

# Net Metering for Smart and Efficient Uses of Energy

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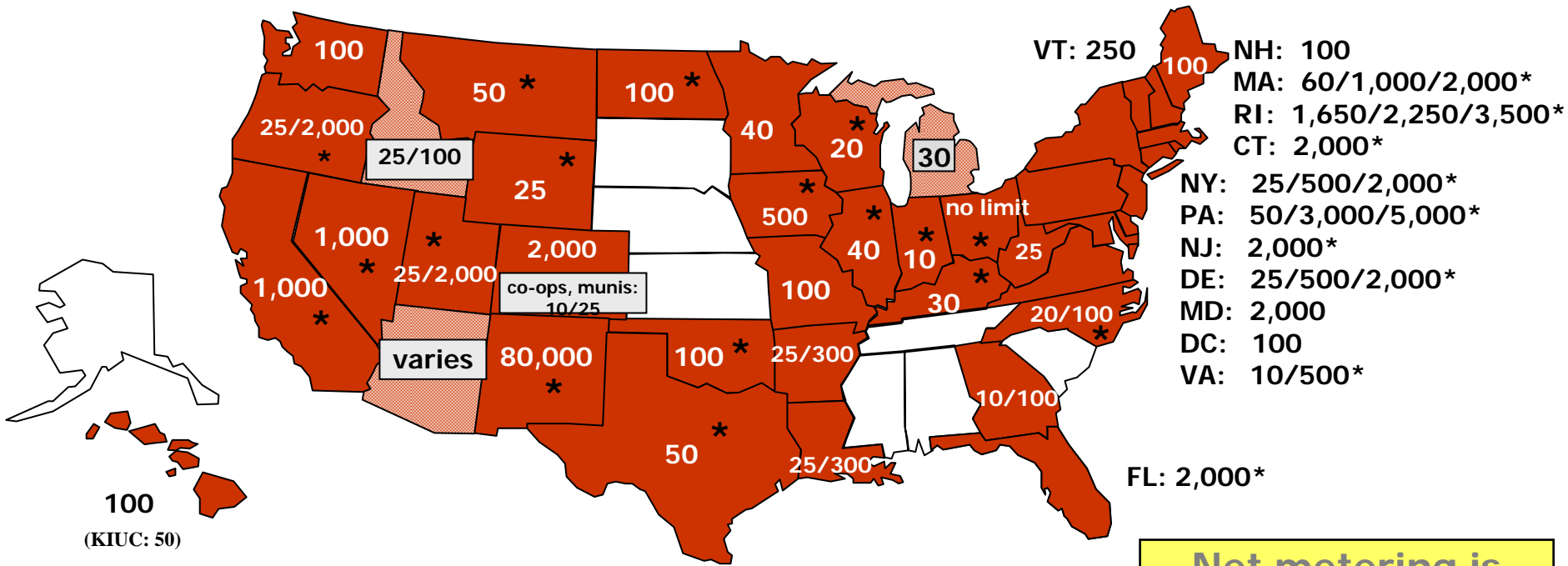
# Introduction

- Net Metering – allows customers to offset their cost of electricity by sending kilowatts generated in their homes or businesses back to the utility
- What you can and cannot do in West Virginia
  - Residential and commercial systems up to 25 kW capacity that generate electricity using photovoltaics, wind, biomass, landfill gas, hydropower or fuel cells
  - Excess generation can be carried over for up to 12 months for credit on customer-generator's next bill
  - West Virginia's net metering rule is NOT available to industrial customers

