

Energy Opportunities: Solar, Wind, Energy Efficiency

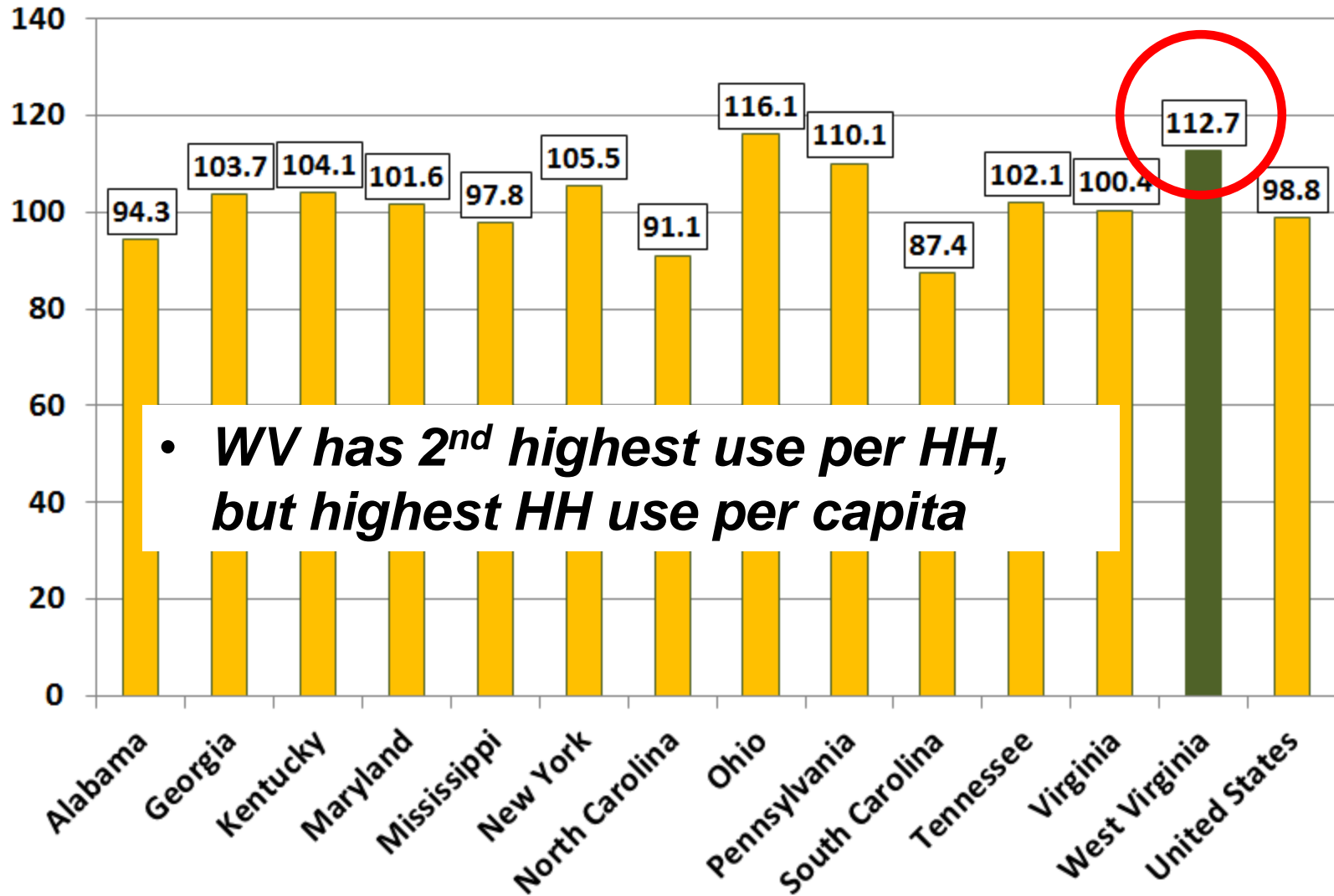


MARSHALL UNIVERSITY
CENTER FOR BUSINESS AND ECONOMIC RESEARCH

December 2012



Household Delivered Energy Consumption in 2010, Select States





Energy Efficiency Overview

- **Where is the State in efficiency efforts?**
 - First Energy - \$1.7 million/year program
 - Appalachian Power - \$6.3 million/year program
 - Adoption of recent industry standards for construction of State buildings
 - Building code training by WVD OE
 - Federal programs – Industries of the Future, Industrial Assessment Centers, low-income weatherization assistance



