

GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2020

Chart Pack

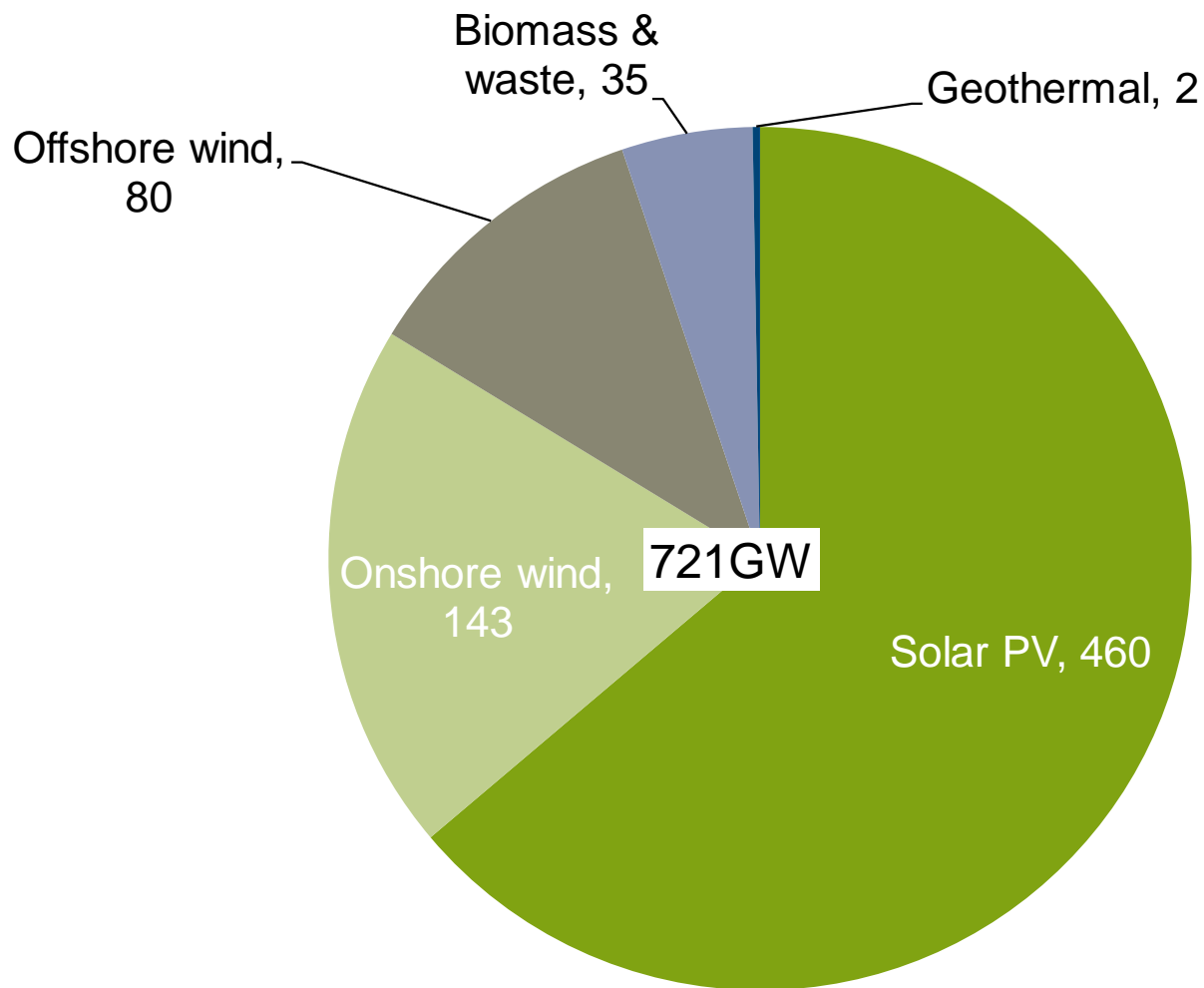


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BloombergNEF

RENEWABLES ADDITIONS REQUIRED TO MEET GOVERNMENT TARGETS, WITH DEADLINES 2020-2030 (GW)

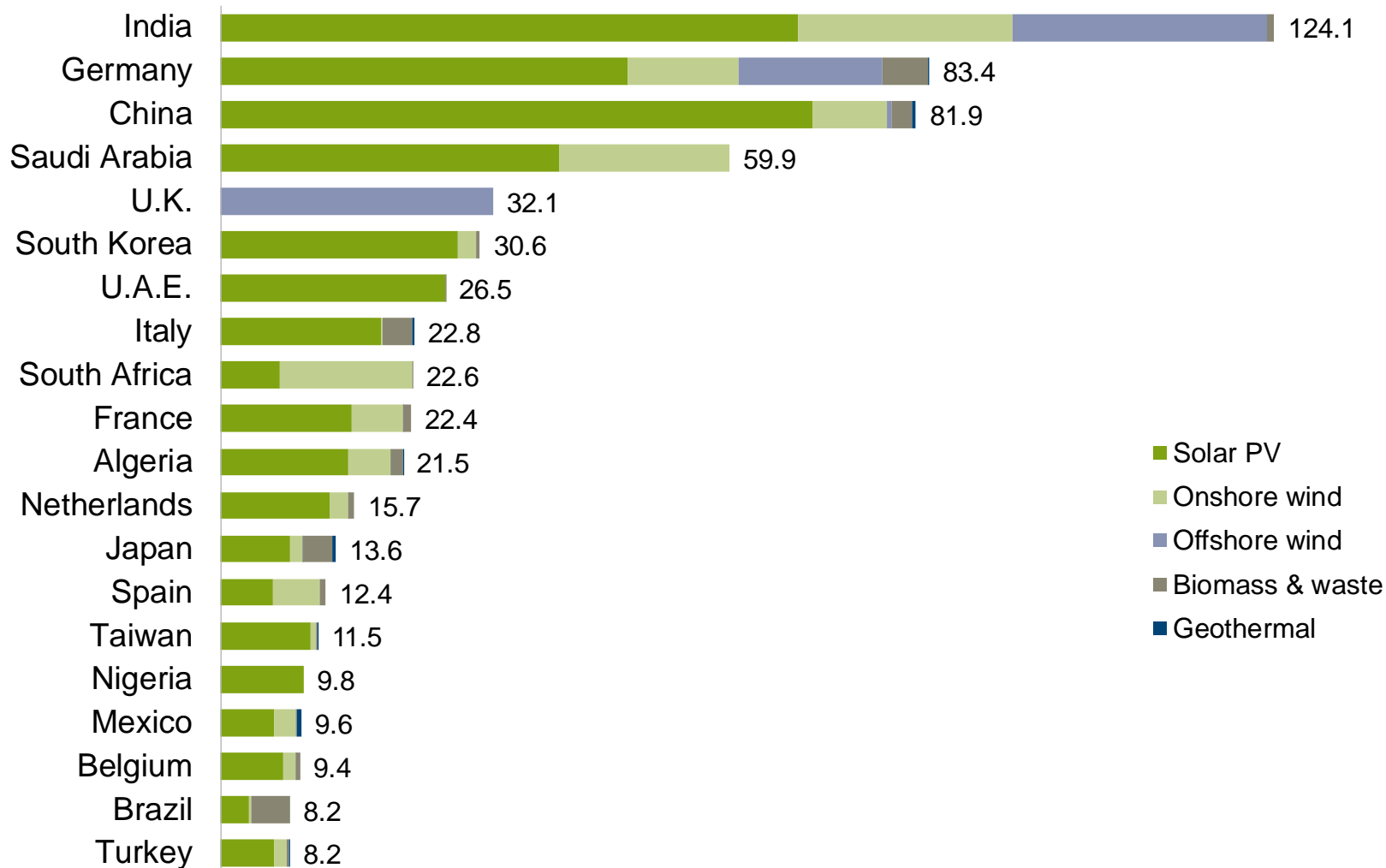


Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLES ADDITIONS REQUIRED TO MEET GOVERNMENT TARGETS, WITH DEADLINES 2020-2030, BY COUNTRY (GW)