# Net Metering Comparisons

	West Virginia American Electric Power	Pennsylvania Allegheny Energy	Ohio Ohio Power	Colorado
Eligible Customer Class	<a href="#">Commercial, Residential</a>	<a href="#">Commercial, Industrial, Residential, Government</a>	<a href="#">Commercial, Industrial, Residential</a>	<a href="#">Commercial, Industrial, Residential</a>
Individual Max Generation	<a href="#">25kw</a>	<a href="#">50kw-3mw</a>	<a href="#">None</a>	<a href="#">10kw-2mw</a>
Overall System Limit	<a href="#">0.1% of the company's peak load forecast</a>	<a href="#">No Limit</a>	<a href="#">1% of the utilities peak demand</a>	<a href="#">No Limit</a>
Technology	<a href="#">Photovoltaics, biomass, fuel cell, hydro, methane field, and wind</a>	<a href="#">Solar, wind, hydropower, geothermal, biological and coal mine methane, fuel cells, biomass, Waste coal, distributed generation, municipal solid waste, wood waste, coal gasification</a>	<a href="#">Solar, wind, biomass, landfill gas, hydropower, microturbine, fuel cells</a>	<a href="#">Wind, biomass, geothermal, solar, recycled energy, hydroelectric, fuel cells</a>
Excess Generation	<a href="#">Customer receives credit on next billing cycle up to 12 months. After 12 months, unused credits granted to utility company.</a>	<a href="#">Customer receives credit on the next billing cycle. After 12 months, unused credit compensated at the full retail value.</a>	<a href="#">Credited at utility's unbundled generation rate to customers next bill; customer may request refund of credits accumulated over a 12 month period.</a>	<a href="#">Credited at the average hourly incremental cost to customers next bill. At end of calendar year, utility pays customer for excess credits.</a>

# Net Metering



- State-wide net metering for all utility types
- State-wide net metering for certain utility types only (e.g., investor-owned utilities)
- Net metering offered voluntarily by one or more individual utilities

**Net metering is available in 42 states + D.C.**

*(Note: Numbers indicate individual system size limit in kilowatts (kW). Some states' limits vary by customer type, technology and/or system application. For complete details, see [www.dsireusa.org](http://www.dsireusa.org).)*

# Net Metering is Timely

- Legislative/regulatory actions
  - EAct 2005 – Electric utilities shall make net metering and interconnection service available to customers upon request
  - EISAct 2007 – Initiates transition of the Nation's T&D system to a Smart Grid that includes use of digital technologies, distributed generation, energy efficiency resources, real time interactive communications, advanced electricity storage, peak shaving technologies, and much more!
  - West Virginia's Net Metering Rule – Public Service Commission of West Virginia ordered its Net Metering Consensus Agreement on December 12, 2006

# Net Metering is Timely (Con't)

- Technology capability
  - Time-of-use and two-way metering
  - Digital monitoring and control systems
  - Advanced generation technologies, e.g. energy recycling
- Economic/Environmental outlook
  - Higher future prices for electricity and natural gas
  - GHG limits and carbon trading programs likely
  - Rising global energy demand
  - Growing interest in renewables

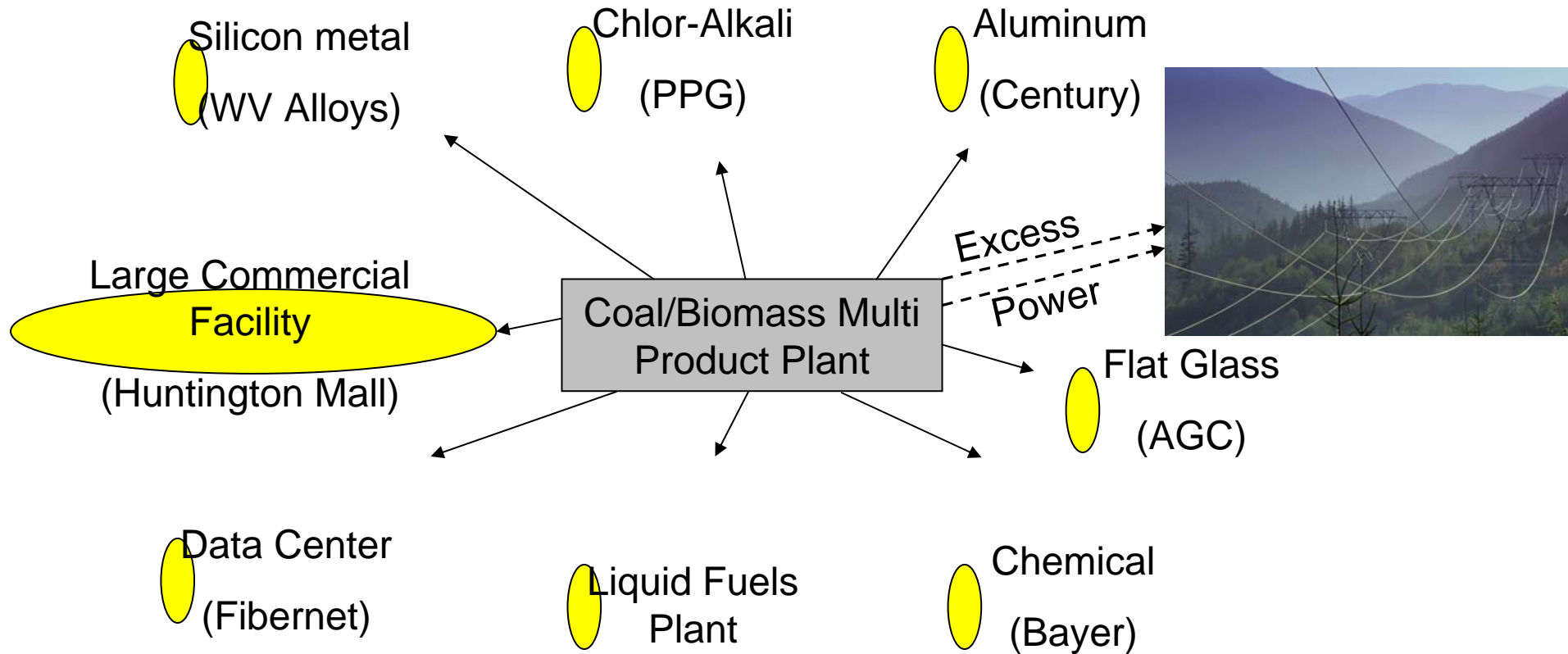
# Recommendations for Expanding Net Metering

