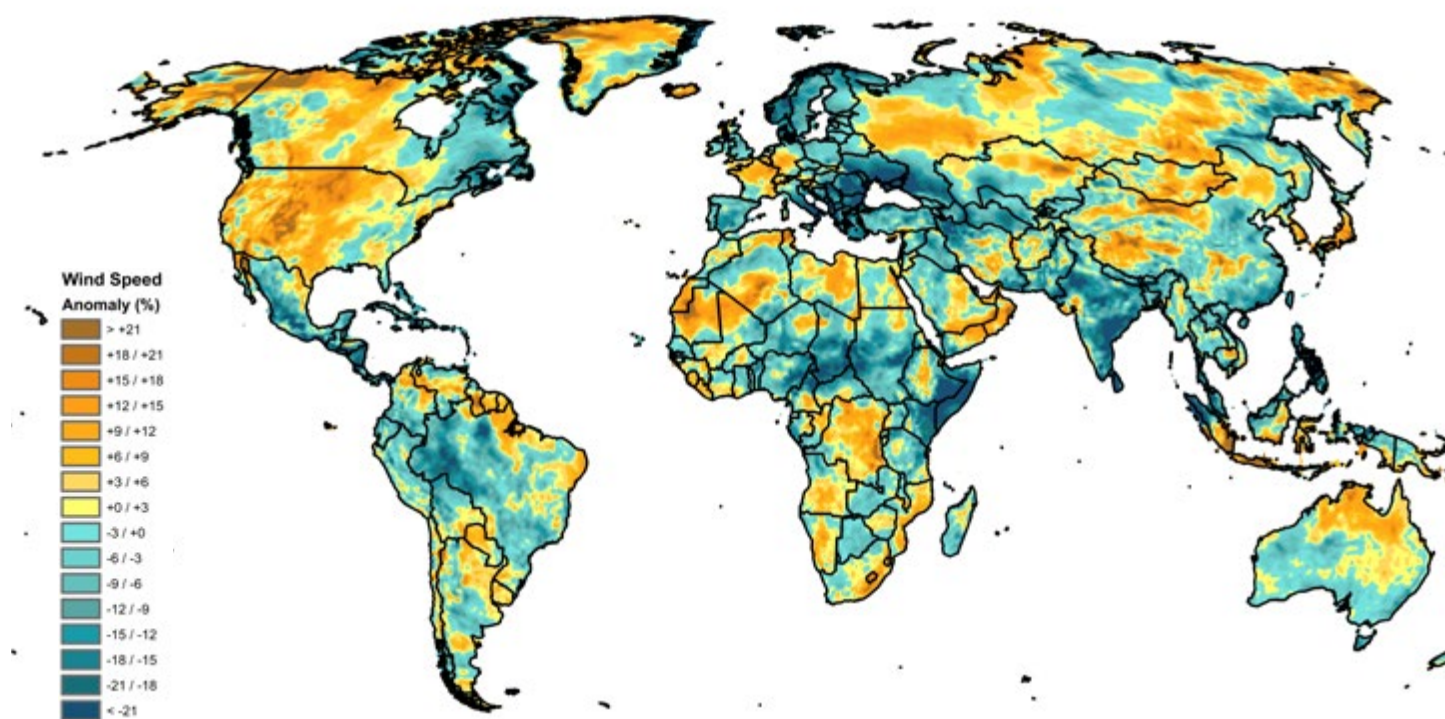


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WIND SPEED PERFORMANCE

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GLOBAL

October 2019

The Wind Trends Bulletin is a report that evaluates deviations in global wind conditions from the historical norm on a monthly, quarterly, and annual basis. The maps contained in this report were derived from a custom combination of the CFSR, ERA-Interim, and MERRA reanalysis datasets. The anomalies are calculated as a percent deviation from the 1988 – 2014 mean speed at 100m above ground level for the calendar period. For more information about customized analyses for your project portfolio, data or subscription options, please contact us at renewableenergyservices@ul.com.



