

Institutional Sustainability and Climate Action Policy

Climate change is one of the important topics concerning the world today. It is a challenge that countries have begun to address by setting plans, measures, and precautions to confront and manage the changes. In Saudi Arabia, through Vision 2030, we are committed to reducing carbon emissions, setting plans, and encouraging people to use renewable energy alternatives. The University of Tabuk has contributed to this effort through the contributions of the Renewable Energy and Environmental Technology Center.

The University of Tabuk is actively contributing to global climate action efforts through cutting-edge research, focusing on renewable energy, carbon reduction, and sustainable technologies. Research initiatives align with the goals of SDG 13 by exploring innovative solutions to climate challenges. For example:

- **Tian, M.W., Abubakar, Z., Chauhan, B.S., Mahmoud, S., Lui, C. and Mansir, I.B., 2023.** Economic cost and performance analysis of a novel trigeneration scheme utilizing CO₂ capture and solid oxide electrolysis units. *Process Safety and Environmental Protection*, 175, pp.377-391.
- **Al-Shetwi, A.Q., Atawi, I.E., Abuelrub, A. and Hannan, M.A., 2023.** Techno-economic assessment and optimal design of hybrid power generation-based renewable energy systems. *Technology in Society*, 75, p.102352.
- **Althobaiti, Z.F. and Shabri, A., 2023,** February. Prediction of CO₂ emissions in Saudi Arabia using genetic algorithms based on Grey Model GM (1, 1). In *AIP Conference Proceedings* (Vol. 2500, No. 1). AIP Publishing.

The University of Tabuk actively engages in providing local education programs and campaigns that address climate change risks, impacts, and mitigation strategies, as well as adaptation, impact reduction, and early warning systems. One notable example is the university's collaboration with the General Authority of Meteorology and Environmental Protection, a partnership aimed at promoting environmental awareness and action. Additionally, the university

offers a Higher Diploma in Environmental Science with a focus on the environmental sustainability path, equipping students with the knowledge and skills to address pressing environmental challenges. Moreover, the university hosts events and seminars that foster community engagement and raise awareness of climate change and its impacts. Through these educational initiatives, the University of Tabuk plays a crucial role in enhancing local capacity to respond to the challenges posed by climate change.

- **Collaboration between the University of Tabuk and the General Authority of Meteorology and Environmental Protection (Page 8)**
- <https://www.ut.edu.sa/ar/administration/vrgssr/Partnerships-and-International/Documents/Partnership%20Agreements%202.pdf>
- **Higher diploma in environmental science- environmental sustainability path**
- <https://www.ut.edu.sa/ar/Faculties/science/Biology-section/Pages/NewsDetails.aspx?NewsID=6>



الدبلوم العالي في العلوم البيئية

مسار الاستدامة البيئية

Higher Diploma in Environmental Sciences

Environmental Sustainability Path

قسم الأحياء - كلية العلوم بجامعة تبوك

Department of Biology - Faculty of Science, University of Tabuk

The University of Tabuk collaborates with the General Authority of Meteorology and Environmental Protection to work together on addressing climate change issues.

Collaboration between the University of Tabuk and the General Authority of Meteorology and Environmental Protection (page 28)

<https://www.ut.edu.sa/ar/administration/vrgssr/Partnerships-and-International/Documents/Partnership%20Agreements%202.pdf>

The University of Tabuk, through its Vice Presidency and specialized units, is committed to promoting energy efficiency by implementing energy-saving standards in all renovations and new constructions. Specialized units such as the Center for Renewable Energy and Environmental Technology, along with the energy conservation team, actively contribute by raising awareness about the importance of energy conservation. They regularly disseminate informative messages to university staff and students via official emails, encouraging responsible energy use across campus.

Agreement document UT and the National Energy Efficiency Services Company

<https://www.spa.gov.sa/947b6479d5q>

Awareness campaigns

<https://www.ut.edu.sa/ar/administration/Agency/Energy-rationalization-team/Pages/default.aspx>



The National Energy Services Company "Tarshid" and the University of Tabuk have launched a project aimed at improving energy efficiency across the university's buildings and facilities. The project seeks to enhance energy performance and reduce consumption in 54 buildings, covering a total area of 238,000 square meters, adhering to international standards.

