Policy Name: Environmental Sustainability 2016-2020

Policy number and code
Legal reference

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Foreword

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In its pursuit of distinction and as part of its endeavor as a world-class university, Jordan University of Science and Technology (JUST) has been working on sustainability to support its status as a leading national university and enhance its international standing among top ranked universities. Sustainability is also a key strategic goal in our 2016-2020 strategic plan. In order to achieve this goal this sustainability policy was prepared and approved by the Dean's Council to manage and plan all components identified as pillars of sustainable environment on our campus. This policy reflects our dedication to continual improvement of our campus life and activities. The university administration is committed to allocate sufficient resources to ensure implementation of this policy. All action plans evolving out of this policy will be implemented and monitored. Feedback and learning experiences will be employed to revise and improve this policy every five years.

JUST President

Introduction

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Since its establishment in 1986, Jordan University of Science and Technology (JUST) made relentless efforts to be as it stands right now, a leading university on the national and regional levels. It is the home of more than 24000 undergraduate and graduate students, and about 3300 employees who jointly contributed to the university's achievements.

JUST recognizes international developments in higher education and is responsive to changing standards and requirements through the adoption of dynamic policies that are continuously revised based on accumulating experiences. Sustainability of the operations of higher education institutions was given more attention by the end of the United Nations Decade Education for Sustainable Development (2005-2014). In response, the latest JUST strategy for the period 2016-2020 has emphasized sustainability.

Given the fact that JUST acknowledges the importance of being responsible in meeting the needs of the present and leaving a better environment for future generation, this environmental sustainability policy is meant to be as a road map for the university to advance and mainstream sustainability aspects in all its operations.

JUST environmental sustainability policy manages our relationship with the natural environment and its life-sustaining ecosystems and provides the procedures to maintain, restore, and advance an environmentally friendly campus. To achieve this, the policy establishes goals in eight areas of sustainable practices, namely, Water Management, Solid Waste Management, Energy Management and Carbon Emissions, Biodiversity, Teaching and Research, Sustainable Construction, Sustainable Procurement, and Sustainable Transportation. For the purpose of benchmarking, the policy adopted the year 2015 as a base year. Overarching goals were identified for each area and implementing mechanisms were recommended. The policy went a step further by putting the key performance indicators for each area, and determined the potential challenges.

Successful implementation of this policy in all JUST operations requires collective and cooperative efforts by its administration, teaching staff, employees, and students. The crop out of these efforts leads JUST to be a sustainable, modern, and green campus.

Water Management

Baseline

All data used as baseline are annual data recorded or computed for the calendar year of 2015.

- Water consumption was 20.7 m^3 per capita.
- Water use for irrigation was 15.5 m^3 per dunum.
- Treated wastewater use for irrigation was 14.7 m^3 per dunum.
- No water harvesting system was available in buildings.

Target

- To reduce-water consumption by 20 % by 2020.
- To reduce water use for irrigation by 20 % by 2020.
- To increase treated wastewater use for irrigation by 20 % by 2020.
- To install water harvesting systems for new buildings.

Policy Statement

To conserve water through efficient use and management.

Implementation Mechanisms

1. Monitor water consumption data to assist in identifying areas of potential savings.
2. Install water saving devices for taps (replacing of renovating fittings). Buildings under construction or undergoing major renovation should have the most efficient Water Efficiency Labeling and Standards.
3. Implement water efficiency awareness programs to encourage students and staff to save water.
4. Use best practices for efficient irrigation.
5. Buildings under construction should all have rainwater tanks installed to capture roof water, which will be used for toilet flushing and irrigation.
6. Increase on-site stormwater collection hardware used for irrigation.
7. Install sub meters where appropriate.

Key Performance Indicators

- Total water consumption (m^3 per capita).
- Percentage of water saving devices installed in buildings (%).
- Percentage water harvesting (%).
- Amount of wastewater use for irrigation (m^3 per dunum).
- Percentage of treated wastewater (%).

Challeges

- Financial resources.
- Submetering.

Solid Waste Management

Baseline

All data used as baseline are annual data recorded or computed for the calendar year of 2015.

- Solid waste generated quantity was 0.05 ton per capita.
- Solid waste stream types (metals, plastics , papers, …).

