CLIMATE POLICY INITIATIVE

Global Landscape of Climate Finance 2021

Preview

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Related CPI works:

Net Zero Finance Tracker
Global Landscape of Climate Finance 2019
Paris Misaligned – An Assessment of Global Power Sector Investment
Framework for Sustainable Finance Integrity
Energizing Finance: Understanding the Landscape 2021

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About CPI: CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has six offices around the world in Brazil, India, Indonesia, Kenya, the United Kingdom, and the United States.

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1. Executive Summary

The Global Landscape of Climate Finance provides the most comprehensive overview of global climate-related primary investment.

CPI reports two-year averages in USD billions (2019 and 2020) to smooth out annual fluctuations in data.

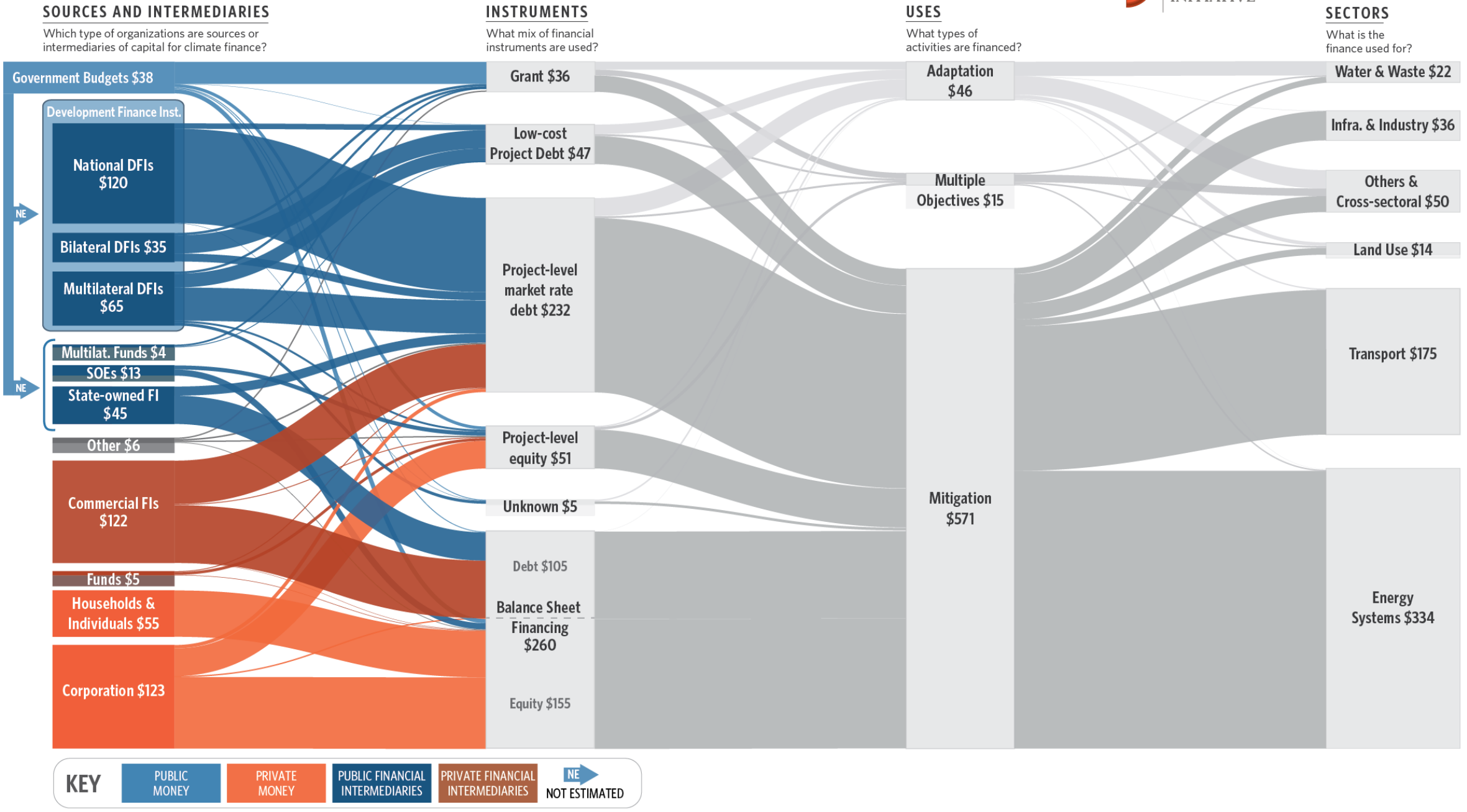
Note: Numbers in figures in this report may not sum exactly due to rounding

LANDSCAPE OF CLIMATE FINANCE IN 2019/2020

Global climate finance flows along their life cycle in 2019 and 2020. Values are average of two years' data, in USD billions.

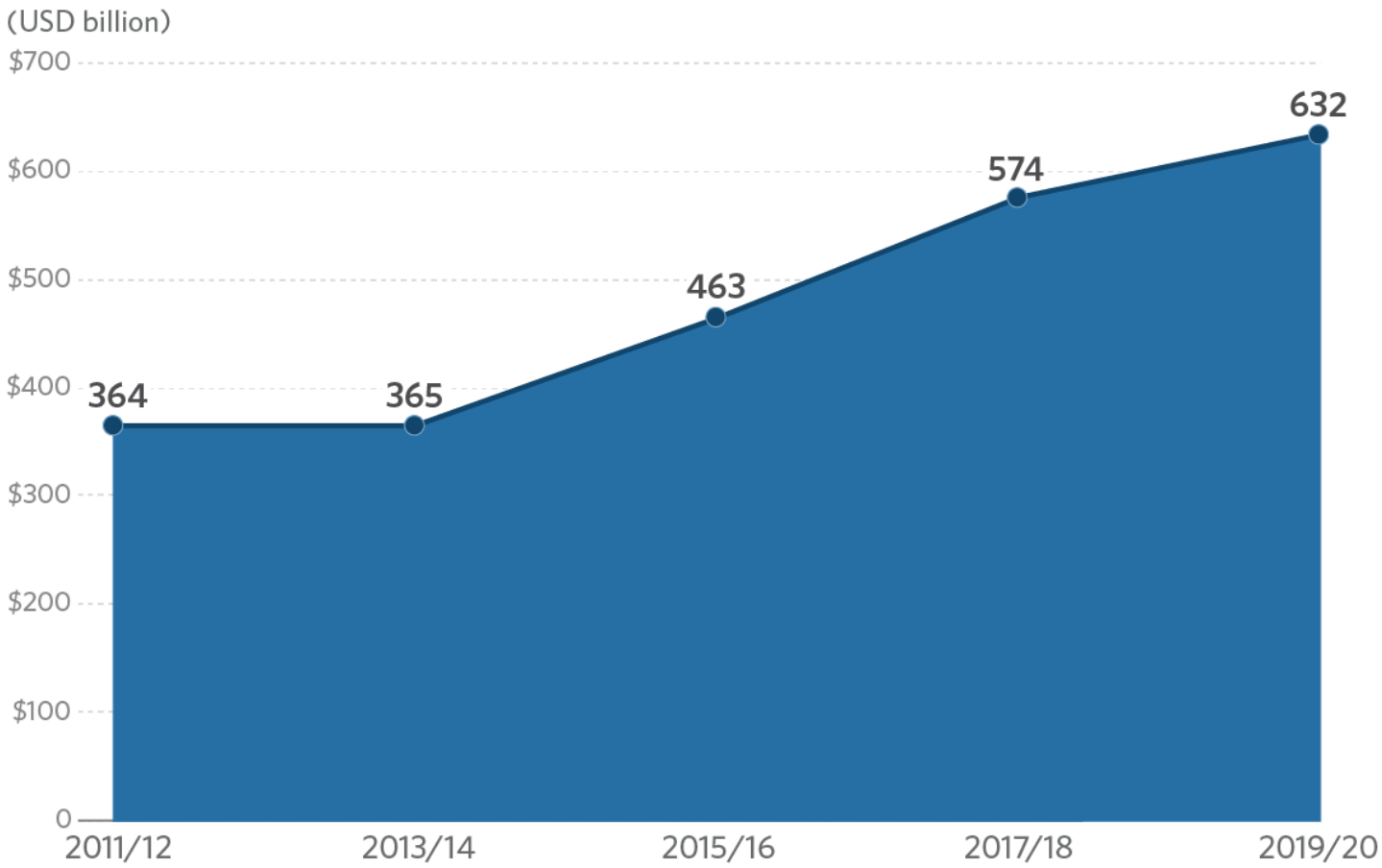
632 BN USD ANNUAL AVERAGE

CLIMATE POLICY INITIATIVE



Global climate finance flows reached USD 632 billion in 2019/2020, but with tepid growth rate

Figure 1.2: Global climate finance flows between 2011 – 2020, biannual averages (USD bn)



Public and private actors steadily increased their climate investments in the last decade, but flows largely plateaued in the last few years.

This is worrying given COVID-19's impact on climate finance is yet to be observed.

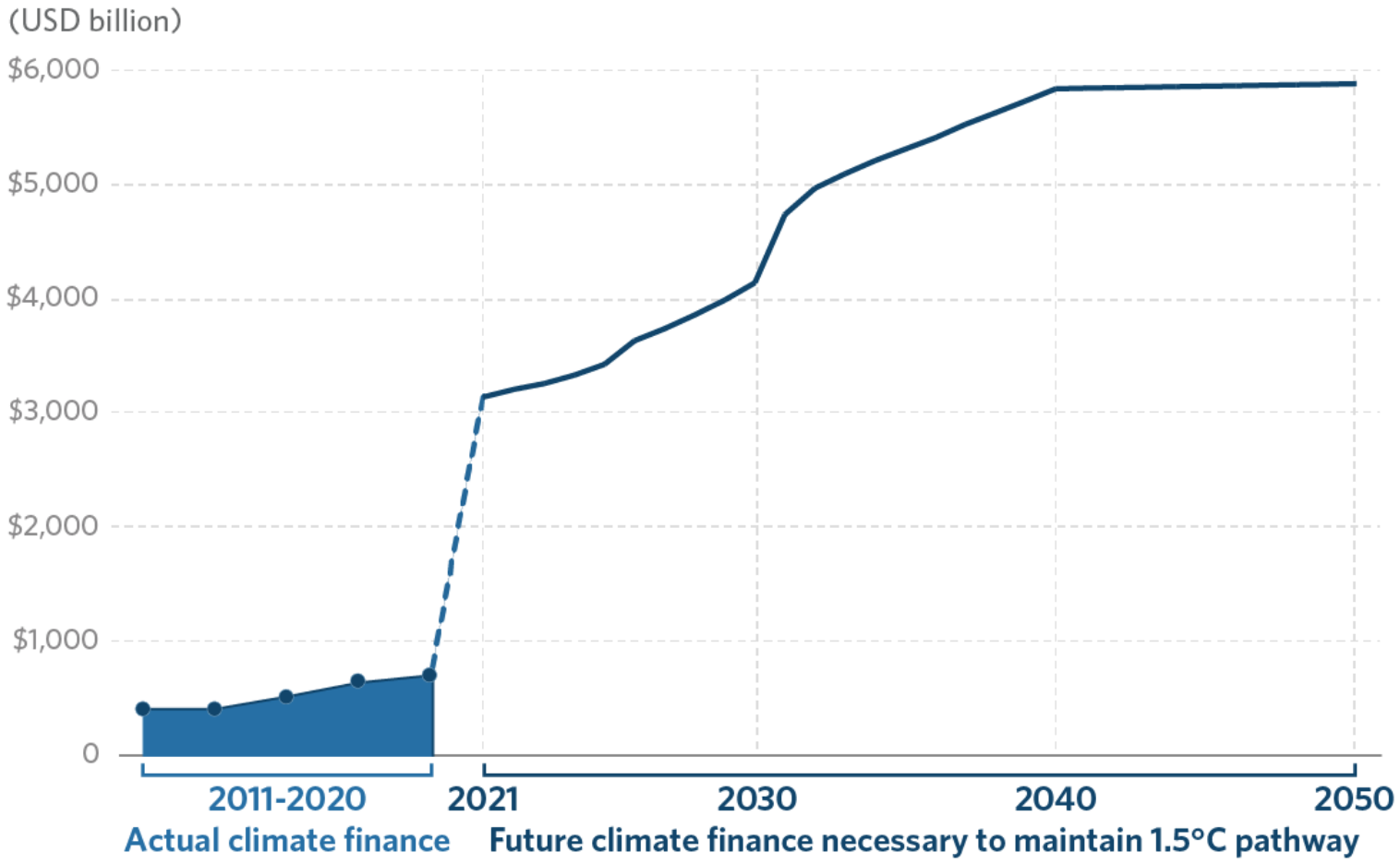
The increase between 2017/2018 and 2019/2020 was only 10%, much slower than previous periods.

