

Clean Energy Investment Trends, 1H 2020

Colossal six months for offshore wind supports
renewable energy investment in first half of 2020

July 13, 2020



BloombergNEF

Colossal six months for offshore wind supports renewable energy investment in first half of 2020

Global investment in new renewables capacity rose 5% in 1H 2020, defying Covid-19 recession

- Offshore wind financings in 1H 2020 totaled \$35 billion, up 319% year-on-year and in fact well above 2019's record full-year figure (a revised \$31.9 billion). The first half of this year saw investment decisions made on 28 sea-based wind farms, including the largest ever, the 1.5GW Vattenfall Hollandse Zuid array off the coast of the Netherlands, costing an estimated \$3.9 billion.

- Overall investment in new renewable energy capacity (excluding large hydro-electric dams of more than 50MW) was \$132.4 billion in the first half of 2020, up 5% from a revised \$125.8 billion in the same period of 2019. Onshore wind investment slipped 21% to \$37.5 billion, while that for solar fell 12% to \$54.7 billion.

- China was the largest market yet again, investing \$41.6 billion in 1H 2020, up 42% compared to the same period in 2019 thanks to its offshore wind boom. Europe secured \$36.5 billion, up 50%, while the U.S. slipped 30% to \$17.8 billion.

- BNEF's data for corporate-level investment in renewables and energy-smart technologies such as battery storage show that equity raising by specialist companies on public markets was \$2.4 billion in the first half of 2020, down 43%. Investment from venture capital and private equity funds was up 10% at \$2.5 billion.

- The charts on the pages to follow show trends in overall clean energy investment, including investment in renewable energy capacity but also equity raising by specialist companies in renewables and related areas such as energy storage. This "total clean energy investment" figure was \$137 billion, a 4% increase on 1H 2019. See chart on right.

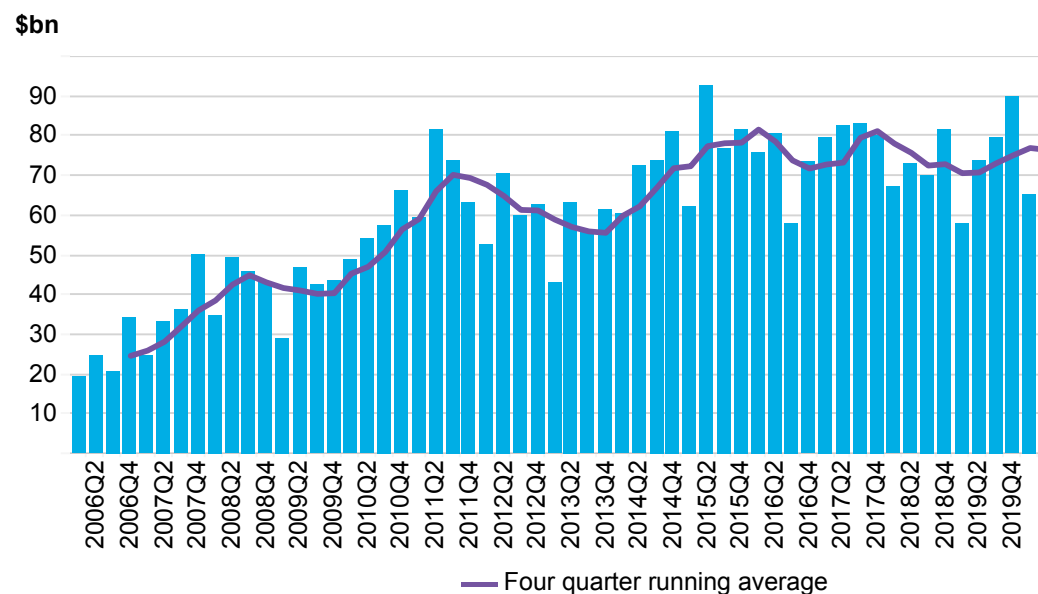
\$137bn

Global renewable energy investment in 1H 2020

319%

Increase in offshore wind investment compared to 1H 2019

Global new investment in renewable energy

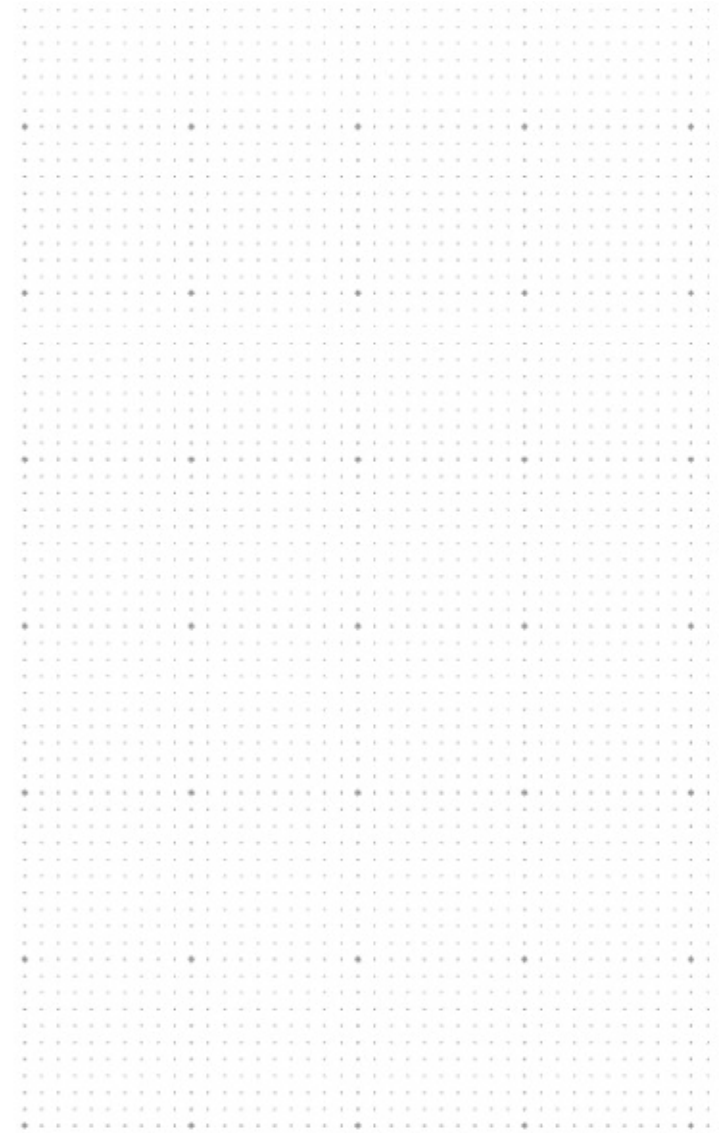


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Quarterly trends, new investment

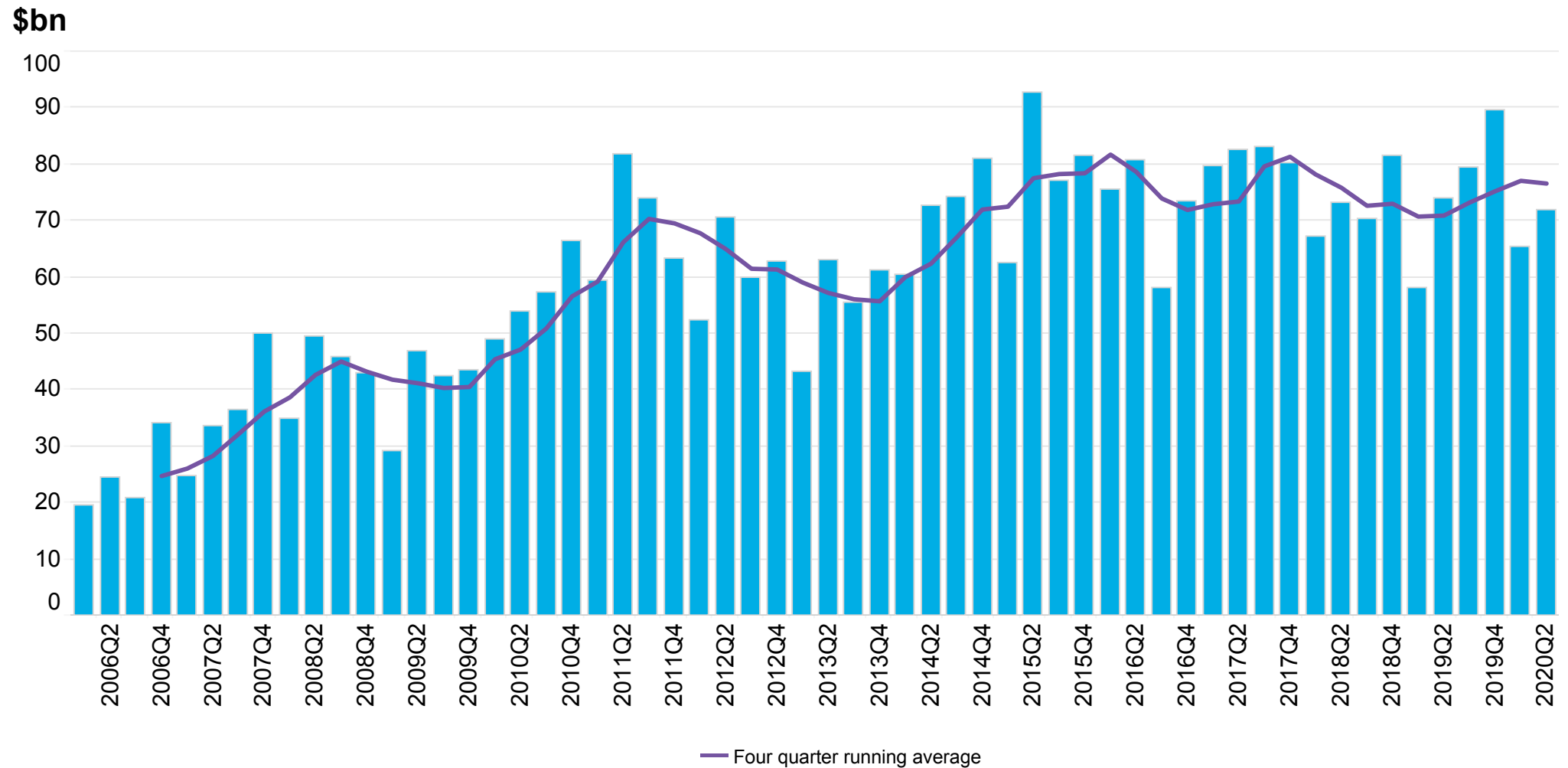
Quarterly trends since 1Q 2006



Quarterly trends, new investment

Global new investment in clean energy

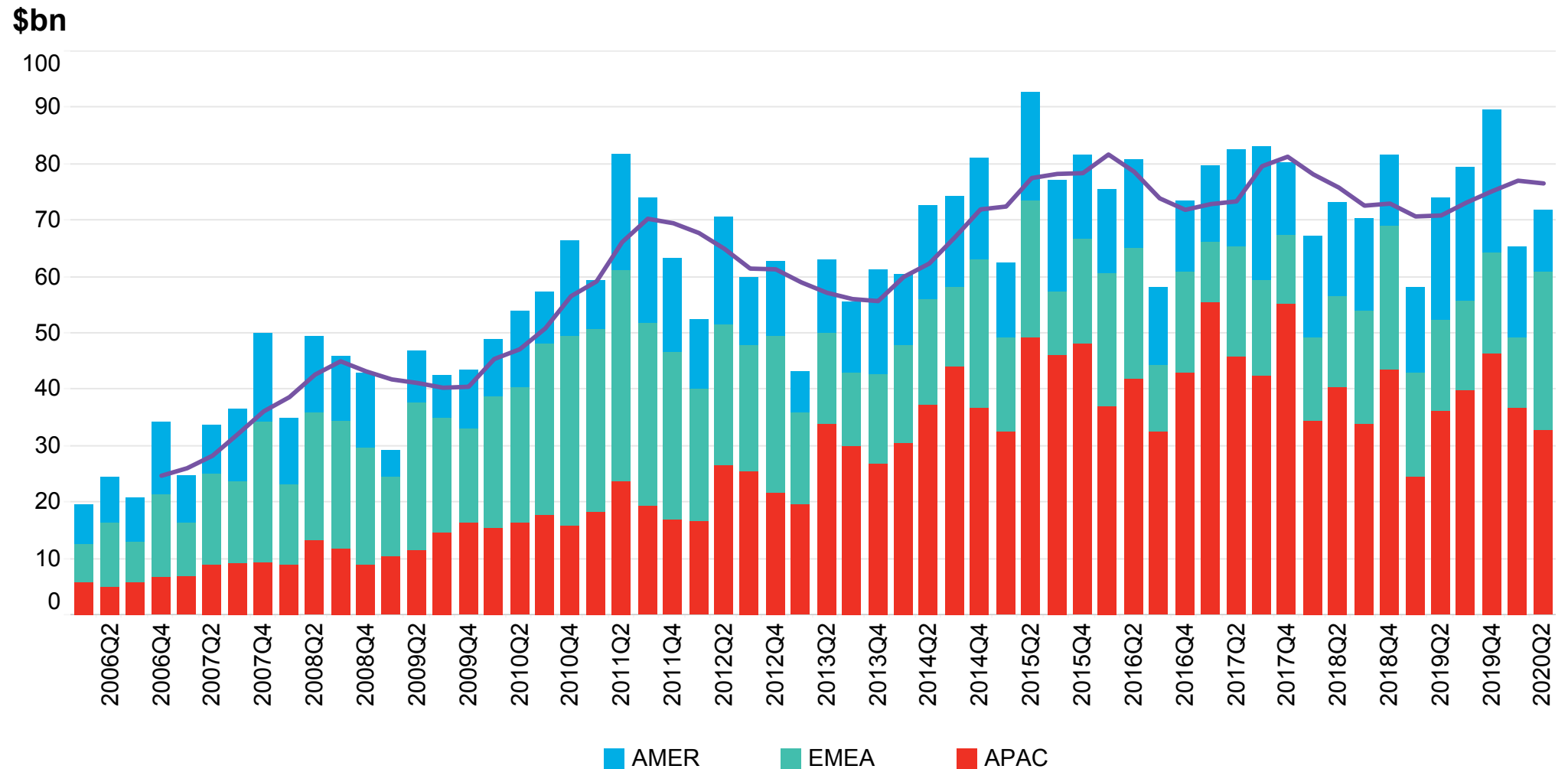
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, by region

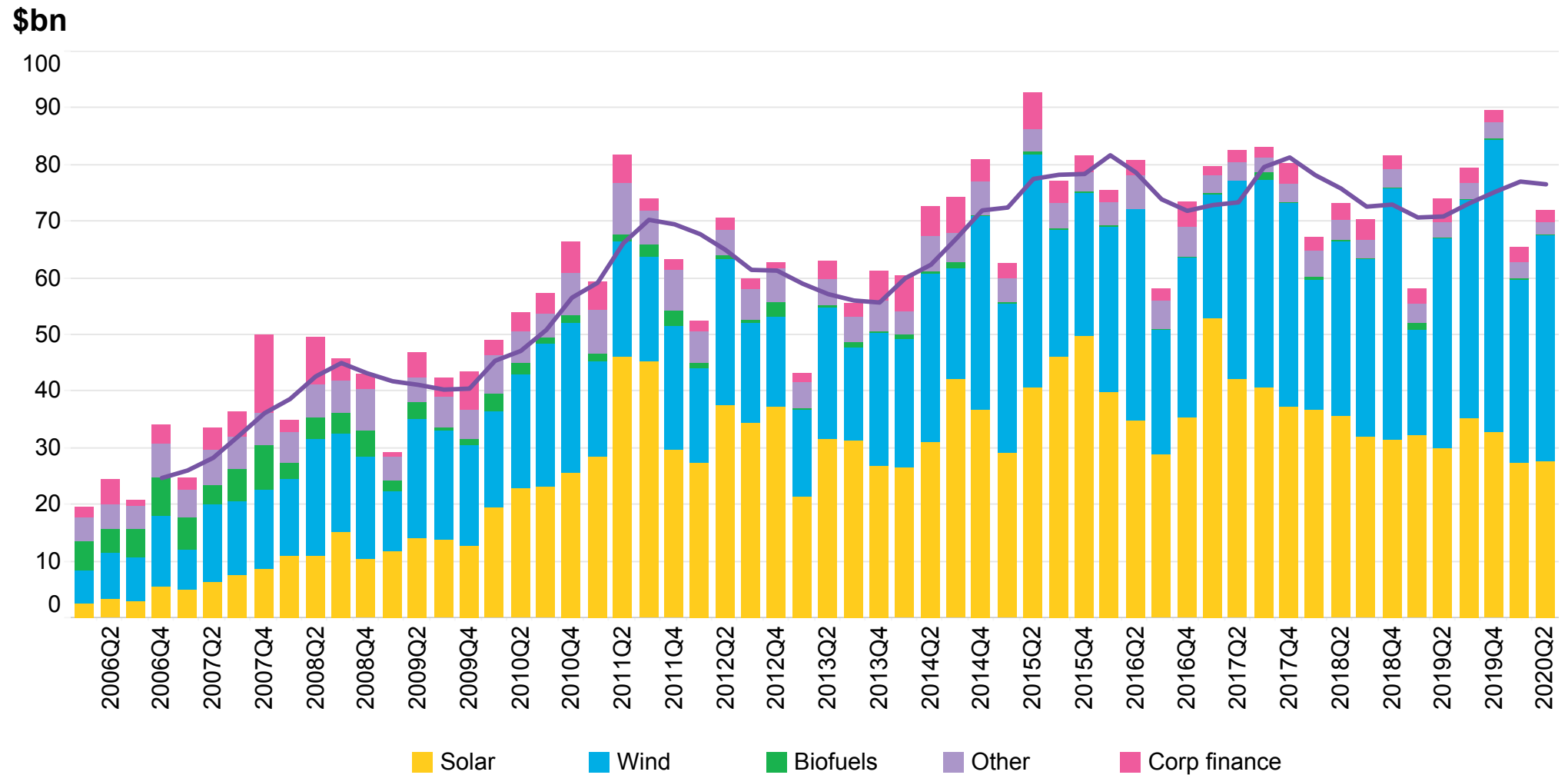
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, by sector

