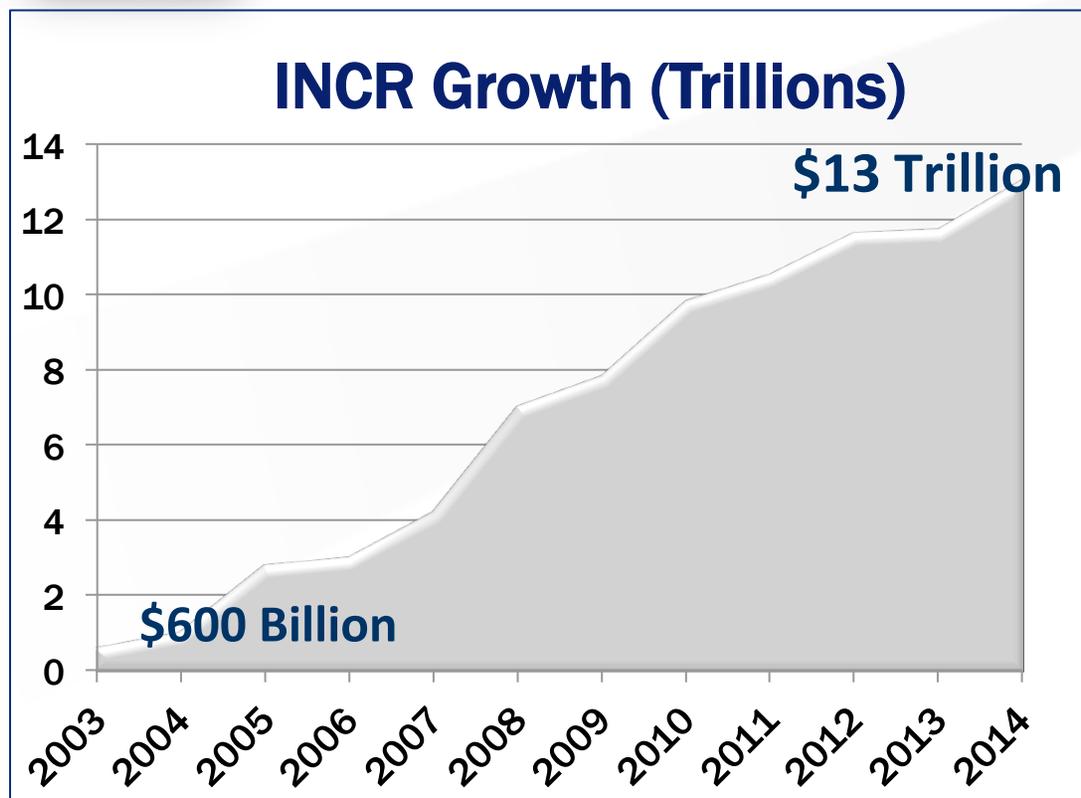
130+ organizations



Investor Network on Climate Risk



Investor Network on
CLIMATE RISK



MEMBERS INCLUDE

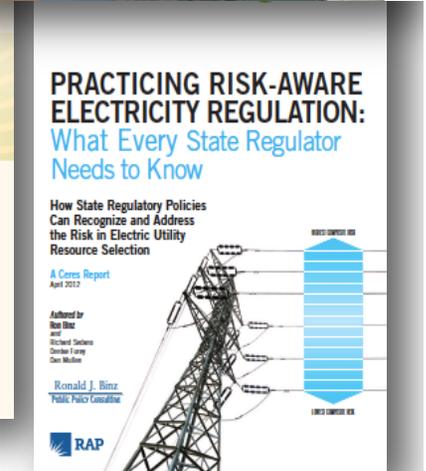
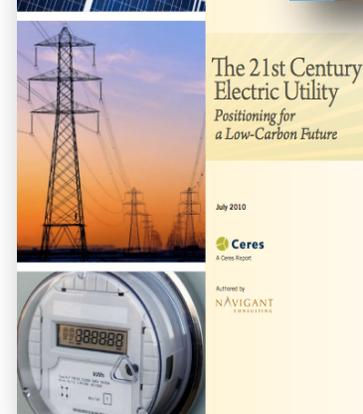
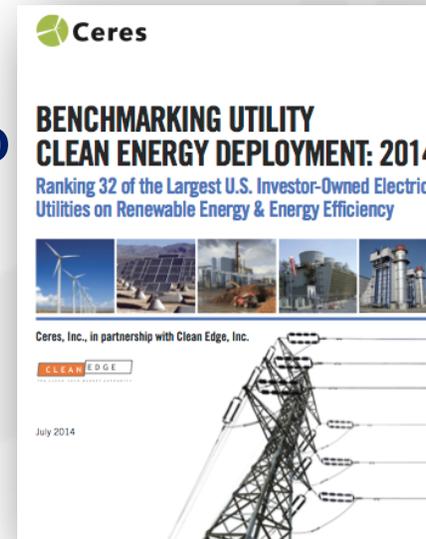
- BlackRock
- CalPERS
- CalSTRS
- Deutsche Asset Management
- Illinois State Treasurer
- Legg Mason
- NYC Comptroller
- NY State Comptroller
- Prudential Investment Mgmt
- Oregon State Treasurer
- State Street Global Advisors
- TIAA-CREF
- Washington State Treasurer



