

To: The University Senate

From: University Resources Policy Committee
Sustainability Committee

Subject: Calling for Purdue to Commit to Carbon Neutrality by 2030

Reference: Purdue Student Government Resolution 21-92

Disposition: For Discussion and Adoption

Rationale: This legislation is based on Purdue Student Senate Resolution 21-92 “Resolution in Support of Creating a Carbon Neutral Purdue by 2030” [1].

According to the Intergovernmental Panel on Climate Change, reaching and sustaining net zero global CO₂ emissions produced by human activities would halt global warming on an immense scale [2].

In 2020, Purdue University Physical Facilities adopted a sustainability plan to reduce Scope 1 (direct emissions) and Scope 2 (indirect admissions) by the fiscal year 2025, with a baseline of fiscal year 2011 [3]. To achieve these goals by 2025, Purdue must reduce energy use, improve building efficiency, and lower gas emissions and waste production on campus [4].

“Neutrality” refers to net-zero carbon emissions; fully renewable energy usage is not required, but decreasing fossil fuel dependency produces a valuable return on investment and greatly assists the net-zero emissions ratio alongside other methods like optimizing energy efficiency, planting carbon sequesters, purchasing offsets if needed, and others.

As an increasing number of countries target net-zero emissions [5], the majority of Big Ten schools are committed to, and making significant progress towards, more ambitious & innovative carbon neutrality goals than Purdue University through comprehensive climate action plans. For example, the University of Michigan [6] is on track to reducing greenhouse gas emissions (Scope 1 and 2) by 50% by 2025, moving toward a goal of 100% elimination by 2040. Similarly, the Ohio State University [7] and Rutgers University [8] also plan for 100% elimination by 2040, while the University of Wisconsin, [9] University of Illinois [10], University of Nebraska [11],

and Michigan State University [12] plan to be carbon neutral by 2050, which aligns with the UN Intergovernmental Panel on Climate Change [13] global net-zero target. Our in-state peer, Indiana University [14], is on track to become carbon neutral by 2030 (if not sooner), with intentions to become carbon negative shortly after, and the University of Maryland [15] is committed to being neutral by 2025, which is Purdue University's target date to reduce our carbon footprint by 50%. Now is the time for Purdue University to make significant changes and impactful goals to join Indiana University and the University of Maryland in being a leading institution in the Big Ten for carbon neutrality.

In September 2022, the Administration addressed questions the Senate had asked about sustainability. Stated in these responses was that, "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." This shows that the University is open to improving sustainability endeavors on campus. Purdue is already moving towards a more sustainable energy source by using a Small Nuclear Reactor to provide a carbon neutral energy source for the University. President Mitch Daniels responded, "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" [16]. In addition to this, the 2020 Physical Facilities Sustainability Master Plan ensures that the University is working to curb energy consumption and reduce campus carbon emissions.

So far, over 4,000 tuition-paying Boilermakers, several bipartisan city and state lawmakers [17], and forty-seven Purdue Student Organizations from all spheres of interest, representing thousands of students, have signed onto the request for Purdue to commit to a carbon neutrality goal [18], including the Purdue Student Government passing Resolution 21-92. In conjunction with Purdue students, the Purdue Faculty Sustainability Committee supports a research-intensive, land-grant commitment to carbon reduction.

A proof-of-concept climate action plan designed by undergraduate students [19] targeting carbon neutrality based on input from faculty and staff, estimates where university data is unavailable, and the analysis of costs and emissions of current infrastructure versus

carbon neutrality includes methods for achieving this goal. This proof-of-concept climate action plan describes methods to achieve carbon neutrality, with the result of creating a return on investment and emissions reduction [20].

Proposal: The University Senate amplifies the leadership of Purdue Student Government and Purdue Graduate Student Government and joins with them in calling for a research-intensive commitment to achieving carbon neutrality by the end of 2023, and to achieving complete Scopes 1 and 2 carbon neutrality on its West Lafayette campus by the year 2030, with the consent of the University Senate and the Purdue Board of Trustees.