Annual climate finance flows between 2013/2014 and 2017/2018 grew more than 24% each period.

Note: 2020 investment numbers were based on preliminary estimates. Further primary data on 2020 international public finance becomes available in 2022.

Current investment levels are nowhere near enough to limit global warming to 1.5 °C

Figure 1.3: Global tracked climate finance flows and the average estimated annual climate investment need through 2050



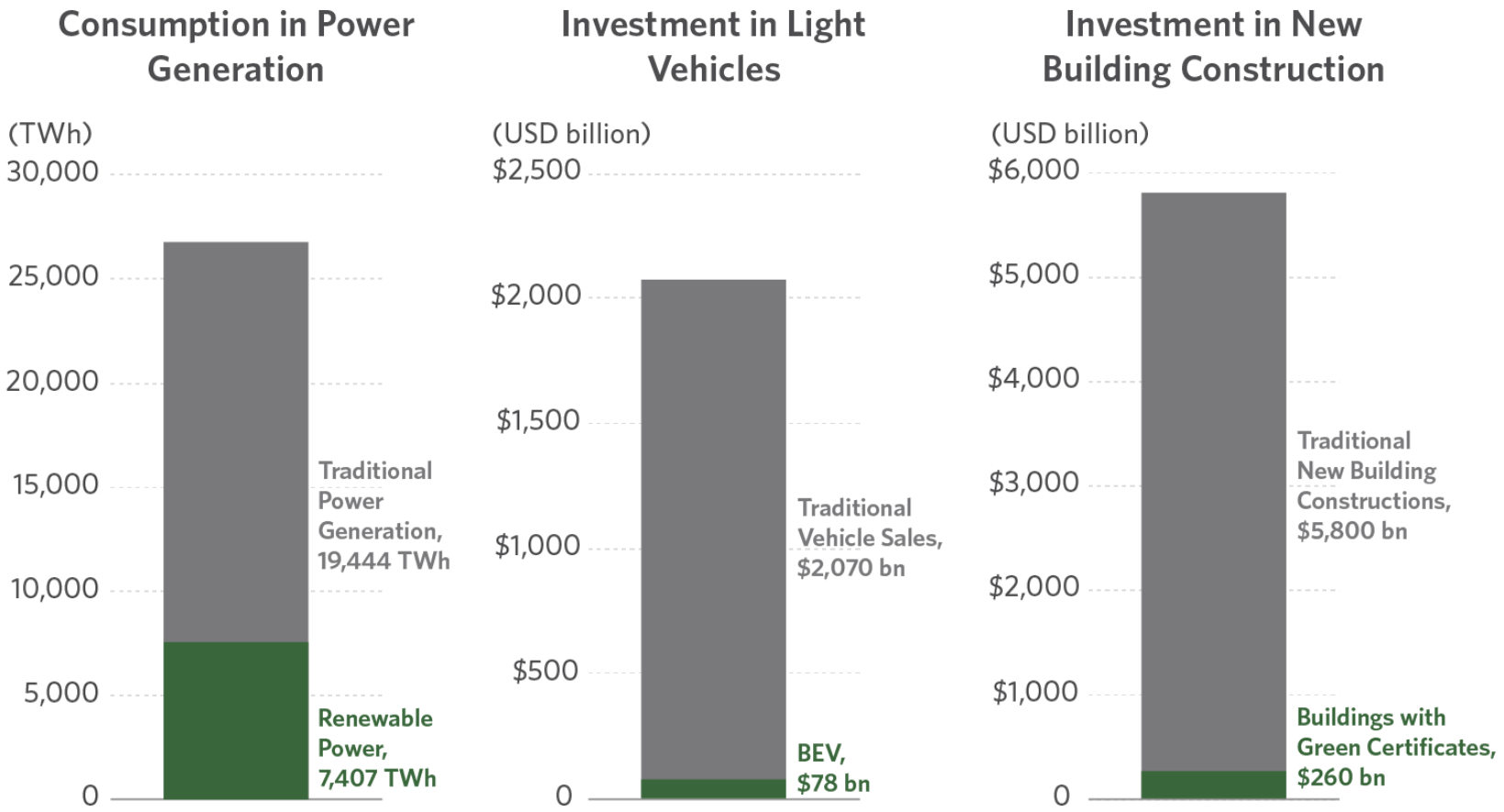
We have analyzed and aggregated data sources and scenarios that explore climate finance needs for energy systems, buildings, industry, transport, and other mitigation and adaptation solutions.

And to meet our climate objectives, by 2030 annual climate finance must increase by at least 590% to USD 4.35 trillion.

Note: Further details on the investment need and the data sources used are available in Annex II.

Achieving net zero will require all public and private actors to align their finance with Paris goals

Figure 1.4: Renewable power consumption compared to overall electricity consumption and climate positive investment compared to overall investment in light vehicles and new building construction

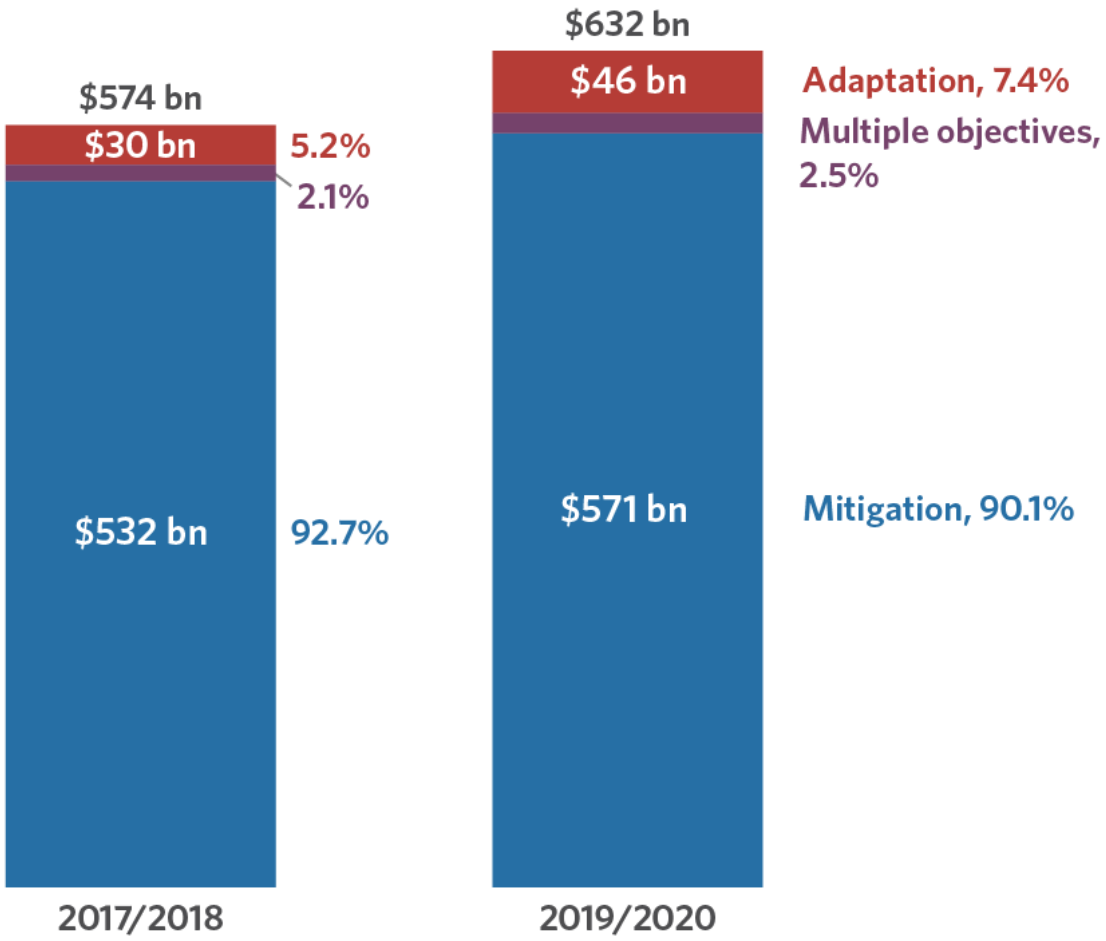


Climate-positive investment still represents only a small fraction of the overall investment in high-emitting sectors. In the meantime, the world largely consumes fossil fuel based electricity.

While many institutions have started to take some action on climate change through net zero pledges and emission reduction targets, **action in the real economy lags**.

A majority of climate finance went to mitigation, but adaptation finance is gaining momentum

Figure 1.5: Biannual average climate finance by mitigation, adaptation and dual objectives (USD bn)



Mitigation finance reached USD 571 billion in 2019/2020, while **adaptation finance commitments totaled USD 46 billion**.

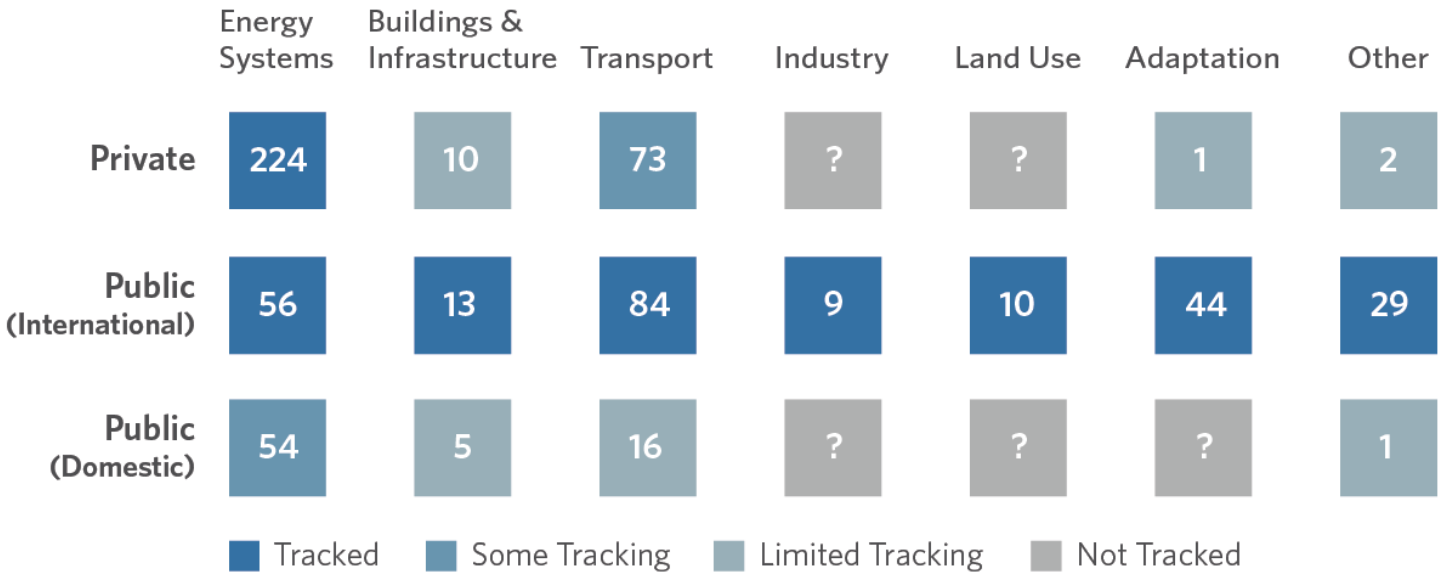
A further USD 15 billion went to projects with **dual benefits** (mitigation and adaptation).

Annual adaptation finance increased by almost 53% in 2019/2020 compared to 2017/2018. Projects with **dual objectives** increased by 23%, showing increased participation from the private sector.

The public sector continues to provide almost all of adaptation finance, while the private sector mostly provides mitigation finance.

