



Success in digital production thanks to MES

User Report

GREENoneTEC Solarindustrie GmbH

Initial Situation

Companies that were founded in a garage have become the epitome of success since Apple mastermind Steve Jobs. Robert Kanduth also started out in a garage. Over the last 25 years, he has developed his company GREENoneTEC into the world's largest manufacturer of flat-plate thermal collectors

with an annual production capacity of over 1.6 million m². With an export rate of more than 85% to over 40 countries worldwide and a market share of over 25% in Europe, GREENoneTEC is one of the global players in the solar industry.



GREENoneTEC 
SOLAR COLLECTORS



50%
10%
15%

"With FASTEC 4 PRO, the company can record an overall increase in productivity of 10% while simultaneously reducing downtimes by 50% and set-up times by 15% thanks to external expert advice."

Heinz Rankl

Head of Operations and Supply Chain Management
GREENoneTEC Solarindustrie GmbH

From a Garage to a Global Player

World Market Leader for Flat Collectors Successfully Relies on MES

When asked about the key success factors that have contributed to GREENoneTEC's market leadership, the answer is "commitment and customer orientation." These are deeply anchored in the key principles of the company to this day.

In order to further expand its successful market position, in 2008, the Austrian company in St. Veit a.d. Glan decided to introduce an MES solution in order to create more transparency and increase productivity in the long term.



Robert Kanduth
Company Founder
GREENoneTEC Solarindustrie GmbH

- **Becoming a World Market Leader**

At the beginning of the impressive success of the solar collector producer was the development of the tray collector by company founder Robert Kanduth in 1994. The rapid growth of the company, which started soon after, found a booming market, in which the production capacity had to be constantly adapted to the growing market demand.

In this success story, GREENoneTEC achieved a peak value of 1.2 million square metres of frame and tray collectors produced in 2008. This corresponds to the area of about 170 soccer fields. GREENoneTEC's core product is the frame collector and it now has the largest share in the company's production. In addition, there are further developments such as a high-performance collector for large areas, thermosiphon systems and the SOLCRAFTE all-in-one system. Thanks to the incentive program for renewable energies, solar energy has been established in many places for decades and can now be found on many roofs of private households as well as on commercial buildings.

- **Not Exclusively Sunny Market Conditions**

However, the market situation for solar thermal energy has weakened in recent years. Heinz Rankl, Head of Operations and Supply Chain Management at GREENoneTEC, gives the following reasons: "First of all, in the 'battle for the roofs' in many countries, photovoltaic systems have the lead. This is mainly due to the massive government 'over' funding for solar power. Furthermore, the payback period for a solar thermal system today is seven to eight years. Especially in the context of the currently extremely low oil price, the reasons for purchasing a solar thermal system are not convincing enough for many."

As a result, the current requirements for an MES solution at GREENoneTEC have changed: The primary goal today is to ensure absolutely efficient production at the lowest possible cost. It was also important to adequately counter the strong competitive pressure from China.

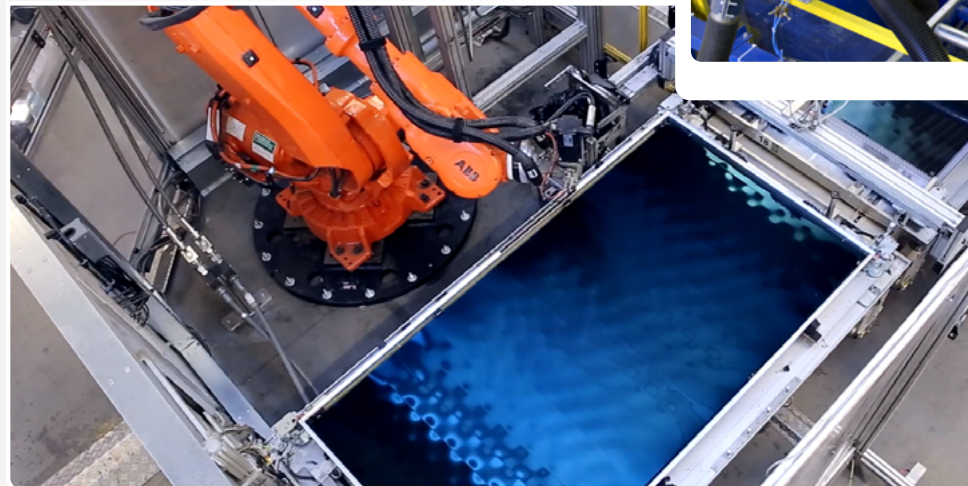
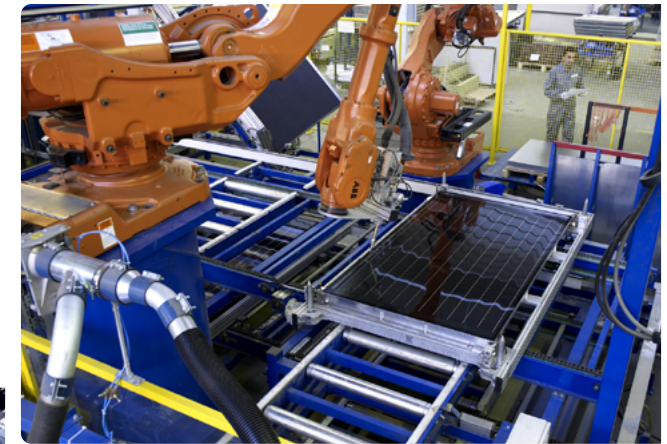
Low Costs Through Efficient Production