In addition, the University Senate requests:

1. The Purdue Board of Trustees to increase financial commitments to this ambitious goal.
2. The Office of Physical Facilities to improve its goal towards carbon neutrality by 2030 by changing its sustainability plan from a 50% reduction from FY11 to FY25 to a 100% reduction from FY23 to FY30.
3. Purdue exhibit transparency in reporting existing collected emissions data publicly. The data on carbon emissions is already collected. In line with improving transparency and accountability, it is in the interest of the Purdue and broader Tippecanoe County communities to be informed on the matter of university emissions.
4. The Office of the Provost and Office of Physical Facilities, in partnership with the University Senate, form a climate action committee, which includes faculty, students, and staff. This committee would be charged with developing comprehensive recommendations for short- and long-term opportunities to reduce greenhouse gas emissions on the Purdue campus.
5. For President Chiang to sign an MOU to have Purdue join GLCAP as per Purdue Student Government Resolution 21-42 (Senate Document 22-18) and the proposed legislation for Purdue University to Join the Greater Lafayette Climate Action Plan.

Works Cited:

1. Purdue Student Senate Resolution 21- 92
https://docs.google.com/document/d/1uqMiQG_Js09DYq8mVqAenLeG2njUjFKd/edit
2. IPCC.
<https://www.ipcc.ch/sr15/chapter/spm/>
3. Environmental Protection Agency, “Causes of Climate Change”,
<https://www.epa.gov/climatechange-science/causes-climate-change#>
4. Purdue University Sustainability Master Plan,
<https://www.purdue.edu/physicalfacilities/units/cpas/sustainability/sustainability-master-plan/energy.html>
5. Indiana Climate Change Impacts Report:
<https://docs.lib.purdue.edu/agriculturetr/1/>
6. University of Michigan
<https://planetblue.umich.edu/campus/goals/carbonneutrality/#:~:text=U%2DM%20is%20on%20pace%20to,IPCC's%20global%20net%2Dzero%20target.>
7. The Ohio State University <https://si.osu.edu/campus/carbon-neutrality#:~:text=Achieve%20carbon%20neutrality%20by%202050,than%20the%20original%20goal%20commitment.>
8. Rutgers University <https://www.rutgers.edu/president/our-efforts-address-climate-change#:~:text=Last%20fall%2C%20I%20announced%20the,achieve%20carbon%20neutrality%20by%202040.>
9. University of Wisconsin <https://uwm.edu/news/uwm-rolls-out-new-climate-action-plan-aiming-for-carbon-zero-by-2050/>
10. University of Illinois Urbana-Champaign
<https://fs.illinois.edu/services/sustainability/illinois-climate-action-plan#:~:text=The%20University%20of%20Illinois%20at,be%20carbon%20neutral%20by%202050.>
11. University of Nebraska-Lincoln <https://sustainability.unl.edu/reducing-greenhouse-gas-emissions-unl-facilities#:~:text=Expecting%20that%20goal%20is%20achieved,of%20fossil%20fuels%20for%20heating.>
12. Michigan State University
<https://www.michigan.gov/egle/about/organization/climate-and->

[energy#:~:text=But%2oclimate%2oaction%2oalso%2opresents,to%2ochart%2oMichigan's%2opath%2oforward.](#)

13. IPCC. <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/#:~:text=The%2oglobal%2otemperature%2owill%2ostabilise,is%2oin%2othe%2oearly%202070s>.

14. Indiana University <https://bfc.indiana.edu/policies/statements-resolutions/policy-resolutions/sustainability.html>

15. University of Maryland <https://sustainingprogress.umd.edu/measuring-progress/carbon-neutrality#:~:text=UMD%2ois%2ocommitted%2oto%2oachieving,and%2oCarbon%2oNeutral%2oAir%2oTravel>.

16. Purdue and Duke Energy <https://www.purdue.edu/newsroom/releases/2022/Q2/purdue-and-duke-energy-to-explore-potential-for-clean,-nuclear-power-source-for-campus.html>

17. Net Zero Coalition <https://www.un.org/en/climatechange/net-zero-coalition>

18. Petition: Carbon Neutral Purdue by 2030 <https://www.carbonneutralindiana.org/purdue-university-carbon-neutral-petition>

19. Letter to Mitch Daniels <https://www.carbonneutralindiana.org/blog-final-purdue-university-carbon-neutral-petition>

20. Purdue University PSG 2022 Climate Action Plan https://drive.google.com/file/d/176t1F5e2YVCR7Y6ELq_acfHRX5QDwaeI/view

Committee Votes, URPC:

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Abstained:

N/A

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