

*SD 18*

# *GREATER LAFAYETTE CLIM*

FOR DISCUSSION 2/20/23

University Policy Resources Committee and Faculty Sustainability  
Committee

Amanda Darbyshire, [adarbysh@purdue.edu](mailto:adarbysh@purdue.edu)

# *Faculty Sustainability Committee*

- Begun in 2012 through SD 115, reports to URPC
- Includes members from PWL (Senate, MAPSAC, CSSAC, PSG, PGSG), and faculty and students from PFW, PNW, IUPUI
- Charge is to set 5-year goals relating to sustainability for the University (West Lafayette)
- Office of Sustainability launched Physical Facilities Sustainability Master Plan in April 2020 - runs FY 2020-2024
- We consider as our current practice:
  - Consult with administration on academic matters relating to campus sustainability
  - Watchdog to keep track and follow-up of administration's commitments on sustainability
  - Bring faculty voice (and pressure) to matters relating to campus sustainability

# Proposal

## For Purdue University to join the Greater Lafayette Climate Action Plan

- Based on Purdue Student Government Senate Resolution 242, “A Resolution for Purdue University to join the Greater Lafayette Climate Action Plan.”
- Created by the city of Lafayette, city of West Lafayette, and Tippecanoe County to address climate change through mitigation and adaptation initiatives
  - Aims: Improved quality of life, new development opportunities, better resource management, ecosystem preservation, economic resilience, and improved health outcomes
- GLCAP collaborators urged Purdue in July 2020 to join the climate action planning process as Purdue is considered a significant source of greenhouse gas emissions in West Lafayette.
- Involvement includes:
  - Sharing relevant data
  - Commit a senior administrator to serving on the leadership team, and a staff member to serving on the implementation team
  - Communication with other GLCAP representatives and cooperation with implementing initiatives and policies on campus

# *Climate Change Predictions*

- 10 degree increase in highest and lowest temperatures of the year by 2050
  - Compared to averages from 1970-2000s
- 16% increase in spring rainfall
- Increase in severe weather events
- Increased food prices
- Drought and floods
- Air pollution
- Health-related complications of asthma, allergies, heat stroke, pestborne disease, drowning, and malnutrition
- Vulnerable populations at highest risk

# *GLCAP Goals*

## **Reduce carbon emissions by 58% by 2030, 80% by 2050**

- Energy use
  - Increase energy efficiency of buildings and infrastructure
  - Transition from fossil fuels to renewable sources
- Transportation
  - Reduce vehicle miles travelled
  - Incentivize zero and low carbon emission vehicles
  - Reduce storm-water run-off and heat-island impacts associated with transportation infrastructure
- Agriculture and Forestry
  - Support a climate friendly farming community
  - Enhance, protect, and improve access to natural resources
- Water
  - Enhance Recycling, Waste Reduction, and Composting
  - Harvest Wastewater Energy and Byproducts and protect Water Quality

# *In the News...*

## WBAA

- Council President Peter Bunder noted that the plan had buyin from the city of Lafayette, West Lafayette, and Tippecanoe County but wasn't endorsed by Purdue University.
- “We need Purdue’s cooperation,” he said. “It is good that members of the Purdue community are listed in there as contributing their expertise to this plan, but it would be nice to know the university shares the community’s interest in climate change.”
- Bunder specifically pointed to the Wade Power Plant at Purdue University as a significant source of emissions within the city.
- Purdue University did not immediately respond to a request for comment.

# *Presidents' Responses when asked about joining G*

- September 2022 President Daniels
- “Purdue University has been making great strides in our sustainability and climate efforts, and we appreciate the continued opportunities to engage in dialogues on these topics. Through initiatives like our 2020 Physical Facilities Sustainability Master Plan, our staff are actively working to curb energy consumption and reduce our campus carbon emissions.
- This spring we announced a partnership with Duke Energy that could make a drastic difference to carbon emissions. Through this partnership, we are exploring the feasibility of using small modular nuclear reactors to meet the West Lafayette campus’ long term energy needs. Nuclear energy has the potential to provide reliable electrical power with zero carbon emission. “
- Jan 2023 President Chiang
- “The university is always open to new conversations and ideas around climate initiatives and, as announced, has partnered with Duke Energy to jointly explore the feasibility of using advanced nuclear energy to meet our longterm energy need.”

# *Discussion*



# *SD 22*

# *CARBON NEUTRALITY*

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Amanda Darbyshire, [adarbysh@purdue.edu](mailto:adarbysh@purdue.edu)

# *Proposal*

## For Purdue to become carbon neutral by FY2030

- Includes Scopes 1 and 2 carbon neutrality
  - Scope 1: Direct greenhouse gases produced from the institution
  - Scope 2: Indirect greenhouse gases associated with the purchase of electricity, steam, heat, or cooling
- Based on Purdue Student Senate Resolution 202 “Resolution in Support of Creating a Carbon Neutral Purdue by 2030

# *Asks of Proposal:*

- BOT increase financial commitments
- Office of Physical Facilities to change its sustainability plan from a 50% reduction from FY11 to FY25 to a 100% reduction from FY23 to FY30
- Purdue exhibit transparency in reporting existing collected emissions data publicly
- The Office of the Provost and Office of Physical Facilities, in partnership with the University Senate, form a climate action committee
  - Faculty, students, and staff
  - Develop comprehensive recommendations for short and long-term opportunities to reduce greenhouse gas emissions
- For President Chiang to sign an MOU to have Purdue join GLCAP

