Economic and Regulatory Issues Associated with Distributed Generation

The Utility Customer's Perspective

Presentation by Jeff Wolfe, Jeff Wolfe Consulting

MADRI Working Group Meeting #32

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Changing Landscape

With or without DG PV - electric market is changing

Unregulated Technology

- **Intelligent** efficiency, Smart everything, **IoT**, Conservation, Lighting, **Storage**

Unregulated Big Data

- **Virtual power plant** capability through discrete load control

If DG owners are pushed too far, they may choose to cut off. Technology is close. **We need to avoid this.**

EEI Agrees

EEI "…the threat of **disruptive forces**, such as new technologies for **home energy management systems** (HEMS), along with **declining sales and end-use efficiency**, are presenting unprecedented challenges for the utility industry. EEI further noted that "the utility industry and its stakeholders must be prepared to address these challenges in a way that will benefit customers, long-term economic growth and investors."

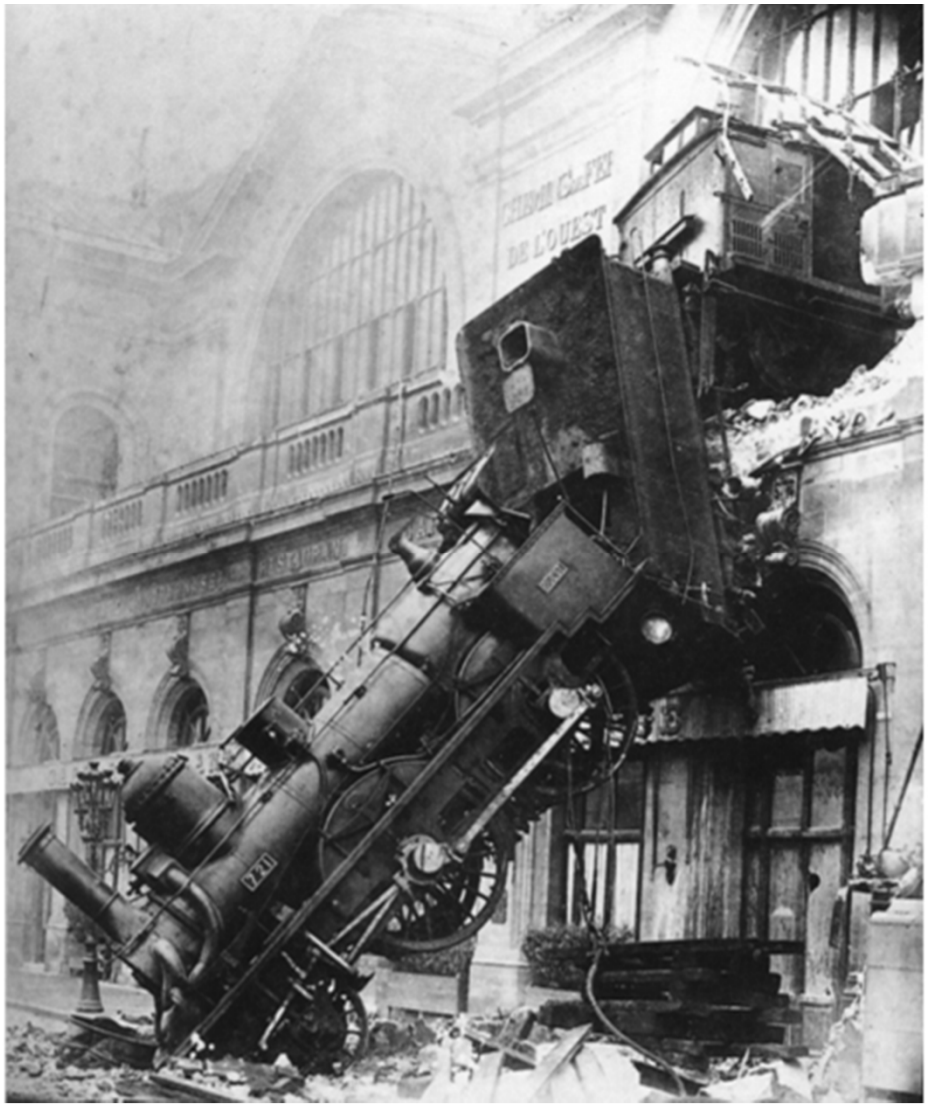
Elizabeth B. Stein, EDF Energy Exchange blog, January 17, 2014, emphasis added

Changing Landscape

The model is broken,
but don't blame DG

Dis-incentivizing PV DG and encouraging large air conditioners is no longer a sustainable utility model, or planetary model

We need to make this into an **opportunity**



Who are we “hurting”?