Benefits of Energy Efficiency

- More efficient use of resources (get more or same with less)
- Participants can reduce impacts of increasing electricity rates
- Can contribute to a decrease in peak power demand due to the decrease in overall demand
- In S-T, can reduce off-system power purchases
- In L-T, can postpone need to build more power plants and T&D lines (and associated costs)
- Local job creation



EE Policy Recommendations

State-Related:

1. Statewide adoption of the 2009 IECC and 2007 ASHRAE standards
2. Keep the State no further than one series of codes behind the most recent version
3. Appointment of an Energy Efficiency Ad-hoc position to the State Fire Commission
4. Study the feasibility of making the energy code portion of the State Building Code enforceable statewide.
5. Continue support of WVDOE EE-related programs
6. Study the Potential for increased CHP deployment



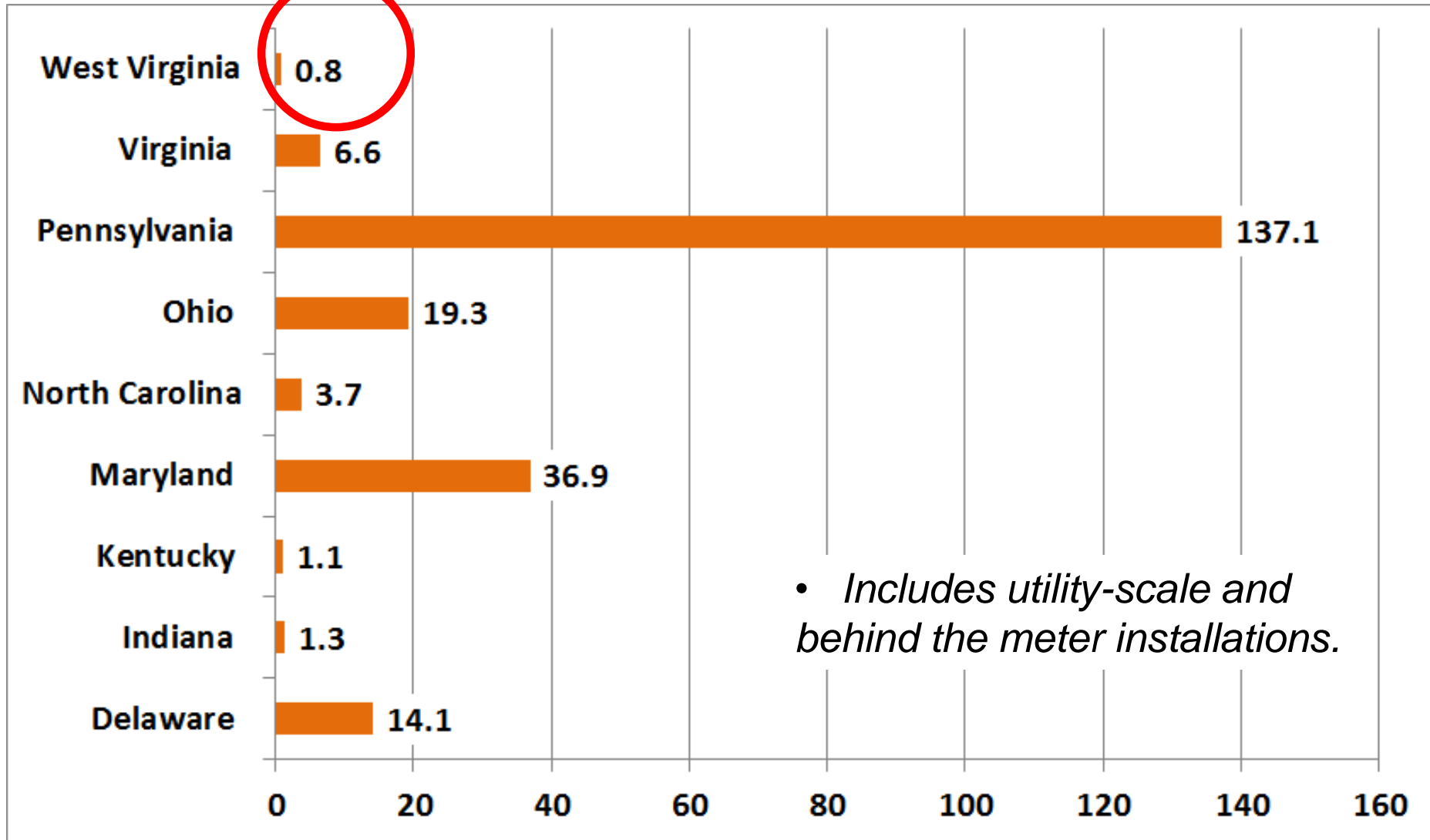
EE Policy Recommendations

Utility-Related:

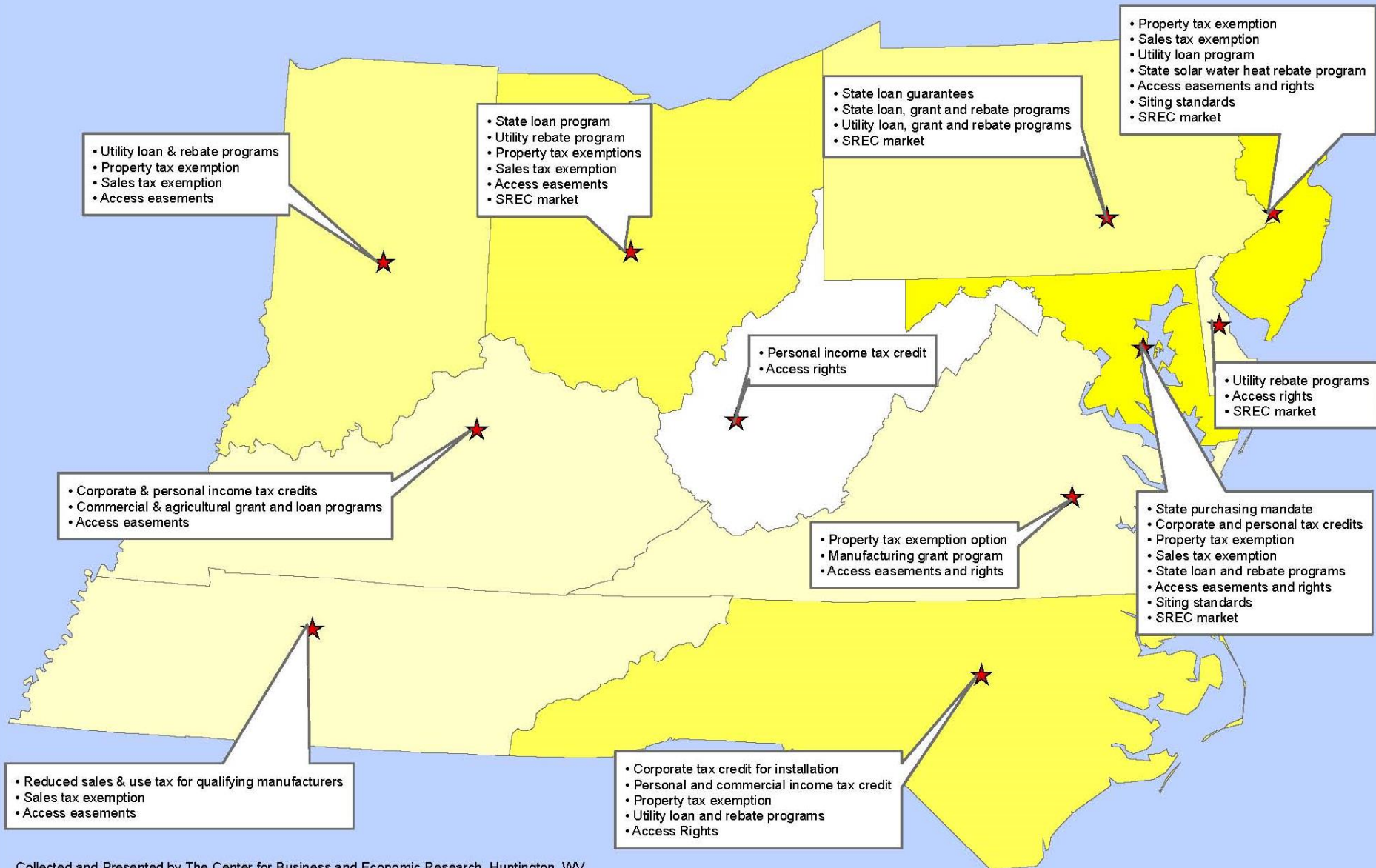
1. Establish an energy savings target for utility energy efficiency initiatives, either legislatively mandated or financially incentivized, with opt-out provisions for large industrial users.
2. Implement a mechanism to allow for reasonable recovery of utility lost revenues resulting from State-mandated EE programs.
3. Establish a stakeholder working group to provide guidance on EE program elements.



Approximate Installed Solar Capacity as of 2011 (MW)



Solar Incentives





Solar Conclusions

- Solar energy is a moderate resource in WV
- Primary economic benefits come from applicable taxes, the removal of which are common incentives.
- Funding solar through utility rates obscures the real price of avoided electricity purchases.
- SREC markets assign the role of market maker to State Legislatures.
- Unresolved grid integration issues reduce the ability to offset fossil resources.
- Beyond 5 years, grid integration solutions will be more widespread allowing more benefit.