Data gaps and methodological issues limit our understanding of progress and impact

Figure 1.6: Data gaps in climate finance (USD bn, 2019/2020 annual average)



Qualitative information on the impact of climate finance continues to be dispersed and scarce.

Metrics and definitions are non-standardized.

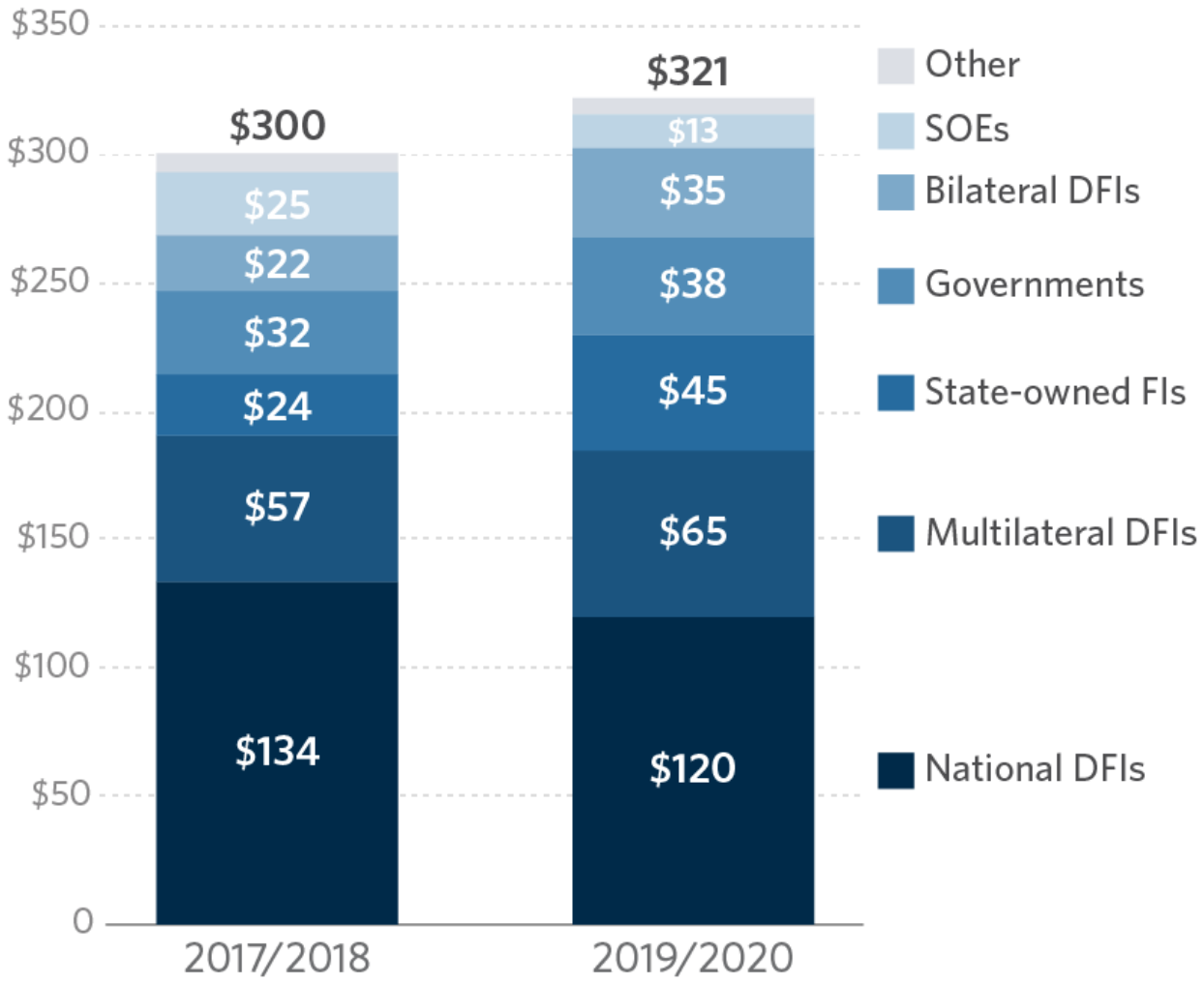
For example, finance for buildings with high energy and thermal insulation performances – green buildings – is growing fast but lacks transparency.

2. Sources and Intermediaries

The Landscape tracks direct primary investment in climate-related infrastructure by each of the public and private actors.

Public actors provided 51% (USD 321 billion) of annual climate finance

Figure 2.1: Public investment by institutions (USD bn)



Tracked climate finance provided by public sources remained largely stable at 51% of the total. By refining* our understanding of state-owned entities' role, we see that the public sector plays a more prominent role than previously thought.

DFIs continue to provide the majority of public finance, contributing 68% (USD 219 bn).

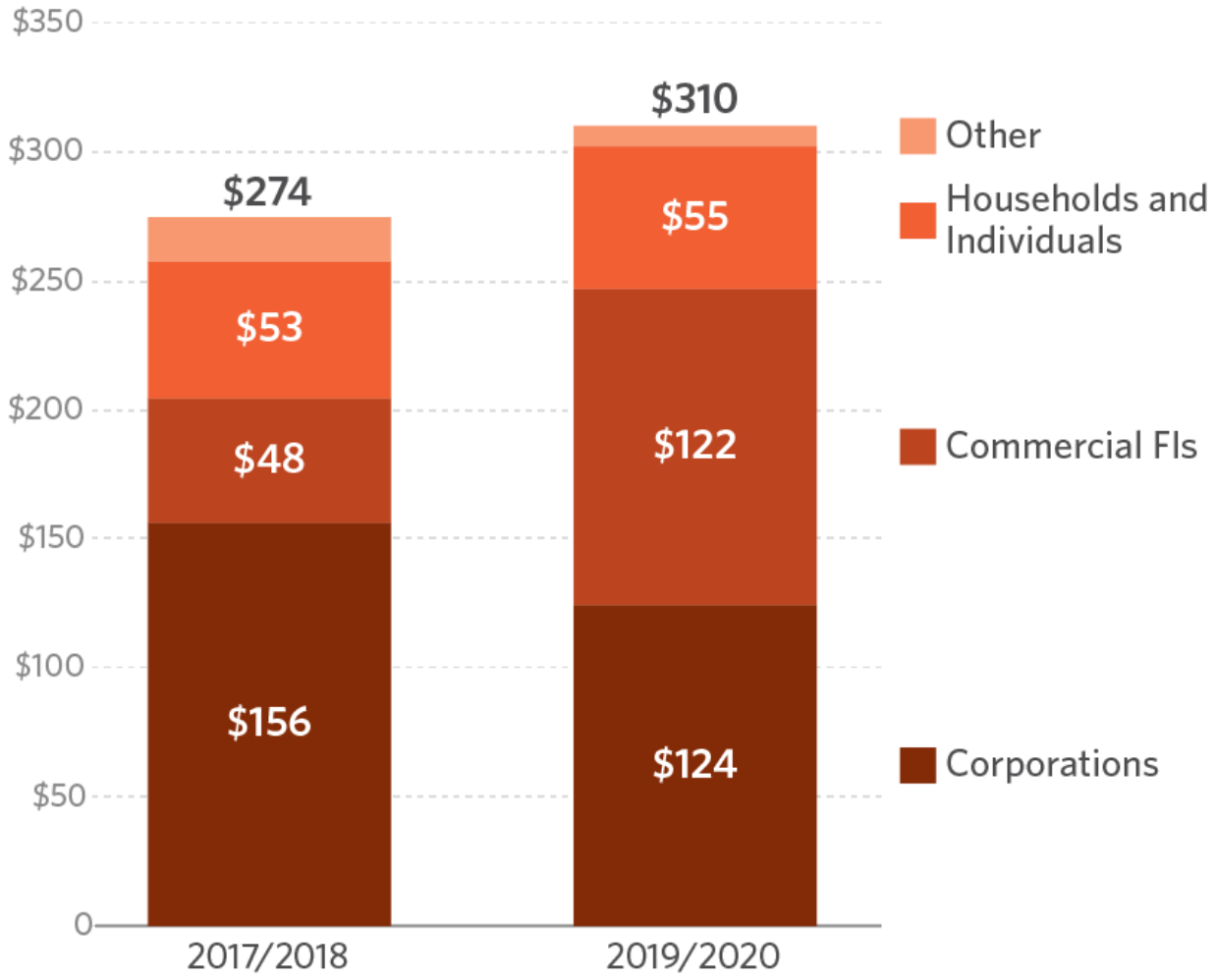
State-owned FI share increased to 14% in 2019/2020. This increase is partly due to improved data points on the flows in East Asia and Pacific as well as an uptake of renewable energy financing in the region.

Tracked climate finance from government increased 17% in 2019/2020, accounting for 12% of public flows. As in previous years, the growth is driven by low-carbon transport and delivered primarily through grants.

* This methodological change can be found in the *Updated View on the Global Landscape of Climate Finance 2019*.

Private actors provided 49% (USD 310 billion) of annual climate finance

Figure 2.2: Private investment by institution type (USD bn)



Private investment increased 13% from the 2017/2018 average.

Commercial financial institutions made the biggest stride in growth, increasing their share from 18% to 39%.

Banks are playing a more prominent role as an intermediary of sustainable and green debt instruments as well as broader trend of setting climate related targets.

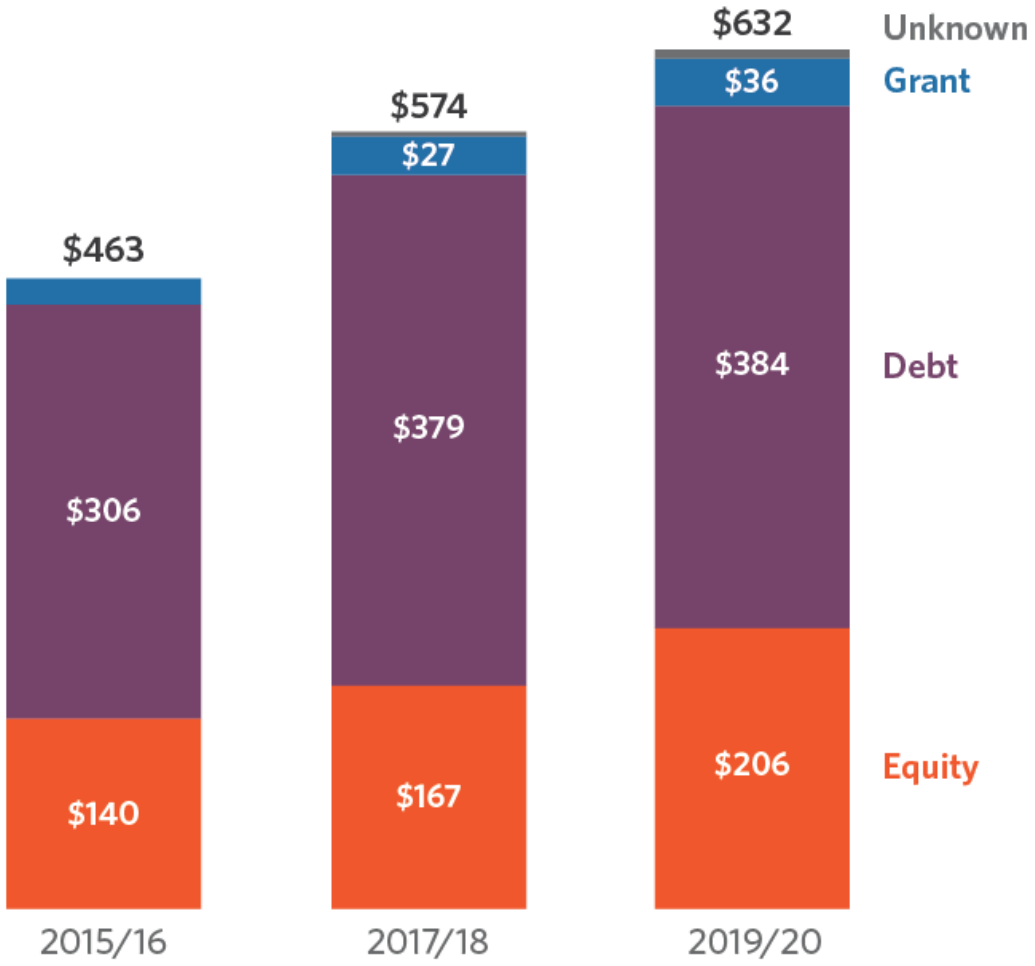
Households provide the third largest share of annual climate finance. Households' annual spending on electric vehicles was USD 25 billion on average over 2019/2020.

