

## **EC Workshops 16.6. - 18.6.1997**

**Sunda Solar Energy Technology Co., Ltd.**  
**Beijing, June 10th, 1997**

## **A Brief History**

- **1985**

Dornier GmbH, a daughter company of Daimler-Benz Aerospace AG, and Beijing Sunpu Technology Co., a daughter company of the Beijing Solar Energy Research Institute, start their joint research and development activities for vacuum tube solar collectors. The research work is funded by the Beijing Science and Technology Council, the German Ministry for Research and Technology, the United Nations Development Program and both companies.

- **1993**

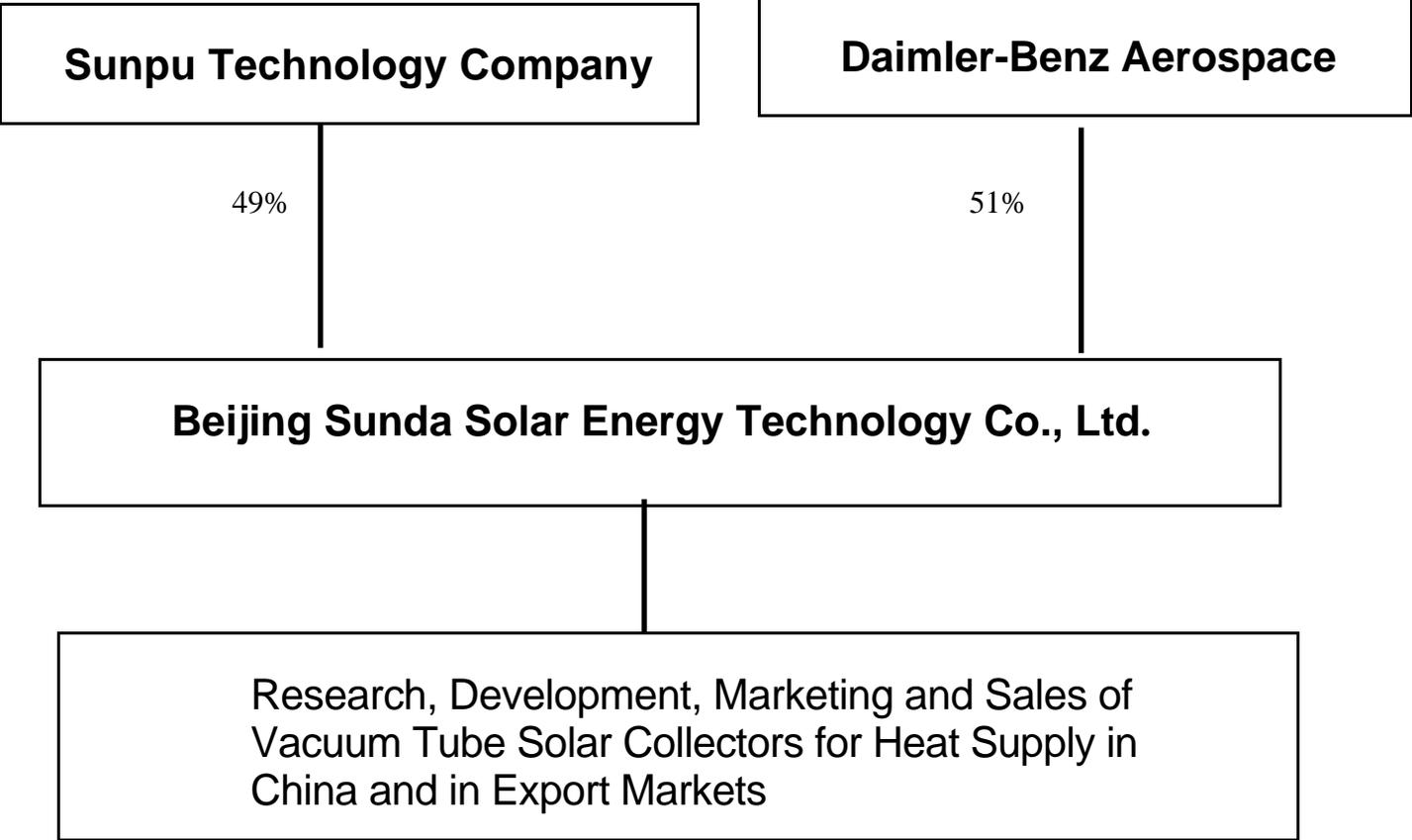
Establishment of a pilot production plant at Beijing Sunpu Technology Company to manufacture vacuum tube solar collectors with heat-pipe and flat absorber.

- **1994**

Export of vacuum tube solar collectors to Germany. Marketing and Sales organized by Daimler- Benz Aerospace. Begin of Joint Venture negotiations between Sunpu Technology and Daimler- Benz Aerospace.

