

# **Empower and Engage Sustainability on Your Campus via Energy and Water Dashboards**

Staff, Faculty, and Student Perspectives



# Staff Perspectives

- ✓ Office of Campus Planning and Sustainability
- ✓ Plant Ops (Utilities)
- ✓ Construction & Design
- ✓ Building managers (College-level)

# Overview of KSU



- Dual-campus
- 3<sup>rd</sup> largest in USG
- 35,846 students in Fall '17



# Sustainability at KSU



# Sustainability (cont.): Energy E.

- ✓ Georgia Energy Challenge
- ✓ Utility identification and sub-metering
- ✓ Energy / Water Dashboard
- ✓ Energy audits, retro-commissioning, and energy performance monitoring

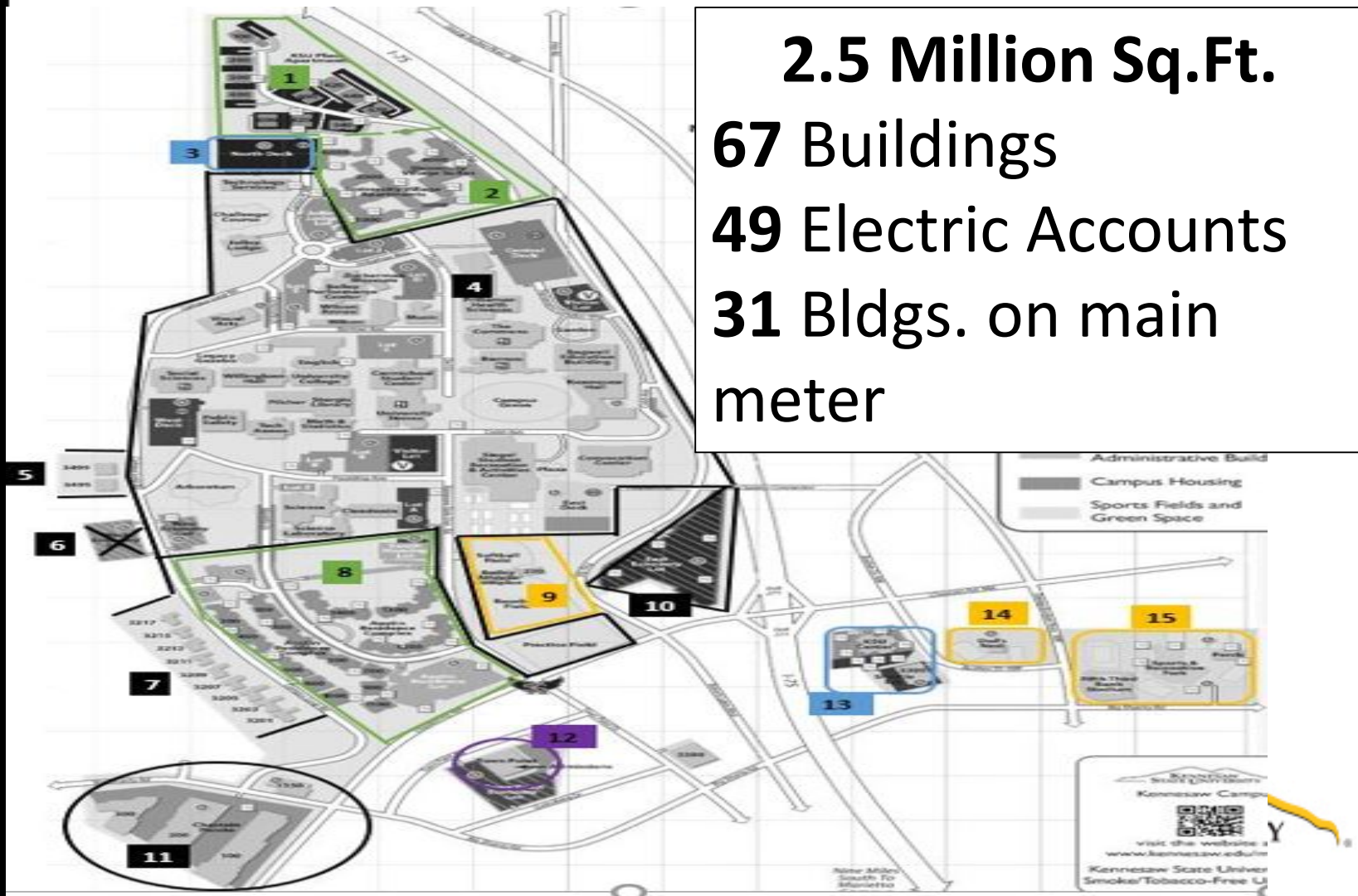


# Georgia Energy Challenge (GEC)

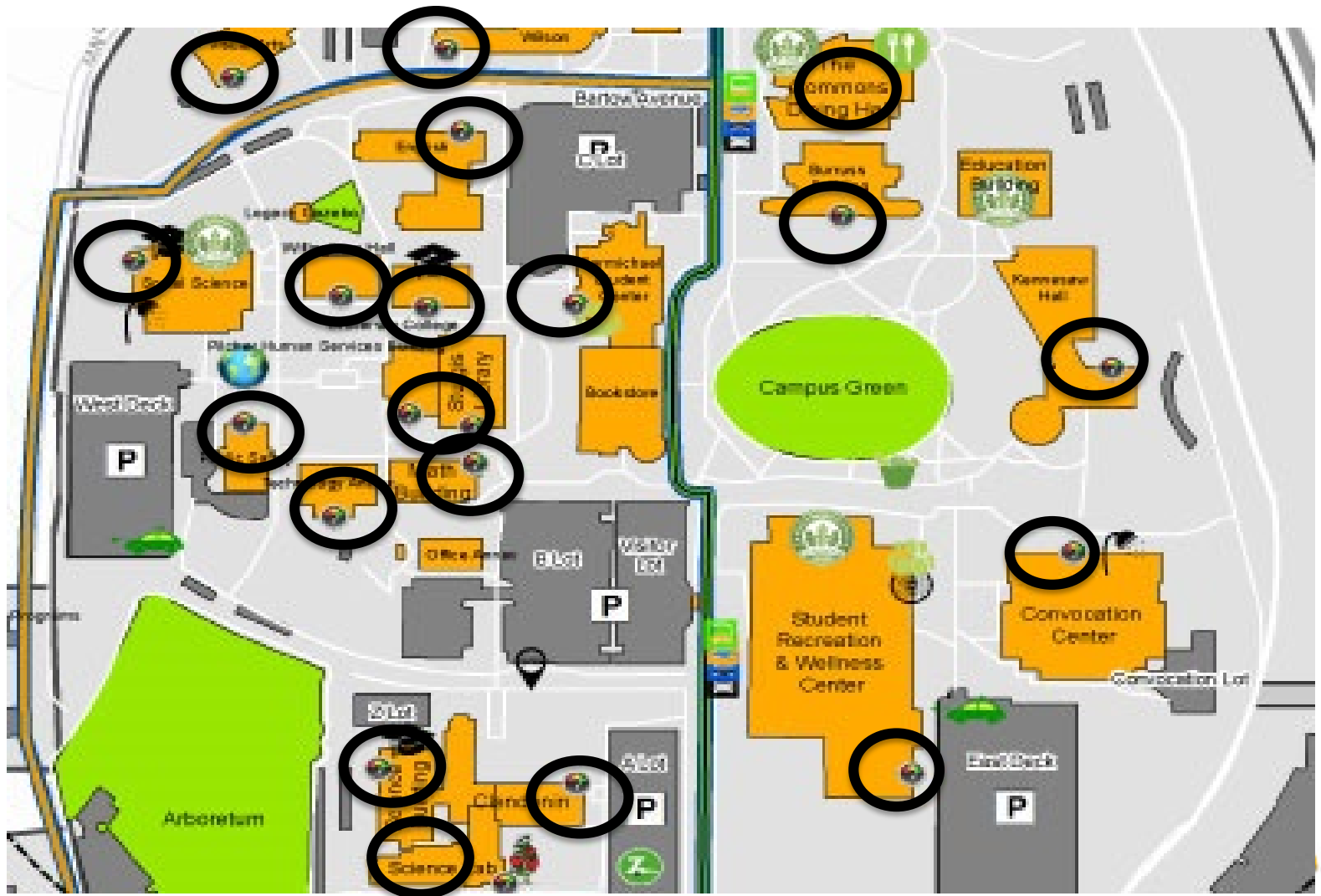


EUI 15% by 2020 over 2007

# Kennesaw Electric Utility Map



# Building Submetering





# KSU Energy Dashboards

<http://sustainability.kennesaw.edu/buildingdashboard.php>