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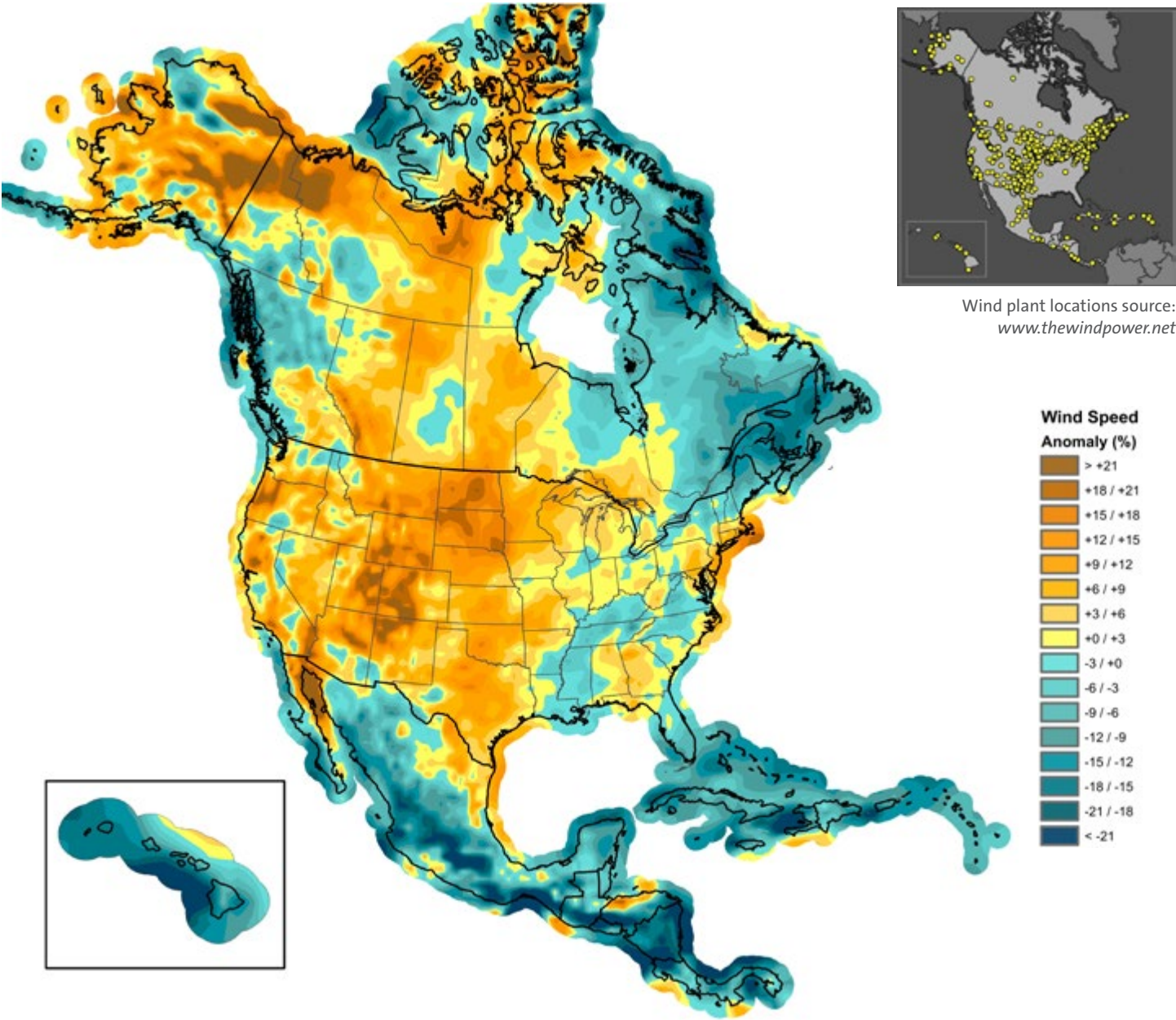
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Wind plant locations source: www.thewindpower.net

Wind Speed Anomaly (%)

