

ENERGY: WHY OUR CHOICES MATTER

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Executive Director



EESI

Environmental and
Energy Study Institute



- Founded in 1984 by a bipartisan Congressional caucus as an independent non-profit organization (but receives no Congressional funding)
- Source of non-partisan information on energy and environment policy development for Congress and other policymakers
- Our work focuses on win-win solutions to climate change in the energy, buildings, bioenergy, biofuels and transportation sectors



- **EESI Approach:**
 - Bi-partisan
 - Holistic & Interconnected
 - Solutions Oriented, Problem-Solving
 - Coalition & Consensus Building, Education
- **Benefits:**
 - Environment, Health, Economy, Development, Justice
- **Policy is Crucial**

The Problem: Climate Change

Reliability

Security

Resilience

Storage

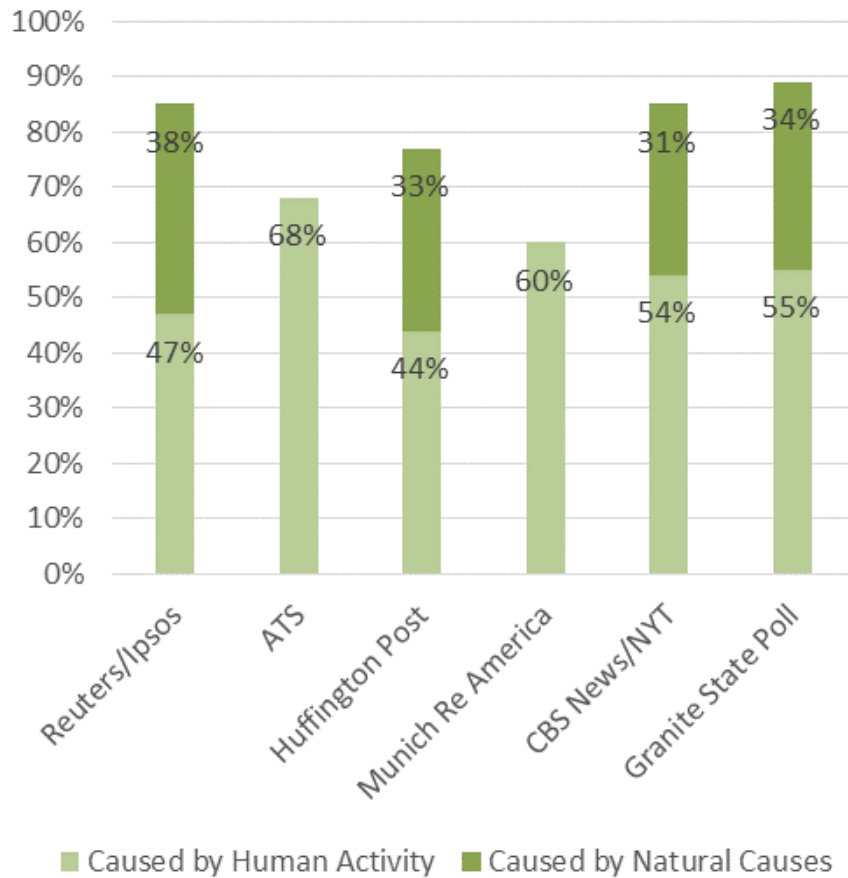
Distributed Generation