## Energy and Water Dashboard

The Energy and Water Dashboard is a joint initiative of The Office of Campus Planning and Sustainability and KSU's Plant Operations to allow students, staff, and faculty to view real-time and historical utility data for select buildings. Data from the dashboards can be used for academic research, as a teaching tool, or to track behavioral changes on building-level utility consumption.

### Access to Energy / Water Dashboards

KSU has designed four separate dashboards. Dashboard names, descriptions, and login credentials are below. Use the login credentials to sign-in via the "Energy and Water Dashboards" button below. All dashboards are read-only.

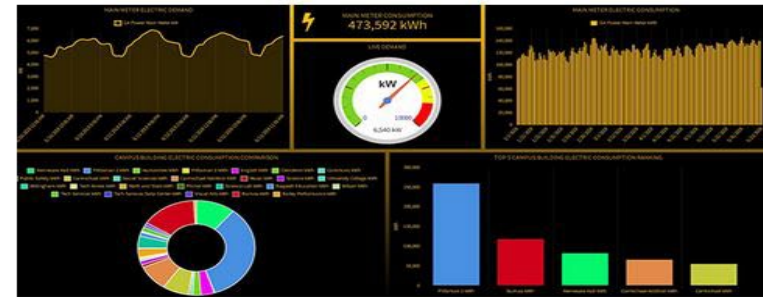
#### KSU'S ENERGY AND WATER DASHBOARDS



KSU Campus Sustainability Dashboard

University-wide public facing dashboard featuring general sustainability data as well as building-level utility usage.

User Name: KSUDashboard  
Password: KSU0v1s1



Plant Ops Dashboard

Facilities dashboard utilized by Plant Ops staff.

User Name: Kennesaw2  
Password: plantops1



Science Lab

A detailed look at the Science Lab's utility usage.

User Name: ScienceLab  
Password: 2017KSUSUSKiosk



Housing: ARC 1200, 1300, And 1400

A detailed look at energy consumption for Aurora Residence Complex II, developed by housing sustainability energy intern Lauren Kinsey.

User Name: ARCDashboard  
Password: KSU0v1s1

# GEC: Results

Kennesaw EUI  
Marietta EUI



9% since 2007  
15% since 2007

Peak Demand below 8,000 kW for first time since 2013:

*\$XX K in projected annual demand cost savings*



# Faculty Perspective

- ✓ Classroom presentations
- ✓ Faculty engagement
- ✓ Construction Management curriculum integration

# IFMA Core Competency

*International Facility Management Association states:*

***The competent facility manager is able to:***

- ✓ Support the entire organization's commitment to protecting the environment.
- ✓ Lead the entire organization's commitment to the sustainability of the built and natural environments.