Target

- To recylce 20% of total solid waste produced on campus by 2020.
- To reduce the amount of solid waste by 20% by 2020.

Policy Statement

To establish a waste management strategy that positively impacts humans and the environment by minimizing waste generation and maximizing waste reuse and recycling.

Implementation Mechanisms

1. Collect data related to the amount and type of waste generated on campus.
2. Form teams of volunteers, staff, faculty members and students to assist in the waste management plan.
3. Build and develop the capabilities of employees of both the housekeeping and transportation departments in the field of integrated waste management.
4. Provide appropriate recycling infrastructure.
5. Implement waste awareness programs to encourage students to reuse and recycle.
6. Rewards and incentives for recycling amongst faculty and students.
7. Enforce by appropriate action.

Key Performance Indicators

- Percentage of recycled waste of total waste generated.
- Level of cleanness of campus spaces and areas.
- Percentage of each waste stream of total waste generated.

Challenges

- Financial resources.
- Lack of available data on solid waste composition.
- Existing behavior and culture.

Biodiversity and Ecosystem

Baseline

All data used as baseline are annual data recorded or computed for the calendar year of 2015.

- Recorded number and types of flora and fauna.
- Existing green area on campus was 4530 dunum.
- Recorded number and types of trees.

Target

- Increase planted area by 20% by 2020.
- Increase number and types of flora and fauna on campus by 10% by 2020.

Policy Statement

Enhance biodiversity on campus wherever possible, and create opportunities for green environment by a variety of measures.

Implementation Mechanisms

1. Map and measure the area of identified vegetation sites.
2. Estimate flora and fauna's numbers and types.
3. Communicate biodiversity principles to staff and students and encourage staff, students and local community participation in biodiversity activities through volunteering and educational events.
4. Reduce disturbance to habitats or species from new development.
5. Select new adequate plants, animal or other species to attract small animal and bird life.
6. Minimize the negative impact of ground management (reduction of pesticides).

7. Maximize the positive impact (replace plantation with plants that benefit wildlife and compost creation).

Key Performance Indicators
- Number of flora and fauna.
- Number of plant species.
- Green area on campus.
- Level of awareness of biodiversity on campus.
- Percentage of new buildings and construction activities with no net impact on biodiversity.

Challenges
- Lack of data.
- Financial resources.
- Low level of awareness.

Energy Management and Carbon Emission

Baseline
All data used as baseline are annual data recorded or computed for the calendar year of 2015.
- Electrical Energy consumption was 33,600,000 kWh.
- Total gasoline consumption was 43775 liter.
- Total diesel consumption was 960601 liter.
- CO_2 emission was 39289 Tonnes.
- CO_2/FTE was 2.44 Tonne/FTE.

Target
- To reduce carbon emissions from campus-wide energy usage by 25% by 2020.
- To put the university on a path consistent with a reduction in carbon emissions through energy management in building usage, with 25% reduction in emissions from lighting and 15% reduction from air conditioning by 2020.

Policy Statement
We aspire to a long-term ambition to be carbon neutral from energy use.

Implementation Mechanisms
1. Develop and implement a Carbon Management Plan (CMP) for 2016-2020, which includes a roadmap to carbon reductions with appropriate targets and key performance indicators (KPIs).
2. Implement energy efficiency and green measures in all new projects and buildings.
3. Apply in a gradual manner energy efficient standards to existing buildings.
4. Use an electricity incentive scheme, to provide a financial incentive for collages and units to reduce their electricity use.
5. Work with academics to use their expertise in solving problems and implementing effective solutions.
6. Monitor and analyze energy and carbon data and provide relevant information to collages and units.
7. Raise student and employee awareness and invest in their training.
8. Review the operation of heating and cooling to ensure needs are met efficiently.
9. Install sub meters where appropriate for energy audit purposes.

Key Performance Indicators
- Carbon emissions from energy use (Tonnes).
- Carbon emissions from energy use per staff and student (Tonnes/FTE).
- Carbon emissions from energy use per total budget (Tonnes/JD).
- Percentage of energy generated from onsite renewable or low carbon sources (%).
- Percentage saving of Electricity and Fuel (%).

Challenges
- Lack of data.
- Financial Resources
- Existing behavior and culture.

