Student Scholar Symposium Abstracts and Posters

Center for Undergraduate Excellence

Spring 5-9-2018

2018 Chapman Environmental Audit: Sustainable Purchasing Policy

KC Hoppel
Chapman University, hoppe109@mail.chapman.edu

Follow this and additional works at: https://digitalcommons.chapman.edu/cusrd_abstracts

Part of the Environmental Monitoring Commons, Natural Resource Economics Commons, Natural Resources Management and Policy Commons, Public Economics Commons, and the Sustainability Commons

Chapman University 2018 Environmental Audit: Sustainable Purchasing Policy

Hoppel, K.

ENV 498, Senior Capstone

School of Earth & Environmental Sciences, Chapman University, Orange, CA

Introduction

Chapman University maintains its commitment to a "campus culture that promotes a sustainable future" in its 2014 Sustainability Policy. However, the University currently has no mechanism to ensure this sustainable decision-making process occurs. One of the surest ways to guarantee this change is to enact a University-wide sustainable purchasing policy that prioritizes environmentally-preferable products.

This project aimed to:

- Demonstrate the benefits of sustainable procurement, which include receiving more efficient and long-lasting products, protecting and enhancing the local and global environment, supporting innovative technologies, and gaining a competitive edge as a leading institution

- Include a few cost-benefit analyses between purchases the University currently makes and more environmentally-preferable alternatives

- Survey faculty, staff, and students about their attitude toward sustainable purchasing

- Outline a University-wide sustainable purchasing policy with guidelines and checklists that the Procurement office and anyone who makes purchasing decisions in their respective department/school can use for future purchases
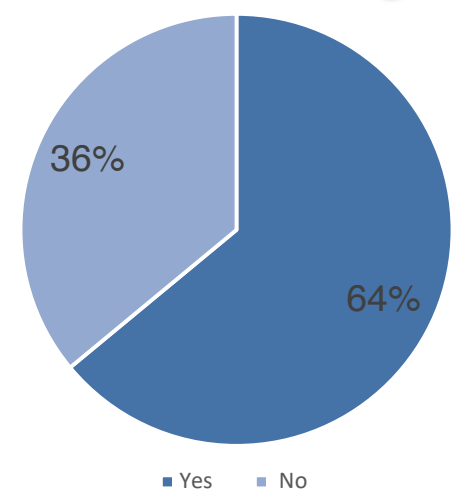
History at Chapman

Figure 1. Percentage of 2013 survey participation that believed a sustainable purchasing policy should be enacted on-campus.

Chapman University currently does not have a sustainable purchasing policy that is used to guide Procurement when making purchasing decisions. **Figure 1** shows that over 60% of the individuals surveyed in 2013 believed that a sustainable purchasing policy should be enacted on campus.

General Sustainability Initiatives
- 2011—Mackenzie Crigger hired as Chapman's first Sustainability and Energy Conservation Manager
- 2013—Double-sided printing becomes standard on campus
- 2014—Chapman University implements its first Sustainability Policy to show its commitment towards a campus culture that promotes a sustainable future

Procurement
- 2013 – The last Environmental Audit to consider Procurement
  - This audit looked into office supplies, inter- and inner-office electronic systems, furniture reuse, and cleaning supplies
  - The 2013 Audit found that Chapman has increased its office paper to up to 30% post-consumer recycled content, implemented a furniture reuse program between departments, installed double-sided printing as a default on most printers, and implemented "Blue Cleaning" to reduce chemical use in cleaning supplies (**Figure 2**).

Figure 2. Orbio "Blue Cleaning" technology, provided by Aramark.

Recommendations

Low cost/effort:
- Increase the number of "green products" purchased through Office Solutions (**Figure 3**).
  - This can be done by replacing a few of the current standard non-core items such as paper pads, envelopes, and Post-It notes with those that come from higher recycled content.

- Purchase more environmentally-friendly products that are similar or lower price.
  - By expanding the purchasing options currently pursued by the University, more sustainable products and materials can be acquired at similar total value (when taking Life Cycle cost into account).

- Prioritize reusable furniture, buy used furniture, and buy furniture that is built to last.