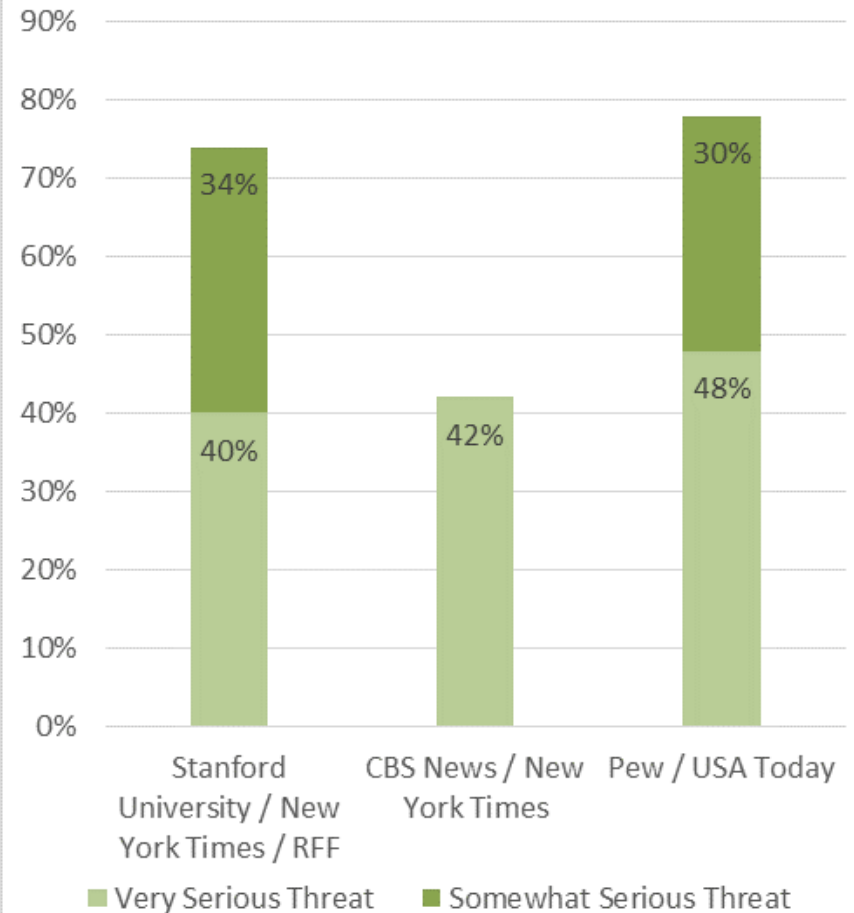
Source: Anthony Quintano via Flickr

Climate Change Polling

Yes, Climate Change Is Happening





Climate Change Is a Threat to the United States

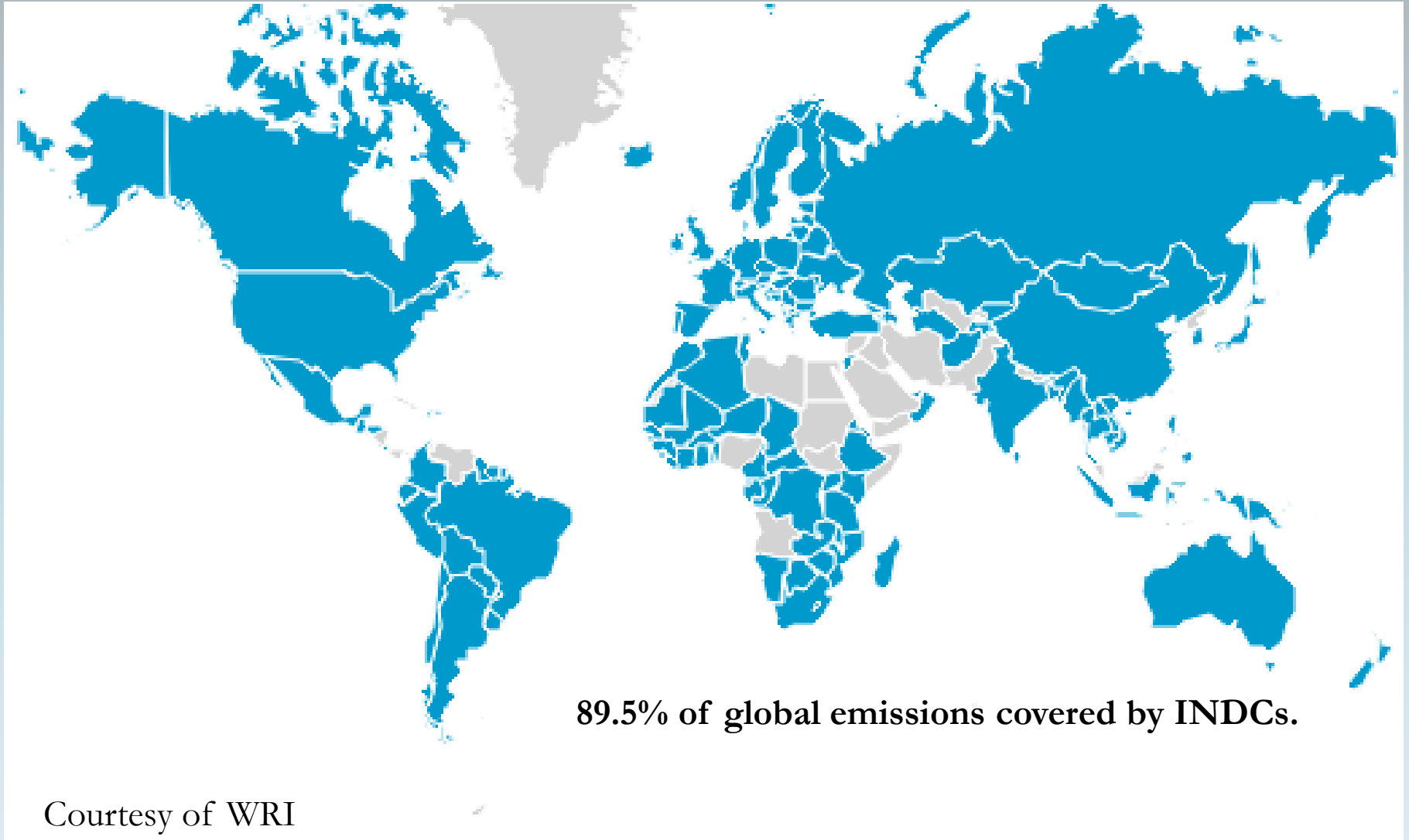


Global Agreement Needed

COP 21: Paris Climate Talks

- Intergovernmental Panel on Climate Change (IPCC)
 - Rio 1992  Paris 2015
- Intended Nationally-Determined Contributions (INDC)
 - 129 Countries  89.5% Global emissions covered by countries that submitted an INDC (Courtesy of WRI)
- Montreal Protocol
 - All 197 Countries agree to phase out HFCs - 0.5°

Intended Nationally Determined Contributions



Courtesy of WRI

China & the U.S.



- **United States Action:** reduce CO₂ emissions from the power sector to 32% below 2005 levels by 2030
- **China Action:** lower carbon dioxide emissions per unit of GDP by 60% to 65% from the 2005 level by 2030 and increase the forest stock volume by around 4.5 billion cubic meters on the 2005 level by 2030
 - Cap and Trade
- **India Action:** Strong bilateral climate agreement, emphasis on clean energy

Business, Communities & Faith Groups

- **American Business Act on Climate**
 - **81 companies** (employ **9 million people** and generate more than **\$3 trillion** in annual revenue)
 - Includes GM, Walmart, IKEA, Goldman Sachs
 - Support for a strong Paris outcome
 - Reduce their emissions, increase low carbon investments, deploy more clean energy
- Cities, **National League of Cities (NLC)**
 - Compact of Mayors, **83 American cities signed** on committing to strong climate action
- Universities
 - **697 universities and colleges in all 50 states** and the District of Columbia, representing a **student population of over 5.6 million** have committed to decrease GHG emissions and increase climate education
- **Pope Francis:** Environmental Encyclical, along with many faith groups