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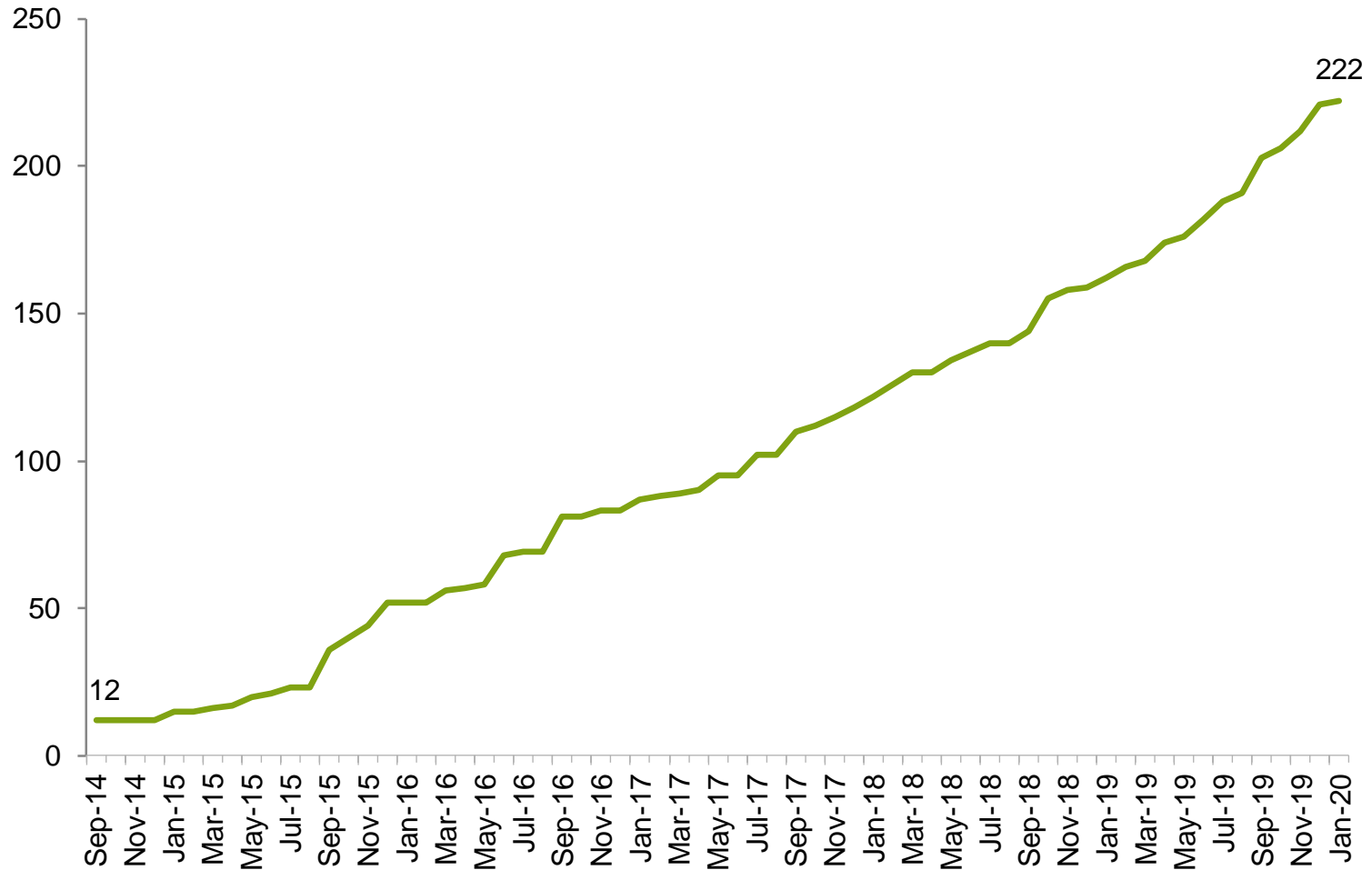
Note: For targets based on electricity consumption or generation, the equivalent volume of capacity was devised, based on BloombergNEF's New Energy Outlook 2019

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLES ADDITIONS REQUIRED TO MEET GOVERNMENT TARGETS, WITH DEADLINES 2020-2030, BY COUNTRY (GW)



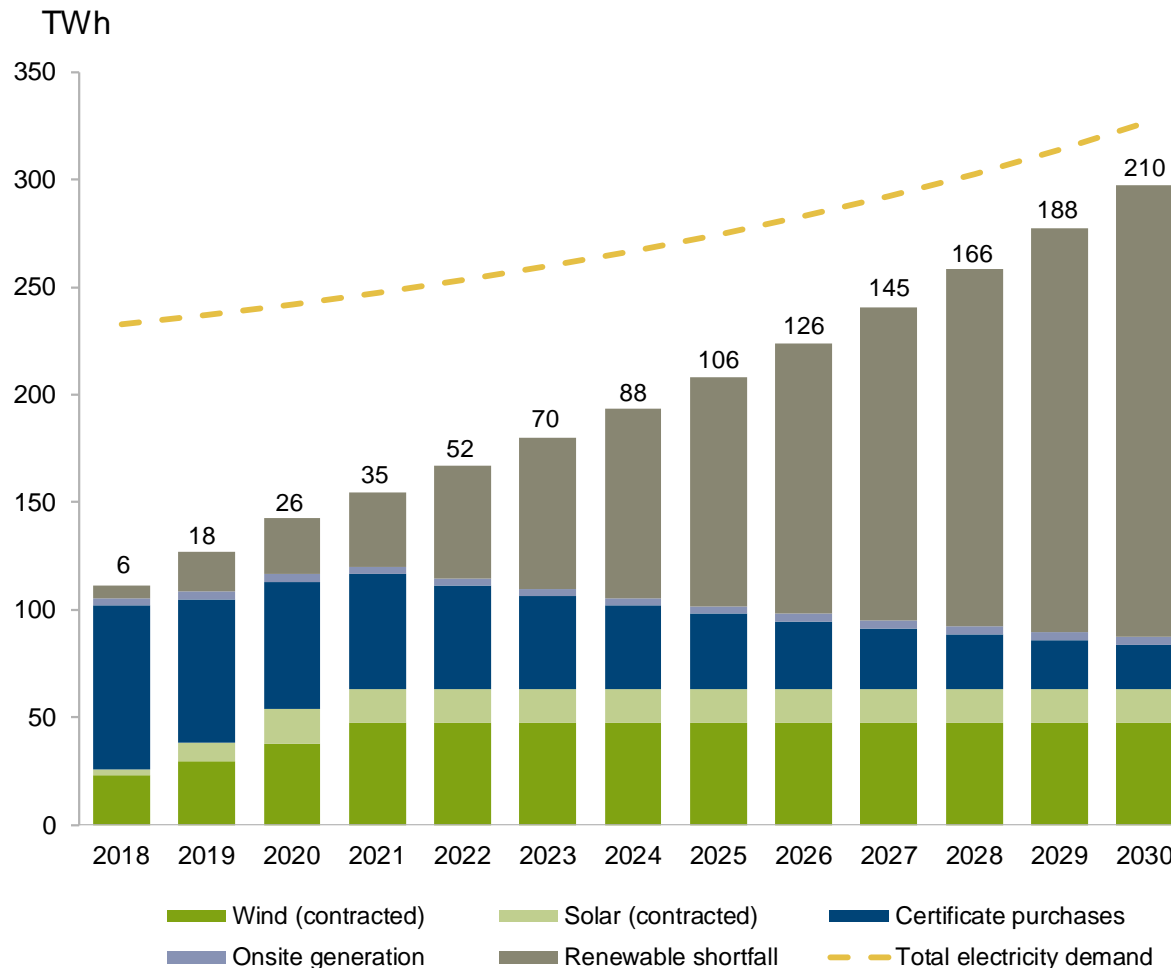
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Note: Data up to end-January 2020

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

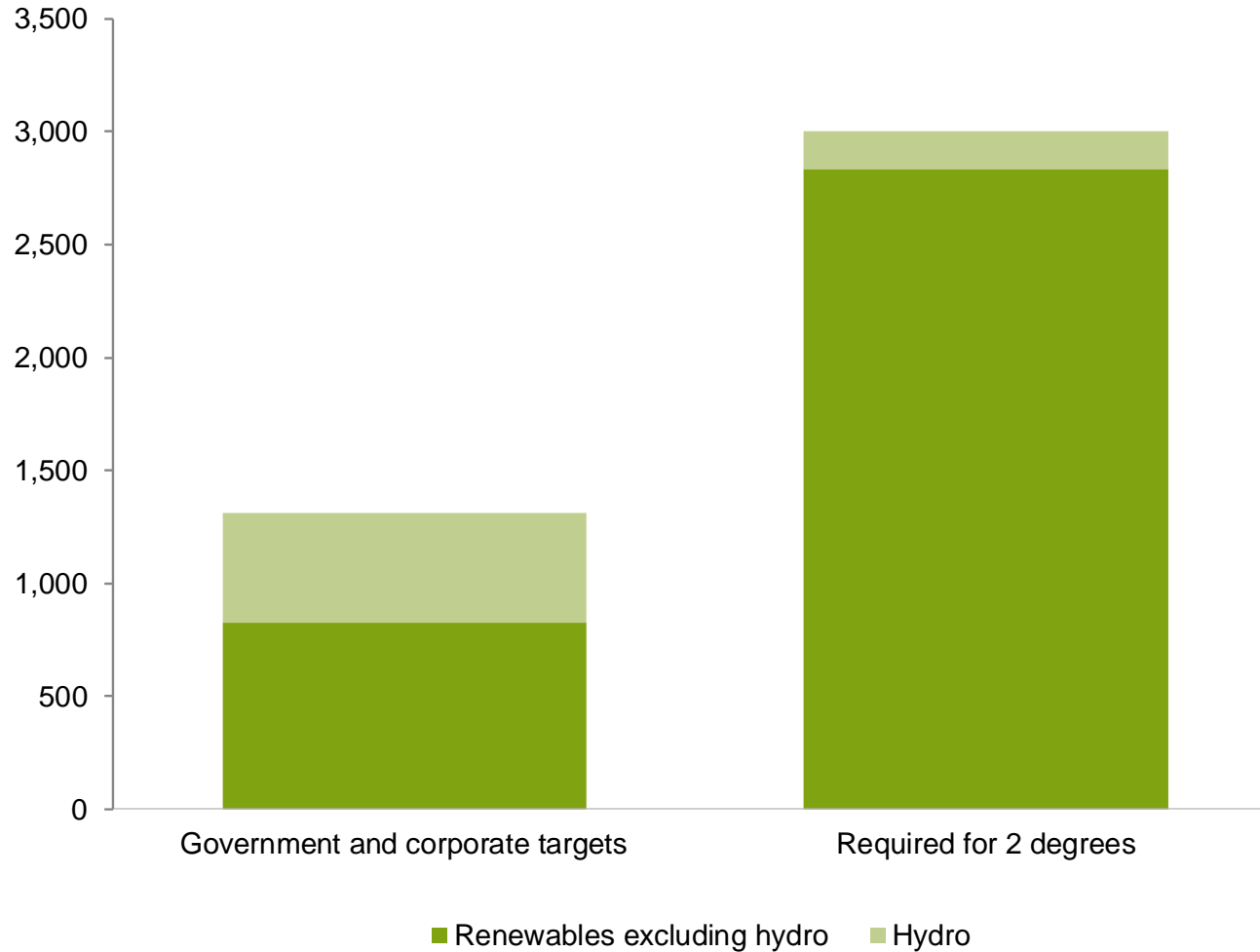
PROJECTED ELECTRICITY SHORTFALL FOR THE RE100 (TWh)