Requirements for an MES Solution

The original motivation for purchasing an MES solution was not to keep production costs as low as possible. Rather, it was a matter of introducing a suitable IT system for production in order to cope with the constantly growing demand by further increasing production output. In 2008, Andreas Ogris, head of purchasing at that time, initiated the search for a suitable MES provider for this challenge. The following goals were to be achieved with the system:

- Increased productivity by reducing system downtimes and set-up times
- Exact recording of activities by duration and number of employees for the incentive wage model used
- Improvement of post-calculation through target and actual comparison

With these goals in mind, a team led by plant managers Robert Gebenetter and Siegfried Seufzer started looking for a suitable software solution. For this purpose, we looked around in other companies and compared different software products in benchmark studies. In the end, the decision was made in favor of the Paderborn-based company FASTEC with its still young product at that time, also because they were looking for a partner with whom they could influence the software development.



The market leader for flat collectors GREENoneTEC in St. Veit a.d. Glan has connected all 30 processing stations to FASTEC 4 PRO – both fully automated systems as well as manual workstations.

Individual Project Implementation

Introduction of FASTEC 4 PRO

At the beginning of the project, a system implementation strategy was jointly developed. It was planned to start with a pilot installation on the laser systems. Using a standard S7 interface, FASTEC was able to access the required data in the control PLCs easily and without any problems.

The first successes were already evident shortly after the start of the project: "The essential thing was that all of a sudden, we had an unprecedented level of transparency thanks to concrete data," recalls Robert Gebenetter, plant manager at GREENoneTEC. "Previously, we had an uncertainty of plus/minus 10% per work step due to manual data entry; now we have been able to improve our efficiency through clear data alone and thus achieve an increase in productivity."

Above all, data accuracy has increased the effectiveness of the measures. This meant that solutions no longer had to be sought on the basis of assumptions, but that problems could be identified and solved with the help of evaluations based on facts and data. The successful connection of the laser machines to FASTEC 4 PRO was decisive for the project progress.

Project requests expressed by GREENoneTEC were implemented in the course of the project – e.g. for the manual workstations, for which both individually adapted and visually appealing user interfaces and error types had to be defined, so that the machine operators can make appropriate entries for data acquisition at the production terminal. As a result of the positive results achieved, the system was extended to all areas of production (absorber production, collector assembly and complete prefabrication) over the course of approximately three years. Among others, the following highly automated systems were connected via PLC coupling:

- Laser welding plants
- Ultrasonic welding plants
- Fully automated brazing stations
- Fully automated meander bending machine
- Fully automated copper tube forming presses
- Partially automated production plant and collector production lines

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Robert Gebenetter

Plant Manager

GREENoneTEC Solarindustrie GmbH

Transparency Through Concrete Data

Expansion of FASTEC 4 PRO

- **Adjustment of Downtimes**

When FASTEC was introduced, the exact determination of downtimes was initially challenging.

The aim was to answer the following questions: When is a fault recognized as a fault? How are tolerance limits defined? This is where systematic tests directly led to the desired result.

- **Change of the ERP System**

At the beginning of the project, GREENoneTEC used the ERP system proALPHA. In the course of the project implementation of FASTEC 4 PRO, proALPHA was then replaced by SAP.