- **November 13, 1995**  
Joint Venture Contract signed.
- **December 18, 1995**  
Legal establishment of Sunda Solar Energy Technology.
- **June 6, 1996**  
Opening of the new production site in SanHe, Hebei Province, to increase the manufacturing volume of vacuum tube solar collectors.
- **July, 1996**  
Establishment of Sunda Solartechnik GmbH, Friedrichshafen, a wholly owned subsidiary for import, marketing and sales in Europe.

**The New Company**



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## **The Locations**

- **Headoffice in Beijing, Haidian District**
  - Administration
  - Research & Development
  
- **Manufacturing Plant in SanHe, Hebei Province**
  - 27.000 m2 land area
  - 8.000 m2 workshop area
  - 500.000 tubes per year (planned capacity)
  
- **Subsidiary in Friedrichshafen, Germany**
  - wholly owned subsidiary company
  - Import, Marketing, Sales, After Sales Service for European markets

## The New Company

### Organization



- Company: High-Technology Joint Venture
- Headquarter: Beijing
- Manufacturing: SanHe, HeBei Province
- Staff: 280 employees
- Scope of Business: Vacuum Tube Solar Collectors for heat supply
- Export: Germany, Austria, Switzerland, Singapore, Korea, Australia etc.

## The Products

### **SEIDO 1**

#### **Vacuum tube solar collector with Heatpipe and Flat Absorber**

The **selective coating** of the absorber plate transforms the solar radiation into heat (> 92%) with almost no energy emission.

The **heatpipe**, mounted in the absorber, transports the heat very quickly to the heat circuit, where the energy is fed in by a metallic heat link. The fluid, which transfers the heat to the hot water storage tank, circulates in the heat circuit, but it does not flow through the collector tubes. This enables an easy installation and provides a safe and reliable operation of the system.

The **stable ultra high vacuum** prevents heat losses and provides high performance even at low outside temperatures. It also protects the absorber and ensures a long lifetime of the collector.

## The Products

### **SEIDO 3**

#### **Vacuum Storage solar collector (market release 4th quarter 1996)**

The **hot water storage**, made out of stainless steel, is integrated into the collector tube. The hot water is directly produced within the collector therefore the system does not require any additional external storage. The system operates on normal water pressure.

The **stainless steel tank** carries the selective coating and acts as the **absorber**.

The **vacuum** provides additional insulation for the stainless steel hot water tank, prevents heat losses and provides high performance even at low outside temperatures. It ensures a long lifetime of the collector.

## The Products

### SEIDO 5

#### **Vacuum tube solar collector with Heatpipe and Bended Absorber**

The **bended absorber plate** increases the energy gained from the solar radiation as it follows more precisely the turn of the sun in the morning and the late afternoon hours.

The **heatpipe**, mounted in the absorber transports the heat very quickly to the heat circuit where the energy is fed in by a metallic heat link. The fluid that transfers the heat to the hot water storage tank, circulates in the heat circuit but it does not flow through the collector tubes. This enables an easy installation and provides a safe and reliable operation of the system. Single tubes of the system can be exchanged without interruption of the system operation.

The **stable ultra high vacuum** prevents heat losses and provides high performance even at low outside temperatures. It also protects the absorber and ensures a long lifetime of the collector.

## **Joint Venture Planning and Realization - Timetable**

### **10/ 1994**

Discussion and pre-negotiation with the Chinese partner on a Joint Venture.  
Preparation of a company internal proposal.

### **12/ 1994**

Letter of Intent. Establishment of a company internal project team to proceed with the Joint Venture preparation and negotiation.

### **01 - 05/ 1995**

Preparation of the Feasibility Study (business plan, investment plan, financing, market research); establish contacts to Chinese Authorities and supporting institutions (e.g. banks)

### **06 - 07/ 1995**

Approval of Feasibility Study within company and with Chinese Authorities.  
Joint Venture Contract negotiations. Due Diligence check within chinese partner.

**09 - 10/ 1995**

Approval of Joint Venture Contract and articles of Association within company.  
Final discussion on Joint Venture Contract with chinese partner. Chinese language version of Joint Venture Contract, Cross check of English and Chinese contracts.  
Fix date of contract signing for November 1995 (visit of German chancellor Kohl to Beijing)

**11/ 1995**

Joint Venture Contract signature. Start approval process with MOFTEC.

**12/ 1995**

Approval by MOFTEC and issuance of business License

**01/ 1996**

Start operational business (all staff meeting, rent office space, office equipment, employ personnel etc.)

**01/ 1996**

Start application to open own subsidiary company in Germany (Feasibility Study, Financing scheme, Articles of Association)

**06 /1996**

Approval by Chinese Authorities to open the subsidiary in Germany (Chinese Embassy, Bonn, MOFTEC Beijing, Foreign Exchange Control)  
Establishment of Sunda Solartechnik GmbH in Friedrichshafen. Start of operational business from July 1997

**07/ 1996**

Intensify export relations and establish contacts to potential customers in Korea, Japan, India, and South East Asia

**11/ 1996**

Organizational change in domestic marketing and sales. Transfer sales responsibility from JV partner to JV own sales group from direct customer sales

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## **Joint Venture Planning and Realization - Support and Information**

### **General**

Seminars on China held at various occasions and by different institutions

Back-up literature, articles, etc.