Report by Center for American Progress:

‘Solar installation data from AZ, CA, and NJ, found that installations are overwhelmingly occurring in middle-class neighborhoods with median incomes from $40,000 - $90,000. Areas that experienced the most growth 2011 - 2012 had median incomes from $40,000 - $50,000 in both AZ and CA and $30,000 - $40,000 in NJ.’[1]

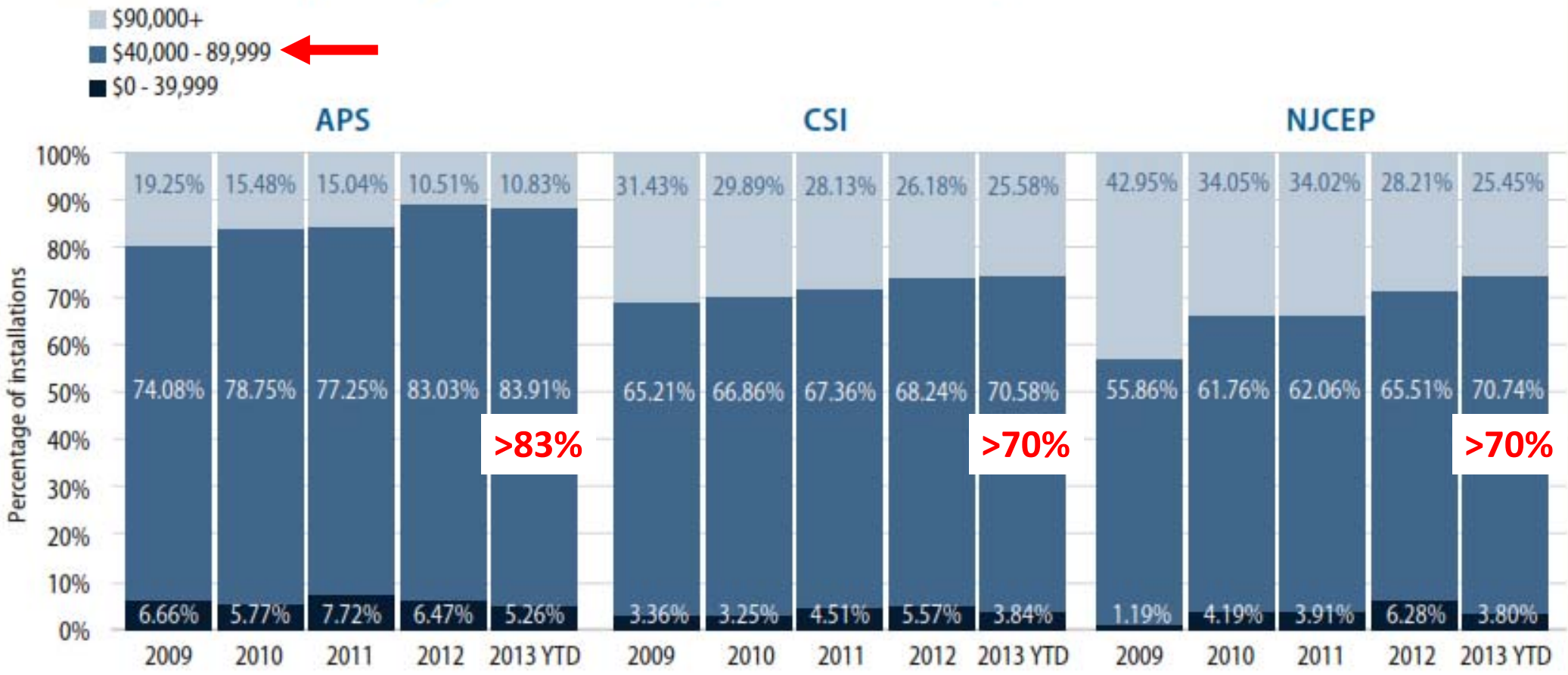
- 63% in NJ in $40k - $90k bracket 2009 – 2013 (now >70%)[1]

➔ Unexpected income diversity – **NOT “High” income**

[1] Center for American Progress, Paraphrased from “Solar Power to the People: The Rise of Rooftop Solar Among the Middle Class” Oct 21, 2013 Mari Hernandez

FIGURE 3

APS, CSI, and NJCEP percentage of installations by income level and year



Sources: Arizona Goes Solar, "Arizona Public Service (APS): Installations," available at http://arizonagoessolar.org/UtilityIncentives/ArizonaPublicService.aspx (last accessed August 2013); Go Solar California, "Download Current CSI Data," available at http://www.californiasolarstatistics.ca.gov/current_data_files/ (last accessed August 2013); New Jersey's Clean Energy Program, "New Jersey Solar Installation Update," available at http://www.njcleanenergy.com/renewable-energy/project-activity-reports/installation-summary-by-technology/solar-installation-projects (last accessed September 2013); U.S. Census Bureau, "American FactFinder: Advanced Search," available at http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (last accessed September 2013);"American FactFinder: Advanced