Moderate cost/effort:
- Implement a sustainable purchasing policy on campus to prioritize environmentally-preferable products when they can be acquired at similar total value (when life cycle information and quality are taken into account).

High cost/effort:
- Purchase more environmentally-friendly products that are 5-10% greater cost, if budgets allow.
  - More environmentally-friendly options are often better quality, and will therefore last longer and require less maintenance, reducing costs in the long run. Additionally, more environmentally-preferable products reduce the negative externalities burdened by society, thereby reducing the social costs, shown in **Figure 4**.

Figure 3. Sustainable items available through Office Solutions.

100% PCC Recycled Office Paper (Against Current 30%)						
Year	0	1	5	9	10	Total
Product Benefits:						
Carbon Sequestration from Trees Saved	-	$31.13	$31.13	$31.13	$31.13	
Water Saved	-	$336.38	$336.38	$336.38	$336.38	
Waste Saved from Landfill	-	$315.40	$315.40	$315.40	$315.40	
Emissions Reduced	-	$490.68	$490.68	$490.68	$490.68	
Energy Saved	-	$4,242.64	$4,242.64	$4,242.64	$4,242.64	
Wood Saved	-	$11,700.00	$11,700.00	$11,700.00	$11,700.00	
Total Net Benefit	$0.00	$17,116.24	$17,116.24	$17,116.24	$17,116.24	
Product Costs:						
Annual Purchase	-	$19,260.03	$15,687.41	$12,777.50	$12,138.62	
Total Net Cost	$0.00	$19,260.03	$15,687.41	$12,777.50	$12,138.62	
Undiscounted PV/Net Social Benefits	$0.00	-$2,143.79	$1,428.82	$4,338.74	$4,977.61	
Discounted PV (@ 5%)	$0.00	-$2,041.71	$1,119.52	$2,796.79	$3,055.82	$10,361.32

Figure 4. Cost-Benefit Analysis of 100% PCC office paper, proving the net social benefit after 10 years.

Current Status

Current Purchasing Policy at Chapman
Chapman University does not currently have a sustainable purchasing policy, nor does the current Purchasing Policy consider any sort of environmental costs (**Figure 5**).
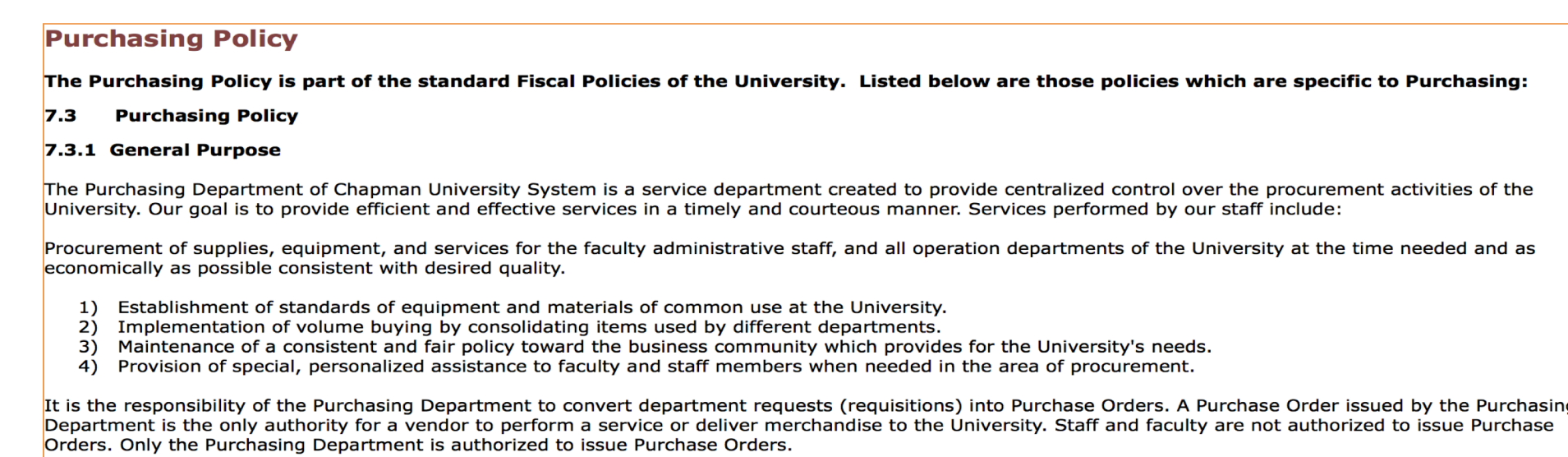

Figure 5. Chapman University Purchasing Policy—part of the standard Fiscal Policies of the University.