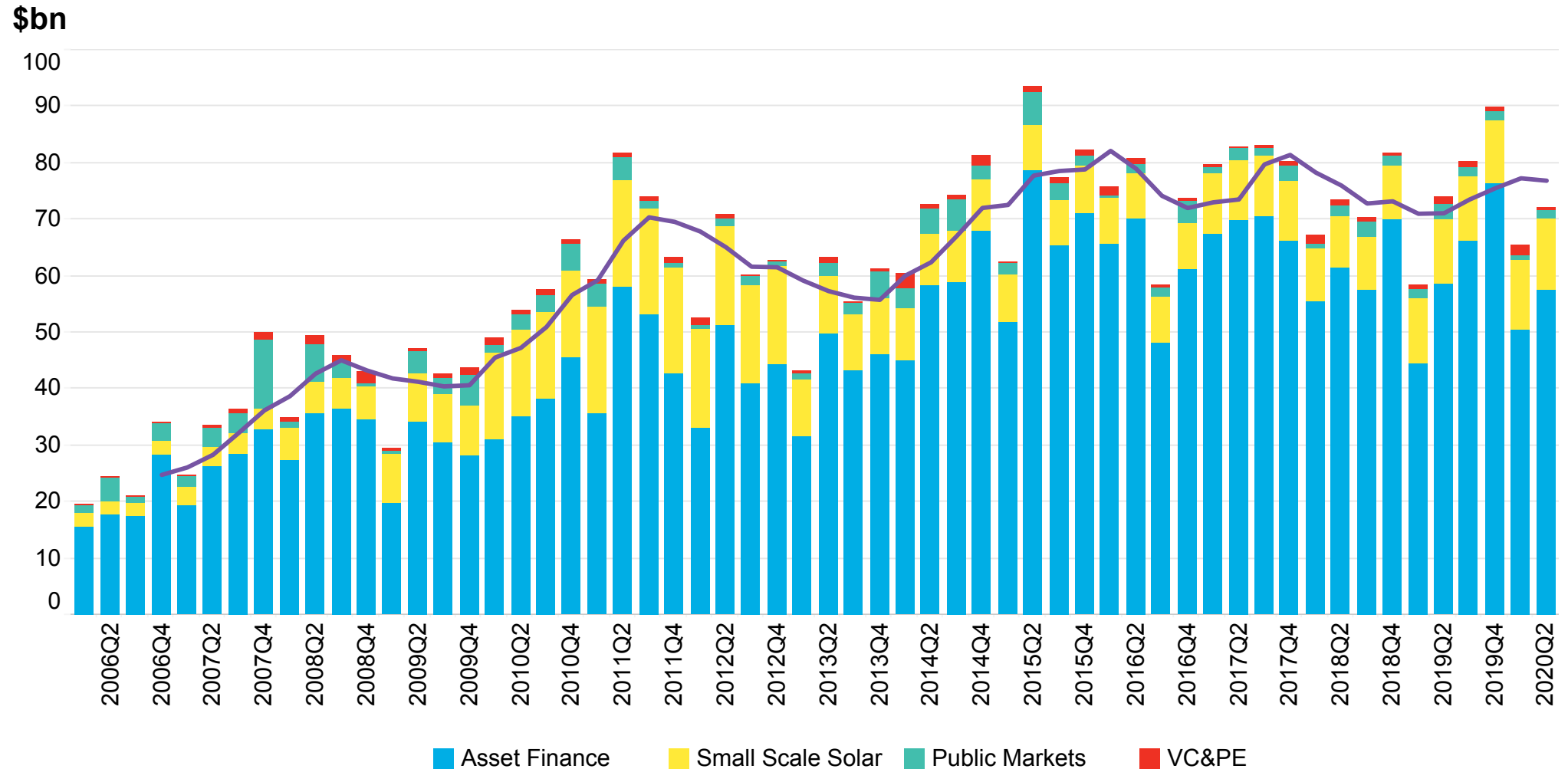
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, by asset class

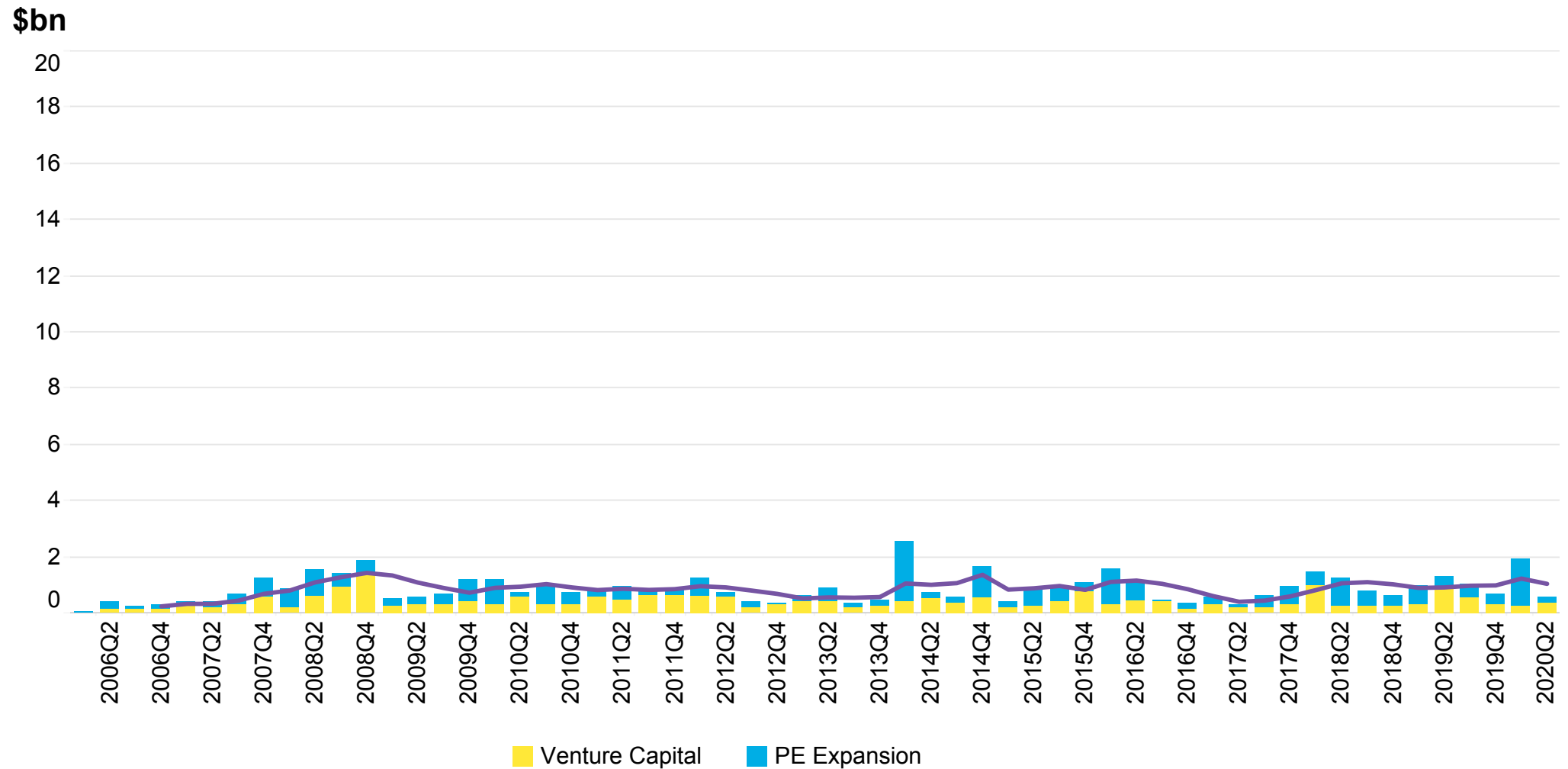
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, VC/PE

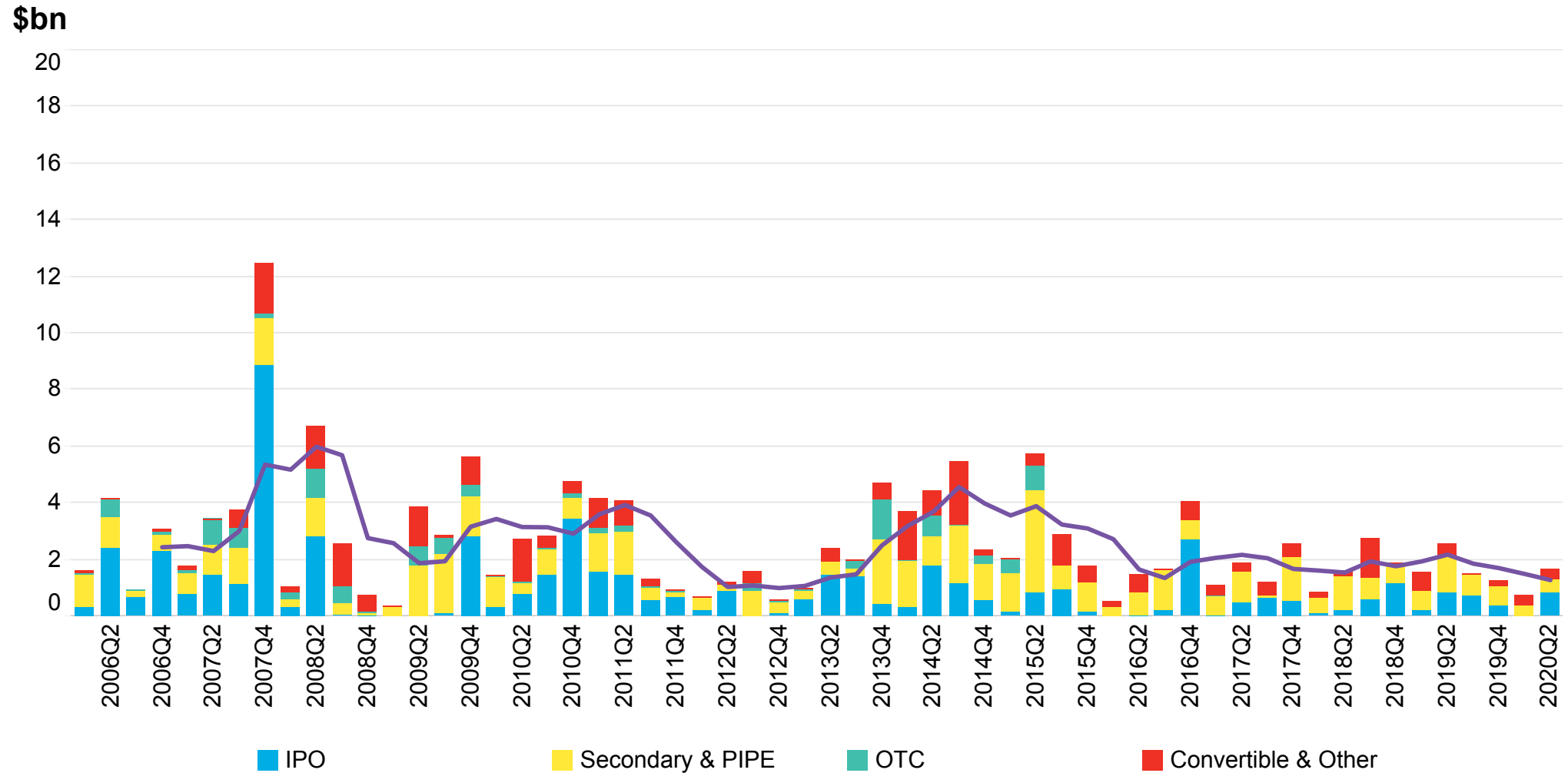
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, public markets

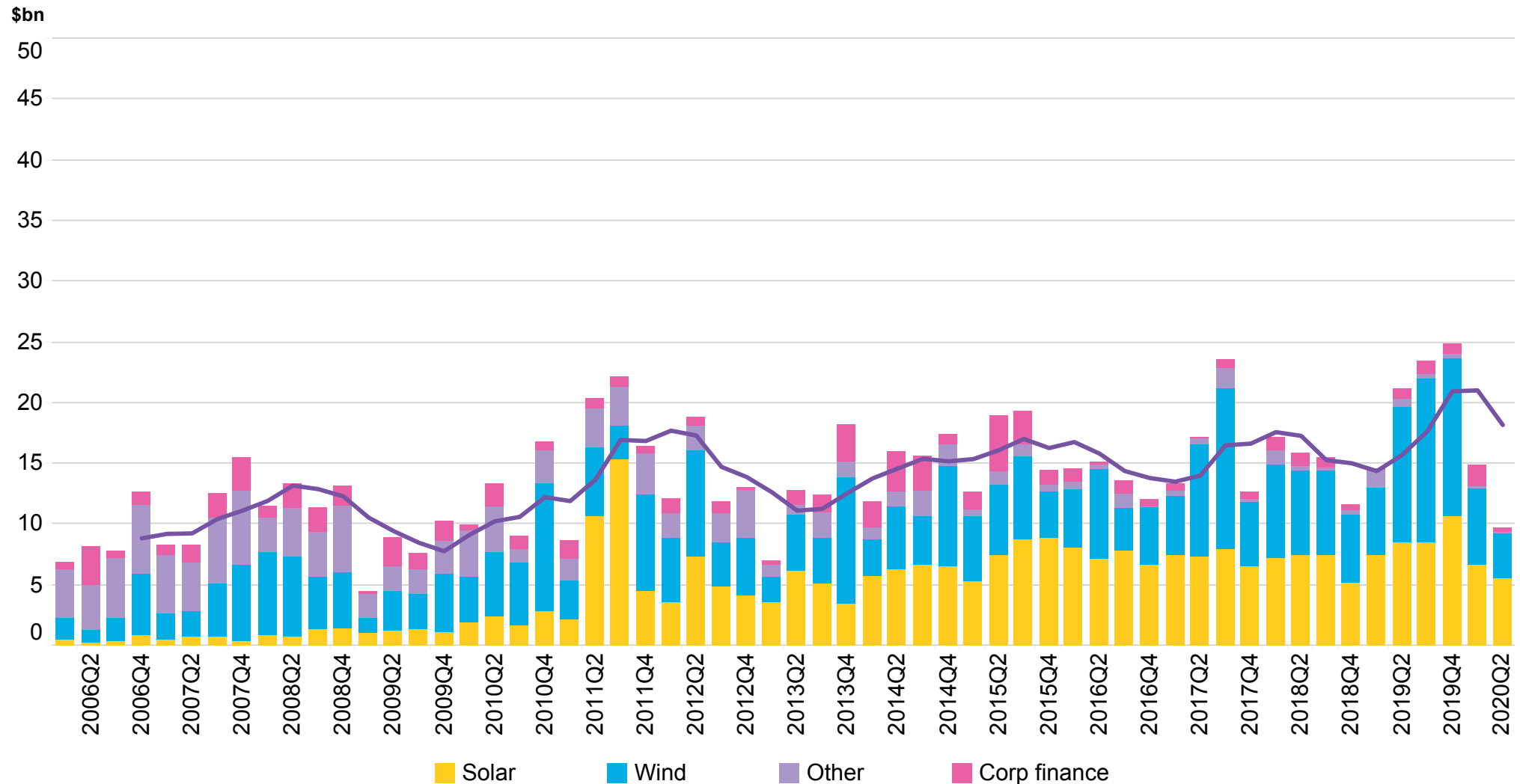
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, AMER

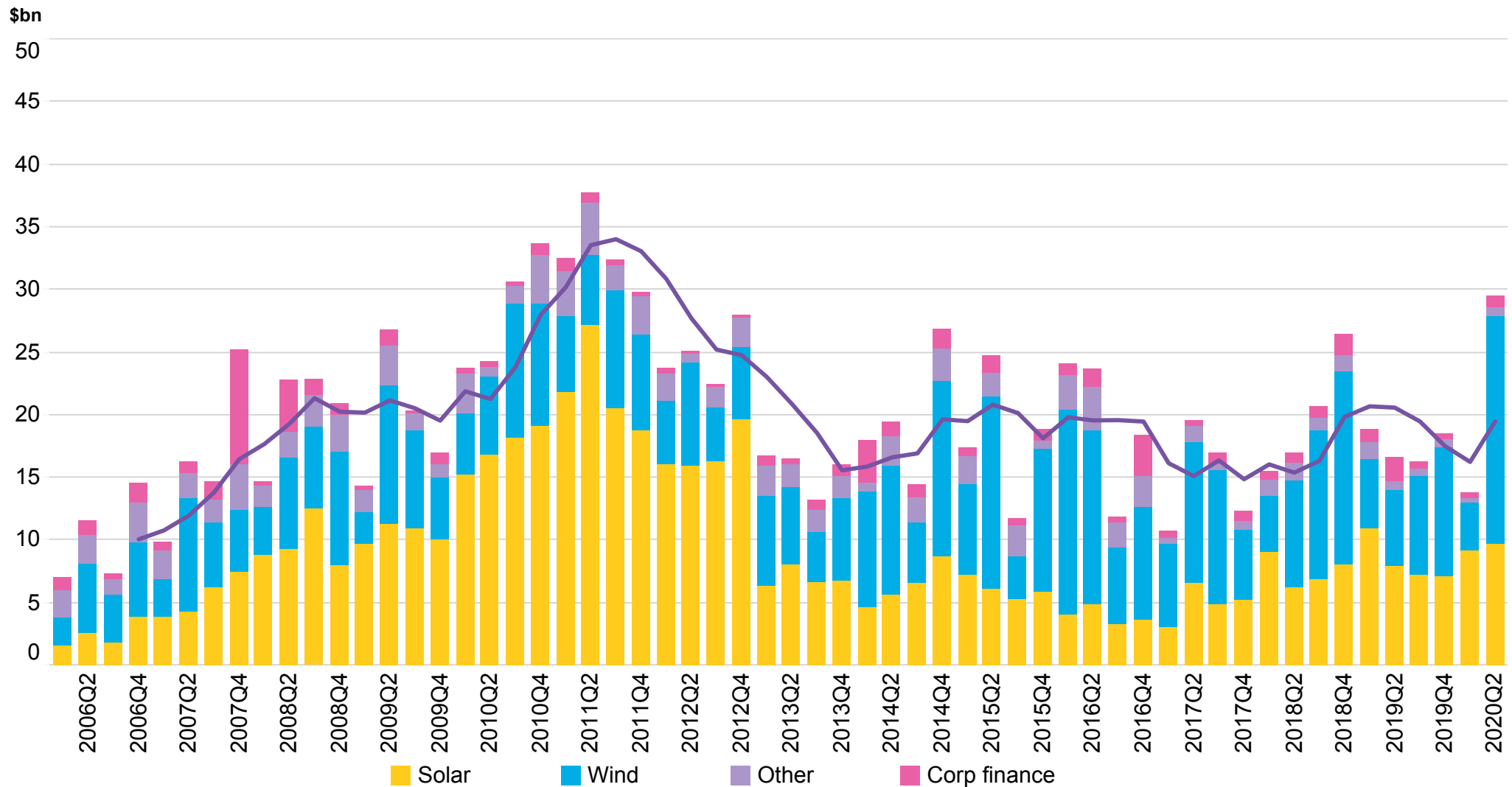
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, EMEA