# IFMA: Sustainability

Energy



Water



Materials and Resources



Workplace Management



Indoor Environmental Quality



Quality of Services



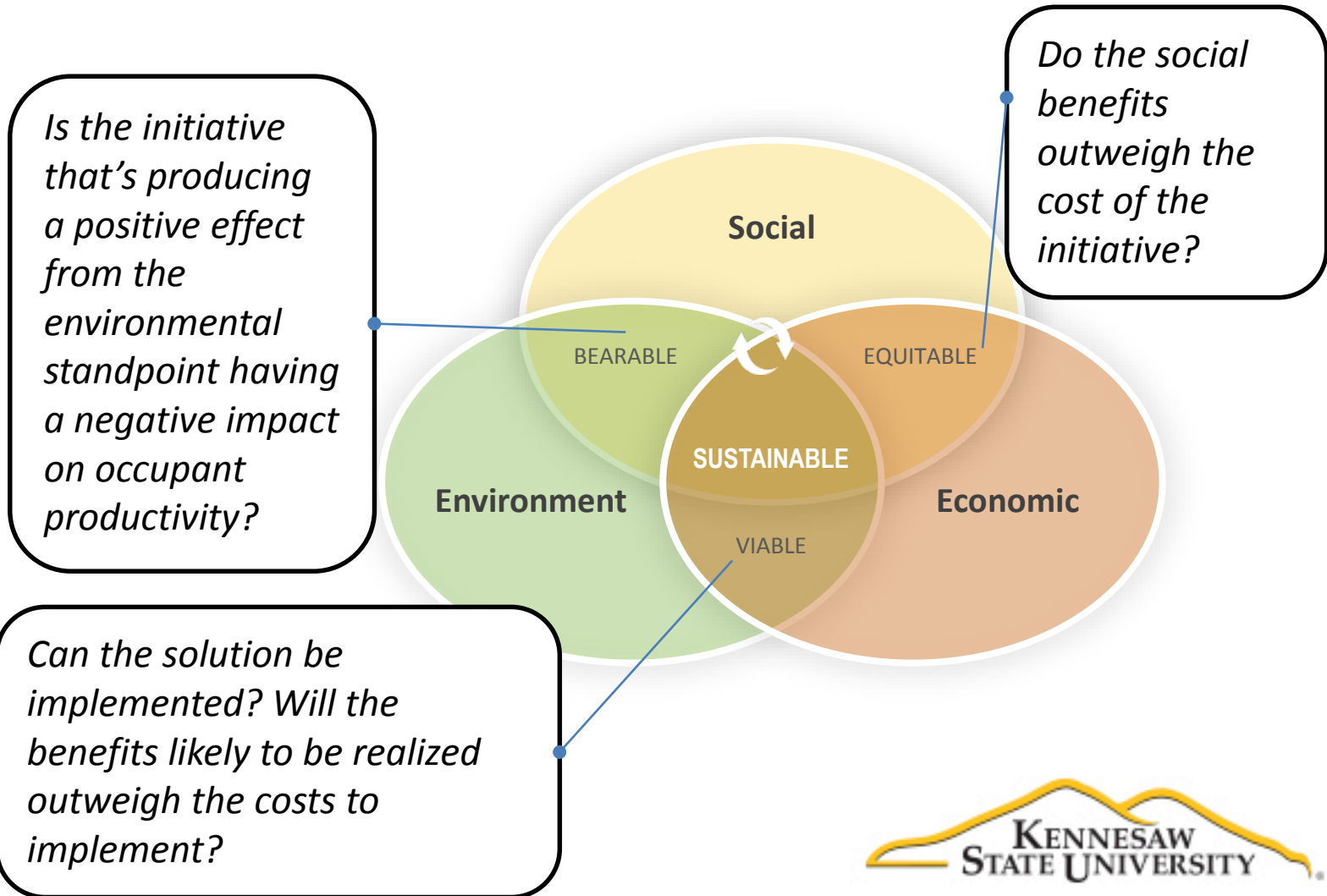
Waste



Site Impact



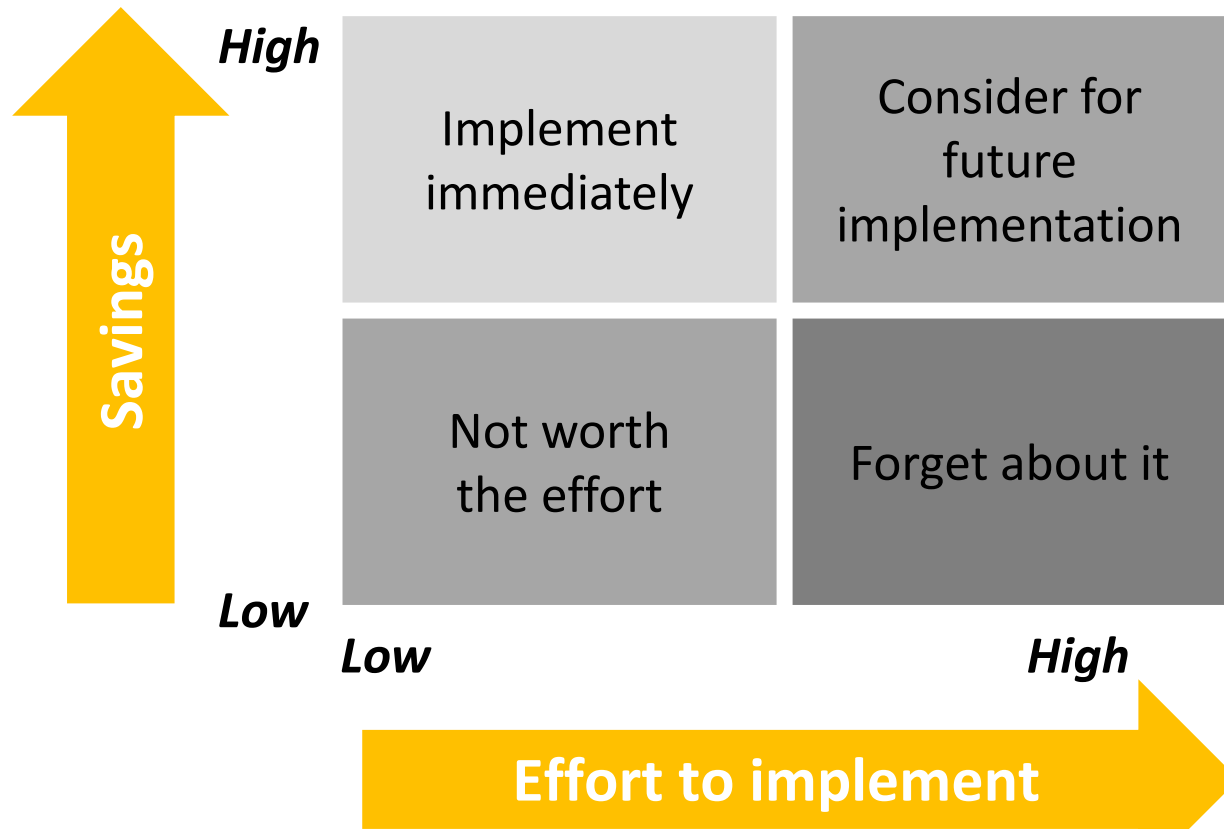
# IFMA: Making Choices



# Sustainability Checklist

<b>Low cost/no cost</b>	<b>Medium cost</b>	<b>High cost</b>
<ul style="list-style-type: none"><li>✓ Scheduling of equipment</li><li>✓ Replacing sensors</li><li>✓ Replacing lamps</li><li>✓ Recycling programs</li><li>✓ Water-saving techniques</li><li>✓ Education programs</li></ul>	<ul style="list-style-type: none"><li>✓ Indoor air quality (IAQ)—ventilation, air quality measurement and monitoring</li><li>✓ Lighting upgrades</li><li>✓ Installation of low flow fixtures</li><li>✓ Creating a formal waste reduction program</li><li>✓ Operational equipment to reduce waste</li></ul>	<ul style="list-style-type: none"><li>✓ Incorporating natural daylighting</li><li>✓ Site improvements</li><li>✓ Replacing existing building systems with energy-efficient systems</li><li>✓ Upgrading and improving facility controls</li></ul>