Office Solutions Products
Office Solutions, Chapman University's main office supplies company, currently offers a number of "green products" that are made from at least 10% post-consumer recycled content. Currently that number is only 21% of the total number of products offered for purchase by the University (**Figure 6**).

Figure 6. Office Solutions purchase requisition form used by Chapman schools and departments to request the purchasing of office supplies. This form is sent to the Purchasing Department for approval.

2018 Environmental Audit Survey Results
The 2018 Chapman Environmental Audit Survey found that 89% of Chapman faculty and staff responsible for purchasing would be willing to buy more environmentally-friendly office supplies at a similar or lower cost (**Figure 7**). Additionally, over 75% of the undergraduate and graduate students that participated in the 2018 Environmental Audit Survey believed a sustainable purchasing policy should be implemented on-campus (**Figure 8**).
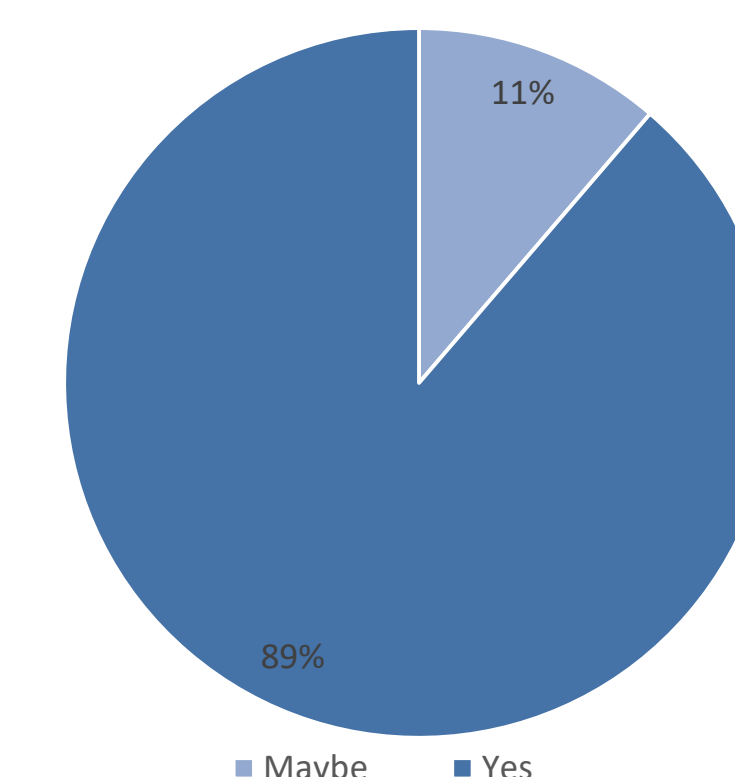

Figure 7. Percentage of faculty and staff (n=97) that would be willing to buy more environmentally-friendly office supplies at a similar or lower cost.
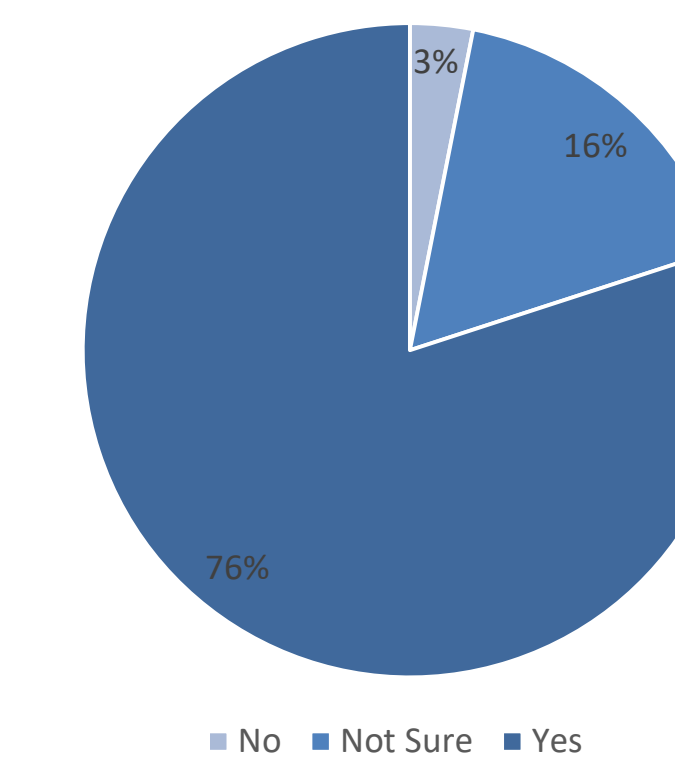

