Driving Solar Market Maturity

Through Innovations in Processes & Policies

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MWCOG BEEAC Meeting | July 17, 2014

Solar Bulk Purchasing

Power in Numbers

- Residential Solar Bulk Purchase
- Small Commercial Aggregation
- Municipal Collaborative Procurement

Benefits

- Leverage purchasing & negotiating power for discounted group price
- Reduces transaction costs and administrative burden
- Lowers customer acquisition costs
- Decreases risk & complexity
- Shortens the learning curve for all
- Quality assurance by vetting of solar contractors by project stakeholders

DC SUN
DC SOLAR UNITED NEIGHBORHOODS

GREEN HOMES CHALLENGE
SOLARIZE
Frederick County

SOLARIZE
ROANOKE

Solarize
Blacksburg

SOLARIZE
CHARLOTTESVILLE

CLEAN ENERGY
COLLABORATIVE
Procurement Initiative

July 23 Solar Roadmap Webinar: www.solarroadmap.com/m1

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Solar Bulk Purchasing

Proven Results

✓ 10-40% cost reductions

✓ Accelerated deployment

Solarize Frederick

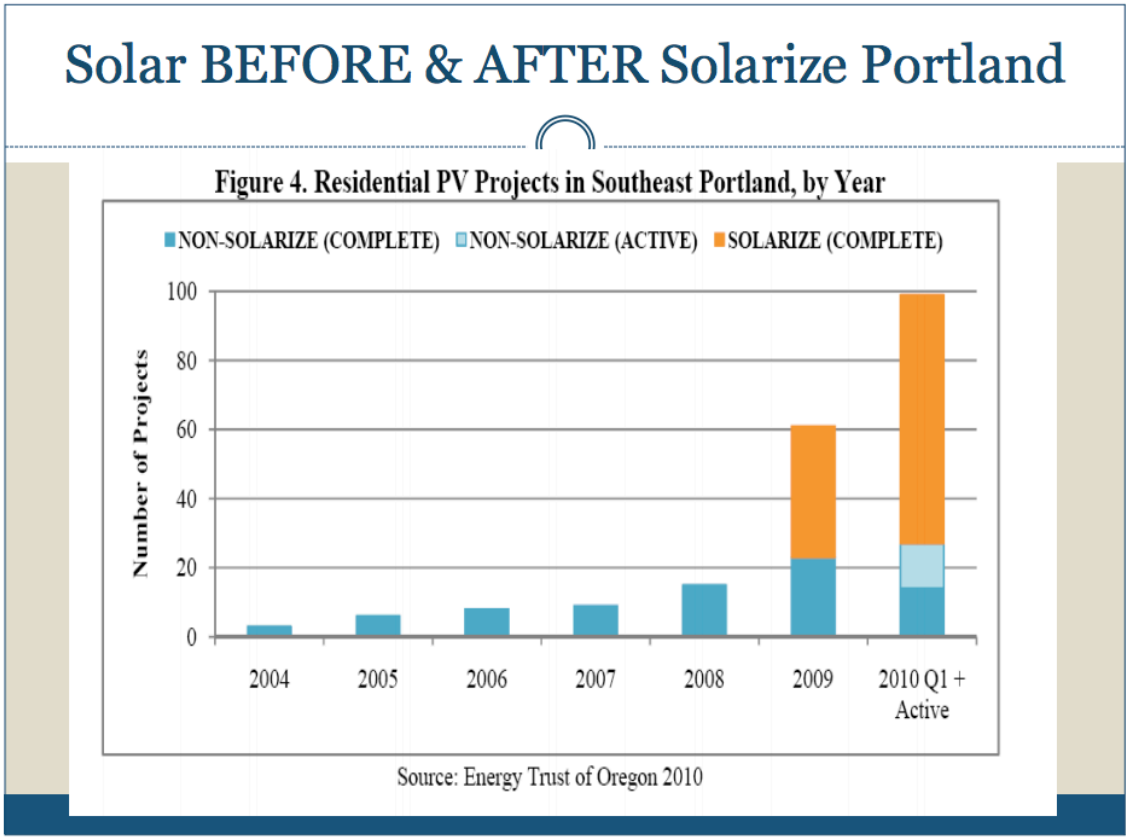
- 66 solar PV systems (512 kW)
- 24% price decrease
- 12 solar thermal systems (31 kW)
- 14% price decrease

