



Sustainability: Building on Our Past to Secure Our Future

4.7.2022

Overview

- **Stewardship History in Wisconsin**
- **Impacts**
 - Enrollment
 - Students & Mental Health
 - Student Voices
 - Trends & Spend
- **Energy & Mitigation**
 - Yesterday
 - Today
 - Tomorrow
- **Goals & Next Steps**



On the Shoulders of Giants



Gaylord Nelson, Father of Earth Day



Aldo Leopold, UW Professor best known for his work in environmental ethics



Walter Bresette, Ojibwe Environmental Advocate & all Native Nations that have been stewards of Wisconsin lands



For Our Future

- For our... current 165,000 students' future
- For our...37,000 annual graduates starting businesses, leading communities, and engaging in the future of our state
- For UW's...65 million sq ft to maintain, heat & cool, and support to withstand future climate impacts
- For the...\$119M spent on utilities with ever increasing costs
- For the...health & wellbeing of our communities

Impacts on Our Students

Enrollment

In 2021, **78%** of students say that environmental commitment contributes somewhat, very much, or strongly to their **school choice**

- **Up from 63% in 2018**



Impacts on Reputation

Peers and Neighbors are Leaving Us Behind

U of Minnesota System- Hires System Chief Sustainability Officer

Iowa- Leading in Renewable Energy

Illinois Green Economy Network- 48 Community Colleges

U of Illinois System- Sustainable Investing



University of Michigan- Commits to climate neutrality

Ohio State- Sustainability Institute

Ball State- Largest geothermal in the nation



Impacts on Our Students and Communities

Climate Anxiety- “The chronic fear of environmental cataclysm that comes from observing the seemingly irrevocable impact of climate change and the associated concern for one's future and that of next generations”-
American Psychology Association

- **Mental Health-** 45 percent of teens and young adults say climate anxiety is affecting their daily lives and ability to function
- **Future Choices-** Doubts about the future affecting choice to go to college, have a family, buy a home, etc.



Student Perspective



Justice Peche- UW-Green Bay
Maddie Loeffler- UW-Eau Claire
Allyn Lottouzee- UW-Milwaukee
Abrina Leonhard- UW-Stout
Eliza Lindley- UW-Madison
Molly McGuire- UW-Stevens Point



Impacts on Trends and Spend

- **Infrastructure**

- \$1.8M in flood damage claims at UW-Milwaukee, FY10-FY20
- \$18.6M in tornado damage at UW-Platteville in 2014
- 25% expected increase in intense storm frequency
- More frequent and intense precipitation, higher annual precipitation, earlier thawing in the spring and more freeze/thaw cycles, higher water table elevations, extreme variation in lake levels, and more humid heat waves

- **Health**

- Heat-related deaths have the highest mortality rate of all weather-related deaths
- Water-borne disease increase

- **Further stress on agriculture, forestry, tourism, fisheries, and wildlife**

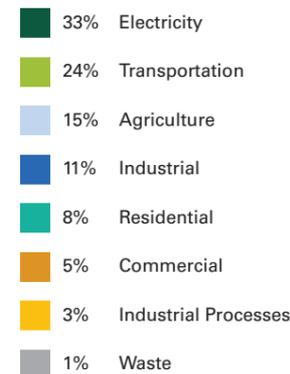
Charting a Course: State of Wisconsin and UW System



State of Wisconsin

- **Executive Order #38:** Clean Energy in Wisconsin
- **Office of Sustainability and Clean Energy** created in 2020
 - Governor's Task Force on Climate Change Report
 - State "Lead by Example:"
 - Clean Energy Report 2022