Electric Power Program

Engage electric power companies, investors, and other stakeholders to advance transition to low-carbon economy

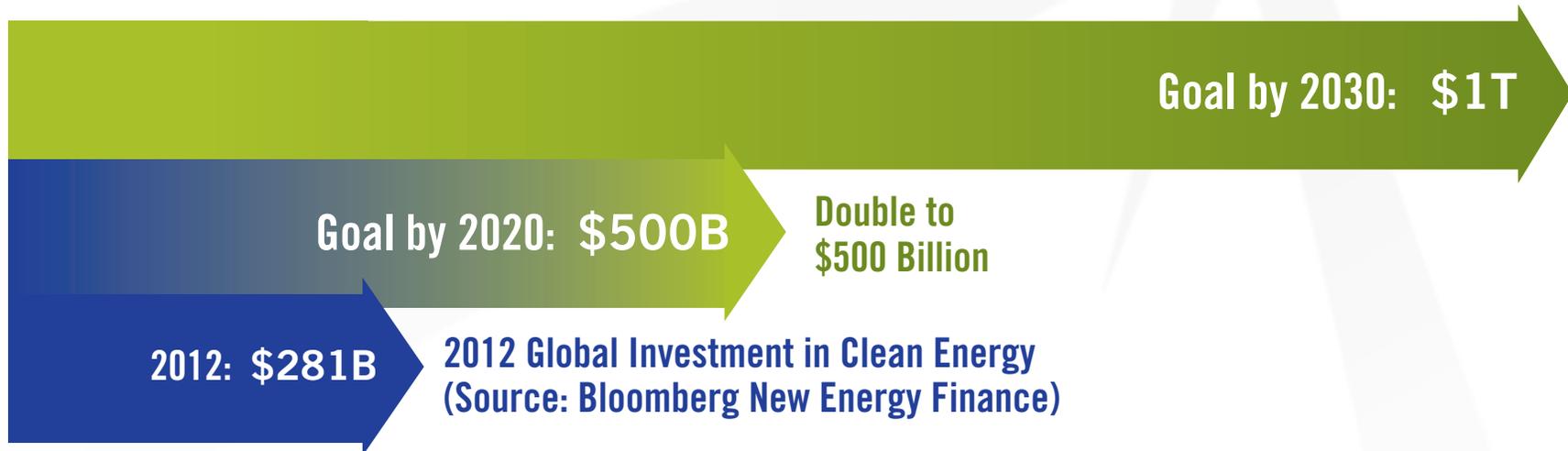
- Thought leadership: benchmarking reports on air emissions and clean energy
- Public policy engagement
- Industry and investor convenings to accelerate transition to clean energy business models





Clean Trillion: Closing the Clean Energy Investment Gap

Annual Investments in Clean Energy to Reach 2°C Goal:





21st Century Electric Utility

- 1) Manage Carbon Across the Enterprise**
- 2) Pursue All Cost-Effective Energy Efficiency**
- 3) Integrate Cost-Effective Renewable Energy**
- 4) Incorporate Smart Grid Technologies for Consumer and Environmental Benefit**
- 5) Conduct Robust and Transparent Resource Planning**



