



SUSTAINABLE DEVELOPMENT REPORT 2019

Responsible Consumption and Production



Responsible Consumption and Production ■

Prince Sultan University took efforts on bringing down the environment pollution and contribute in the fight against climate change. As an important stakeholder, PSU contributes towards the achievement of sustainable cities and communities through various events, practices, and research. It regularly organizes events and exhibitions for students and employees to promote responsible consumption and production.

The strong commitment can be witnessed from the type of support provided in events related to E-waste and the sustainable practices followed in PSU campus that promote responsible consumption and production, research contribution, etc. Moreover, the integration of consumption and production as an important topic is endorsed in our curriculum and outreach.

Impact example

Prince Sultan University is involved in several industrial collaborations that are leading the way in search for alternative energy sources. One such example is our Renewable Energy Lab's association with Power and Telecom Technologies Co., KFB Holding Group, Riyadh for a collaborative consultancy project on minimizing electricity cost and feasibility study of self-sustainable campus.

The main objective of the project is to study PSU Lighting electricity network to provide strategic solutions as per the sustainable development goals (SDGs 12, 13 & 17).

01

Clear plan for executing energy saving measures by identifying energy-intensive electrical utilities inside the campus

02

Economic analysis for power quality improvement and energy savings

03

Identifying inefficient electrical processes in the campus

04

Analysis of financial benefit (reduction in the billing cost), investment and payback period



Metrics

Research on Responsible Consumption and Production

1227 Number of views

4.03 Citations Per Paper

The commitment towards encouraging researchers is high at Prince Sultan University which results in high productivity across the department. PSU's scholarly output researches related to SDG 12 – responsible consumption and production in the past academic year has 1227 views and 4.03 citations per paper.

Relevant Researches

sustainability **MDPI**

Article
Quality Management Practices of Food Manufacturers: A Comparative Study between Small, Medium and Large Companies in Malaysia

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Abstract: Quality management (QM) has been intensively studied from the perspective of quality management practices (QMP) and market performance in the food manufacturing industry. However, in Asian countries, studies as regards to the sizes of food manufacturing companies are being neglected. Hence, this quantitative study investigates several aspects and focuses on the extent and level of QMP implementation among small, medium, and large food manufacturing companies in Malaysia. A survey questionnaire has been used to collect the data. In general, the results show that the components and types of QMP have the highest impact on large companies and medium companies than the smallest companies. It was found that QMP significantly related to the operational performance and market performance of the food manufacturing companies in Malaysia. Moreover, the verified QMP was particularly important to improve the effectiveness of resource control of small-sized and medium-sized enterprises. The outcome of this study serves as a framework to bring an understanding of QMP and promote continuous QM improvement means to the food manufacturing industries in Malaysia and other countries of the region.

Keywords: quality management (QM); quality management practices (QMP); international organization for standardization (IOS); good manufacturing practices (GMP); hazard analysis critical control points (HACCP)

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Optimum battery depth of discharge for off-grid solar PV/battery system

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ARTICLE INFO

Keywords:
 Stand-alone PV-battery system
 Multi-objective NSGA-II
 Optimization
 Low of load probability
 Cost of energy

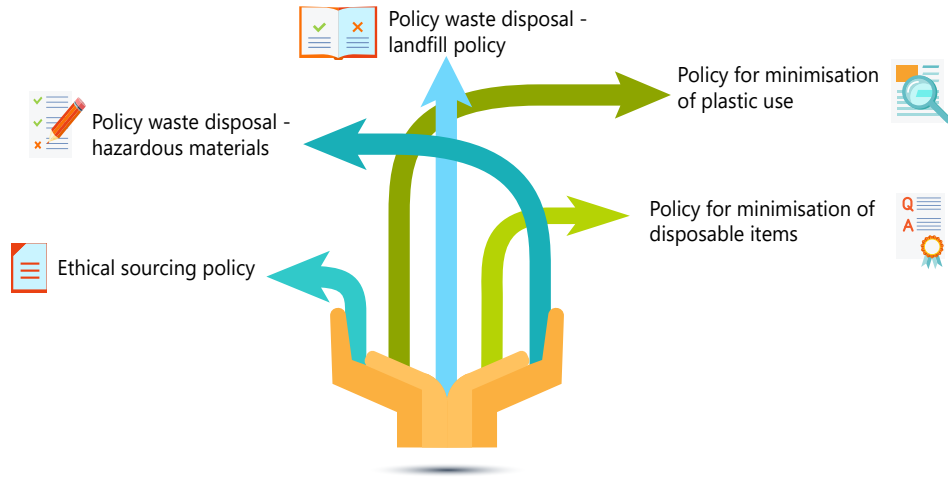
ABSTRACT

In this paper, we propose a multi-objective optimization model that considers the loss of load probability (LLP) and the cost of energy (COE) together with the battery life loss cost and the costs of operation, replacement, and maintenance. These factors form the projected operating framework of the off-grid system for which we utilize the non-dominated sorting genetic algorithm (NSGA-II) method. The proposed model includes the depth of discharge (DOD) of the battery, which is determined based on the battery life loss cost. In addition, in the optimal model, the amount of energy flow from the battery bank during the charging and discharging cycles must satisfy the load demand at the lowest cost and with the highest reliability. The results show that the optimal DOD value for a battery in the solar PV system being investigated is 70%, with LLP = 0% and COE = 0.20594 USD/kWh.