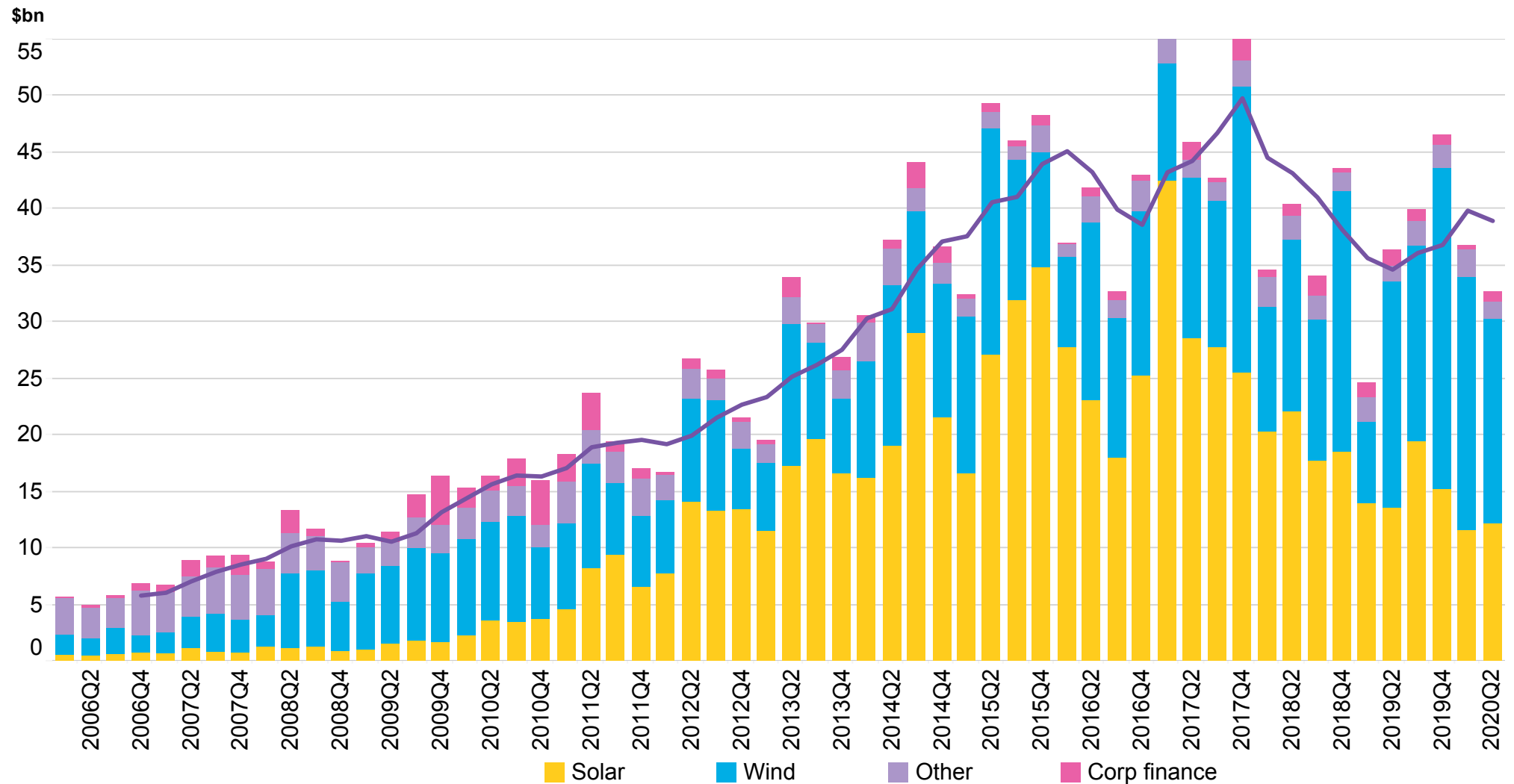
1Q 2006 - 2Q 2020



Quarterly trends, new investment

Global new investment in clean energy, APAC

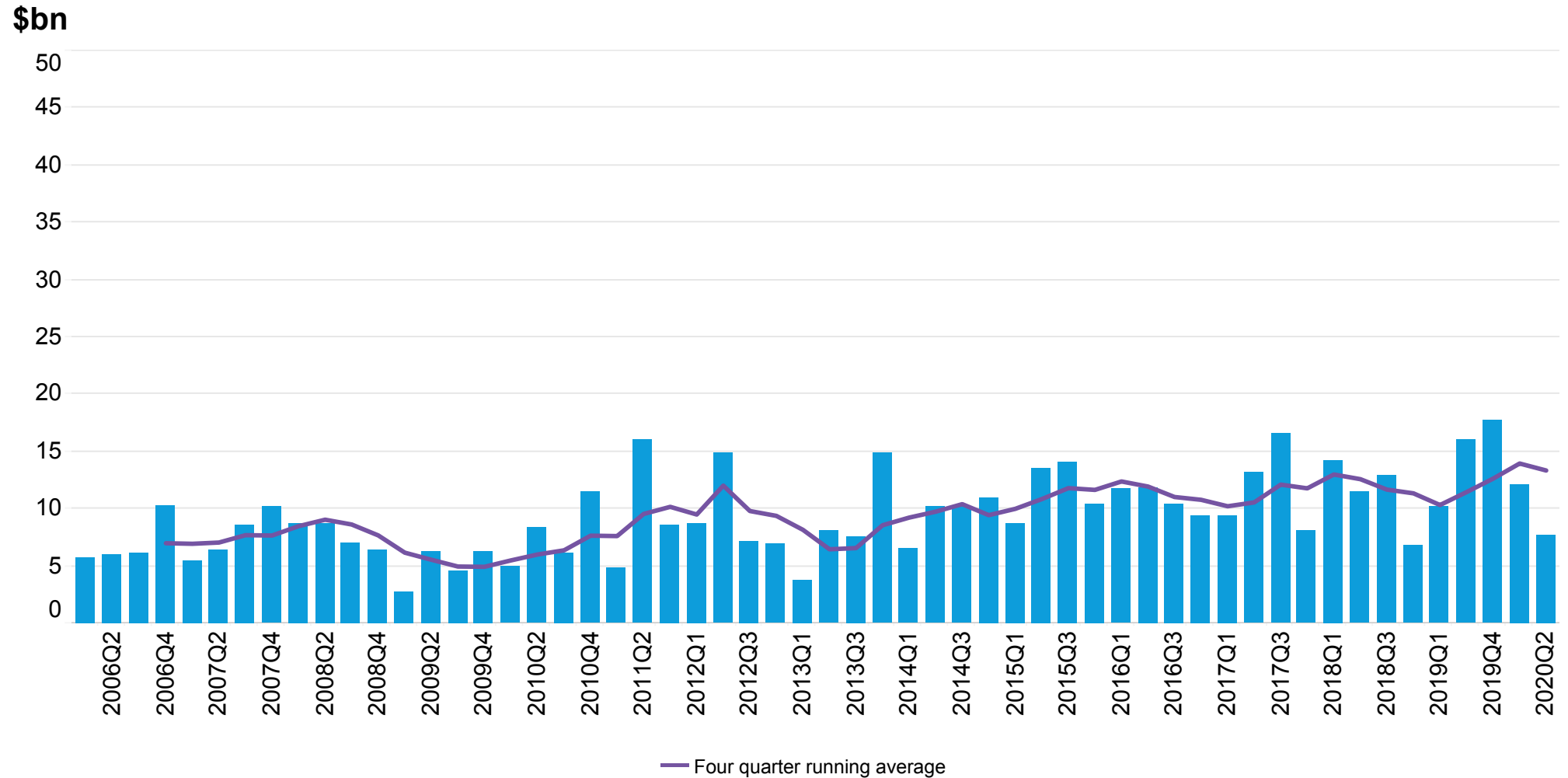
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy United States

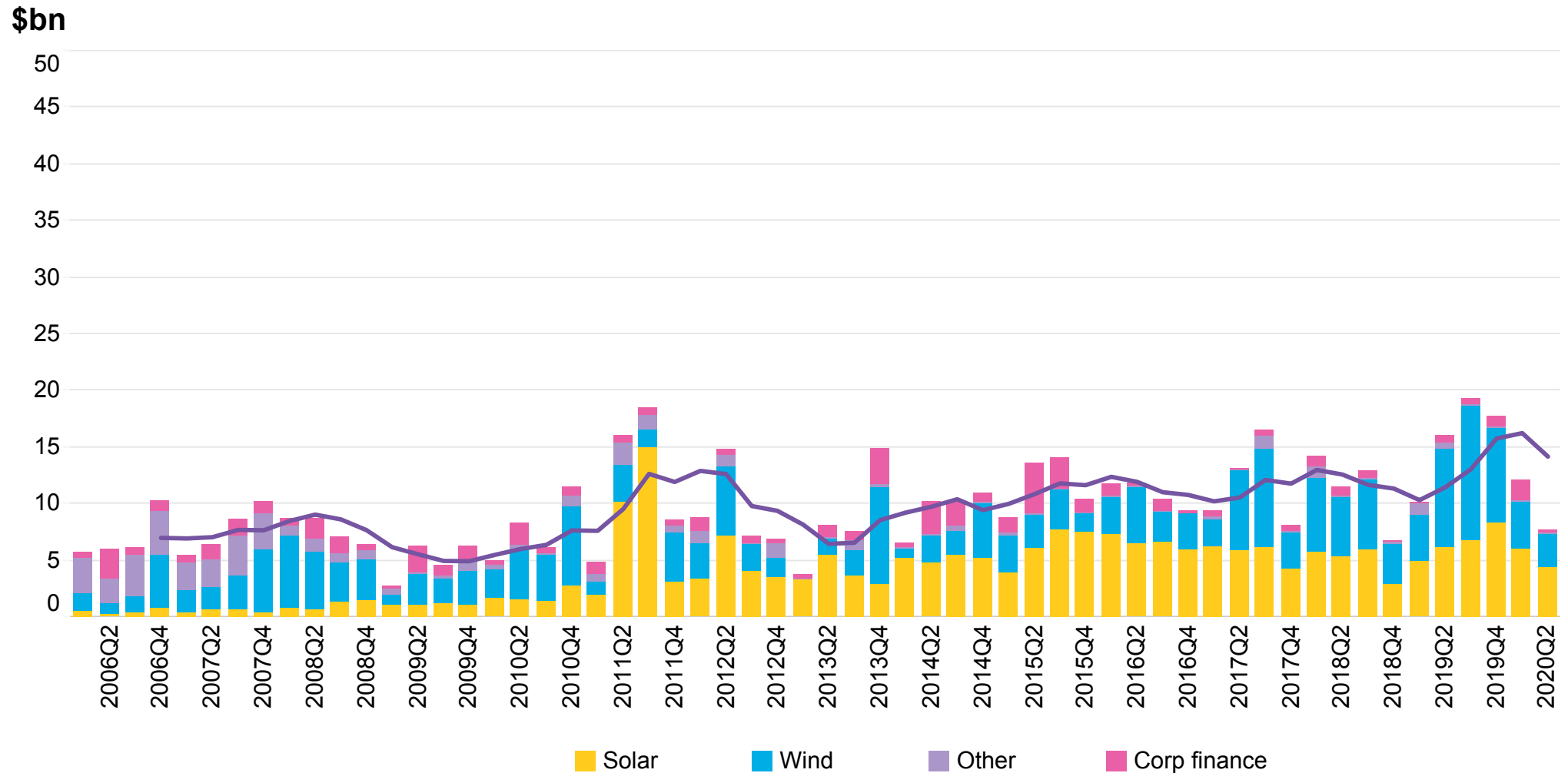
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy United States, by sector

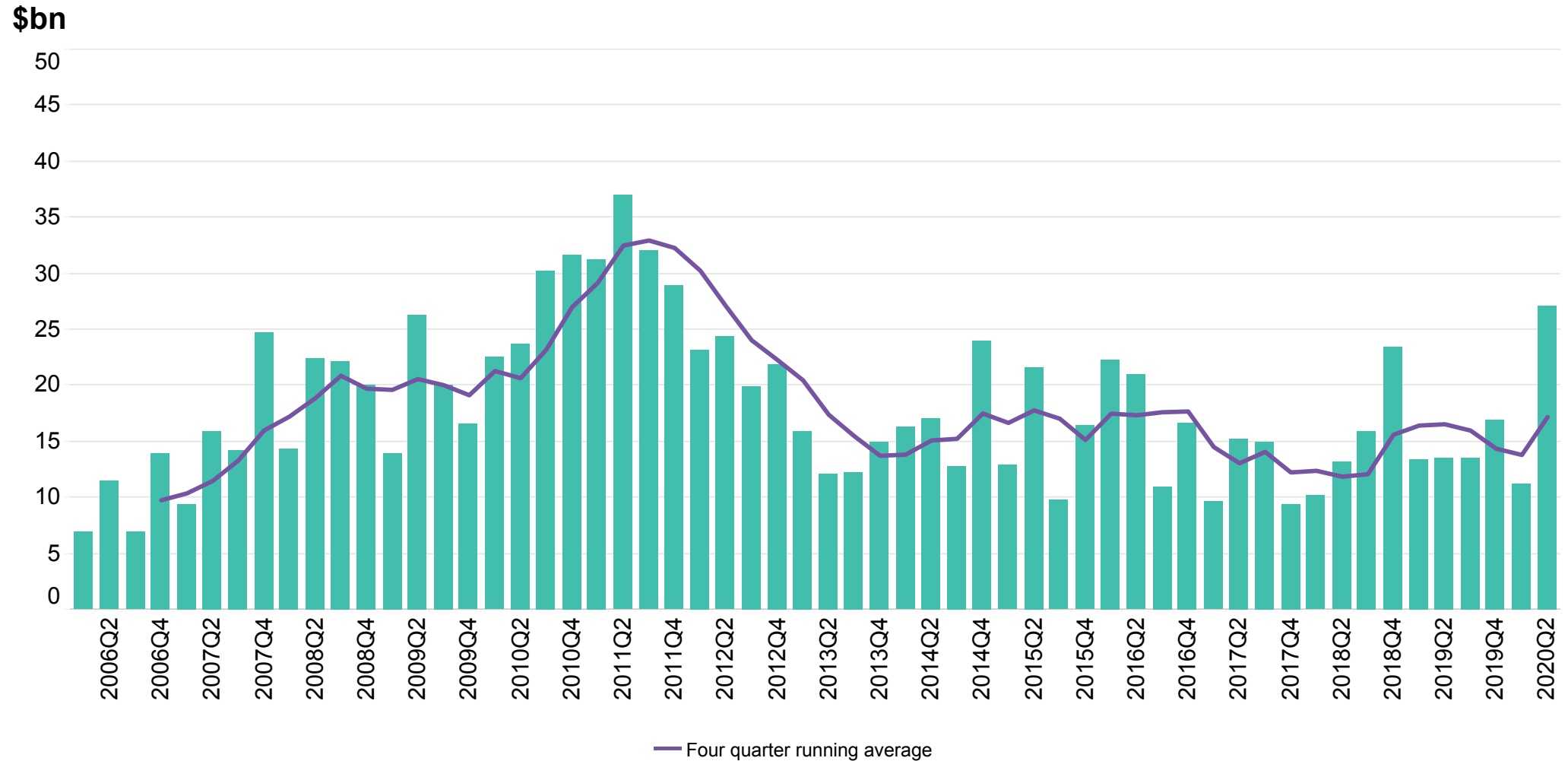
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy Europe

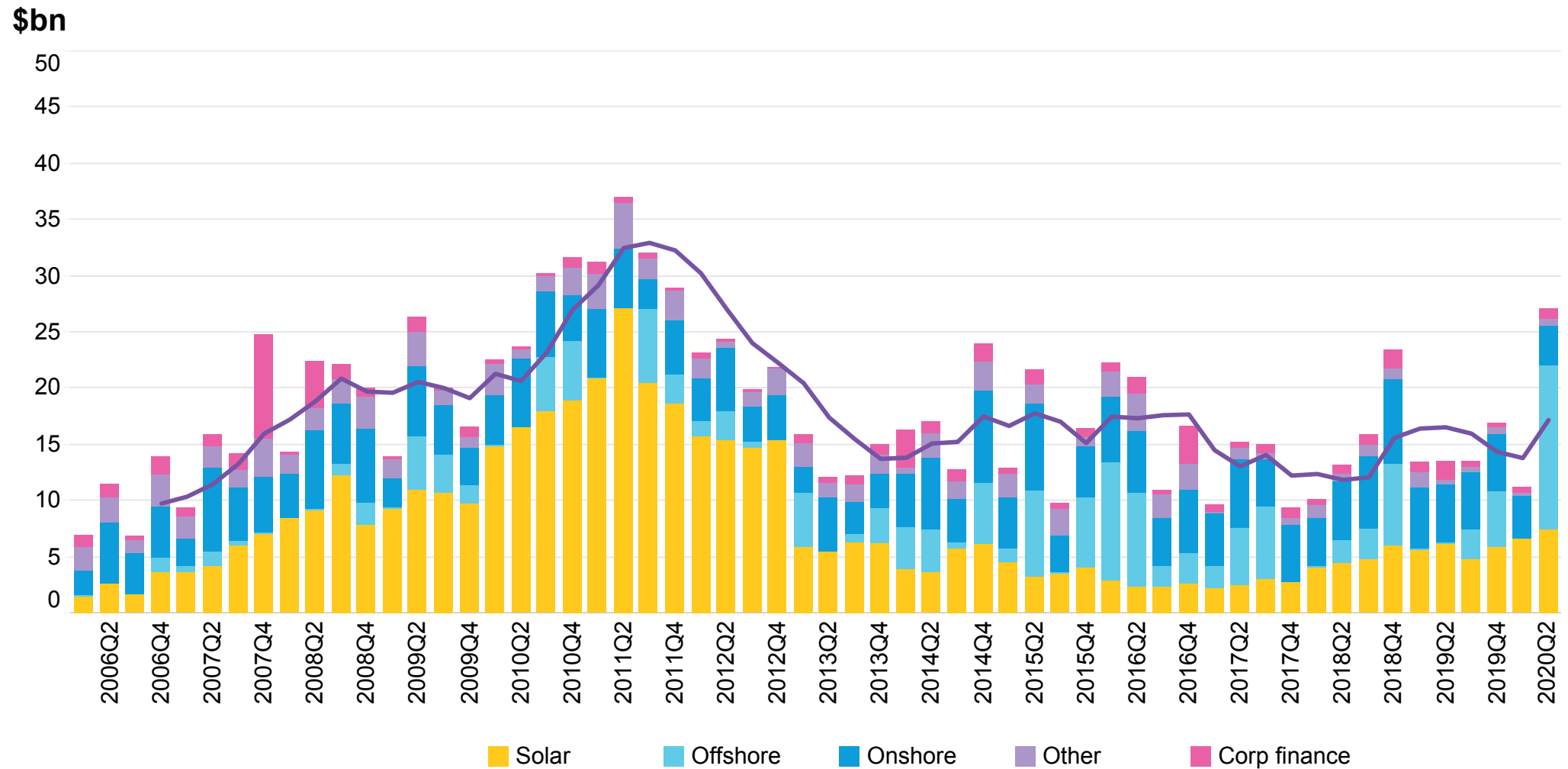
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy Europe, by sector

