TOPICS FOR DISCUSSION
PROCESS

DATA COLLECTION → BASELINE → FORECAST → ANALYZE → PLAN → DRAFT
WHAT WE’VE DISCOVERED
WHAT HAVE WE MISSED?

- **Positive Emissions Change: Growth** - Likely to stay same, small increase potentially.
- **Positive Emissions Change: Building Solar**
- **Positive Emissions Change: Building Performance**
- **Potential Large Emissions Change: Steam Plant Performance**
- **Room for Improvement: Electricity Supply Decarbonization**
EMISSIONS TODAY

GHG EMISSIONS BY SOURCE

- Purchased Electricity - Indirect
- On-Campus Stationary
- Direct Transportation Sources
- Refrigerants & Chemicals
- Fertilizer

GHG EMISSIONS OVER TIME

- Total GHG MTCE
- Fiscal Year

 IU CAP Committee - January 13, 2023
ELECTRICITY TODAY IS A CONSTANT PROBLEM FOR GHG

Greenhouse Gas Emissions Dashboard
INDIANA UNIVERSITY

Click to Filter by Campus

GHG EMISSIONS BY SOURCE

GHG EMISSIONS OVER TIME
ANALYZING 2021 EUI DATA

Campus
- Bloomington
- Indianapolis
- Kokomo
- New Albany
- Northwest
- Richmond
- South Bend

Building Use
- ACADEMIC
- LIBRARY
- UNION
- ATHLETICS
- AUXILIARIES
- HOSPITALS
- RESIDENTIAL PROGRAMS
- SERVICE
- ADMIN SUPPORT

2021 EUI (kbtu/sqft/year)

- Sum of Total Electrical Usage (kWh/yr): 3,460,873
- Sum of Total Nat Gas Usage (kbtu/yr): 62,721,109
- Sum of CO2 (Total): 10,725,154

Year Occupied: 1.88K - 2.02K

Building Name
- Marram Hall NW818
- Dunes Med/Prof Blg NW817
- Moraine Student Center NW824
- Arts & Sciences NW831
- Savannah Center NW822
- Raintree Hall NW825
- Anderson Library Conference Center NW827
- Facilities Building Annex NW830
- Hawthorn Hall NW819
New LEED building certifications show IU’s continued dedication to green construction

By IU Bloomington Today  December 01, 2022

Two building projects on the Indiana University Bloomington campus recently received the globally recognized U.S. Green Building Council’s LEED certification: the Health Sciences Building earned LEED gold, and the renovation of the IU Museum of Archaeology and Anthropology earned it LEED silver.

IU has had a long-term commitment to developing and renovating buildings to LEED standards, with IU’s first LEED certification achieved in 2009 for the IU Research and Teaching Preserve.

The university has a total of 35 certified projects that conserve resources and support public health and the environment across Indiana, spanning from Evansville to South Bend, with additional projects currently undergoing the certification process.

Designing, constructing, and renovating buildings to LEED certification standards reduces greenhouse gas emissions and energy use, conserves water, reduces waste sent to landfills and provides better indoor environmental quality.

IU’s commitment to LEED standards also is an important strategy of the comprehensive work of the IU Climate Action Planning Committee to reduce greenhouse gas emissions in service of our campus and statewide communities.

Learn more about IU’s LEED projects at the Capital Planning and

Credit: Liz Kaye, Indiana University
DRIVERS DEEP-DIVE
THE IPCC INDICATES BOTH POSITIVE AND NEGATIVE SCENARIOS FOR CLIMATE CHANGE MITIGATION

POSITIVE SCENARIO—WARMING IS LIMITED TO A 1.5°C INCREASE

NEGATIVE SCENARIO—WARMING INCREASES UP TO 8.5°C
TEMPERATURE RANGE IS LIKELY TO FALL SOMEWHERE IN BETWEEN AND SO WILL THE RANGE OF IMPACTS
WITH THESE RISES COME ECONOMIC AND ENVIRONMENTAL IMPACT