Utah Community Solar

- 64 systems (232 kW)
- 40% price decrease

CA Collaborative Procurement

- 19 public agencies
- 187 systems (31 MW)
- 10-14% price decrease
- Major transaction cost/time reductions



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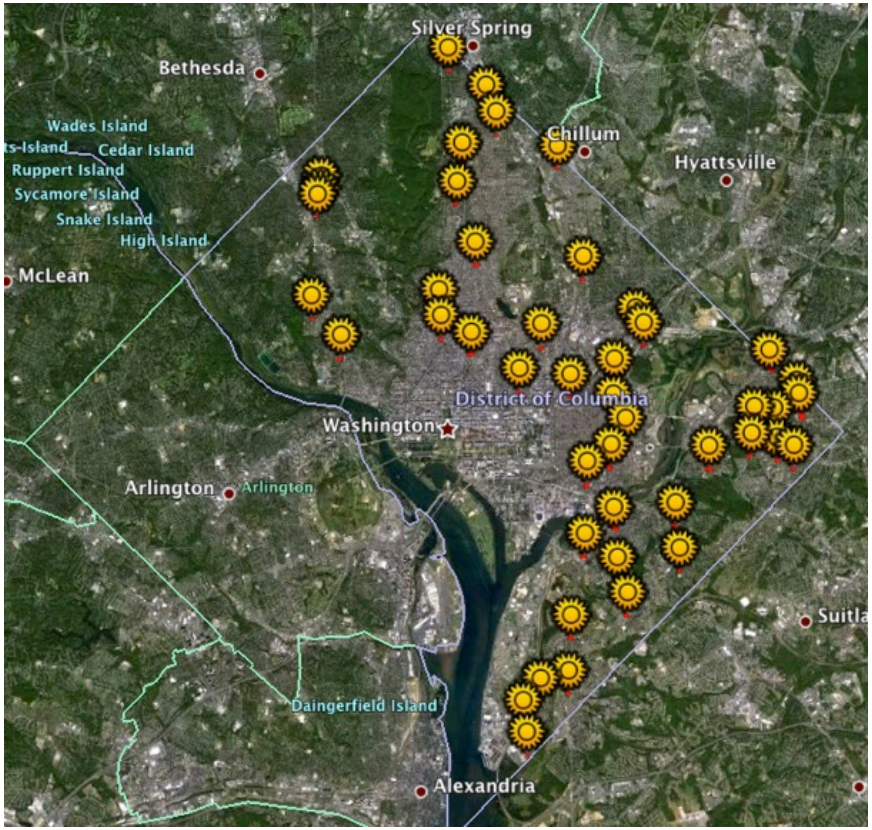
Case Study: District of Columbia DGS RFP



Includes 50 sites

- 10+ MW of solar PV potential

Multiple Site Types

- Rooftops
- Carports

Largest single urban DG procurement

- 10 MW across 50 sites in single procurement

Results

- Much faster deployment of solar
- Anticipated pricing: over 30% below utility
- Transaction & Admin savings: 50% to 75%
- Market leading contract terms

Next Step

- Vendor selection

Case Study: Montgomery County DOT & DGS RFEPs

DGS procurements

- 19 sites
- MW of solar PV potential TBA
- Additional microgrid potential

DOT procurement

- 12 parking garage sites
- 5+ MW of solar PV potential

Multiple Site Types

- Rooftops
- Carports
- Ground mount

Results

- Anticipated pricing: 20-30% below utility
- Transaction & Admin savings: 50% to 75%
- Market leading contract terms

