

Duke Carbon Offsets Initiative 2017 Annual Report



Background

History

In 2007, Duke University set a target of achieving climate neutrality by 2024. Even after being aggressive with reducing emissions on campus, Duke is expected to have to offset an estimated 185,000 metric tons per year of carbon dioxide in 2024. The Duke Carbon Offsets Initiative (DCOI) was created to help Duke University reach its climate neutrality goal. Since its beginning in 2009, it has developed a variety of innovative carbon offset programs in swine waste-to-energy, energy efficiency, solar, and urban forestry.

Mission

- To develop and implement the University's strategy for identifying, creating, and purchasing carbon offsets.
- To implement the strategy in a way that provides educational opportunities for students and faculty.
- To prioritize local and regional offsets that provide significant environmental, economic, and societal benefits beyond the benefits of greenhouse gas reduction.
- To facilitate and catalyze high-integrity, unique offset projects by serving as a resource for other institutions.

Offset Projects

Urban Forestry

The DCOI continued its work developing the market for urban forestry offset projects. By engaging in 9 more urban forestry projects in 2017, the DCOI and its partners enabled 2,170 trees to be planted. The DCOI partnered with Delta Air Lines to sponsor the planting of 1,000 trees in the City of Durham alone. This partnership will result in all of Duke's flights on Delta Air



Trees to be planted in Durham alone in the 2017/18 planting season.



Lines being carbon neutral. The DCOI is continuing to spread the co-benefits associated with urban trees and establishing the market for urban forestry carbon offsets as a scalable option for universities to utilize towards carbon neutrality commitments.

Project with Delta Air Lines makes all 2017 Duke travel on Delta flights carbon neutral.

Energy Efficiency

In 2017, the DCOI continued its efforts to provide the Duke community with home energy efficiency education by hosting home energy efficiency workshops.

The professionals at Home Energy NC presented the DCOI developed training, leading hands-on demonstrations and developing action plans for each attendee.



3 Home Energy Efficiency Workshops hosted 60 attendees educated through workshops.



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4,000

**Carbon offsets
verified in 2017.**

Loyd Ray Farms

The DCOI developed best practice guidance for swine farmers from six years of experience managing and conducting research at the swine-waste-to-energy system at Loyd Ray Farms in Yadkinville, NC. This system generates carbon offsets and Renewable Energy Certificates (RECs) by capturing the biogas that results from the decomposition of hog waste and using it to generate electricity on-site.

#BleedBlueEatGreen

This pilot project is launching in the spring semester and will incentivize first-year undergraduates to eat non-meat protein options in cooperation with Nutrition Services guidelines for healthy diets. The production of meat is far more carbon-intensive than other sources of protein, so #BleedBlueEatGreen rewards students with various prizes after they've eaten a certain number of meatless meals.

#BleedBlueEatGreen

Flex your diet. Be a
Flexitarian

Eat your way to a greener campus and
a sustainable world.

Academic Engagement Innovative and Peer Reviewed Offsets

The DCOI staff has coordinated a 15+ member committee of academic peers and offset professionals to eliminate barriers preventing many schools from developing medium to small-scale projects.

- **Offsetnetwork.org** was created as a resource sharing platform for the academic community to publicize university-catalyzed offset projects, collaborate towards useful guidance materials for project implementation, and structure a feedback mechanism for innovative climate solutions
- The DCOI is developing a peer verification program for offset credit generation through peer institutional review to provide interesting projects for student researchers and reduce project cost

Student Projects

The DCOI staff served as team members of two Bass Connections projects that concluded in 2017:

- "Developing Departmental Energy Reports and a Carbon Pricing Program for Duke University" resulted in policy proposals for the university on the road to carbon neutrality in 2024.
- "Animal Waste Management and Global Health" created a website (www.solveanimalwaste.com) and comprehensive research paper on the policies that can either promote or hinder novel waste-management technologies.

Conferences, Presentations & Webinars

DCOI Research Camp - Suzhou Gaoxin District, China

- Led sessions for Chinese high school students covering energy, carbon, and emissions commitments, as well as providing cultural guidance for students considering study in the U.S.

Appalachian State University Offset Workshop - Boone, NC

- Presented on Duke's innovative approach to urban forestry and pioneering work to allow students to engage in the carbon offset credit generation process.

2017 Association for the Advancement of Sustainability in Higher Education - San Antonio, TX

- Sponsored the conference by making it entirely carbon neutral through the retirement of carbon offsets
- Led three workshops relating to urban forestry carbon offset projects, and led one discussion session about general carbon offset project development.

Arizona State University Training - Tempe, AZ

- Led a carbon offset verification and validation training on the campus of Arizona State University.

Strategies for Reducing Environmental Impact of University Campuses webinar with BuildPulse and MyGreenLab

- Presented Duke's innovative approach to carbon offsets in addressing difficult to reduce emission sources like transportation and heating.



**Duke Carbon
Offsets Initiative**
DUKE UNIVERSITY

For more information, visit
sustainability.duke.edu/carbon_offsets