

## **SECTION 01 13 00 - BROWN NET ZERO PLEDGE**

### **Brown University Pledge to Reduce Campus Greenhouse Gas Emissions to Net-Zero by 2040**

In February 2019, Brown University set an aggressive goal to cut its campus greenhouse gas emissions by 75 percent by 2025, and to achieve net-zero no later than 2040. The steps to achieve this goal are outlined below. Facilities Management is in the process of revising our design standards to reflect this commitment. In the interim, we ask that design teams eliminate fossil fuel burning equipment as feasible in the course of a typical project. We recognize there will be scenarios where, due to power supply or existing budget constraints, replacement-in-kind of existing fossil fuel burning equipment may be necessary to maintain building operations. However, no new fossil fuel burning systems shall be designed or installed and all in-kind replacements will first analyze the cost-benefit of replacing with non-fossil fuel source equipment.

#### Phased Plan

##### **100% Renewable Electricity**

- 2020: Two renewable energy agreements with providers of solar and wind power to offset 100 percent of Brown's on-campus electricity use up to an estimated 95 million kWh (annually). Brown will purchase the renewable electricity as early as 2020, when the related projects are scheduled to come on-line.

##### **Conversion of the Central Heating System to Low Temperature Hot Water Heated By Renewable Electricity**

The Central Heat Plant provides heat to ~100 buildings on campus via high temperature hot water heating loop – Funding Plan Established for the following:

- 2022: The second phase, scheduled for 2022, will convert the central heating plant to post-consumer bio-oil as a primary fuel, with natural gas remaining as a backup. While not a permanent solution, recycled bio-oil, which is derived from waste cooking oil discarded after food preparation, enables a large decrease in emissions in the near term, as steps are taken to prepare for a more permanent fuel solution that relies on renewable electricity.
- 2021 to 2038: The project's third phase involves further upgrades to the University's central heating loop and buildings connected to it, enabling lower-temperature water to meet the heating needs of the campus.
- 2038: Conversion of Brown's heating plant to renewable electricity, with bio-oil as a secondary fuel. This will also likely require augmentation of the campus electrical grid prior to 2038.

Off-Loop, ~140 buildings – (20% total scope 1&2 emissions)

- Eliminate fuel burning equipment during replacement or building renovation
- For any buildings which are not a long term asset: Do not retrofit