Case Study: Alameda County Collaborative Procurement

www.solarroadmap.com/regional-initiatives/ba-rrep/

Includes 187 sites

- Collaboration across 19 public agencies
- 31+ MW of solar PV potential

Largest multi-agency effort to date

- 4 Counties
- 11 Cities
- 3 Special districts
- 1 University

Multiple Site Types

- Rooftops
- Carports & shade structures
- Ground mounted

Results

- Volume discount: 10-15%
- Transaction & Admin savings: 50% to 75%
- Market leading contract terms

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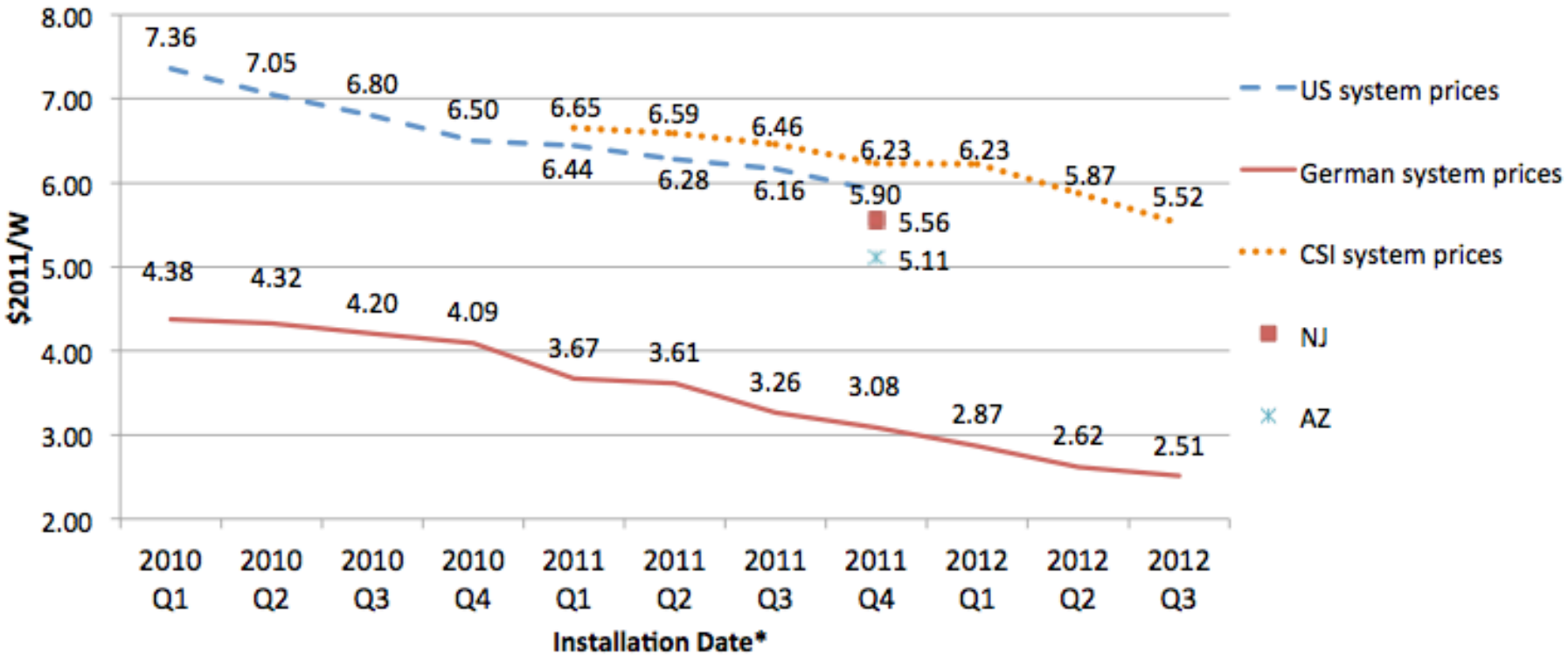
Pathway to Solar Power Generation

1. Identify project manager and convene stakeholders
2. Define solar goals and identify internal roadblocks
3. Perform site assessments
4. Develop and issue RFP
5. Evaluate and compare proposals
6. Conduct interviews of vendors with most compelling proposals
7. Select winning vendor
8. Negotiate contracts
9. Manage construction process
10. Commission the system

