



ADVANTAGE AUSTRIA ISRAEL is proud to present a selection of Austrian Environmental Technologies in Israel

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Foreword by Markus Haas, The Commercial Counsellor



Austria has a concentration of know-how in the greentech sector that is unparalleled the world over. Countless innovation, technology and market leaders from the fields of **renewable energy sources**, **energy efficiency** and **environmental technology** are based here.

Our partners in Israel appreciate Austria's technologically refined solutions for the most pressing issues in **waste disposal and processing**, the **circular economy**, **air purification**, **water supply** and the **energy economy**.

Innovations in climate and environmental protection that are 'made in Austria' exert an instantly positive effect on the economy, which is also to the benefit of our partners in Israel.

In this brochure we intend to give you a glimpse of some of the most prominent examples of Austrian technology, applied in Israel, in harmony with and to the benefit of the environment.

Another sector, which is not yet paid much attention to, but has great potential in Israel is the one of energy-efficient buildings. **Energy-efficient buildings** are considered a significant complement to the use of renewable energy sources within an expedient and sustainable climate strategy, and Austria has developed into a leading provider in the field over the last 20 years. The palette of options available ranges from cutting-edge, energy-saving windows and doors through passive house-compatible ventilation systems to automatic biomass heating and solar energy systems.

The entire Austrian greentech sector is considered innovative and export-orientated, and it more than lives up to its reputation as a global pioneer in the field. Companies from Austria provide practical solutions that are always focused on sustainable operation and a functional circular economy. Also **many Israeli startups collaborate already with Austrian greentech coporates** and we encourage more to come to Austria and partner up with our hardware providers to expand their market.

I invite you to explore exciting insights into the sector and its top players from Austria and dive into the latest edition of FRESH VIEW GreenTech magazine.



Compost Systems GmbH



Compost Systems GmbH is focused on the design and supply of technologies and machinery in the field of **composting and organic waste treatment**. Compost Systems have developed the CSC container, a unique modular closed composting unit, based on a RORO container. The **CSC container** can serve as an independent composting unit, designed for treating different organic wastes and convert them into hygienic, safe and stabilized compost product. The CSC container is equipped with advanced components that enable **remote operation and online control** on the treatment process.

UBQ Materials Ltd. is an Israeli advanced materials company that transforms unsorted household waste, destined to landfill, into the most **climate-positive thermoplastic** on the market. **UBQ™** is a bio-based material that can substitute conventional plastic, concrete, and wood in the manufacturing of everyday products.

When the team of UBQ materials was seeking for an efficient and environmentally safe solution for the pretreatment of household waste that is the raw material in their process, the ultimate option was the **CSC container technology**. Following a successful pilot study, conducted by **Nativ Recycling** experts, that have tested the required criteria needed for optimal biodrying, UBQ Materials professionals have taken the decision to integrate this solution into their processing line. After having creative discussions between the three business partners involved, the CSC container unit was redesigned and modified according to the client specific demands, and production of the CSC units was carried out in both Israel and Austria. Within one year, **12 units of CSC containers were supplied and installed in UBQ Materials processing plant in Kibutz Zeelim**.

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CTP Chemisch Thermische Prozesstechnik GmbH



CTP - Chemisch Thermische Prozesstechnik GmbH - is one of the world's leading companies in **air pollution control for industrial applications**.

CTP has been active on the Israeli market for 10 years now, supported by our local partner company E.S.T. Projects Ltd. since 2012. Many interesting air purification projects in the chemical industry such as for CO₂ purification, fertilizer production, crop protection but also in the petrochemical industry e.g. for tank farm venting as well as several references in the pharmaceutical industry have been realized ever since.

One of the latest successful projects implemented is a **turnkey key installation for a global leading supplier of specialty plant nutrition in Mishor Rotem**, near Beer-Sheva. The air pollution control solution for this application comprises scrubbers & RTO (regenerative thermal oxidation) technology (CTP's VOXcube 3-450). Our highly motivated commissioning team carried out the works even facing severe Covid restrictions. **AIR PURIFICATION: OUR WORLDWIDE MISSION**

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Dumag GmbH Combustion Technology Partners





DUMAG is a leading European manufacturer for combustion systems from single burners up to complete systems. We provide state-of-the-art solutions for combustion of any non-standardized gaseous and liquid medium, including ATEX-gases, halogenated streams, waste solvents, Sulphur streams and diluted acids. Of course, our burners are Hydrogen-ready!

For decades, DUMAG is present in Israel providing solutions for demanding tasks in the chemical and pharmaceutical industry. In 2018, DUMAG installed a burner for ATEX-gases in a RTO-system for a leading Israeli pharmaceutical company. The **DUMAG Constant Speed Burner CSB** has achieved impressive results in many applications around the globe for low-pressure, highly fluctuating vent- and process gases, many of them within the explosive range. The unique DUMAG CSB enables a safe, highly-cost effective combustion without the need for any dilution gas – activating an enormous cost saving potential!