Recent News

- ➔ **SolarCity Launches Microgrid Service – combines distributed solar, batteries and controllable loads to give municipalities, remote communities, military bases and hospitals cleaner, more resilient, more affordable power**
- ➔ **Colorado Is the Latest State to Consider the ‘Utility of the Future’ – HB 1250 proposes performance based regulation for utilities**
- ➔ **MI Governor outlines 10-year energy plan aiming for 40% clean energy by 2025**
- ➔ **Bill allowing renewable-power sales direct to N.C. consumers could be a boon for solar**
- ➔ **Arizona Public Service Prepares to Ask Regulators for Higher Fees on Solar Customers**

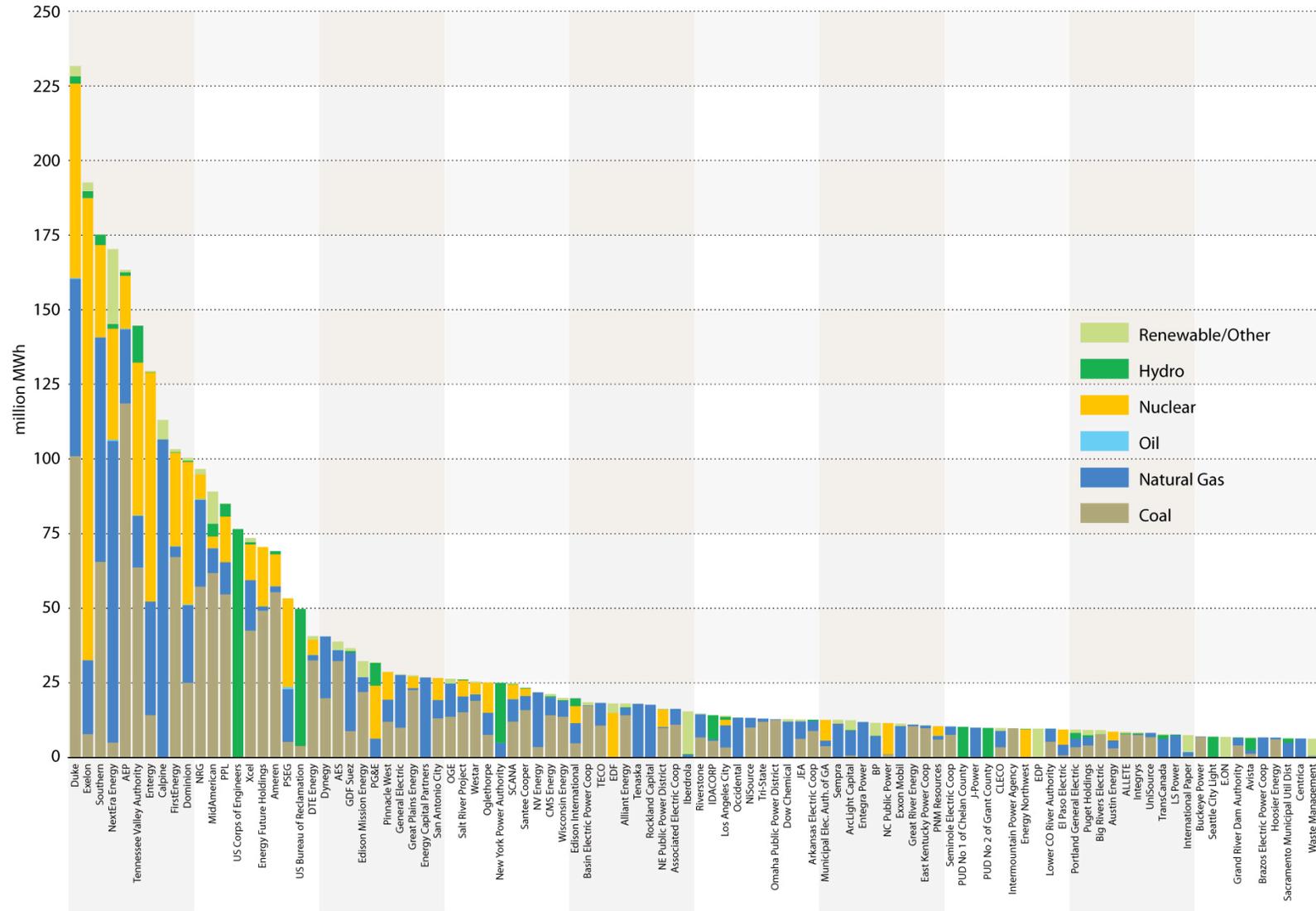


The Current Context

- ➔ **August 2014 - UBS highlights that solar systems and batteries will be disruptive technologies for utilities due to steeply declining costs and by 2020, the unsubsidized payback time will be as low as 6-8 years for homeowners making a combined investment in an electric vehicle and a solar power system with battery storage.**
- ➔ **May 2014 - Barclays downgraded bonds for the entire U.S. electric utility sector due to risk of rapidly improving solar power and energy storage.**
- ➔ **Deutsche Bank predicts solar PV will reach grid parity in 47 U.S. states as soon as 2016**
- ➔ **94% of international industry representatives surveyed by PricewaterhouseCoopers predict that the power utility business model will be either completely transformed or significantly changed by 2030.**
- ➔ **Navigant: "Utilities that proactively engage with their customers to accommodate DG - and even participate in the market themselves - limit their risk and stand to benefit the most."**