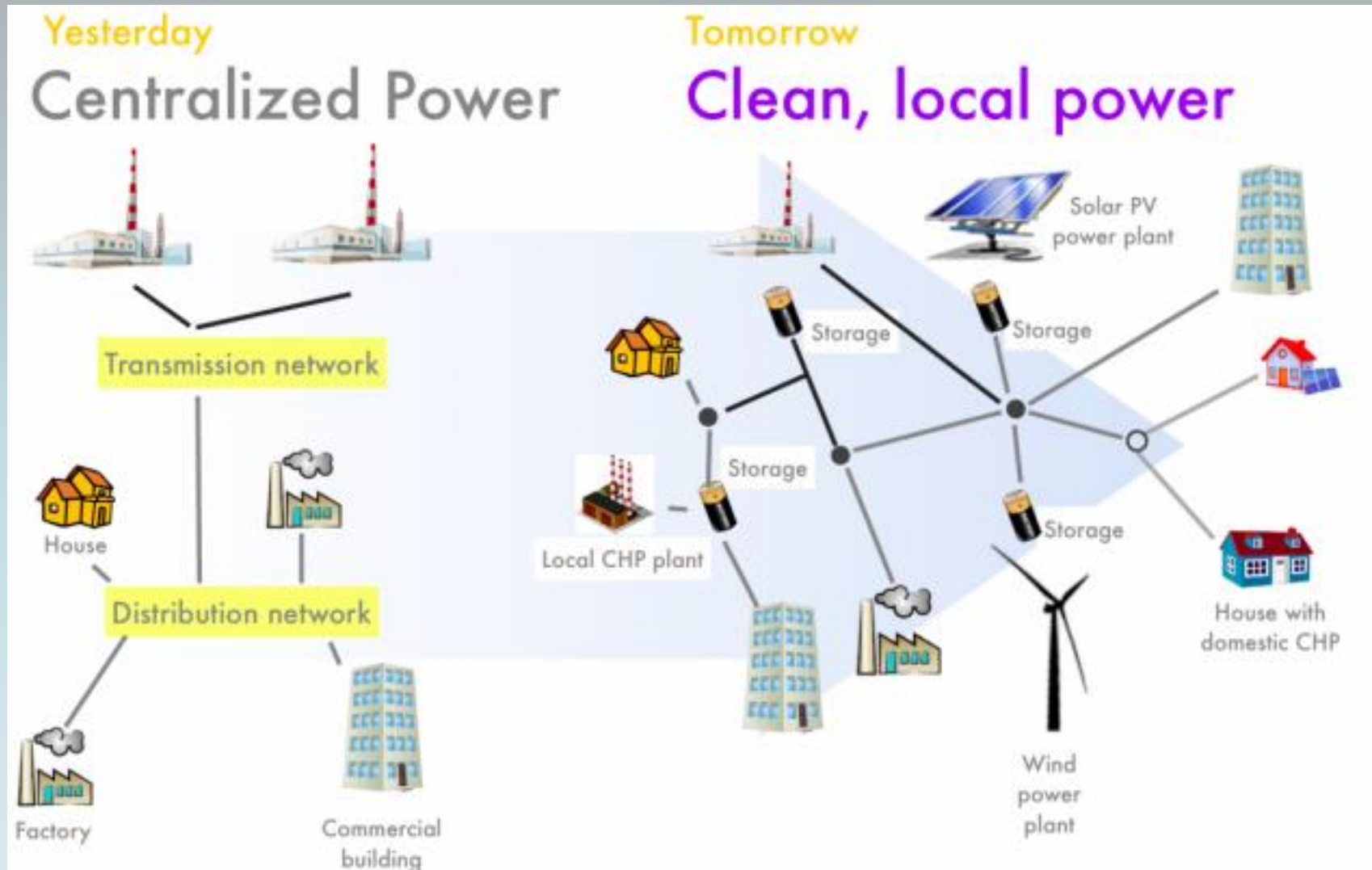
Clean Energy Investment

- **Business Council for Sustainable Energy (BCSE)**
 - Clean Air and Emissions Markets (RGGI), Emissions Reporting, Expanding Markets for Energy Efficiency, Expanding Market-Based Programs
- **Global Renewable Energy Investment rose 17 percent to reach \$270.2 billion in 2014**
 - estimated 103 gigawatts of new renewable power capacity, excluding large hydro, was built around the world in 2014
 - Compares 86 GW in 2013 and 80.5 GW in 2011