Note: Certificate purchases are assumed to step down 10% each year. Onsite generation and contracted wind and solar purchases remain flat through 2030. Electricity demand and renewable electricity demand don't intersect in 2030, as some companies have targets extending out past 2030

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

CAPACITY ADDITIONS TO 2030 REQUIRED FOR TARGETS, VERSUS REQUIRED FOR 2 DEGREES (GW)

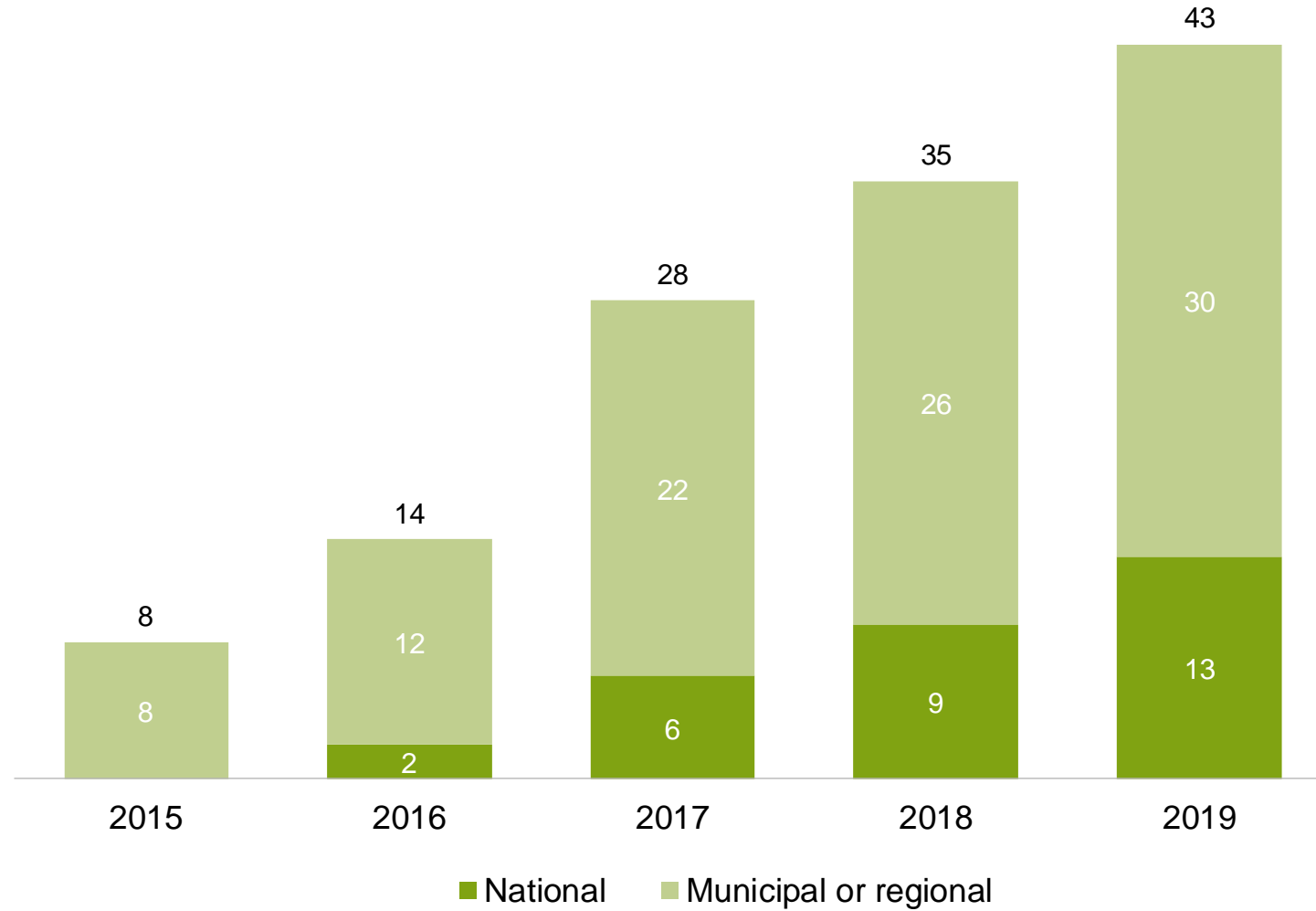


Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

NUMBER OF GOVERNMENTS THAT HAVE PLANS TO PHASE OUT COMBUSTION-ENGINE VEHICLE SALES



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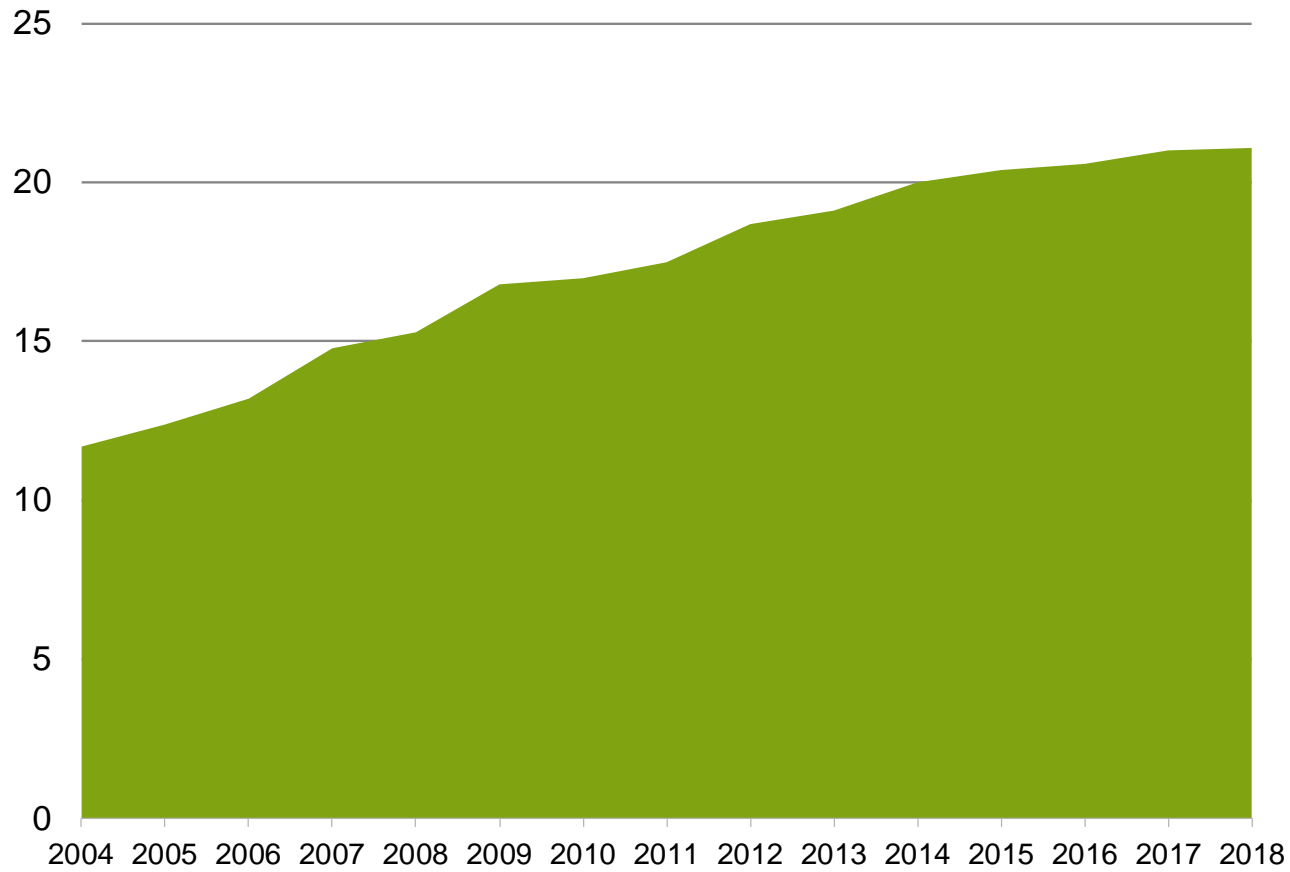


Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

SHARE OF ENERGY FROM RENEWABLES FOR HEATING AND COOLING IN THE EU27 (%)



