

The Deloitte Solar Template



Introducing a hot new approach to obtaining an SAP platform designed to address the unique needs of photovoltaic companies

The solar industry is like no other. Push-production supply chain principles have to be applied due to raw material constraints and unforeseeable output quality. The variability of finished goods is very high, demanding tight integration of quality management, technology, production and sourcing. Production processes are still evolving. And it is driven by sales and distribution, with companies actually selling energy as opposed to pieces such as modules or cells. The industry also has unique accounting and reporting requirements due to an abundance of government subsidies and incentives — not to mention that many companies find that their HR departments are straining under the weight of the huge numbers of applicants who wish to work in this exploding new field.

An extraordinary ERP platform is needed to meet the industry-specific requirements of fast-growing solar manufacturers. Furthermore, this platform must be highly integrated to promote efficiency, scalable to accommodate growth, and adaptable to support new processes across an extended enterprise that includes a growing web of suppliers and trade partners. The Deloitte Solar Template offers a streamlined and comprehensive way to obtain just such a platform by incorporating the specific requirements of the solar industry into an SAP ERP solution.

The Template defined

The Deloitte Solar Template, based on SAP's ERP software suite, is a pre-configured solution that has been specifically designed for companies in the photovoltaic industry. It incorporates Deloitte's extensive experience in the solar industry as well as a suite of leading practice models to create a robust, yet adaptable, IT and process solution. It seamlessly covers the current processes in a solar industry company, ranging from R&D to production to spare-parts support at the end of the production lifecycle, and it spans the complete supply chain from silicon to module manufacturing. It also offers functionality that supports the unique integration requirements of thin-film manufacturing.

The Template encompasses:

- Logistics — Master Data Management, Procurement, Sales and Distribution, Inventory Management, Production Planning and Execution, and Quality and Project Management, including R&D.
- Financials — Finance & Accounting, Controlling and Asset Accounting.
- Human Capital Management — Payroll, Talent Development, and Recruitment Support.

Industry-specific functionality

Based on extensive experience in working with the world's leading solar companies, Deloitte understands where most solar businesses experience painful business issues. The Deloitte Solar Template offers the



following functional enhancements that have been designed to alleviate common industry pain points in order to assist you in your efforts to continuously improve quality while reducing production and logistics costs.

Building the backbone: A diversified material master

The Deloitte Solar Template accommodates the wide variety of master data functionality that is required in photovoltaic manufacturing. Specifically, it enriches and broadens the standard master data fields found in SAP by adding those unique to the photovoltaic industry. With the Deloitte Solar Template, materials can be differentiated by various characteristics (e.g., quality, efficiency, etc.), types of processes (e.g., counter-purchase, tooling, etc.), and production steps (e.g., cell tester). Items can also be classified by planned characteristics such as format and thickness as well as unplanned ones such as quality and power efficiency. This extraordinary level of detail enables more-precise tracking and tracing, which can be used across the supply chain to support activities such as special production, availability check, substitutions for creating flexible customer orders, or sales planning.

Sending and receiving: Inter- and intra-company processes

The Deloitte Solar Template provides specific functionality for managing outline agreements, contracts and delivery plans. It also enables flexible price management by supporting time-dependent pricing, rebate schedules and various types of surcharges or discounts. Customer call-offs can also be comfortably managed, and those not handled by Electronic Data Interchange (EDI) can be maintained manually.

Additionally, the industry is trending toward vertically integrated supply chains; therefore, the number of business transactions within a single company is rising. The Deloitte Solar Template has the ability to support you in your efforts to manage these in-house transactions, which can be just as important as managing external ones, especially considering possible legal and financial ramifications.

Production focus: Tracking, tracing, and visibility

Traceability of materials from raw silicon to cells and modules is necessary to meet high quality standards. To address this need, the Deloitte Solar Template seamlessly integrates with all common Manufacturing Execution Systems (MES). This tight integration enables materials to be tracked throughout the whole company over all production steps and related back to the previous main components. Cells and wafers can be individually tracked, and the system can handle the tracking and tracing of serial numbers, which are frequently used on solar modules. In addition, an enhanced batch-information cockpit is available for transparent and efficient production support. In planning the production of cells, rarely are more than three different batches of wafers/ingots used together because the size of the batch affects further material usage (e.g. silver paste) as well as subsequent production scheduling. Batch information is also important since it is used for efficiency inspections and R&D activities.