Dark Brown	> +21
Brown	+18 / +21
Orange	+15 / +18
Light Orange	+12 / +15
Yellow-Orange	+9 / +12
Yellow	+6 / +9
Light Yellow	+3 / +6
Yellow-Green	+0 / +3
Light Blue	-3 / +0
Blue	-6 / -3
Dark Blue	-9 / -6
Teal	-12 / -9
Dark Teal	-15 / -12
Very Dark Teal	-18 / -15
Dark Blue-Black	-21 / -18
Black	< -21

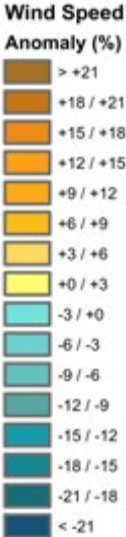
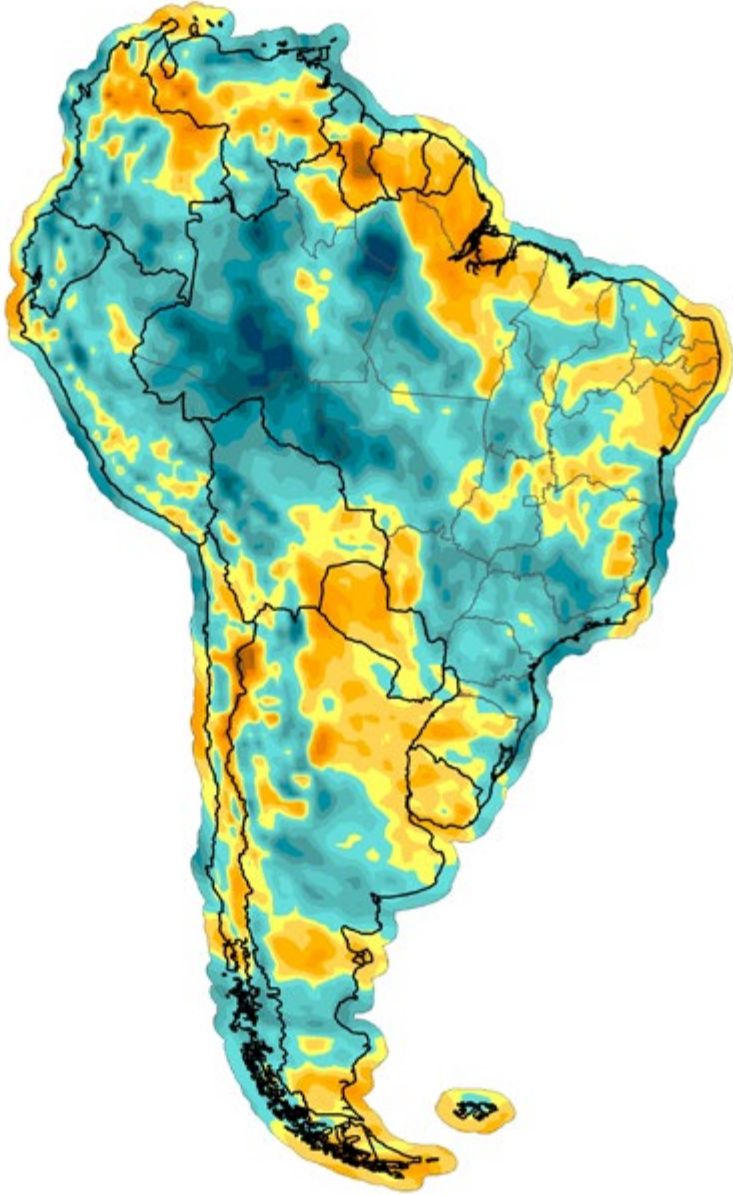
NORTH AMERICA

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Wind plant locations source:
www.thewindpower.net