Solar Pricing Trends

Median Installed Price of Customer-Owned PV Systems ≤10 kW



Source: Lawrence Berkeley National Laboratory

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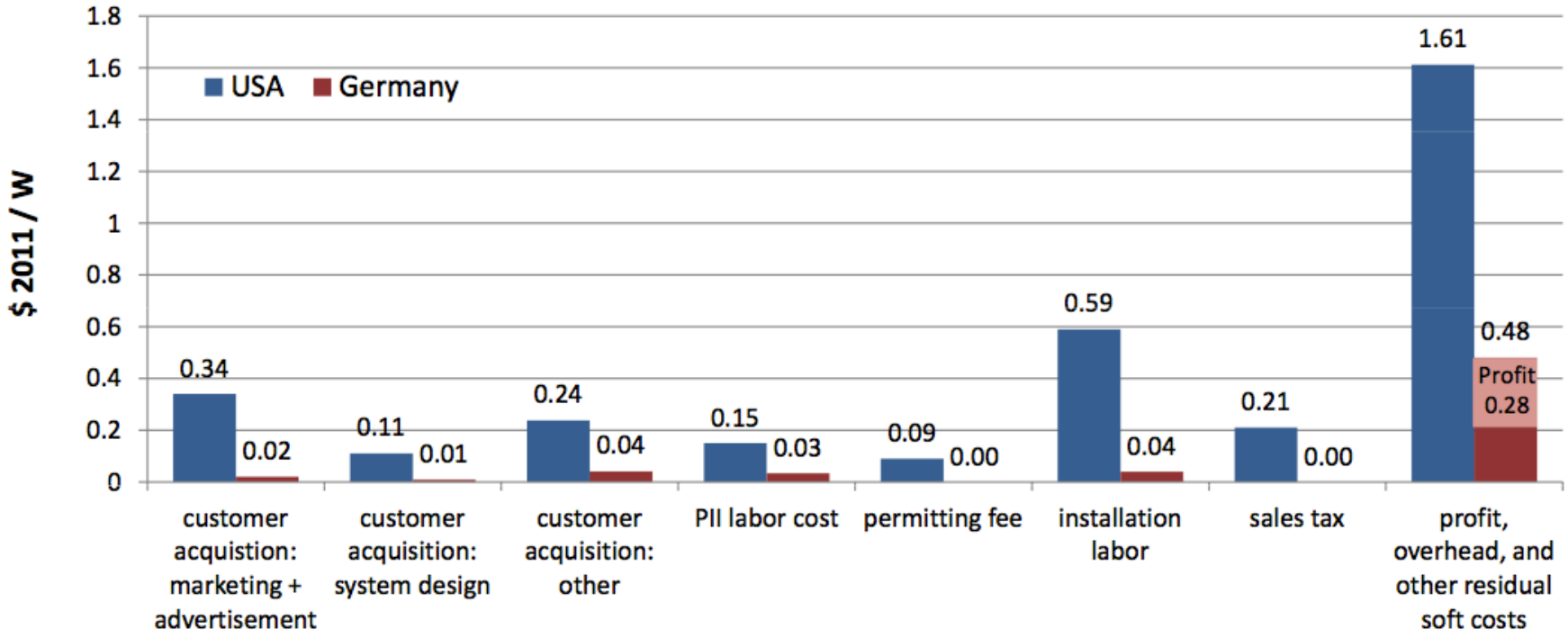
Solar Pricing Trends

Comparison of Soft Costs for Residential PV in Germany and the U.S.