Who are we "hurting"

NRG Energy, **Community Solar Pilot,** Rutland, VT

- ~$45,000 median household income, **~20% are renters**
- Saving 5% - 10% on electric costs
- No money down, $100 default fee
- No credit check, no one turned down
- Enabled by Virtual Net Meter laws
- Local utility (GMP) is an active participant & supporter

Direct Individual Benefit, <u>Broadly</u> Available

(+ System benefits)

NY PSC Order CASE 07-M-0548

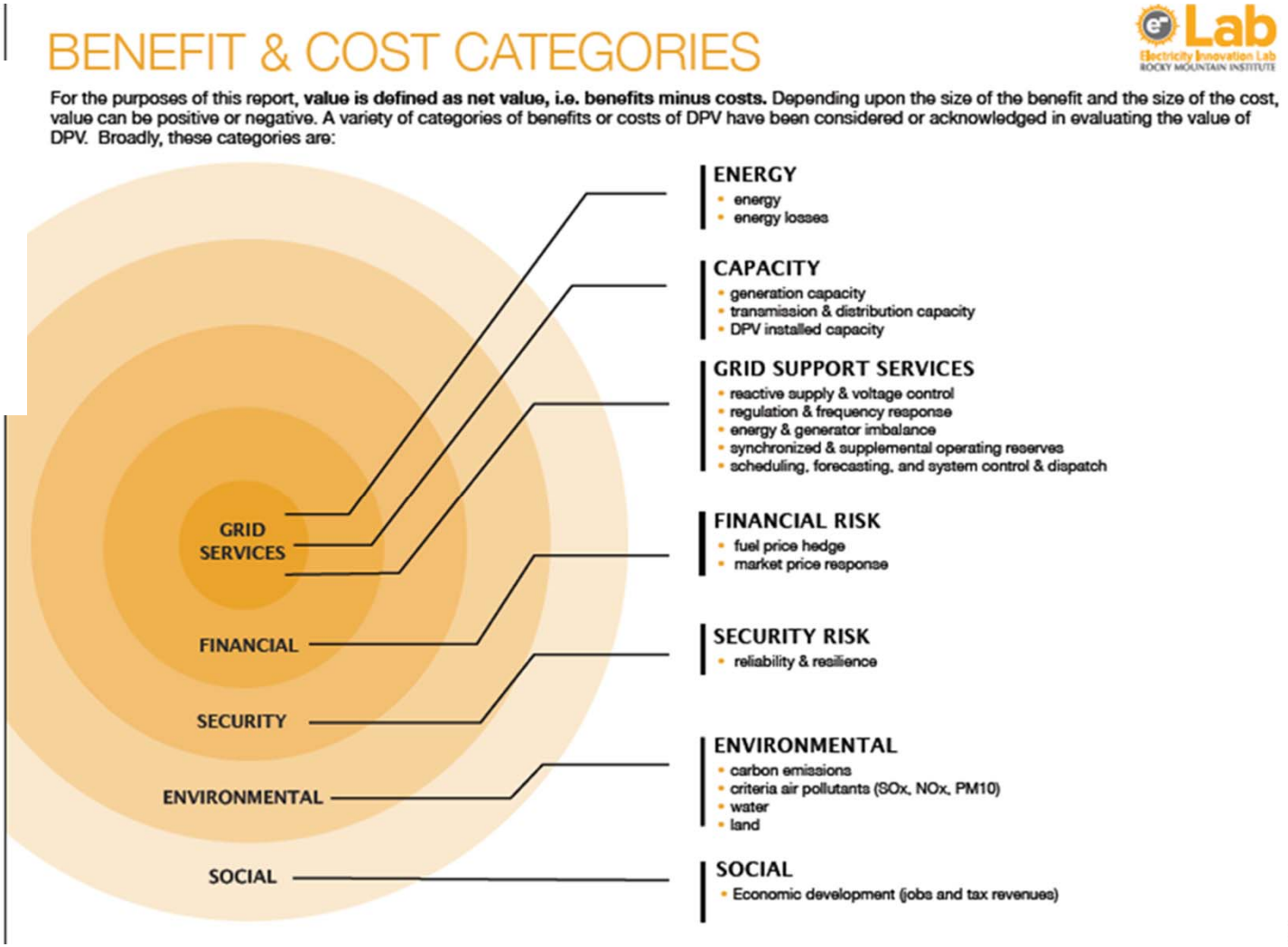
Proceeding on Motion of the Commission Regarding and Energy Efficiency Portfolio Standard

"The Commission and other policy makers can no longer afford to think of energy efficiency and distributed clean energy resources as peripheral elements of the electric system that require continuous government support. Rather, the time has come to **manage the capabilities of these customer based technologies as a core source of value to electric customers**. In addition, full integration of load management capabilities into energy supply and grid management decisions **will improve system wide reliability, efficiency, and resiliency at just and reasonable rates for New Yorkers**."