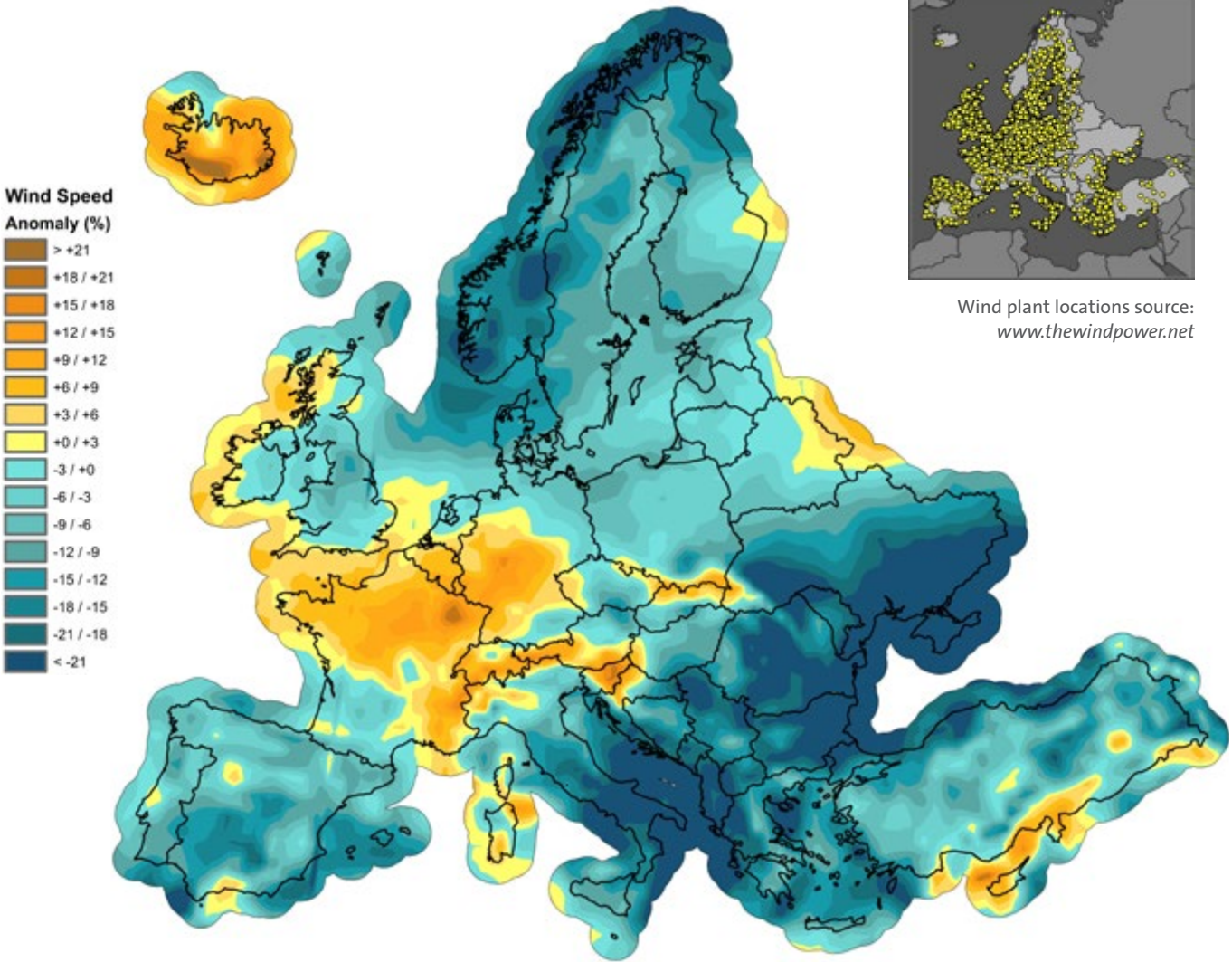
SOUTH AMERICA

