

Energy & Sustainability Committee Meeting Minutes
11/12/18 – 2 to 3 pm - Burruss Hall Conference Room 130

Attendees: Sarah McCoy for Sherwood Wilson, Debbie Greer for M. Dwight Shelton, Jr., Denny Cochrane, Scott Kerklo, Edward Lener, Sean McGinnis, Erin Hopkins (conference call), Pat Hilt for Alan Grant, Angie De Soto, Caed Cunningham

Guests: Karlee Siepierski, Kate Franczek, Mike Dunn, Barbara Wise, Jeri Baker, Allen McWhirt, Jody Boogie Daniels, Ruben Avagyan

November Agenda Approved: Edward Lener motion, Sean McGinnis second

October Meeting Minutes Approved: Scott Kerklo motion, Debbie Greer second

Old Business

- **Sustainability Annual Report:**
 - Presented to BOV on 11/4/18 and approved
 - SAR now on website:
https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/annual-reports/Sustainability%20report%20v102218%20FINAL%20v7.pdf
 - Positive comments on SAR from Board of Visitors Chair
- **Policy 5505** meeting update will take place later this month with sub-committee
- **Green RFP Timeline:**
 - Deadline moved from 11/9 to 11/16
 - 11/26 OS begins technical & feasibility review
 - 01/28 E&SC will appoint sub-committee to review & prioritize
 - 02/25 Subcommittee presents recommendations to E&SC for approval
 - 03/01 E&SC presents proposals to the Office of Budget & Financial Planning
 - Mar/Apr OBFP convenes Budget Review Committee- identifies funding sources
 - Apr/May Select proposals approved - implementation initiated

New Business

ROAM New River Valley Bike Share Update - Alan McWhirt, ROAM Regional Manager

- Bike share is a regional partnership with Town of Blacksburg, Town of Christiansburg, Montgomery County, and VT.
- Gotcha Bikes is a company based out of Charleston, SC, Alan is the regional manager for Gotcha.

- Bike Specs:
 - 41lb bike - aluminum frame
 - Bikes are manufactured and assembled in Charleston SC.
 - They have front and rear LED lights
 - When the front wheel is in motion, it helps power the battery. There is a solar panel located on the back, which charges the battery when not in motion.
 - Program uses Social Bicycles App. This is a user friendly smartphone app, which is GPS enabled. It handles mobile payments and booking. It also helps with the integrated smart lock on the bikes. The app provides the ability to track data and share with partners. Data that is tracked: calories burned, CO2 emissions reduced, and money saved versus driving. (App can be found at app.socialbicycles.com)
- You have the ability to reserve a bike through the app.
- A membership for the program is \$60 per year
 - Membership gives you 2 hours/day of rides
 - You can also unlock up to 3 bikes at a time for friends to use
- Local Statistics for Bike Share Program (since start)
 - During the first month, there was large growth. This has remained steady going into 4th month. However, ROAM is expecting slowdown in cold months.
 - Carbon reduced - 9536.54 lbs
 - Calories burned - 432,585
 - Money saved - \$6272
 - Miles biked - 10,814.63
- 12 hub locations:
 - Huckleberry Trail at NRV Mall
 - Huckleberry Trail at Christiansburg Recreation Center
 - Huckleberry Trail at Miller Street/Blacksburg
 - Market Square - Draper Road Blacksburg
 - New Classroom Building - VT
 - Squires Student Center - VT
 - Burruss Hall - VT
 - West End Market - VT
 - Surge Building - VT
 - McComas Hall - VT
 - Eggleston Hall - VT
 - Duck Pond Lot - VT
- Question: *What is the most popular hub?* As it relates to the amount of bikes that leave from one hub - NCB. Also popular, is Miller St at Blacksburg Library, but numbers can get skewed on game day. For example, one particular game day 32 bikes ended up at Duck Pond. This did not become a game day trend either.
- Question: *Do you have to do a lot of shuffling bikes back and forth?* Not so much because Bike Barn does maintenance and checks them every day. Also has a team to move bikes back to docks if people park them independently.

