



## **Report on the NJPIRG 100% Renewable Campaign**

### **Energy Usage at Rutgers**

Since 1995, Rutgers University has utilized a cogeneration plant to produce electricity and heating for the Busch and Livingston campuses. The plant produces roughly 300,000 kWh daily, accounting for about 90% of the energy demands of the two campuses. At 75% efficiency, the plant exceeds the normal efficiency of typical power plants, which is about 35% efficiency. The energy plant has reduced CO<sub>2</sub> emissions by 70,000 tons and saved \$27,587,668. For some of the other buildings, Rutgers University utilizes geothermal energy for heating and cooling of the new Rutgers School of Business-New Brunswick building on the Livingston Campus. The geothermal energy project that was successfully completed in 2013 uses the Earth's core to extract energy to offset energy costs. The project consists of 321 wells at a depth of 500 feet to provide 700 tons of cooling annually. In 2013, Rutgers University added additional solar panels on Livingston Campus that add about<sup>1</sup> 8 megawatts of solar power by way of solar canopies over 28 acres of parking to the existing 1.4 megawatt solar farm built in 2009. The combined solar energy capacity can produce 63% of the electrical demand of the campus which then lessens the power used by the cogeneration plant.<sup>2</sup>

With the help of New Jersey's Clean Energy Rebate Program, Rutgers University replaced existing motors in air handlers, cooling towers, exhaust fans, and circulating pumps with EPA high efficiency motors and installed variable-frequency drives. With these changes, the University has been able to save 2.8 million kWh of electricity. Rutgers has also been able to benefit from PSE&G's Direct Install Program, which replaced old light fixtures with higher efficiency bulbs and motion sensors. The estimated energy savings for the first phase are 7 million kWh per year, but those numbers could rise as high as 42 million kWh of electricity per year. All new buildings and major renovations at Rutgers University are required to be built to LEED Silver Standards.

---

<sup>1</sup> <http://climatechange.rutgers.edu/rutgers-climate-stewardship#energy-use-and-generation> (cogeneration)

<sup>2</sup> <http://climatechange.rutgers.edu/rutgers-climate-stewardship#energy-use-and-generation> (solar power)

Rutgers University uses over 580,000,000 kWh of electricity per year and uses over 40.5<sup>3</sup> million therms of natural gas per year as an energy source to heat buildings and to generate electricity at two cogeneration plants. Between 2013 and 2014, Rutgers University used 546,703,576 kWh, with only 10,990,726 kWh from the Livingston solar canopy; and,<sup>4</sup> Heating oil is used in buildings where natural gas is unavailable. Additionally, the EPA reported that from 2009-2014, University Facilities and Capital Planning at Rutgers reduced their operating costs by \$41 million and prevented 261,080 metric tons of CO<sub>2</sub> emissions through environmental initiatives.<sup>5</sup>

## **Greenhouse Gas Emissions and Carbon Footprint**

In 2012, Rutgers University updated a report on New Jersey's total estimated greenhouse gas emissions that were reported in New Jersey's Statewide Greenhouse Gas Emissions Inventory. The inventory was based on fuel use data received from the Energy Information Administration. In 2012, the total estimated greenhouse gas emissions for New Jersey was 111.7 million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>e). Forty-six and three tenths percent of that number is derived from transportation, 20.9% electricity generation, 12.1% residential, 10.3% industrial, 10.1% commercial, 7.2% highly warming gases, 4.7% waste management, and 0.8% land clearing.<sup>6</sup> The University has not continued its research since the last report.

A Memorandum of Understanding was signed by Rutgers University on November 3, 2009 with the United States Environmental Protection Agency pledging to reduce the university's carbon footprint and improve the environment. Between November 2009 and June 20, 2016 Rutgers-New Brunswick/Piscataway has managed to reduce its carbon footprint by an estimated 444,509 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) and save an estimated \$69,571,964 in operating expenses. Rutgers University is currently a member of the United States Green Building Council, the Association for the Advancement of Sustainability in Higher Education, the New Jersey Higher Education Partnership for Sustainability, as well as an Energy Star and Combined Heat and Power Partner with the EPA. Rutgers University has made the following reductions since November 2009 (metric tons).<sup>7</sup>

---

<sup>3</sup> <http://facilities.rutgers.edu/facilities-units/utilities-operations/electric>

<sup>4</sup> [http://facilities.rutgers.edu/content/media-files/Purchased\\_Uilities\\_for\\_2013-2014rev1A.pdf](http://facilities.rutgers.edu/content/media-files/Purchased_Uilities_for_2013-2014rev1A.pdf)