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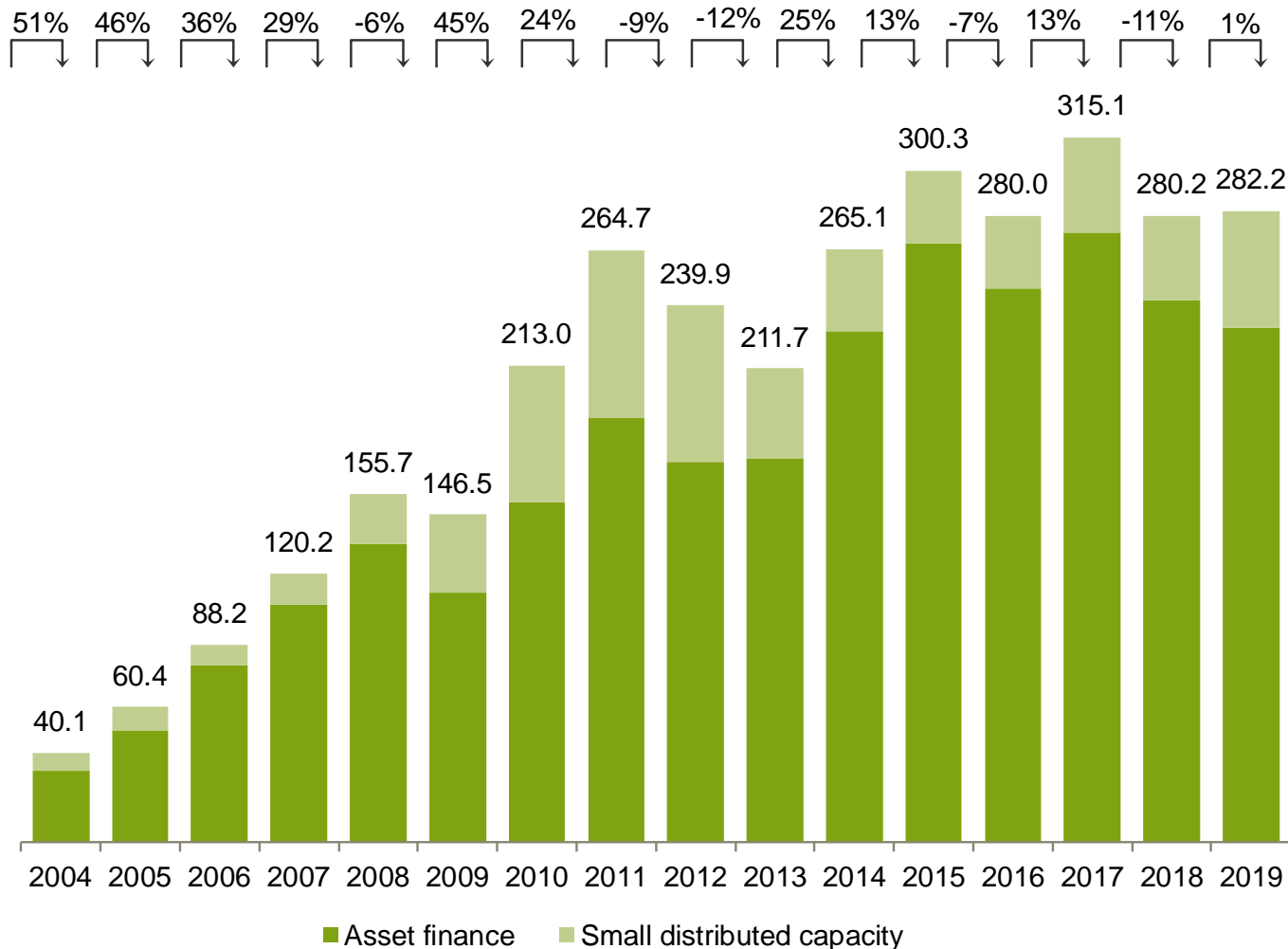


Source: Eurostat

GLOBAL RENEWABLE ENERGY CAPACITY INVESTMENT, 2004 TO 2019 (\$BN)



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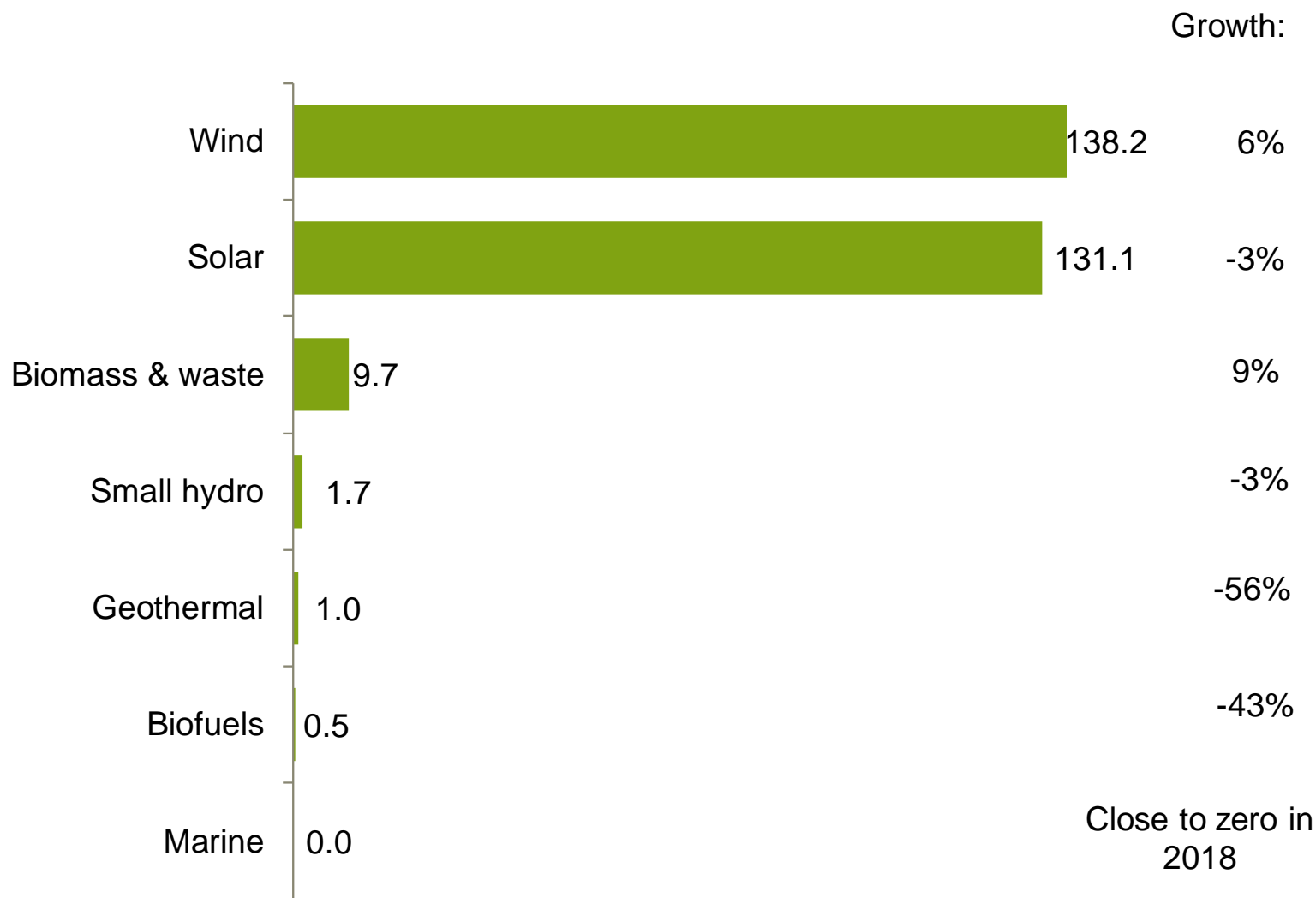
Note: Total values include estimates for undisclosed deals.

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

GLOBAL INVESTMENT IN RENEWABLES CAPACITY BY SECTOR IN 2019, AND GROWTH ON 2018 (\$BN)



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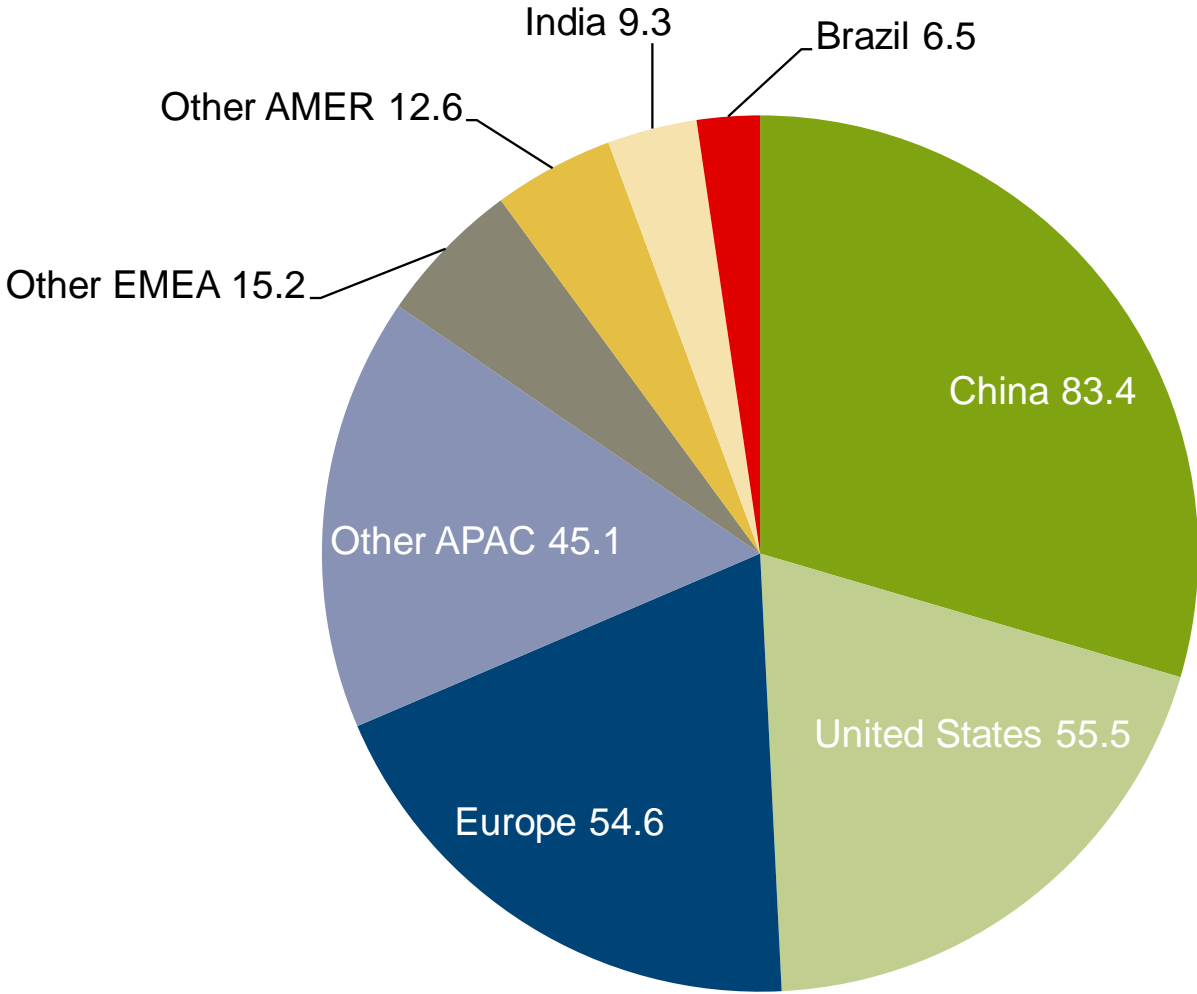
Note: Total values include estimates for undisclosed deals.