3. Instruments

The Landscape categorizes transactions by the instrument used to structure the provision of climate finance. It includes both debt and equity instruments, both of which are differentiated between arrangements at the project level and on balance sheets. Grants, which do not usually require repayment, is the third and final category.

Debt remains the main instrument for climate finance, but equity's share and amount has increased

Figure 3.1: Climate Finance by instrument (USD bn)



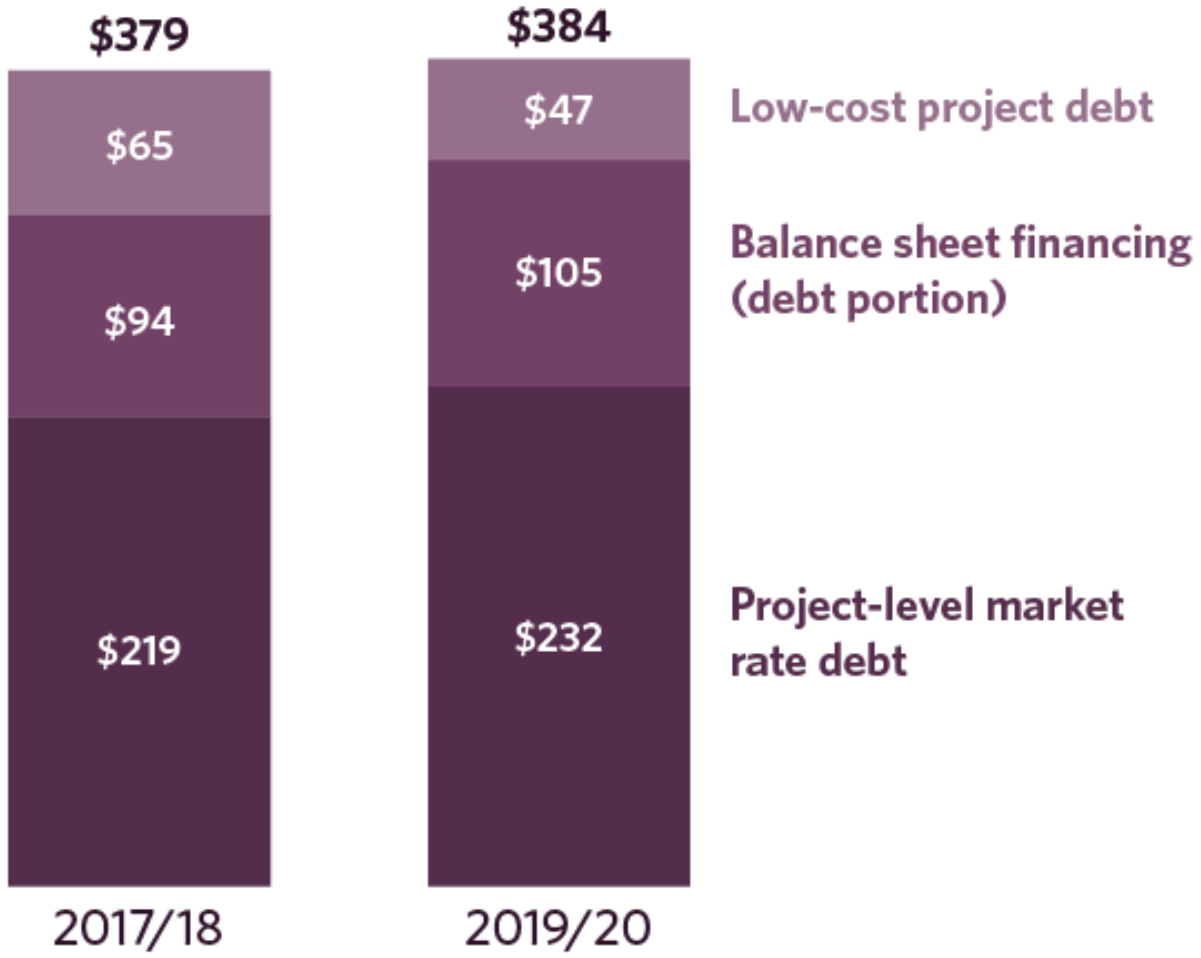
The majority of climate finance — 61% (USD 384 billion) — was raised as debt in 2019/2020.

Equity investments, the next-largest category after debt, came to 33% of total climate finance, up from 29% during the previous period.

Grant finance comprised 6% of total flows (compared to 5% in 2017/2018).

Market-rate debt accounted for 88% of all total climate finance debt

Figure 3.2: Debt by type (USD bn)



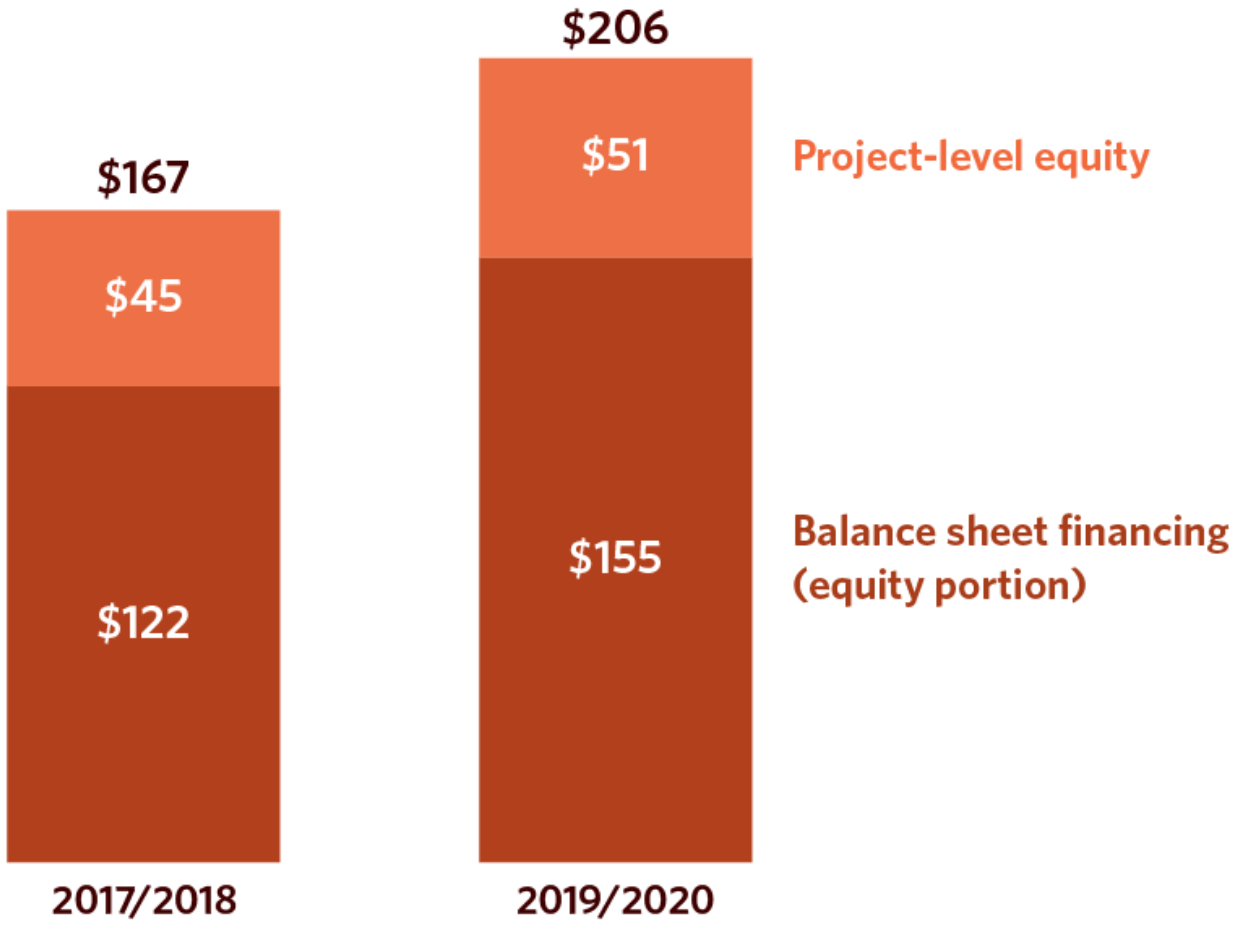
Public institutions provided 75% of project-level market-rate debt, primarily multilateral and national DFIs.

Debt issued directly through balance sheets comprised 31% of total annual market-rate debt. The vast majority of this finance was capital raised by commercial financial institutions (66%) for direct expenditure in renewable energy projects.

Low-cost project-level debt decreased 27% from the 2017/2018 annual average. **Almost all (99.8%) is provided by public institutions.**

Equity investments increased their share of total climate finance flows

Figure 3.3: Equity by type (USD bn)

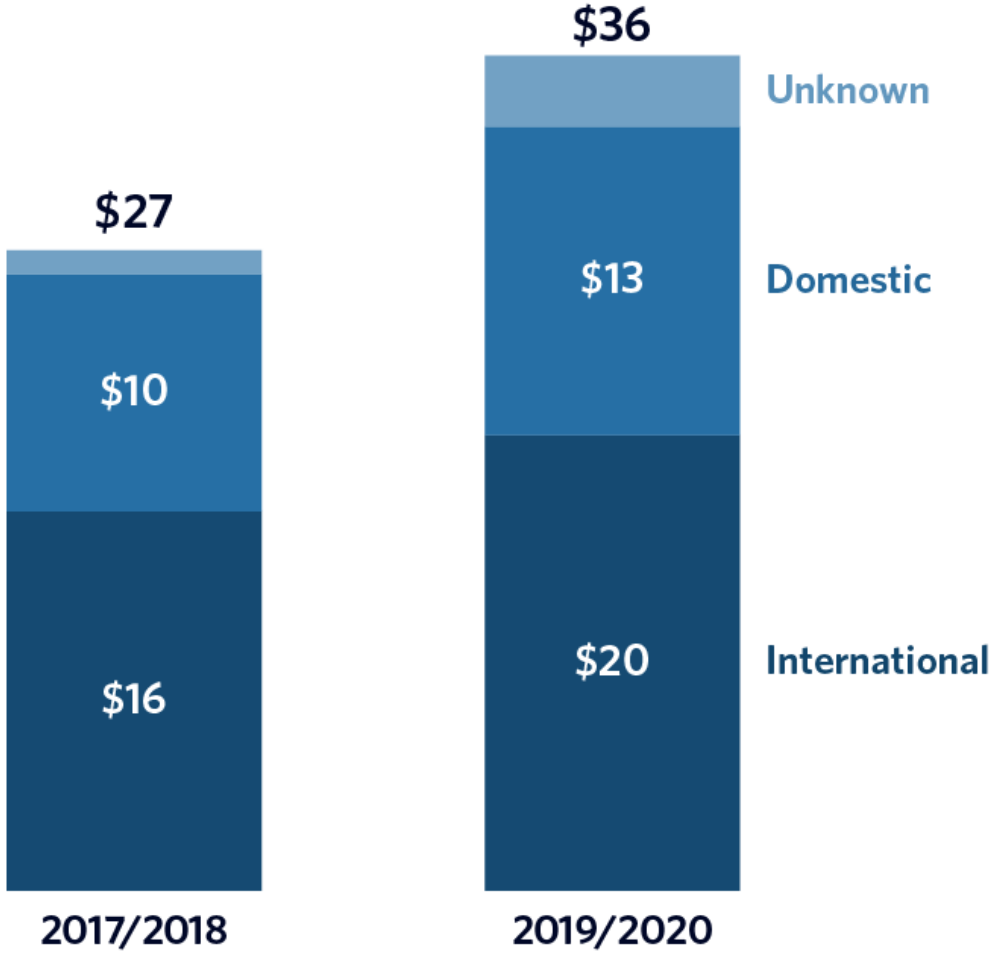


Balance sheet equity investments represented 75% of total equity finance, accounting for USD 155 billion in annual flows, on average.

Annual financing through project-level equity accounted for the remaining 25% of total equity. The vast majority of this finance was capital raised by corporations (65%).