Sustainable Construction

Baseline
- By the end of 2015, only one building supports sustainability issues in: Energy and water savings, Solid waste reduction, Maintenance and operation efficiency (cost), Building's indoor atmosphere quality (Lighting, Ventilation and Heating) and minimizing environmental impacts.

Targets
- To achieve the minimum acceptable level of the Jordan Green Buildings Guide (JGBG) for new construction projects starting 2016.
- To construct new buildings in a sustainable manner supporting sustainability issues starting in 2016.

Implementation mechanisms
- Implement building's site design as per the JGBG criteria.
- Thermally insulate building envelope as per the JGBG criteria.
- Recycle and reuse construction materials into building operations.
- Achieve minimum levels of internal air quality.
- Focus on water and energy saving techniques.
- Light buildings' green area and surroundings.

Key Performance Indicators
- Ratio of Energy saving.
- Ratio of Water saving.
- Maintenance cost for new buildings.

Sustainable Procurement

Baseline
- Number of procurement activity cases that involve a clear statement for sustainability issues for the calendar year 2015. A current baseline of no activity.

Targets
- To prepare a new sustainable guideline for all procurement activities in a flexible manner via the central supply unit and tenders department.
- To increase the number of sustainable procurements for all purchasing and central tenders.

Implementation Mechanisms

1. Allocate and add a specific section into the current technical specifications documents for each purchasing order or central tender for sustainability issues.
2. Apply best practices to all procurement activities as indicated in the "Sustainable Guide for Purchasing.

Key Performance Indicators

- A new controlled document for sustainable procurement.
- Ratio of increasing sustainable procurement activities.

Challenges

- The limitations of the official supplies system.
- Financial resources.

Sustainable Transportation

Baseline

All data used as baseline are annual data recorded or computed for the calendar year of 2015.

- Average fuel consumption was 400107 liters.
- Average mileage was 2366320 km.
- Average number of single occupancy car journeys was 230 journeys.

Targets

- To reduce fuel consumption by 20% by 2020.
- To reduce mileage by 20% by 2020.
- To reduce the number of single occupancy car journeys by 20 % by 2020.

Implementation mechanisms

1. Monitor and collect all data to maintain just staff travel plans.
2. Plan lectures' schedule to minimize student travel needs.
3. Develop a framework to implement the best practice for sustainable travel and transportation on and off campus such as walking, cycling and carpooling.
4. Replace old vehicles with hybrid and/or full electrical cars.
5. Implement a green transportation awareness program for JUST's staff to encourage them to undertake the best practices of traveling.
6. Work with the Public Transportation Authority in order to expand and improve the transportation network to campus.

Key Performance Indicators

- Ratio of fuel savings.
- Ratio of mileage reduction.
- Ratio of single occupancy journey.
- Ratio of carpooling sharing.

Challenges

- Culture (norms and behaviors).
- Financial resources.

Teaching and Research

Baseline
All data used as baseline are annual data recorded or computed for the calendar year of 2015.
- Current number of courses dierctly related to sustainability.
- Current number of published artciles dierctly related to sustainability.

Target
- To increase number of offered courses directly related to sustainability by 10% by 2020.
- To increase number of published articles which are directly related to sustainability by 10% by 2020.

Policy Statement
To create a national and regional positive impact in the domain of sustainability through relevant teaching and research activities.

Implementation Mechanisms
1. Have sustainability-related teaching and research embedded in the University's strategic research and teaching initiatives.
2. Establish campus-wide initiatives in teaching and research related to sustainability.
3. Promote inter- and multi-disciplinary teaching and research on sustainability.
4. Create sustainability forums, clubs,…. etc., and encourage volunteering in such bodies.
5. Prepare basic infrastructure needed to promote sustainability awareness and culture such as labs, ….etc.
6. Provide opportunities for faculty and students to address real-world sustainability problems to enhance their awareness level of sustainability and deepen JUST community's understanding of sustainability issues and challenges.

Key Performance Indicators
- Increase in number of sustainability–related courses (relative to baseline).
- Increase in number of sustainability–related articles published (relative to baseline).
- Level of awareness among JUST's community in sustainability skills, knowledge and understanding (relative to baseline).
- Number of sustainability strategic initiatives implemented.
- Number of students enrolled in sustainability-related courses and activities.

Challeges
- Resources available.
- Response and enthusiasm of JUST's community.