



switchmed

MED TEST II

*Transfer of Environmental
Sound Technology in the
Southern Mediterranean Region*

Israel


The SwitchMed programme is
funded by the European Union



Mediterranean Action Plan
Barcelona Convention



Regional Activity Centre
for Sustainable Consumption
and Production



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Switching to a Sustainable Consumption and Production

SwitchMed is about changing the way goods and services are produced and consumed, so that human development is detached from environmental degradation. The EU funded SwitchMed programme strives to switch the Southern Mediterranean Region to a Sustainable Consumption and Production (SCP).

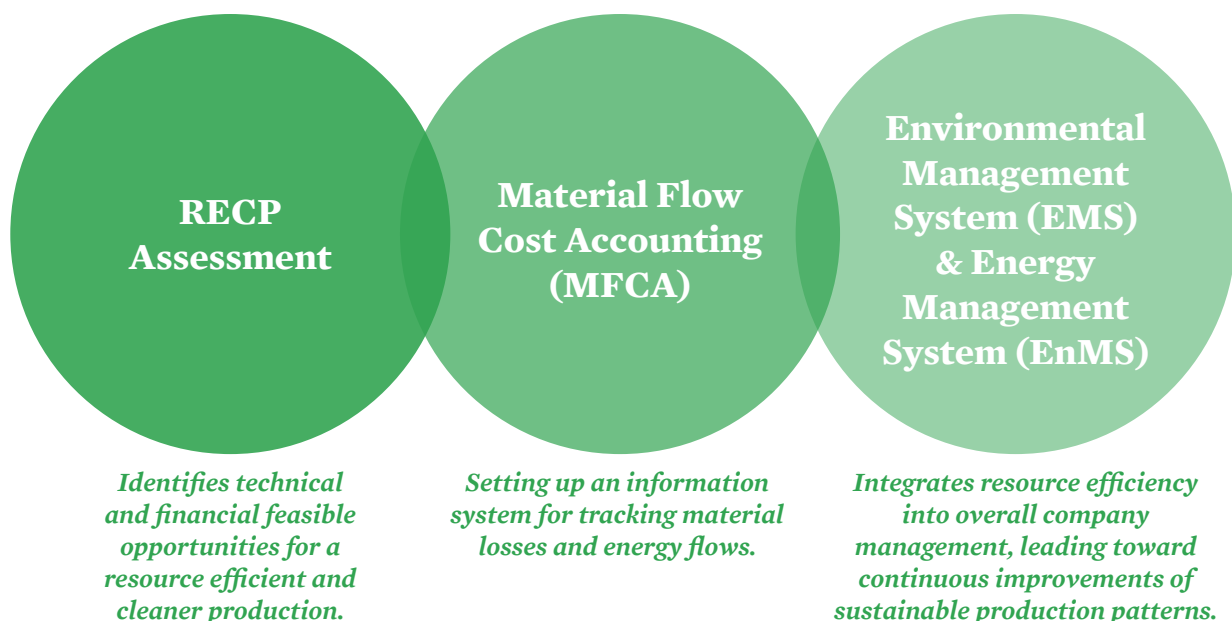
It supports industry, emerging green entrepreneurs, service providers, civil society and policy makers through, demonstration activities, policy development and networking of incubators for eco innovation to catalyze progress towards low carbon and climate resilient societies.

Turning challenges into opportunities is at core to the MED TEST II programme, which is a unique and innovative component of the SwitchMed programme. The Transfer of Environmentally Sound Technologies (TEST) approach of UNIDO, addresses rising energy and raw material costs by demonstrating how Resource Efficiency and Cleaner Production (RECP) practices with an attractive return on investment can be integrated into existing business operations leading to higher profitability and greater competitiveness.

The UNIDO integrated approach of TEST targets all levels of the management of a company through creative thinking and effective collaboration, involving people of different backgrounds and operational responsibilities to enhance and sustain an efficient use of production inputs and environmental performance encouraging a business culture where eco-innovation can thrive.

Stimulating the development of new skills, demonstrating the business case for RECP in key manufacturing sectors, and setting up the right mix of policy and financial incentives are the essential pillars in the transition towards resource and energy efficient low-carbon economies. One of the core objectives of MED TEST II programme is the reinforcement of national capacities to develop local markets of sustainable production services. The extensive training and technical assistance programme delivered in Israel has been effective to connect the manufacturing sector with innovative knowledge networks and circular economy models.