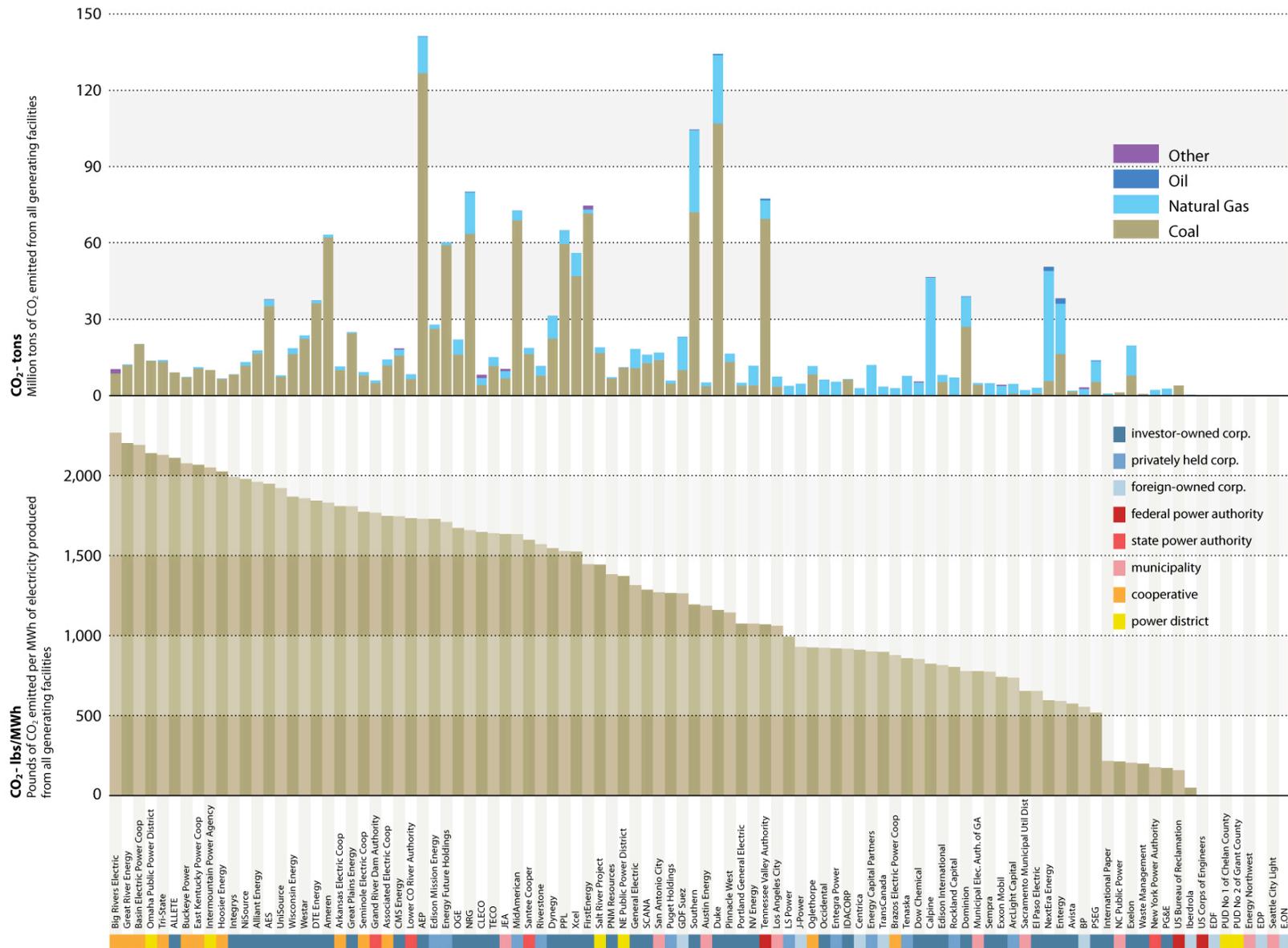
Top 100 US Power Producers By Fuel Type



Source: Ceres, MJB&A Benchmarking Air Emissions: 2014



CO₂ Emissions of the Top 100 Power Producers

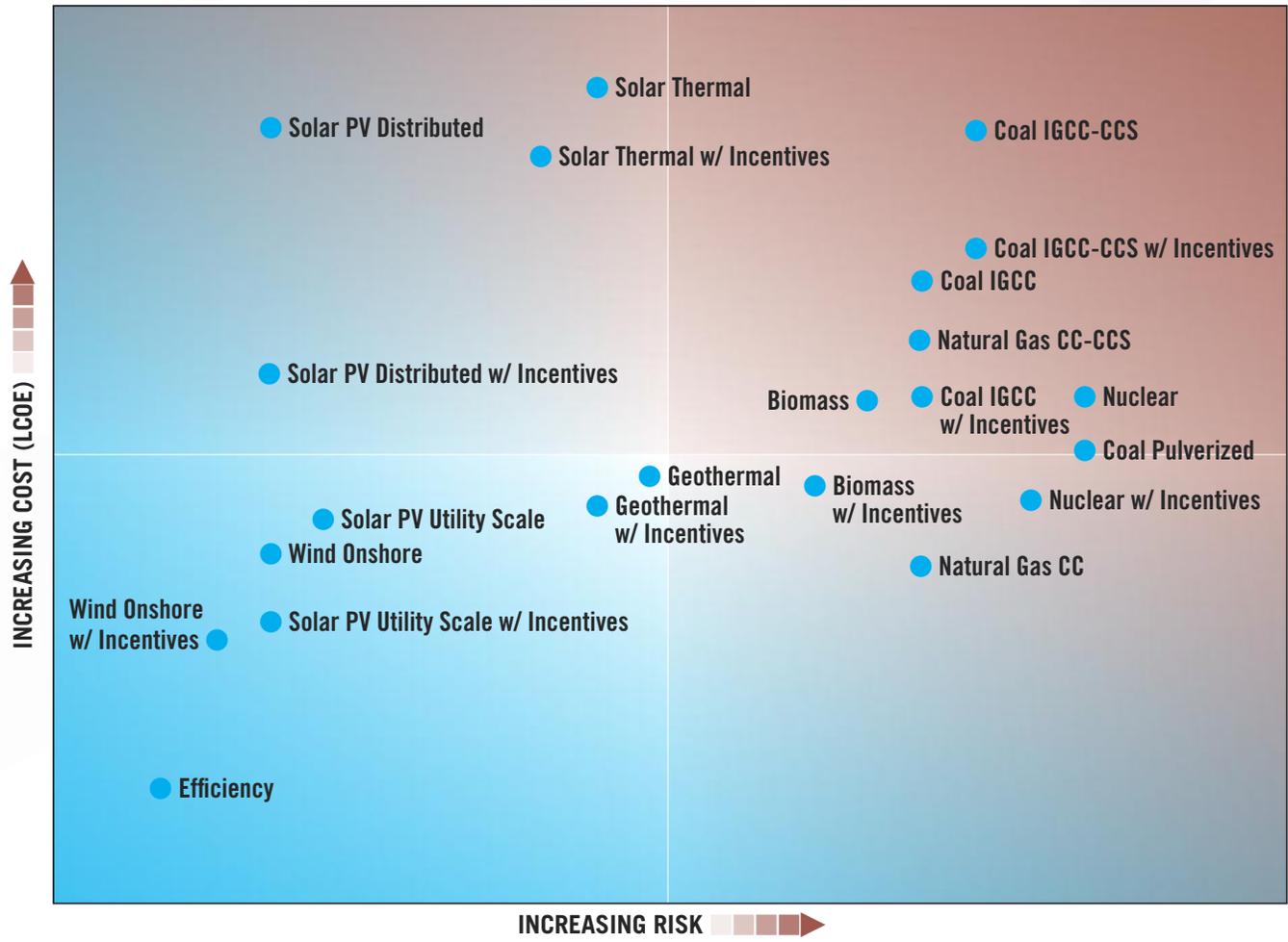


Source: Ceres, MJB&A Benchmarking Air Emissions: 2014



Practicing Risk-Aware Regulation

2014 UPDATE RANKING: RELATIVE COST VS. RELATIVE RISK OF NEW GENERATION RESOURCES





Benchmarking Utility Clean Energy

- **Renewable energy sales:** The total amount of renewable electricity sold to retail customers, plus the total amount of Renewable Energy Credits (RECs) surrendered by the utility
