Photovoltaic - Common Energy Supply for the Future
Christian Renken, Head of 3S Photovoltaics
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Integrated Value Chain Enables Innovation & Standardisation

Note: (1) Strategic Marketing- & Distribution Agreement with Oerlikon Systems / Solaris
Meyer Burger closes the „gap“ between wafering and solar modules with the takeover of Roth & Rau

A further step in our long-term corporate strategy
- Market leadership along the value chain of the PV industry
- Meyer Burger Group is a comprehensive systems and solutions provider along the value chain

Roth & Rau will continue as „enterprise within Meyer Burger Group“ as the core technology competence centre for solar cells
- Meyer Burger strategy of a decentralised management structure within the Group
Technology Centers

MBT Core Business

- Wafering
- Consumables
- Metrology
- Robotics and Automation
- Cell Connecting
- Encapsulation
- Testing/Simulation/Sorting

R&R Core Business

- Cell technology
- Cell process
- Microwave technology
- Plasma- and Ion Beam technology
- Production Information Technology

Other Business

- PV Thinfilm Line
- Semiconductor Maintenance
- PV Foil Technology
The technology roadmap to reduce cost per kWh

Cost per kWh

high

low

Volume requires process stability

Scale Integration

low

high

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Worldwide Presence – Close to customer

USA
Colorado, Colorado Springs
New Jersey Columbia; Oregon Hillsboro

Europe
Switzerland Baar, Lyss, Neuchâtel, Thun;
Germany Langenfeld, Langweid, Umkirch, Halle, Zülpich; Norway Porsgrunn; Spain Barcelona

Asia
China Shanghai; India Pune; Japan Tokio;
Singapore Singapore; Taiwan Taoyuan County;
Korea Seoul

Headquarter: Switzerland, Thun
Employees: Worldwide > 1200
Markets: Solar, Semiconductor, Optics
Management: Peter Pauli, CEO
Patrick Hofer-Noser, CTO
Sylvère Leu, CIO
Michel Hirschi, CFO
Development of costs of Si-panels

USD / Wp

Price
Costs

Status 6/2011

Costs of energy in the future

- **Costs of conventional energy**
- **Costs of renewable energy**
- **Mix of costs**

Today: Costs of renewable energy are below those of conventional energy.
Business Model
Supplier with in-house production expertise

World’s market leader for production equipment for module manufacturing

Know-how accumulated from the conception and production of solar modules flows directly into further development of production equipment

Experts in design, development and certification of innovative building integrated solar systems

8 MW production
Production Process

Cell Connection  →  Lay-up  →  Lamination  →  Finishing  →  Testing

1. Heating & vacuum & pressure
2. Cooling
3. Junction box

1. Edge trimming
2. Frame press
3. Junction box

Sorting & packaging
High quality products manufactured in Switzerland

Solar façade „Kleines Matterhorn“
3S glass/glass module applied in the Alps, 3'800m above sea level

MFH Bennau Plusenergiehaus
Megaslate® solar roof system

Solar façade „Monte Rosa“
High efficiency 3S glass/glass modules

www.3s-pv.ch
Key points for successful solar building materials
Increase of acceptance due to the availability of asthetical solutions

Perfect integration through the use of custom made solar panels
Photovoltaic technology in combination with thermal panels & roof lights

MegaSlate® H&S thermal panel

Integrated solar roof light
R&D projects
Hybrid solar panel

ZeroEmission LowEx building system with heating pump & geothermal probe
Energy costs by photovoltaic installations

LEVELISED COST OF ELECTRICITY (LCOE)

€/KWh

Highlight-Projects 2011

UmweltArena Spreitenbach, 750 kWp

Stadion Thun, 410 kWp

Tramdepot Bern, 292 kWp
Leader of Solar Technology

www.3-s.ch  www.3s-pv.ch