The interface originally set up for proALPHA for the transfer of order data became obsolete with the migration to SAP and was replaced by the SAP certified PP-PDC interface in FASTEC 4 PRO.

At GREENoneTEC, the ERP system is the leading IT system. To avoid double data storage, the MES therefore uses the master data and wage models stored there. FASTEC can easily exchange data via the standard interface to SAP, which ensures the consistency of data in both systems. The ERP system change, which was initially viewed critically, was implemented quickly and turned out to be unproblematic thanks to the standard interface.

- **Implementation of the Incentive Wage Model**

Another aim of the MES introduction was to map the incentive wage model introduced at GREENoneTEC in the production clients in a user-friendly manner.

In this model, the target times of the operations depend on the number of employees involved. Therefore, in addition to the exact times, the respective number of employees must also be taken into account when acquiring data for correct remuneration. The necessary acquisition logic and an additional touch screen for entries have been adapted accordingly in the system.

This means that the data at the machines and manual workstations is recorded on the touch terminal in the FASTEC system and made available to the payroll accounting system without interruptions.



No Double Data Storage

Conclusion: More Time for Further Projects Through MES

• Additional Benefits

The system also provides the data necessary for post-calculation. Furthermore, additional benefits were created: The downtimes previously communicated by telephone have been replaced by monitoring, thus reducing maintenance response times through direct and short information paths.

Last but not least, there is also a positive reaction from employees. Their initial skepticism has given way to satisfaction; today, they are pleased the tiresome paper work is a thing of the past and that recording via touch terminals requires far less effort.

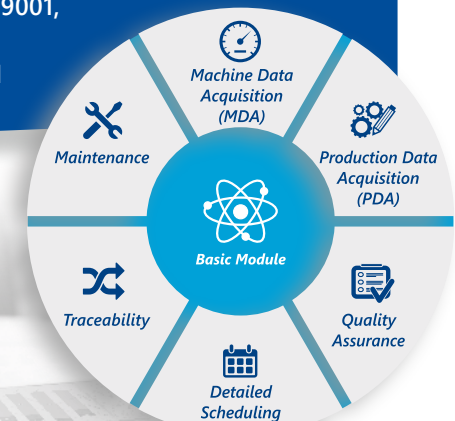
• Final Conclusion

Although the introduction of the MES solution at GREENoneTEC in 2008 was primarily aimed at increasing production, the system is still operating successfully today despite changed conditions. The company was able to record an overall increase in productivity of 10%, while at the same time reducing downtimes by 50% and set-up times, supported by external expert advice, by 15%.

As a result, FASTEC 4 PRO has proven to be equally successful as a means of rigorous cost reduction and cost control at GREENoneTEC.

Overview:

- Fully and partially automated production on 28,000 m²
- Eight highly automated, reliable robot production lines
- OEM supplier for customized absorbers
- More than 670 customer-specific designs of collectors and more than 1300 associated fastening items
- High-bay warehouse with space for 150,000 m² collector area
- Highest product quality – Made in Austria
- Certified to ISO 9001, ISO 14001 and BS OHSAS 18001



Satisfaction at All Levels

Why Not Get to Know Us Personally?

Production companies must produce on time, in a traceable, flexible and customer-specific manner, while ensuring consistently high quality. Achieving these goals requires transparency through real-time information, good planning and quick and adequate reactions to deviations. Our Manufacturing Execution System (MES) FASTEC 4 PRO is the right tool for this purpose. With great success since 1995.

We would also like to give you a good advice personally!

Our sales department will be happy to provide you with further user reports and information material! Or else, make an appointment with our sales department for a presentation at your location, in our company or via web. Of course, you can also experience FASTEC 4 PRO live and on site with our customers.

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Additionally, we offer videos of our software and customer solutions in our YouTube channel:

www.youtube.com/FASTECGmbH

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With FASTEC 4 PRO, you gain the necessary level of transparency in all areas of production in real time, enabling you to discover previously unused potential for increasing productivity and optimizing processes. Thanks to targeted planning, you can also respond to short-term requirements from sales and efficiently design production processes – traceable and documented.



FASTEC 4 PRO

- Get transparent data in real time
- Reduce production costs
- Detect and eliminate weak points
- Develop high productivity potentials
- Benefit from the continuous flow of information
- Use available resources efficiently

▶ **As a data hub, FASTEC 4 PRO is essential on the way to the Smart Factory.**