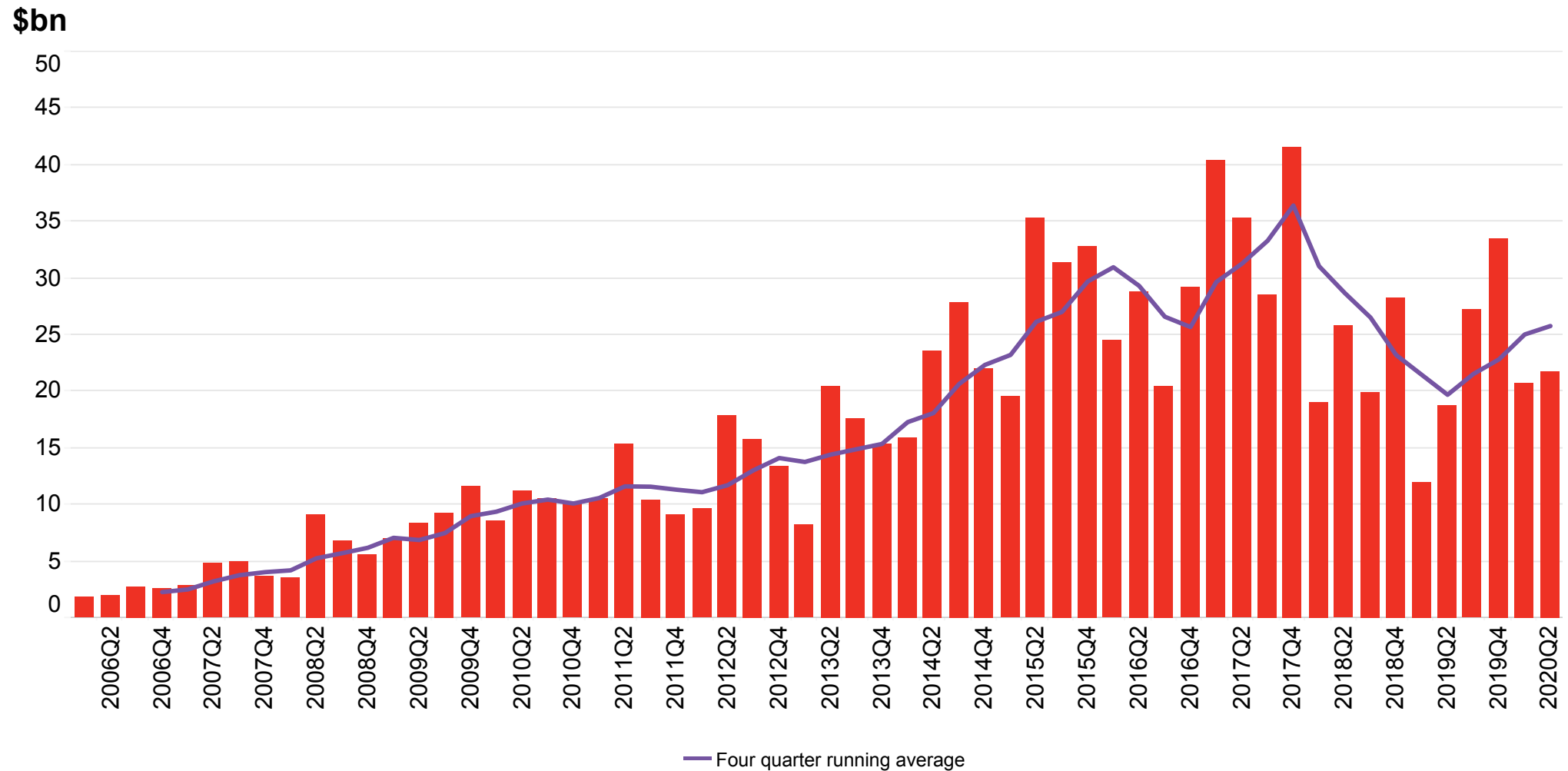
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy China

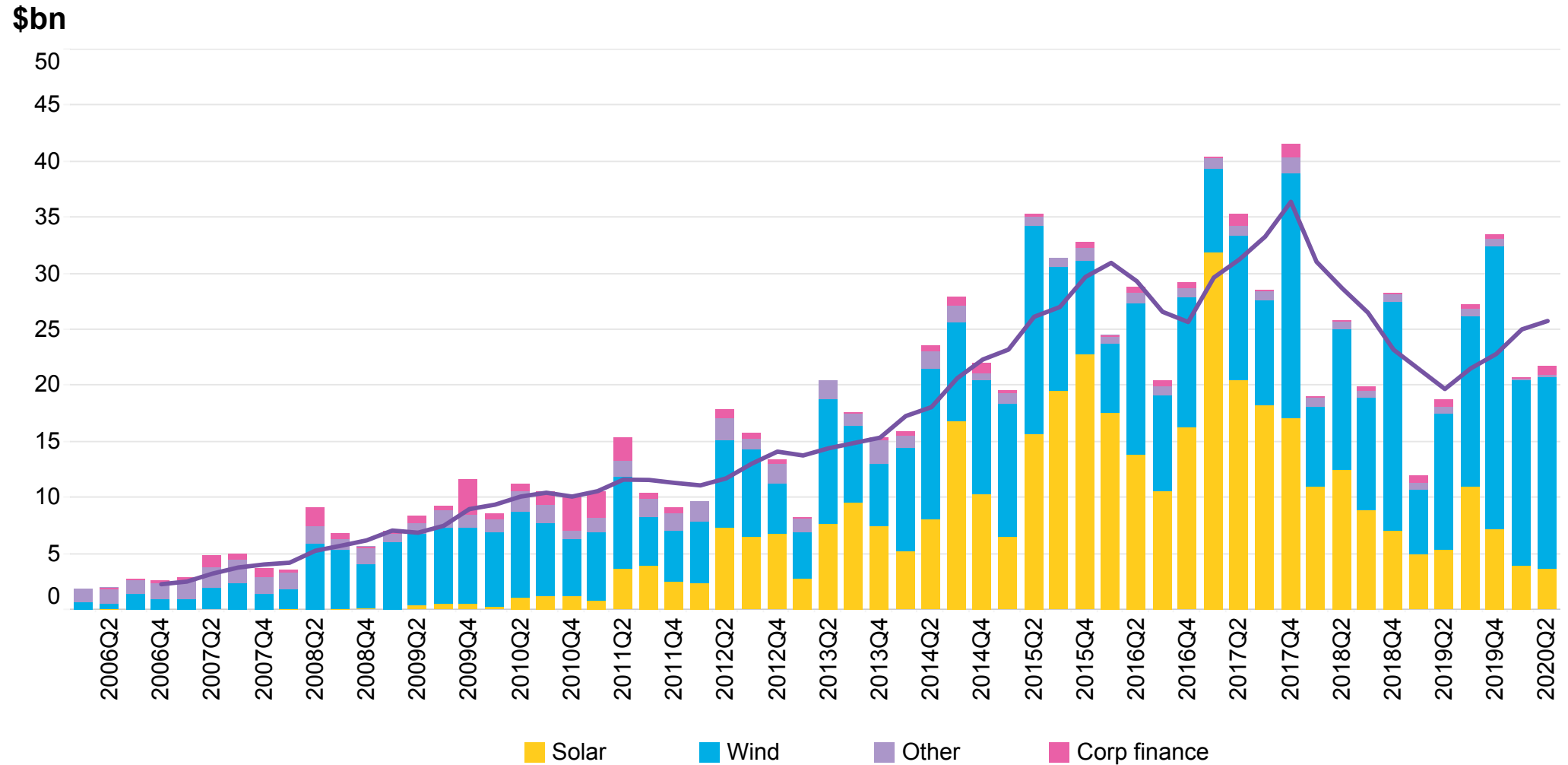
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy China, by sector

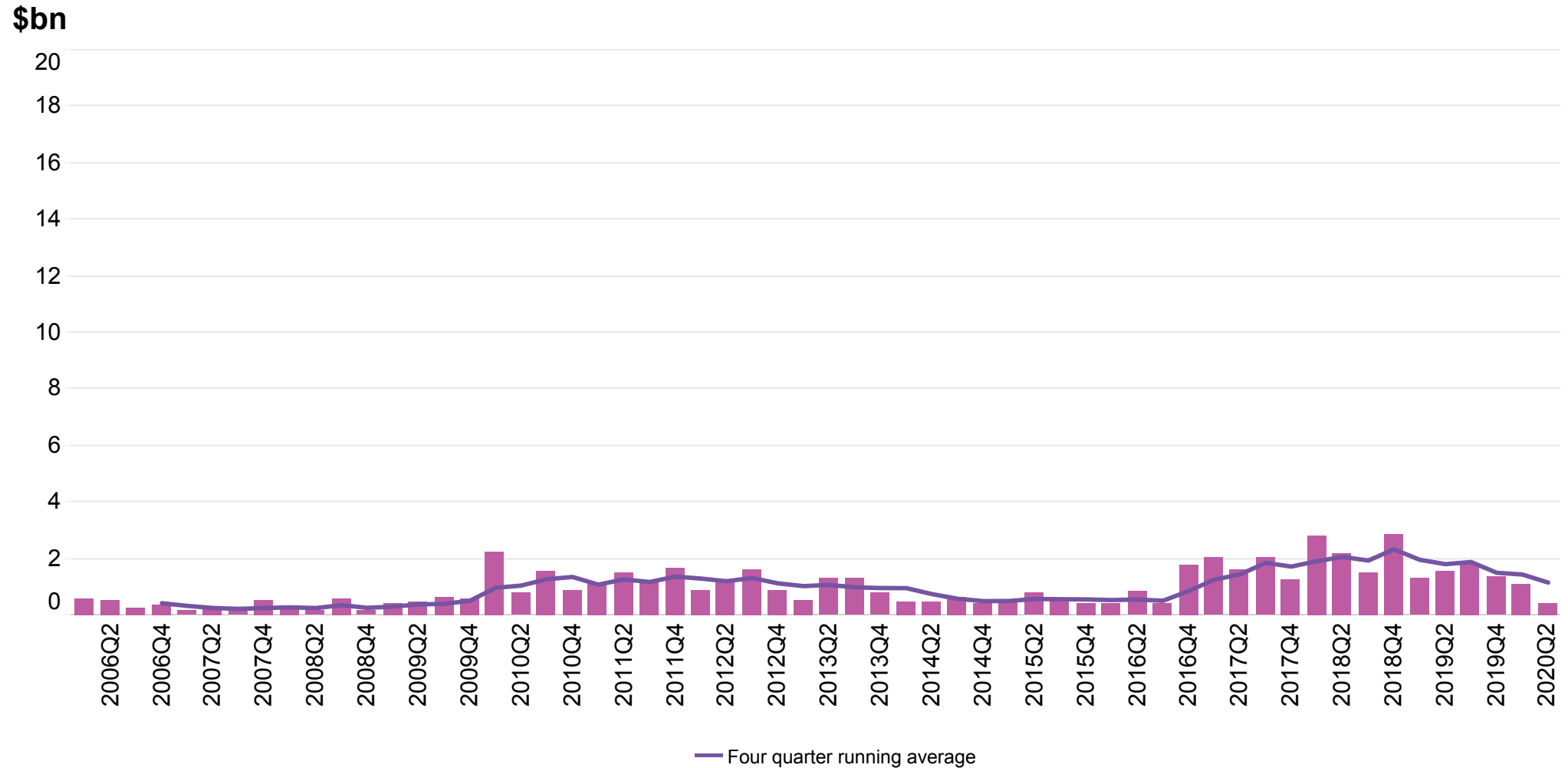
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy Australia

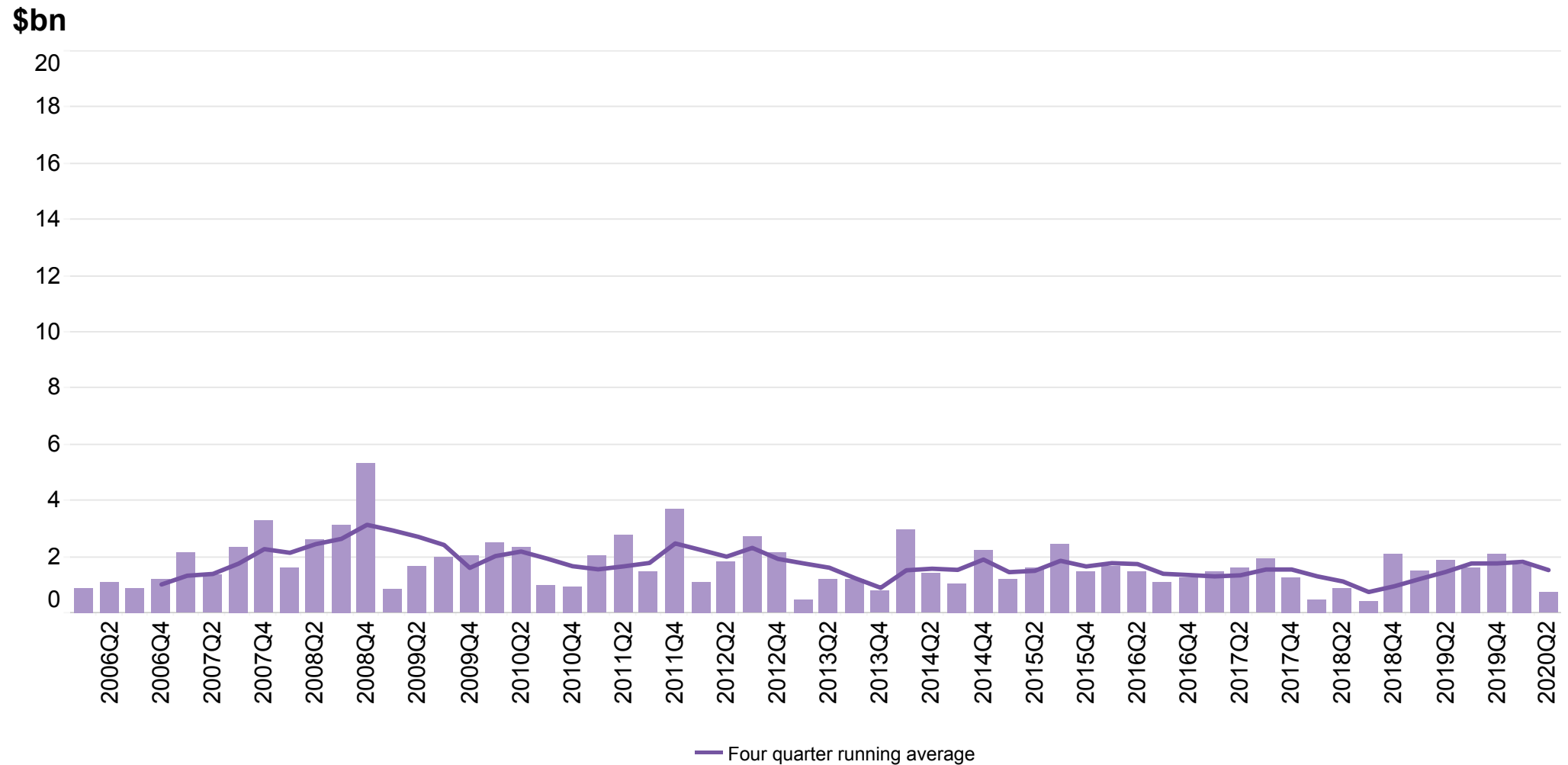
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy Brazil

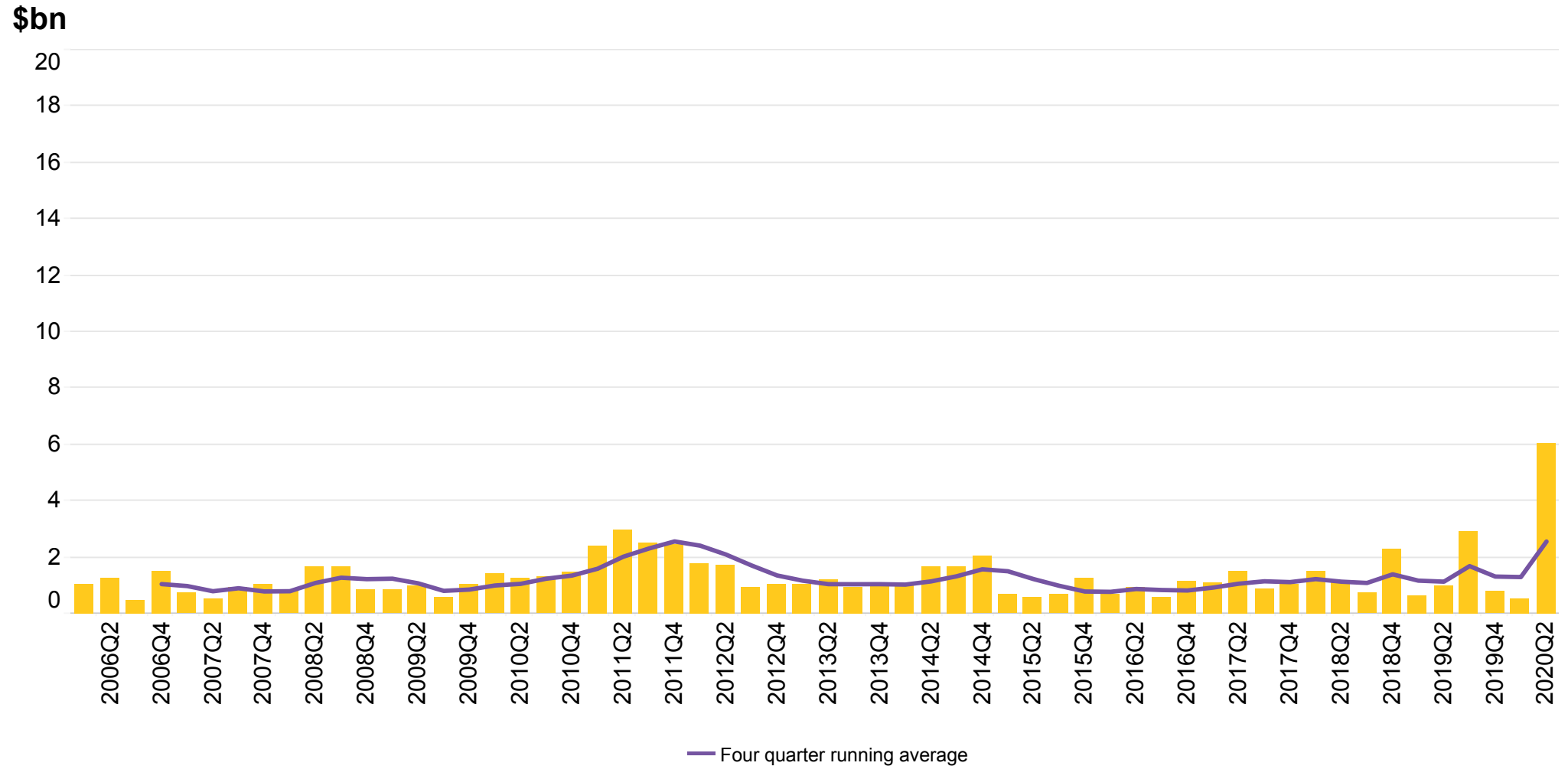
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy France

