

Design and Implementation of an Energy Reduction Program in Shefaa Al-Orman Oncology Hospital:

Strategies and Outcomes

Shefaa Al-Orman Oncology Hospital (SOH)

Demographic information

- Region: Africa
- Country: Egypt
- Type of institution: Hospital
- Number of staff: 1200
- Number of beds: 150

GGHH agenda goals

- Leadership
- Energy

Case study summary

This case study examines the design and implementation of an energy reduction program in Shefaa Al-Orman Oncology Hospital (SOH), focusing on specific strategies and outcomes that resulted in a significant reduction in energy consumption. The study highlights initiatives such as operating Fan Coil Unit (FCU's) through timers, scheduling HVAC system operation, optimizing lighting usage, standardizing temperature settings, and incorporating photocell sensors. Additionally, it emphasizes the leadership's decisions to support rationalization, raise awareness, educate workers, and monitor rationalization on a monthly basis. The case study evaluates the impact of these measures, resulting in a significant 20% reduction in energy consumption from October 2022 to March 2023. Moreover, it showcases the achievement of a 261.5-tonne reduction in the hospital's carbon footprint, measured in CO₂e (carbon dioxide equivalent).

The issue

Shefaa al-Orman Hospital (SOH) faced a significant issue of high energy consumption, leading to substantial operating costs and negative environmental impact. This directly affected patients, staff, and the broader society. The hospital spent approximately 105,939.0 US dollars on energy consumption in the last 6 months from April 2022 to September 2022. This high cost highlighted the urgency of implementing energy-saving measures to reduce operating expenses and redirect funds to patient care and other critical areas. Additionally, excessive energy usage contributed to a larger carbon footprint, worsening air quality and posing health risks. To address this issue, SOH implemented energy reduction measures, resulting in improved patient care, working conditions, and a more sustainable society.

Hospital goal:

- Reduce energy costs
- Reduce carbon dioxide emissions

Sustainability strategy implemented

Under the leadership's guidance and support, Shefaa al-Orman Hospital (SOH) successfully implemented its sustainability strategy. The leadership recognized the importance of reducing energy consumption and its impact on both the hospital's financial stability and the well-being of patients, staff, and the environment. They issued decisions to support energy rationalization efforts, raise awareness, and educate workers about sustainable practices.

Shefaa al-Orman Hospital (SOH) implemented a comprehensive sustainability strategy. This included several key measures such as operating the FCU's for administrative offices through a timer, scheduling HVAC system units via a Building Management System (BMS), standardizing temperature settings for all AHU and FCU to 25 degrees, using photocell sensors for external lighting, and transitioning to LED lights. These initiatives aimed to reduce energy consumption, lower operating costs, and minimize the hospital's carbon footprint. The chosen solution was based on its proven effectiveness in other healthcare settings and its potential for significant energy savings.

Implementation process

The implementation of the sustainability strategy at (SOH) involved various stages and stakeholders. The key aspects of the implementation process are as follows:

Stakeholders: The implementation process involved active participation from hospital leadership, quality team, facility management team, Safety and environmental committee, and staff members from different departments.

Success factors: The success of the implementation can be attributed to strong leadership support, effective communication, and stakeholder engagement. Regular monitoring and evaluation of energy consumption helped identify areas for improvement and track progress towards sustainability goals.

Decision-making process: Decisions regarding the implementation of specific energy-saving measures were made through a collaborative approach. Input from the environmental committee, engineering department, and relevant stakeholders was considered to ensure feasibility and effectiveness.

Staff training: Staff members were provided with training sessions to raise awareness about energy-saving practices and to ensure proper utilization of the new systems and equipment. Training focused on promoting energy-efficient behaviors, such as turning off lights when not in use and optimizing the use of HVAC systems.

Equipment changes: Equipment changes included installing timers on FCUs for administrative offices, incorporating BMS for scheduling HVAC system units, use LED lights, and integrating photocell sensors for external lighting.

Departments involved: Multiple departments were involved in the implementation, including quality department, facility management, safety and environmental committee, administration, and various clinical departments.

Behavior/Cultural changes: The implementation required a shift in behavior and culture to promote energy-conscious practices. This involved promoting the importance of energy conservation, encouraging staff to adopt sustainable behaviors, and fostering a culture of environmental responsibility.

Implementation timeline: The strategy was implemented gradually, with different measures introduced at different stages. The entire implementation process, from planning to full deployment, took approximately two months.

Please note that the information in this case study was provided by the GGHH member named above. Health Care Without Harm (HCWH) is not responsible for the accuracy of the information/data provided.

Review and modification: The strategy's implementation was reviewed and modified periodically to address any challenges or optimize its effectiveness. Ongoing staff training needs were identified and provided as part of the continuous improvement process.

Overall, the implementation process involved collaboration, training, equipment upgrades, behavior changes, and ongoing review to ensure the successful integration of the sustainability strategy at Shefaa al-Orman Hospital.

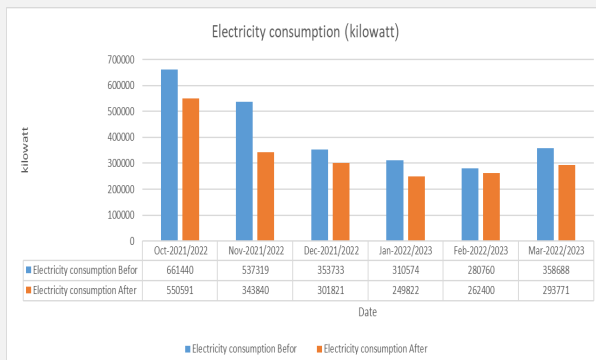


Tracking progress

Monitor the consumption and cost of electricity through bills on a monthly basis.

Calculating the carbon footprint of electricity on a monthly basis.

Progress achieved



Energy Consumption: The implementation of energy-saving measures resulted in a successful reduction of energy consumption by 20% from October 2022 to March 2023, surpassing the initial target.

Cost Reduction: The cost savings achieved through reduced energy consumption contributed to a decrease in operating expenses by 21,178.0 US in six months.

Carbon Emissions: The implementation of energy-saving measures led to a reduction in carbon emissions, with a total reduction of 261.5 tonnes of CO₂e achieved from October 2022 to March 2023, meeting the targeted goal.

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Challenges and lessons learned

During the implementation of the sustainability strategy, Shefaa al-Orman Hospital (SOH) encountered several challenges. These included resistance to change, staff engagement, budget constraints, and technical complexities. However, valuable lessons were learned throughout the process. Clear and consistent communication, stakeholder involvement, and leadership support were crucial in overcoming resistance and fostering a culture of sustainability. Flexibility in adapting the strategy to fit the hospital's specific needs and resources helped address budget constraints. Technical challenges were resolved through collaboration with experts and thorough planning. Sharing these lessons can assist other hospitals in anticipating and addressing similar challenges, enabling them to work towards their sustainability goals more efficiently.

Next steps

Following the successful implementation of the sustainability strategy, Shefaa al-Orman Hospital (SOH) has identified several next steps. These include ongoing monitoring and optimization of energy-saving measures and exploring the integration of solar energy as a sustainable power source. New objectives involve setting more ambitious targets for energy reduction and carbon emissions. To scale up the initiative, SOH plans to share best practices and lessons learned with other hospitals. Publishing data and case study findings can contribute to knowledge sharing and inspire similar projects. Unanswered questions include long-term sustainability, the impact on patient outcomes, and the potential for wider community engagement.

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