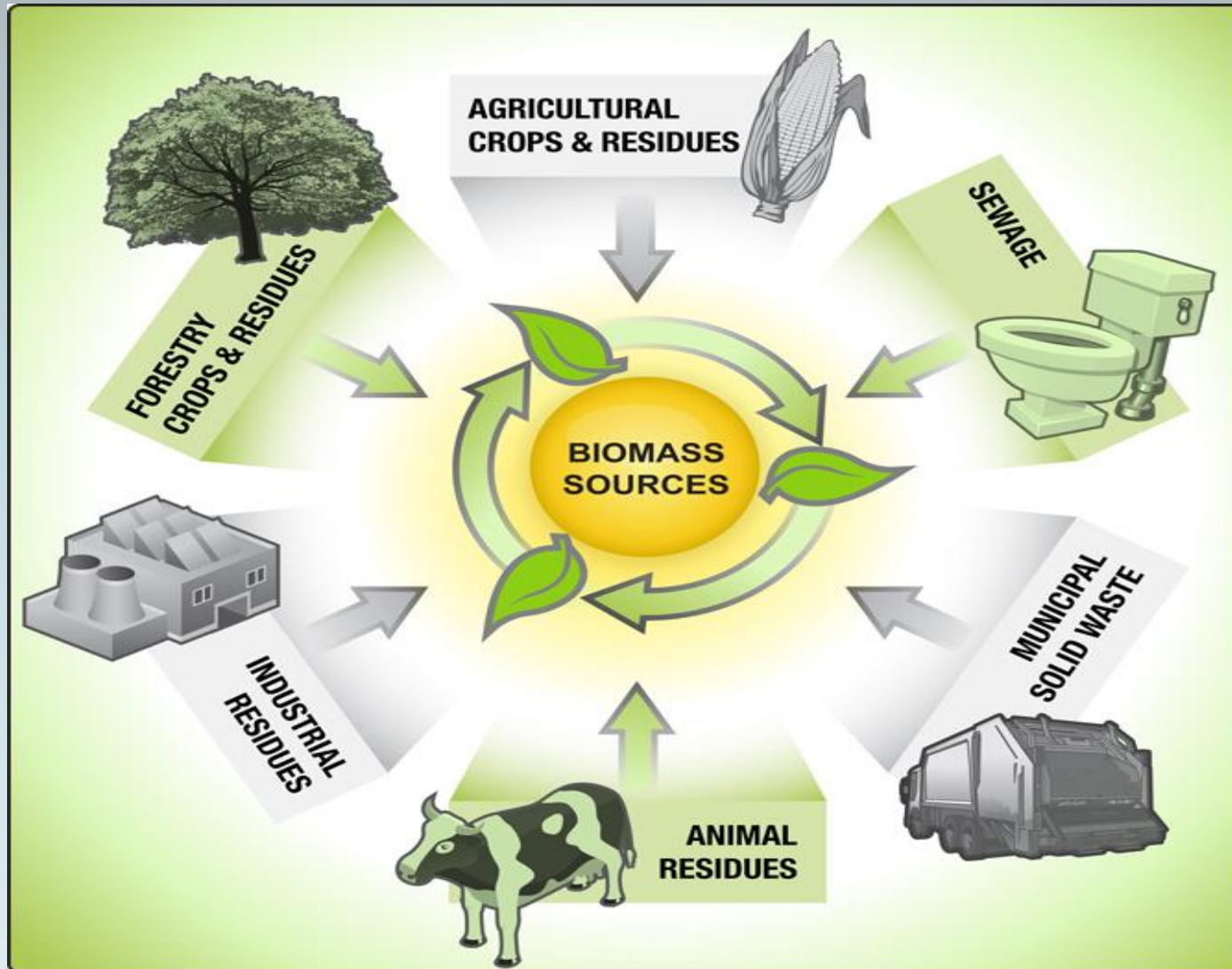
Renewables Outpacing Fossil

- 60% of new U.S. generating capacity in first three-quarters of 2015 is from renewables
- Wind is largest source of new capacity
- New renewable capacity is 1,460 times greater than that from coal
- Non-hydro renewable capacity now exceeds conventional hydropower

Distributed Generation



Biomass Energy: Thermal, Power, Fuels



Advanced Biofuels

“Wastes”:

- Crop Residue
- Organic wastes: food, manure, wastewater treatment
- Forestry waste



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Purpose grown:

- Perennial grasses
- Fast growing woody crops
- Grasses
- Legumes
- Algae, cyanobacteria

Fuel Quality Matters for Health

45 million Americans live, go to school or work within 300 feet of a major roadway, airport or railway. -- U.S. EPA