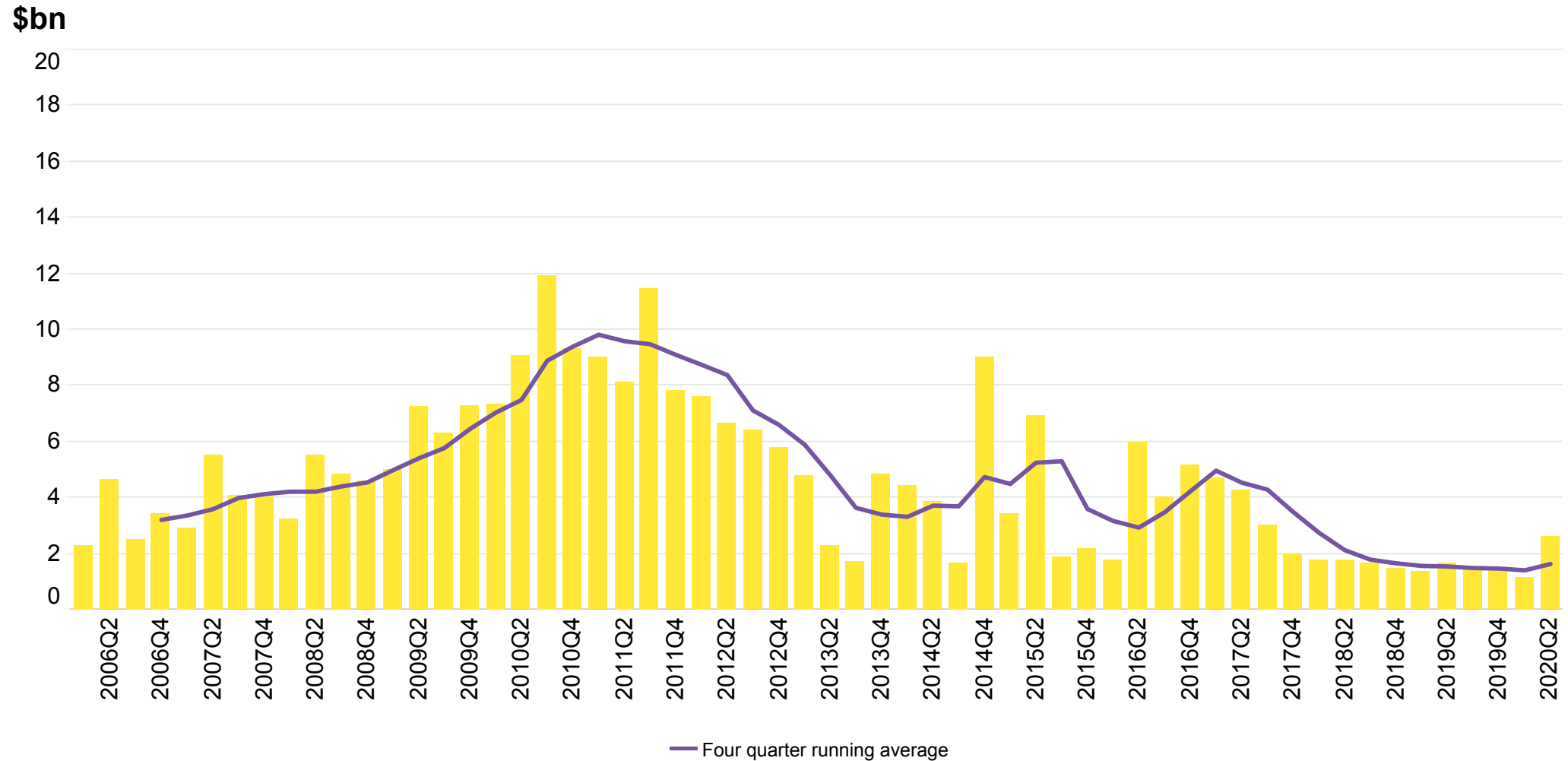
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy Germany

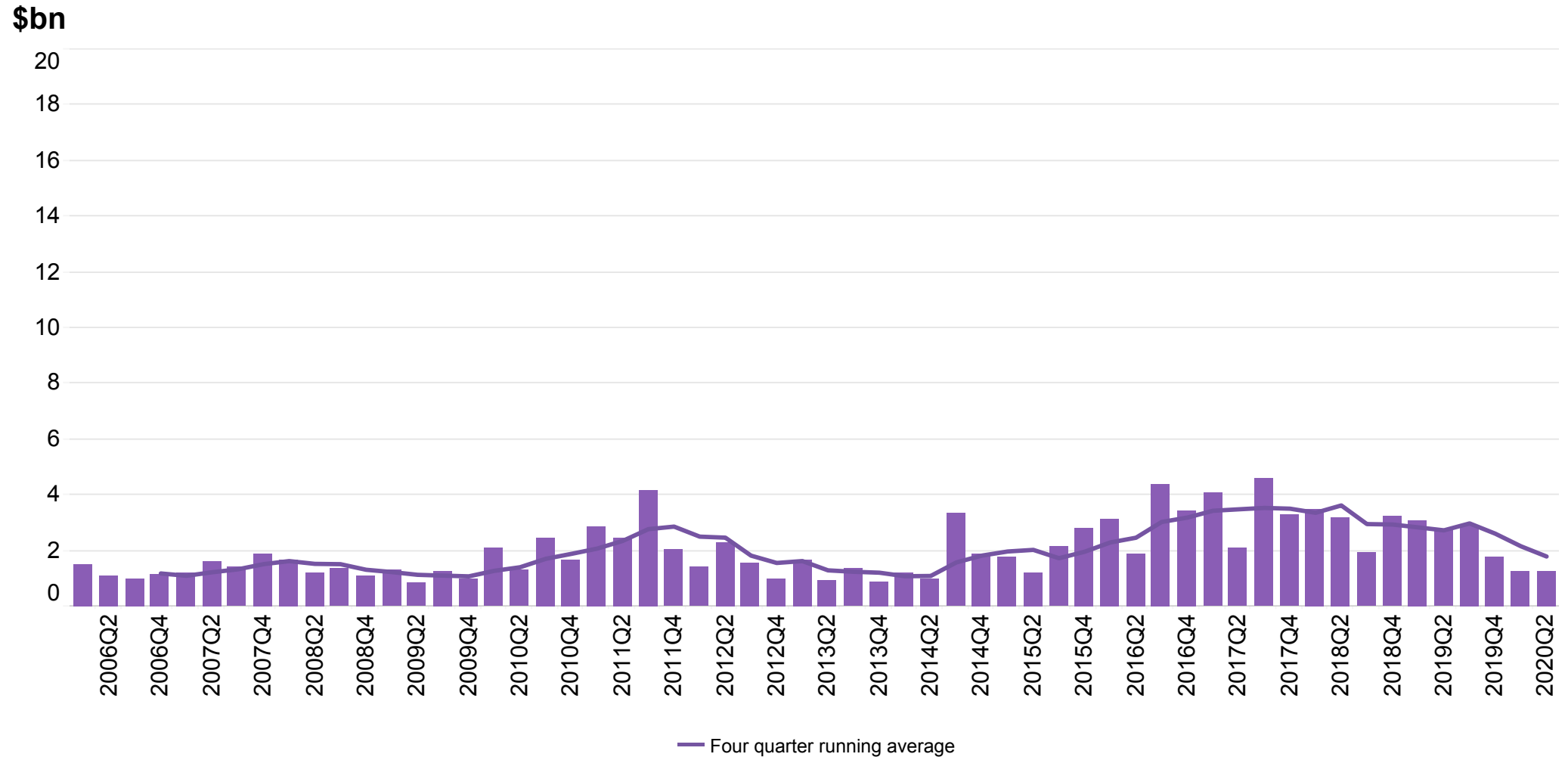
1Q 2006 - 2Q 2020



Quarterly trends, new investment

New investment in clean energy India

1Q 2006 - 2Q 2020

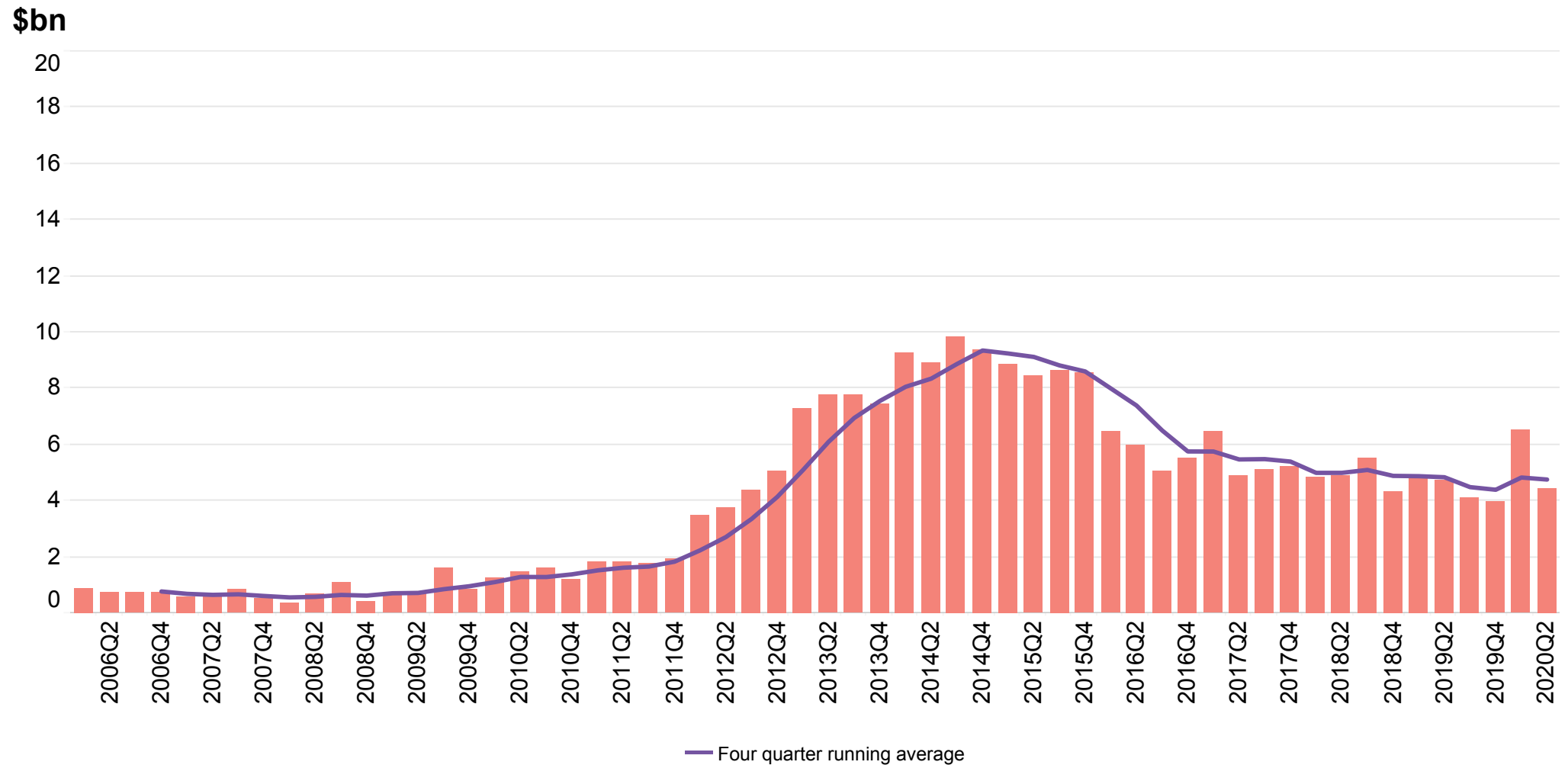


Quarterly trends, new investment

New investment in clean energy

Japan

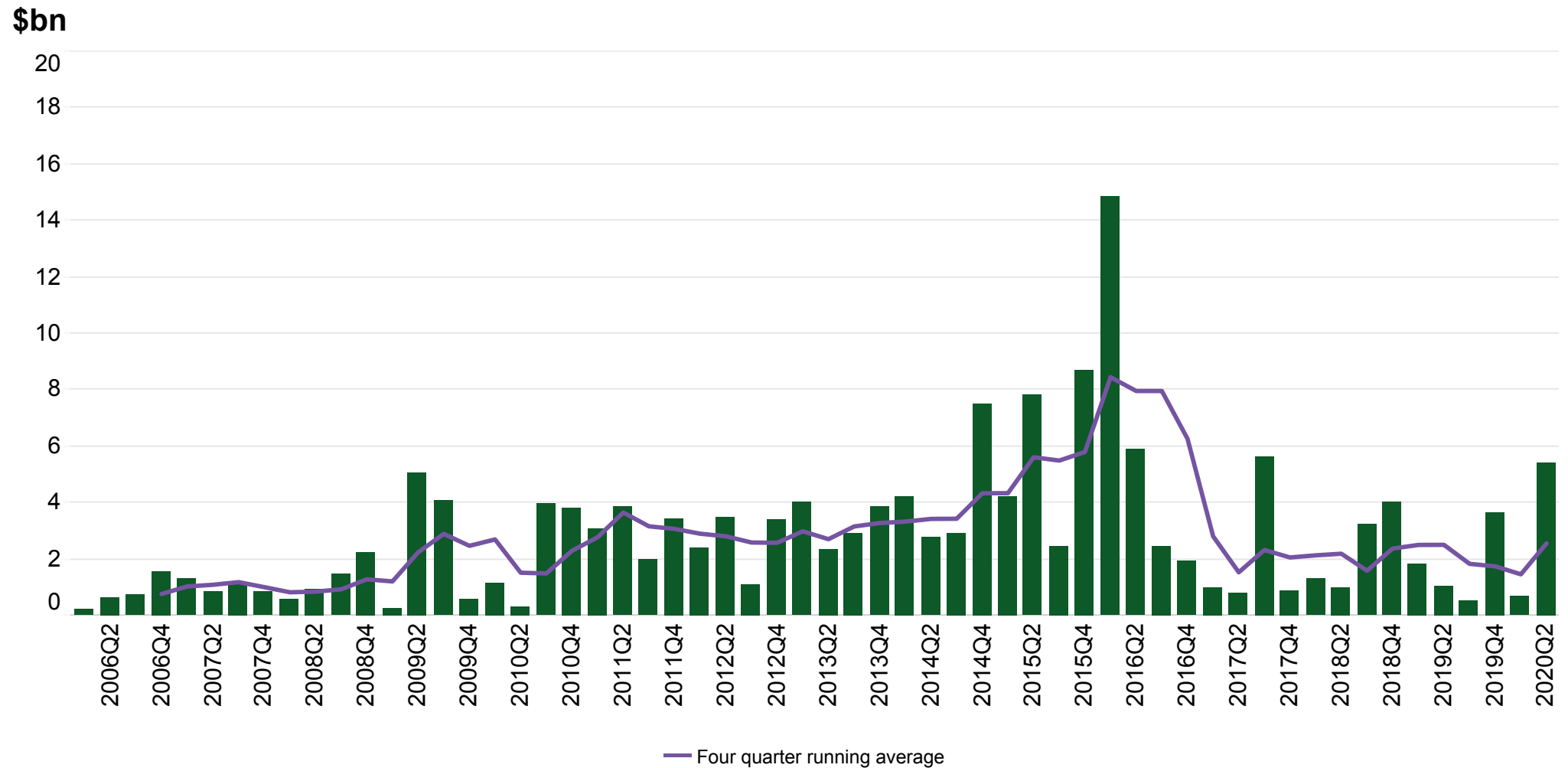
1Q 2006 - 2Q 2020



Quarterly trends, new investment

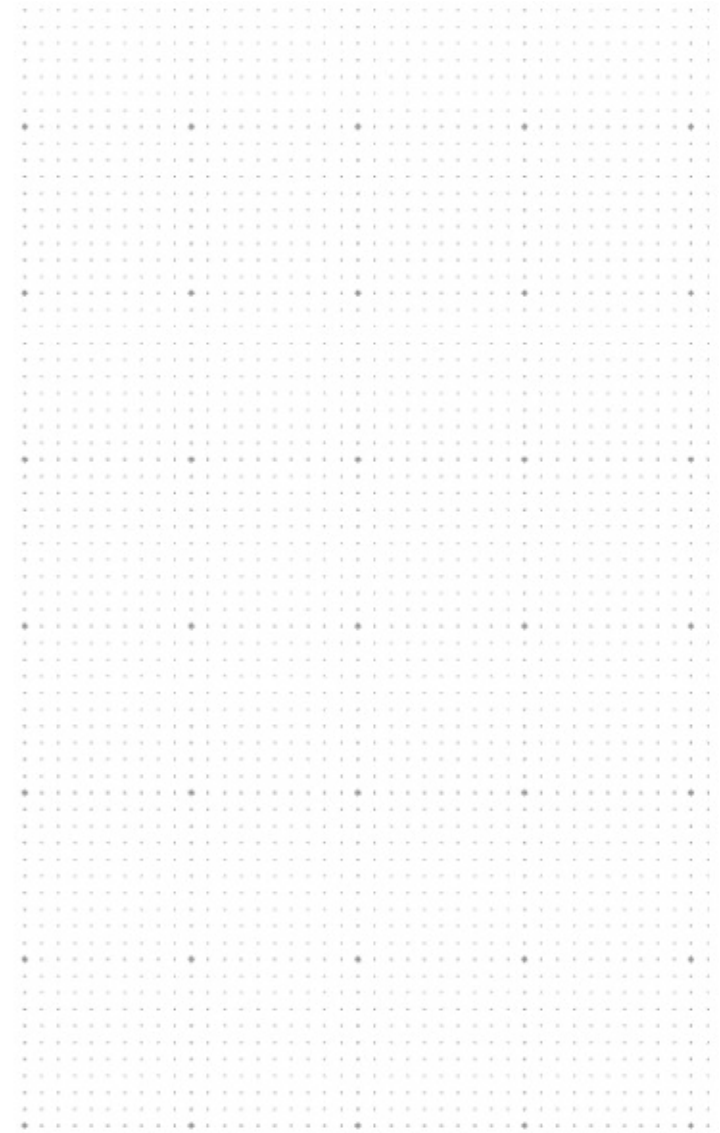
New investment in clean energy United Kingdom