Grants have increased 32% on average from 2017/2018 to 2019/2020, but remain a small part of climate finance

Figure 3.4: Grants by source (USD bn)



Almost 55% of tracked grants were international flows, and 37% domestic flows.

Governments are the main source of grants. Though flows increased by 33% from 2017/2018, the share remained largely stable at 73% of all flows.

All domestic grants were provided for the transport sector.

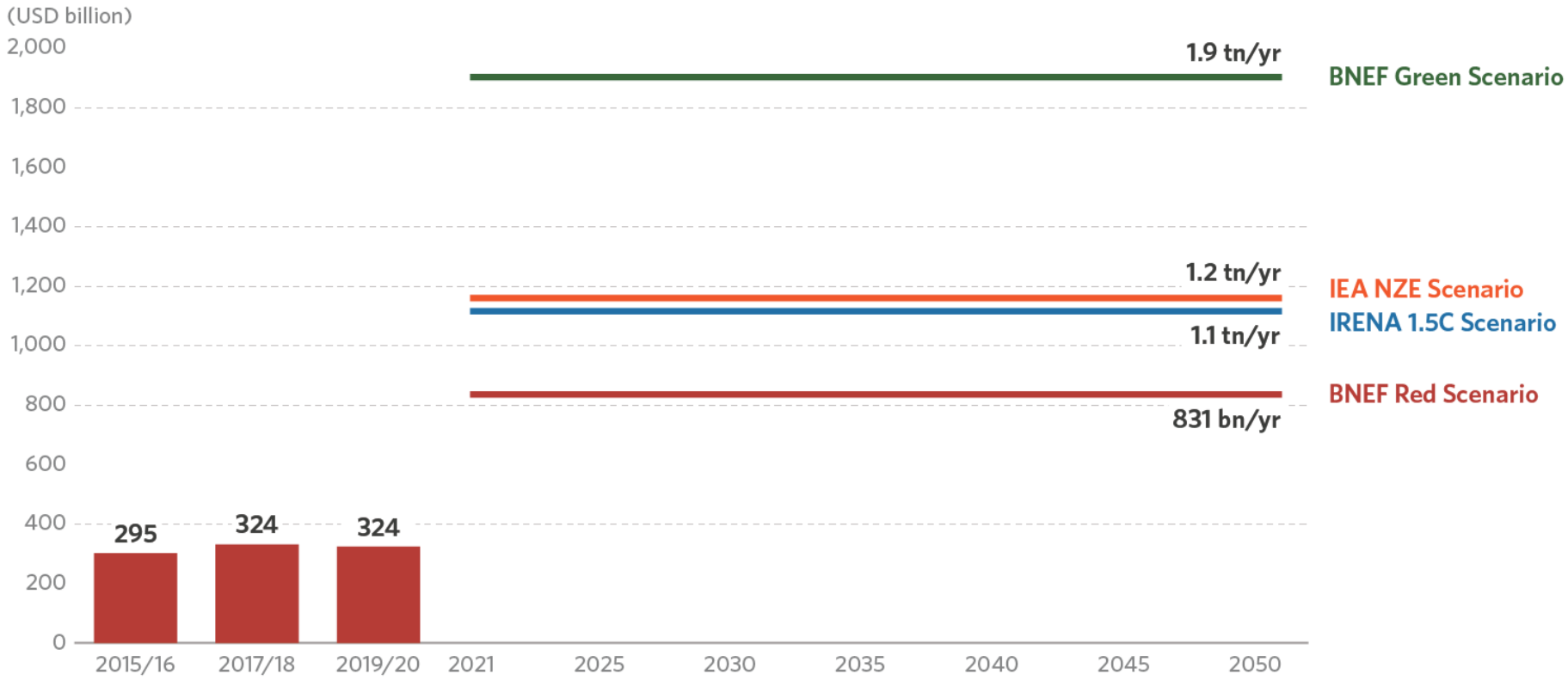
22% of international grants were channeled towards the Energy Systems sector, and 11% for the Agriculture sector.

4. Mitigation: Energy Systems

Energy systems investments include investments in renewable fuel production (i.e., biofuels and biogas), renewable power and heat generation assets, transmission and distribution networks, as well as support to policy and national budget and capacity building.

Annual renewable energy investments need to at least triple to keep warming within 1.5° C by mid-century

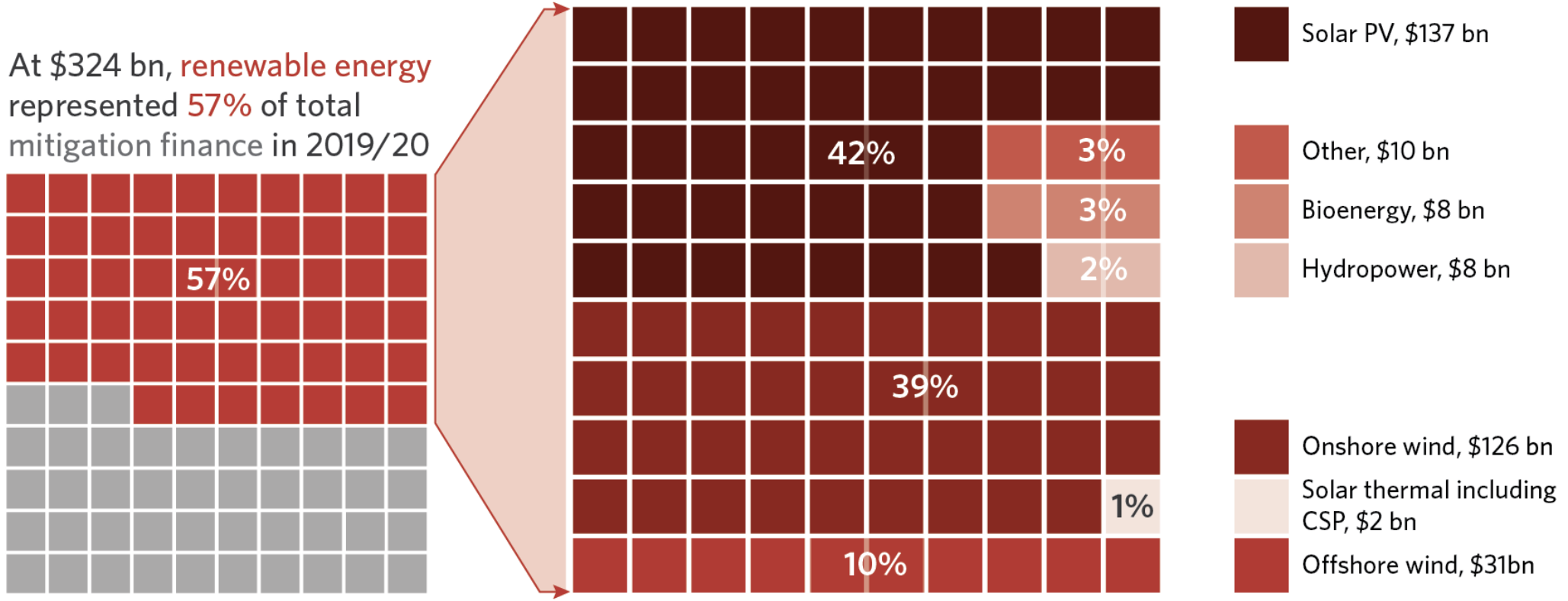
Figure 4.1: Annual renewable energy investments (2015-2020) vs investment needs through 2050



Energy-sector scenarios show that the current level of renewable energy investment is insufficient to put the world on a 1.5°C trajectory by 2050. Based on these scenarios, **annual investment ranging between USD 831 billion and USD 1.9 trillion is needed over the period through 2050**.

Renewable energy remains the largest mitigation sector

Figure 4.2: Renewable energy investments by sector as a share of mitigation finance (USD bn, 2019/2020 average)

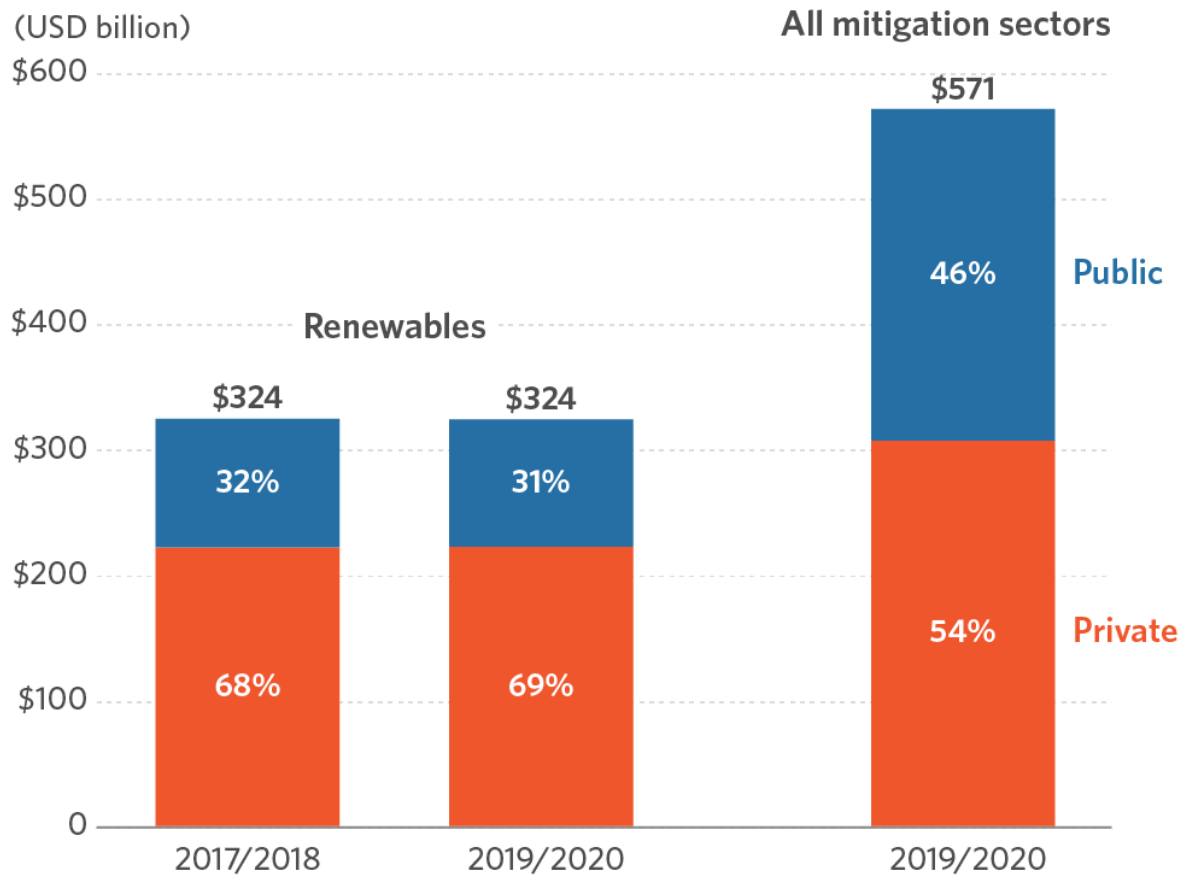


Solar PV and onshore wind continued to be the main recipient of renewable energy finance, attracting over 91% of mitigation investment.

According IRENA (2021b), in 2020, the global average levelized cost of electricity of newly commissioned onshore wind projects declined by 13%, compared to 2019, followed by offshore wind (down 9%) and utility-scale solar PV (down by 7%).