Policies



**Prince Sultan University
PSU Policy Management Systems
Sustainable Waste Management, Prevention and Disposal Policy**

Policy Code: GV0016
Policy Name: Sustainable Waste Management, Prevention and Disposal Policies
Handling Unit: PSU Maintenance Department
Date of Current Revision: August 2020
Approved by: University Council
Date of Approval: 02/09/2020

Purpose and Aims:

Prince Sultan University is a sustainable green university that preaches and applies sustainable development approaches and practices at all levels. As part of its endeavors to build a safe, green campus, PSU adopts sustainable waste management and disposal practices that are implemented in coordination with municipal and government agencies.

Aims:

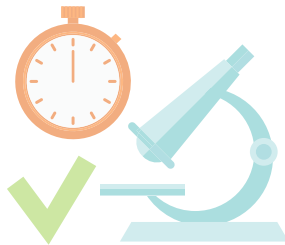
PSU waste management and disposal policy aims to:

- Build and maintain a safe, healthy green campus
- Apply the appropriate approach and use the proper channels for disposing waste based on its category
- Minimize the use of plastics and reduce plastic waste
- Minimize the use of disposable items
- Adopt energy efficiency standards
- Avoid carbon-intensive industries and similar chemical processes that cause the emission of unhealthy gases
- Measure and monitor the amount of landfill and recycled waste



Waste Handling and Disposal Channels

Waste Category	Handling Approach	Channel
Solid Landfill waste	Disposal using appropriate channel	Municipal Waste Disposing network
Electronic Waste	Recycling through specilzed agencies recommended by the Municipality	Specialized agencies for disposing electronic waste
Publications and Paper Waste	Recycling or donation through recommended agencies or recognized charity organizations	Philanthropic societies and organizations
Hazardous Material Waste	Disposal through trusted specialized agencies recommended by the Municipality	Trusted specialized agencies for disposing hazardous waste
Reusable Furniture and Equipment	Donation to needy people and organizations through charity organizations	Recognized charity organizations
Carbon and gas emissions	Minimization or prevention	Instructions, regulations, and guidelines
Plastic waste	Minimization or prevention	Instructions, regulations, and guidelines





Educational Events



Power & Energy Society®

Smart Grid and IoT for the Integration of Renewables in Saudi Arabia



رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Speaker



Prof. Dr. Saifur Rahman
Joseph R. Loring Professor of Electrical Engineering, Virginia Tech Advanced Research Institute, Virginia, USA.

- # Founding director of the Advanced Research Institute at Virginia Tech, USA.
- # Joseph R. Loring professor of electrical and computer engineering.
- # Life Fellow of the IEEE and an IEEE Millennium Medal winner.
- # President-elect of the IEEE Power and Energy Society (PES), 2018 and 2019.
- # Founding editor-in-chief of the IEEE Electrification Magazine and the IEEE Transactions on Sustainable Energy.
- # Conducted several energy efficiency related projects for Duke Energy, Tokyo Electric Power Company, the US Department of Defense, the State of Virginia and the US Department of Energy.
- # Published over 140 Journal and 400 conferences articles.




Outline

- The operational characteristics of renewable energy sources.
- Various Aspects of Smart Grid - Technology, Standards, and Regulations.
- Addresses the interplay among distributed generation, storage, and conventional generation to provide an efficient operational strategy.

Registration

Please register your name by using Link.
<https://forms.gle/Et3K1hMwhKXZFz6>



Date: 16 Sept. 2020
Time: 4:00 to 6:00 PM (KSA)
Day: Wednesday



The link of the webinar will be sent to the registered E-mail ID.

Organizer
CME Student Activity Committee and Renewable Energy Lab
Email: usubramaniam@psu.edu.sa



<https://www.psu.edu.sa/CE/renewable-energy-laboratory>

SSN SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
Kattavakkom - 603 003, Chennai, Tamil Nadu, India
(An Autonomous Institution, Affiliated to Anna University, Chennai)



7TH INTERNATIONAL CONFERENCE ON ELECTRICAL ENERGY SYSTEMS

Organized by
Department of
Electrical and Electronics Engineering

February 11 – 13, 2021

In association with



<p>CONFERENCE CHAIR Dr. V. Kamaraj Professor & Head</p>	<p>CONFERENCE CO-CHAIR Dr. Umashankar Subramaniam Renewable Energy Lab, Prince Sultan University, Riyadh, Saudi Arabia.</p>	<p>CONVENERS Dr. N. B. Muthu Selvan Associate Professor Dr. V. Thyagarajan Associate Professor Dr. M. Devesh Raj Associate Professor</p>
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04

جامعة الامير سلطان
PRINCE SULTAN UNIVERSITY





SUSTAINABLE DEVELOPMENT GOALS

PSU's commitment to SDG 2030

PSU is committed to United Nations' Sustainable Development Goals (SDGs) through effective institutional resource management, innovative teaching and learning, research, national and international partnerships, continuous studies, and outreach. PSU shall undertake the following activities: form higher and steering committees, evaluate each SDG, formulate and develop related SDG policies, conduct awareness campaigns to the PSU community, establish a sustainability office, identify the SDGs related to each college, program, and course, and lab centers at PSU, and implement sustainability-related initiatives.

Vision

Prince Sultan University strives to support Saudi Arabia's Vision 2030 and the United Nations' Sustainable Development Goals (SDGs) by paving the way for higher education in KSA and Middle East.

Mission

Supporting the Saudi Arabia's Vision 2030 and the PSU's strategic directions, PSU aligns its mission with SDGs by providing quality education, sustainability initiatives, lifelong learning, scientific research, and community service.

جامعة الامير سلطان
PRINCE SULTAN
UNIVERSITY



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