(b) Observed impacts of climate change on human systems

<table>
<thead>
<tr>
<th>Human systems</th>
<th>Impacts on water scarcity and food production</th>
<th>Impacts on health and wellbeing</th>
<th>Impacts on cities, settlements and infrastructure</th>
<th>Impacts to key economic sectors</th>
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<tbody>
<tr>
<td>Global</td>
<td>Water scarcity</td>
<td>Heat, malnutrition and other</td>
<td>Inland flooding and associated damages</td>
<td>Damages to key economic sectors</td>
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<td>Agriculture/crop production</td>
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<td>Animal and livestock health and productivity</td>
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<td>Damage to infrastructure</td>
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<td>Fisheries yields and aquaculture production</td>
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<td>Damage to key economic sectors</td>
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<td>Arctic</td>
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<td>Cities by the sea</td>
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<td>Mediterranean region</td>
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<td>Mountain regions</td>
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Confidence in attribution to climate change:
- High or very high
- Medium
- Low
- Evidence limited, insufficient
- na Not applicable

Impacts:
- Increasing adverse impacts
- Increasing adverse and positive impacts
POLICY DRIVERS
UNDERSTANDING SCALES OF INFLUENCE

- Physical Buildings, Infrastructure, People
- Campuses + Communities
- IU as an entity + Government & utilities
- IU CAMPUSES
- CITIES/REGIONS THAT CAMPUSES SIT WITHIN
- STATE OF INDIANA
- UNITED STATES (FEDERAL POLICY)
After rejoining the Paris Agreement and restoring U.S. leadership on the world stage, President Biden created the National Climate Task Force. The federal mandate now works to:

- Reducing U.S. greenhouse gas emissions 50-52% below 2005 levels in 2030
- Reaching 100% carbon pollution-free electricity by 2035
- Achieving a net-zero emissions economy by 2050
- Delivering 40% of the benefits from federal investments in climate and clean energy to disadvantaged communities

**Inflation Reduction Act** – EV's, energy saving appliances
**Bipartisan Infrastructure Act** – energy infrastructure, community resilience projects
**Building Performance Standards** – reducing emissions + increasing energy efficiency in the built environment
**Better Climate Challenge** – emissions reductions commitments from institutions

**IMPACT ON THE STATE OF INDIANA?**
ENGIE (50%) and Axium Infrastructure US (50%) have won a 50-year concession valued at $1.165 billion USD to address The Ohio State University's energy sustainability goals for its 485-building campus in Columbus, Ohio, one of the largest university campuses in the United States.

- Smart meters
- Indoor lighting
- Outdoor lighting
- Steam upgrade, domestic hot water, and utility tunnels
- Extends life of the utility plant by 50 years
- $150 million in partnership on energy research
- Smart Campus Challenge- student pitch, sustainability project that sells innovative ideas to CEO’s, OSU alumni, and other civic leaders
• Installing geothermal heating and cooling systems as a first step in a phased transition of heating and cooling systems.

• Electrifying the Ann Arbor and Dearborn campus buses as a first step toward decarbonizing U-M's entire vehicle fleet.

• Initiating a campus master planning process that includes carbon neutrality at its center, in collaboration with faculty experts.

• Making all building projects (renovation, additions, construction) compatible with renewable-energy-driven heating and cooling systems and developing overall standards for renovation and construction that address increased energy efficiency and lower carbon emissions.

• Launching a revolving fund for energy efficiency projects, beginning with $25 million over five years. Energy savings will be reinvested into the fund, which will accelerate energy conservation projects on all three campuses and Michigan Medicine.

• Submitting a request for proposals to secure all purchased electricity from renewable sources.

• Forming several distinct working groups, consisting of specialists from across the university, to develop roadmaps for implementing a wide range of commission recommendations.
FUTURE MEETINGS WILL DEEP-DIVE INTO EACH OF THESE TOPICS

- Behavioral Change
- Research Programs
- Utility & Facility Planning
- Mobility Shifts
- Program Impact on Emissions
- Space Consolidation
NEXT STEPS

BEHAVIORAL CHANGE

- Space utilization (during and outside of academic year)
- Class scheduling
- Summer and winter programming
- Temperature sets
- Voluntary student activities
- Virtual meetings, learning, and research