1Q 2006 - 2Q 2020



Quarterly trends, funds in circulation

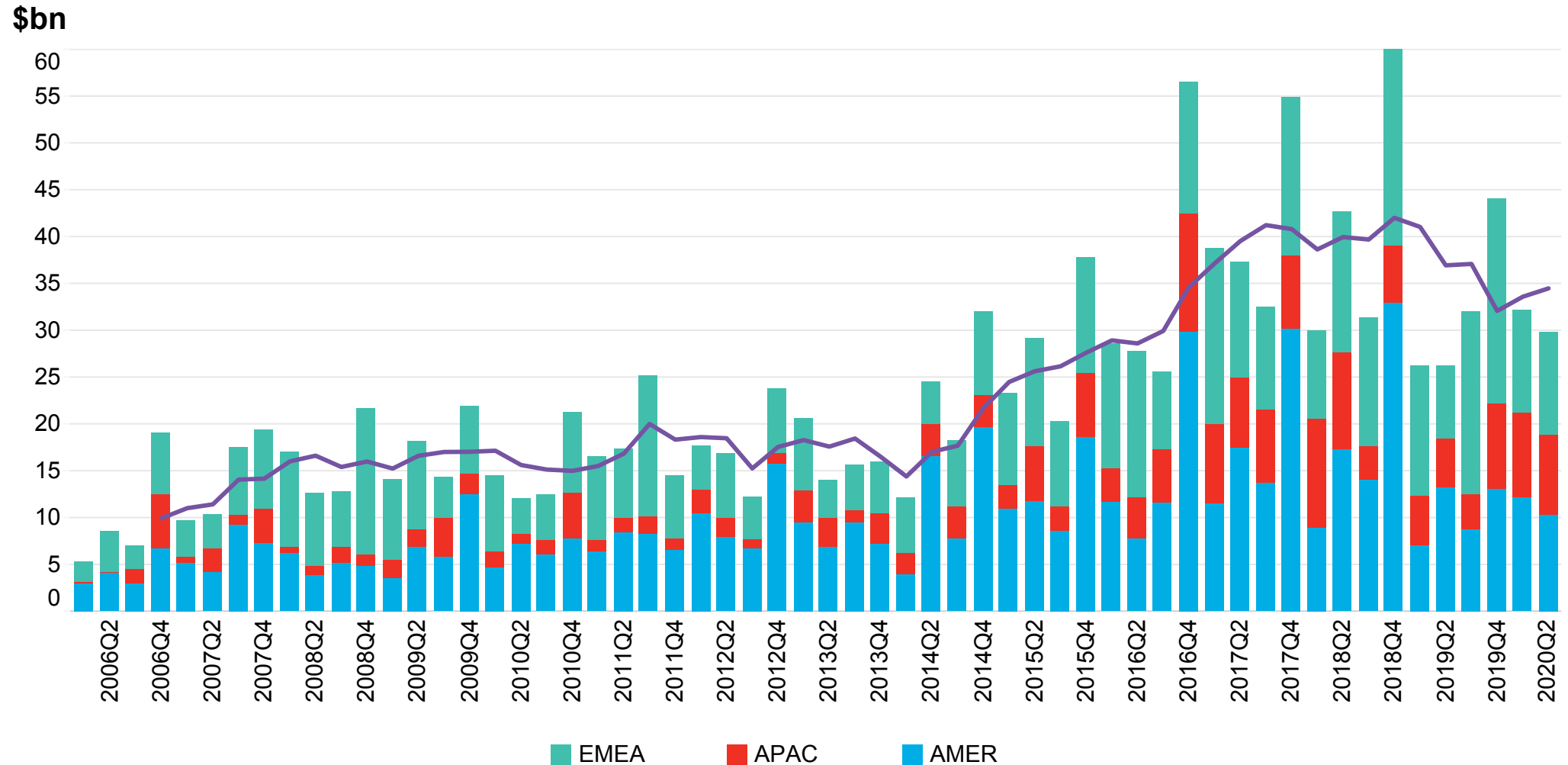
Quarterly trends since 1Q 2006



Quarterly trends, funds in circulation

Global clean energy, funds in circulation, by region

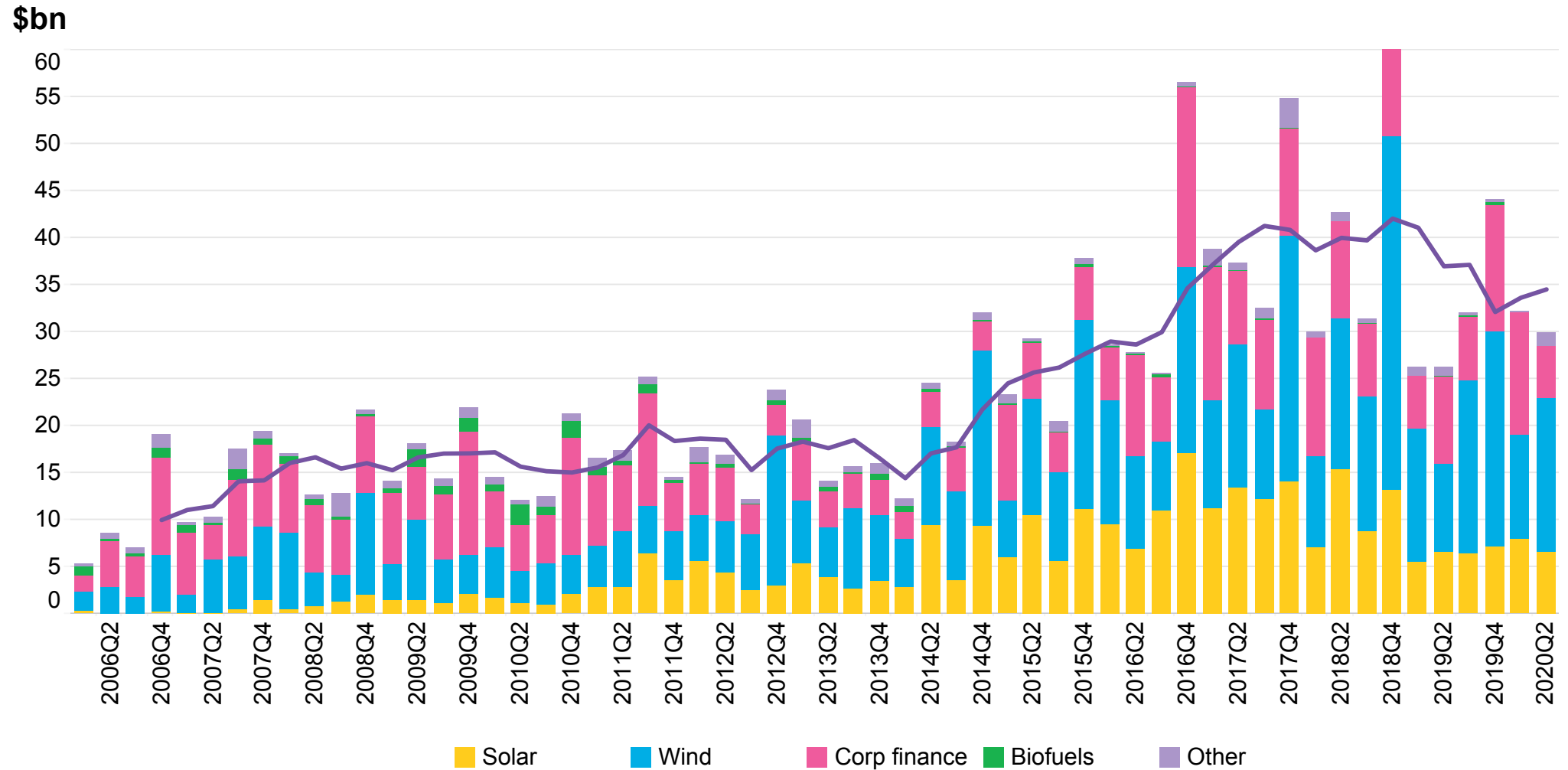
1Q 2006 - 2Q 2020



Quarterly trends, funds in circulation

Global clean energy, funds in circulation, by sector

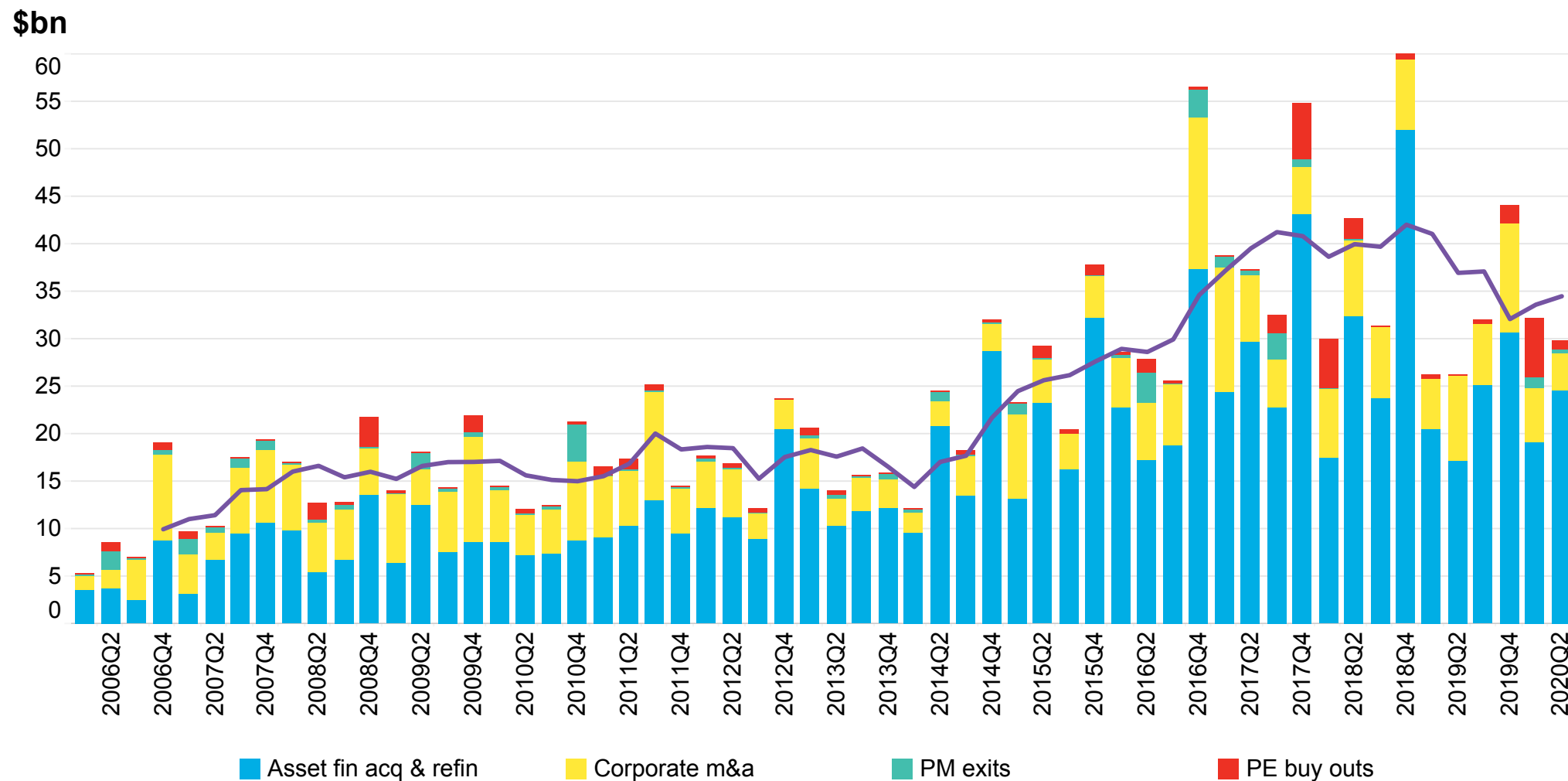
1Q 2006 - 2Q 2020



Quarterly trends, funds in circulation

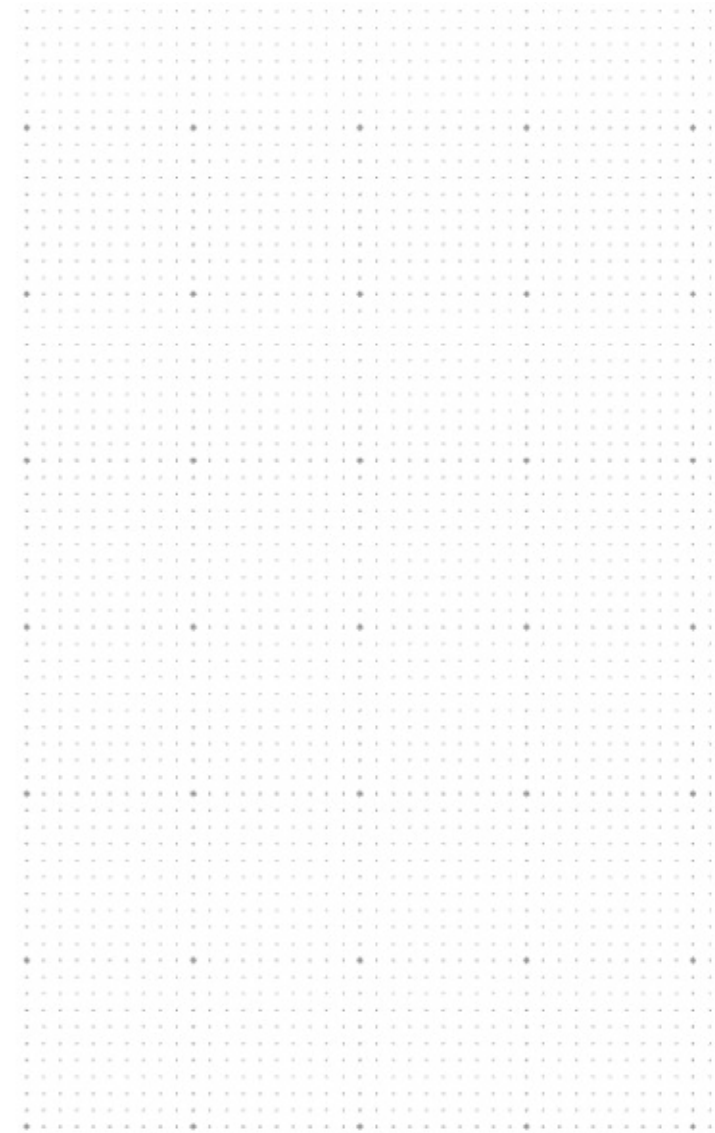
Global clean energy, funds in circulation, by asset class

1Q 2006 - 2Q 2020



Top deals

Top deals for 2020



Top asset finance deals

2020

Project Name	Country	Sector	Capacity	Value
Vattenfall Hollandse Zuid Offshore Wind Portfolio	Netherlands	Wind	1,540MW	\$3,850m
SSE Seagreen Offshore Wind Portfolio Phase I	United Kingdom	Wind	1,140MW	\$3,839m
CIP Changhua Zone Changfang Xidao Offshore Wind Portfolio	Taiwan	Wind	600MW	\$3,632m
EDF and Enbridge Fecamp Offshore Wind Farm	France	Wind	497MW	\$2,713m
Iberdrola St Brieuc Offshore Wind Farm	France	Wind	496MW	\$2,664m

Top venture capital & private equity deals

2020

Project Name	Country	Type of Transaction	Value
Altus Power America Inc	United States	PE Expansion	\$850m
Scale Microgrid Solutions Inc	United States	PE Expansion	\$300m
Alchemy Renewable Energy LLC	United States	PE Expansion	\$100m
Terres d'Energie SAS	France	PE Expansion	\$99m
Commonwealth Fusion Systems	United States	Venture Capital	\$84m

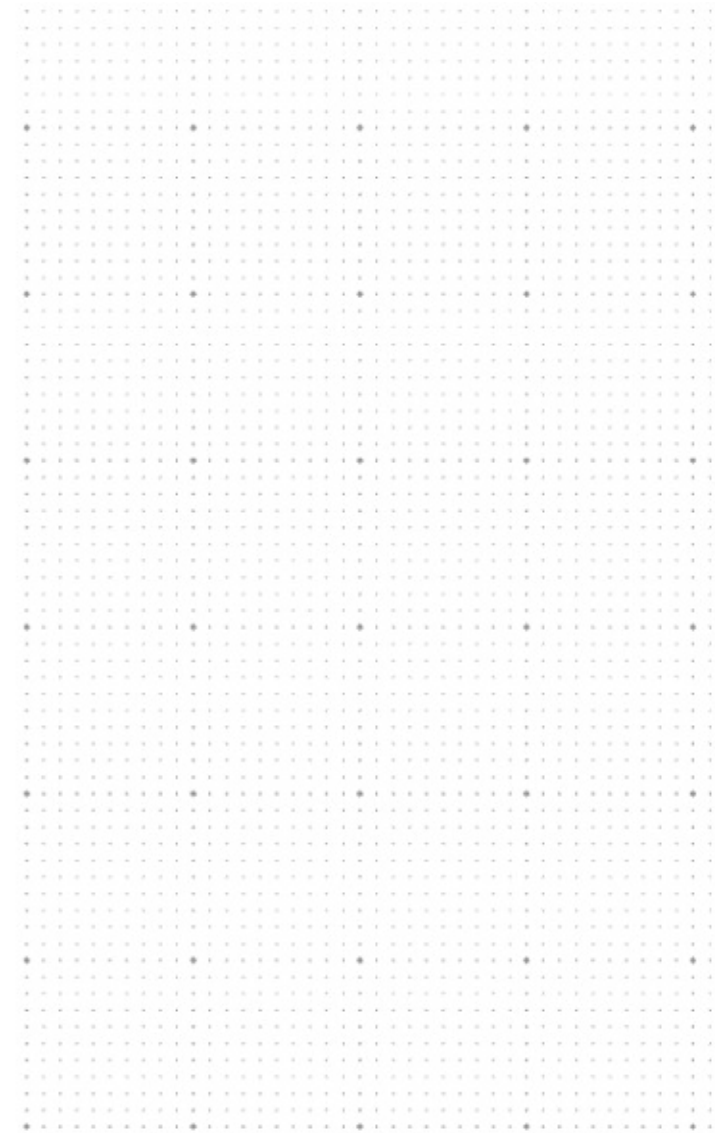
Top public market deals

2020

Project Name	Country	Type of Transaction	Equity Raised
Jinko Power Technology Co Ltd	China	IPO	\$366m
Trina Solar Co Ltd	China	IPO	\$359m
Enphase Energy Inc	United States	Convertible	\$320m
Plug Power Inc	United States	Convertible	\$200m
Scatec Solar ASA	Norway	Secondary	\$198m

