



# CONSTITUENT OVERVIEW

**The Nasdaq OMX Clean Edge Smart Grid Infrastructure Index (QGRD)** is designed to act as a transparent and liquid benchmark for the smart grid and electric infrastructure sector. The Index includes companies that are primarily engaged and involved in electric grid; electric meters, devices, and networks; energy storage and management; connected mobility; and enabling software used by the smart grid and electric infrastructure sector (including both pure play companies focused on the smart grid sector and diversified multinationals with smart grid sector exposure).

COMPANY	STOCK TICKER	PP / NPP*	AT A GLANCE
ABB Ltd.	ABBN (Swiss)	PP	Transmission and distribution (T&D), automation, connected mobility, and digitization
Advanced Energy Industries, Inc.	AEIS	PP	Power conversion, measurement, and control solutions
Advantech Co., Ltd.	2395 (Taiwan)	NPP	Industrial Internet-of-Things (IoT) and embedded boards for network edges in communication and electrical systems
AES Corp.	AES	NPP	Energy management, energy storage, and conversion. Activities include Fluence (energy storage joint venture with Siemens) and stake in Uplight (cloud energy management for utility sector)
Alfen N.V.	ALFEN (Amsterdam)	PP	Netherlands-based provider of energy storage, electric vehicle (EV) charging stations, and grid-edge technologies
Allis Electric Co., Ltd.	1514 (Taiwan)	PP	Manufacturer of transformers, battery chargers, rectifiers, and other electrical products
Alupar Investimento S.A.	ALUP11 (São Paulo)	PP	T&D development company with growing investments in renewables
American Superconductor Corp.	AMSC	PP	Electronic control systems and superconductive wires for grid management/optimization, wind turbines, and control systems
Analog Devices, Inc.	ADI	NPP	Integrated circuits for wireless infrastructure equipment, networking equipment, connected mobility, and energy management systems for industry
Aptiv Plc	APTV	PP	Provider of components for automotive electrical architecture, systems integration in connectivity and security, and autonomous driving technologies
Arcosa, Inc.	ACA	NPP	Energy equipment including wind turbine towers and structures for T&D

\*Denotes pure play vs. non pure play or diversified

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Atkore, Inc.	ATKR	PP	Manufacturer of electrical conduits, cables, connection and protection equipment
AZZ Inc.	AZZ	NPP	T&D equipment
Belden, Inc.	BDC	NPP	Networking, connectivity, and cabling equipment
BYD Co. Ltd.	1211 (Hong Kong)	NPP	Electric buses, EVs, connected mobility systems, and advanced batteries for energy storage
Centrais Elébricas Brasileiras S.A.	EBR	NPP	Operator of T&D assets and a large fleet of renewable generating plants in Brazil
Chung-Hsin Electric & Machinery Mfg. Corp.	1513 (Taiwan)	NPP	Manufacturer of T&D equipment, controls, and meters
Cisco Systems, Inc.	CSCO	NPP	Global leader in networking systems and infrastructure with energy management offerings for utilities
Companhia de Transmissão de Energia Elétrica Paulista S.A. (CTEEP)	TRPL4 (São Paulo)	PP	T&D networks in Brazil with concentration in the State of São Paulo
Companhia Paranaense de Energia S.A. (COPEL)	CPLE11 (São Paulo)	PP	Transmits, distributes, and generates electric power
Daihen Corporation	6622 (Tokyo)	NPP	Manufacturer of electrical equipment for smart energy management
Digi International, Inc.	DGII	NPP	IoT hardware, software, and services
E.ON SE	EOAN (Xetra)	NPP	Large Germany-based energy provider with a focus on intelligent networks and grid integration of renewable energy (RE)
Eaton Corp. Plc	ETN	PP	Intelligent power management (including energy management and building controls), vehicle electrification and connected mobility systems
EDP-Energias de Portugal S.A.	EDP (Lisbon)	NPP	Portugal-based energy provider with businesses in transmission and distribution on the Iberian Peninsula and in Brazil and in renewable electricity
Elia Group S.A.	ELI (Brussels)	PP	Grid operator in Belgium and in Germany; transmission management and grid load-balancing
Emerson Electric Co.	EMR	NPP	Building, power, and grid efficiency management systems and solutions
Enel S.p.A.	ENEL (Milan)	NPP	Italian state-owned utility with large base of T&D assets; Enel Green Power subsidiary owns and operates RE assets around the world; and Enel X, a provider of demand response solutions worldwide