# Evaluation Matrix





# Student Perspective

- ✓ Student Engagement
- ✓ Housing/Residence Life and Office of Campus Planning and Sustainability collaboration
- ✓ ENERGY STAR Certification

# Austin Residence Complex



# Student Education

## Energy Dashboard Introduction

### What is an *Energy Dashboard?*

An Energy Dashboard is a tool that creatively illustrates real time energy consumption, data trends, and history by using cloud-based energy metering. This program is used to analyze energy data, predict future building needs, promote sustainability, and provide an interactive educational tool for Kennesaw State University.



#### *ARC Student Housing Dashboard*

The purpose of this dashboard is to provide users with current data on ARC Buildings 1200, 1300, and 1400 to compare, evaluate, and understand energy use for student housing.



#### *Tips and Navigation*

- Preferred Browser: Google Chrome
- Double clicking the Viewlet bar will expand and minimize information
- Holding the mouse over a Viewlet bar will provide more details
- Click the yellow lightbulb at the top right corner the Viewlet's toolbar to show more information. (The popup is only available if the lightbulb is yellow)

#### *Get Involved!*



For more information on the Student Housing Dashboard or the 2017 ARC Energy competition, please visit:  
<http://sustainability.kennesaw.edu/>

## Key Terms

#### **Dashboard**

*An online platform providing key data metrics and performance indicators.*

Ex: The ARC Student Housing Dashboard provides energy usage data for several buildings.

#### **Tab**

*A page within the Dashboard.*

Ex: The ARC student housing dashboard has several tabs, the first one is labeled Introduction.

#### **Viewlet**

*An information box or graph within a tab.*

Ex: ARC 1200/ Today Vs. Yesterday/kWh per sq. ft.

# ENERGY STAR Certification

<b>ENERGY STAR Score (1-100)</b>	<b>Building performance</b>
< 50	... worse than 50% of similar buildings nationwide
>50	...better than 50% of similar buildings nationwide
>75	High performance building

# Eligible college building types

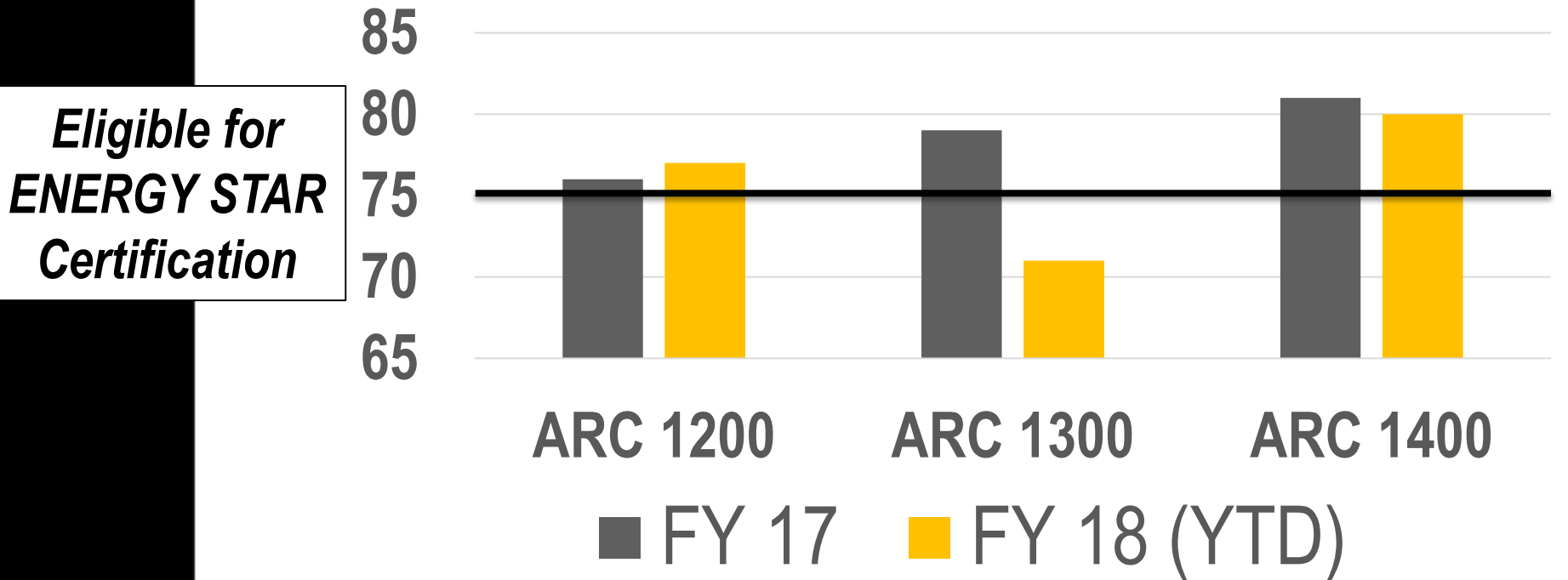
<b>Track EUI only</b>	<ul style="list-style-type: none"><li>✓ College / University</li><li>✓ Library</li><li>✓ Entertainment / Public Assembly</li></ul>
<b>Eligible for ENERGY STAR Score</b>	<ul style="list-style-type: none"><li>✓ Residence Hall / Dormitory</li></ul>
<b>Eligible for ENERGY STAR Certification</b>	<ul style="list-style-type: none"><li>✓ Data center</li><li>✓ Multifamily Housing</li><li>✓ Office</li></ul>