- **Total annual energy efficiency savings:** All energy savings from all energy efficiency programs active in a given year
- **Incremental annual energy efficiency savings:** All energy savings from i) new participants in existing programs and ii) all participants in new programs in a given year.



Figure 8: Selected U.S. Investor-Owned Electric Utility Holding Companies Ranked by 2012 Retail Electric Sales

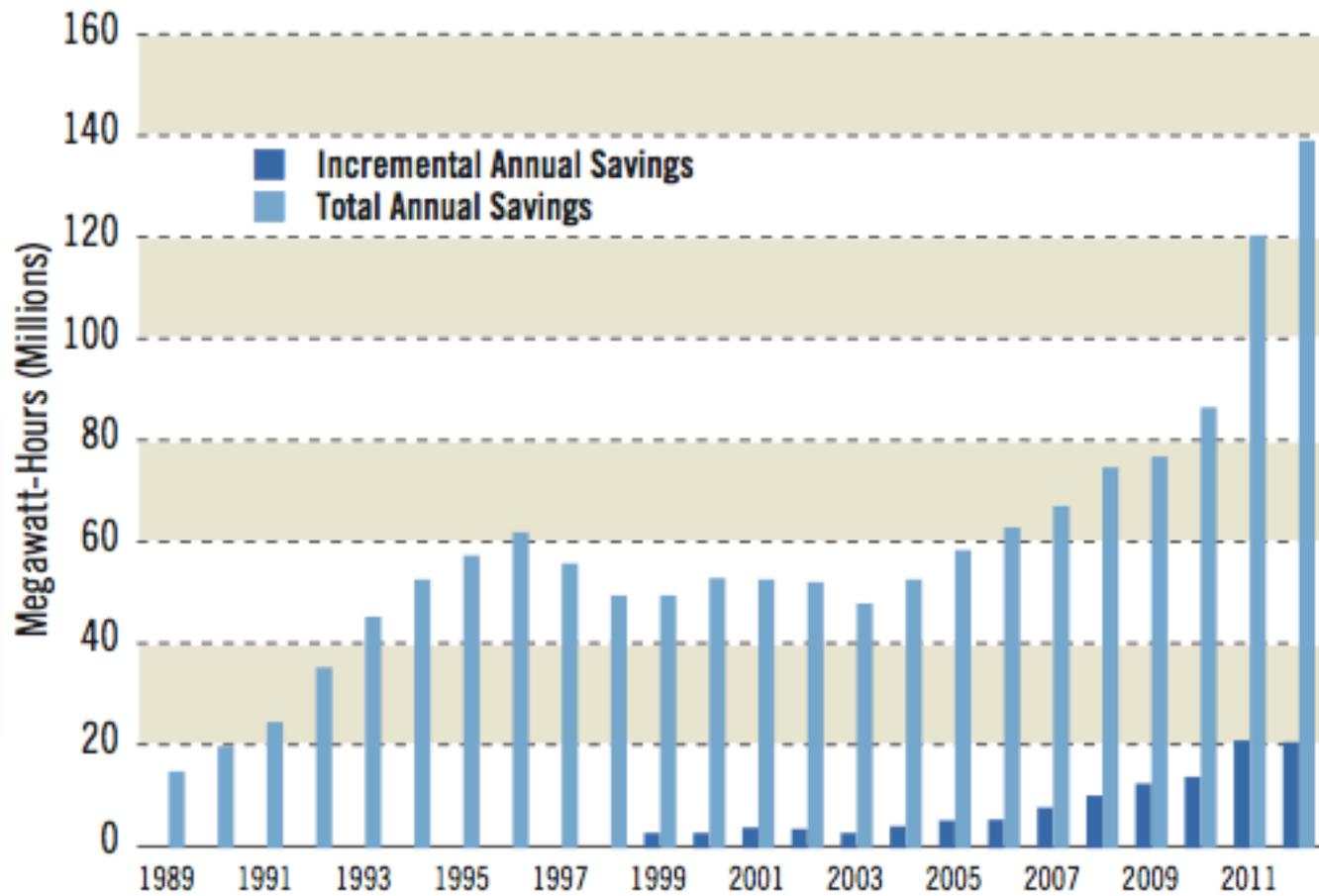
Holding Company	Rank	Retail Sales (MWh)	States
Duke Energy	1	205,843,041	FL, IN, KY, NC, OH, SC