# *Carbon Neutrality*

- “Neutrality” refers to net-zero carbon emissions
  - Fully renewable energy usage not required, but decreasing fossil fuel dependency produces a valuable return on investment and greatly assists the netzero emissions ratio
  - Also involves optimizing energy efficiency, planting carbon sequesters, purchasing offsets if needed, and other methods
- The majority of Big Ten schools are committed to carbon neutrality through comprehensive climate action plans.
  - Range from 100% neutrality between 2025 and 2050
  - IU on track to be carbon neutral by 2030

# *Current Initiatives Towards Neutrality*

- Small Nuclear Reactor to provide a carbon neutral energy source for the University in conjunction with Duke Energy
  - President Daniels reported “No other option holds as much potential to provide reliable, adequate electric power with zero carbon emissions,” “Innovation and new ideas are at the core of what we do at Purdue, and that includes searching for ways to minimize the use of fossil fuels while still providing carbon-free, reliable, and affordable energy. We see enough promise in these new technologies to undertake an exploration of their practicality, and few places are better positioned to do it.”
- 2020 Physical Facilities Sustainability Master Plan ensures that the University is working to curb energy consumption and reduce campus carbon emissions.
  - Current plan ends in 2024
  - 50% reduction by 2025
  - Cap total energy consumption at FY11 levels in order to show no net gain in total energy consumption despite an increase in total campus gross square feet.

# On Track to Reduce Carbon Emissions by 50%

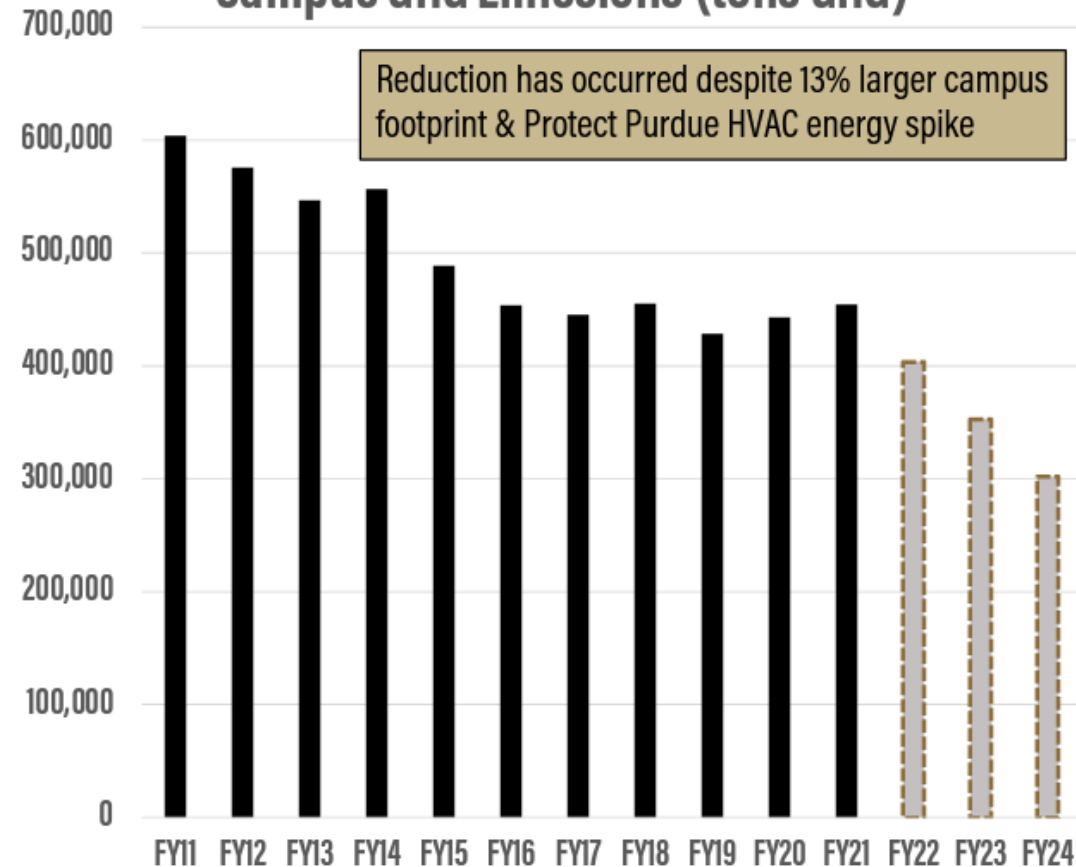
## Reducing Demand for Carbon:

- “Renovate First” policy limits new construction and improves HVAC efficiency
- Future of Work initiative leading to more efficient building utilization
- LED light investments
- Updated lab controls that guide equipment on/off times
- Improved insulation on steam pipes

## Supplying Cleaner Energy

- Switch to natural gas from coal

## Campus GHG Emissions (tons GHG)



# *Next steps and Discussion*

- Please send comments, questions, suggestions to Amanda Darbyshire at [adarbysh@purdue.edu](mailto:adarbysh@purdue.edu)
- Continued diligence to ensure these documents are pushed forward if passed