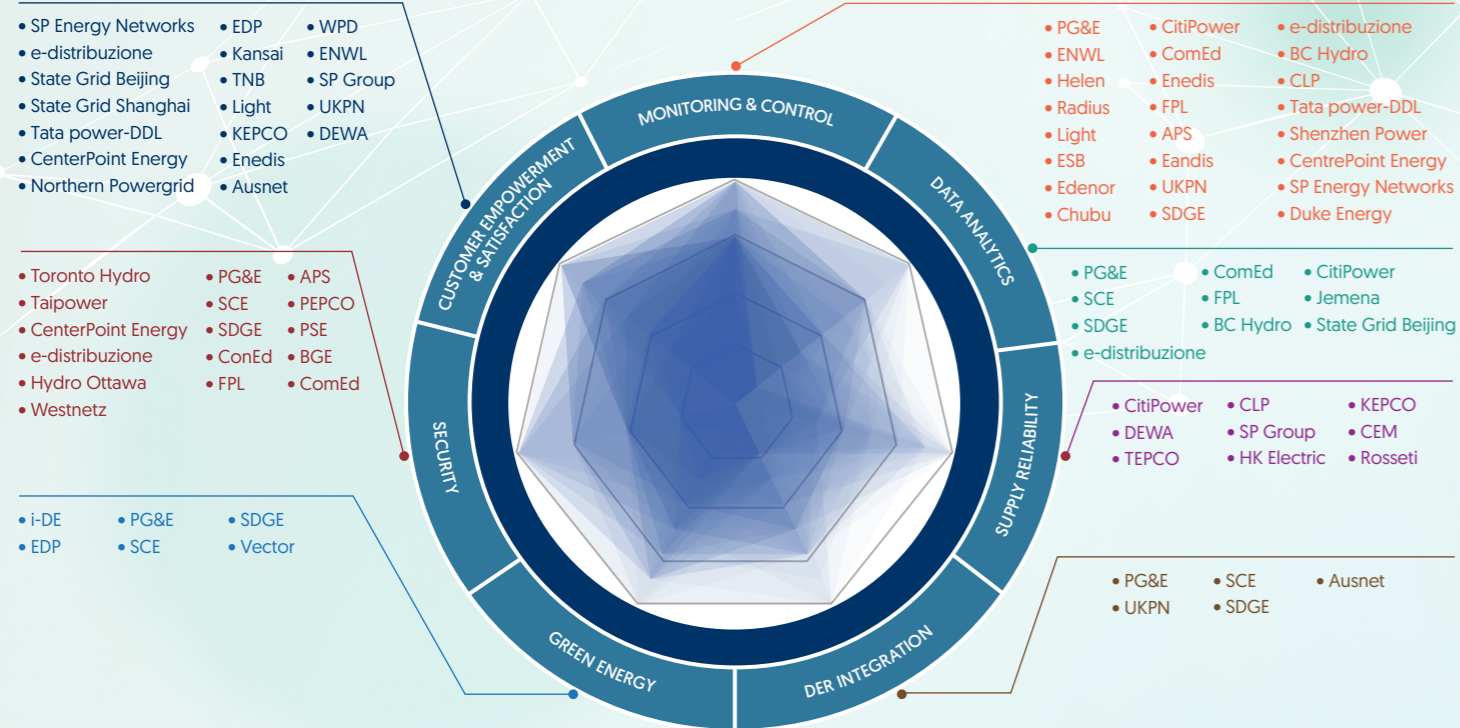


Best Practices by Dimensions



BUILDING SMARTER GRIDS

Benchmarking Results 2019

Smart Grid Progress (2018-2019)



Global



Asia Pacific



N. America



Europe

■ Average score 2018
■ Average score 2019



Key Findings

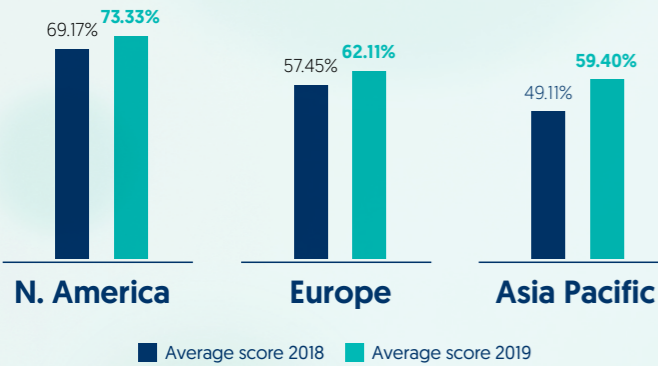
Smart grid development is a priority for most utilities. Here are the highlights from the benchmarking results 2019:

POWER GRIDS are smarter than a year ago

NORTH AMERICA led the transition

ASIA-PACIFIC region improved the most relative to the rest of the world

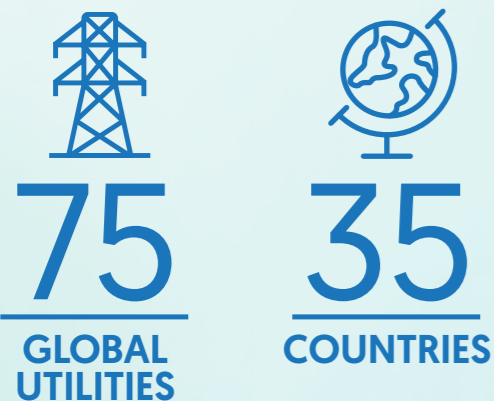
AVERAGE SCORE BY REGION



MAJOR PROGRESS



INCREASED COVERAGE IN 2019



SMART GRID INDEX

The Smart Grid Index (SGI) measures the smartness of electricity grids globally, in seven key dimensions. The benchmarking also identifies best practices to build smarter grids that deliver better value to customers.

7 DIMENSIONS OF A SMART GRID

- MONITORING & CONTROL**
 - SCADA
 - DMS/ADMS
- DATA ANALYTICS**
 - Smart Meter Coverage
 - Data Analytics Application
- SUPPLY RELIABILITY**
 - SAIDI
 - SAIFI
- DER INTEGRATION**
 - Management of DER Integration
 - Grid Scale Energy Storage
- GREEN ENERGY**
 - Renewable Energy Penetration
 - EV Facilitation
- SECURITY**
 - IT Cyber Security
 - OT Cyber Security
- CUSTOMER EMPOWERMENT & SATISFACTION**
 - Real-Time Data to Customers
 - Customer Satisfaction Feedback

Benchmarking Results 2019

Utility	Country	Score	+/-	Best Practices
PG&E	USA	93%	▲7.14%	🔌📊🛡️⚡
UKPN	GBR	89%	▲10.71%	🔌📊⚡
SCE	USA	88%	▲12.50%	🔌📊⚡
SDGE	USA	86%	▲3.57%	🔌📊⚡
e-distribuzione	ITA	84%	▲7.14%	🔌📊⚡
CitiPower	AUS	80%	▲19.64%	🔌📊⚡
ConEd	USA	80%	▲8.93%	🔌📊⚡
ComEd	USA	79%	▲5.36%	🔌📊⚡
State Grid Beijing	CHN	79%	▲28.57%	🔌📊⚡
DEWA	ARE	77%	▲10.71%	🔌📊⚡
FPL	USA	77%	▲10.71%	🔌📊⚡
Westnetz	DEU	77%	▲1.79%	🔌📊⚡
Enedis	FRA	75%	▲17.86%	🔌📊⚡
KEPCO	KOR	73%	▲5.36%	🔌📊⚡
PEPCO	USA	73%	▲3.57%	🔌📊⚡
State Grid Shanghai	CHN	73%	▲23.21%	🔌📊⚡
TEPCO	JPN	73%	▲12.50%	🔌📊⚡
APS	USA	71%	▲1.79%	🔌📊⚡
CenterPoint Energy	USA	71%	—0.00%	🔌📊⚡
i-DE	ESP	71%	▲14.29%	🔌📊⚡
Northern Powergrid	GBR	71%	▲10.71%	🔌📊⚡
Tata power-DDL	IND	71%	▲8.93%	🔌📊⚡
Ausgrid	AUS	70%	▲3.57%	🔌📊⚡
CLP	HKG	70%	▲19.64%	🔌📊⚡
EDP	PRT	70%	▼5.36%	🔌📊⚡
ENWL	GBR	70%	▲14.29%	🔌📊⚡
Hydro Ottawa	CAN	70%	▲10.71%	🔌📊⚡
Ausnet	AUS	68%	▲10.71%	🔌📊⚡
Chubu	JPN	68%	▲5.36%	🔌📊⚡
Jemena	AUS	68%	▲8.93%	🔌📊⚡
Stedin	NLD	68%	▲5.36%	🔌📊⚡
WPD	GBR	68%	▲5.36%	🔌📊⚡
Eandis	BEL	66%	▲3.57%	🔌📊⚡
SP Group	SGP	66%	▲16.07%	🔌📊⚡
SSEN	GBR	66%	▲10.71%	🔌📊⚡
BC Hydro	CAN	64%	▲7.14%	🔌📊⚡
BGE	USA	64%	▲3.57%	🔌📊⚡
Shenzhen Power	CHN	64%	▲16.07%	🔌📊⚡