Exelon	2	158,350,795	IL, MD, PA
Southern Co.	3	156,054,013	AL, FL, GA, MS
FirstEnergy	4	146,655,784	MD, NJ, OH, PA, WV
American Electric Power	5	137,865,319	AR, IN, KY, LA, MI, OH, OK, TN, TX, VA, WV
Entergy	6	107,006,909	AR, LA, MS, TX
Florida Power & Light	7	102,127,929	FL
Xcel Energy	8	89,197,694	CO, MI, MN, ND, NM, SD, TX, WI
Berkshire Hathaway Energy	9	86,991,113	CA, IA, ID, IL, OR, UT, WA, WY
PG&E	10	86,828,940	CA
Edison International	11	86,480,012	CA
Dominion Resources	12	76,718,050	NC, VA
Ameren	13	74,387,447	IL, MO
PPL Corp.	14	66,922,848	KY, PA, VA
ConEdison	15	62,609,086	NJ, NY, PA
National Grid	16	59,478,516	MA, NH, NY, RI
Northeast Utilities	17	55,519,803	CT, MA, NH
Pepco Holdings	18	48,145,834	DC, DE, MD, NJ
DTE Energy	19	47,990,734	MI
PSEG	20	41,641,444	NJ
CMS Energy	21	37,737,194	MI
Iberdrola	22	31,447,720	ME, NY
NV Energy	23	31,031,134	NV
Pinnacle West	24	28,154,136	AZ
AES	25	28,014,216	IN, OH
We Energies	26	27,043,204	MI, WI
OGE Energy	27	26,785,618	OK
Alliant Energy	28	25,732,527	IA, MN, WI
Puget Sound Energy	29	23,119,041	WA
SCANA	30	21,304,407	SC
Sempra Energy	31	20,025,695	CA
Portland General Electric	32	19,191,143	OR
Total		2,216,401,346	

