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at  
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**these slides posted at:**

**<http://wireWB.org/MIenergy.pdf>**

"In a net metering program, the electric company allows a customer's meter to actually run backwards if the electricity the customer generates is more than they are consuming. At the end of the billing period, the customer only pays for their net consumption: the amount of resources consumed, minus the amount of resources generated."

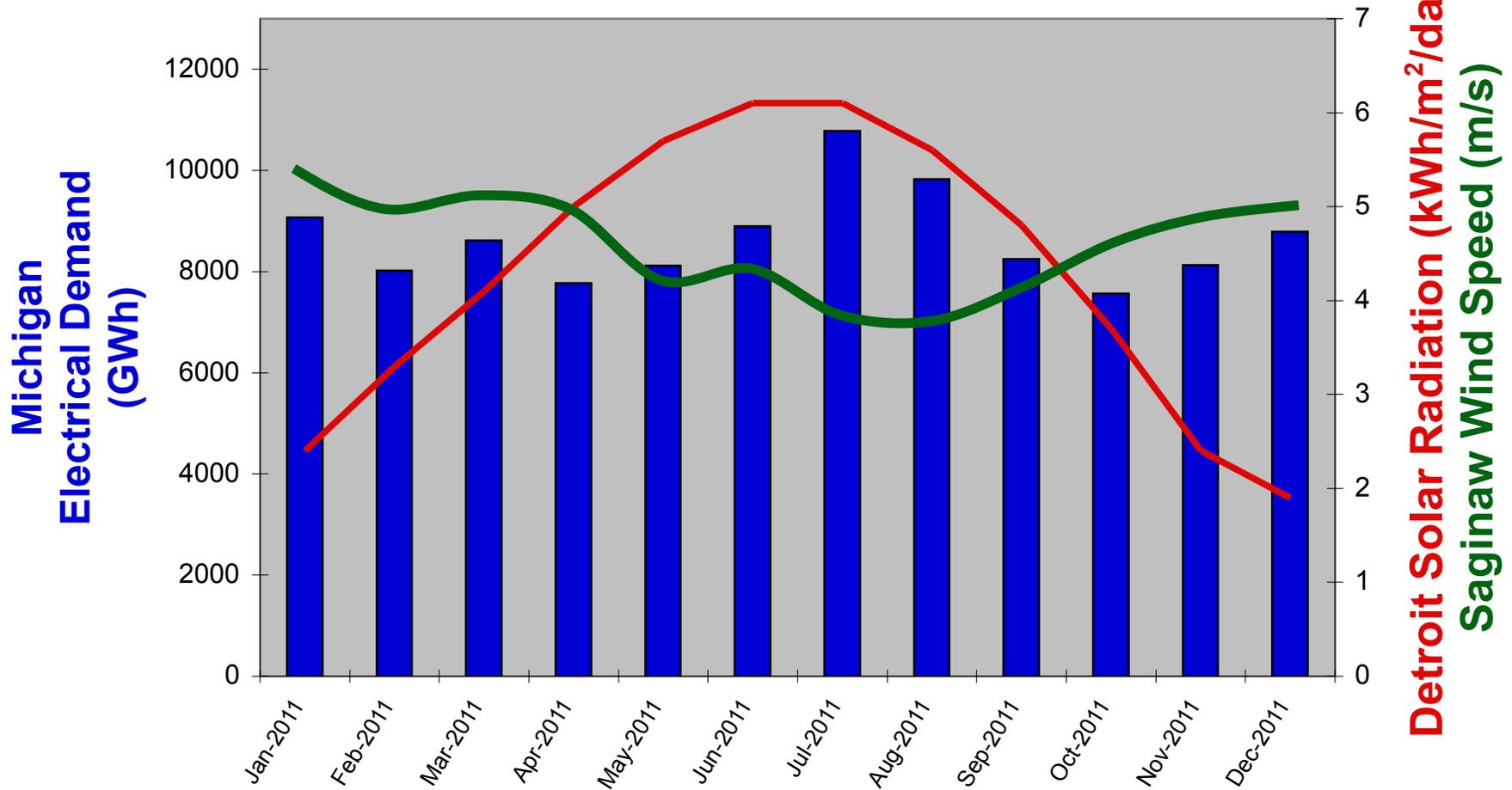
(<http://searchcio.techtarget.com/definition/net-metering>)

Net metering has been described as

*“providing the most significant boost of any policy tool at any level of government...to decentralize and ‘green’ American energy sources.”*