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

INVESTMENT IN RENEWABLE ENERGY CAPACITY BY REGION, 2019 (\$BN)



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Note: Total values include estimates for undisclosed deals.

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

INVESTMENT IN RENEWABLES CAPACITY BY TOP 30 COUNTRY/MARKET IN 2019, GROWTH ON 2018 (\$BN)



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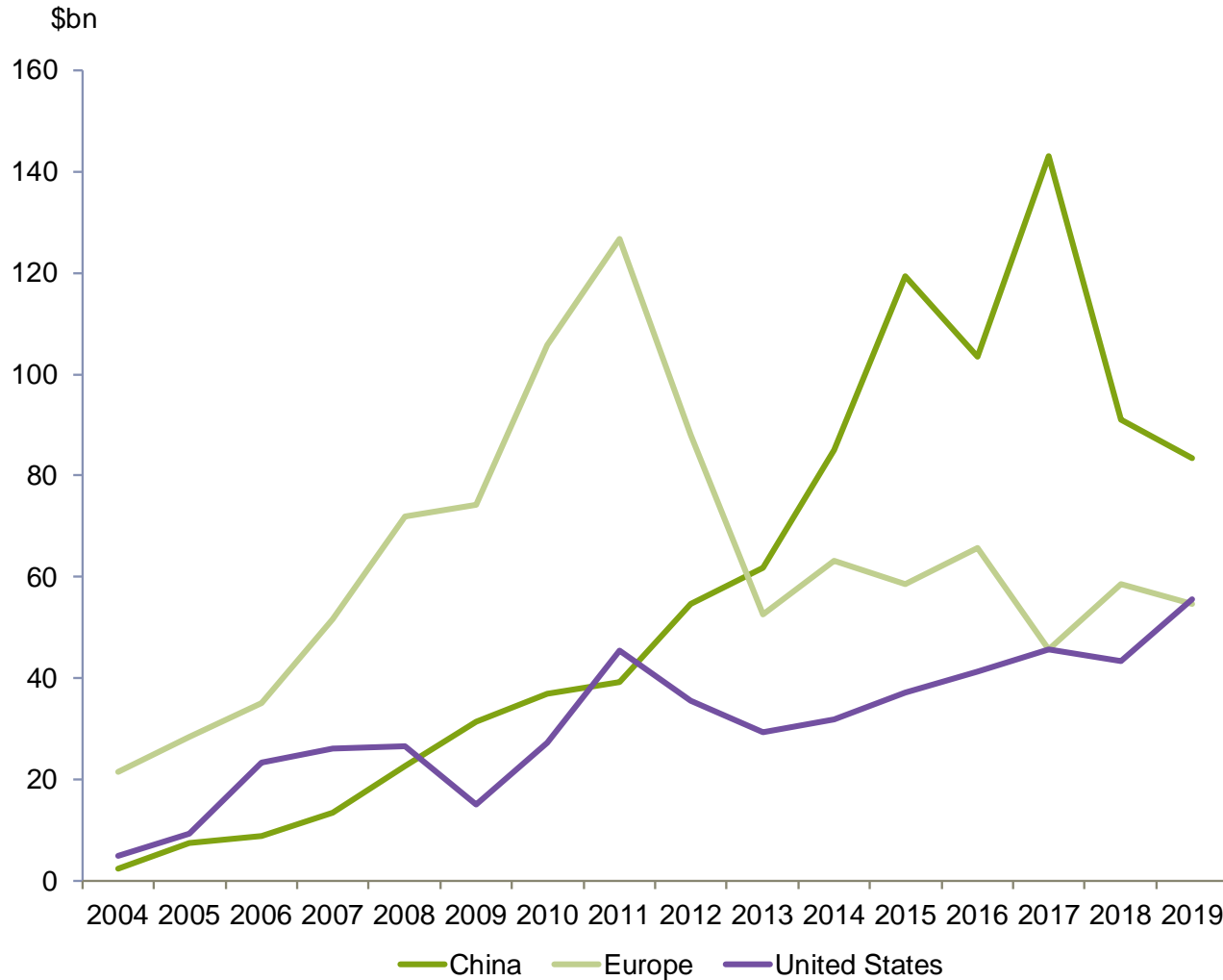
		% growth on 2018
China	83.4	-8%
United States	55.5	28%
Japan	16.5	-10%
India	9.3	-14%
Taiwan	8.8	390%
Spain	8.4	25%
Brazil	6.5	74%
Australia	5.6	-40%
Netherlands	5.5	25%
United Kingdom	5.3	-40%
Chile	4.9	302%
United Arab Emirates	4.5	1223%
Germany	4.4	-30%
France	4.4	3%
Mexico	4.3	17%
Sweden	3.7	-19%
Ukraine	3.4	56%
Vietnam	2.6	-64%
Korea (Republic)	2.4	31%
Russian Federation	2.3	76%
Argentina	2.0	-18%
Turkey	1.9	-16%
Poland	1.8	349%
Finland	1.5	41%
Italy	1.3	-35%
Norway	1.0	-8%
South Africa	1.0	-76%
Kazakhstan	0.8	58%
Greece	0.7	11%
Israel	0.7	113%

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLE ENERGY CAPACITY INVESTMENT IN EUROPE, U.S. AND CHINA, 2004 TO 2019

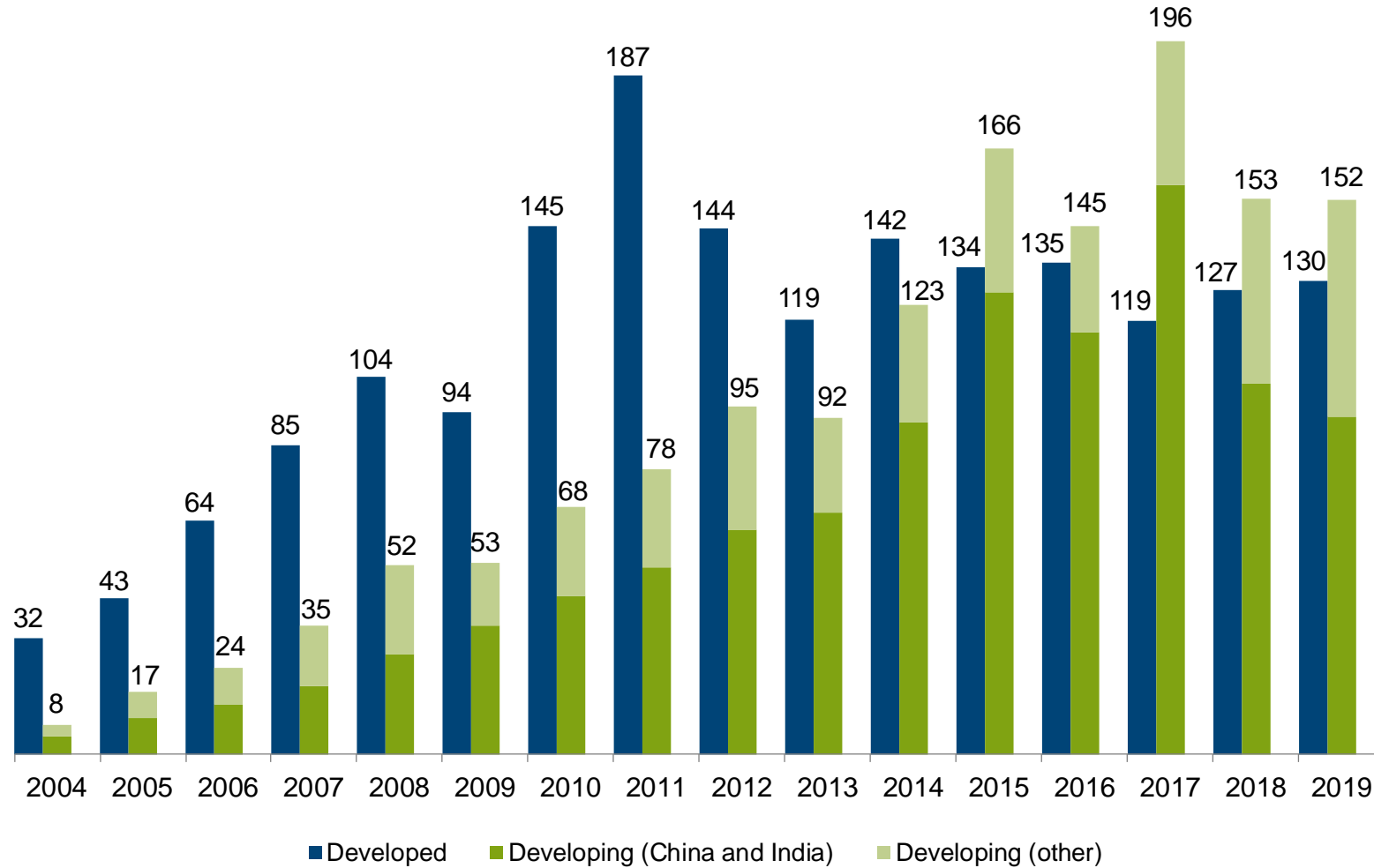


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Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