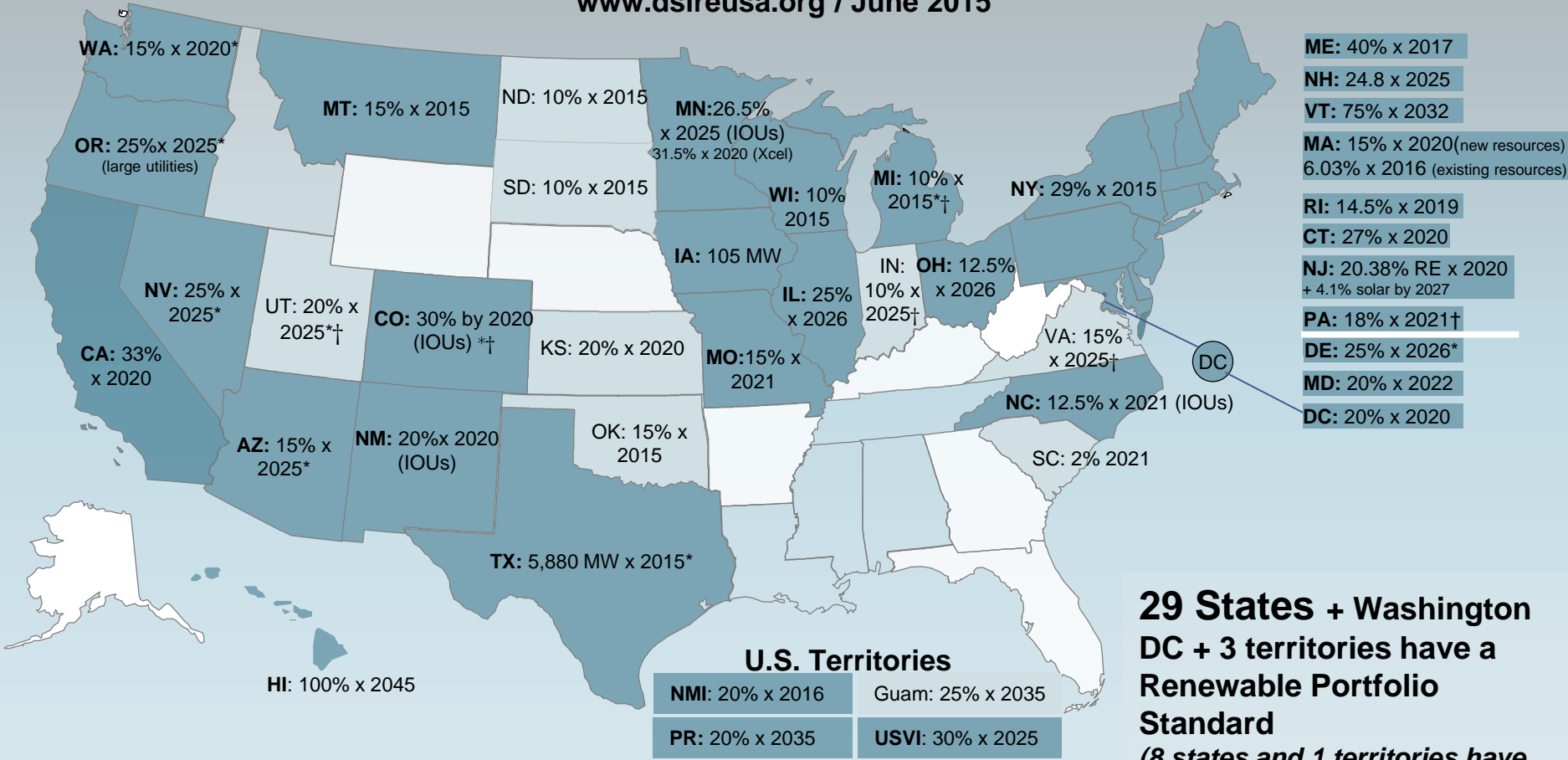
- Gasoline contains 25% by volume gasoline aromatics
- Gasoline aromatics → benzene, toluene, ethylbenzene & xylene
- Increasing the volume of ethanol in gasoline lowers toxic gasoline additives

Key Policies

- The **Production Tax Credit (PTC)** – originally enacted in 1992
- The **Investment Tax Credit (ITC)** – both residential and commercial were originally enacted in 2005
- Environmental Protection Agency (EPA)
 - **Clean Power Plan** (finalized Oct 2015)
- **Net Energy Metering (NEM)**
- **Renewable Portfolio Standards (RPS)**
- **Renewable Fuel Standard (RFS)**
- State Policies
 - Third-party power purchase agreements, Loan programs for renewable energy, Carbon Trading Schemes (RGGI and California Cap-and-Trade), Tax Credits, PACE Financing, Grant programs for renewables

