



**Cities Alliance**  
Cities Without Slums

Hosted by  
**UNOPS**



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Economic Affairs SECO

# ACCELERATING TUNISIA'S ENERGY TRANSITION

## INVESTING IN CLIMATE-RESILIENCE: TOWARDS A SUSTAINABLE ENERGY TRANSITION FOR TUNISIA'S SECONDARY CITIES

© LED street lights in the city centre of Beja



Tunisia, and its regions and cities of the interior, are particularly vulnerable to climate change. Already today, climate change and environmental degradation are putting strong pressure on water resources, agricultural production, ecosystems, and health and well-being. These stresses pose a significant threat to inclusive and sustainable development.

The government of Tunisia has committed to combating climate change and developing a climate-resilient economy. Its commitments are outlined in the Nationally Determined Contributions (NDC) resulting from the Paris Agreement, the National Climate Change Strategy, the Energy Efficiency Strategy and Solar Plan, and the action plan for renewable energy. Tunisia aims to reduce total GHG emission across sectors by 41 % by 2030<sup>1</sup> and to minimise energy consumption by 30 %. Localising effective mitigation and adaptation measures holds the potential for a green and climate-resilient economic transition. Tunisia's interior regions and cities can be at the forefront of these efforts.

<sup>1</sup> In comparison to 2010, of which 13% are unconditional and another 28% conditional (GoT, Ministry of Environment 2015).

*Our energy bill already makes up 25 % of the city's budget, and keeps increasing year by year. It prevents us from investing more money into those infrastructures our citizens demand.*

— Finance officer, city of Tataouine

Energy audits are a key tool for advancing the energy and climate transition because they help cities reduce their high and inefficient electricity consumption.

### THE 2030 CLIMATE GOALS OF TUNISIA:



reduce total  
GHG emission by

↓ 41%



minimise  
energy consumption by

↓ 30%



Savings through gains  
in **energy efficiency**  
interventions

CONTRIBUTE TO



Climate  
change goals



Reallocate funds  
for investment

The cities of Beja, Jendouba and Tataouine spend between 15-25 % of their budget on electricity bills, and these costs increase each year. Savings through gains in evidence-based energy efficiency interventions following audits allow these cities to contribute to national climate change goals. They allow them to

reallocate funds for investment to other priority areas of public infrastructure and services.

The energy audit currently underway analyses the energy performance of the public lighting networks of 3 cities (20,000 light points in total) and provides

recommendations for targeted actions to minimise energy consumption and improve the quality and safety of public lighting. By extension they can improve the quality and safety of public spaces throughout the day for more than 200,000 inhabitants, and women and girls in particular.

## BEJA, JENDOUBA AND TATAOUINE

(💡 20,000 light points)



# 15-30%

**of municipal budgets are  
spent on electricity bills**

↑ **costs increase  
each year**



*The intervention area is a newly built neighborhood at the city's outskirts. Many residents originally from rural areas have settled here. Before the project, the absence of adequate street lighting made the area unsafe for women and girls after dark and thefts and burglaries were common. It also meant that commercial activities were limited once the sun had set.*

*Thanks to this project, we have been able to install LED street lights here. Residents' feedback has been overwhelmingly positive. They have told us how they feel much safer and street life has become livelier after dark, allowing them to do grocery shopping and other activities even after sunset. It's been a pilot experience for us. Now we are motivated and well-equipped to extend LED street lighting into other neighborhoods so that over time all residents of Msaken can benefit from it.*

— Leila Zina, Architect of the municipality of Msaken

The evidence bases and recommended actions resulting from the audits provide decision-makers and technical staff with the information they need to budget for and prioritise investments in the cities' public lighting network. A scenario and action plan allow for progressive

energy transitions over the next 3-5 years, tailored to the cities' implementation capacities.

Based on the selected scenario, Cities Alliance will conduct a financial analysis on the cost of the optimisations, the potential returns on investment, and a

review of existing financing modalities in the form of state grants, credits and subsidies such as via the Energy Transition Fund and other funding sources. This support allows city authorities to choose the appropriate financing mechanisms for their chosen path to energy transitions.

