Your challenge, our project – logistics solutions for the Semicon/Solar industry.
Best performances for your business – DB Schenker Logistics Solutions.

DB Schenker represents the combination of performance, service and quality, regardless of the complexity or scope of logistics tasks and requirements. As an integrated logistics service provider, DB Schenker operates and shapes the transportation network of the future, including Land Transport as well as Air Freight, Ocean Freight and Contract Logistics.

Our performance for your successful logistics.
We handle goods in end-to-end supply chains and offer our customers innovative and cost-efficient transport and logistics solutions of high quality and from one source. Furthermore, we are constantly enhancing logistical processes – locally, nationally and worldwide.

We have a presence in some 130 countries around the world; with over 100,000 employees we work in a worldwide network, but operate locally. Thanks to about 2,000 locations in the world’s most important economic regions, we have a global network dedicated to customer service, quality and sustainability.

We are within the Top 5 across all products:

- **No. 1** in Europe in Land Transport
  - Shipments (in thousands): 95,325
- **No. 1** in Europe in Rail Freight
  - Transportation volume (in million tons): 399
- **No. 2** worldwide in Air Freight
  - Air freight volume (in thousand tons): 1,095
- **No. 3** worldwide in Ocean Freight
  - Ocean Freight volume (in thousand TEU): 1,905
- **No. 5** worldwide in Contract Logistics
  - Turnover (in million Euros): 1,750

Source: Annual Report Deutsche Bahn AG 2012
Global logistics concepts for the Semicon/Solar industry.

DB Schenker supports the industry and your suppliers to establish most efficient logistics across the world and for all your products.

Qualified performances for your success.
We know the challenges in your industry and the tools you need to make your work run smoothly. Our expertise in each of the modes of transport and in contract logistics makes us your ideal partner.
- We have a global team of experts in place to ensure the best support along your entire supply chain.
- We offer a dedicated approach for all market segments.

Our excellence for the Semicon/Solar market:
- Time to market
- Rapid development from requirement to solution
- One face to the customer
  - Dedicated account management
  - Best Known Method (BKM)
  - Equipment competence centers
  - Regional units (DRS, SFO, SHA)

Specialized equipment
- Special trucks
- Air cushion racks
- Special handling equipment etc.

Industry knowledge and longtime experience
- Global set-up with understanding of the special industry requirements
- Globally established customer base
- Exhibitions and industry’s forum attendance
- Innovative logistics solutions driven by market demands
- Defining standards and guaranteeing a seamless supply chain
- Optimizing processes for effective end-to-end solutions
- Enlarging markets and strengthen our position in existing markets

In the Semicon/Solar market a smooth supply chain is essential.
Vertical Market Semicon/Solar – Solutions

DB Schenker provides the ideal basis for both industries.

Coordination of Suppliers
According to customers’ demand, DB Schenker manages the entire supply chain: From single parts (chip frontend/solar cell) to finished modules (chip backend/solar module) up to production machines.

Feeding in the global network
DB Schenker connects suppliers and manufacturers in the whole world. Customized strategies guarantee each of our customers the most efficient logistics solution.

Transport management according to urgency service level
In order to minimize or even prevent production downtimes, DB Schenker arranges direct deliveries of necessary parts in the shortest possible time – 24 hours, every day.

DB Schenker Logistics Center
At dedicated logistics centers single shipments are consolidated for the delivery to final consignees – manufacturers or warehouses, locally, regionally or worldwide.

Supply of Manufacturers and final Consignees
DB Schenker’s comprehensive product portfolio, as one of the worldwide leading logistics services providers, achieves sustained success for the complete process chain of our semicon and solar customers.

Over 10 years experience in industry related comprehensive logistics solutions.

For refined semicon and solar logistics you need a reliable infrastructure: DB Schenker, as one of the leading international providers of integrated logistics services, offers multi-faceted support to both industries: global transports, supply-, warehousing- and distribution concepts as well as comprehensive logistics solutions and value added services.