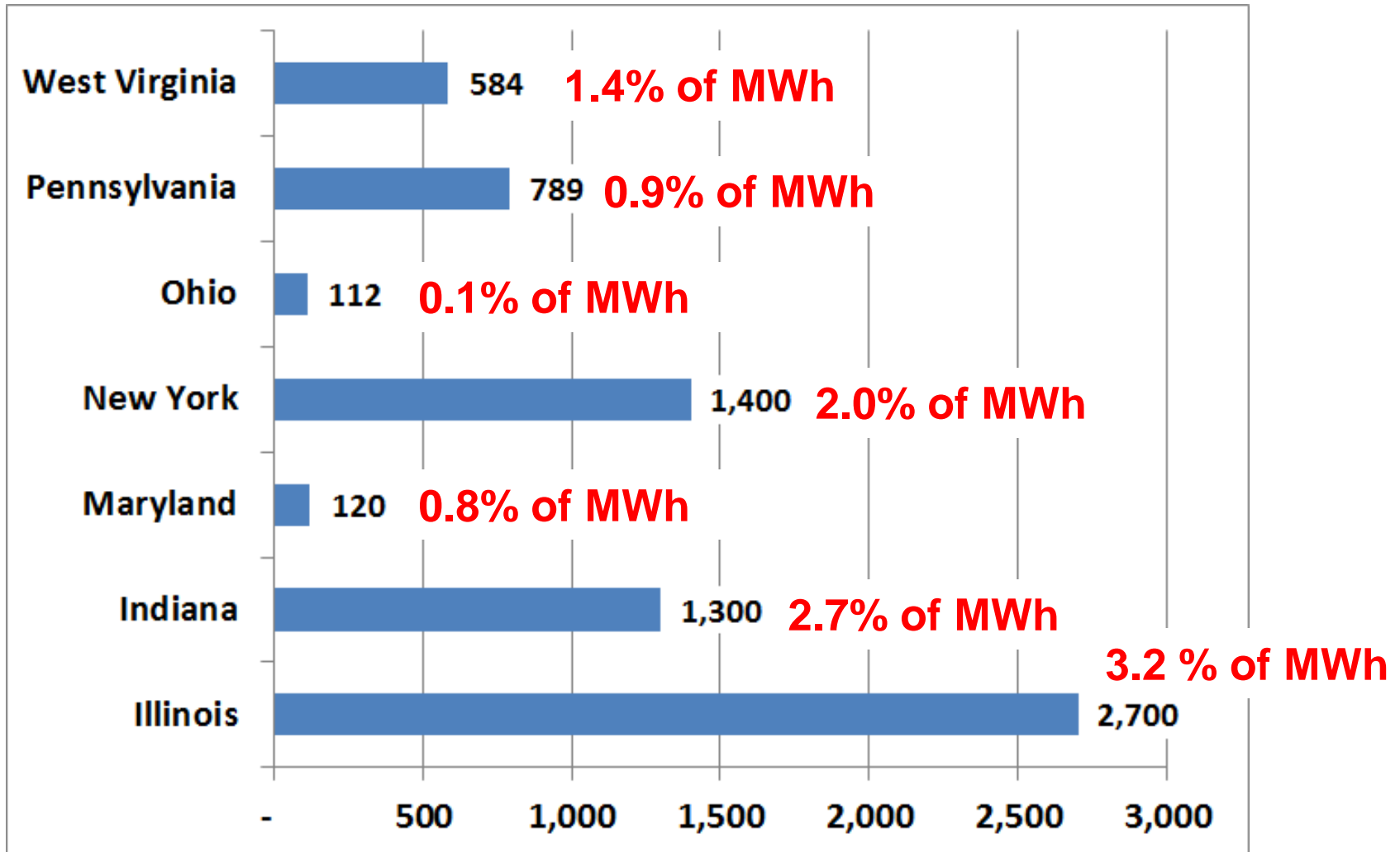
Solar Policy Recommendations

1. Maintain current policies. The current policy is likely to induce some interested WV residents to adopt solar PV technology, but not at very high levels.
2. Monitor the results of research being conducted on the options to efficiently integrate wind and solar resources into the grid.

Applicable State Organizations: Division of Energy, Public Service Commission.