(Ferrey, Steven (2003). Nothing but net: Renewable energy and the environment, MidAmerican legal fictions, and supremacy doctrine, Duke Environmental Law & Policy Forum. 14:1-120. )

## 2011 Michigan Electrical Demand, Detroit Solar Radiation and Saginaw Wind Speed

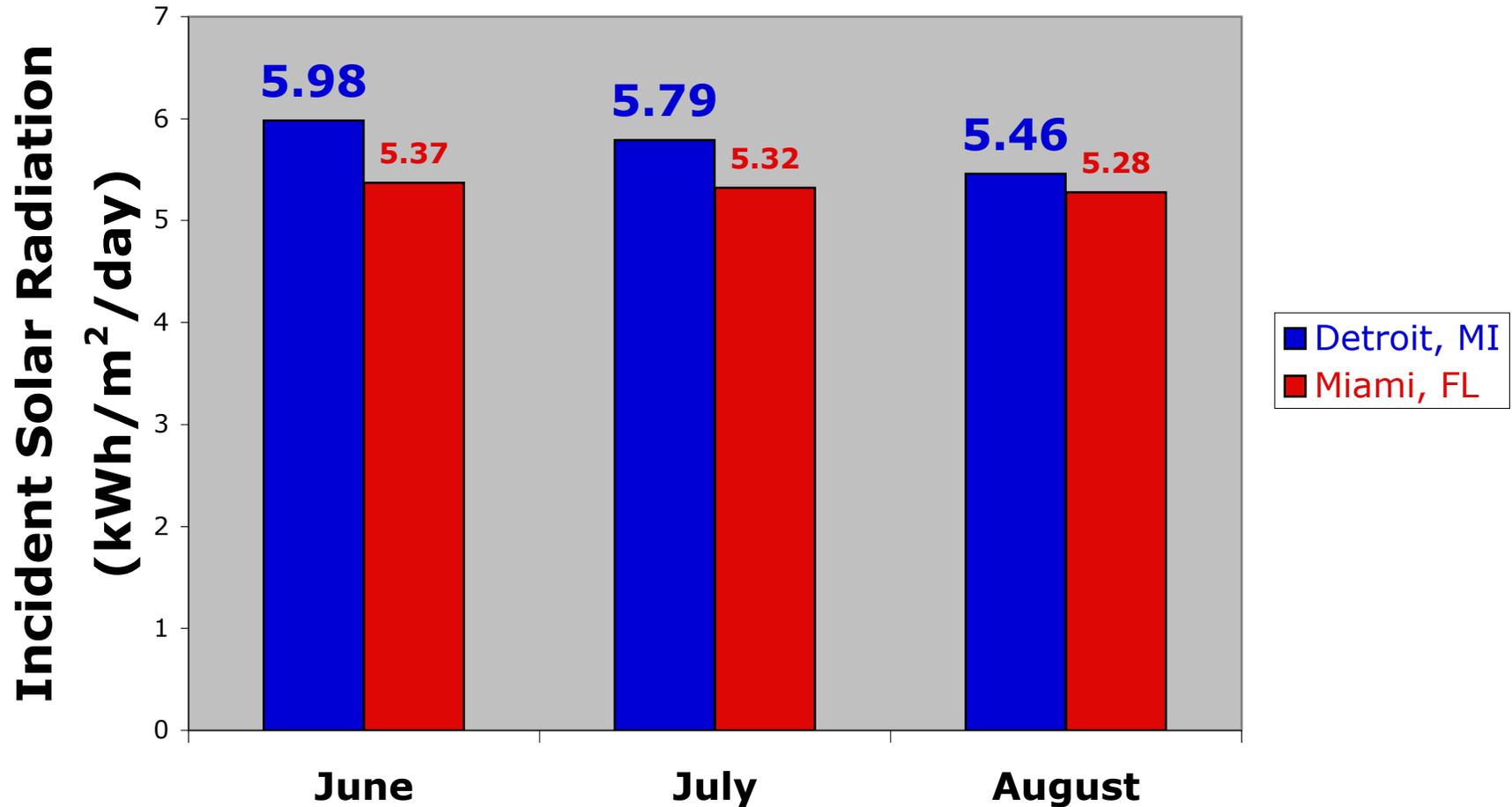


Michigan electrical demand data from <http://www.dleg.state.mi.us/mpsc/reports/energy/html/>  
 Detroit incident solar radiation data from <http://rredc.nrel.gov/solar/pubs/redbook/PDFs/MI.PDF>  
 Saginaw Airport wind speed data from [http://michigan.gov/documents/michigan\\_wind\\_map\\_04\\_multi\\_105417\\_7.pdf](http://michigan.gov/documents/michigan_wind_map_04_multi_105417_7.pdf)