- No limits on individual max generation
- No restrictions on generation technology
- No restrictions on eligible customer classes
- Include energy efficiency standards in all Net Metering, Smart Grid and Grid Demonstration projects and studies
- Streamline the Interconnect application process with clear requirements and guaranteed speedy resolution

# Potential Benefits of Expanded Net Metering

- More efficient use of energy resources
- Reduced GHG emissions/BTU of fuel consumed
- Reduced energy costs/unit of product – more competitive industry
- New high-skilled green-energy jobs – economic development
- Avoided construction of new power plants

# A VISION for West Virginia: Electricity, Heat, Steam, and Chemical Feedstocks for Clusters of Intensive-Industry Companies



# For More Information

- Net Metering, Energy Efficiency, and Renewables information for WV and other states

<http://www.dsireusa.org/>

- IOF-WV website:

<http://www.iofwv.nrcce.wvu.edu/>

Thank you!

# Barriers to Net metering

- High liability insurance requirements
- Restricting eligibility to certain classes of customers
- Limiting size of eligible renewable energy systems
- Capping the total combined capacity of all customer-sited generators
- Cumbersome utility procedures – Charging excessive fees and standby charges, redundant safety requirements, prolonged process for approval
- Preventing customers from receiving access credits for electricity - Attempt by utility to characterize as a retail sale and a wholesale buy
- Different net metering standards across states

Commercial,  
Residential

**Commercial, Industrial,  
Residential,  
Nonprofit, Schools,  
Local Government,  
State Government,  
Fed. Government,  
Agricultural, Institutional**

**Commercial,  
Industrial,  
Residential**

**25kw**

Residential: 50kw

Non-residential/commercial:  
3000kw,

3-5mw for those willing supply for  
emergencies

**10kw-2mw**

0.1 % of the company's  
single hour peak load  
during the previous year

0.1% of the  
company's peak load  
forecast

**No limit**

1% of the utilities  
peak demand

Photovoltaics,  
biomass, fuel cell,  
hydro, methane field,  
and wind

solar photovoltaics, wind, low and high  
impact hydropower, geothermal,  
biological and coal mine methane,  
fuel cells, biomass, waste coal,  
distributed generation,  
municipal solid waste, wood  
processing by-products, coal  
gasification

solar, wind, biomass,

landfill gas,

hydropower,

microturbine, fuel cell

wind, biomass,  
geothermal  
solar, recycled energy,  
hydroelectric, fuel cells

Customer will receive energy on the next billing cycle up to 12 months. Unused credits will revert to the company.

Customer receives credit on next billing cycle. After 12 months, unused credits compensated at the full retail value.

Credited at utility's unbundled generation rate to customer's next bill; customer may request refund of NEG credits accumulated over a 12 month period.

Credited to customer's next bill; IOUs: utility pays customer at end of calendar year for excess kWh credits at the average hourly incremental cost for that year. The annual period is undefined.