We know our way around specialized markets.
The high-tech expertise of DB Schenker is built on the proven logistics capabilities dedicated to the semicon and solar industry and its grown long-term partnerships. The gained know-how of high-tech technologies and special requirements as well as the logistics competence of a global market leader realize flexible logistics concepts to connect companies and markets: Collaboration between manufacturers, suppliers, their customers and their integrated logistics service provider generates innovative solutions for sustained market success.

A worldwide supply chain – tailored to every customer’s needs.
Our core competencies are global freight transportation as well as logistics services covering every aspect of the production process. DB Schenker supports the entire value chain with integrated supply chain logistics solutions, from vendor, to customer delivery, to reverse logistics and aftermarket support. We have the expertise – and the passion – to make your supply chain simply perform better. With the worldwide network of 2,000 branches and facilities DB Schenker connects all important and emerging global economic regions. Furthermore, DB Schenker offers logistics solutions tailor-made to the requirements of the semicon and solar industry segments providing sustainable efficiency and high standard security for the supply chain.
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Photo: ©Harald Lange, fotolia.com

Photo: ©DB Schenker
Integrated logistics solutions for the Semicon/Solar industry.

In order to guarantee high quality, the reliable transport of sensitive goods is important. We take this responsibility seriously and develop industry-specific solutions safely, securely and on time.

The Vertical Market Semicon/Solar is dedicated to special demands:
- Entering new global markets
- Offering integrated supply chain solutions
- Providing special equipment and handling tools for sensitive high-tech goods
- Ensuring flexibility to adjust to rapid pace of market changes
- Connecting all transport modes (air, ocean, land)

We provide our customers with the best quality!

General services:
- Transportation and transport planning including Land Transport, Air and Ocean Freight, Special Transports (On Board Courier, Oversized Land Transport)
- Equipment Logistics
- Cleanroom Logistics
- Spare Parts Logistics
- Fab Support & In-house Logistics
- Warehouse Management
- Project Management for Solar Parks
- PV Quality Testing
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We organize the complete range of logistics services related to our customers’ production sites – from supply chain management or sequenced component delivery on the production line to assembly work or spare parts supply. Our employees have the know-how and industry expertise it takes to respond professionally to customer needs and local specifics. And our logistics services are aligned to the semicon and solar industry requirements: We operate the transport of single machines up to total turn-key solutions including necessary project management on a proven expertise.

**Transport**
- Supervision at defined service points according to customized security specifications and respective documentation
- Supply of appropriate transport equipment, e.g. air-ride and temperature controlled trucks, heavy lifts

**Rigging and move-in/out – Utilities:**
- Retractable roller beds
- Temperature controlled trailers with protocol and GPS
- Scissor roller bed platform for unloading complete aircraft pallets on site (worldwide availability on request)
- A-frames for smooth heavy lifts
- Air cushion tools for clean-room movements

**Experienced personnel and dedicated partners**
- Know-how of technology and production environment: Technical move-in staff available for worldwide deployment

**Packing/Unpacking and Crating/Uncrating**
- Knowledge about the handling of sensitive high-tech technology, usage of adequate packaging according to customer requirements

**Consulting**
- Project involvement right from the beginning and along the entire supply chain focusing on all aspects

**Turn-key solutions**
- Project-oriented logistics service and supervision for build-up and positioning of all necessary machines for production technologies
- Deliveries of equipment from multiple suppliers
- From “prior to project consulting” up to “ready to hook up”

**Other Services:**
- Warehousing
- Project management
- Purchase order management
- Move-in/hook-up support

Fitting solutions for Equipment Logistics.

DB Schenker delivers your capital equipment everywhere in the world. Irrespective of size or complexity.

We provide our customers with the best quality!

Consulting and controlling by DB Schenker
Solutions for spare part logistics.