Private sources continue to provide the majority of renewable energy finance

Figure 4.3: Investment by public/private source – renewables vs. mitigation (USD bn)

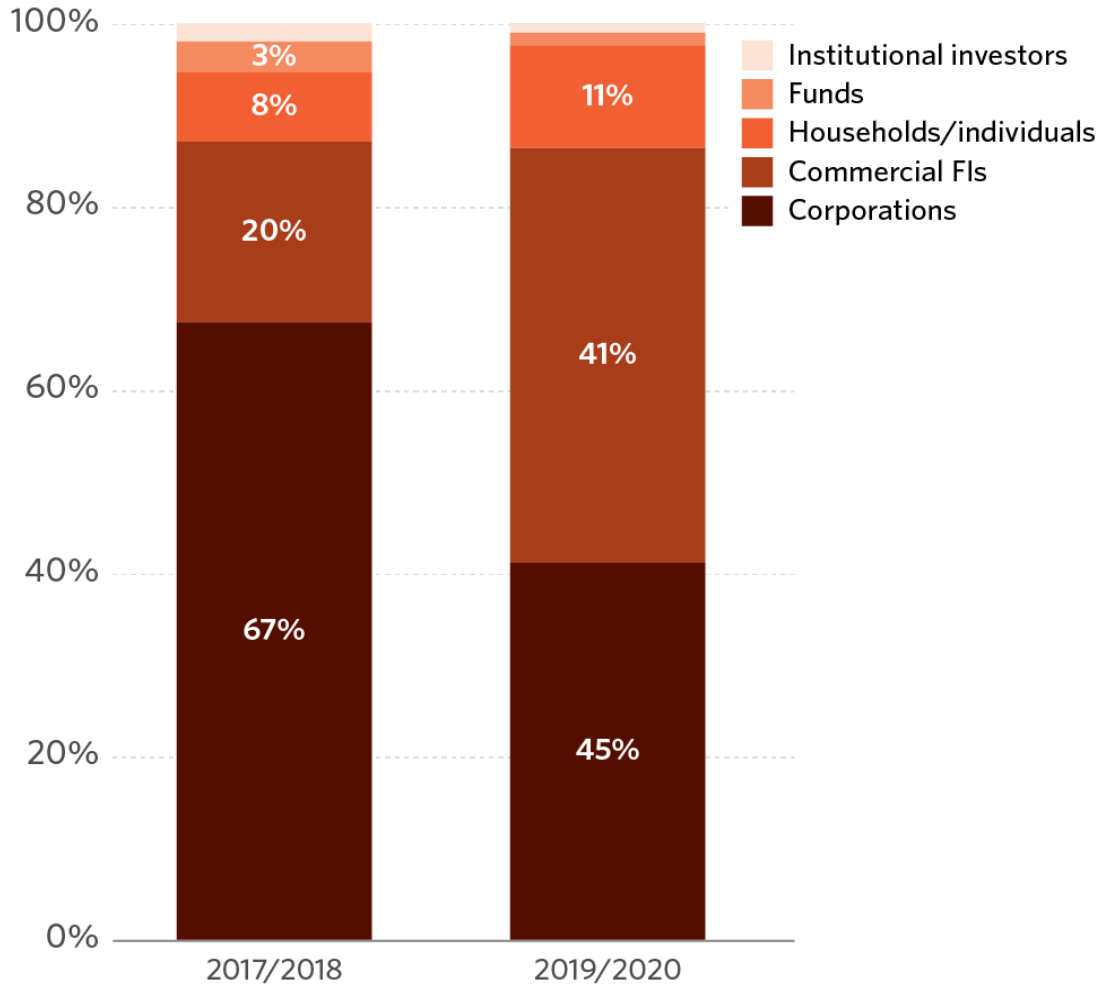


The private sector provided, on average, 69% of renewable energy finance (USD 223 billion), in line with the share observed in 2017/2018 and confirming the maturity of the renewable energy sector.

Owing to their higher competitiveness (especially of solar PV), **renewables are generally able to attract greater shares of private finance compared to other mitigation solutions.** Private investors accounted for over half (54%) of all mitigation finance flows.

Commercial FIs emerge as the main providers of private capital for renewables

Figure 4.4: Private renewable energy investments by type of institution (% of total share)

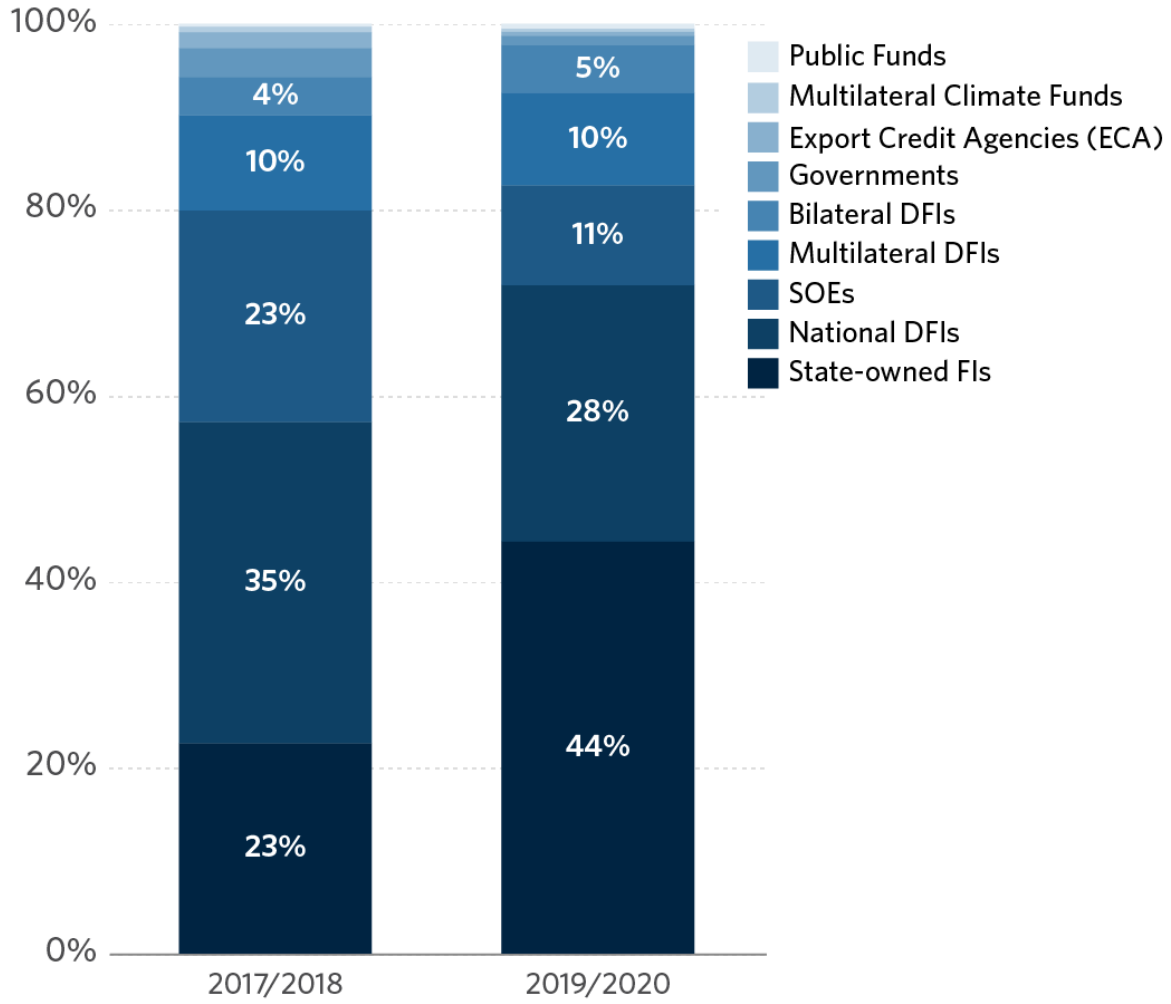


Commercial financial institutions provided 45% of the total (or USD 104 bn per year), followed by corporations (41%) and households and individuals (11%).

Compared to 2017/2018, commercial financial institutions, especially from the US, China, and Western Europe, more than doubled their commitments to renewables, while capital provided by corporations almost halved.

State-owned FIs provided 44% of public finance for renewables, followed by national DFIs at 28%

Figure 4.5: Public renewable energy investments by type of investor (% of total share)



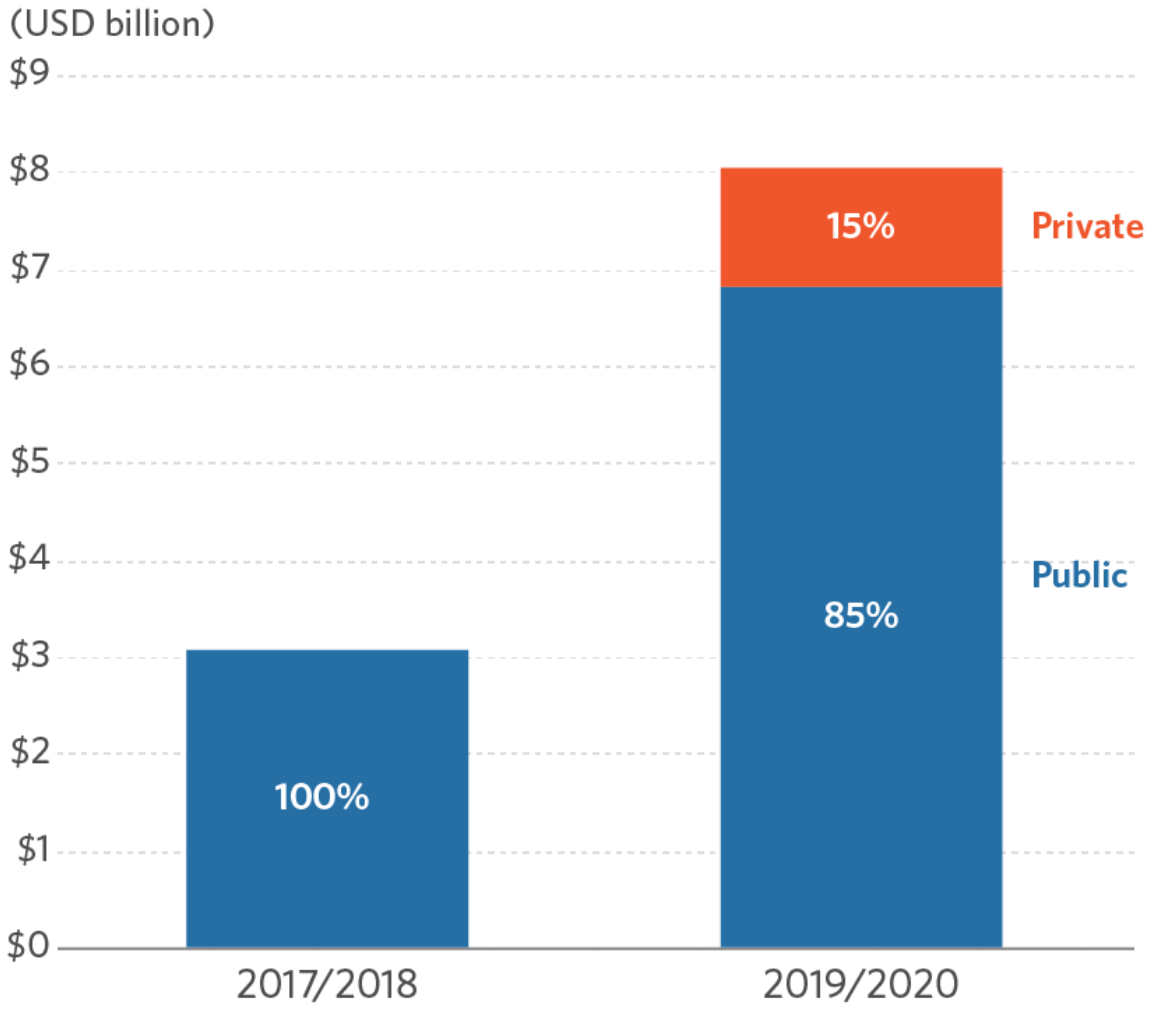
Public finance came in mainly via state-owned financial institutions, which provided USD 45 billion per year, **doubling their share** in total public finance from the previous period.

National DFIs provided USD 28 billion in 2019/2020, or 28% of public renewable energy investments, down from USD 36 billion (or 35%) in 2017/2018.

Investments from state-owned enterprises were down 53% compared to 2017/2018.

Growing investments and more private participation in greening transmission and distribution

Figure 4.6: Energy T&D by investment source (USD bn)



Global investments in transmission and distribution (T&D) reached an average of USD 8.03 billion per year in 2019/2020, a USD 4.96 billion increase from 2017 and 2018 annual levels.

Although the public actors almost exclusively financed the T&D in 2017/2018, private actors' participation became visible in 2019/2020, mainly from corporations for the construction of new grids.

In 2019, 38.9% of the investments came from the East Asia and Pacific region, while in 2020 the leading role shifted to the Middle East due to large sized projects.