Source: EIA Form 861 including both bundled and unbundled sales.



Savings from Utility EE Programs

Figure 6: U.S. Energy Efficiency Savings—1989-2012

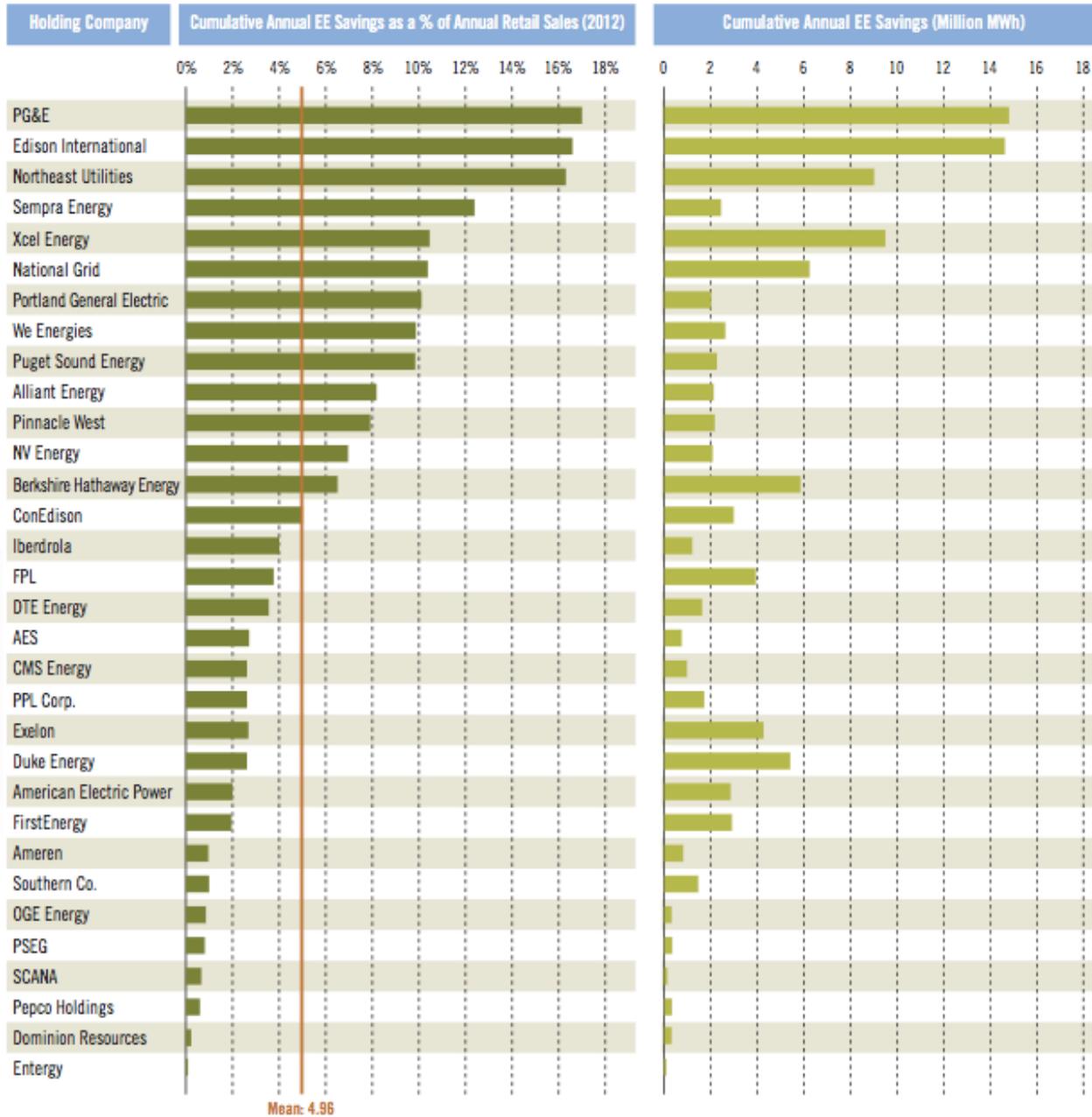


Source: ACEEE



Indicator 2: Cumulative Annual Energy Efficiency Savings

All energy saved by all energy efficiency programs active in 2012 (MWh) and cumulative energy saved as a percentage of annual retail electricity sales





Increased Investor Engagement

- ➔ **Resolved:** With board oversight, assess how DTE Energy is adapting (or could adapt) its business model to enable increased deployment of distributed low-carbon electricity generation resources as a means to reduce societal greenhouse gas emissions and protect shareholder value, and report to shareholders (at reasonable cost and omitting proprietary information) by September 1st, 2015.



Some Encouraging Signs?

- ➔ **Germany - E.ON spins off legacy fossil assets to focus on RE, DG services**
- ➔ **Enel has pledged to phase out coal and lead the charge among global energy cos for a global climate pact**
- ➔ **NY REV – Utilities as DSPs, can't own DG, but ConEd, Nat'l Grid going along for the ride. ConEd avoids \$1.1 B substation with DG +EE**
- ➔ **MN – e21 Initiative, performance based ratemaking for Xcel Energy (also in CO?)**
- ➔ **CA – ambitious GHG, EE and RE goals, with a suite of expectations of utilities on EE, RE, DG, EVs, storage**
- ➔ **HI – NextEra acquires HE as “postcard from the future”**
- ➔ **MA – GridMod effort incentivizes utilities to improve the grid, Nat'l Grid, Eversource engaged**



Thank You!

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Reports can be downloaded at:

**[http://www.ceres.org/resources/reports/
electric-power](http://www.ceres.org/resources/reports/electric-power)**