# ARC 1200 – ENERGY STAR Score



# Comparison: 3 Multi-family Bldgs.

## ENERGY STAR Score Comparison



# Student Outreach

*Under the Stars*  
**EARTH HOUR**  
MARCH 24TH, 2018  
*Join Housing and Residence Life  
in this worldwide lights out event*  
AUSTIN RESIDENCE COMPLEX AMPHITHEATER  
7:30-9:30PM  
— *Featuring* —

- ★ FREE FOOD & ACOUSTIC BAND - FEATURING AUDIO DOSE
- ★ KSU NECA STUDENT CHAPTER- LED LIGHT BULB EXCHANGE  
BRING YOUR OLD INCANDESCENT LIGHT BULBS AND EXCHANGE  
THEM FOR ENERGY EFFICIENT LED BULBS
- ★ GUEST SPEAKERS FROM THE KSU CLUB:  
STUDENTS FOR THE EXPLORATION AND DEVELOPMENT OF SPACE

PLEASE TURN OFF YOUR LIGHTS AND UNPLUG  
ANY UNUSED APPLIANCES BEFORE JOINING THE PARTY.  
DISCOVER MORE AT [SUSTAINABILITY.KENNESAW.EDU](http://SUSTAINABILITY.KENNESAW.EDU)

Office of Campus Planning  
and Sustainability      Office of Diversity and  
Inclusion

- ✓ Fellowship
- ✓ Light Bulb Exchange
- ✓ Introduction to Student Dashboard
- ✓ Live Music
- ✓ Student Speakers
  - ✓ SPACE Club
  - ✓ Green Ambassadors
  - ✓ Owl Swap
  - ✓ NECA





# Housing & Res. Life Collaboration

- ✓ Resident Assistance Sustainability Representative
- ✓ Quarterly Staff / RA meetings
- ✓ New Student Orientation:
  - ✓ Sustainability at KSU
  - ✓ Individual Energy Saving Tips
  - ✓ Using and Locating Recycling Bins
  - ✓ Clean Commuting
  - ✓ Energy and Water Dashboard
  - ✓ Sustainability Events

# Next Steps

- ✓ Complete Energy STAR Score certification
- ✓ Onboard RA Sustainability Liaison
- ✓ Quarterly Housing, Residence Life, and Sustainability meetings

# Thank you!

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Construction Management  
Graduate (Dec. 2018)

