Development of Steinmüller Engineering in the last three Years

Speaker: Dr. Hans-Ulrich Thierbach
Managing Director
# Employment Record Dr. Hans-Ulrich Thierbach

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Company/Institution</th>
<th>Location</th>
<th>Position/Role</th>
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</thead>
<tbody>
<tr>
<td>2012 - present</td>
<td>Steinmüller Engineering GmbH, Gummersbach, Germany</td>
<td>Engineering and Supplies for Power Plants</td>
<td>Member to Board of Directors</td>
</tr>
<tr>
<td>2004 - 2012</td>
<td>Steinmüller Engineering GmbH, Gummersbach, Germany</td>
<td>Engineering and Supplies for Power Plants</td>
<td>Head of Power Plant Technologies Department</td>
</tr>
<tr>
<td>2000 - 2003</td>
<td>Striko Westofen GmbH, Wiehl, Germany</td>
<td>Process Engineering and Design of Industrial Furnaces for Foundries</td>
<td>Head of Engineering Department</td>
</tr>
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<td>1999 - 2000</td>
<td>Babcock Borsig Power GmbH, Oberhausen, Germany</td>
<td>Engineering and Supplies for Power Plants</td>
<td>Head of R&amp;D Department for Coal, Oil and Gas Firing Systems</td>
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<td>1991 - 1999</td>
<td>L. &amp; C. Steinmüller GmbH, Gummersbach, Germany</td>
<td>Engineering and Supplies for Power Plants</td>
<td>Process and Design Engineer for Coal, Oil and Gas Firing Systems</td>
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Agenda - Development of SE in the last three Years

1. Introduction, History & Steinmüller FY 2013
2. Steinmüller FY 2014 – Acquisition by IHI
3. Steinmüller FY 2015 / Short FY 2015/16
4. Summary and Outlook
History – Steinmüller Engineering
Based on History of L. & C. Steinmüller as Boiler Supplier

1872
L&C Steinmüller GmbH was legally founded by Lebrecht and Carl Steinmüller

1874
L&C Steinmüller GmbH built the first steam boiler. 1.5 meters high and maximum steam pressure of 3 atm

1995
Steam Boiler construction (Boiler Height 160m; Steam Temp 580°C; Pressure 285 atm; Steam Quantity 2428 t/h)

1999
Acquisition of L&C Steinmüller GmbH by Deutsche Babcock AG. Shortly thereafter large job cuts from 1,500 to 700 staff.

2003
First Owner
Great Grandsons of Carl Steinmüller
Not the legal successor of L&C Steinmüller, but the Steinmüller name continued.

2009
60% shares of Steinmüller Engineering GmbH acquired by Siemens AG.

2014
100% shares of Steinmüller Engineering GmbH acquired by IHI Corporation

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L&C Steinmüller GmbH built the first steam boiler. 1.5 meters high and maximum steam pressure of 3 atm

1914
Largest employer in Gummersbach, 1000 employees. L&C Steinmüller GmbH regarded as leader in pipe/tube steam boiler factory, 1/3 turnover abroad.

1967
Expansion of production range including construction of boilers. Export success in South Africa (subsidiary in Chandor)

1997
L&C Steinmüller’s most successful year in the history of the company with 5,650 staff, sales of 1.74 billion and net income before tax of 79.2 million Deutsche Mark

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1st Bituminous coal SMV - LNB for Altbach CHP2

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Maritsa 3 – EPC Lignite Low-NOx-Firing Retrofit
Paroseni - FGD retrofit
Stanari – consultancy for a power plant to be realised by the customer
Albbruck - 1st EPC for Low-Nox-Firing System retrofit
Hemweg – 1st FGD revamp
Chalampe first new heat exchanger supplied
Report about 1st SE-Conference – for the SE Control Board in 2013

57 Guests from Germany; Russia; Netherlands; UK; Japan and South Africa

SE-Product Presentations
- Steinmüller Engineering Process Engineering
- Competence Steam Generation – Concepts and Supplies
- Revamp and New Build of Firing Systems
- Revamp and Retrofit of FGD Plants
- SCR Retrofit for Power Plants
- Local and International Project Execution
- Consulting Activities

Feedback
- impressive development of Steinmüller Engineering
- respectable business opportunities for the future

Conclusion: Next SE-Conference in two or three years
...rely on good experiences.
Steinmüller Engineering GmbH – Fields of Competence

Product-Engineering and Supply

Combustion Systems
- Bituminous coal
- Lignite
- Oil and gas
- Waste gases and liquid
- Fluidized bed boilers
- Biomass power plants

Steam Generation
- Fired Steam generator
- Heat recovery
- Process gas heat exchangers
- Coal gasification components
- Solar thermal plants

Environmental Technology
- Flue gas cleaning for power generation and waste incineration plants
  - Particulate removal
  - DeNOx
  - Desulphurization
  - Removal of toxic components and heavy metals
- Thermal recycling of domestic-, industrial- and hazardous waste

Planning Engineering

Consulting and Planning
- Concept and feasibility studies
- Tender preparation and bid evaluation
- Design review and supervision during project realization period
- Owners Engineering
Spotlights SE-FY 2013

Renaissance of the product line
Industriale Heat exchanger

Rodia Chalampé
Engineering supply
France
- Supply May 2013
- PAC Aug. 2013

Grow How 1+2
Engineering supply
Great Britain
- Grow How 1
  (OE in Feb. 2013)
- Grow How 2
  (OE in Aug. 2013)

Project „Clear Skies“
- May - Siemens decided to sell the Environmental Business (+SE)
- July - electronic Data room available
- Autumn - Management Presentations
- December- First non binding Bid´s