Figure 8. Percentage of undergraduate and graduate student (n=542) that believed a sustainable purchasing policy should be implemented on-campus.

Possible Sustainable Purchasing Policy
A mock sustainable purchasing policy was created based on a few other Universities that practice sustainable procurement. A few of the questions that should be asked by Chapman's Procurement Department before making any purchasing decisions are shown in **Figure 9** below.

1. **Waste reduction:** Is the product reusable and/or technically recyclable? Is the product biodegrade over time?
2. **Packaging:** Is minimal packaging used? Is the packaging reusable and/or recyclable? Are recycled materials used to produce the packaging (what percent post-consumer waste)? Is the packaging compostable?
3. **Material source:** Are recycled materials used in the product (if so, what percentage)? If wood is used, how was it harvested? Is it Forest Stewardship Council certified?
4. **Energy efficiency:** Is the product energy efficient compared to competitive products? Are Energy Star rated products available? Can the product run on renewable fuels? Does the product require less energy to manufacture than competing products?
5. **Water efficiency:** Does the product require less water to manufacture than competing products?

Figure 9. Sustainable Procurement Checklist–part of the mock Sustainable Purchasing Policy created for this chapter of the 2018 Environmental Audit.

Concluding Assessment

Areas of progress
- Increased the percentage of office paper to 30% post-consumer recycled content (PCC)
- Required purchasing orders to be sent electronically, thereby reducing paper use
- Reduced chemical use on campus via Aramark's "Blue Cleaning" Orbio technology

Areas in which to improve
- Implement a sustainable purchasing policy that can be embedded into the existing Purchasing Policy to prioritize environmentally-preferable products that are third-party certified such as Forest Stewardship Council, Green Seal, Green Label, and Energy Star

Future Research
Ideas for future research, which did not fit the scope of this audit, but would be of interest in future audits, include:
- Continuing cost-benefit analyses to further understand if environmentally-friendly products are the most socially optimal choice

Contacts

Mackenzie Crigger, Energy Conservation and Sustainability Manager, Facilities Management, Chapman University (crigger@chapman.edu, 714-997-6658 ext. 7370)

Adey Oyenuga, Procurement Administrator, Purchasing Department, Chapman University (oyenuga@chapman.edu)

Ken Gordon, Account Executive, Office Solutions (kgordon@officesolutions.com)

Carlos Chavez-Garcia, Chapman University Custodial Services, Aramark (ChavezGarcia-Carlos@aramark.com)

Cindy Graves, Department Business Manager, Facilities Management, Chapman University (cgraves@chapman.edu)

Acknowledgements

This audit was made possible by Mackenzie Crigger and Dr. Jason Keller. Thanks also to every person listed or not listed in the contacts section for their valuable contributions to this project.

References

Aramark. (2018). *Meet the next generation of blue cleaning*. Retrieved from: https://www.aramark.com/about-us/news/in-focus/highered/next-generation-blue-cleaning

Chapman University. (2018). *2013 Environmental Audit*. Retrieved from: https://www.chapman.edu/campus-services/sustainability/_files/environmental-audit/pdfs/ch6-procurement.pdf

Office Solutions. (2018). *Green Solutions*. Retrieved from: http://www.officesolutions.com/green-get-started.html

United States Environmental Protection Agency. *Sustainable Marketplace: Greener Products and Services*. Retrieved from: https://www.epa.gov/greenerproducts/about-environmentally-preferable-purchasing-program