Končar – Power Transformers Ltd.
Joint Venture of Siemens and Končar
TP comprising all products of HV substations including their electrical integration to systems

Air insulated substation

Gas insulated substation

Power quality

Voltage Transformer
Current Transformer
Bushing
GIS
Coils
Reactors
Phase Shifter

Disconnector
Disconnector
Arrester
Transformer

Line Traps

Sensors and connectivity; control, protection and automation; medium voltage; parameterization, system engineering; HV connection between AIS/GIS and transformers
Manufacturing Places Siemens TP

- Toronto, CA
- Jackson, US
- Guanajuato, MX
- Querétaro, MX
- Cairo Mont., IT
- Troisdorf, DE
- Berlin, DE
- Dresden, DE
- Bamberg, DE
- Nuremberg, DE
- Troisdorf, DE
- Leonding, AT
- Linz, AT
- Weiz, AT
- Voronesh, RU
- Jinan, CN
- Wuhan, CN
- Guangzhou, CN
- Wuxi, CN
- Shanghai, CN
- Hangzhou, CN
- Saint-Louis, FR
- Pravets, BG
- Zagreb, HR
- Trento, IT
- Aurangabad, IN
- Hyderabad, IN
- Jakarta, ID
- (in set up)

Factory Network

- Air Insulated Switchgear
- Gas Insulated Switchgear
- Power Transformers

- Clear global product responsibility in Lead Factories for highest performance of entire factory network

Končar – Power Transformers Ltd.
Siemens Transformers
Merged strengths - our history
KPT Company History

- **1921**: Production and repair of rotating machines and transformers
- **1946**: First asynchron machine with the winding from enamel copper wire
- **1947 – 1960**: Transformers voltage class up to 123kV
- **From 1962**: Transformers voltage class up to 245kV
- **1965**: New factory production capacity 3500 MVA/yr
- **From 1970**: Transformers voltage class up to 420 kV, ratings up to 725 MVA
- **1991**: Independent Končar Power Transformers Ltd. (KPT)
- **1995**: Joint Venture of Siemens and Končar
  - Certificates ISO 9001, ISO 14001, OHSAS 18001, ISO/IEC 27001:2005
  - Transformers voltage class up to 550 kV, ratings up to 1000 MVA
  - HVDC transformers
  - SVC transformers
## Manufacturing Program

<table>
<thead>
<tr>
<th>Category</th>
<th>Specifications</th>
<th>Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator transformers</td>
<td>- Up to 1000 MVA</td>
<td><img src="image1" alt="Generator Transformer" /></td>
</tr>
<tr>
<td></td>
<td>- Up to 550 kV</td>
<td><img src="image2" alt="Generator Transformer" /></td>
</tr>
<tr>
<td>Large transmission transformers and autotransformers</td>
<td>- Up to 1000 MVA</td>
<td><img src="image3" alt="Large Transformer" /></td>
</tr>
<tr>
<td></td>
<td>- Up to 550 kV</td>
<td><img src="image4" alt="Large Transformer" /></td>
</tr>
<tr>
<td>HVDC transformers</td>
<td>- Up to 550 kV</td>
<td><img src="image5" alt="HVDC Transformer" /></td>
</tr>
<tr>
<td>Special transformers</td>
<td>- Furnace and rectifier</td>
<td><img src="image6" alt="Special Transformer" /></td>
</tr>
<tr>
<td></td>
<td>- For railways</td>
<td><img src="image7" alt="Special Transformer" /></td>
</tr>
<tr>
<td>Transformer life management</td>
<td>- Customer support</td>
<td><img src="image8" alt="Transformer Life Management" /></td>
</tr>
<tr>
<td></td>
<td>- Diagnostic and maintenance</td>
<td><img src="image9" alt="Transformer Life Management" /></td>
</tr>
</tbody>
</table>
## Production 1949 – 12/2018

<table>
<thead>
<tr>
<th>Highest operation voltage (kV)</th>
<th>Units</th>
<th>Total power (MVA)</th>
<th>Export (MVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>72,5</td>
<td>534</td>
<td>17.750,90</td>
<td>17.725,90</td>
</tr>
<tr>
<td>123</td>
<td>904</td>
<td>35.110,15</td>
<td>13.497,65</td>
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<tr>
<td>170</td>
<td>409</td>
<td>29.293,25</td>
<td>29.293,25</td>
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<tr>
<td>245</td>
<td>487</td>
<td>82.263,23</td>
<td>69.602,23</td>
</tr>
<tr>
<td>420</td>
<td>596</td>
<td>159.709,90</td>
<td>137.117,90</td>
</tr>
<tr>
<td>550</td>
<td>76</td>
<td>19.385,32</td>
<td>19.385,32</td>
</tr>
<tr>
<td>Total</td>
<td>3.006</td>
<td>343.512,75</td>
<td>286.622,25</td>
</tr>
</tbody>
</table>

Average transformer power / year: 114,28 MVA

<table>
<thead>
<tr>
<th>Rated power (average)</th>
<th>2009 – 2018</th>
<th>182,66 MVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017 – 2018</td>
<td>207,22 MVA</td>
</tr>
</tbody>
</table>

Export

<table>
<thead>
<tr>
<th>2009 – 2018</th>
<th>97,74%</th>
</tr>
</thead>
</table>

Total export

| 1949 – 2018 | 83,44% |
Export

Total of 90 countries

Export in 2009 – 12/2018 = 97.74%
Siemens KPT Transformer Factory

Today:

- Total Area: 48.467 m²
- Under the roof: 25.125 m²
Core-Sheet Cutting & Stacking Area

- Total working area: 1632m²
- Air conditioned
- Cutting to the length, core sheet up to 1000 mm width
- Cutting capacity: 5500 t/y
Winding Workshop

Total working area:
- 1800 m²

Winding machines:
- Vertical: 4 units
- Horizontal: 7 units

Overpressure controlled
Air conditioned
Assembly Workshop

Total area of 4661 m²
Air conditioned

Main equipment:
- Crane – capacity 150 t, 3 units
- Crane – capacity 400 t, 1 unit
- Other cranes: 3 – 32 t, 7 units
- Movable scaffold 5 units
- Vapour phase drying chamber – 2 units
- Air cushions, capacity up to 500 t
**Desert Climate & Online Air Quality Monitoring**

**Desert Climate**

Preparation of active part before tanking

Performed in controlled environment:

- Humidity below 10%
- Temperature 20 – 30 °C

**Online Air Quality Monitoring**

- Continuous online measurement of: air pressure, temperature, humidity, low power gas concentration and dust particles density
The building is 100% Electrostatically (Faraday cage) & noise shielded.
Test Laboratory

Dimensions of testing area:
- Surface 30 m × 35 m
- Height 25 m
Integrated Management System
Transport

On time delivery!
Končar Power Transformers Ltd.
A Joint Venture of Siemens and Končar