Renewable Portfolio Standard Policies

www.dsireusa.org / June 2015



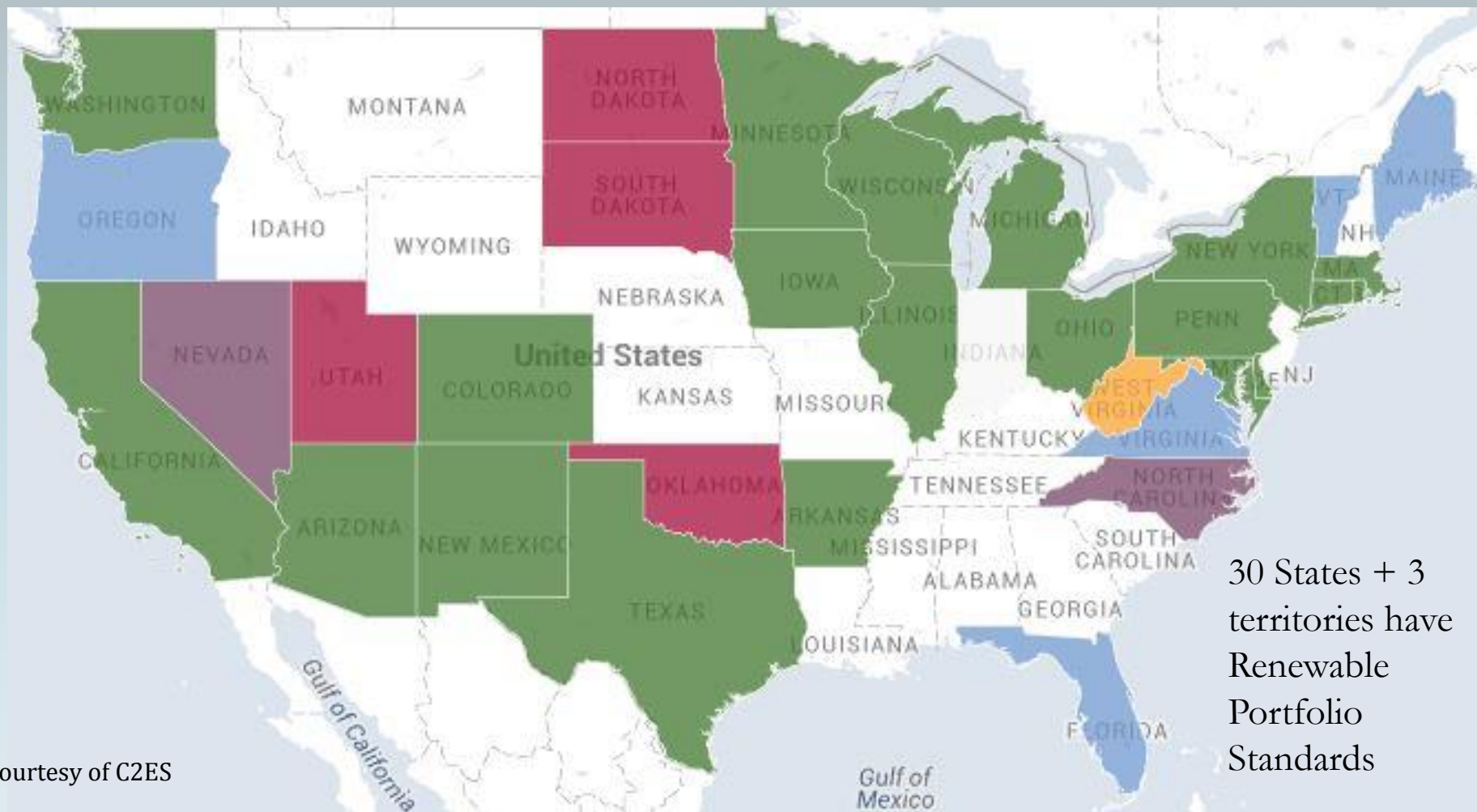
29 States + Washington DC + 3 territories have a Renewable Portfolio Standard
(8 states and 1 territories have renewable portfolio goals)

Renewable portfolio standard
 Renewable portfolio goal

* Extra credit for solar or customer-sited renewables
 † Includes non-renewable alternative resources

Energy Efficiency Resources Standards

Mandatory, Voluntary, Renewables Standard, Renewables Goal, Alternative Energy Standard



ON-BILL FINANCING (OBF)

- Loans that are repaid on the monthly utility bill
- Utilities finance energy/water improvements to customers' homes
- Common features:
 - No upfront costs to consumer
 - Bill neutrality (or better)
 - Alternative loan underwriting
(i.e. good bill payment history in lieu of credit check)
- At least 60 utilities in 22 states offer OBF
- Loan money available through USDA RUS

OBF WITH SOUTH CAROLINA CO-OPS



On-Bill Financing Pilot

- 2011-2012
- 8 co-ops, 125 homes
- Main Purpose: test EE vs. building new generation
- RUS and G&T funding
- 34% energy savings

Working OBF Programs

- 2012- Present
- 5 co-ops, 375 homes (as of 10/10/15)
- Purpose: Member service
- Mix of co-op and RUS dollars for lending capital



IOWA
ASSOCIATION OF MUNICIPAL
UTILITIES



Energy Independent Community

an evaluation
for

 **Bloomfield**
EST. 1855

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THANK YOU

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