



Crisis in Power Engineering Education: A National Security Concern Minneapolis, MN October 21-22, 2022



Siemens Large Drives LLC

Industrial

Oil and Gas

Utilities

Metals

Mining

Water

Cement

Test

Company Background

Siemens Large Drives is one of the world's leading manufacturers of medium and high voltage electrical motors, converters (VFDs) up to 100MW and synchronous generators, as well as special drives for ships, mines and rolling mills. These products form the basis for drive systems optimized for a wide range of industries and applications. We have 7000 employees working in 43 countries including 9 factories in US (2), Europe (3), China (2), Brazil and India. Our employees are helping our customers in their efforts to decarbonize.

Power and Energy Focus

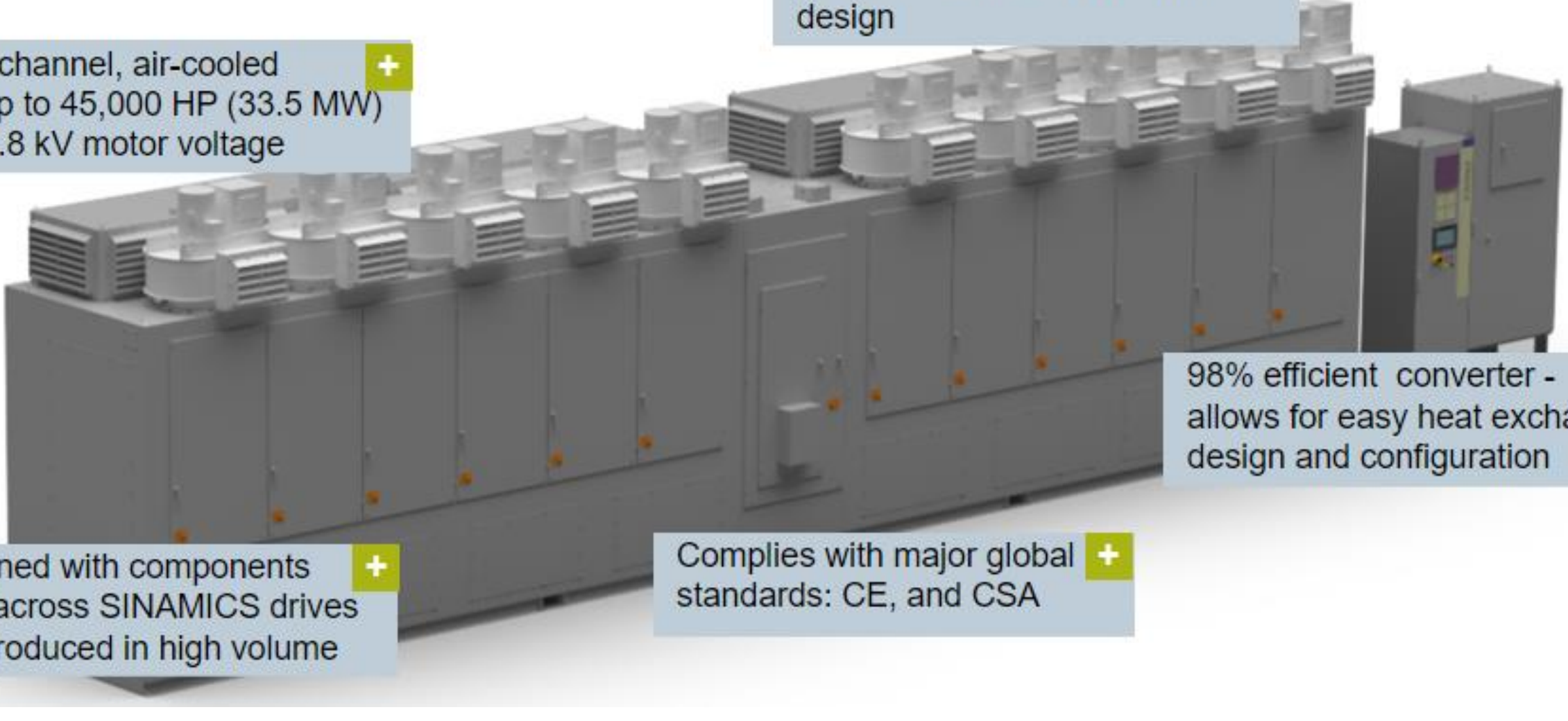
- Medium Voltage Electric Drives – all relevant topologies offered
 - Cascaded H-Bridge
 - Modular Multi-level
 - Neutral-Point Clamped
 - Load Commutated Inverter
 - Cycloconverter
- Grid Tied Inverters
- Medium and High Voltage Motors
- Industrial Applications

Power and Energy Talent Base

people employed in the Power Electronics and Power Systems domain:
50

Workforce demographics:

4% AS
50% BS
30% MS
16% PhD



40% better heat density per power cell enables air-cooled design

Single channel, air-cooled drive up to 45,000 HP (33.5 MW) and 13.8 kV motor voltage

98% efficient converter - allows for easy heat exchanger design and configuration


Designed with components used across SINAMICS drives and produced in high volume

Complies with major global standards: CE, and CSA

GH150 Modular Multi-level Converter – Largest Air-cooled VFD



GH180 Cascaded H-Bridge Converter – Highest Market Penetration



Siemens Motor Products – wide selection available – Ultracompact, Low and High Voltage Induction Motors, Generators and Synchronous Motors

Salary and Benefits for EE

The 2021 IEEE Salary and Benefits Report for the Energy and Power Engineering category states:
Range: \$89k - \$220k
Median: \$140k

Siemens offers salaries consistent with the IEEE Report, and benefits that are equal or better than the Industry average

Growth and Hiring

Growth opportunity:
From Entry Level to Principal Engineer and to R&D Director

Immediate openings (US):

- Power Electronics Design
- Simulation (FEA and Systems) Engineer

Future opportunities (US):

- Magnetics Design and Analysis
- Power Electronics Systems
- Realtime Control