

# WELLESLEY SUSTAINABILITY

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December 6, 2018



# Introduction

- Sustainability!
  - Climate Change!
  - Global Warming!
  - Green!
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- Is anyone **listening**...?
  - Is this the **right vocabulary**?
  - How do we **connect**? How do we make this **real**?

# Wind/Solar Resources



# Bio-Gas Plant



# Wellesley College



# Introduction

- Maybe we should be asking...
- What am I breathing?
- What am I drinking?
- What am I eating?
- Where does all this stuff I have, come from?
- Where does all this stuff I have, end up?
- Where do people where I live, work?
- What are they doing?
- What are their living conditions?
- Where am I going to work and what will I be doing?
- What kind of living conditions will I have?

# Introduction

- Sustainability – Three impacts
  - **Ecology/Environment**
  - **Economy** of resources – money, materials, energy, labor, etc.
  - **Society**

The conversation begins with these...

We need to make this conversation “real”... not just “ideal”...

# Responsibility

- Educational Institution responsibility
  - We are **educating the next generation** of
    - Leaders
    - Policy makers
    - Scientists & Engineers
    - Educators
    - Medical personnel
    - Innovators & Entrepreneurs
    - Business professionals
    - Writers, artists
    - Social Science professionals
- Knowledge is power; the power to **change**
- Our challenge is to “**help make the connection**” ...  
To **show how** this can work... to make it “**real**”



# “Out of Box” Thinking

- Need to encourage a **revised “way of life”** on Campus
  - How students live/study
  - How we work – staff and faculty
  - How we educate our students, faculty, and staff
  - How we all use (and take for granted) resources
- **All** constituents **have a stake** in the viability of the institution
- **All** will be **involved** to develop the best approach(s) to the challenges of responsible resource use and operational cost reduction – **Institutional Responsibility**
- Operational/academic engagement – **all on “same page”**

# So, what do we do? ...Objective

- **We need a Strategy which...**
  - Supports what we **say we want to do**
  - Outlines **what we do**
  - Leads by **example**
  - Makes a **real difference**, right **here... right now**
- (...but **doesn't break the bank...**)
- Looking for **Value** – Wise investment and spending for the **long term.**

# Leadership

- “**Political Will**” is most influential aspect of sustainability integration – **Importance** to the **institution**
- Strength of institutional leadership
- Location of supportive leadership within the institution
- “Fit” with Strategic Plan
- Institutional Value – to **work across the entire institution**
- Institutional Sustainability Policy Statement

# Wellesley College Initiatives

- Advisory Committee on Environmental Sustainability – students, faculty, staff
- 2016 Strategic Sustainability Plan – on-line
- Fossil Fuel Divestment Statement
- Academic Council GHG resolution
- GHG inventory
- AASHE STARS assessment/rating - Silver
- Campus sustainability surveys – twice/yr
- Green Office Certification – faculty, staff
- Green Res Hall room certification – students
- Sustainability Guiding Principles – being published
- Wellesley College Green Building Standards – LEED Gold eq.
- Strategic Energy Planning – in progress

# Four Key Strategies

- **Behavior and resource Use Reduction**
  - Energy
  - Water
  - Waste/recycling/composting
  - What we bring to campus
  - What we purchase – creates waste to be addressed
  - Food, etc.
- **Transportation options**
  - Bike sharing - students
  - Zip-Cars – students, faculty, staff
  - Inter-campus shuttles
- **Energy Efficiency and Renewable Energy Initiatives**
- Central Heating/Cooling Plant upgrades

# Behavior/Use reduction

- WAIT – **Students, Faculty and Staff**
- Not just a “student initiative”
- **Staff and Faculty** on campus for many more years than students – **long term impact**
- Education, training, and incentives.
- **Green Office Program** – certification and revisits (to keep certification)
- **Green Res Hall Room Program** – similar to above
- Focus on **plug loads** (up to 50% of electricity use in Res Halls)
- **Reduce/Reuse/Recycle/Repurpose**
- **Compost**
- Lots of info for faculty, staff– **see OS web-site** at:  
<http://www.wellesley.edu/sustainability>

Even the most Energy  
Efficient Lamp saves  
the most energy when  
turned off !

Jorgen Norgard, PhD - Technical University of Denmark

Energy Saving Philosophy

# Energy Efficiency





# The Energy Pyramid



## Energy Strategy

# Building Energy Efficiency Study

- 65 buildings, (approx 2M gsf) assessment completed.
- 187 energy conservation measures with good ROI identified.
- Approx \$5-7M investment required.
- Close to \$1M annual utility savings expected, and
- Approx. 2000 mT GHG savings at 10% reduction

# Campus sustainability standards/statements

- **WC Green Building Standards** – all new buildings and major renovations to be LEED Gold standard (or equiv)
  - **3 LEED certified buildings** so far – i.e. Alumni Hall (G), Whitin Obs (S), Schneider (S)
  - **2-3 other projects** are planned/pending – PNW, New Science, L&E wings, etc.
- **Carbon reduction goals**
- By 2026, reduce GHG by 37% (from 2010 levels **32.7**mT CO<sub>2</sub>e): Target = **20.6**mT, and
- By 2036, reduce GHG by 44%: Target = **18.3**mT

## Current Emissions

- GHG Emissions in 2016 = 27.72 mT
- GHG Emissions in 2017 = 27.31 mT



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back on your  
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inspiration  
on...

Energy  
CO2  
Water & Land

# Energy Use Now (2017)

## Usage now

- **26.58** Million kWh of Campus use (3.3 MW average demand, 5.2 MW Peak)
  - **1 kWh** = Ten 100w lightbulbs burning for one hour
  - Campus electricity use is equiv to **30,340 100w lightbulbs burning year 'round**
- 245.3 Million lbs. of 125 PSIG steam for heating and cooling
- Approx **490,278** mmBTU energy used.

## Ultimate Goal

- Sustainability is, "just the way we live and work on campus!"

# For More Info - Contacts

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# QUESTIONS?