2017 WISCONSIN EMISSIONS
BY SECTOR



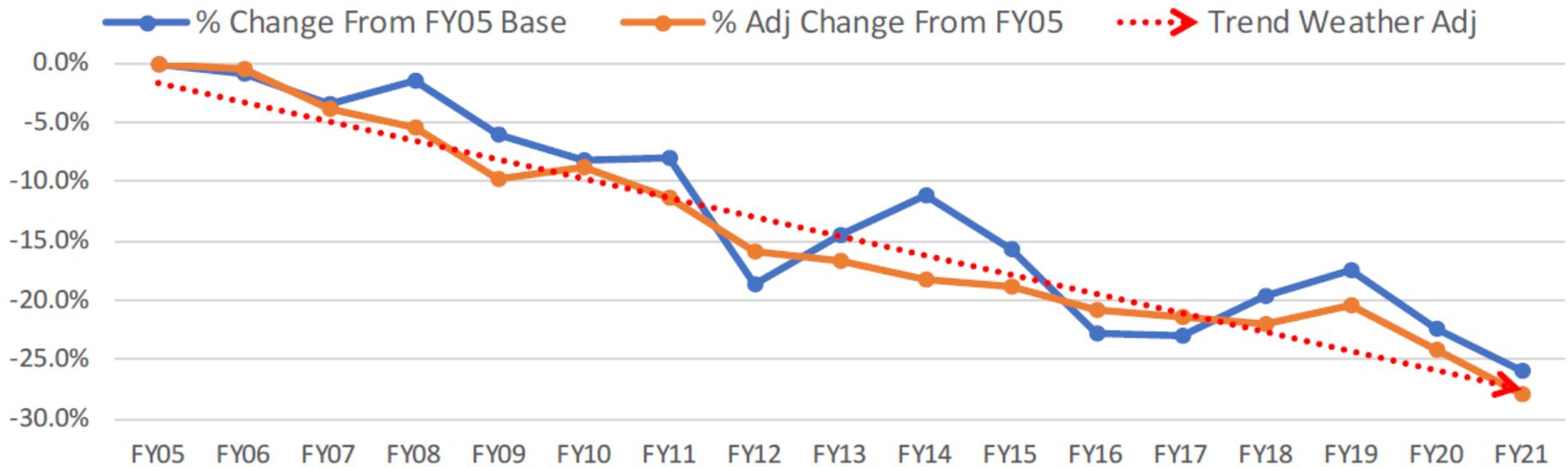
UW System Energy Usage

- **Energy use down 28% per gross sq foot**
 - 20% increase in gsf
 - Gov. Doyle's Executive Order #132 & #145 Goals (Met)
- **Overall Energy Consumption down 11%**
- **Renewable Energy**
 - Contracts Less than 8% (2 of 4 remain, expiring in 2023 and 2028)
 - On-site Less than 1% overall



UW System Energy Usage Yesterday, Today, and Tomorrow

- **Efficiency-** 10+ years of conservation work through the Energy Services Contracts
 - \$171M in spend, \$16M/year in savings to date



UW System Energy Usage Yesterday, Today, and Tomorrow

- **On-Site Renewable Energy (examples)**



UW-Platteville (17% of electric load)



