Boston University Sustainability

Large Scale Renewable Energy Program & BU Climate Action Plan

NACUBO Annual Meeting July 13 – 17, 2020
#1 Prepare BU for Climate Change

#2 Net Zero Direct Emissions by 2040

#3 Act on Indirect Emissions

#4 Climate Change Education & Research

#5 Integrate the CAP with BU Strategic Plan
Implementing the Climate Action Plan

- Efficiency: 31%
- BU Wind: 53%
- Geothermal: 8%
- EV Transition: 3%

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Renewable Energy Project Criteria

- **Match 100% of University’s Electricity Demand** — 205,000 MWh annually
- **Impact, New Build (Additionality)** — Generate new renewable energy that would not otherwise have been generated
- **GHG Reduction (CO₂e lb/MWh)** - Strong correlation between high grid carbon intensity at time of renewable energy production
- **Project Economics (strong NPV/MWh)** - Financial strength based on risk-adjusted, projected cash flows, and impact on BU financial position and credit rating. The driver in a Contract for Differences is the margin modeled between the PPA price and the grid price/MWh. Favorable project economics are a prerequisite
- **Green-e Certified RECs** - Project-based Green-e Certified RECs are necessary to validate the claims for the emissions reductions
- **Education & Research Opportunities** — Benefit student education and faculty research
- **Project Developer Financial Strength** - Long-term owner/operators have resources, experience, & financial strength to manage relationship over term
- **Environmental & Health Co-benefits** - Favor projects with lower construction and operational environmental and health impacts
- **Integration with BU on-site procurement** - Integrate PPA purchases and sales into BU’s energy purchasing through hedges or other mechanisms
How

Buy **205,000 MWh** of wind energy through a PPA (Power Purchase Agreement) for 15 years.
BU will buy 48.6 MW of wind generation capacity annually.
Power Purchase Agreement

- **PPA Price**
- **Market Price**
- **Time: 15 years**

- **Wind Energy (Generation)**
  - ~205,000 MWh/year*

- **Local Energy (Generation)**
  - ~205,000 MWh/year*

- **PPA Buyer**
  - Floating $ Revenue $/MWh

- **PPA Seller**
  - Fixed Payment $/MWh

- **Green-e Renewable Energy Certificates**

- **New England Power Market**

- **SPP Power Market**
  - Floating $ Revenue $/MWh

- **PPA**

- **Boston University**

- **Boston University Sustainability**
Where

South Dakota where BU can have the greatest global impact

A grid reliant on fossil fuels
Marginal emissions best align with wind energy generation

Credit: Dennis Carlberg
Maximizing Global Impact
Why

For maximum **global impact** on greenhouse gas reduction

Goal: Displace the greatest amount of fossil fuel generated CO₂ possible

Reduce BU emissions by 53%

2 – 3 x **greater** impact on emissions than in New England

Toward BU’s goal to be carbon neutral by 2040

Credit: NASA
Q4 2020 when this new project is complete and energized.
Thank you