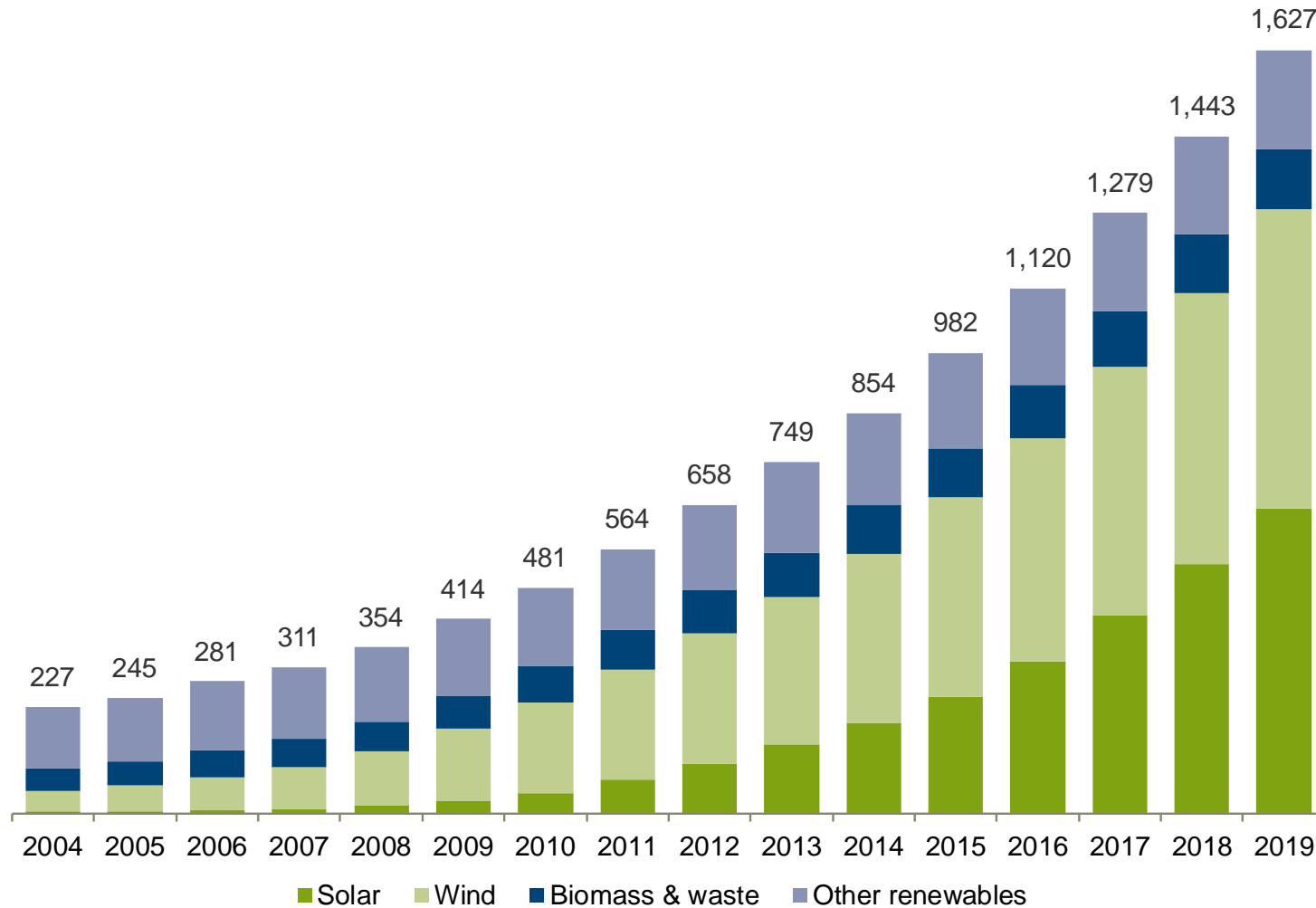
INVESTMENT IN RENEWABLES CAPACITY, DEVELOPED VS DEVELOPING COUNTRIES, 2004-2019 (\$BN)



Note: Total values include estimates for undisclosed deals. Developed volumes are based on OECD countries excluding Mexico, Chile, and Turkey.

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

GLOBAL CAPACITY IN RENEWABLE POWER, 2004-2019 (GW)



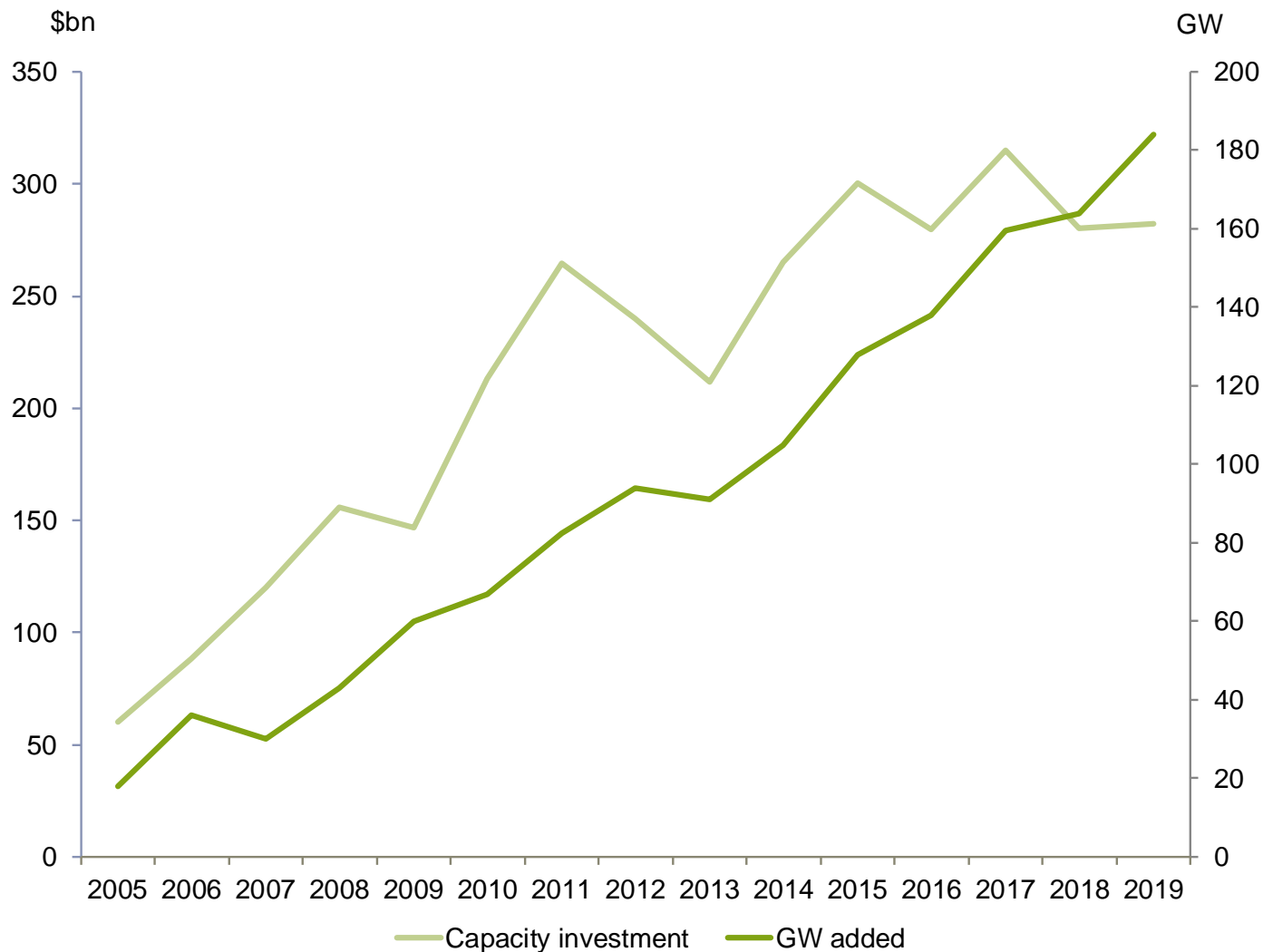
Note: "Other renewables" does not include large hydro-electric projects of more than 50MW

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLE ENERGY CAPACITY INVESTMENT IN \$BN VS GW CAPACITY ADDED, 2005-2019