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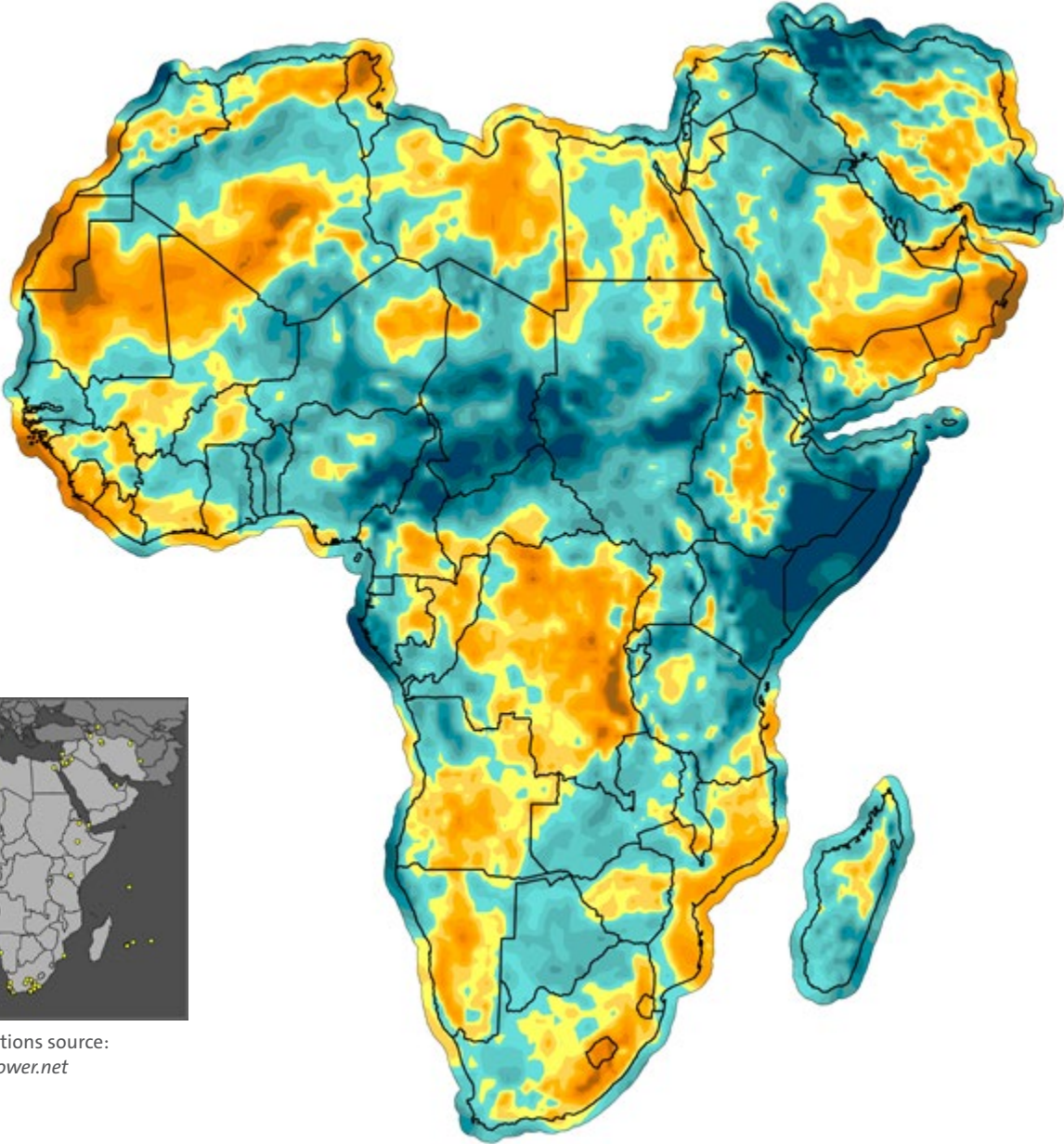
EUROPE