Annual trends, new investment

Annual trends since 2006

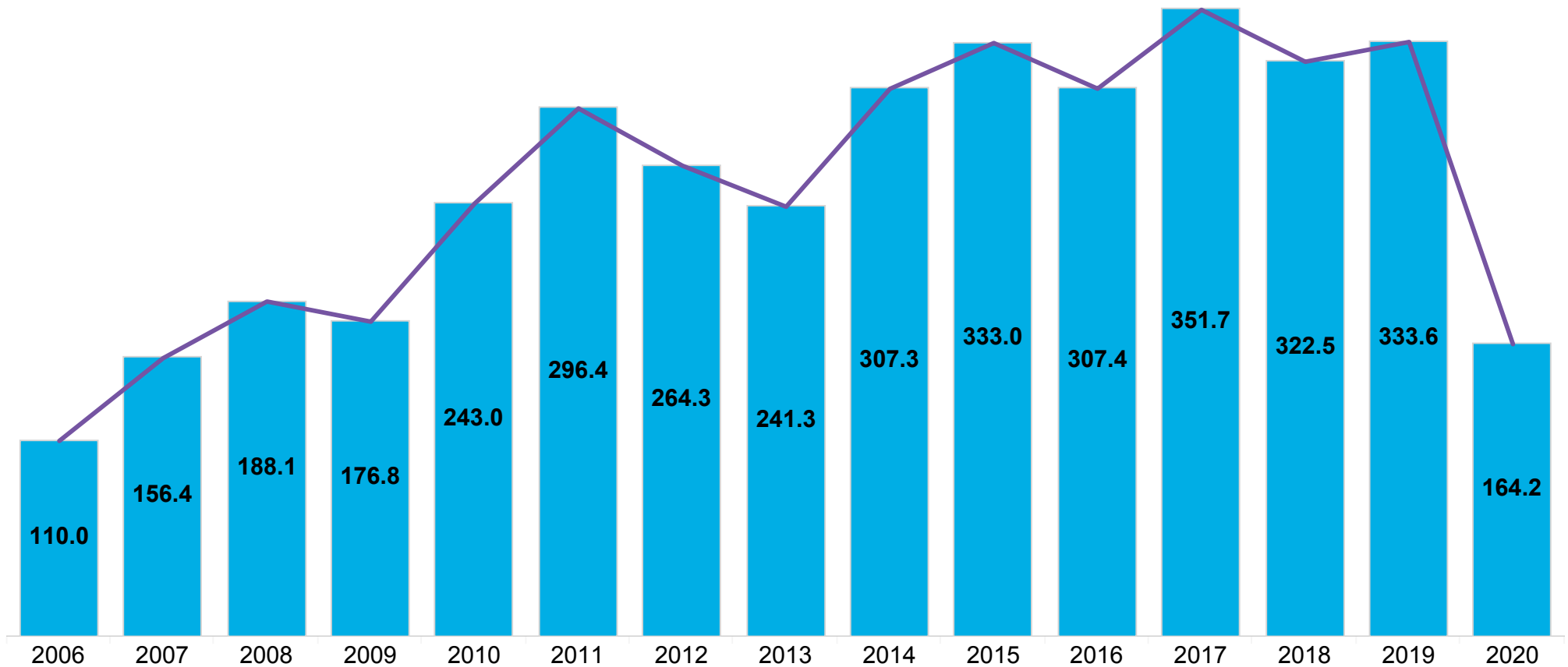


Annual trends, new investment

Global new investment in clean energy

2006 - 2020

\$bn

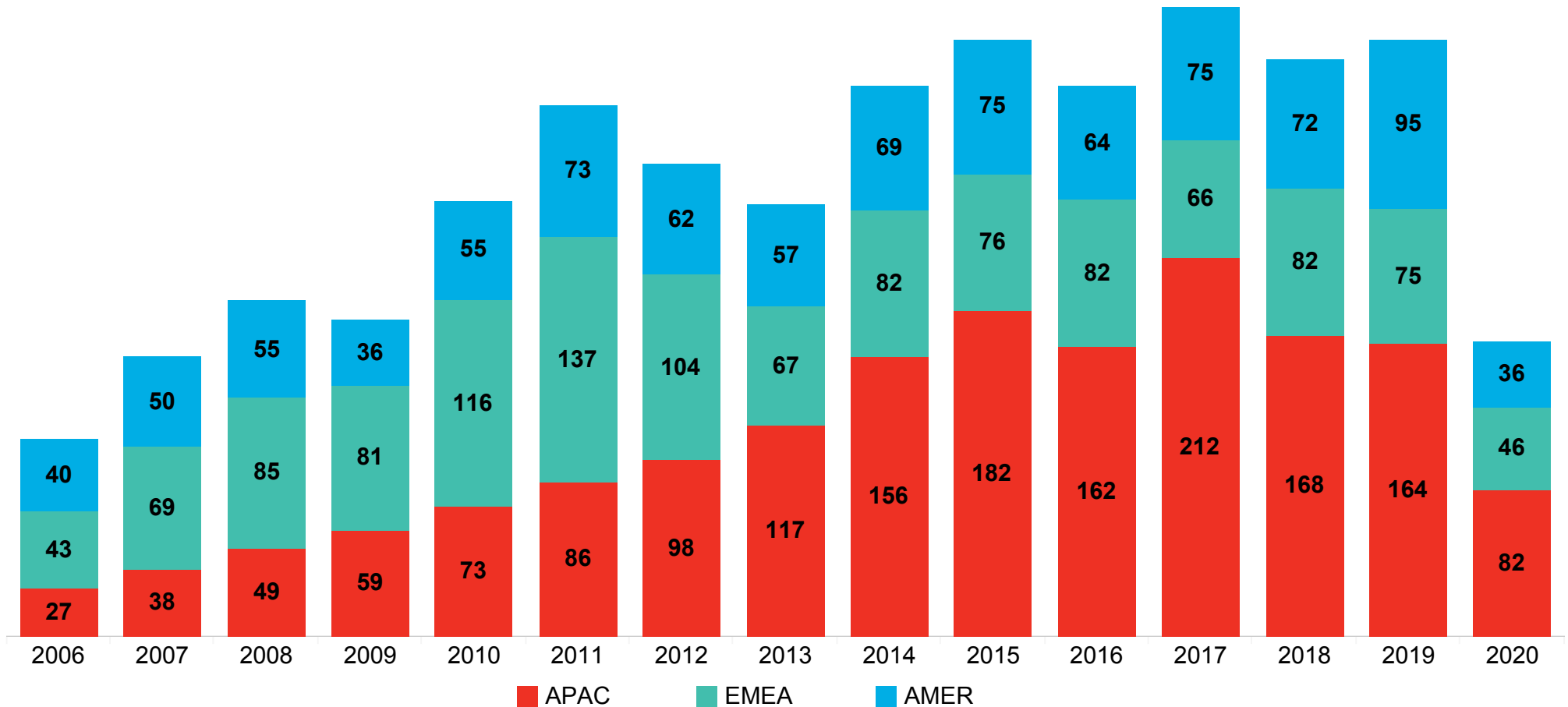


Annual trends, new investment

Global new investment in clean energy, by region

2006 - 2020

\$bn

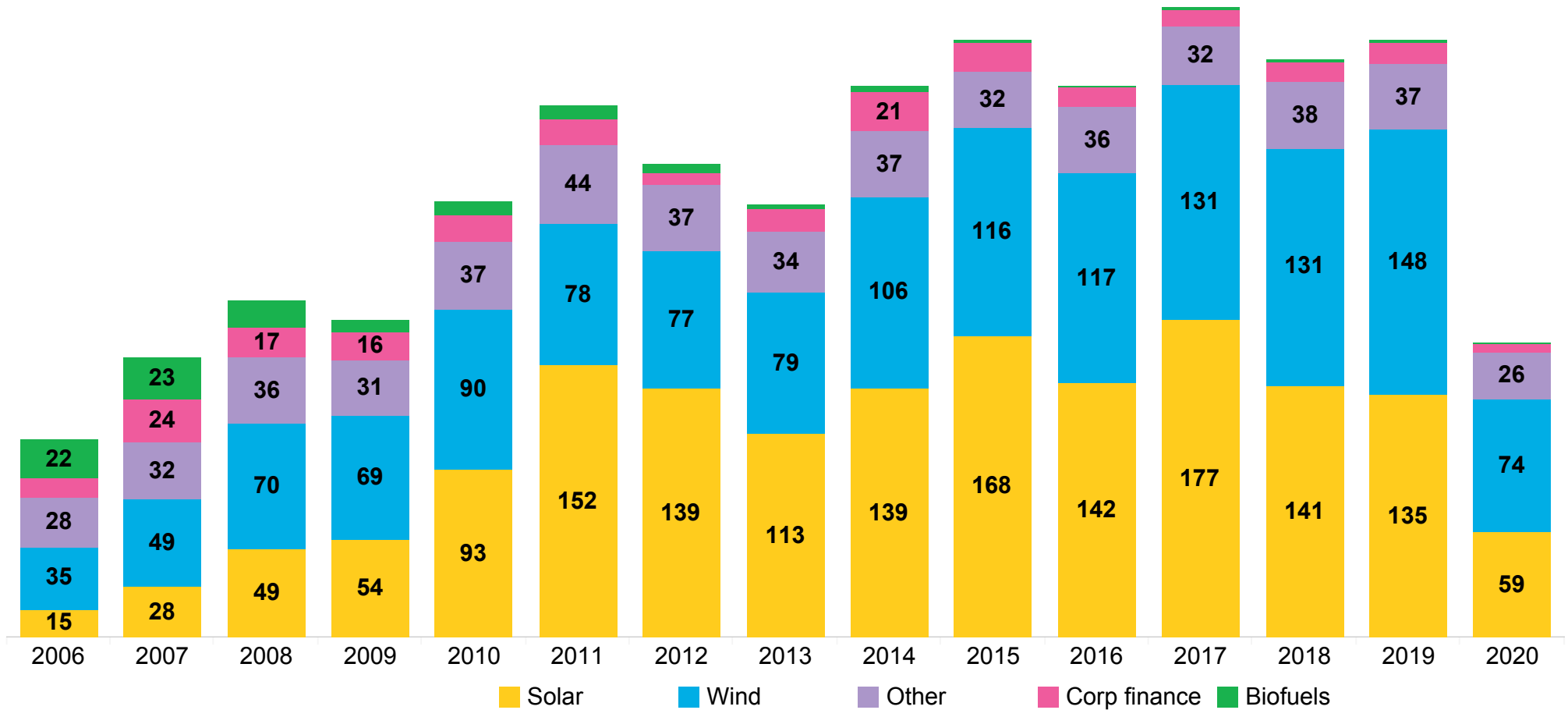


Annual trends, new investment

Global new investment in clean energy, by sector

2006 - 2020

\$bn

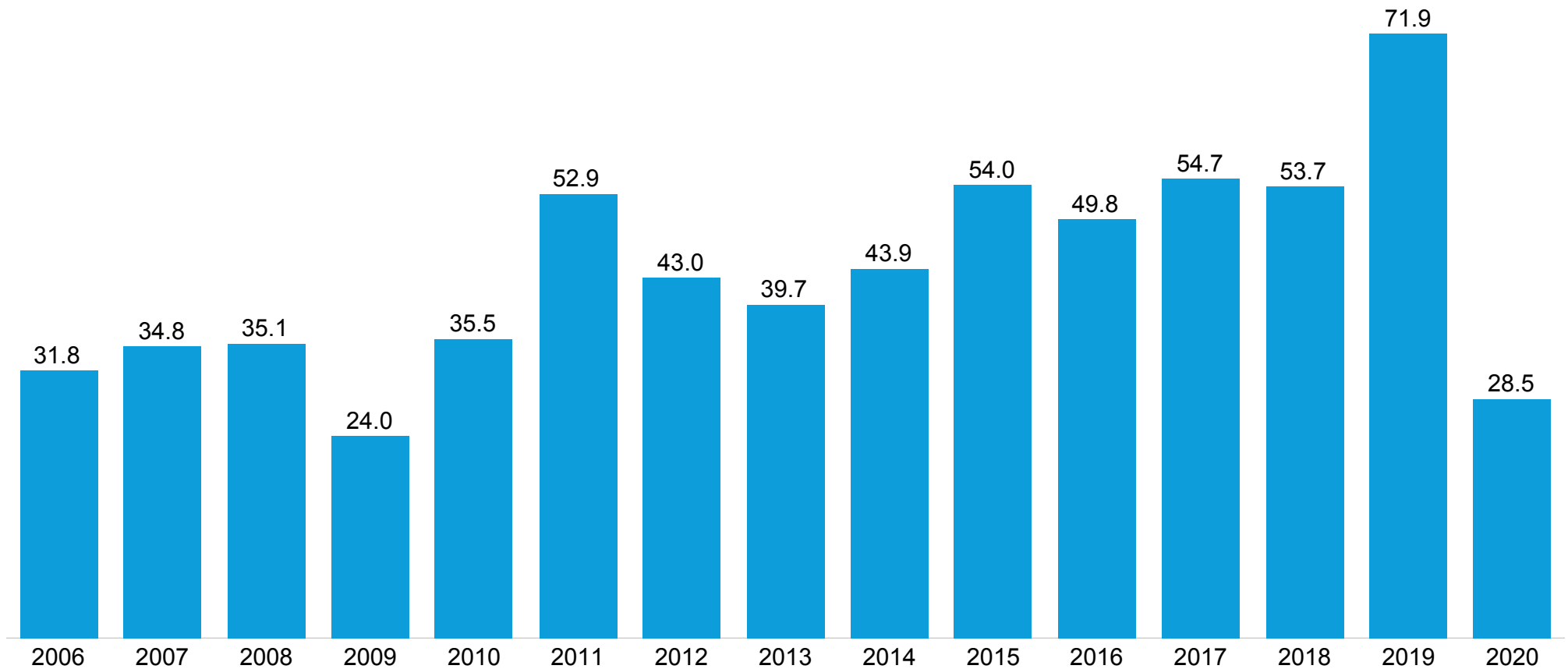


Annual trends, new investment

New investment in clean energy United States

2006 - 2020

\$bn

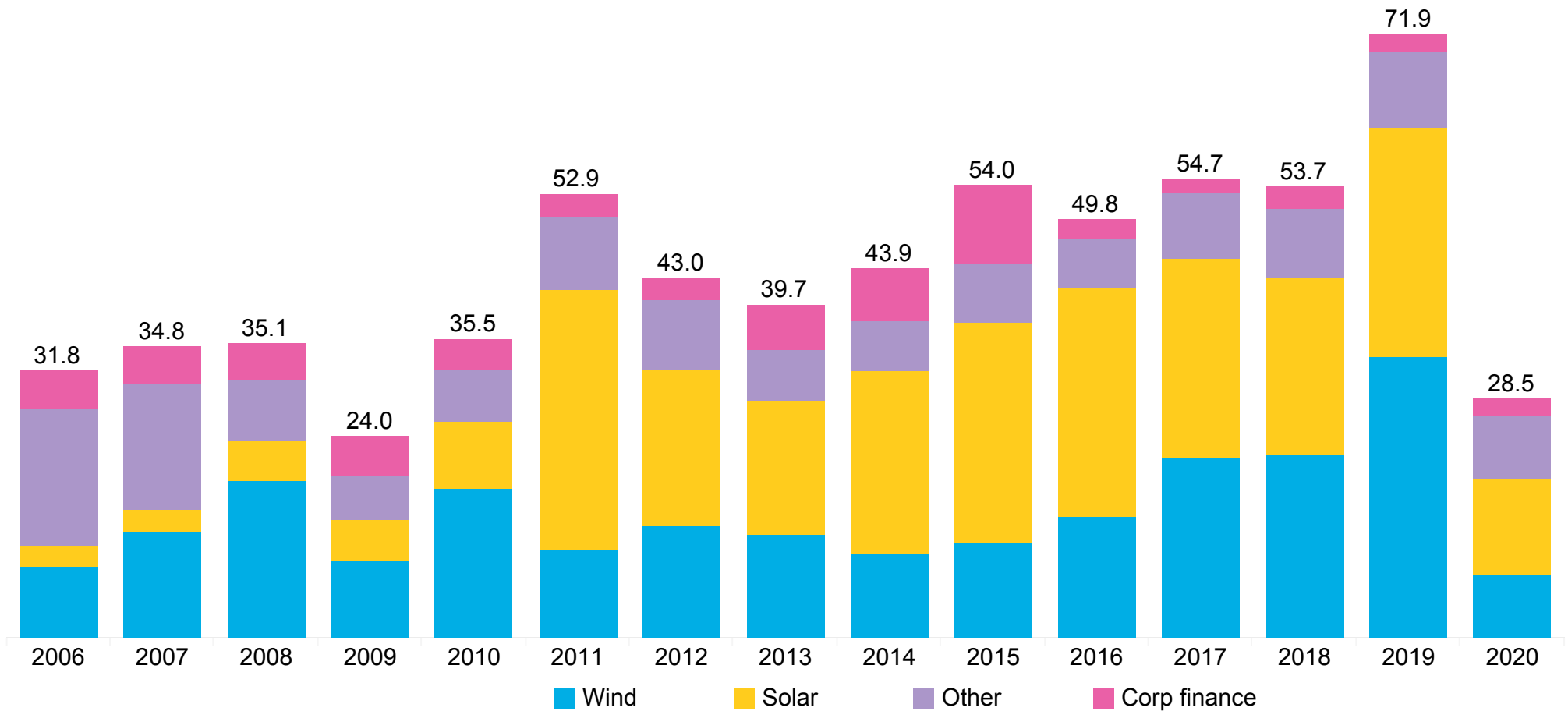


Annual trends, new investment

New investment in clean energy United States, by sector

2006 - 2020

\$bn

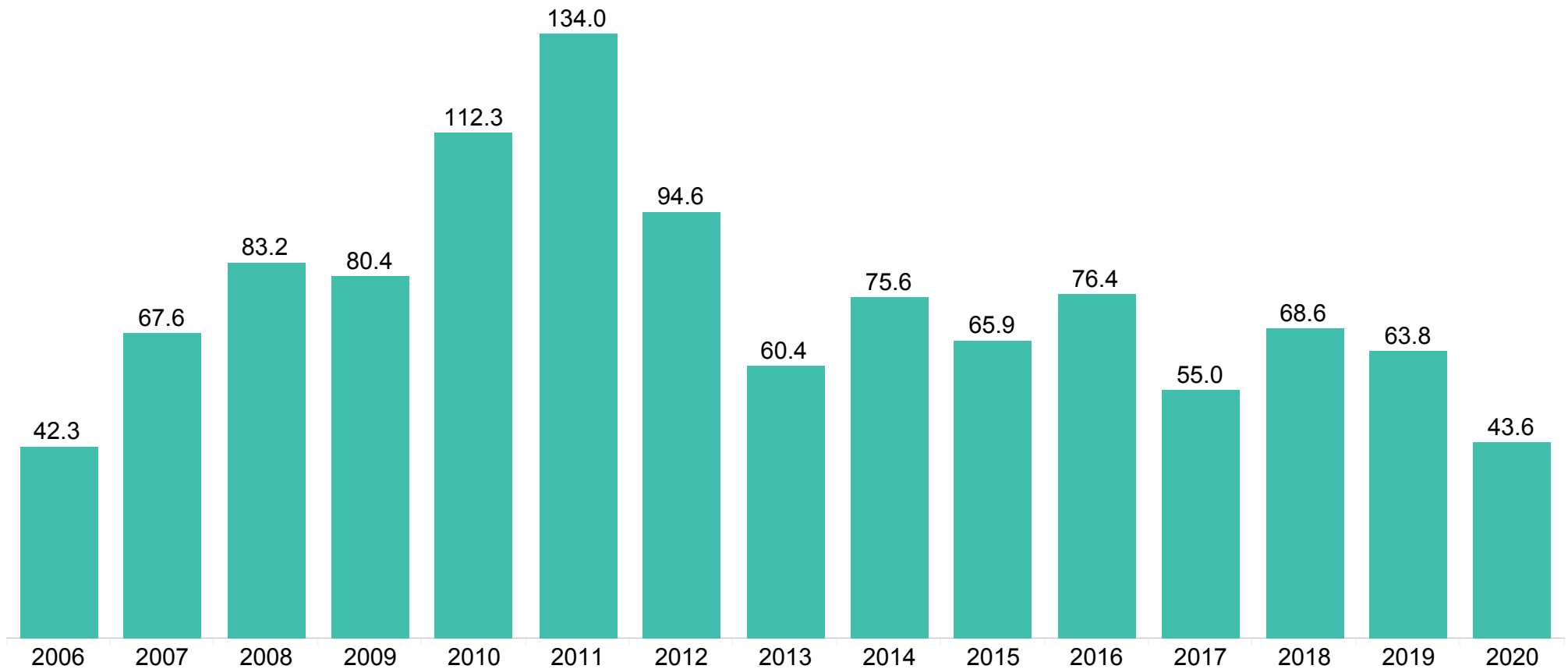


Annual trends, new investment

New investment in clean energy Europe

2006 - 2020

\$bn

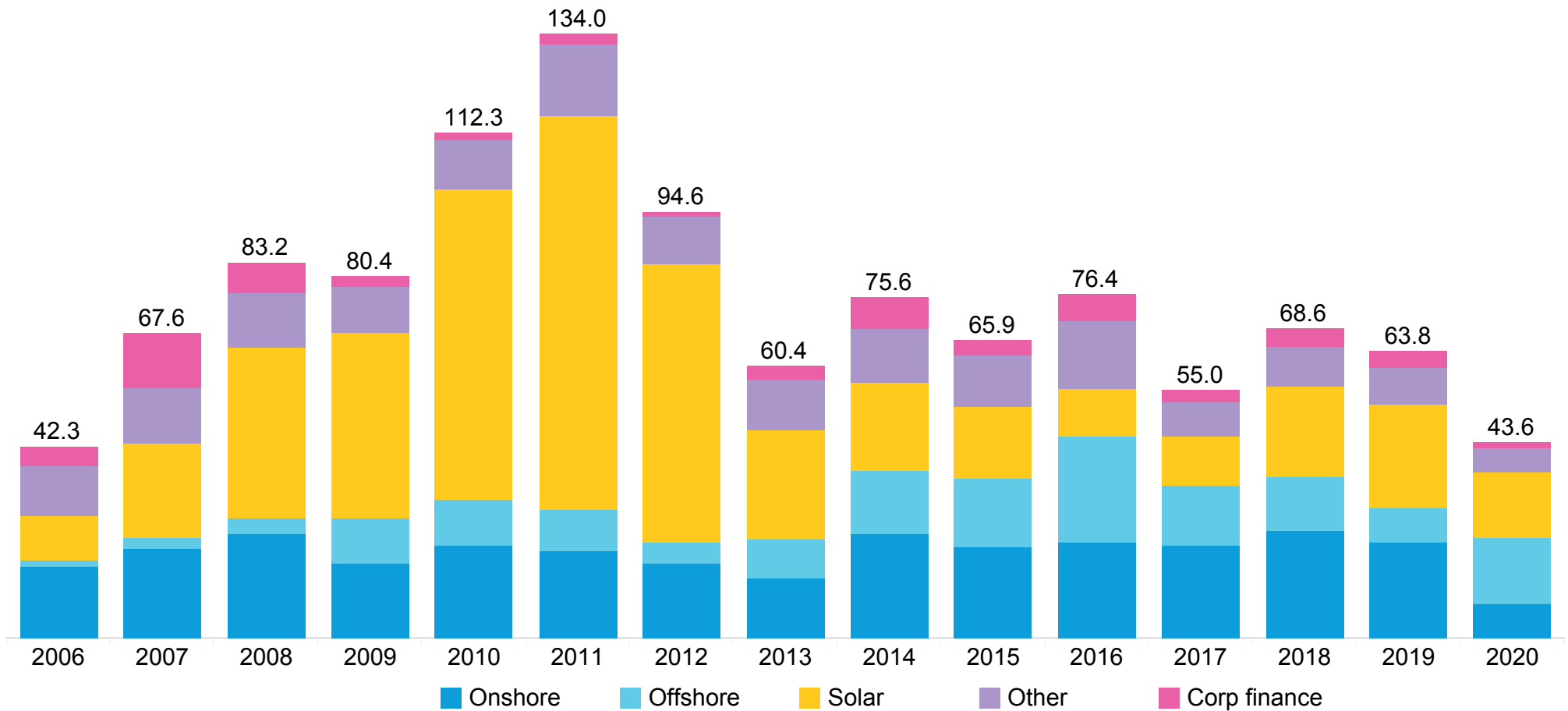


Annual trends, new investment

New investment in clean energy Europe, by sector

2006 - 2020

\$bn

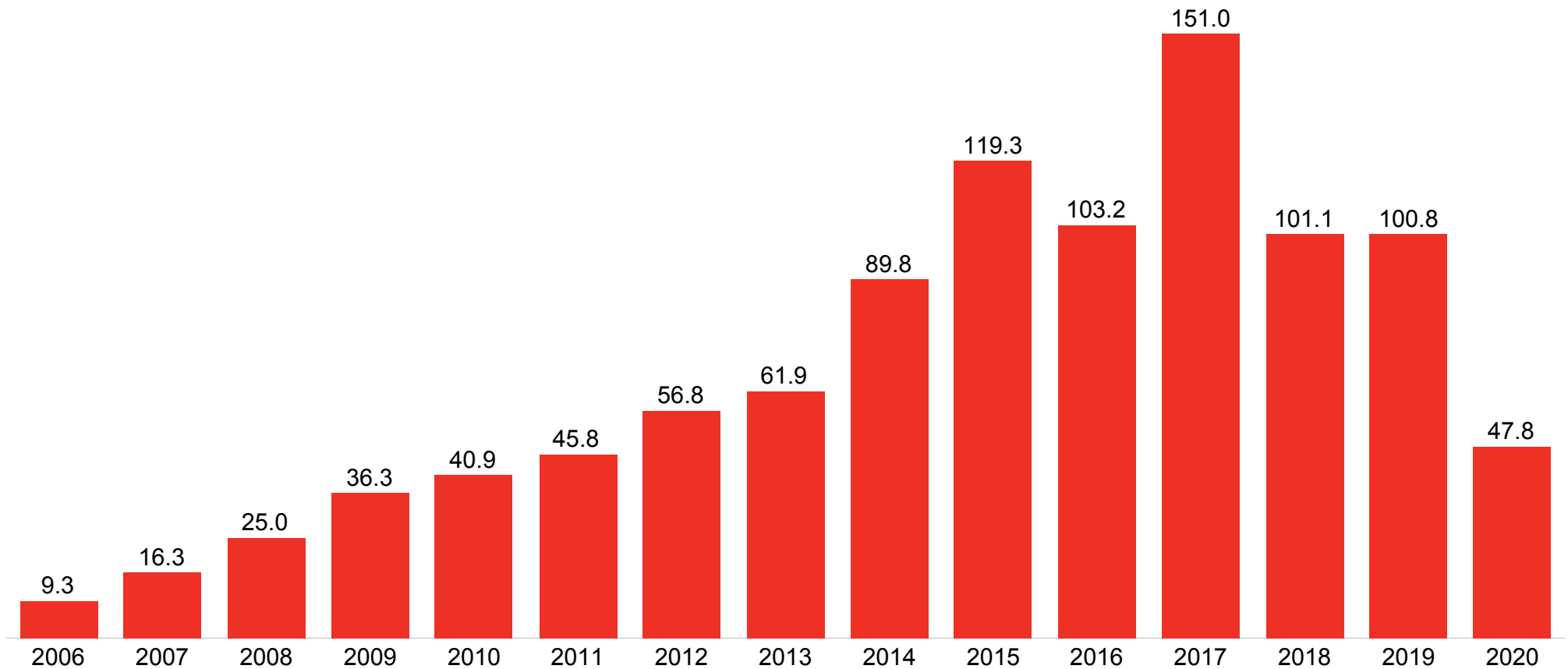


Annual trends, new investment

New investment in clean energy China

2006 - 2020

\$bn

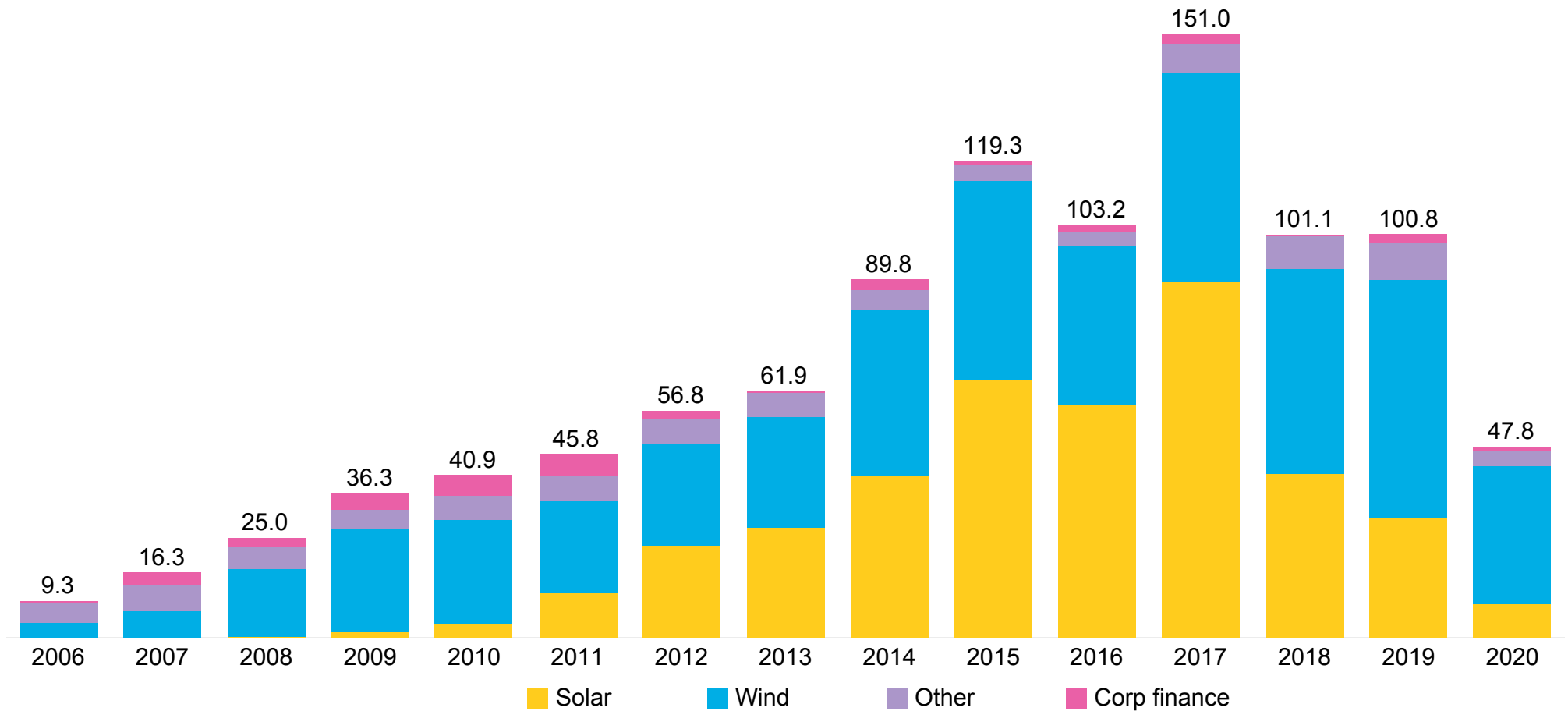


Annual trends, new investment

New investment in clean energy China, by sector

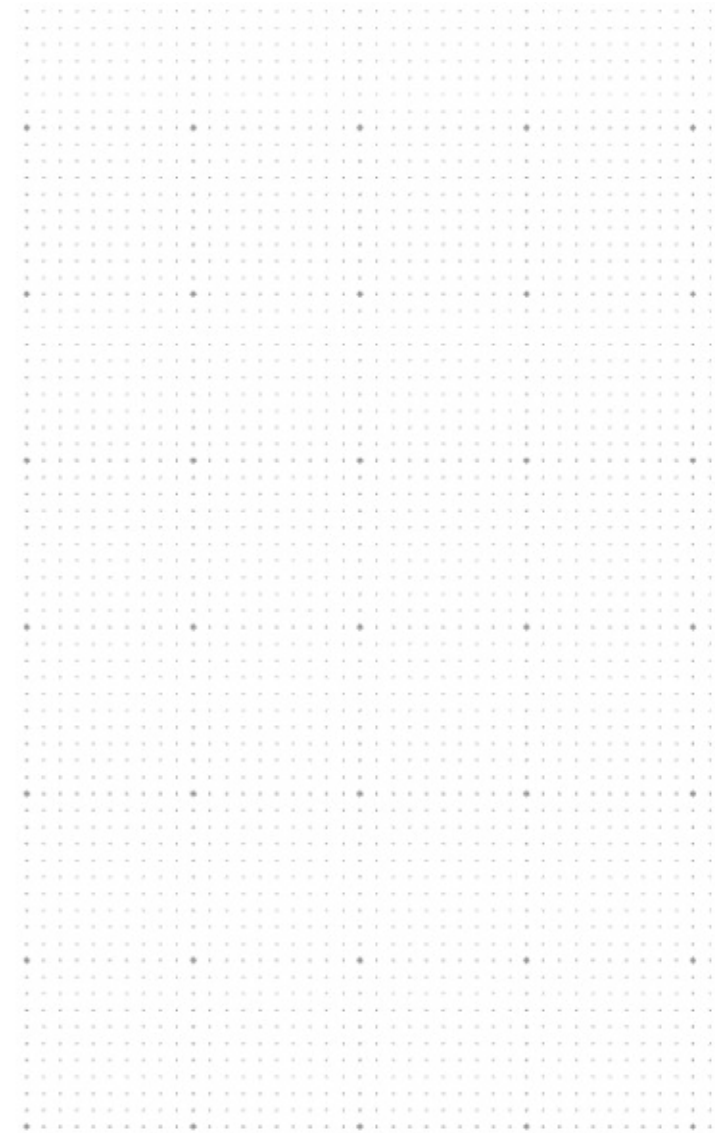
2006 - 2020

\$bn



Definitions and FAQs

How BloombergNEF defines clean energy



Definitions

Asset classes

Venture capital and private equity (VCPE)

Early and late stage venture capital funding rounds of pure play renewable energy companies as well as funds raised privately for the purposes of expansion.

Public markets (PM)

Funds raised by publicly quoted or OTC quoted pure play renewable energy companies on the capital markets. This may be through IPOs or follow-on offerings like secondary offerings, private investment in public equity or PIPEs, convertibles etc.

Asset finance

The new build financing of renewable energy generating projects as well as smart metering and energy storage projects - smart metering and energy storage investment are only reported annually. Renewable energy generating projects includes both electricity generating and biofuels producing assets. Projects may be financed off the owner's balance sheet, or through financing mechanisms such as project finance, syndicated equity from institutional investors, or project bonds underwritten by banks.

Re-invested equity

Isolates values for balance sheet-financed project investments by companies who have raised money privately or publicly over the past 12 months. The purpose of this category is to prevent double counting of money raised publicly or privately that has been invested in clean energy assets.

Small scale solar

Given the technical limitations in tracking small-scale solar projects, BloombergNEF's asset finance database excludes projects below roughly 1MW. Unlike utility scale asset investment, small-scale solar investment is based on top-down analyst estimates.

Government R&D

Government r&d figures are sourced from the IEA, IMF, OECD, and various government agencies.

Corporate R&D

The Bloomberg Terminal is used to source corporate r&d figures for key quoted companies in all clean energy sectors.

Definitions

Sectors

Wind

Electricity generation using wind turbines. Included in this sector, are players across the entire value chain of both onshore and offshore developments. From manufacturers of turbines, components and subassemblies to developers, generators, utilities and engineering firm.

