

*As part of the SwitchMed programme, UNIDO supports industries in the Southern Mediterranean through the transfer of environmental sound technologies (MED TEST II) to become more resource efficient and to generate savings for improved competitiveness and environmental performance.*

## Morocco

### Afrique Câbles

### Mechanical sector

#### Context

Number of employees: 200

Key products: Starter batteries, solar energy components, telephone cables

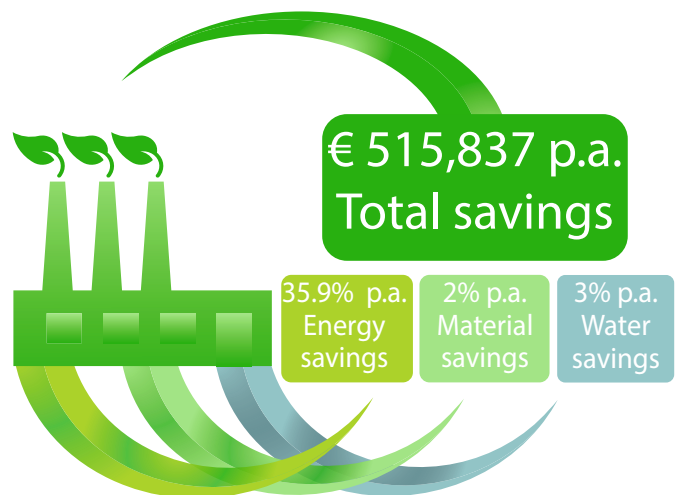
Main markets: Local and international

AFRIQUE CABLES, established in 1992, specializes in the production of cables for overhead and underground telephone networks, as well as the manufacture of starter batteries and energy.

The main strength of AFRIQUE CABLES is the constant search for innovation to maintain its leading position. An integrated R&D laboratory has been set up giving the company a clear competitive advantage. AFRIQUE CABLES was the first Moroccan company to adopt the battery recycling process.

With a continuous improvement approach, it has implemented an integrated system of quality management, health and safety at work and the environment based on ISO standards.

#### Benefits



Graphic: UNIDO

The MED TEST II project identified opportunities for total annual savings of €515 837 in raw materials, water and energy for a projected investment of € 1,649,895.

The average payback period for the identified RECP measures is 3.2 years. All of the measures identified have been accepted by management and some have already been implemented.

Thanks to the improvement and optimization of production and the installation of more efficient equipment, the implemented measures will reduce energy consumption by 35.9%, water consumption by 3%, and the consumption of raw materials by 2%.

The environmental benefits achieved through photovoltaic electric production and several product optimization measures will reduce annual energy expenses and decrease CO<sub>2</sub> emissions by 37.7% (2,084 t).

## Saving opportunities<sup>1</sup>

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Electrical energy and compressed air	73,530	55,265	1.3	-	435	Total: 2,084 t CO <sub>2</sub> 444 m <sup>3</sup> waste water 120 t solid waste
Desulphurization in recycling plant and environmental compliance	854,580	73,548	11.6	40 t raw materials	2,679	
Energy management system	46,790	21,355	2.1	-	263	
Improving technology and optimizing production	197,490	271,400	0.7	444 m <sup>3</sup> water 880 t raw materials	114	
Independent production of electricity by PV	477,505	94,269	5.1	-	1,035	
<b>TOTAL</b>	<b>€ 1,649,895</b>	<b>€ 515,837</b>	<b>3.2</b>	<b>120 t raw materials 444 m<sup>3</sup> water</b>	<b>4,526 MWh</b>	

<sup>1</sup> Numbers based on production value from 2015

### Electrical energy and compressed air

Electrical consumption will be reduced through measures aimed at optimizing contract power, improving performance of indoor and outdoor lighting at the sites of the two production units by installing LED appliances and phased replacement of electric motors with more efficient models. The production of compressed air will be improved by the installation of variable speed compressors on the sites of the two production units (Batteries and Cables) and by a campaign for the detection and repair of leaks.

### Desulphurization in the recycling plant and environmental compliance

Implementation of the desulphurization stage, unprofitable at the current recycling scale, will have a significant impact on the environment and energy consumption as part of the planned expansion of production (1 million batteries a year). Air purification at the recycling plant and the neutralization unit, and compliance of liquid wastes in terms of sulphate content, by recovery of sulfuric acid from used batteries or replacement of soda through lime milk, will further improve the working conditions of the staff and the environmental situation of the company.

### Energy management system

Implementation of an electrical energy management system to implement the standard ISO 50001 on energy management will enable the company to optimize its energy consumption, with potential for significant reduction.

### Improving technology and optimizing production

The implementation of the 5S approach, the renovation of IC welding, the improvement of equipment and processes as well as training of operators will allow the optimization and control of production, the reduction of waste, internal emission and market returns and better use of resources.

### Independent production of electricity by PV

The independent production of photovoltaic electricity will cover nearly a quarter of the annual consumption of the company which has a great value knowing that the batteries are delivered to the market charged.

## For more information, contact:



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