- Question: *Are there any plans for expansion?* Still early, but there is a committee to discuss and narrow down sponsorship options. This would be the next way to bring in more bikes and hubs (businesses, apt complexes, etc.). ROAM wants to make sure hubs are in most utilized potential spots.
- Question: *Helmet rental system?* Helmets are a user-option. ROAM can encourage through social media and events, but it is up to individual user. Sanitation is also an issue when thinking about providing helmets. VT students are developing helmet that can fold up and fit into pocket, and this may be something users could purchase through a vending machine.
- Question: *Rules on campus vs town?* Only difference is campus you can ride on sidewalks, but town you have to be in bike lane or enter traffic.
- Question: *What percentage of users are students?* System does not capture this data. This was designed purposely, as this program is being pushed as a regional partnership. Team is avoiding singling out students or promoting this as a “VT only” program.
- Question: *Self-sustaining financially?* No. Initial funding was made by a grant through Department of Transportation. This pays for first year +, Program hopes to grow through accommodation of user fees and sponsorship fees.
 - There is a large blank section on bike they plan to use for sponsor advertisements.
 - Not necessarily profitable venture. The focus is on sustainability and user.

Campus Energy Update - Ruben Avagyan, Campus Energy Manager

- FY 18 Total Energy Consumption = 2.04 trillion BTU's; FY 18 Total Energy Cost = \$23.75 million
- Although campus footprint keeps growing, consumption is staying flat and cost is decreasing.
- Energy breakout by utility: 30.7 % Purchased electric energy, 20.8% Coal (Power Plant), 0% Fuel Oil (Power Plant), 42.5% Natural Gas (Power Plant), 6.0% Natural Gas (Buildings)
- Cost breakout by utility: 66.4% Electric Energy, 6.0% Coal (Power Plant), 0.2% Fuel Oil (Power Plant), 14.6% Natural Gas (Power Plant), 3.2% Natural Gas (Buildings), 9.5% Water/Sewer
- Most expensive source of energy is purchased electricity
- Campus square footage grows, normalized energy staying flat, energy intensity staying relatively flat.
- When we burn coal or fossil fuels, we generate greenhouse gases and heat, all being dumped into atmosphere, which is bad for environment.
- Carbon footprint decreased from FY 17 to 18- about a 20% reduction.
- Carbon footprint intensity (per square foot) is also decreasing.
- GHG emissions breakout: Purchased electricity is the biggest emitter of carbon (comes from AEP. AEP has similar carbon footprint breakdown as VT GHG emissions. Commute and fleet vehicles also large percent of VT's carbon footprint

- AEP Breakdown - Coal is also biggest source of carbon footprint.
- Solar is still at 0.4%
- Climate Action Commitment set goals for VT GHG Emissions. End goal is 80% reduction from GHG Emissions in 1990 (From 188,000 to 38,000). For the most part we are on track to 2025 goals. However, the rate at which we must reduce GHG emissions during 2025-2050 is much faster (steeper slope) than present time to 2025. For this reason the 2025-2050 section will be much more difficult to achieve GHG emission goals. For that reason, we must invest in Renewable Resources (solar). We will not be able to meet 2050 goals without doing so.
- Energy mix is cleaner from AEP than it was 20 years ago, burning natural gas on campus. We continue to reduce coal, efficiency measures all contribute to energy reduction.
- Office of Energy Management:
 - Monitor and analyze energy consumption on campus
 - Establish energy-reduction goals and the roadmap to achieve them
 - Coordinate implementation of energy reduction programs
 - Oversee execution of energy retrofit projects
 - Verify post-retrofit energy savings
 - Report energy statistics to various stakeholders
- Energy Management: Key Initiatives
 - Installation of new gas line and addition of new natural gas boiler to the Steam Plant to reduce dependence on coal
 - Initiation of campus-wide building energy benchmarking
 - Establishment of Five-year Energy Action plan (2016-2020)
 - Chilled water pumping improvement in the North Chiller Plant
 - Implementation of energy conservation projects aligning with the established Five-year Energy Action plan
 - Establishment of in-house energy audit team
 - Question: *What is an Uninterruptible gas line?* This means in the middle of winter, valve could close without questions asked, now it cannot be.
- Five-year Energy Action plan
 - Commissioning - buildings that have been constructed 20 - 30 years ago, making sure mechanical systems work properly
 - During first three years, university has invested \$9 million, payback is 4.5 years, savings, etc.
 - FY 19 received \$3.5 million for plan
- VT needs to plan for renewable energy - required to support sustainability goals
 - Best way is solar
 - Facilities currently investigating multiple solar opportunities - \$.5 million to install rooftop solar. VT is looking into 5 buildings currently. This first project will be a learning experience to see about payback, maintenance.
 - Other universities are partnering on large-scale power purchase agreements, similar to what Jesse Warren has done at UVA (signed 2 PPA's with Dominion)