

HEAVY INDUSTRY

Powering the World's Heaviest Industries

Power solutions from 500 kW to 300+ MW for steel, rolling mills, cement, mining, glass, and waste-to-energy. Systems certified CE, IEC, IEEE 519, EN 50160.

STEEL & ELECTRIC ARC FURNACES

ArcPower Elite Sarcwise: the most advanced power supply system for electric arc furnaces.

■ Up to 80 MVA per Unit

Scalable power from 10 MW to 80 MVA, adaptable to any EAF size. SCR/IGBT hybrid topology.

■ Containerized Deployment

Pre-assembled system in ISO 20/40 ft containers reducing installation time from months to 4-8 weeks.

■ Advanced Digital Control

Real-time regulation algorithms optimizing the electric arc and minimizing grid disturbances.

■ 15-20% Energy Savings

Power profile optimization reducing consumption from 350-700 kWh/ton and improving process thermal efficiency.

■ Harmonic Compensation

Integrated active filtering meeting IEEE 519 and IEC 61000. Flicker reduction and grid disturbance mitigation.

■ 24/7 Remote Monitoring

Supervision platform with predictive diagnostics and remote technical support. CE, UKCA, IEC 62109-1 certified.

ROLLING MILLS & LAMINATION TRAINS

Power conversion and energy management for hot and cold rolling mill lines.

■ 5-20 MW per Stand

Power drives for each rolling stand, with total installed power of 150-300 MW per complete line.

■ Peak Shaving with Storage

Peak-to-average ratio of 2:1 to 4:1 in rolling. BESS storage for peak clipping — saving \$2-6M/year in demand charges.

■ DC-to-AC Drive Modernization

Replacement of obsolete DC drives with modern AC variable-frequency drives. Higher efficiency, lower maintenance, superior control.

■ Active Harmonic Filtering

Thyristor drives generate 25-35% THDi. Our active filters reduce harmonics to IEEE 519 / EN 50160 limits.

■ Regenerative Braking

10-25% energy recovery during deceleration. Capture systems returning energy to the grid or to storage.

■ Standards Compliance

CE, IEC 61800, IEEE 519 certified. Compatible with 6.6 kV to 36 kV grid connections.

CEMENT INDUSTRY

Emission control, power quality, and energy efficiency for cement plants.

■ ESP Power Supplies

Power supplies for electrostatic precipitators (ESP): emission control with high-frequency transformer-rectifiers and arc detection.

■ Power Quality for Crushers

Soft starters and reactive compensation for 2-10 MW mill and crusher motors. Elimination of startup disturbances.

■ EU CBAM Compliance

The EU Carbon Border Adjustment Mechanism increases costs for high-footprint cement. Electrification and efficiency as strategy.

■ Plasma Gasification

Plasma torches for alternative fuels (MSW, tires, biomass). Reduction in fossil fuel use and fuel costs.

■ Industrial Peak Shaving

BESS storage to manage demand peaks from crushers and mills. Reduction in contracted power costs.

■ Certifications

CE, IEC 60076, IEEE 519, EN 50160. Designs for dusty environments and extreme temperatures.

MINING & NON-FERROUS METALS

High-power rectifiers and power quality for aluminum smelting, copper refining, and ferroalloys.

■ Aluminum Smelting

Smelters of 200-1,000+ MW with 60-120 MVA rectifiers. Very high current DC supply (>300 kA) for electrolytic pot lines.

■ Submerged Arc Furnaces (SAF)

Ferroalloys (FeSi, FeMn, FeCr) in 20-120 MW furnaces. Same power quality challenges as EAF — shared solutions with ArcPower.

■ Remote Site Power

Hybrid solar + storage + generator solutions for mines without reliable grid connection. Industrial microgrids.

■ Copper Electrowinning

10-80 MW systems for electrowinning and electrorefining. Controlled rectifiers with high current stability for cathode quality.

■ Reactive Compensation

SVC/STATCOM for remote mines with weak grid connections. Voltage stabilization and power factor correction for fluctuating loads.

■ Certifications

CE, IEC 60146, IEEE 519, EN 50160. Designs for extreme altitudes and corrosive environments.

GLASS MANUFACTURING

All-electric melting furnaces and the transition from natural gas for the glass industry.

■ All-Electric Melting Furnaces

Power supply for 5-40 MW furnaces with molybdenum or tin oxide electrodes. Systems for full-electric melting or electric boosting.

■ Critical 24/7 Continuity

Glass furnaces operate continuously for 10-15 years. Power supply must have N+1 redundancy and industrial UPS.

■ Energy Efficiency

Electric melting is 2-3x more efficient than gas. 80% CO₂ emission reduction compared to natural gas.

■ Transition from Gas

Progressive electrification of the melting process. Hybrid gas/electric systems as an intermediate step toward 100% electric melting.

■ Precise Temperature Control

Power regulation at 1,500 deg C with <0.5% variation. High-quality transformers and thyristors for process stability.

■ Certifications

CE, IEC 60076, EN 50160. Designs for continuous operation with high availability (>99.5%).

WASTE-TO-ENERGY & PLASMA GASIFICATION

DC plasma torches for waste destruction and syngas energy generation.

■ DC Plasma Torches

DC power supplies for 0.5-6 MW plasma torches. Temperatures >5,000 deg C destroying any waste, including PFAS and hazardous materials.

■ Containerized Modular Plants

Processing units of 5-50 ton/day in ISO containers. Rapid deployment for emergencies, military installations, or remote areas.

■ Environmental Regulation

Compliance with EU incineration directives (2010/75/EU). Near-zero emissions compared to conventional incineration.

■ PFAS Destruction

Plasma temperatures destroy "forever chemicals" (PFAS/PFOS) impossible to eliminate by other methods. Definitive pollution solution.

■ Syngas Recovery

High-value synthesis gas (H₂ + CO) for power generation or chemical production. Inert vitrified slag as byproduct.

■ Certifications

CE, IEC 62109, IEEE 519. Designs for continuous operation with corrosive gases.

POWER RANGES BY SECTOR

Arc Furnaces (EAF)	10 - 80 MVA
Rolling Mill Total	150 - 300 MW
Aluminum Smelting	200 - 1,000+ MW
Glass Melting	5 - 40 MW
Plasma Torches	0.5 - 6 MW
Copper Rectifiers	10 - 80 MW
Cement ESP	50 - 500 kW
SAF Ferroalloys	20 - 120 MW

YOUR INDUSTRY IS UNIQUE. SO IS YOUR SOLUTION.

Our engineering team analyzes your process, models your electrical demand, and designs the optimal power solution — from consultation to commissioning.

Eneraq

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European technology · In-house R&D