The packaging process: Handling-unit management

At dispatching, deliveries are planned and managed against existing orders and call-offs. The Deloitte Solar Template supports the creation and processing of handling units according to packing specs. A handling unit has a unique identification (e.g., license plate or packaging number) that corresponds to the physical package. Depending on the business transaction, handling units can be generated for or linked to deliveries. Commissioning and repacking of handling units are also supported. Additionally, in cases where the requested loading volume is not available, a planned delivery can be split.

Delivery slips, freight orders and other accompanying documents can be printed in accordance with current national and international norms, including DIN norms and VDA recommendations (e.g., ISO 9735). The tag formats can also be customized according to individual specifications.

The Wattpeak-Piece-Paradox

In the solar business, the customer is most often interested in purchasing power, not just units or modules. Therefore, an effective ERP system must be able to manage production of cells and wafers as well as the sale and distribution of energy. Deloitte calls this unusual requirement the Wattpeak-Piece-Paradox. During the process of generating and confirming customer orders, the system needs to be able to recalculate the power efficiencies of different units based on material codes. To continually meet customer requirements, material substitutions often have to be made and available-to-promise quantities re-calculated. The Deloitte Solar Template effortlessly rises to these challenges by seamlessly converting production data into its energy equivalents, thus helping solar companies in their efforts to deliver the total amount of Wattpeak they have

promised to their customers. No other system has the capability to resolve the Wattpeak-Piece-Paradox so expeditiously.

Solar needs more people! HR Administration

A comprehensive HR management system is needed to support the fast-growing number of employees in this booming industry. Accordingly, the Template supports robust payroll and employment processes. For instance, relevant messages generated by the system are electronically routed to the appropriate person in the organization via an integrated workflow, enabling quick reaction and fast resolution. Document Management is also supported, with the ability to handle and store application forms, letters and mailings. In addition, the system contains country-specific payroll requirements, which are fully integrated with Finance systems.

Financial services: Business consolidation and credit note handling

Credit notes are rapidly becoming the preferred form of settling accounts between suppliers and customers in the solar industry. Often, a supplier does not issue an invoice anymore; instead, the customer advises the supplier via credit note of the payment as per the delivery. This payment notification is submitted via EDI-remittance advice. The Deloitte Solar Template enables reconciliation of received credit notes or clearance of received remittance advices both manually and automatically. Another important functionality is business consolidation, which the Template handles based on the financial data within the ERP system.

MES integration for thin film

Thin film manufacturers do not face the raw material constraints that producers of traditional modules do; however, they too have special requirements. Customers demand a high degree of technical information, such as module placement for maximum electricity output, which requires tight integration between the ERP platform and the MES. The Deloitte Solar Template offers an industry-standard interface between the two systems as well as accompanying functionality for reporting technical data for individual



modules. Ready to deploy, the SAP/MES interface reduces development costs and lowers risks in comparison to more traditional implementation approaches.

Demonstrated benefits

The Deloitte Solar Template offers a powerful and completely integrated enterprise solution based on SAP's ERP suite. It is built upon Deloitte's vast experience in the solar industry and contains a blend of Deloitte's leading practices and SAP-recommended "Best Business Practices." Because it is pre-configured, it accelerates the implementation process so practitioners can address your specific company requirements faster and more cost-efficiently than with traditional approaches — without making sacrifices to critical functionality.

Importantly, the effectiveness of the template has been demonstrated: It is currently in use at leading companies such as Q-Cells SE, ersol AG, and Solibro. Dr. Hartmut Schüning, the CFO of Q-Cells SE, commented: "Deployed with remarkable efficiency, the Deloitte Solar Template addressed many of our industry-specific business issues

right from the start. We are confident that we now have the IT platform and business-process foundation necessary to continually heighten quality, while keeping pace with the industry's rapid evolution."

Suitable for companies of all sizes, the Template is particularly helpful to medium-sized businesses, which can benefit from a scaleable and cost-efficient SAP implementation as an important building block for future company growth.

For more information

Through the Solar Template, Deloitte combines solid, solar-industry know-how with proficiency in process and system design and deep experience in SAP implementations. To support you in your efforts to realize greater business value, Deloitte offers a portfolio of multi-disciplinary services that complement the solution. These disciplines include strategy and operations, tax advisory, IT consulting, financial transformation, human capital management, application maintenance services, and more.

For more information on how Deloitte's unique offerings can shed new light on your business issues and help your company stay at the forefront of this red-hot industry, please contact:

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