Sustainability at Research Universities – US Overview and USC Case Study

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How to Reach Carbon Neutrality/Climate Neutrality

Outline

- Contextual Factors Affecting University Sustainability Initiatives

- Variety of Approaches

- A case study: University of Southern California

- Questions and Discussion

Contextual Factors Affecting University Sustainability

Structural

- Public versus private; four year college versus university
- Governing body state or public authority versus private self-governed
- Wealth and access to financial capital

Political

- Political leaning of state, strength of state environmental, energy, and sustainability policies and regulations
- Local energy and building codes

University Specific Features

- Vision, leadership, commitment
- Organizational capacity (having a Chief Sustainability Officer, centralized versus decentralized decisions making)

Variety of Approaches
(see AASHE, STARS under reference for fuller listing)

<u>Comprehensive University Planning for Sustainability</u> –

University of Vermont (Hill and Wang 2018)

<u>Concentrating University Resources in a School</u> –

Stanford U. new School of Sustainability; Columbia U. new school of climate change

<u>Organizing Curriculum based on Sustainability Competencies</u> -

–   Systems thinking

–   Futures thinking (or anticipatory)

–   Values thinking (or normative)

–   Strategic thinking (or action-oriented)

–   Collaboration (or interpersonal)   (Wiek *et al* 2015)

Cont: Variety of Approaches

<u>Emphasis on Sustainability Research</u> –

MIT's Grand Challenges

<u>Emphasis on Commitment to Carbon Neutrality</u> –

University of California system-wide commitment to carbon neutrality in electricity by 2025; Stanford U's 100% renewable power by 202; Yale U's internal cap-and-trade for reduction of usage in buildings

<u>Endowment Divestiture and Green Investing</u> –

George Washington University's commitment to eliminate all fossil fuel investments ***and reverse all emissions produced in its 200 year history***

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University Of Southern California
Case Study - <u>Structural Factors</u>

<u>Public versusPrivate</u> – USC is a nonprofit private university, in Los Angeles, California

<u>Organization</u> – 2 major campuses (University Park and Health Sciences, plus several satellites); a liberal arts college and 21 specialty and professionals schools

<u>Governance</u> – An internally appointed Board of Trustees

<u>Student body</u> – 20,000+ undergraduates, 28,000+ graduates

<u>Faculty</u> – 4,600+

<u>Finance</u> – $5.5 bi. Endowment; $900 mi. sponsored research, $5.3 bi. annual budget (2019)

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Case Study – <u>Political Factors</u>

- California is a "Red" state (liberal, Democratic Party voting)

- California is the leading state in the U.S. in environmental and sustainability policies

- Los Angeles is a leading sustainability City, LA Mayor is Chair of C40 cities around the world

- California policy-makers strongly support environmental protection, climate change, and sustainability policies

- Californian's strongly support environmental protection, climate change mitigation and adaptation, and sustainability goals (Mazmanian, Jurewitz, Nelson 2019)

University Of Southern California
Case Study – <u>University Specific Factors</u>

<u>Vision, Leadership, Commitment (*new* in 2019-2020)</u>

- New University President Carol Folt's commitment to USC sustainability (Sept. 2019)

- Formation of the USC Presidential Working Group on Sustainability representing schools, faculty, students, equity and justice, research centers, and operations to provide university-wide recommendations (Sept. 2019)

- Launching of "Sustainability Plan 2028" for Campus Facilities and 10 year Capital Plan
  - DRAFT elements: carbon neutrality by 2028; zero recyclable plastics by 2022; zero waste by 2023; EV cars and truck fleet; compliance with stringent CA and LA energy building codes

Cont: <u>University Specific Factors</u>

<u>Organizational capacity prior to arrival of President Folt</u>

- *No* university sustainability plan; central senior administrative personnel to lead sustainability; little to no coordination of sustainability across academic, research, facilities, and operations
- USC has operated as classic model of decentralization:
  - Schools and facilities organized as income and cost centers
  - School deans responsible for curriculum, faculty, buildings, administration
  - Little curricular integration across school
  - Little university-wide research initiatives

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Cont: University Specific Factors

School level sustainability capacity prior to arrival of Pres. Folt

- Dornsife College (liberal arts) sustainability plan and programs being initiated; individual environment and health courses throughout campus

- Some *cost-effective* energy, water, and waste measures initiated under Capital and Facilities Plan (2015-2020)

- University Academic Senate Committee on Sustainability

- Undergraduate student groups on sustainability – Environmental Student Assembly and Environmental Core

Year 1 Under New Leadership - Selected Achievement (Fall 2019—Spring 2020)

- GHG reduction by 20% per square foot from 2014 base
- 20% food purchased from sustainable sources
- GHG reduction of electricity use by 33% from 2014 base
- USC Hotel sustainability program – receives best University hotel award
- Zero Waste football games (90% or more waste diverted from land fill) for the 70,000+ seat sports arena
- Installation of solar panels on Galen sports arena
- Paperless university events (multiple)

Cont: Year 1 Under New Leadership – Selected Achievement (Fall 2019–Spring 2020)

Presidential Working Group Recommendations

(1) Sustainability Education

- Require an introductory sustainability course for all first year students
- Require an experiential learning sustainability course to graduate
- Provide recognition and support of School-level sustainability curricular initiatives and faculty course development

(2) Sustainability Research

- Set a goal of 3-4 university sustainability themes and initiatives, jointly by faculty, office of Research, Provost, President

Cont: Year 1 Under New Leadership

(3) Establish a Chief Sustainability Officer

- Charge CSO with overall responsibility for coordination and cooperation across education, research, and operations sustainability activities at the university

- 14 functions identified:

    - Advisor to the President on sustainability

    - Manager of CSO office

    - Repository of information on all major sustainability activities at USC

    - Facilitate coordination on sustainability among all USC campuses and business entities

    - Etc.

Year 2 – Selected Actions and Activities Underway (July and August 2020)

- Initiation of a pilot program in introductory sustainability education (expected to reach 600+ students by end of the academic year)

- 2028 Facilities and Capital Plan completed and moving toward adoption by the President and Board of Trustees (delayed by COVID until Fall)

- New CSO position approved to oversee facilities and operations

- New senior administrator and many new faculty hires committed to the sustainability initiative

Cont: Year 2 –Actions Underway
(July and August 2020)

- Major research centers collaboration on sustainability themes (several faculty seed-grants funded by Center on Sustainable Solutions)

- First university "Sustainable Grand Challenge" under discussion

- USC collaborating with City of LA on several initiatives:
  - renewable electricity
  - Mobility and EVs
  - green canopy
  - recycled water

Thank you for your attention

Questions and Comments

Selected References

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