# Detroit, MI vs Miami, FL

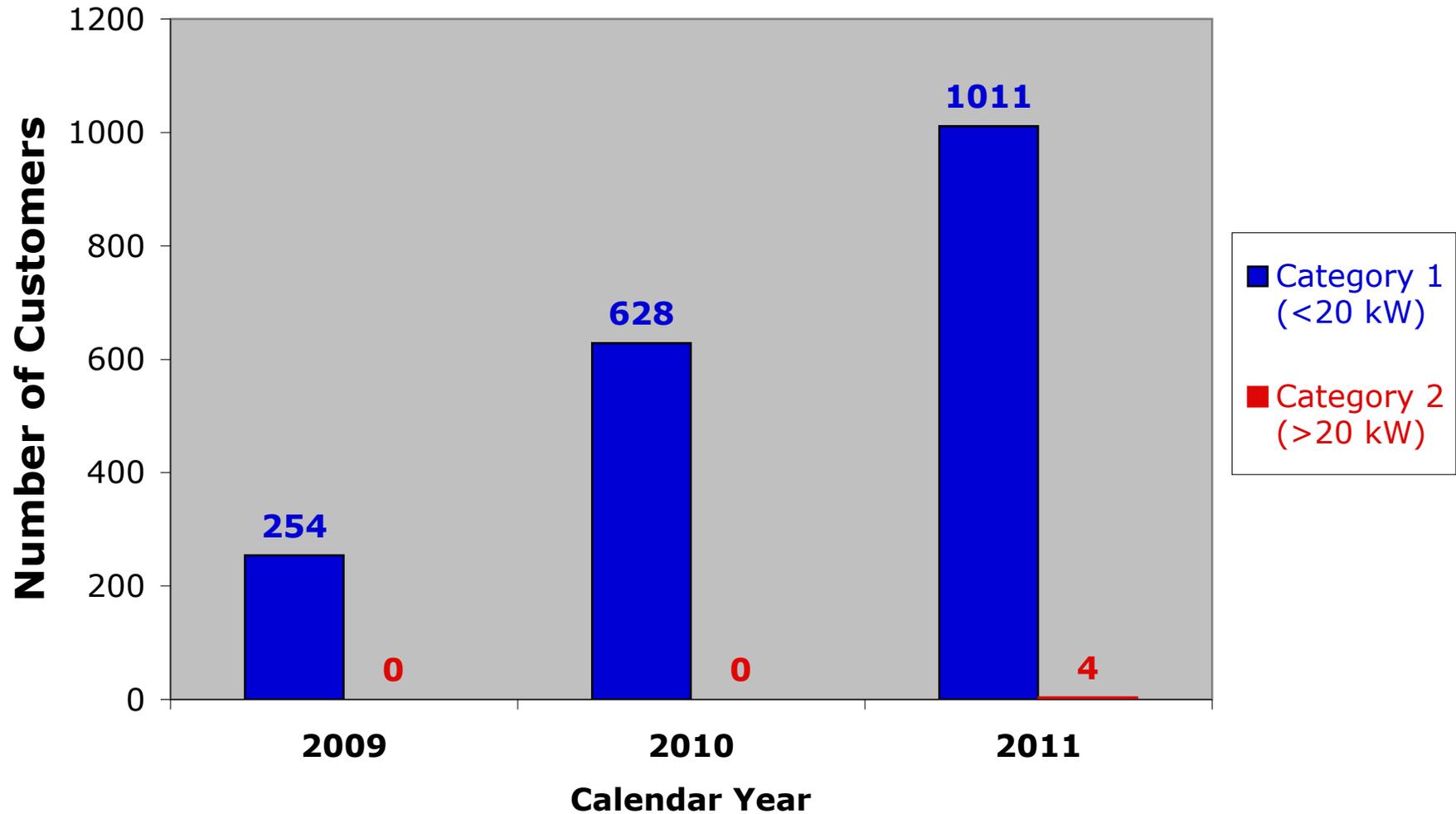
## Incident Solar Radiation During Summer Months

(Array Tilt Angles Optimized for Annual Generation)