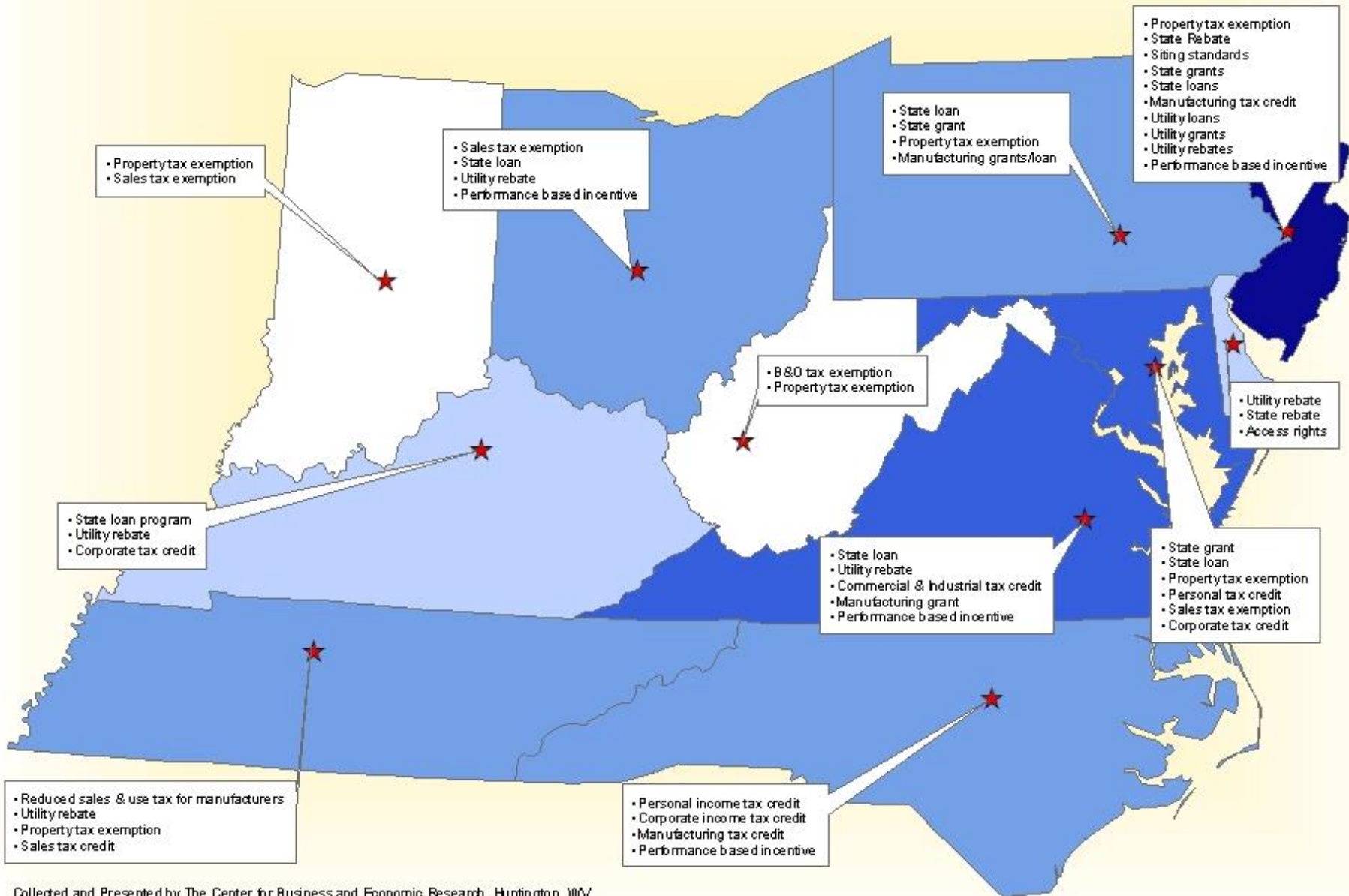


Installed Wind Capacity (MW) in Regional States, as of 2011



Sources: (Wind Powering America 2012), (AWEA 2012) and (EIA 2012).

Wind Incentives





Wind Conclusions

- The quantity of wind estimated to be “developable” on private land may be less than what is developed or under consideration.
- Unresolved efficiency issues related to grid integration of wind energy need to be understood more in terms of accomplishing policy objectives.
- The extension of the federal PTC will determine future development efforts.



Wind Policy Recommendations

1. Maintain current policies. The two existing State tax incentives are a balanced acknowledgement of public and private interests.
2. Monitor the results of research being conducted on the options to efficiently integrate wind and solar resources into the grid.

Applicable State Organizations: Division of Energy, Public Service Commission.

Thank You