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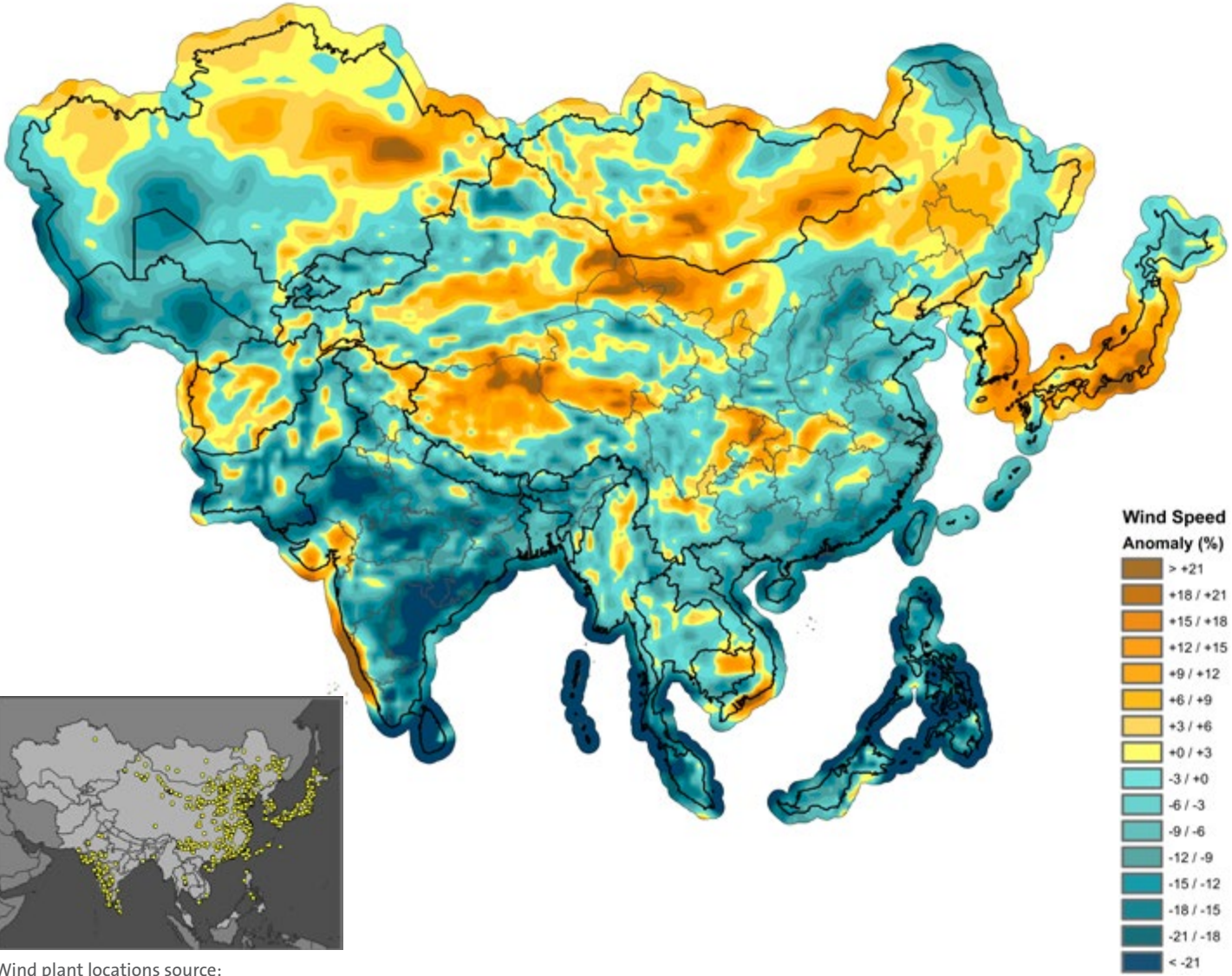
AFRICA AND THE MIDDLE EAST

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Wind plant locations source:
www.thewindpower.net