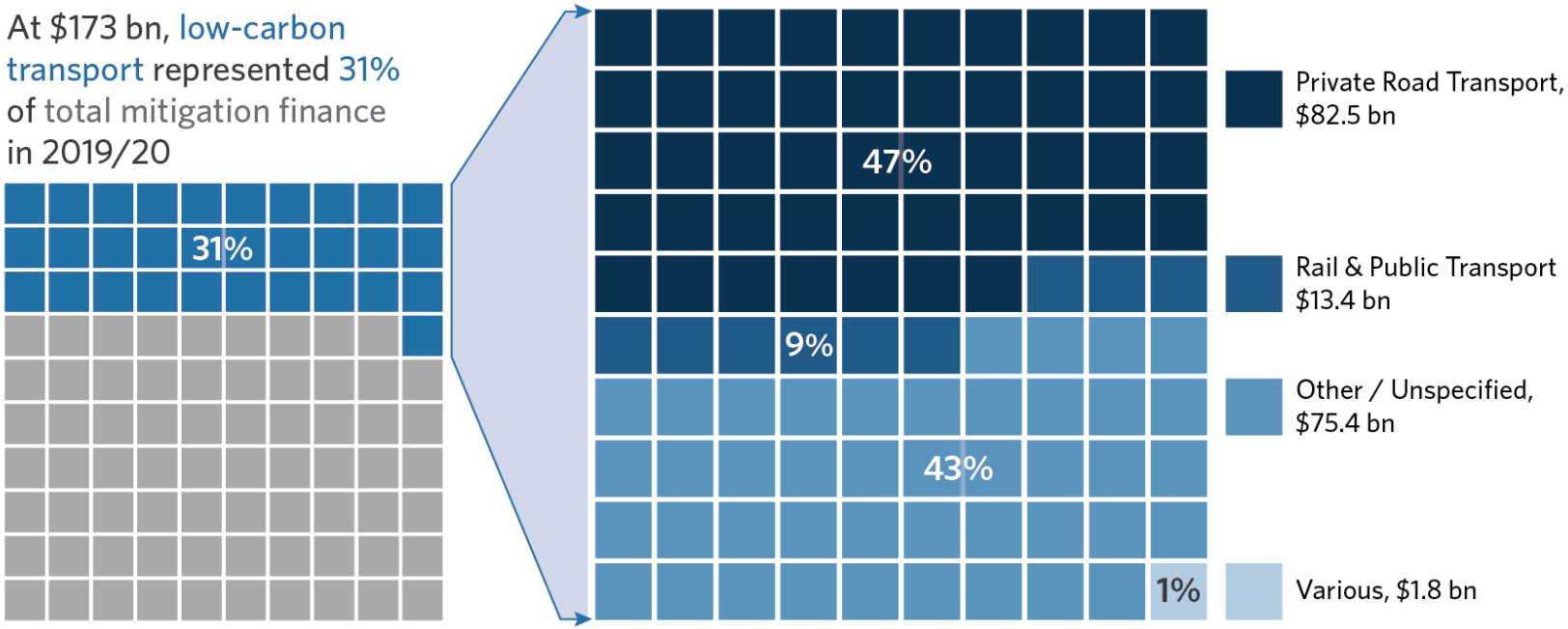
5. Mitigation: High Energy Demand Sectors

In the following sections, we discuss climate mitigation investments dedicated to decarbonizing high energy demand sectors.

Further breakdown of other climate mitigation investment are available in Annex I, Table A.4.

Low-carbon transport is the fastest-growing sector in 2019/2020

Figure 5.1: Low-carbon transport sub-sector investment



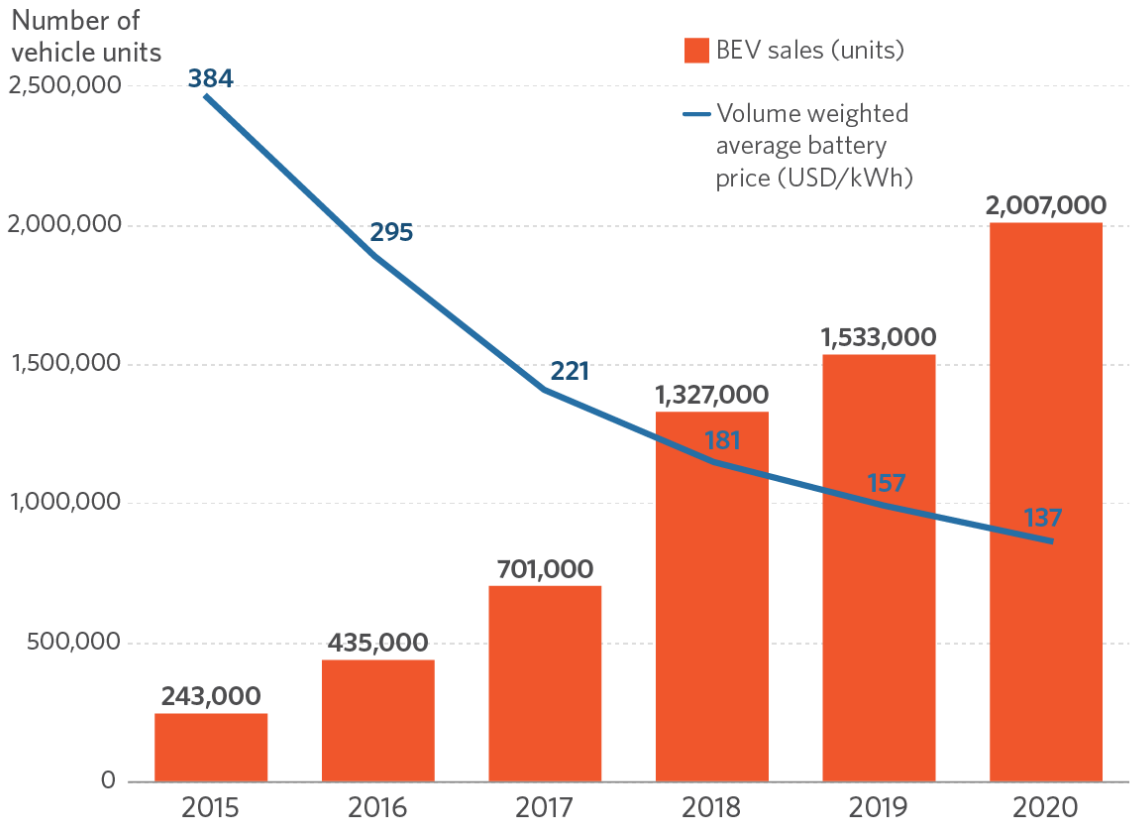
Low-carbon transport is still the fastest-growing sector in 2019/2020 with an average increase of 23% compared to 2017/2018.

In 2019/2020, investment tracked to **private road transport (battery electric vehicles and chargers) accounted for 48% of low-carbon transport finance** – building on multiple years of government subsidy policies and falling technology costs.

In comparison, despite gaps in data coverage, low-carbon investments in Rail & Public transport are lagging. **In many countries, rail and public transport networks are underdeveloped and fail to offer low-carbon alternatives to private vehicles and road freight.**

Battery Electric Vehicle (BEV) sales showed remarkable robustness

Figure 5.2: Volume of BEV sales vs. battery prices



Sources: BNEF, 2020b; IEA, 2021b

Last year, growth in global BEV sales accelerated (+31% year-to-year increase,) **while the global vehicle market fell by 16% compared to 2019 due to the pandemic** (IEA, 2021c). BEV's sharp market increase was driven by surging sales in Europe (+108%). Early findings suggest global sales could double in 2021 (Strategy&, 2021).

The 2020 expansion of the BEV market triggered an even greater year-to-year investment increment (+88%) as the average BEV price also increased. While falling battery costs had been making BEVs cheaper over time – contributing to their growing popularity (Figure 4.8) - the recent emergence of energy and tech-intensive electric SUVs is competing with this trend. **Compared to lighter BEVs, the mitigation benefit of such vehicles is not as clear** (CPI, 2020).

With expiring subsidy policies, private actors are now compensating for more expensive vehicles (Fuel Economy, 2021). On average, government incentives covered 24% of BEV price in 2019 down to only 10% in 2020. **In 2019/2020, household and corporation down payments were 68% of private flows, while commercial FIs provided the remaining share through auto loans.**

Building sector tracking hindered by uncoordinated action, stacked actors, and missing climate threshold definitions

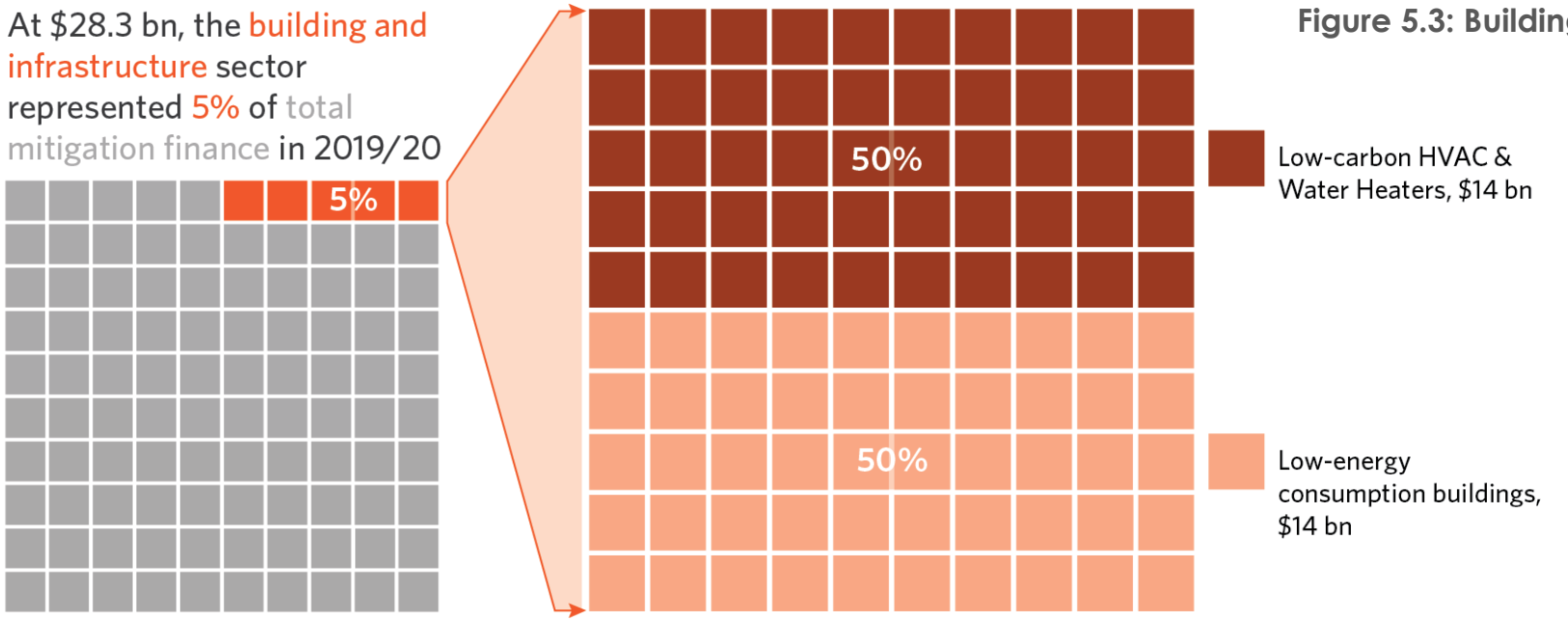


Figure 5.3: Building sub-sector investment (USD bn)