Consulting
EFT – Stanari
Bosnia Herzegovina

First new power plant with SE-Consulting contribution

CFB-Licence
Eskom
South Africa
OE March 2013
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### Project „Clear Skies“

- **January** - Management Presentations
- **February** - Binding Bid’s and IHI selected as preferred bidder
- **March-June** - Contract Negotiation IHI-Siemens
- **30. June** - IHI took over a 100% Share of SE

### Advantages for SE and our Clients by integration into IHI-Group

- Long term of cooperation between SE(LCS) – IHI
- Similar Products as a good basis for collaboration
- Additional Know How, Products and Services
- Increased capabilities for Own Product development
- Professional capacity support
- Complementary Market Activities

### De SOx Fleet Study – Eskom

**South Africa**

Development of Concept and Basic Designs for different reduction technologies with individual optimized Solution for each of the Eskom Power Stations to reduce SOx emissions

### SE-Tray supply and installation

**MIBRAG – Deuben**

**Germany**

First EPC-Contract for FGD-Tray installation

Additionally 4 Trays have been designed and/or installed for different units
Integration into IHI Corporation

IHI Corporation

President and Chief Executive Officer
Tamotsu Saito

IHI Europe Ltd.
Managing Director:
Mr. Kadooka

Corporate

Sales Headquarters

Global Marketing Headquarters

Energy & Plant Operations
- Aioi Works
- Yokohama Works

Nuclear Power Operations

Aero-Engine & Space Operations

Rotating Machinery Operations
- Aioi Casting Workshop

Vehicular Turbocharger Operations

Machinery & Logistics Systems Operations

Infrastructure Operations
- Offshore Project & Steel Structures Operations
- Urban Development Operations

Resources, Energy and Environment

Aero Engines and Space

Industrial Systems and General-Purpose Machinery

Social Infrastructure and Offshore Facilities

IHI Europe Ltd.
Managing Director:
Mr. Kadooka

Steinmüller Engineering Conference 2016
# Integration into IHI Corporation

<table>
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<tr>
<th>Date</th>
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| January 2014 | First visit of Domoto -San  
Director of Sector Energy & Plant Operations |
| 30th June 2014 | IHI acquires 100 % Shares of Steinmüller Engineering |
| 1st July 2014 | All Employees Meeting with IHI Presentation  
participation of Domoto-san |
| August 2014  | First Visit of Hamamura-san  
Board Director of IHI |
| August 2014  | First common visit of SE MD´s at IHI in Tokio  
Meeting with Saito-san - CEO of IHI |
| October 2014 | First Control Board Meeting in Gummersbach  
with Domoto-san and Kuomi-san |
| December 2014 | First visit of Saito-san in Gummersbach |
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Spotlights from SE-FY 2015 & Short FY 2015/16

SE Branch in South Africa
Date of registration: March 27th, 2015
Start of operation: July 1st, 2015
Directors: Tetsuya Iwasaki, Dr. Hans-Ulrich Thierbach
General Manager: Hans Marquardt

Location
South Africa, Johannesburg
Building 13 The Woodland, Woodlands drive, Woodmead Sandton 2196

Business
Consulting and engineering services for boilers, combustion equipment and air quality control systems for ESKOM and other companies in South Africa

Camden LNB-Burner retrofit
Cooperation between Eskom and SE
South Africa
First SMV – Low NOx Burner installation with excellent operation performance for a very specific customized solution
Spotlights from SE-FY 2015 & Short FY 2015/16

Low Nox-Solution for Lignite

Maritza EAST 3, Bulgaria
TOC last Unit Dec. 2015
4th Unit – successful retrofit
• Excellent technical Performance
• Extremely challenging time schedules met

Kostolac B
TE-KO / Serbia
TOC 23.12.2015

New contracts
Rovinari
Romelectro /CEO Oltenia
Rumania / OE Sep. 2015

Aghios Dimitrios 3 & 4
Ergotem / PPC
Greece / OE 14.12.2015

Consulting
Kusile Erection acceleration Eskom
South Africa

1st Unit to be synchronized in 2016

Acceleration of After Sales Services

• Monitoring PCK Schwedt
• Maintenance for Herne 4
• Support for Lünen
• Operational Optimization grate firing system Nestle Mainz
• Spare part delivery Shell Wesseling

First LNB Supply for Russia
Contract signing planned for Mid of March
Paper Mill ZBK Arkhangelsk – Boiler supply by ZiO Podolsk - LNB-Supply by SE
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Global Activities and Markets (Europe & Africa)

**ESP-Projects**
- Govora # 7 (ROM)

**LNB-Projects**
- HKW II (GER)
- Herne #4 (GER)
- Astana (KAS)
- HKW II (GER)
- Herne #4 (GER)
- Astana (KAS)

**LNB-Projects (bituminous)**
- HKW II (GER)
- Herne #4 (GER)
- Astana (KAS)

**CPC**
- Yara Trinidad

**SCR-Projects**
- Shell unit 6

**FGD**
- Paroseni (ROM)

**Eskom Activities (RSA)**
- Hendrina LTE Studie
- FGD Engineering
- DeNOx Fleet Assessment
- DeSOx Fleet-Assessment
- LNB-Burner Engineering
- Other Professional Services

**Consulting**
- PS Stanari

**Concept Study**
WaiGaoQiao, China

**CFB**
Martech / Vietnam

**LNB-Projects (Lignite)**
- ME III (BLG)
- Kostolac (SER)
Mid Term Plan for further Company Development

OE Plan by contract type in FY 2016 - 2020

- Moderate continued Growth
- Four equal Product Areas
- Expand After Sales Activities

Capacity Forecast (FTE) out of the OE Planning
Thank you for your attention