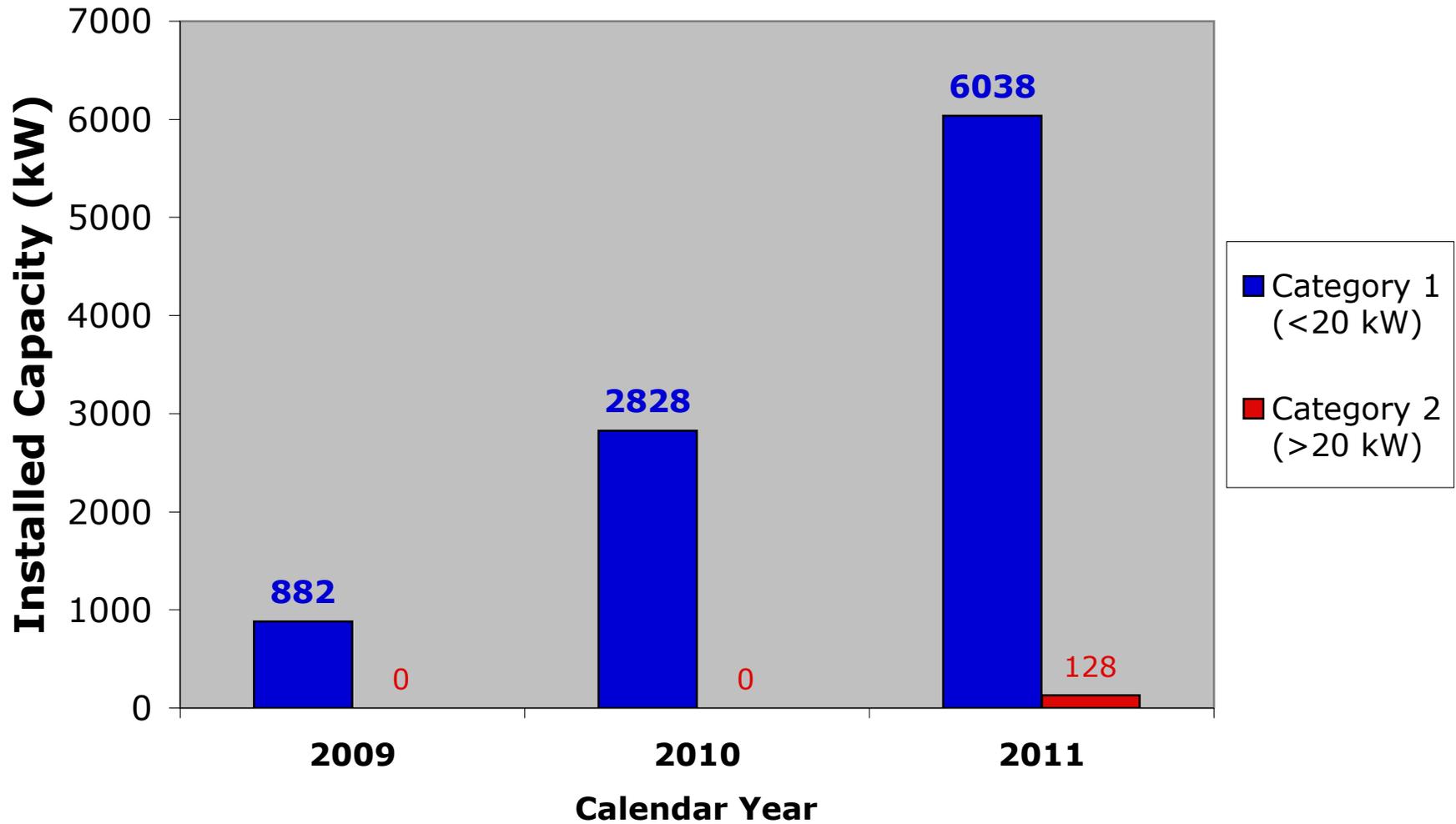
Incident solar radiation for **Detroit** and **Miami** for annually optimized static arrays  
(**Detroit** array tilt 30°, **Miami** array tilt 24°) calculated using  
<http://www.nrel.gov/rredc/pvwatts/grid.html> version 2 calculator