UW-Stevens Point

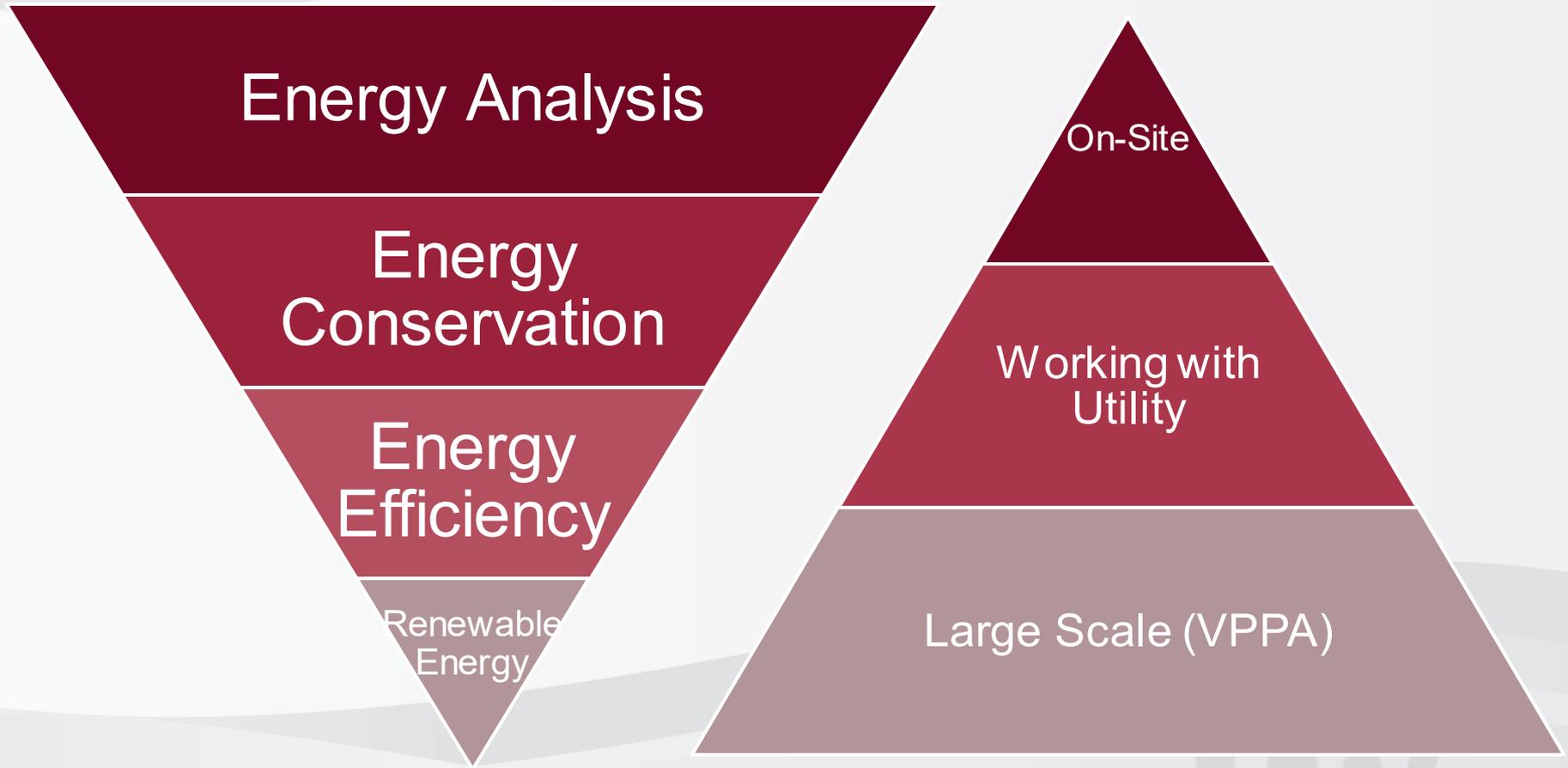


UW-Oshkosh, Biogas



UW-Milwaukee, 15kW

Strategy



UW System Energy Usage

Energy Efficiency Challenges

- **All the quick/easy efficiency efforts are done**
- **Continuous Retro Commissioning:** Neither maintenance nor capital, so tends to be unfunded
- **Accountability and Robustness of “Sustainability Guidelines” (DFD)**
- **Financial Risk**
 - Natural gas prices expected to rise 28% by 2030
 - Electric rates escalating beyond 2% annual average

UW System Energy

Renewable Energy Pursuit Challenges

- **On-Site**
 - **Pace**- Less than 1% coverage after the last 10+ years of installations
 - **Rooftop and Land Availability** (Eg.- If UWM covered all its rooftops, it would only account for 5% of its required electricity)
 - **Maintenance**
- **Off-Site**
 - **Utility Agreements and Tariffs**
 - Limited, variable, and high risk
 - **Virtual Power Purchase Agreement**
 - Aggregation and Support



UW System Energy

Renewable Energy Pursuit Challenges- Case Study

UWM Electric Consumption (80,000 MWh/yr)

Renewable portion of Utility-delivered energy (6.1%)

Existing on-site renewables (0.2%)

Existing State Agency-purchased Unbundled RECs (7.3%) Sunset in 2023 and 2028

~~Main Campus, Utility Land Lease (0.3-0.4%)~~

Possible UW System Land Renewable Energy Project

In-State or Out-of-State VPPA (Remainder)



% of UWM's electric consumption

UW System Energy Future

- **Efficiency**
 - Squeeze out further efficiency work for savings
 - Fund continuous (RCx) commissioning to fine tune and drive savings
 - Support energy managers at all campuses
 - Lead on sustainability guidelines
- **Renewable Energy**
 - Large Scale Renewable Energy
 - Virtual Power Purchase Agreements (financial tool)
 - Selective utility opportunities
 - Maximize university lands
 - Build in renewable, resilient back-up power on-site

Next Steps