We never fail to come up with a value-for-money solution for our customers. Whatever transportation or logistics service they require, DB Schenker offers a tailored, one-stop service. For global availability of spare parts, we provide our customers storage for different spare parts worldwide. Supply management is synchronized with our customers’ production runs and the logistics service for spare parts follows different urgency levels according to customers’ needs. We can do this, because our company embraces the full range of logistics skills and transportation modes. One of our specialities is the coordination of integrated transportation services: Meaning we always have an efficient solution on hand.
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Transport
- Order Management
- Spare parts distribution according to three urgency service levels:
  - Standard: Replenishment of individual depots and dispatching warehouses as well as deliveries to final consignees
  - Priority: Delivery within 24/48 hours
  - Machine Down: Emergency delivery
- Customs clearance
- Scrapping
- Waste Management
- Management of empties

Warehousing
- Global dedicated warehousing network of shared and stand-alone facilities
- Warehouse management system with related IT-infrastructure and -setup
- Reverse/return management
- Kitting
- ESD Areas
- Quality management including part control prior to delivery
- Backlog management
- 24/7 Services on request

Manufacture                                                    Global Distribution Center                       Depot                         Customer

Regional Distribution Center
DB SCHENKER pvchain – assurance of high module quality throughout the solar supply chain – certified by TÜV Rheinland.
DB SCHENKER pvchain offers the seamless integration of optimized quality testing throughout the customer’s entire supply chain on a worldwide level. Our cooperation with the leading test lab, TÜV Rheinland, enables us to effectively detect quality issues. The integration of the quality review process into the supply chain allows us to respond to customer needs promptly and accordingly send alerts when quality issues are detected. The new monitoring and control system increases the transparency along the transport of solar modules from factory to final delivery. It systematically identifies quality issues and detects the damage location of the modules.
DB SCHENKER pvchain – new comprehensive control system for greater safety in international transport.

**Examination of transport packaging**
Testing of the manufacturer’s transport packaging according to IEC 62759-1 standard by TÜV Rheinland:
- Recording of real transport routes and determination of influences during ocean and land transport leads to transport simulation & load testing of the packaging unit
- Environmental simulation of individual modules in the laboratory:
  - Impact test
  - Tilt and drop tests
  - Shock test

**Pre-delivery inspection at manufacturer’s site**
- Evaluation of flash simulators ("flasher") and electroluminescence-equipment by TÜV Rheinland engineers
- Outbound control of all modules leaving the FAB (EL/IV measurements)
- Storage of valid data in a sufficient resolution in a common database
- Accessibility of data to involved participants at any time
Monitoring during transport
- Continuous monitoring during transport with:
  - DB SCHENKER’s **smartbox premium** as a valid data logger during ocean freight transportation for shocks, vibrations, and GPS
  - DB SCHENKER’s **shockwatch** as a valid data logger during last mile delivery (land transport)
- Gathered data proofs if stress level limitations during transport were exceeded and corrective actions need to be applied

Inspection & Controlling at the receiving warehouse
- Statistically calculated representative control sample of modules to be tested at the receiving warehouse by DB Schenker to determine:
  - visual damages
  - micro cracks
  - module performance
- TÜV Rheinland in cooperation with DB Schenker operates a conveyor line with:
  - insulation tests
  - performance tests (flashlight simulation for IV measurements)
  - electroluminescence (EL) analyzes
- Evaluation of the test data by TÜV Rheinland engineers:
  - Detection of occurred damages during transport or confirmation of module quality in good condition
- Independent certification of the DB Schenker’s logistics processes by TÜV Rheinland

Photo: ©DB Schenker
Global presence and local commitment.

We offer a dedicated set-up for the semicon and solar industry all around the world. Integrated logistics services wherever the industry needs us.
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Dresden, Germany
Shanghai, China
San Francisco, USA

Countries with DB Schenker Presence

DB Schenker Semicon/Solar Competence Centres

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