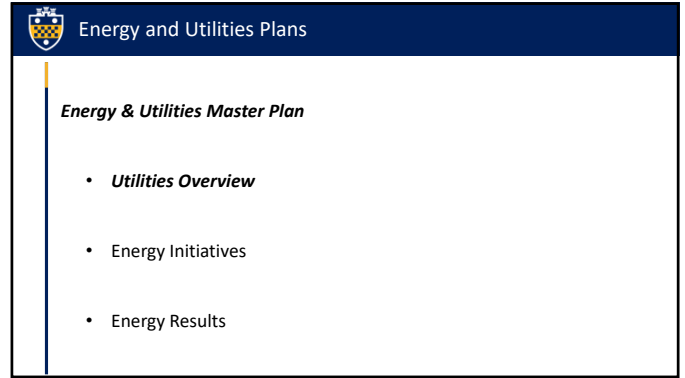
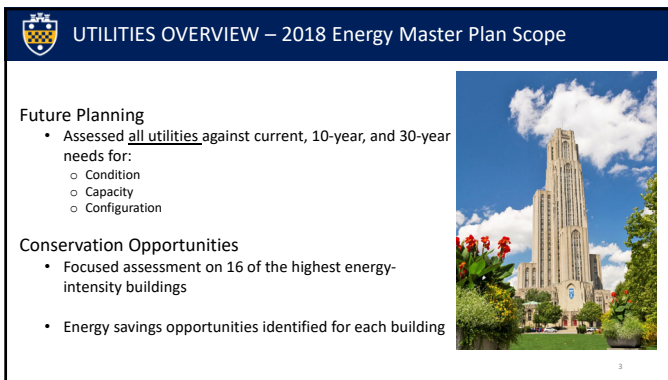




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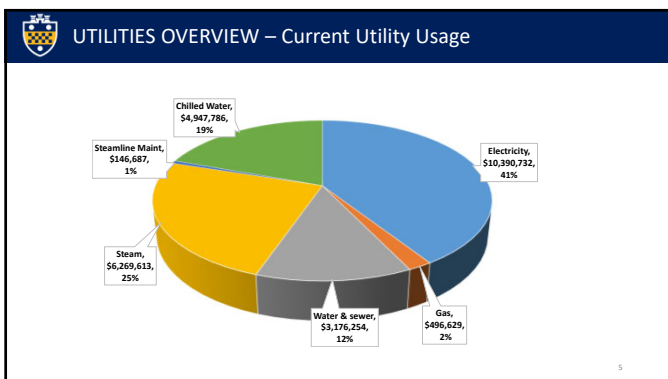
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Energy and Utilities Plans

Energy & Utilities Master Plan

- Utilities Overview
- **Energy Initiatives**
- Energy Results

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ENERGY INITIATIVES – University Energy Focus Areas

A huge driver is the University's commitment to Carbon Neutrality by 2037

- We've accomplished a lot, but our goal posts were extended & raised here.
- Facilities will lead ~ 60% of the remaining GHG emissions reduction

Two Strategies

- **Reducing Demand**
 - Reduce consumption in all buildings, with focus on highest energy intensity bldgs.
 - Six buildings account for 40% of our energy use
- **Cleaning Supply** → Purchase Renewable Energy
 - 2 small short-term contracts for energy that's 100% renewables today
 - 2 long-term agreements for local hydro & solar (~40% total need) operational soon

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ENERGY INITIATIVES – University Energy Focus Areas

Pitt Climate Action Plan

Carbon Neutral Pitt

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ENERGY INITIATIVES – Oakland Campus Data

PittCAP: Building Energy Use & Reduction Potential

(Excluding Leased Space)

Building	Total Annual Energy Use (MMBtu)
Chemist Science Center	34,311
Benjamin Franklin Hall (MCC)	107,039
South Hall	139,889
Biomedical Science Tower 3	211,146
Biomedical Science Tower 1 & 2	296,936

PROCESS

- 1) Estimate total energy reduction potential by building (5-25%).
- 2) Apply cost factors for investment and savings.
- 3) Apply carbon factors to estimate avoided GHGs

~40% of TOTAL! BUT LOW OPPORTUNITY FOR REDUCTIONS

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ENERGY INITIATIVES – Oakland Campus

- Renovation & Construction have strict energy guidelines
 - Our Energy and Water Usage Intensity standards exceed industry guidelines
 - We are completing documentation to LEED certify 5 new buildings recently completed
- Campus Energy Center
 - Extensive (800K+ sensors) and 24/7/365 monitoring
 - Retro-Commissioning and Continuous Fault Detection
- Power Purchase Agreements for hydroelectric and solar power
 - In 2020, 18% of our energy originated from renewable energy sources
 - Hydropower ~25% of all our electrical needs (in 2024)
 - Solar Agreement will amount to 13% of all our electrical needs (in 2023)
- Stormwater Master Plan
 - New stormwater management infrastructure on new Bigelow Boulevard and WPU plaza
 - Plan has identified many opportunities to capture and reuse stormwater

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ENERGY INITIATIVES – Buildings Selected for Energy Improvements

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ENERGY INITIATIVES – Energy Savings Strategies

Most favorable energy saving strategies for the 16 buildings are:

- Converting existing lighting to LED lighting
- Air change and temperature setbacks per occupancy or schedule
- Commissioning fume hood zone presence sensors (rapid payback)
- Demand control ventilation using air quality or particulate-sensing (lab spaces)

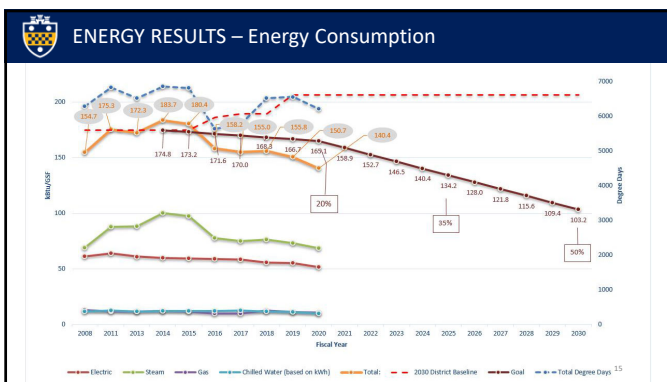
Created Energy Dashboard for these projects

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Energy and Utilities Plans

- Energy & Utilities Master Plan
 - Utilities Overview
 - Utility and Energy Initiatives
 - **Energy Results**

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ENERGY RESULTS – 2020 Specific Achievements

- Achieved the lowest building energy use since tracking began in 2008
- Beating our “glide slope” targets to meet 2030 Challenge energy reduction goal of 50%
- LED lighting upgrade program saving more than \$237,000 annually across 12 buildings
- Fault detection and diagnostics system yielding savings of more than \$149,000 annually
- Water use on campus has decreased 13.9% since 2015
- “Team Water” monitors data for indications of leaks – results saving \$187,000/month
- 14 buildings have been LEED certified, with another 5 pending (Gold and Platinum)
- Post Litchfield Towers restroom renovations, annual water saving equated to over \$170K.

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