The project will implement 12 key energy efficiency measures, focusing on control systems, air conditioning, and lighting. These measures include the partial replacement of chillers with more energy-efficient models, installing control systems for air conditioning and air handling units, upgrading traditional lighting to energy-efficient LED systems, and adding motion sensors in offices and facilities to optimize energy use.

Agreement document UT and the National Energy Efficiency Services Company

<https://www.spa.gov.sa/947b6479d5q>

The University of Tabuk has implemented a comprehensive process for carbon management and reducing carbon dioxide emissions. This includes:

- **Energy Efficiency Projects:** In collaboration with 'Tarshid', we are upgrading HVAC systems, replacing traditional lighting with energy-efficient LED systems, and implementing smart control systems to optimize energy usage across all buildings
- **Renewable Energy Integration:** The University of Tabuk, through the Renewable Energy and Environmental Technology Center, aims to transform the university from a consumer of electricity into a self-sufficient institution by powering campus facilities with an integrated renewable energy system, including solar and wind energy. This initiative positions the University of Tabuk as the first university in Saudi Arabia to operate on renewable, eco-friendly energy.

At the University of Tabuk, the contract for the building maintenance and operation project specifies that the contractor is responsible for protecting the environment and adhering to all environmental regulations and guidelines.

The University of Tabuk, represented by the Center for Renewable Energy and Environmental Technology, offers programs for the local community to learn about the importance of energy efficiency and clean energy. The Center has been approved by the King Abdullah City for Atomic and Renewable Energy as a site for conducting training courses in the field of solar photovoltaic energy



Renewable Energy & Environmental technology center

<https://www.ut.edu.sa/ar/Centers/reeec/Pages/NewsDetails.aspx?NewsID=10#>

The Center for Renewable Energy and Energy Efficiency at Tabuk University has been accredited as a center for providing specialized training courses in the field of solar energy system design

https://x.com/u_tabuk/status/1477634849968214018?s=46&t=TRyN4HDvhNuZLwM4vITAoQ

Issuance of training certificates in the field of solar photovoltaic energy and the inclusion of the Center for Renewable Energy and Environmental Technology at Tabuk University among the centers accredited by King Abdullah City for Atomic and Renewable Energy

<https://www.kacare.gov.sa/ar/FutureEnergy/RenewableEnergy/Pages/ri.aspx>

Solar Energy Systems Design Course

<https://www.ut.edu.sa/ar/Centers/reeec/Pages/NewsDetails.aspx?NewsID=13>

Solar Photovoltaic Design

<https://www.ut.edu.sa/ar/Centers/reeec/Pages/NewsDetails.aspx?NewsID=12>

Partnerships with Local Organizations:

https://x.com/u_tabuk/status/1774394979760185570?s=48

<https://www.ut.edu.sa/ar/administration/vrgssr/Partnerships-and-International/Documents/Partnership%20Agreements%202.pdf>

<https://www.ut.edu.sa/ar/administration/vrgssr/Partnerships-and-International/Documents/Partnership%20Agreements%201.pdf>

Workshops:

https://x.com/ut_dgs/status/1719279471226655189?s=46&t=TRyN4HDvhNuZLwM4vITAoQ

The University of Tabuk has adopted a plan to operate some of its facilities using renewable energy sources, specifically wind and solar energy. It has also approved the operation and identity of the Center for Renewable Energy and Environmental Technology. Additionally, the University of Tabuk is working on signing contracts to monitor the performance of the supercapacitor storage system and to evaluate the PERC technology in solar panels under extreme environmental conditions

The university's plan to operate using renewable energy

https://x.com/u_tabuk/status/1049554211330056192?s=46&t=TRyN4HDvhNuZLwM4vITAoQ

Cooperation agreement to implement rehabilitation works for Tabuk University buildings and public facilities to rationalize energy consumption

https://x.com/u_tabuk/status/1464241726424551424?s=46&t=TRyN4HDvhNuZLwM4vITaoQ

<https://www.spa.gov.sa/947b6479d5q>

https://x.com/u_tabuk/status/1464609607201009674?s=46&t=TRyN4HDvhNuZLwM4vITaoQ

The Research and Consulting Institute, in cooperation with the Deanship of Research and Graduate Studies at Tabuk University, signed contracts to implement services for the competition to evaluate and monitor the performance of the supercapacitor storage system, as well as the competition to evaluate PERC technology in solar panels under harsh environmental condition

https://x.com/event_ut/status/1812568564290703615?s=46&t=TRyN4HDvhNuZLwM4vITaoQ

Partnerships with Local Organizations:

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Workshops:

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Conducting joint research with international institutions

<https://www.ut.edu.sa/ar/administration/vrgssr/Social-Responsibility/Documents/%D9%82%D8%A7%D8%A6%D9%85%D8%A9%20%D8%A7%D9%84%D8%A7%D8%A8%D8%AD%D8%A7%D8%AB%20%D8%A7%D9%84%D9%85%D8%AC%D8%AA%D9%85%D8%B9%D9%8A%D8%A9.pdf>

The University of Tabuk cooperates with governmental and industrial sectors specialized in finding clean energy solutions by sharing its scientific, research, and technical expertise. This collaboration aims to develop clean energy solutions that promote sustainable environmental development with higher efficiency and lower costs. The University of Tabuk's Center for Renewable Energy and Environmental Technology has been approved by the King Abdullah City for Atomic and Renewable Energy as a headquarters for conducting training courses on solar photovoltaic energy.

Public Lectures and Seminars (Free)

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<https://www.ut.edu.sa/ar/Centers/reeec/Pages/default.aspx>

Training (Free)

Free- Solar Photovoltaic Design

<https://www.ut.edu.sa/ar/Centers/reeec/Pages/NewsDetails.aspx?NewsID=12>

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B%20%D8%A7%D9%84%D9%85%D8%AC%D8%AA%D9%85%D8%B9
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Training (paid)

<https://www.ut.edu.sa/ar/Centers/reeec/Pages/NewsDetails.aspx?NewsID=13>

The University of Tabuk collaborates with government sectors specialized in developing clean energy solutions by sharing its scientific, research, and technical expertise. This partnership aims to promote sustainable environmental development with higher efficiency and lower costs. For example, the university works with the Ministry of Energy and Tarshid (the National Energy Services Company) to optimize energy consumption and enhance its efficiency in university buildings. Additionally, the University of Tabuk's Center for Renewable Energy and Environmental Technology has been approved by the King Abdullah City for Atomic and Renewable Energy as a venue for conducting training courses on solar energy.

Renewable Energy & Environmental technology center

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https://x.com/event_ut/status/1812568564290703615?s=46&t=TRyN4HDvhNuZLwM4vITaoQ

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Conducting joint research with international institutions

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B%20%D8%A7%D9%84%D9%85%D8%AC%D8%AA%D9%85%D8%B9
%D9%8A%D8%A9.pdf](https://www.ut.edu.sa/ar/administration/vrgssr/Social-Responsibility/Documents/%D9%82%D8%A7%D8%A6%D9%85%D8%A9%20%D8%A7%D9%84%D8%A7%D8%A8%D8%AD%D8%A7%D8%A
B%20%D8%A7%D9%84%D9%85%D8%AC%D8%AA%D9%85%D8%B9
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The University of Tabuk works to adopt sustainable technologies that reduce environmental damage. For example: The University of Tabuk - Center for Research on Artificial Intelligence and Sensor Technologies cooperated with the Saline Water Conversion Corporation, represented by the Water Technology Innovation and Research Development Company (WTIIRA), in publishing a research paper.

Improving charge transfer properties and performance of solar cells by doped TiO₂ as an efficient photovoltaic code for dye sensitized solar cells (DSSCs) as an alternative to conventional solar energy for its high ability to absorb energy from sunlight more efficiently and less expensively. This enhances the university's role in promoting scientific cooperation between the industrial and academic sectors in the field of sustainable energy in line with the Kingdom's Vision 2030 and achieving the goal of zero carbon neutrality in the Kingdom.

The new edition of the Water Research Community, organized by the Saline Water Conversion Corporation and represented by the Water Technology Innovation and Advanced Research Institute, targeted important projects and innovative initiatives, including developing a chain of operations to reduce carbon emissions and supporting ongoing efforts to enhance the use of sustainability solutions and renewable energy.

<https://www.spa.gov.sa/N2094781>

A delegation from the Water Technology Innovation and Advanced Research Institute visits Tabuk University

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<https://www.swcc.gov.sa/ar/News/NewsDetails/1193>

<https://www.swcc.gov.sa/uploads/watira%20news.pdf>