Utility	Country	Score	+/-	Best Practices
TaiPower	TWN	64%	▲26.79%	🔌📊⚡
Toronto Hydro	CAN	64%	▲7.14%	🔌📊⚡
SP Energy Networks	GBR	63%	▲7.14%	🔌📊⚡
PSE	USA	61%	▲1.79%	🔌📊⚡
Duke Energy	USA	59%	▼8.93%	🔌📊⚡
Guangzhou Power	CHN	57%	▲14.29%	🔌📊⚡
Helen	FIN	57%	▲5.36%	🔌📊⚡
HK Electric	HKG	57%	▲7.14%	🔌📊⚡
Kansai	JPN	57%	▼1.79%	🔌📊⚡
Stromnetz Berlin	DEU	57%	▲5.36%	🔌📊⚡
Western Power	AUS	57%	▲17.86%	🔌📊⚡
Liander	NLD	54%	—0.00%	🔌📊⚡
MEA	THA	54%	▲10.71%	🔌📊⚡
Meralco	PHL	54%	▲16.07%	🔌📊⚡
Wiener Netze	AUT	54%	▲14.29%	🔌📊⚡
CEM	MAC	52%	▲5.36%	🔌📊⚡
Kahramaa	QAT	52%	▲7.14%	🔌📊⚡
Radius	DNK	52%	—0.00%	🔌📊⚡
TNB	MYS	52%	▲1.79%	🔌📊⚡
ESB	IRL	46%	▲3.57%	🔌📊⚡
Light	BRA	46%	▲7.14%	🔌📊⚡
Vattenfall	SWE	46%	▲3.57%	🔌📊⚡
Vector	NZL	46%	▲8.93%	🔌📊⚡
NIEN	GBR	45%	▲3.57%	🔌📊⚡
PEA	THA	45%	▲7.14%	🔌📊⚡
PLN	IDN	45%	▲21.43%	🔌📊⚡
ACEA	ITA	43%	▲3.57%	🔌📊⚡
Eskom	ZAF	41%	—0.00%	🔌📊⚡
Rosseti	RUS	38%	▼5.36%	🔌📊⚡
Edenor	ARG	34%	▲1.79%	🔌📊⚡
Enel Dist Sao Paulo	BRA	34%	▲1.79%	🔌📊⚡
EVN HCMC	VNM	34%	▲5.36%	🔌📊⚡
Sarawak Energy	MYS	32%	▲1.79%	🔌📊⚡
EVN Hanoi	VNM	29%	▲3.57%	🔌📊⚡
Enel Dist Chile	CHL	23%	▲7.14%	🔌📊⚡
Edesur	ARG	21%	—0.00%	🔌📊⚡
City Power	ZAF	20%	—0.00%	🔌📊⚡

Disclaimer:

We have arrived at the findings, opinions and conclusion set out in this paper based on application of our methodology to materials and information we believe to be accurate and reliable, and which are made available to us at the time when we carry out the relevant research and study. Despite our best efforts, the materials and information may include inaccuracies and errors. The findings, opinions and conclusion will be construed solely as statements of opinion on the matters addressed in this paper including the degree of grid smartness ratings and shall not in any way represent authoritative assessment or judgment on any such matters. You assume the sole risk of making use of and/or relying on the findings, opinions and conclusion made available in this paper. To the extent permitted by law, we disclaim liability to any person or entity for all and any liability, direct and indirect, special, consequential, incidental losses and damages whatsoever arising from or in connection with your access to or use of the findings, opinions and conclusions in this paper.