EnerSys	ENS	NPP	Manufacturer and marketer of batteries for industrial applications, reserve power, and transportation
ENGIE S.A.	ENGI (Paris)	NPP	France-based utility shifting to zero-carbon energy deployment, grid integration of RE, and connected mobility and vehicle electrification
Enphase Energy, Inc.	ENPH	PP	Solar inverters and controls to condition solar power for use and transmission on the grid
Equatorial Energia S.A.	EQTL3 (São Paulo)	PP	Distributes electric power
ESCO Technologies, Inc.	ESE	NPP	Smart meters and other diagnostic measurement and monitoring systems
Fluence Energy, Inc.	FLNC	PP	Provider of utility-scale and grid-edge energy storage systems (joint-venture of Siemens and AES) with a focus on integrating renewable electricity into power pools
Fortis, Inc.	FTS (Toronto)	NPP	Canada-based electric utility holding company with investments in T&D networks
Fortune Electric Co., Ltd.	1519 (Taiwan)	PP	Manufacturer of switchboards, high and low voltage switchgears, and transformer equipment
Generac Holdings, Inc.	GNRC	NPP	Backup power generators for residential and commercial markets with a growing focus on lithium battery systems
General Electric Co.	GE	NPP	Smart meters, transformers, and other power conversion products
Grupo Energisa S.A.	ENG11 (São Paulo)	PP	T&D company serving 8 million people in Brazil
GS Yuasa Corp.	6674 (Tokyo)	NPP	Stationary battery storage and automotive batteries
Hammond Power Solutions, Inc.	HPS.A (Toronto)	PP	Leading designer and builder of transformers
HD Hyundai Electric	267260 (Korea)	PP	Manufacturer of transmission and distribution equipment
Hitachi Ltd.	6501 (Tokyo)	NPP	Diversified global manufacturer active in smart meters, building controls, smart devices, energy management, and grid operations
Honeywell International, Inc.	HON	NPP	Energy control technologies including sensing and energy efficiency products for transportation, industry, and buildings
Hubbell, Inc.	HUBB	PP	Components for T&D

Hydro One Ltd.	H (Toronto)	PP	T&D services in the Province of Ontario
Hyosung Heavy Industries Corp.	298040 (Korea)	NPP	Manufacturer of transformers, gears, electric motors, and inverters
Iberdrola S.A.	IBE (Madrid)	NPP	Global leader in renewables development, T&D infrastructure, and grid edge development
Iljin Electric Co., Ltd.	103590 (Korea)	PP	Manufacturer of electrical wire, transformers, and switchgear products
Infineon Technologies AG	IFX (Xetra)	NPP	Germany-based semiconductor producer for connected mobility, EVs, renewable energy, and electrical generation and transmission
International Business Machines Corp.	IBM	NPP	Energy management hardware, software, and networks; automated metering infrastructure (AMI)
Itron, Inc.	ITRI	PP	Leading smart meter manufacturer; AMI solutions for electricity, gas, and water
Johnson Controls International Plc	JCI	PP	Intelligent energy management, smart buildings, storage, and connected mobility
Landis+Gyr Group AG	LAND (Swiss)	PP	Switzerland-based maker of smart and traditional meters
Littelfuse, Inc.	LFUS	NPP	Power control and battery management systems, fuses, sensors
LS Electric Co., Ltd.	010120 (Korea)	PP	T&D products and automation solutions
MasTec, Inc.	MTZ	NPP	Construction of transmission, power generation, and industrial infrastructure
Meidensha Corp.	6508 (Tokyo)	PP	Infrastructure products for power generation, T&D, and EV connectivity and drivetrains
MYR Group, Inc.	MYRG	PP	Builder of T&D, substations, and RE projects
National Grid Plc	NG. (London)	PP	T&D in U.K. and U.S.
Nexans S.A.	NEX (Paris)	PP	Cable manufacturer for high-voltage projects such as smart grids, transmission, buildings, and industrial operations
NGK Insulators, Ltd.	5333 (Tokyo)	NPP	Ceramics technologies for insulation in transmission, mobile applications, and electronics; also active in utility-scale energy storage