The TEST methodology builds on the following tools:



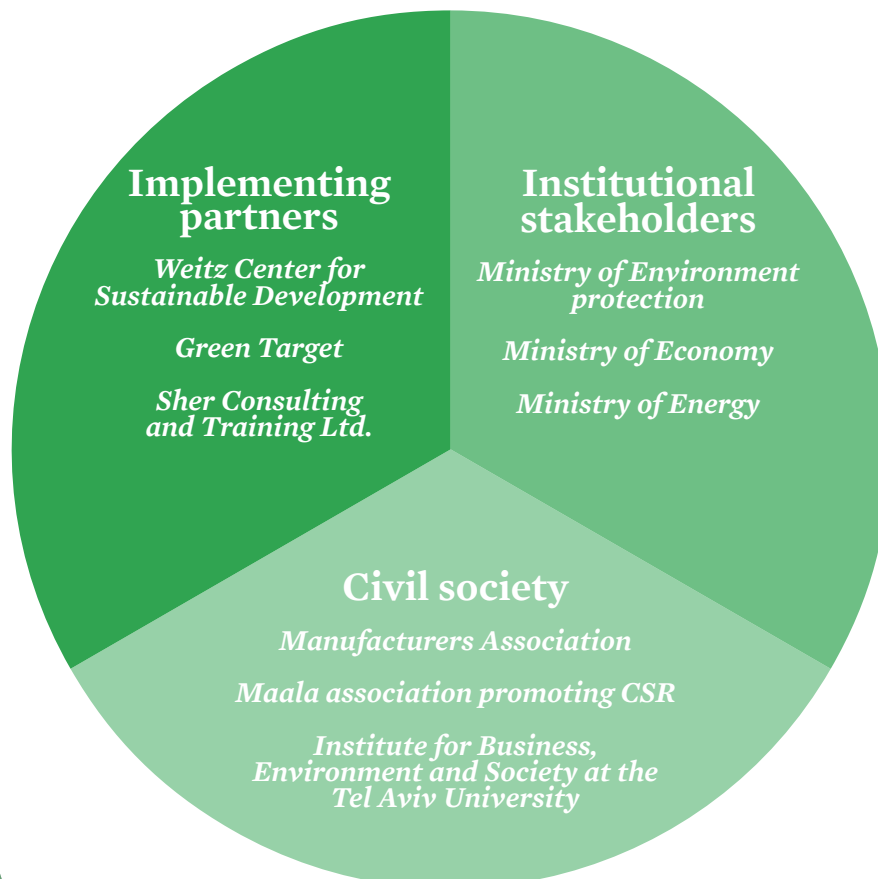
MED TEST II: partnering for a sustainable Industry in Israel

As one of the leading nations in water resource saving innovations, with a steady increase in the economic annual growth over the past decades, Israel is still seeking to enhance productivity of the manufacturing sector while facing the challenge of scarcity of natural resources.

The MED TEST II programme implemented in Israel from 2015 to 2017 addresses the challenges and the barriers national industries are facing to become more resource and energy efficient, non-polluting and safe, produce products that are responsibly managed throughout their life cycle, while increasing productivity and maintain an access to international markets with good quality products, complying with international environmental standards.

Under the patronage of the Ministry of Environment protection (MoEP) and the Ministry of Economy (MoE), the MED TEST II in Israel has been led by the Weitz Center, in partnership with two consulting firms, Green Target and Sher Consulting and Training. In collaboration with the Israeli manufacturer's association and other key national stakeholders, MED TEST II has brought together influential organizations and institutions through collaborative efforts for a sustained application and scaling-up of RECP in Israel.

UNIDO MED TEST II partners in Israel



The MED TEST II approach in *Israel*



professionals from business consultancies, government institutions and academia received training on the tools of TEST during the demonstration phase of MED TEST II in Israel.

Following an extensive marketing campaign, entailing workshops and one-to-one company visits, 12 companies were selected for an initial assessment, out of which 7 companies from four industrial sectors namely food & beverage, plastics, metals, and chemical sectors signed in for the MED TEST II project. Companies were motivated by the expectation that the project could help them to reduce production costs, while assisting them to comply with national regulations and to implement corporate strategies.