DUMAG is leading in Low-NOx-solutions for multifuel applications with a variety of waste solvents, halogenated offgases or high-viscose liquids. Multiple **DUMAG DUO-Systems** installed worldwide impressively demonstrate the unique ability to lower the NOx-emissions for a challenging mix of streams.

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INNIO Jenbacher GmbH & Co OG



Using Combined Heat and Power (CHP) for Waste Water Treatment: A combined heat and power (CHP) plant at the largest wastewater treatment facility in Israel is reducing onsite energy costs, creating an additional revenue stream, and reducing the plant's CO₂ footprint. Powered by eight Jenbacher* JMC 420 gas engines from INNIO*, the **Shafdan sewage plant** runs on biogas, producing **11.304 kW of electrical power and 11.120 kW of thermal power.**

INNIO is a leading provider of renewable gas, natural gas, and hydrogen-based solutions and services for power generation and gas compression at or near the point of use. With its **Jenbacher** and Waukesha* gas engines, INNIO provides sustainable, reliable and economical power ranging from 200 kW to 10 MW. The company also provides lifecycle support and digital solutions to the **more than 53,000 delivered gas engines globally**, through its service network in more than 100 countries.

The **anaerobic facility in Israel** was built to treat sludge, prevent raw sludge from being fed into the sea, and implement a CHP solution to turn the biogas into energy taking advantage of feed-in tariffs when the plant consumes less power than the gas engines generate.

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Komptech





Komptech, a leading Austrian technology supplier of machinery and systems for the **mechanical and mechanical-biological treatment of solid waste** and for the treatment of **biomass as a renewable energy source**, has been active on the market for many years and have completed delivery and installation of a number of machines and systems in Israel.

Despite the corona crisis, Komptech installed a **processing plant for green waste in Qalansuwa** with a capacity of up to 25t/hour towards the end of 2020. The project was **supported by the Israeli Ministry of Environmental Protection**. After the delivered material is shredded, using the Komptech Crambo shredder, and freed of iron, it is sent to a special sieving machine (splitter), which produces different grain sizes. The coarse material is returned to a sorting cabin in order to manually sort the material again and remove any contaminants (plastic, foils, stones, etc.). The fine material from the screening machine is then separated into various fractions in another screening machine. Depending on their size and nature, these end products can then be used as material for composting plants or as biomass.

Komptech are currently working on additional greentech projects in cooperation with Veridis and Zvi Cohen Ecology.

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Rubble Master



RUBBLE MASTER has been represented in Israel with the entire range of crushers and screens for decades. The RM systems are mainly used in **concrete, asphalt and C&D waste recycling** and score points with their efficiency and compactness. Based on 30 years of experience in the field of **electrification**, RUBBLE MASTER has launched both **hybrid crushers and hybrid screens** on the market in recent years. The demand for hybrid systems has also increased in Israel due to the greater flexibility, the fulfillment of the strictest requirements and the low consumption combined with high efficiency. One of the hybrid RM 120X has recently been installed at **Taha Zahir** near Tel Aviv. There, C&D waste is processed into high-quality final grain in an enclosed hall every day and subsequently used as a road substructure. Taha Zahir wanted to keep dust and noise emissions as low as possible due to the processing in the hall. In addition to the option of crushing completely diesel-free, the latest RUBBLE MASTER innovation also impresses with its **enormous user-friendliness**, both in operation and during maintenance.

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Starlinger & Co GmbH





Starlinger has been active in the Israeli market for many years. Being the **world market leader for high-end PET bottle-to-bottle recycling equipment,** Starlinger was actively involved in the development of the PET bottle recycling industry in Israel. Until recently, PET recycling was limited to washing the bottles and turning them into flakes that were sold to processors outside of Israel.

Two well-known players in the Israeli recycling market decided to take a step forward: The companies **Green PET and rPET (Shalam-Aviv)** invested almost at the same time into PET bottle-to-bottle equipment from Starlinger in order to close the loop locally and re-use the pellets to produce bottles again. **Both recyclers are installing a Starlinger bottle-to-bottle recycling system with a production capacity of 1,800 kg/h in their respective plants in October 2021.**

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STRABAG AG





"5th Water Supply System to Jerusalem": The 40 km long drinking water pipeline leads from the seawater desalination plants on the Mediterranean to the city of Jerusalem. It climbs 540 meters from Ashdod to (Ein Karem) Jerusalem and is designed for a throughput of 65,000 m³ of water per hour. The mountainous terrain and a large section running through a nature reserve led to the decision to move part of it underground.

STRABAG`s project – Israel`s longest tunnel: In April 2016 the state-owned **Mekorot Water Company Ltd.** therefor awarded the Austrian company **STRABAG** with the Design & Build contract for the construction of a **drinking water pipeline**, to be laid underground through the Judeah Mountain National Park.