## PUTTING THE SUSTAINABLE ENERGY TRANSITION INTO ACTION: efficient LED street lighting

© Cyclists enjoy improved road safety thanks to LED street lighting along the walls of the medina in Kairouan



In parallel, Cities Alliance is already supporting the city of Beja and Tataouine in launching their sustainable energy transitions with action on the ground. In a first instance, the authorities in Beja installed energy-efficient LED streetlights with 3 arterial roads in the center of the city. In Tataouine such streetlights, complemented by solar-powered lights, were installed around a popular public park.

Already in an earlier project in partnership with the National Federation of Tunisian Municipalities (FNCT), the cities of Kairouan and Msaken had kicked off their energy transition.



*Since 2017 we've been suggesting to renew our street lights with more efficient LEDs. Finally, thanks to this project we have been able to go ahead. And this is just the start. Encouraged by this pilot experience and equipped with the technical know-how, we recently prepared three additional tendering processes, worth 1.45 million TND (\$USD 468,000). The funds are already there, they have accumulated from our last three Annual Investment Plans for which implementation had stalled due to the socio-economic crisis related to COVID.*

*I'm particularly proud that based on the initial experience we extend energy-efficient street lighting into the disadvantaged, peripheral neighborhoods of the city, benefiting those that are often left out. The savings will allow us to extend other municipal services into these areas, too.*

— Mohamed Salah, Technical director and LDP focal point, municipality of Beja

Both cities introduced intelligent street lighting control systems allowing them to further reduce consumption by 15 % by adapting light brightness according to traffic hours and performance monitoring. They enable city staff to control point by point, detect breakdowns through alert messaging, monitor real-time consumption, predict the next year's consumption and apply energy performance indicators and monitoring models.

The cost for replacing the traditional lights with LED will be recovered within 4-5 years of operation thanks to the savings made in electricity consumption.

Encouraged by the positive feedback from residents and now equipped with the capacities to move forward, city authorities are planning to install other, larger sets of LED street lights in more neighborhoods.

### CITIES ALLIANCE IS SUPPORTING

the cities of Beja, Jendouba and Tataouine in kickstarting their sustainable energy transition



municipality-wide audits of a total of  
**20,000**  
light points



installation of energy-efficient  
**LED STREET LIGHTS IN**  
priority areas of the cities



**An operational action plan**  
with concrete targeted actions and financing schemes



## ACCELERATING URBAN ENERGY TRANSITIONS: the essential role of partnerships

To overcome operational and financing challenges partnerships are vital. This is why Cities Alliance supports local authorities in closely collaborating with key stakeholders like the National Agency for Energy Management (ANME), the Local Government Development Bank (CPSCL), international financing partners and private investors. Currently, Cities Alliance is developing an innovative PPP financing mechanism. A public-private dialogue is already underway and initial interest by investors has been confirmed.

©A street vendor enjoys safer streets in Kairouan, as cars detect his cart better after dark.



### KEY RESULTS



municipality-wide audits  
of a total of  
**20,000 light points**



Saving potential of  
**30-50 %**  
of the electricity bill



Savings of  
**400-800,000 TND**  
(\$USD 136-272,000)  
per city



Technical staff of  
**3 municipalities**  
equipped with skills to  
replicate and scale-up



An operational  
**action plan**  
with concrete targeted  
actions and financing  
schemes



**Scale-up for a**  
city-wide energy  
transition



Improved  
**quality and safety of public spaces**  
at all times of the day

For more than  
**200,000 inhabitants**  
women and girls  
in particular.

The Accelerating Tunisia's Energy Transition activity is part of the Madinatouna II project, implemented by Cities Alliance with financial support from the Swiss State Secretariat for Economic Affairs (SECO).

**Cities Alliance**  
Cities Without Slums

Hosted by  
**UNOPS**



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Economic Affairs SECO