NKT A/S	NKT (Copenhagen)	PP	Power cable manufacturer and installer across low-, medium-, and high-voltage applications
nVent Electric Plc	NVT	PP	Electrical connection and protection solutions; focus on electric infrastructure
NVIDIA Corp.	NVDA	NPP	Graphics processing leader with applications in smart cities, grid edge, and connected mobility
NXP Semiconductors N.V.	NXPI	NPP	Smart connectivity/signal processing with applications for smart cities management and advanced mobility including autonomous vehicles
Oracle Corp.	ORCL	NPP	Utility and power management software
Osaki Electric Co., Ltd.	6644 (Tokyo)	PP	Maker of advanced and watt-hour meters, distribution panels, and communication devices
Panasonic Corp.	6752 (Tokyo)	NPP	Automotive and stationary battery storage
Preformed Line Products Co.	PLPC	PP	Electrical systems and equipment manufacturing with a focus on utility overhead and underground networks
Prysmian S.p.A.	PRY (Milan)	PP	Maker of high voltage and undersea cables
QUALCOMM, Inc.	QCOM	NPP	Grid edge technologies for utilities, smart cities and connected mobility
Quanta Services, Inc.	PWR	PP	Designer/builder of generating stations, substations, and transmission lines
Redeia Corporación S.A.	RED (Madrid)	PP	Operator of the Spanish electrical grid
Redes Energéticas Nacionais, SGPS, S.A.	RENE (Lisbon)	PP	Operator of the Portuguese electrical grid
Renesas Electronics Corp.	6723 (Tokyo)	NPP	Electronic components for smart meters, inverters, and connected mobility
Samsung SDI Co., Ltd.	006400 (Korea)	PP	Lithium-ion batteries for connected devices, EVs, and stationary storage
Schneider Electric SE	SU (Paris)	PP	Wide range of energy management systems, industrial controls, and interconnection components
Siemens AG	SIE (Xetra)	NPP	Diversified German company active in T&D, smart infrastructure, and connected mobility

SMA Solar Technology AG	S92 (Xetra)	PP	Inverters and other components for residential and utility-scale solar photovoltaic (PV) systems
SolarEdge Technologies, Inc.	SEDG	PP	Solar PV inverters; moving into EV infrastructure
SPIE S.A.	SPIE (Paris)	PP	Engineering services company with activities in transmission infrastructure and smart cities
SSE Plc	SSE (London)	NPP	T&D in Scotland and Northern England. Offers substation, distribution and monitoring and control systems and EV charging equipment and controls for RE systems
Stella-Jones, Inc.	SJ (Toronto)	NPP	Canada-based producer of wooden utility poles
STMicroelectronics N.V.	STM	NPP	Electronic components for smart meters, smart grid, and connected mobility
Sumitomo Electric Industries, Ltd.	5802 (Tokyo)	NPP	Legacy copper wire company with activities in T&D, automotive and electronics industries
Ta Ya Electric Wire & Cable Co., Ltd.	1609 (Taiwan)	NPP	Manufacturer and distributor of high voltage electric power cables and wires
Taihan Electric Wire Co., Ltd.	001440 (Korea)	PP	Manufacturer of electric wires and cables including HVDC lines, along with grid construction and engineering services
Takaoka Toko Co., Ltd.	6617 (Tokyo)	PP	Transformers, AMI, and EV charging systems
TERNA S.p.A.	TRN (Milan)	PP	Owner/operator of Italian national grid
Tesla, Inc.	TSLA	NPP	EVs, residential and commercial battery storage, solar panels & inverters
Texas Instruments Inc.	TXN	NPP	Electronic components to support power conversion, grid communication, smart meters, EV charging infrastructure, and energy storage
Transmissora Aliança de Energia Elétrica S.A. (TAESA)	TAE11 (São Paulo)	PP	Engages in the construction, operation, and maintenance of electricity transmission lines in Brazil
Trimble, Inc.	TRMB	NPP	Utility software services including GPS-based grid management and outage control; vehicle fleet and autonomous vehicle management
Valmont Industries, Inc.	VMI	NPP	Steel and cement pole structures for T&D
Verbund AG	VER (Vienna)	NPP	Operator of the Austrian grid with activities in renewable electricity and grid edge development in Central and Eastern Europe

Voltronic Power Technology Corp.	6409 (Taiwan)	PP	Manufacturer of transformers, substations, electrical panels, and electric motors
WEG S.A.	WEGE3 (São Paulo)	NPP	Designer and manufacturer of uninterruptible power supplies, inverters, and EV charging systems
WESCO International, Inc.	WCC	NPP	Cable and conduit products, electrical distribution, controls, and automation
Willdan Group, Inc.	WLDN	PP	Energy efficiency and energy management technologies and consulting services

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