For this purpose, **STRABAG drilled a 13 km long tunnel** using its own hard rock tunnel boring machine (TBM). The tunnel construction started in December 2016 and ended in March 2020. The tunnel diameter is 3.9 m, and it is the longest tunnel in Israel. In parallel since July 2019 steel pipes with an inner diameter of 2.60 m are laid inside the tunnel and the remaining gap is filled with concrete. The project is expected to be finalized in July 2022.

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VERBUND Hydro Consulting





Long-term consultancy contract for a Pumped Storage Power Plant in Israel:

The pumped storage power plant (PSPP) at **Manara Cliff** is being built in the north of Israel, and is part of the **nationwide energy storage and flexibility system**, which is being implemented to supplement the massive expansion of wind power and photovoltaics for a **renewable energy future** in Israel.

In the subterranean cavern power plant, water is pumped up to a higher reservoir at times of excess wind and PV generation by a 156 MW pump turbine and used to generate electricity when it's needed. The plant is therefore used to regulate and stabilize the grid.

An experienced consortium comprising **VERBUND**, **Voith Hydro** and the national Israeli water supply company **Mekorot** is responsible for the execution of this power plant's efficient operational management. The consortium was selected as best bidder in an international tender exercise, with **VERBUND**'s extensive experience of **hydropower**, in particular in the construction and operation of large pumped storage power plants, clinching the deal. **Voith**'s long-lasting experience in designing equipping pumped storage facilities all over the world and **Mekorot**'s extensive market knowledge and experienced personnel makes the perfect partnership for execution of contract.

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Voith Hydro



With a view to expanding renewable energies and stabilizing its grid, the Israeli government had decided to expand their pumped storage capacity some years ago. Following a long and intensive project development phase, Voith Hydro was awarded the order for the **Manara pumped storage plant** at the beginning of February. The scope of supply includes the **delivery and installation of the electrical and mechanical equipment for the complete power unit comprising pump turbine, motor-generator and control equipment including sub-systems**. With an electrical output of 156 MW and an impressive head of almost 700 m, the system is distinguished in particular by its fast response times to changing grid requirements.

The Manara pumped storage power plant, located in the north of Israel, will have two artificial reservoirs and the machine hall will be designed as an underground cavern. Following the construction of the facility, Voith Hydro together with other partners will also be responsible for the maintenance and operation of the pumped storage plant for the first three years. Through this project, Voith Hydro is yet again underscoring its technological and market leadership in large-scale pumped storage facilities.

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VWMS GmbH





VWMS GmbH is an Austrian technology company offering the Coliminder, a novel technology that is able to measure microbiological water quality within 15 minutes fully automatically. Its real-time online microbiological measurements enable process monitoring and control for all water-related applications, significantly increasing efficiency and safety in all water treatment processes and distribution networks. In Israel, Mekorot has been using ColiMinder since 2017 for online monitoring of the drinking water supply and network to ensure the safety of drinking water.

In 2019, Mekorot launched the Bacterial Detection Challenge, seeking innovative methods for rapid identification of indicator bacteria in the field, in the laboratory, and continuously in the water supply system. In this challenge, the ColiMinder was the **only technology** to **fulfil all** challenge **criteria**.

There are discussions with a **Tel Aviv based company** providing innovative solutions for Smart Cities and Intelligent Environments, who intend to use ColiMinder results to contribute to their data system.

The beverage and bottling industries in particular benefit from using the ColiMinder. Currently Nestlé Waters R&D department is validating the instrument for use in all bottling plants around the globe. VWMS is also in discussions with other major bottling companies. VWMS is seeking new customers in Israel, mainly from bottling industries.

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WIEHAG



Ice Park & Mall, Eilat



Radiotherapy Institute Shaare Zedek Medical Center, Jerusalem

Ice Park & Mall is a complex of ice rink and shopping mall opened in 2012 in the Israeli city of Eilat.

The Ice Park has the **largest timber dome in the Middle East** at 105 metres in diameter with a timber support system made by WIEHAG.

It forms one of the city's attractions. The ice skating surface, which is also used for ice sports events, is 1800 square metres. The special feature of this ice rink is its location at the southern end of the Negev desert and its proximity to the Red Sea.

The Ice Mall, the shopping centre runs over 10 levels. The individual exterior and roof design make this building complex an eye-catching object in the cityscape. The client is Ice Park Eilat Ltd. based in Tel Aviv. The architects were **Feigin Architects**, Tel Aviv.

Currently we are producing timber beams and columns for the new **Radiotherapy Institute** of the **Shaare Zedek Medical Center** in Jerusalem. The new institute will serve as a national center for cancer treatment, with advanced and leading treatment methods and technologies.

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