Considering Above Code Certification Policies Webinar

June 15, 2016
Green Building & Energy

- Green Building Act (2006)
- Energy Benchmarking & DC SEU (2008)
- Energy Efficiency Financing Act (PACE - 2010)
- Distributed Generation Amendment Act (2011)
- Community Renewables Act (2013)
- Green Construction Codes (2014)

Green Infrastructure

- Stormwater Regulations (2013)
- Green Area Ratio (2013)
- Green Construction Codes (2014)
DC Green Construction Code

- Scope – Based on the International Green Construction Code, the code covers all commercial projects 10,000 SF and above, and all multifamily residential projects 10,000 SF and larger, and 4 stories and higher

- LEED-like Sections:
  - Site Development and Land Use
  - Material Resource Conservation and Efficiency
  - Energy Conservation and Efficiency
  - Water Resource Conservation and Efficiency
  - Indoor Environmental Quality and Comfort
  - Commissioning
  - Appendix A

- Alternative Compliance Paths: LEED, Enterprise Green Communities, ASHRAE 189.1, National Green Building Standard (ICC 700 – possible)
ENERGY STAR in DC

Energy Star Certified Buildings

Number of Buildings

250
200
150
100
50
0
LEED in DC

LEED Project Construction

- Certified
- Silver Certified
- Gold Certified
- Platinum Certified
- All Certified Levels
- Registered

# of Projects

- 1200
- 1000
- 800
- 600
- 400
- 200
- 0

Years:

- 2001-2003
- 2004-2006
- 2007-2009
- 2010-2012
- 2013-2015
- 2016-2018
- 2019-2021
- 2022-2024
Policy Outcomes in DC

- 1st in LEED and ENERGY STAR® certified square footage per capita among large cities in U.S.
- 1st in nation in total number of ENERGY STAR® buildings (DC Metro Area) and 2nd in total number of LEED projects
- #1 EPA Green Power Community for five years
- 1st in nation in green roof square footage per capita (2nd in total square footage)
- 2nd in alternative transportation (56% of trips by transit, walking, or bike)
Green Building Codes and LEED Are Great, But Not Enough to Get to This
And More Challenges...

850 Certified Buildings

128,000 Total Buildings

125,000,000 SF
(10.7 million m²)

730,000,000
(67.8 million m²)
Path to True Sustainability

- Living Communities
  - Living Building Challenge, EcoDistricts, Net Positive Buildings
  - Net Zero Buildings
  - Incentive Programs
    - Sustainable DC
- Incentive Programs
Green Building Fund Grants

In 2013, DDOE created a Green Building Fund Grant Program:

- **2013 Funded Projects**
  - Study on Mortality and Urban Heat Island Effect
  - Development of Green Building Program Manual
  - Net Zero Energy/Water and Living Building Challenge Financial Study for DC

- **2014 Funded Projects**
  - Greening the Multiple Listing Service (MLS) System (continued in 2015)
  - Green Appraisal (continued in 2015)
  - Smart Buildings Plan (City-Wide Energy/Water/Waste/Etc. Models)
  - Quality Assurance for Benchmarking Scores (continued in 2015)
  - DC Smarter Business Challenge (continued in 2015 and 2016)

- **2015 Funded Projects**
  - Microgrid/District Energy Potential Study (continued in 2016)
  - Green Bank/Incentives/Revenue Neutral Carbon Pricing Study (continued in 2016)

- **2016 Funded Projects**
  - POWER DOWN DC (behavior change competition for multifamily residential)
  - Living Community Challenge Planning (for large scale development sites in DC)

Grant Program Website:
http://doee.dc.gov/publication/green-light-grant-program
# Green Building Fund Grants

**First Costs**

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Net Zero Energy</th>
<th>Net Zero Water</th>
<th>Living Building Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial - New (328,095 SF)</td>
<td>5-10%</td>
<td>0-4%</td>
<td>11-16%</td>
</tr>
<tr>
<td>Commercial - Retrofit (235,172 SF)</td>
<td>7-12%</td>
<td>1-6%</td>
<td>13-18%</td>
</tr>
<tr>
<td>Residential - New (329,164 SF)</td>
<td>14-19%</td>
<td>2-7%</td>
<td>22-27%</td>
</tr>
</tbody>
</table>

## Energy Financials

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Deep ECM Only</th>
<th>Net Zero With ECM</th>
<th>Net Zero Without ECM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NPV</td>
<td>SPB</td>
<td>NPV</td>
</tr>
<tr>
<td>Office New Construction</td>
<td>($396,476)</td>
<td>11 yrs</td>
<td>$2,672,413</td>
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<tr>
<td>Multifamily New Construction</td>
<td>($1,772,741)</td>
<td>17.7 yrs</td>
<td>$3,192,398</td>
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<tr>
<td>Office Renovation</td>
<td>($137,039)</td>
<td>8.1 yrs</td>
<td>$1,260,704</td>
</tr>
</tbody>
</table>
Other Initiatives in DC...

- **Smart City Efforts**
  - Virtual Energy Audits

- **Update of Green Building Act** (higher performance req.)

- **Update of Renewable Portfolio Standard** (50% by 2032)

- **Potential Creation of Green Bank**

- **Development of Single Family Green Building Program**

- **New Green Construction Code + Energy Code**
  (with stretch codes and net zero code in Appendix)

- **Net Zero/Living Building Challenges Language in RFPs**

- **EcoDistricts**
  - 3 Target Cities Projects in DC
  - Focus on district energy and microgrid solutions

- **Living Building Challenge/Living Community Challenge**
  - LBC Design Competition/Project for Affordable Housing
  - Living Community Challenge Planning for large sites

### Calendar

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Total # Interconnected PV Systems in DC</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>524</td>
</tr>
<tr>
<td>2012</td>
<td>791</td>
</tr>
<tr>
<td>2013</td>
<td>1,140</td>
</tr>
<tr>
<td>2014*</td>
<td>1,307</td>
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</table>
Contact Info

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