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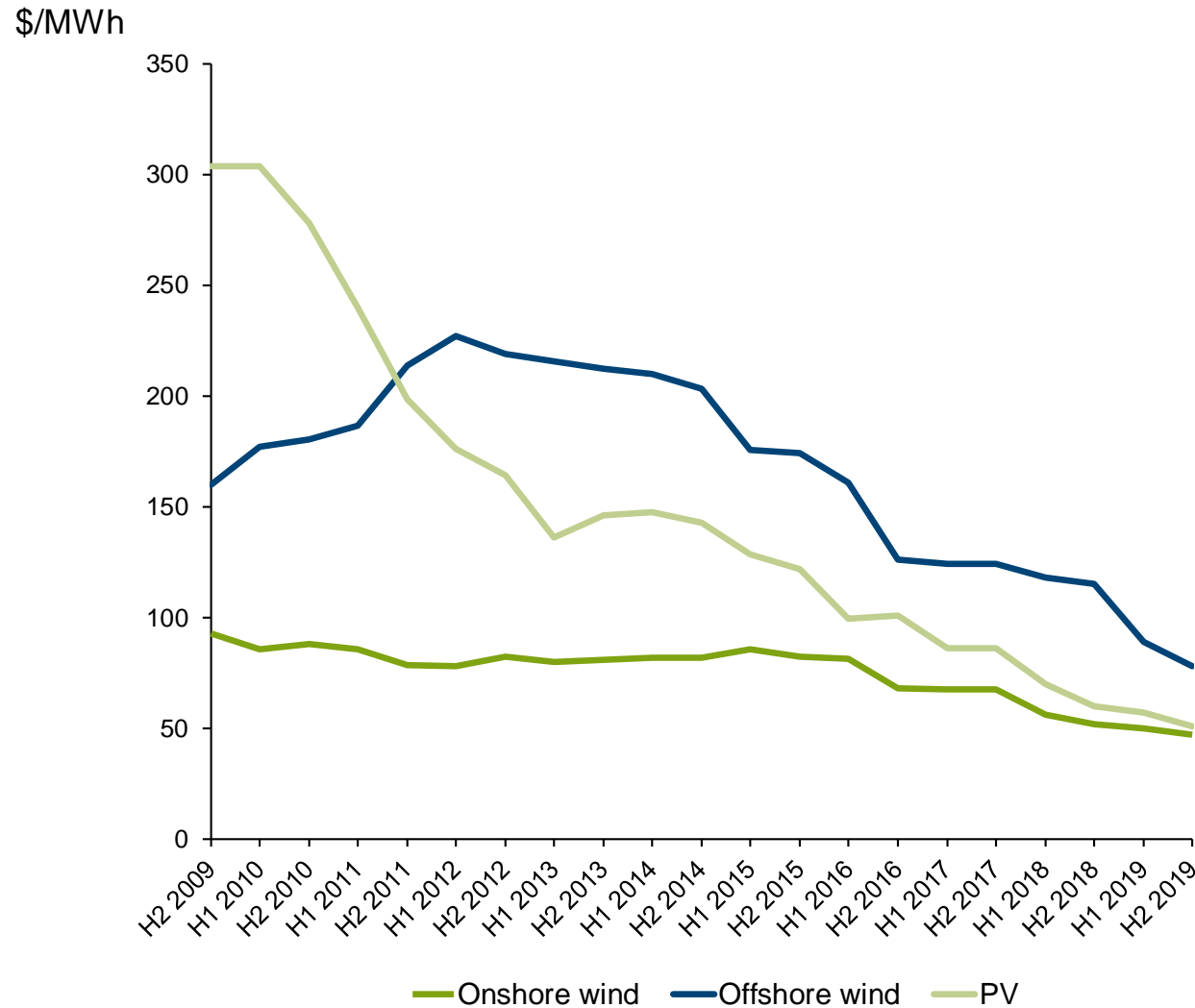


Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

LEVELIZED COST OF ELECTRICITY, BY MAIN RENEWABLE TECHNOLOGY, 2009 TO 2019 (\$/MWh)



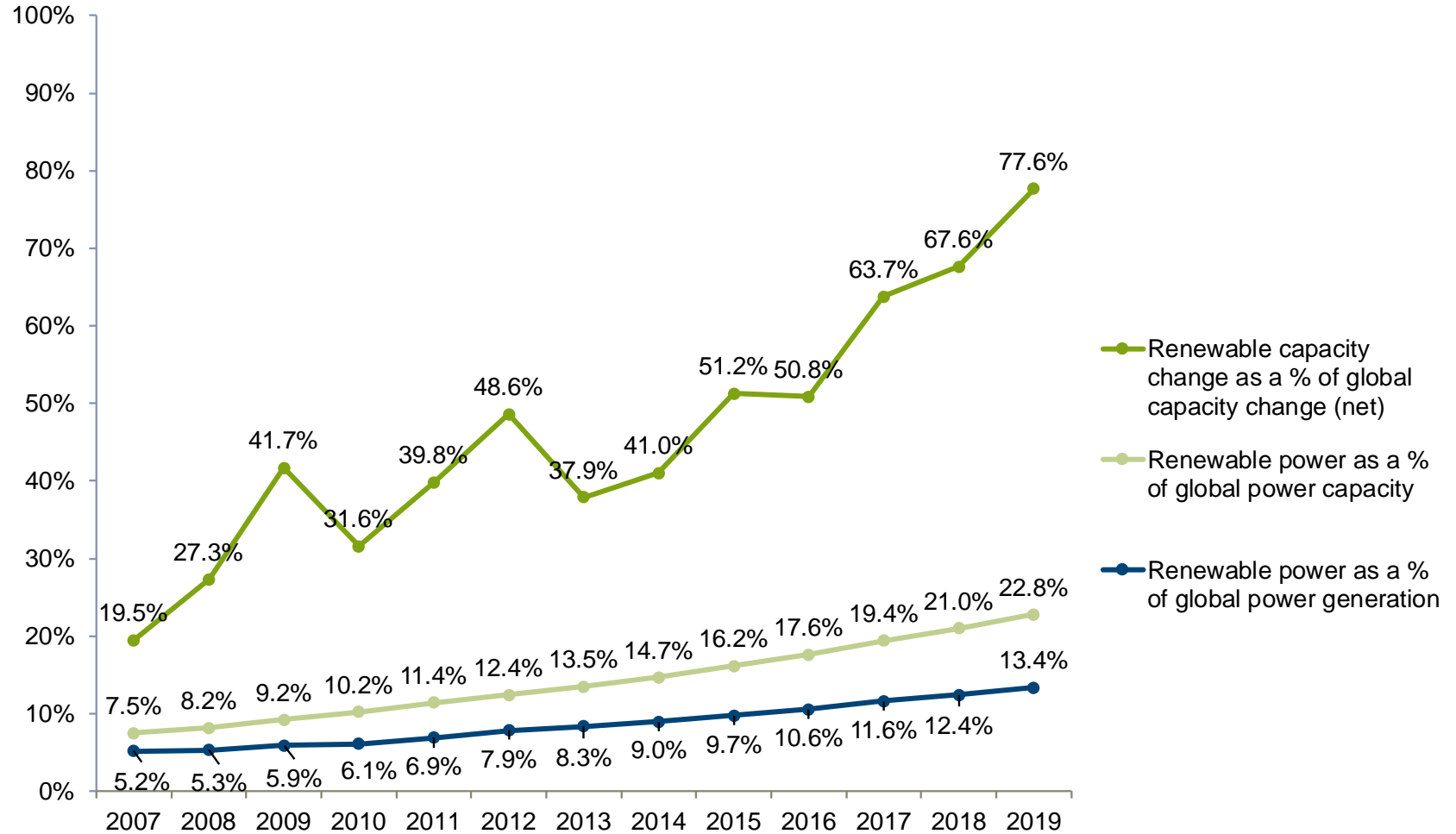
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Note: PV is crystalline silicon with no tracking.

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLE GENERATION AND CAPACITY AS A SHARE OF GLOBAL POWER, 2007-2019 (%)



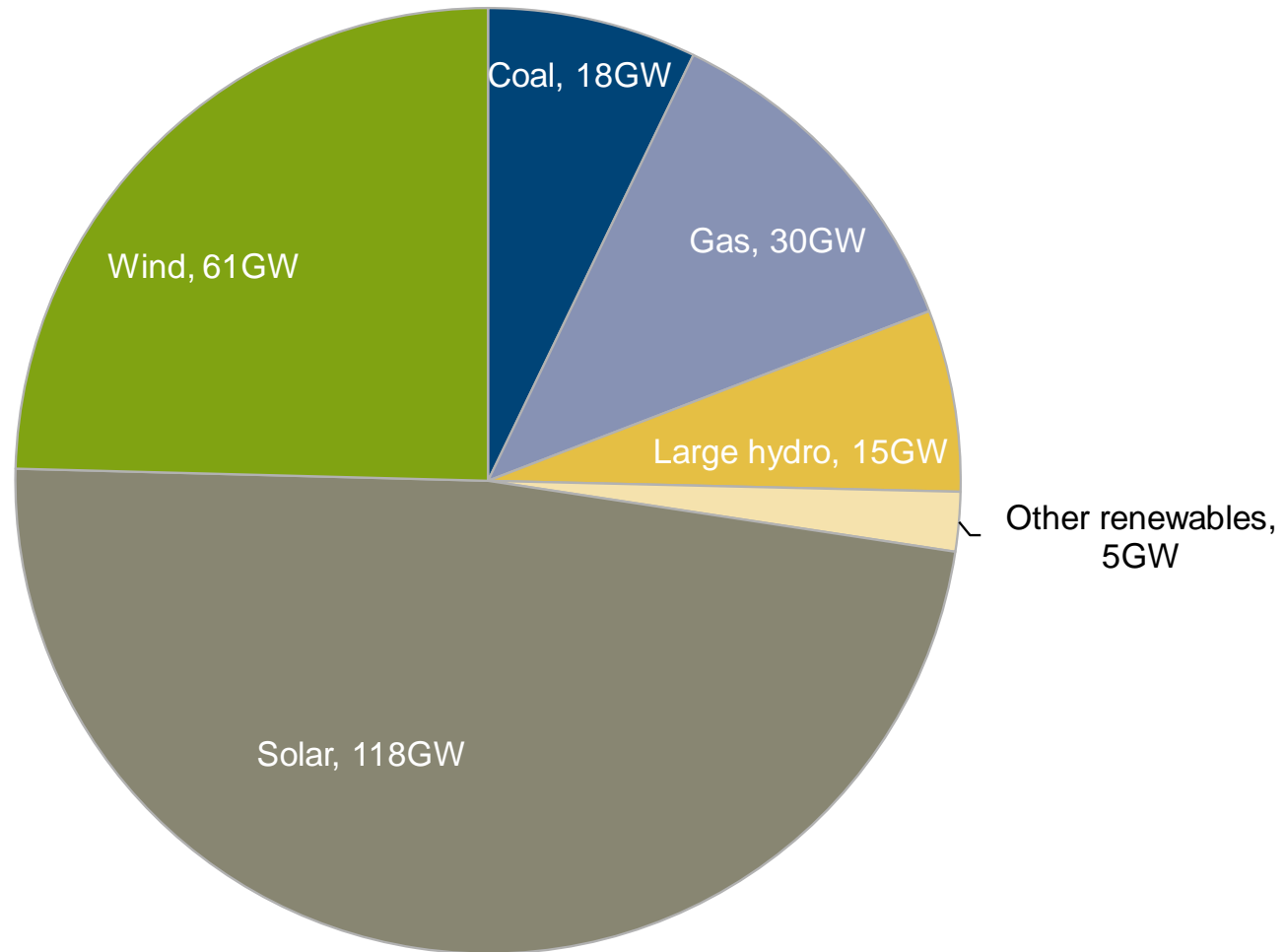
Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