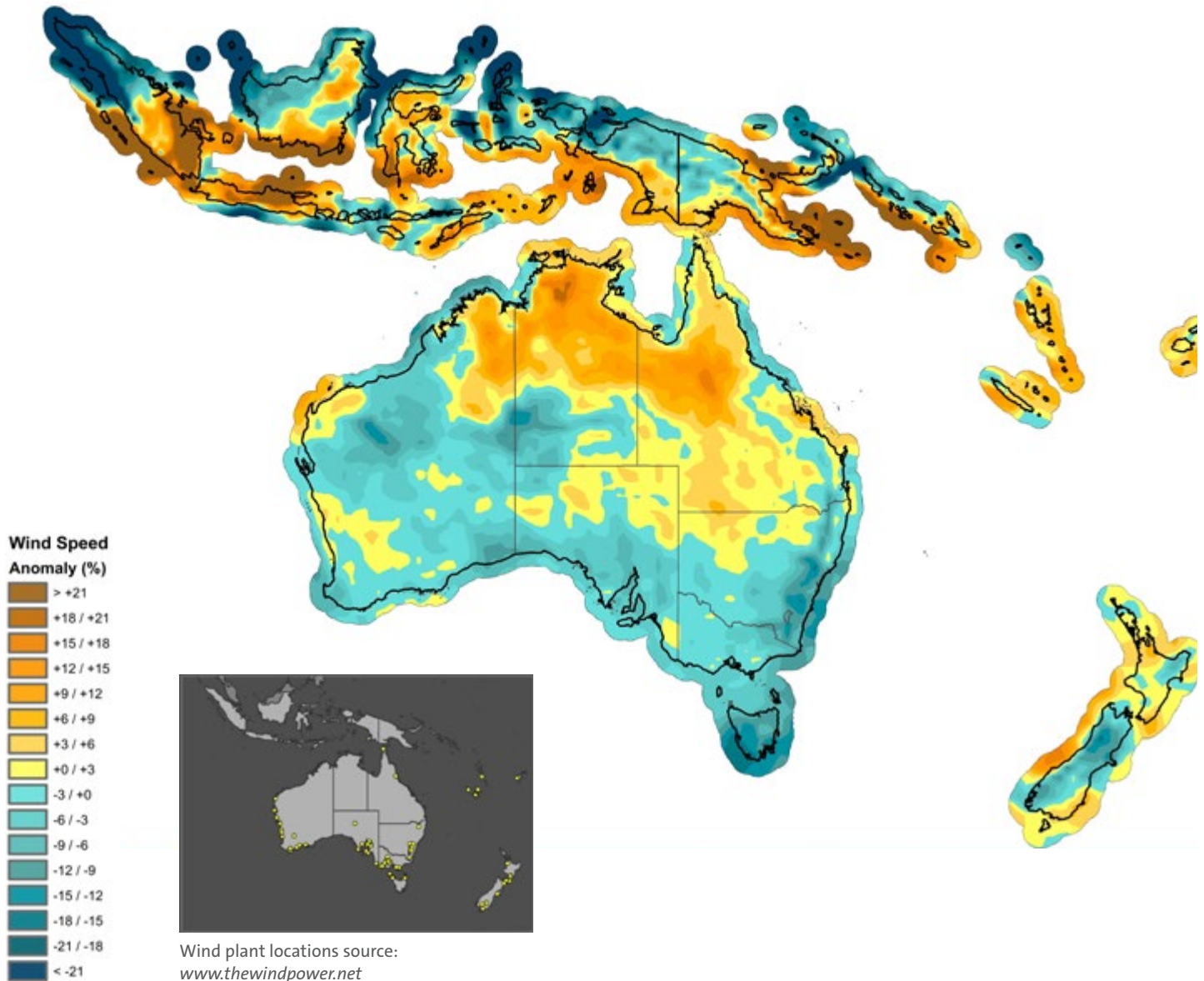
ASIA

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INDONESIA, AUSTRALIA AND OCEANIA

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2019 Wind Index

This index represents the average wind anomaly (expressed as a percent deviation in mean speed from the 1988-2014 baseline for the corresponding calendar period) for each region and country shown, weighted by the location and megawatt capacity of wind projects in production by the end of 2018. The wind project locations and rated capacities are from The Wind Power database (TheWindPower.net). Note that not all operating projects are in the database, and coverage in certain countries such as China is weak. However, UL believes the findings are reasonably representative of wind conditions for the industry as a whole and for the key wind-producing countries.

