



UNIVERSITY OF EL-OUED

Report on the United Nations
Sustainable Development Goal 9:
Industry, Innovation and Infrastructure



This report illustrates the University of El Oued's progress on SDG 9, focusing on building resilient infrastructure, fostering innovation, and promoting sustainable industrialization that drives regional development

Introduction

Sustainable Development Goal 9 (SDG 9) emphasizes building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. At the University of El Oued, SDG 9 is advanced through a range of research initiatives, educational programs, and community partnerships. This report highlights the university's ongoing contributions to industrial innovation and infrastructure development, which are essential for driving economic growth and addressing regional and global challenges.

Research, Teaching, and Operations: Fostering Innovation and Industrialization

The University of El Oued integrates SDG 9 into its primary activities—research, teaching, and operations—through its commitment to developing infrastructure, supporting industrialization, and encouraging innovation.

1. Developing Sustainable and Resilient Infrastructure

The university prioritizes sustainable infrastructure that addresses regional environmental challenges, such as sandstorms and extreme heat. Its infrastructure projects aim to support economic growth, facilitate resource access, and improve community well-being.

- *Sustainable Infrastructure in Disadvantaged Regions:* Research conducted at the university explores how to implement infrastructure projects that are affordable and accessible for economically disadvantaged areas. This research includes case studies on projects in low-income regions and examines financing models to ensure equitable access to resources.

2. Smart Infrastructure for Sustainable Urban Development

The university is investing in smart infrastructure to support sustainable urban development. Projects include integrating IoT and AI technology into infrastructure planning to enhance

efficiency and ensure equitable access to resources. Smart transportation systems and energy-efficient grids represent a shift toward sustainable urbanization.

Inclusive and Sustainable Industrialization: Driving Regional Development

The University of El Oued promotes sustainable industrialization by fostering innovation and supporting local industries to create jobs, increase economic growth, and enhance environmental sustainability.

1. Harnessing Renewable Energy in Industrial Development

The university's research explores how renewable energy sources, such as solar and wind, can power industrial activities in the Saharan region. This research includes evaluating the potential for renewable energy applications in industries, contributing to both sustainability and economic resilience in the region.

2. Gender Equality in Industrial Sectors

The university is committed to gender equality in the workforce, particularly within the industrial sector. Research focuses on identifying barriers to women's participation in industry and developing programs to address these challenges, including skills training and educational initiatives aimed at empowering women.

3. Climate-Resilient Industrial Practices

The university's research emphasizes the importance of climate-resilient industrial practices, particularly in the Sahara. Studies focus on industries that have successfully adapted to the challenges of climate change, with examples of businesses implementing sustainable practices that benefit the environment and strengthen resilience against extreme weather.

Support for Innovation: Startups, Patents, and Entrepreneurship

The University of El Oued is dedicated to promoting entrepreneurship and supporting innovative student projects that contribute to sustainable development and regional economic growth.

1. The Startup-Patent Initiative and Inventions

In alignment with Ministerial Decree 1275, the university has established a programme supporting innovative student projects, leading to the development of several startups and patents. For example, on June 6, 2023, students Ahmed Khiari and Mahmoud Aiba presented their master's thesis, which included three inventions: the "Safir" goods transportation application, a smart cane, and talking glasses for the visually impaired. These projects were developed as part of the startup-patent initiative, emphasizing the university's role in fostering practical solutions for real-world challenges.

- *Safir Goods Transportation Application*: Developed by student Ahmed Khiari, this application facilitates easy transportation of goods by connecting customers with drivers. The application is designed to support economic development by creating a seamless, efficient logistics solution for individuals and businesses alike. This invention has garnered interest from investors in Algeria and internationally.
- *Assistive Technologies for the Visually Impaired*: Students Khiari and Aiba developed two devices to assist visually impaired individuals: a smart cane with an ultrasonic sensor and smart glasses with an AI-powered camera. These devices enhance mobility for visually impaired individuals by detecting obstacles and providing audio feedback. This project underscores the university's commitment to social impact through innovation.

2. Supporting Entrepreneurship through the Business Incubator

The university's business incubator plays a vital role in supporting student entrepreneurs and

guiding them through the process of developing and patenting their projects. On April 27, 2023, working sessions were held at the incubator to assist students in refining their business plans and integrating recommendations from experienced faculty members. This incubator support system encourages students to pursue innovative projects and helps them gain recognition as "innovative project" startups.

3. Technology Exhibitions and Community Engagement

Following the thesis defence sessions, the university's incubator organized a technology exhibition that showcased significant innovations from students' projects. The exhibition provided an opportunity for students, faculty, and community members to learn about cutting-edge projects, reinforcing the university's commitment to community engagement and promoting student-led innovation.

Strengthening Education and Collaboration for Industrial Innovation

1. Study Day on Graduation Theses and Innovation

On February 6, 2023, the university hosted a study day focused on the "Mechanism of Graduation Thesis for Obtaining a University Degree - Startup and Patent," in accordance with Ministerial Decree 1275. The event brought together key stakeholders, including representatives from the National Institute of Industrial Property, to discuss the patent process, provide guidance, and inspire students to develop market-ready innovations.

2. Promoting Innovation through Partnerships with Government and Industry

The University of El Oued collaborates with government bodies and industry leaders to support infrastructure development and the commercialization of student innovations. These partnerships include joint research projects, technology transfer,

and policy recommendations that support the national strategy for industrial innovation.

3. Future Vision for Infrastructure Modernization

In alignment with SDG 9 goals, the university aims to modernize infrastructure, enhance resource efficiency, and promote the use of clean technologies. With each faculty contributing through its specific expertise, the university is dedicated to fostering a culture of innovation that drives sustainable practices and technological advancement.

Conclusion

The University of El Oued's dedication to SDG 9 is evident through its advancements in sustainable infrastructure, inclusive industrialization, and innovation. Through student-led projects, such as the Safir application and assistive technologies for the visually impaired, as well as its business incubator's support for startups, the university demonstrates a commitment to impactful research and development. These efforts, coupled with strong community engagement and government collaboration, position the University of El Oued as a leader in sustainable industrial innovation and infrastructure development. The university's ongoing initiatives contribute to a resilient, inclusive, and sustainable future for the region, in line with global SDG 9 objectives.