Discussion with existing JV and Representative Offices

Embassy and Trade Office (e.g. German Trade Office Beijing: updated list of German companies in China, support in all questions related to business in China, establishment of contacts, etc.)

Germany:

BfAi, DEG (German Investment and development Co. Ltd.), GTZ (Technical cooperation), Ostausschuß der deutschen Wirtschaft, etc.

China:

Chinese embassy, China Center for Business Cooperation and Coordination (CCBCC), China Council for Promotion of International Trade (CCPIT), IAS- Investment Advisory Services, etc.

### **Legal procedures and requirements**

Specialized Law Offices (e.g. Pünder, Volhard, Weber, Axster Office Beijing)

Own legal division or legal personnel

Publications and literature on relevant laws and regulations

### **Business plan, Chinese business requirements**

Own company requirements

Discussion and information with local foreign companies and existing JV

Auditing companies (e.g. KPMG China Desk, Frankfurt)

Consulting Companies

Literature (Life and Death of a joint Venture, etc.)

### **Financing**

Own company requirements and possibilities

Local banks (Bank of China, Construction bank, etc.)

Information from foreign commercial banks (e.g. Commerzbank, Dresdner Bank)

Venture capital companies

Joint Venture Financing programs by government or institutions (ECIP, DEG, etc.)

### **Chinese Partner**

Due Diligence Study (with experienced Auditing company)

Back-up Information from secondary source if available and accessible

Company brochure, product leaflets, balance sheets, profit and loss statements

Own observations and discussions with senior management personal and managerial staff

### **Chinese Market Information**

Own market research

Company brochure, product leaflets, balance sheets, profit and loss statements

Own observations and discussions with senior management personal and managerial staff

## **Joint Venture Planning and Realization - Obstacles**

### **Start up phase**

Selection of JV Partner

Legal structure (Equity Joint Venture, Contractual Joint Venture)

Evaluation of potential business in China and export possibilities

Selection of own expert team to prepare JV discussion and negotiations

High start-up cost (travelling expenses)

Language and country requirements

Location requirements

Legal advise in preparation of Letter of Intent

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## **Realization phase**

Feasibility Study

Market research study

Business plan

Investment, registered capital, total amount of investment

JV contract negotiations, definition of go and no go position

Language requirements (negotiation in Chinese language?)

Legal advise (Law of the PRC on Joint Ventures, Labour Law, etc.)

Articles of Association

Shareholding relation, Board of Directors, Board of Mangement

Due Diligence of Chinese partner

Location factors (Special economic zones, Land use rights)

Search and selection of Chinese mangement and staff

Establishment of Guanxi (visit to approval authorities and supporting institutions)

Financing via local banks

Evaluation of investment (assets) by independant auditing company

Taxation (Income tax, Value added tax, etc.)

Search and selection of foreign expatriate staff

Registration of Joint Venture contract, Approval by MOFTEC, Planning commission,

Industrial bureau, etc.

## **Operational Phase**

Company organization

Training of Management, Staff and workers

Quality requirements in production, office and service divisions

Company rules and regulations

Teamwork between foreign and chinese management and staff

Financing via local banks

Bookkeeping, Accounting, Auditing, Reporting according to advanced standards

Human relations, Social factors

Business establishment, sales network, service network

Local sourcing of machinery, materials

Networking to decision leaders (Guanxi)

## **Joint Venture Planning and Realization - Recommendations**

### **1. Selection and specification of an expert team to conduct the whole Joint Venture Planning and Realization Process:**

- Board member
- Legal person
- Controller
- Technician
- Designated General manager for the Joint Venture

Time requirement: ca. 1 - 3 months

### **2. Specify back-up support team and establish contacts**

- Consulting company
- Auditing company
- Law office

Time requirement: ca. 1 - 3 months

Cost: 2.000 - 6.000 DM per day

### **3. Back-up research on market, potential partner, budget, general requirements**

Time requirement: ca. 3 - 6 months  
Cost: China visit 1 week/person: ca. 10.000,- DM

### **4. Selection of potential partner, technical or other cooperation if feasible**

Time requirement: ca. 2-12 months depending on the number of potential partners and the intensity of the selection process  
Cost: number of visits / length and details of cooperation

### **5. Project proposal, letter of Intent, feasibility study, contract negotiations, Joint Venture Contract, Start of operations**

Time requirement: ca. 6 - 12 months depending on the intensity and progress of work  
Cost: depending on number of visits, volume of external service work

## **Main Conclusions:**

Double Check on all data, information etc. received during the JV Planning and negotiation process

Visit to potential customers and dealers to check Chinese Market Requirements before JV foundation

Discussion with JV partner Management and designated JV Management and staff before foundation of JV

Plan to dispatch expatriate personnel for training and education temporarily during the JV start up phase

All key management positions must be guided and supervised by experienced foreign management (Production, Marketing and Sales, Accounting and Bookkeeping, General Management)