Regions/Leading Wind Producing Countries	Jan	Feb	Mar	Q1	Apr	May	Jun	Q2	Jul	Aug	Sep	Q3	Oct	Nov	Dec	Q4	ANNUAL
North America	-1.1	3.1	-4.9	-1.3	-1.0	-5.2	-4.0	-3.4	1.0	-1.3	6.3		5.3				
Canada	3.0	8.1	0.7	3.9	9.6	-5.2	0.8	2.0	-2.0	-2.5	-1.1		-3.4				
USA	-1.6	3.2	-6.0	-1.8	-2.4	-5.1	-4.8	-4.1	1.5	-0.8	7.7		7.6				
Mexico	-2.5	-13.5	0.5	-4.9	1.4	-3.8	-3.5	-2.1	-5.9	-13.6	-1.2		-18.6				
South America	8.8	-9.2	-3.9	-0.9	-6.5	2.1	4.9	0.6	-1.0	3.8	-1.6		2.2				
Brazil	11.1	-10.7	-6.6	-1.5	-7.8	1.9	4.7	0.1	-2.1	3.1	0.1		2.2				
Argentina	-0.7	5.9	1.2	2.0	1.7	-4.7	2.9	0.0	-4.0	4.2	12.4		3.8				
Europe	0.1	-4.8	11.0	1.9	0.6	2.1	-0.1	0.8	-3.6	-2.6	3.4		-4.6				
Denmark	-2.9	-3.2	13.5	2.2	-4.6	15.8	-1.8	3.1	7.5	-3.2	11.6		-11.3				
France	-7.7	-14.0	18.1	-1.7	-5.7	-1.6	-0.1	-2.6	-2.5	-2.7	11.2		6.9				
Germany	1.9	-7.6	19.7	4.6	3.8	1.1	-2.8	0.8	-4.8	-8.0	3.4		0.0				
Great Britain	-16.2	-7.5	9.8	-5.3	-2.1	-14.3	4.1	-4.4	-6.0	12.4	1.0		-2.0				
Ireland	-22.1	12.9	4.7	-2.8	12.9	-14.3	3.5	-1.2	-7.2	17.2	4.5		0.0				
Italy	17.3	16.4	6.4	13.2	-4.3	11.9	-7.2	0.2	-2.9	-17.3	-10.8		-16.8				
Portugal	5.3	-7.3	-2.1	-0.9	5.8	15.8	1.4	7.6	-6.2	-2.8	5.3		-6.0				
Spain	7.0	-12.1	-1.3	-1.9	1.5	9.8	3.3	4.7	0.9	-5.1	5.3		-7.3				
Africa / Middle East	5.7	-3.8	1.2	1.3	-1.5	0.7	-2.1	-0.9	5.7	-2.6	0.2		2.7				
South Africa	-5.5	-3.4	-1.0	1.6	-0.7	-2.8	3.0	0.0	17.4	-10.0	-1.9		4.7				
Egypt	8.0	-15.1	-3.7	-7.8	2.9	2.3	-11.1	-2.4	-1.2	-14.3	9.0		-0.4				
Asia	-4.5	-2.8	-3.1	-3.5	-4.6	4.3	-1.8	-0.8	-3.0	4.4	-2.7		-0.9				
China	-4.9	-4.0	-3.7	-4.2	-5.1	7.2	-1.3	0.2	-4.1	4.7	-3.8		1.0				
India	-4.1	5.7	0.3	0.3	-1.5	-9.0	-5.4	-5.5	1.5	2.5	2.2		-12.5				
Ind, Aus, Oceania	-2.5	1.7	-1.4	-0.9	3.9	13.0	-6.7	3.1	5.8	2.0	-5.3		-3.1				
Australia	-4.5	0.9	0.3	-1.3	5.4	13.3	-6.0	3.8	6.6	-0.3	-7.1		-3.8				
World	-0.6	-1.7	2.2	-0.2	-0.9	0.4	-1.1	-0.5	-1.4	-0.4	2.1		-1.7				

Click [HERE](#) to download index values for even more wind producing countries!