The companies participating in the project range from SME's with 100 employees to large companies with 1000 employees with multiple production sites also abroad. The industrial sites are located in different regions of the country. One of the companies' selection criteria was the "replicability" of the results to other similar production sites, aiming to allow ripple effects of the project. Therefore the plastic sector was selected as this is a major industrial sector in Israel. Three of the industries participating in the project have manufacturing sites abroad and lessons learnt have already been replicated, extending the scope of influence of the project beyond the boundaries of the Mediterranean.

One of the objectives of the project is building local capacity of service providers on resource efficiency tools so that the MED TEST II initiative can be scaled up beyond the duration of the project to the wider benefit for the industries in Israel. Under the supervision and coaching of UNIDO international experts, several lectures were delivered to industrial engineering students in universities around the country.

At the project's end a workshop on TEST methodology was conducted by the local team to additional service providers: there were more than 50 consultants participating, showing the great interest and demand for such expertise.

“What was new about the TEST methodology is that it was very well organized, step by step... “

*Ohad Agranat,
Sher Consulting and Training Ltd.*

Results of the *TEST* demonstration projects

Initial assessments in the seven demonstration companies, participating in MED TEST II, showed that raw material purchase value account between 50% and 80% of total manufacturing costs, highlighting significant potential for cost savings when reducing the raw material consumption and losses in production systems.

The TEST methodology introduced the Material Flow Cost Accounting tool (MFCA), as one of the major novelties. The MFCA analysis confronted the company with the real cost of raw material losses and inefficiencies. Through the TEST approach both monetary and volume data related to production losses have been

compiled putting together “finance” and “technical” company staff working together. This results in putting a price tag on the losses and shedding light on the savings potential in monetary value. Analysis of the data showed that in some cases the annual cost of all water and energy costs was lower than the cost of the raw material losses alone. This helps the plant to choose where to focus its efforts in the identification of sources of inefficiency and improvement measures.

The table below summarize the financial and environmental indicators of the total identified measures in the demo companies.

Company*	No. of employees	Investment Euro	Savings Euro / yr.	Avg. PBP yr.	Water %/ yr.	Material %/yr.	Energy %/ yr.
Plastic sector							
Amiad Water Systems***	160	€ 162,810	€ 183,888	0.9 yr.	-	3.4%	18%
Cargal Flexible Packaging Ltd.	100	€ 322,815	€ 262,721	1.2 yr.	-	2.3%	20%
Kafrit Industries	160	€ 253,575	€ 115,179	2.2 yr.	-	0.2%	6%
Chemical sector							
Tambour	80	€ 466,250	€ 97,301	4.8 yr.	-	1%	10%
Metal sector							
Hanita Metal Works Ltd.**	200-300	€ 421,800	€ 274,987	1.5 yr.	-	0.3%	7.8%
Food and Beverage sector							
Rushdi Food Industries	120	€ 1,860,250	€ 631,366	2.9 yr.	37.1%	1.3%	14.8%
Tempo Beverages Ltd.	1,000	€ 965,122	€ 562,045	1.7 yr.	3.3%	-	19%
TOTAL	1,870	€4,452,623	€ 2,127,489	2.1 yr.			

(*) Data from the production year 2014

(**) Data from the production year mid-2014 to mid-2015

(***) Data from the production year 2015

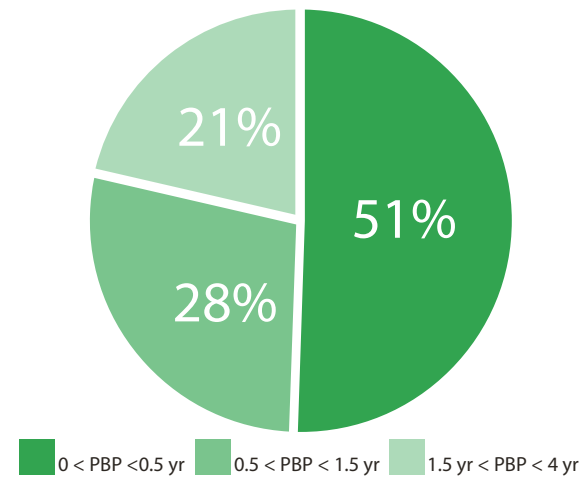
Scan the QR code or visit www.switchmed.eu to download the individual company case studies from the MED TEST II project:



A profitable solution for industry and environment in Israel

Over a total of 121 resource efficiency measures identified by the TEST team, 67 measures corresponding to approximately 50% of the total, were approved by company management and incorporated into the action plan for implementation. In the 7 plants alone a potential saving of over 8 Million NIS (2 Million Euro) annually was identified. Resulting in an energy saving of 15,192 MWh/yr; Water saving of 113,985 m³/yr; 503 tonnes of raw material savings and 205 ton of landfilled solid waste avoided. Whilst substantial savings were identified, the majority of the measures had a Pay Back Period (PBP) of less than half a year (51%) and a required investment of under 10,000 NIS, €2500 (36%). Showing the high profitability of these measures.

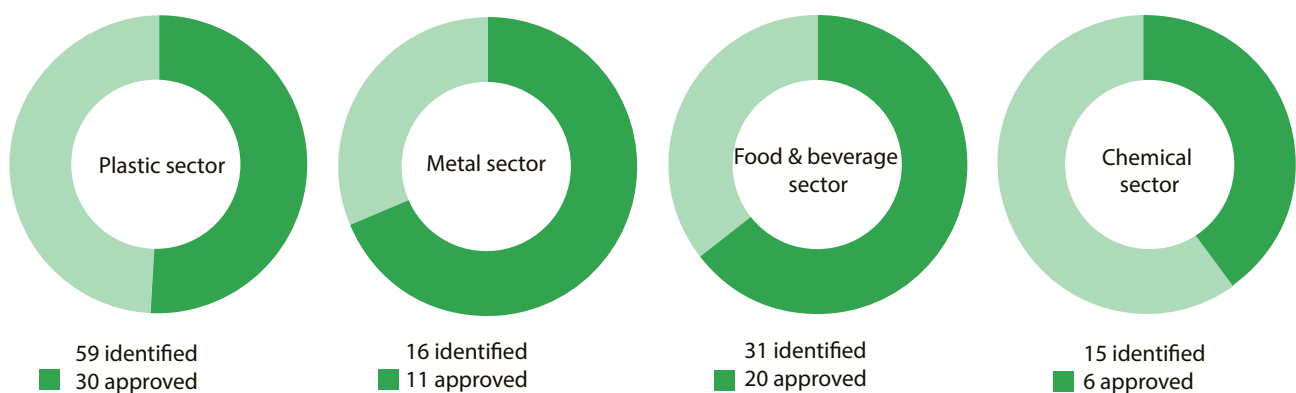
PBP of identified measures at the demonstration sites



“The MFCA is a very powerful tool which multiplies dollars and tons, puts a price tag on the inefficiencies and makes it impossible to ignore them.”

Adi Dishon, Managing Director, Weitz Center for Sustainable Development

Number of RECP measures approved according to sector at the demonstration sites in Israel



Estimated environmental benefits

Water Savings (M3/yr.)	Energy Savings (MwH/yr.)	CO ₂ Reductions (tons/yr.)	Waste Reduction (tons/yr.)	COD Reductions (tons/yr.)	BOD Reductions (tons/yr.)
113,985	15,192	8,689	205	3.9	1.7



To share our vision of a system wide change towards a Sustainable Consumption and Production in the Southern Mediterranean requires the efforts from all society actors. The MED TEST II demonstration project in Israel has revealed that with the integrated approach of TEST, additional economic or environmental benefits

can be gained from the RECP methodology, without interfering in the business operations of the industries.

Moreover, the MED TEST II project has reinforced the capacities of the local RECP Service Providers, to help develop solutions for Israel that increasingly decouple production from the consumption of finite resources.

“As consultants we help people to look differently at the problems they face with new tools of strategic thinking. That is better environmental management.”

Eran Doron, Green Target

National Team

Adi Dishon (Local MFCA expert, Director Weitz Center), Omer Eliyahu (Project coordinator, Weitz Center), Eran Doron (TEST advisor, Green Target), Shiri Drory (Project manager, Green Target), Ohad Agranat (TEST advisor, Sher Consulting), Esther Peled (Project manager, Sher Consulting), Tzruya Chebach (Policy Expert; Sustainability Foresight), Yair Engel (EcoDesign Expert), Sagit Porat (Translation of National Publication)

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Quality • Safety • Environment



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