Solar

All technologies which capture energy directly from the sun. These include production of electricity using semiconductor-based photovoltaic (pv) materials, use of concentrated sunlight to heat fluids that drive power generation equipment (solar thermal), and passive methods which use sunlight to heat water. Whilst company level investment of passive methods is recorded, investment in passive projects is not.

Biofuels

Liquid transportation fuels including biodiesel and bioethanol. These can be derived from a range of biomass sources, including sugar cane, rape seed, soybean oil or non-food cellulosic feedstock. Our database excludes producers of base biomass, but includes suppliers of everything from the processing technologies and equipment, through the logistics of distribution, to manufacturers of energy systems which are specially adapted for the use of biofuels and products, and the services on which they depend.

Biomass & waste

Electricity and/or heat produced with bio-based feedstocks, typically through incineration but also through more advanced processes like gasification or anaerobic digestion. This sector also includes waste-to-energy which includes energy produced through landfill gas projects and incineration of municipal and industrial waste.

Energy smart technologies

This sector covers technologies like digital energy, smart grids, power storage, hydrogen and fuel cells, advanced transportation and energy efficiency on both the demand and supply side.

Other renewables

Includes small hydro - hydro projects with capacities smaller or equal to 50MW; geothermal - extraction of useful power from heat stored in the earth; marine - the extraction of tidal, wave and thermal energy from the ocean.

FAQs



Q1: Why is there a difference between the sum of the quarterly figures and the annual figures?

Quarterly figures do not include certain asset classes which we only produce annually. These asset classes are corporate and government r&d and asset finance for energy smart technologies, in other words, smart meters and energy storage investment

Q2: Which countries are included in Europe?

Europe includes all 28 EU countries, and non-EU countries like Switzerland, Norway, Turkey and Russia. The majority of clean energy investment stems from the EU though

Download the underlying data and create your own charts

BloombergNEF clients can navigate to the web platform (BNEF.com) or run BNEF <GO> in a terminal window to download the relevant data that supplies this publication. Customizable charts and data sets are available for further insight relating to clean energy investment.



Clean energy investment was \$76.7 billion in the second quarter of 2018, up 8% year-on-year, the increase driven by stronger activity in the U.S. and, to some extent, Europe.

Angus McCrone
Chief Editor

Jonathan Gardiner
Analyst, Clean Energy Finance

[View full report and source data](#)

Clean Energy Investment 2004-18 (\$bn)



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Run BNEF <GO>, click "BNEF Tools", click "Clean Energy" and select "Investment"

Log onto BNEF.com, hover over "Flagship" and click "Clean Energy Investment"

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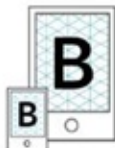
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