Note: Renewables figure excludes large hydro. Capacity and generation based on BloombergNEF totals.

NET POWER GENERATING CAPACITY ADDED IN 2019 BY MAIN TECHNOLOGY (GW)



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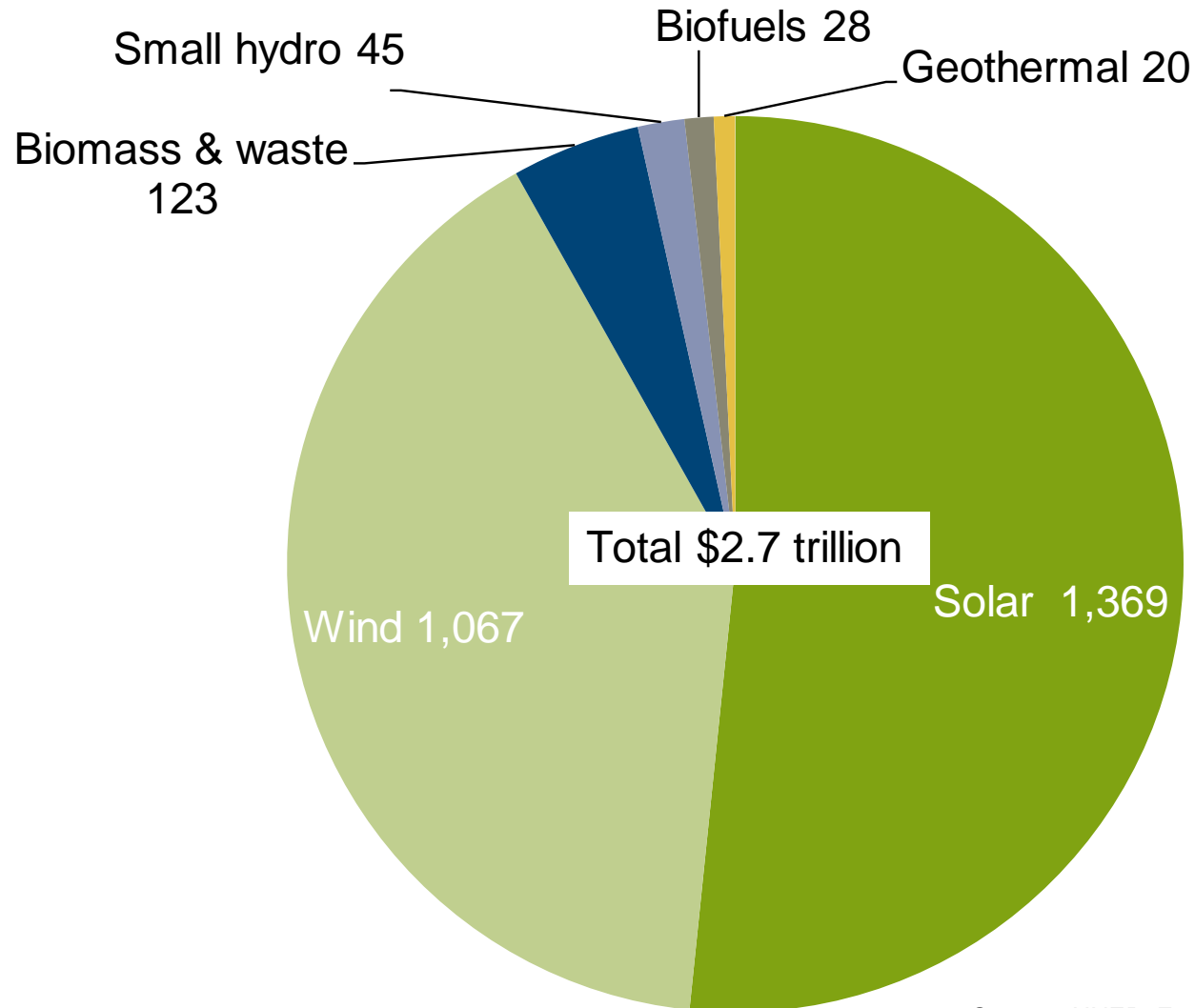
Note: The chart does not show the negative figure from net closure of oil-fired capacity in 2018

Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLE ENERGY CAPACITY INVESTMENT OVER THE DECADE, 2010-2019 (\$BN)



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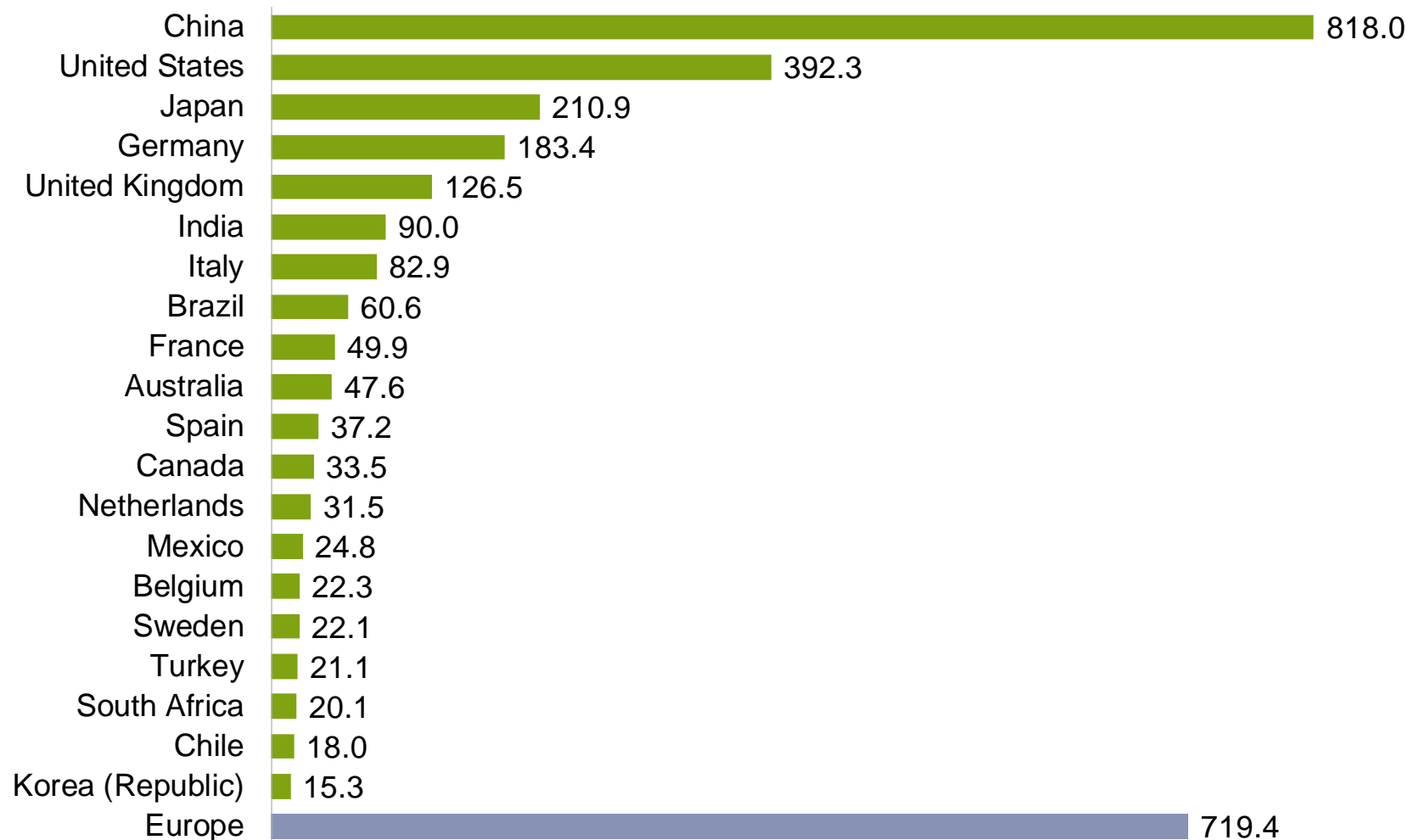


Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF

RENEWABLE ENERGY CAPACITY INVESTMENT FROM 2010 TO 2019, TOP 20 COUNTRIES/MARKETS (\$BN)



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Source: UNEP, Frankfurt School-UNEP Centre, BloombergNEF



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