Issued and Effective December 26, 2013

Transparency - What is subsidizing who?

- Transparency requires that costs and benefits of **ALL technologies** are included
- Here are a variety of categories that have been identified

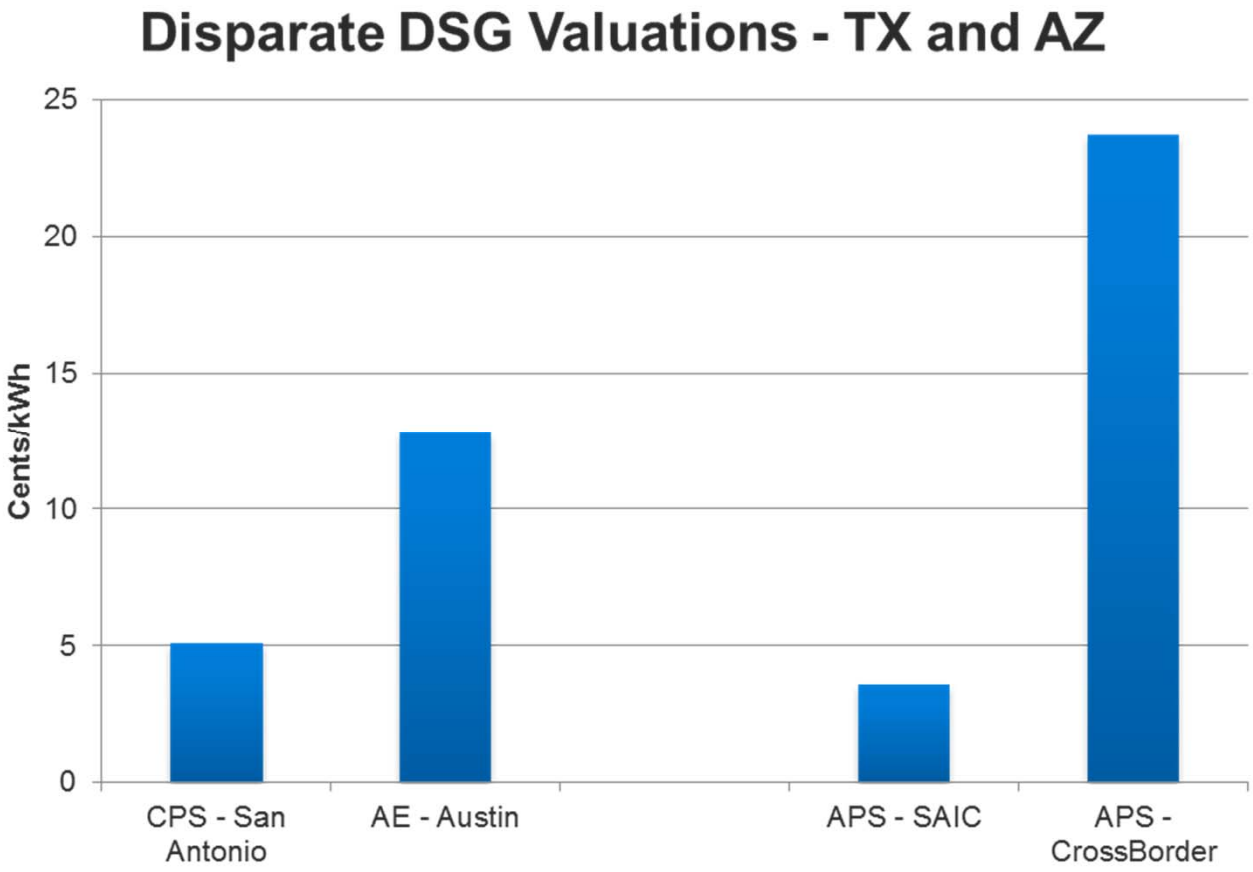


Source: "A REVIEW OF SOLAR PV BENEFIT & COST STUDIES", 7/22/13, Electricity Innovation Lab (eLab

Fairness

Why is there a presumption that NEM is a subsidy of the NEM customer?

Proper discussion and fairness requires that we start from a base of no presumptions.



Taken from: A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation. Interstate Renewable Energy Council, October 2013

What we want

- Sustainable environment
- Affordable energy
- Fairness for all, ratepayers, shareholders, taxpayers

What we need

- Clean energy
- Recognition of all societal costs from power generation
- Balance of risk/reward btwn society, ratepayers, & investors

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