Source: Lawrence Berkeley National Laboratory

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Solar Pricing Trends

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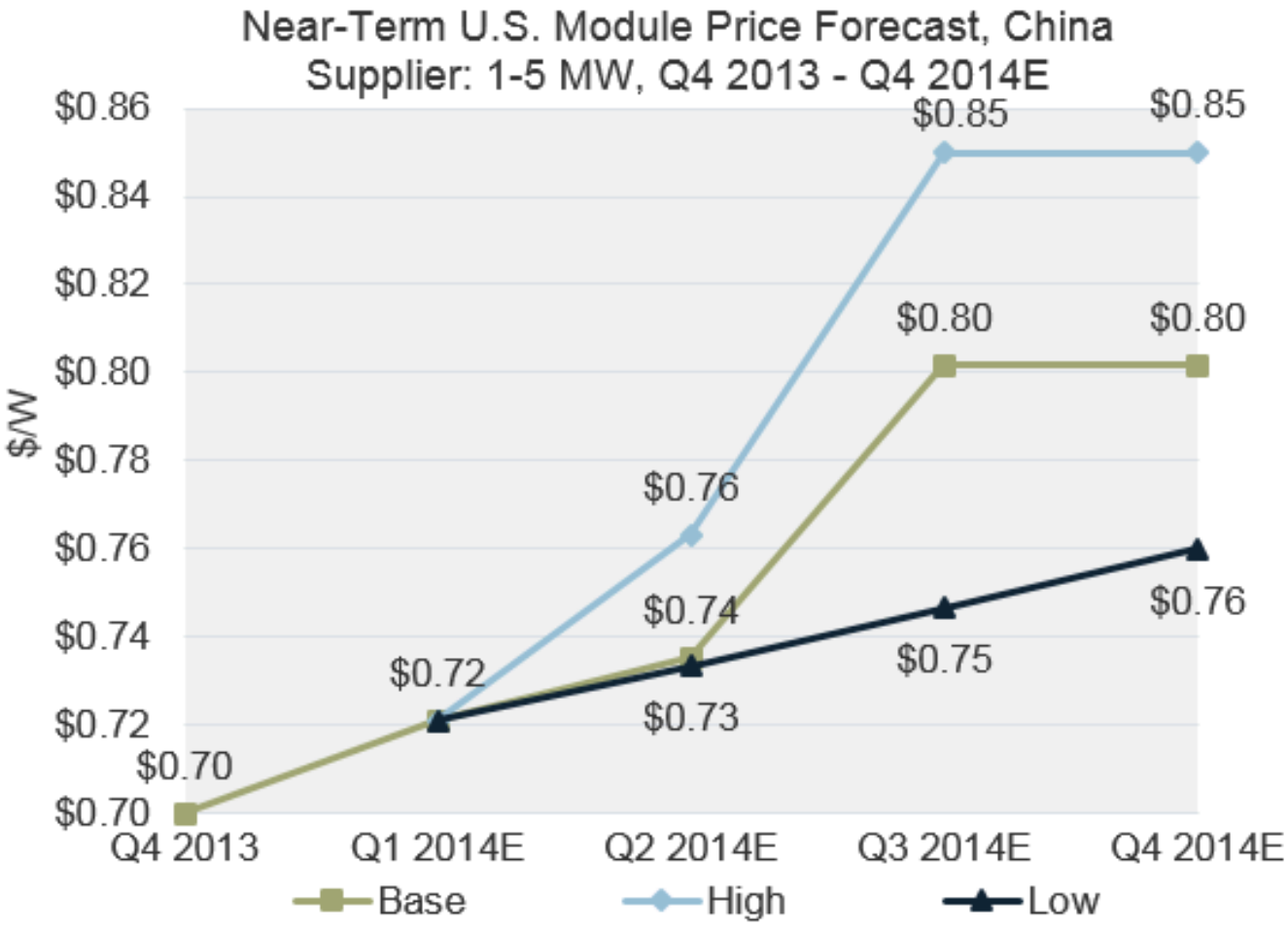

Source: Greentech Media

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Solar Pricing Trends

Current installed price for solar is at historical low

- Module costs decreased 80% from 2008-2012
- Innovations in policies, processes and financing also helped
- Pricing is lower in mature markets due to advanced policies, increased competition and installation efficiency

Short-term installed price declines likely to slow

- Future installed cost decreases will be based on:
  - Limits to falling module costs in future
  - Solar import tariff expected to increase US module prices by 14%
  - Supply constraints on horizon due to surging global demand, led by China's domestic market
- Future reductions will need to come from soft costs
- Federal ITC schedule to expire in 2016. Will impact PPA market.