<sup>5</sup> [http://masterplan.rutgers.edu/sites/masterplan/files/Rutgers%202030%20-%20Volume%201%20-%20Rutgers%20University%20-%20New%20Brunswick\\_r3.pdf](http://masterplan.rutgers.edu/sites/masterplan/files/Rutgers%202030%20-%20Volume%201%20-%20Rutgers%20University%20-%20New%20Brunswick_r3.pdf) (111)

<sup>6</sup> [http://climatechange.rutgers.edu/docman-list/special-reports/354-2012-update-to-new-jersey-s-statewide-greenhouse-gas-emission-inventory/file\\_11](http://climatechange.rutgers.edu/docman-list/special-reports/354-2012-update-to-new-jersey-s-statewide-greenhouse-gas-emission-inventory/file_11)

<sup>7</sup> <http://climatechange.rutgers.edu/rutgers-climate-stewardship#energy-use-and-generation>

- Energy Conservation: 149,141 metric tons
- Alternative Energy: 242,547 metric tons
- Water Conservation: 3,900 metric tons
- Solid Waste: 46,388 metric tons
- Green Landscaping: 380 metric tons
- Transportation: 2,153 metric tons
- Total: 444,509 metric tons

### **The President's Climate Leadership Commitment**

The President's Climate Leadership Commitment (previously the American College & University President's Climate Commitment) is a climate commitment signed by numerous presidents and chancellors of colleges and universities who all believe in higher education's key role in shaping a sustainable society. The President's Climate Leadership Commitment prioritizes carbon commitment, resilience commitment, and the climate commitment. The carbon commitment ensures that the colleges and universities who signed the agreement work to reduce their greenhouse gas emissions and achieve carbon neutrality as soon as possible. The resilience commitment ensures that the colleges and universities who signed the agreement focus in on climate adaptation and community capacity-building to deal with a changing climate and resulting extremes. The climate commitment lays out methods for the colleges and universities who signed it to incorporate carbon neutrality and resilience in institutional planning and puts an emphasis on sustainability on all the colleges and universities plans such as campus master plans, development goals, utility master plans, transportation master plans, and more. The RUSA Sustainability Report published by the RUSA Sustainability Task Force in April 2017 recommended that Rutgers University become a signatory institution in the President's' Climate Leadership Commitments (previously the American College & University Presidents' Climate Commitment). Currently Rutgers University has not become a signatory on the President's Climate agreement while other big ten schools such as The University of Illinois, The University of Maryland, The University of Minnesota, and The Ohio State University have signed this agreement.<sup>8</sup>

---

<sup>8</sup> <http://secondnature.org/climate-guidance/the-commitments/>

## Paris Climate Accords

The United States has indicated an intention to withdraw from the Paris Climate Accords, which called to strengthen the global response to the threat of climate change by keeping a global temperature rise this century below two degrees Celsius and to pursue efforts to limit the temperature increase even further to one-and-a-half degrees Celsius. In response, the “We are still in” campaign formed as a coalition of governors, mayors, corporate leaders and university presidents to “demonstrate America’s enduring commitment to delivering on the promise of the Paris Agreement and America’s contribution to it.” Rutgers has already signed onto the “stay in” campaign alongside schools in the Big Ten conference, schools in New Jersey, and many other prominent universities throughout the country.<sup>9</sup>

“Stay In” signatory schools

- Big Ten Universities
  - University of Michigan
  - Northwestern University
  - Penn State University
  - Michigan State University
  - University of Iowa
- New Jersey Schools
  - New Jersey City University
  - Ramapo College of New Jersey
  - Rider University

## NJPIRG 100% Renewable Energy Campaign

NJPIRG students began the 100% Renewable Energy campaign in the Spring of 2017, aiming to have Rutgers University commit to transitioning to 100% renewable energy by 2050 and 100% renewable electricity by 2030. Since the start of the campaign last semester, the 100% Renewable Energy campaign has gathered over 4,000 student petitions and over 100 faculty endorsements of this goal, in addition to speaking regularly with administrators and campus student leaders. As part of this campaign, NJPIRG has partnered with the Frontier Group research center and Environment New Jersey to launch a 10-part series of reports with case studies on how universities can move towards 100% renewable energy.

---

<sup>9</sup> <https://www.wearestillin.com/we-are-still-declaration>

As the undergraduate student government of Rutgers University - New Brunswick, the Rutgers University Student Assembly (RUSA) has been actively working to reduce the negative impact that the university has on its environment and to achieve substantial cost savings through various sustainability initiatives. Through our research, we have found that numerous schools with similar size and stature to that of Rutgers University have already worked towards achieving 100% renewable energy by 2050. We believe that in order for Rutgers University to solidify its role as a leader in sustainability and environmental advocacy, university leadership must commit to reducing and eventually eliminating the use of non-renewable energy sources.