Carbon Policy on the Road to 2024

Bass Connections in Energy: Developing Departmental Energy Reports and a Carbon Pricing Program for Duke University
Path to Carbon Neutrality

**Where we are now**
- Aspirations in sustainability leadership
- 34% emission reduction by 2024

**Where we want to be**
- Take leadership in sustainability efforts
- Reduce dependence on carbon offsets
For CSC to:

Task a subcommittee to further develop and implement our recommendations
CARBON POLICY

Campus-wide Education

Targeted Education

Pricing Carbon

Building Improvement
CARBON POLICY

Campus-wide Education

Targeted Education

Pricing Carbon

Building Improvement

Building broad support from end users
CARBON POLICY

- Campus-wide Education: Building broad support from end users
- Targeted Education: Educating decision-makers
- Pricing Carbon
- Building Improvement
CARBON POLICY

- **Campus-wide Education**: Building broad support from end users
- **Targeted Education**: Educating decision-makers
- **Pricing Carbon**: Making cost of carbon visible to decision-makers
- **Building Improvement**
CARBON POLICY

Campus-wide Education: Building broad support from end users
Targeted Education: Educating decision-makers
Pricing Carbon: Making cost of carbon visible to decision-makers
Building Improvement: Providing resources to create change
Campus-wide Education

Student Engagement

- Create webpage dedicated to Duke’s energy systems and decision-making process
- Educate students about Duke’s energy system and create channel for feedback

Implementer: Sustainable Duke
Campus-wide Education

Student Engagement

- Create webpage dedicated to Duke’s energy systems and decision-making process
- Educate students about Duke’s energy system and create channel for feedback

Staff Engagement

- Expand staff educational programs to incorporate carbon reduction policies and Duke’s current energy efficient projects

Implementer: Sustainable Duke
Targeted Education

- Create and distribute Departmental Energy Reports
- Publicize departmental energy consumption leaderboard
- Create Energy Efficiency Retrofit Guidebook

Implementers: Campus Sustainability Committee, Sustainable Duke, Facilities & Management
Departmental Energy Reports

DUKE ENERGY REPORT

**Puqua School of Business**

**March 2016**

**Here's how you compare to neighbors**

<table>
<thead>
<tr>
<th>Energy Efficient Neighbor</th>
<th>Puqua School of Business</th>
<th>Average Neighbor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>6.1</td>
<td>6.0</td>
</tr>
</tbody>
</table>

You used 3.6% less energy than your efficient neighbors.

**Snapshot of your usage over time**

- Your total energy use increased 5.7% from last year to this year.

**Spot on the leaderboard**

<table>
<thead>
<tr>
<th>Ranking (Total 5)</th>
<th>Building</th>
<th>Energy Consumption (per GSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Puqua School of Business</td>
<td>6.0</td>
</tr>
<tr>
<td>2</td>
<td>School of Law</td>
<td>6.1</td>
</tr>
<tr>
<td>3</td>
<td>Divinity School</td>
<td>6.2</td>
</tr>
<tr>
<td>4</td>
<td>Sanford School of Public Policy</td>
<td>9.4</td>
</tr>
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For more information about your energy bill, complete our leaderboard and energy efficiency tips. Visit: [www.energytips.com](http://www.energytips.com)

DUKE ENERGY REPORT

**Nicholas School of the Environment**

**March 2016**

**Here's how you compare to neighbors**

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<th>Energy Efficient Neighbor</th>
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<th>Average Neighbor</th>
</tr>
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<tr>
<td>5.0</td>
<td>5.0</td>
<td>7.1</td>
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</table>

You used 158.3% more energy than your efficient neighbors.

**Snapshot of your usage over time**

- Your total energy use decreased 6.8% from last year to this year.

**Spot on the leaderboard**

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Targeted Education

- Create and distribute Departmental Energy Reports
- Publicize departmental energy consumption leaderboard
- Create Energy Efficiency Retrofit Guidebook

Implementers: Sustainable Duke, Facilities & Management
Pricing Carbon

- Utilize **shadow pricing** in financial models for new constructions
  - NOT an actual fee
  - Price based on cost of offsets, not social cost of carbon
  - Reduces cost in the long-run

- Implement **carbon charge** across departments
  - Charge proportional to energy consumption
  - Add budget line item as placeholder
  - Charge based on cost of offsets, not social cost of carbon

**Implementers:** Campus Sustainability Committee, Facilities & Management, Financial Services
Shadow Pricing

Cost of building option 1

Cost of building option 2
Pricing Carbon

- Utilize shadow pricing in financial models for new constructions
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- Implement carbon charge across departments
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  - Charge based on cost of offsets
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Implementers: Campus Sustainability Committee, Facilities & Management, Financial Services
Building Improvement

- **Increase funding** for energy-efficient projects
  - Increase allocation from Provost, OR
  - Establish revolving fund

- **Support implementation** of Sustainable Building Guideline
  - 30% improvement over baseline energy use
  - Current maximum has been 28%
  - Opportunity during revision of Sustainable Building Guideline

**Implementers:** Campus Sustainability Committee, Facilities & Management, Provost’s Office, EVP Office
To Recap:

- Carbon neutrality by 2024, mainly achieved via purchasing offsets
- Our recommendations help reduce dependence on offsets and establish Duke as a carbon policy leader
- They require institutional change and high-level political support

**Request:** tasking of subcommittee to further develop and implement these recommendations
Questions?
CARBON POLICY

- Campus-wide Education: Building broad support from end users
- Targeted Education: Educating decision-makers
- Pricing Carbon: Making cost of carbon visible to decision-makers
- Infrastructural Improvement: Providing resources to create change