## Number of Net Metering Customers Category 1 (<20 kW) and Category 2 (>20 kW)



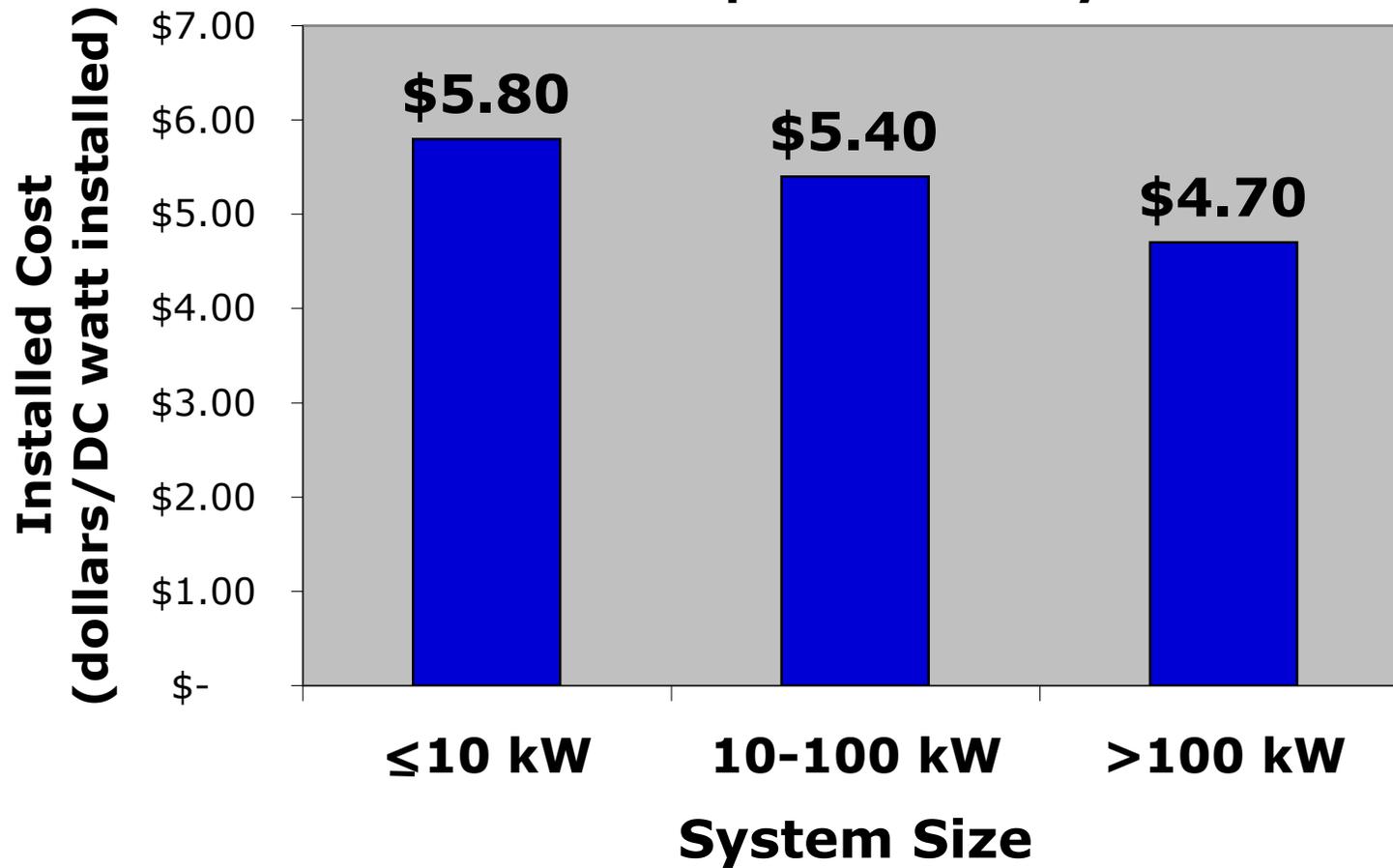
Michigan net metering data from  
<http://www.michigan.gov/netmetering>  
Net Metering Annual Reports 2009-2011

## Installed Net Metering Generation Capacity Category 1 (<20 kW) and Category 2 (>20 kW)



Michigan net metering data from  
<http://www.michigan.gov/netmetering>  
Net Metering Annual Reports 2009-2011

## 2011 U.S. Residential and Commercial Installed Cost per Watt vs System Size



<http://emp.lbl.gov/publications/tracking-sun-v-historical-summary-installed-price-photovoltaics-united-states-1998-2011>

# If cost is not the problem, it may be policy:

Excerpts from Michigan Net Metering Rules, emphases mine.

## ***20 kW and under-net metering a smashing success!***

**R 460.650 Billing and credit for true net metering customers.**

Rule 50. (1) Net metering customers with a system capable of generating *20 kW or less shall qualify for true net metering...the net of the bidirectional flow of kWh... including excess generation, shall be credited at the full retail rate...*

## ***Over 20 kW-not so much! We must revisit!***

**R 460.652 Billing and credit for modified net metering customers.**

Rule 52. (1) Net metering customers with a system capable of generating *more than 20 kW qualify for modified net metering...*

***(3) A customer qualifying for modified net metering shall not have net metering credits applied to distribution charges...***