Source: Greentech Media

Solar Roadmap Update

(10) Communities in the Greater Washington D.C region

METROPOLITAN WASHINGTON Council of Governments

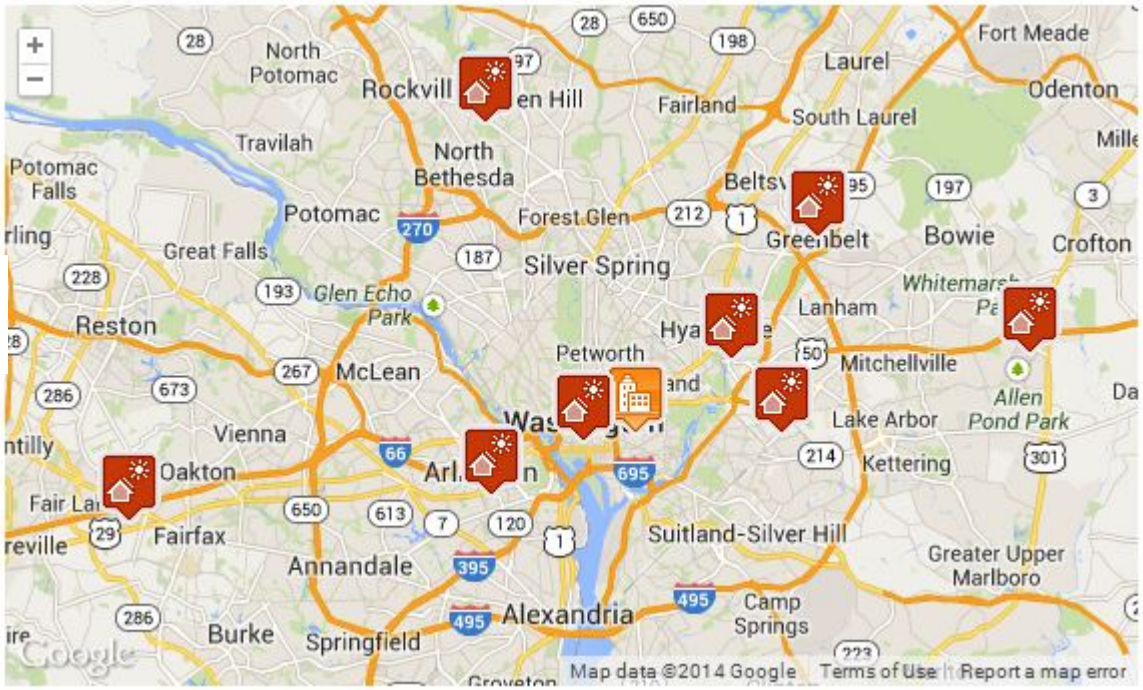
nvrc

Maryland Energy ADMINISTRATION
Powering Maryland's Future

MARC
Mid-America Regional Council

NARC
Building Regional Communities

MEISTER CONSULTANTS GROUP



- Washington, D.C.
- Fairfax County
- Arlington County
- Blacksburg
- Prince George's County
- Bladensburg
- Greenbelt
- Bowie
- College Park
- Montgomery County

+ (125) Communities and (19) Utilities from (21) States nationwide

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THANK YOU

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ABOUT OPTONY INC.

Optony develops and deploys solar best practices across the entire solar project lifecycle for government agencies, schools and commercial organizations. Optony has been involved in over 300MW of project activity globally.

Working with clients across all phases of solar projects creates deep insight into true performance drivers which is used to reduce costs and improve performance at any stage in the process.

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"Optony's consulting service is a must-have for any organization considering an investment in solar. Based on Optony's comprehensive analysis and recommendations, we now have a low-risk, high-return solar strategy."

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