Bay Area Wind Turbines
(The Other Bay)

Paul Gipe, wind-works.org
Boston Area Wind Turbines (Partial)

Logan Airport: 2x 600 kW
Deer Island: 2x 600 kW
Hull: 1x600 kW, 1x2 MW
Charlestown: 1x 1.5 MW
IBEW: 100 kW
BMoS Rooftop Wind

Map © Google.com

Paul Gipe, wind-works.org
Hull Wind (Hull, Massachusetts)

Andrew Stern, Hullwind.org
Hull Wind

• The Turbine That Started It All!
• Hull 1: V47, 2001
• Hull 2: V80, 1.8 MW, 2006
• 95% approval
• Hull 3: 4 offshore turbines . . .

Paul Gipe, wind-works.org
Hull Wind 2: 1.8 MW, 2006

Paul Gipe, wind-works.org

Map © Google.com
Hull Wind 1: 660 kW, 2001
# Hull Wind

## Real World Performance

<table>
<thead>
<tr>
<th>Hull Wind Production</th>
<th>Feb 23, 2012</th>
<th>0.66 MW</th>
<th>1.8 MW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Generation - kWhs</td>
<td>15,847,729</td>
<td>22,257,956</td>
</tr>
<tr>
<td>Days Commissioned</td>
<td>3,713</td>
<td>2,134</td>
<td></td>
</tr>
<tr>
<td>Hours generating</td>
<td>61%</td>
<td>~ 59%</td>
<td></td>
</tr>
<tr>
<td>Capacity Factor</td>
<td>27.0 %</td>
<td>24.1%</td>
<td></td>
</tr>
</tbody>
</table>

YouTube video, MIT delegation visits Hull Wind 1, with Andy Stern  [CLICK HERE](#)
IBEW Boston, Mass.: 100 kW

Paul Gipe, wind-works.org

Map © Google.com
IBEW Boston, Mass.: 100 kW

Map © Google.com

Paul Gipe, wind-works.org
IBEW Boston, Mass.: 100 kW

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Map © Google.com
Charlestown, Mass (Boston): 1X1.5 MW

Mass Water Resources Authority
Boston Museum of Science
Logan Airport

Map © Google.com

Paul Gipe, wind-works.org
Charlestown, Mass (Boston): 1X1.5 MW
Boston Museum of Science

Mass Water Resources Authority

Boston Museum of Science

Map © Google.com

Paul Gipe, wind-works.org
Charlestown, Mass (Boston): 1X1.5 MW

http://www.mwra.com

Paul Gipe, wind-works.org
Deer Island (Boston), Mass.: 2x 600 kW
Medford, Mass (Boston): 1x 100 kW

Map © Google.com

Paul Gipe, wind-works.org
Medford, Mass (Boston): 1x 100 kW

Paul Gipe, wind-works.org
Medford, Mass (Boston): 1x 100 kW

- Installed 2009, No Complaints
- 245,000 kWh total, ~80,000 kWh/yr
  50% of Estimates
  What Would They do Differently: Taller Tower
- Public Access, Public Park/Playground
- Site of “Energy Harvest Festival” in Fall

Paul Gipe, wind-works.org
### Boston Harbor Wind Turbine Yields

<table>
<thead>
<tr>
<th>Turbine</th>
<th>Area (m²)</th>
<th>kWh/yr</th>
<th>kWh/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hull V47</td>
<td>1,735</td>
<td>1,561,032</td>
<td>900</td>
</tr>
<tr>
<td>Hull V80</td>
<td>5,027</td>
<td>3,784,320</td>
<td>753</td>
</tr>
<tr>
<td>IBEW NPS 100</td>
<td>346</td>
<td>80,000</td>
<td>231</td>
</tr>
</tbody>
</table>

Paul Gipe, wind-works.org
Boston Harbor Wind Turbine Yields Lessons Learned: Well-sited Wind Turbines on Tall Towers Deliver Results!

(This is, unfortunately, a lesson that keeps being repeated.)