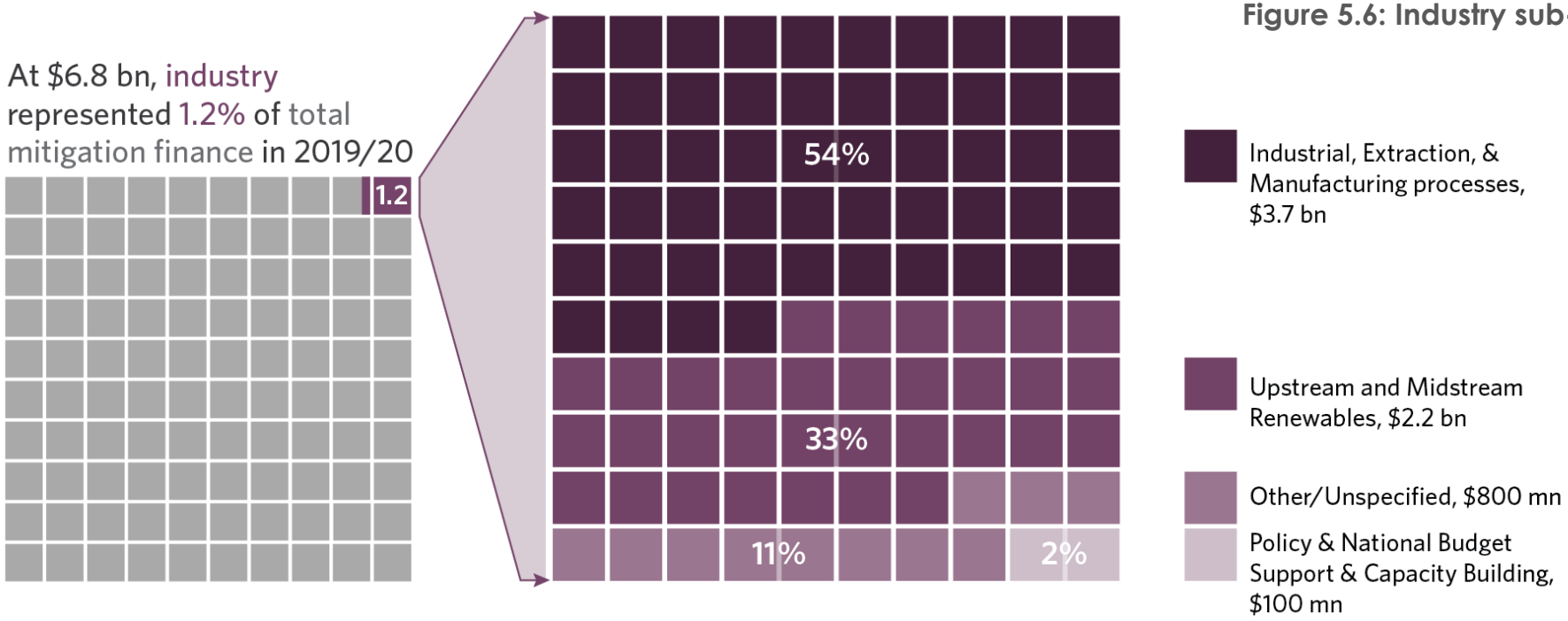
Tracked mitigation investment in Buildings & Infrastructure totalled USD 27.7 billion on average in 2019/2020. Limited data availability, especially in the private sector, means the amount tracked represents only a partial view.

However, several mitigation solutions stand out. Distributed solar thermal water heaters make up most of HVAC & Water Heaters tracked finance, although the sector suffered due to tightened household budgets during the pandemic (SHC, 2021).

Finance for buildings with high energy and thermal insulation performances – green buildings – is growing fast but lacks transparency. Private sector investments are hard to capture (6% of total), but more importantly **shared science-based standards are missing**. **Given the inertia in infrastructure stocks, some buildings that currently qualify for green certifications are not compatible with tomorrow's decarbonization pathways** (CRREM, 2020).

Industry remains the hidden face of climate finance with limited data disclosure and a key role in broader supply chains

Figure 5.6: Industry sub-sector investment (USD bn)



In 2019/2020 tracked mitigation investments flowing to the industrial sector remained low, averaging USD 6.7 billion per year. Climate finance in the industry is particularly hard to track as industrial processes are prone to confidentiality restrictions. Some industries are also known to be technically hard to decarbonize (steel, cement) as they rely on energy-intensive processes.

A large share of tracked flows come from Western Europe DFIs (48%) and are used for energy efficiency improvements (50.6%).

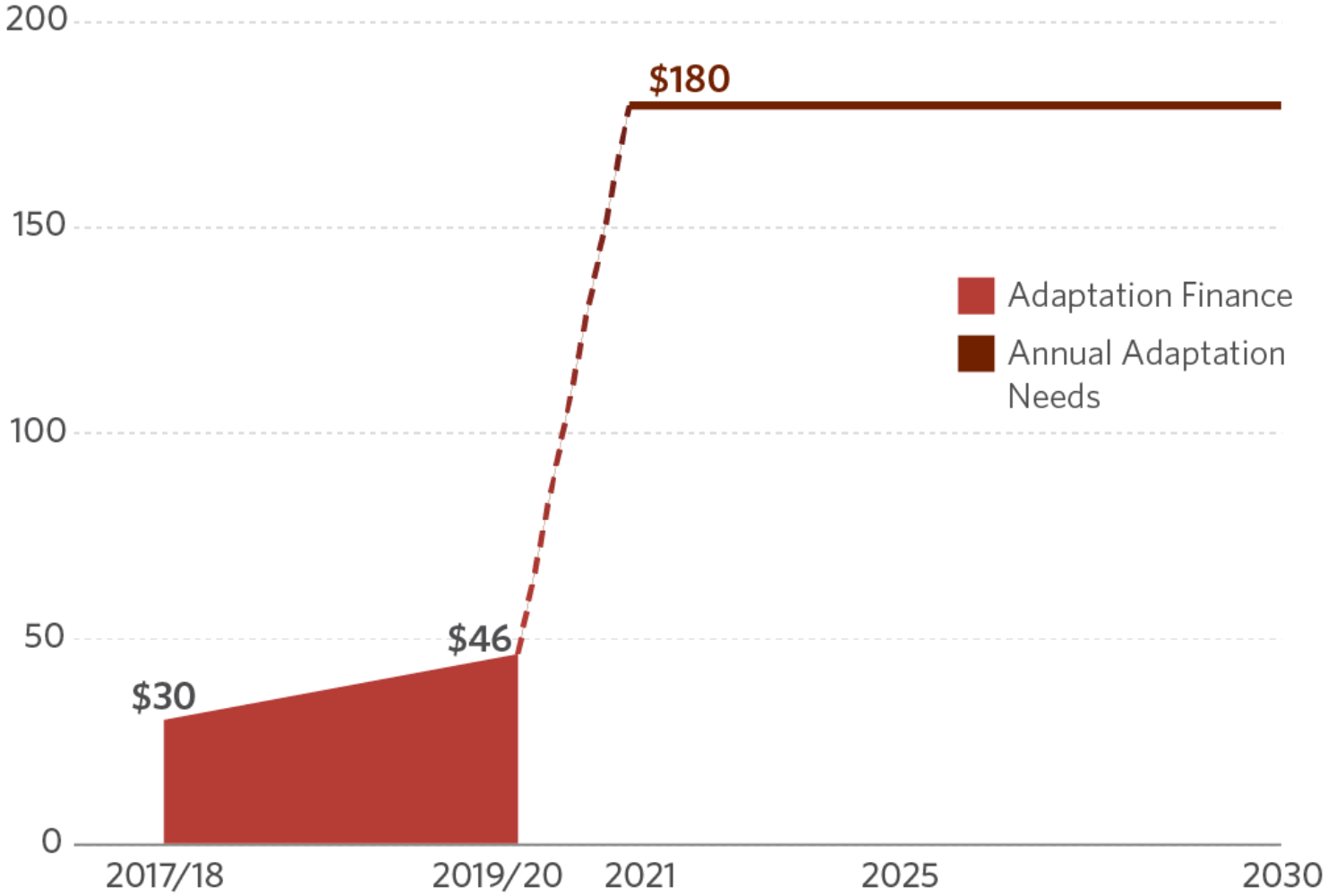
In the EU, **the recent surge of the EU-ETS carbon market** (EMBER, 2021) **combined with gas prices volatility** (Bloomberg, 2021) **could soon outweigh CO_2 abatement costs in numerous industries**. Should these trends persist, new finance to energy efficiency and carbon capture, utilisation and storage (CCUS) technologies could be unlocked.

6. Adaptation Finance

Adaptation finance increased substantially in 2019/2020 despite methodological difficulties involved with tracking adaptation activities, particularly in the context of the private sector.

Adaptation finance gained momentum in 2019/2020 but remains well short of estimated needs

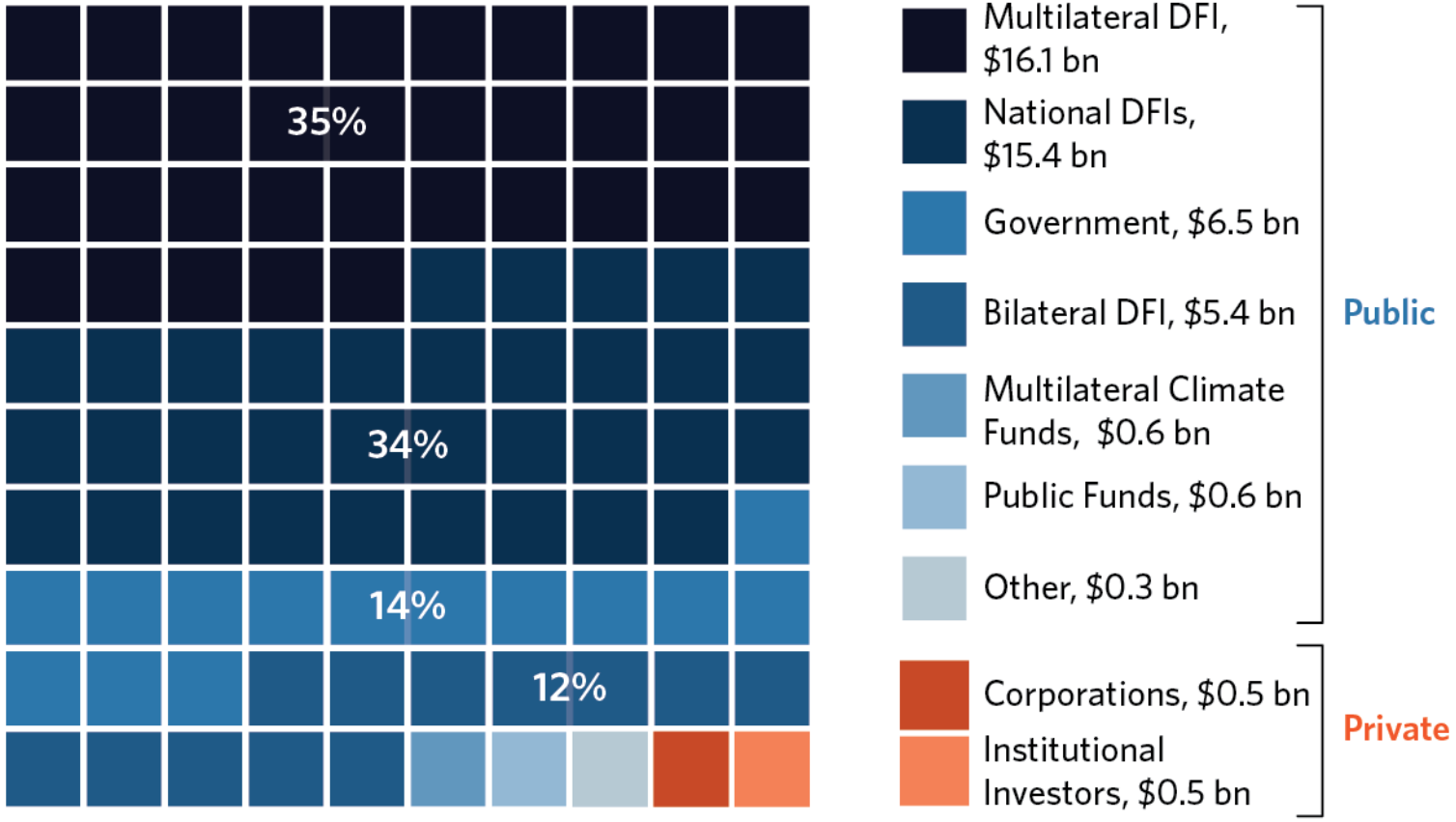
Figure 6.1: Adaptation finance and needs (USD bn)



Adaptation finance gained momentum in 2019/2020, increasing 53% to an annual average of USD 46 billion from USD 30 billion in 2017/2018. This increase stems from an uptick in Water & Wastewater as well as other cross-sectoral projects, with adaptation increasingly prioritized in development finance climate portfolios. However, adaptation finance falls well short of estimated annual needs through to 2030 (GCA, 2020).

Almost all adaptation finance tracked in the Landscape was funded by public actors

Figure 6.2: Adaptation investment sources by actor (USD bn, 2019/2020 annual average)

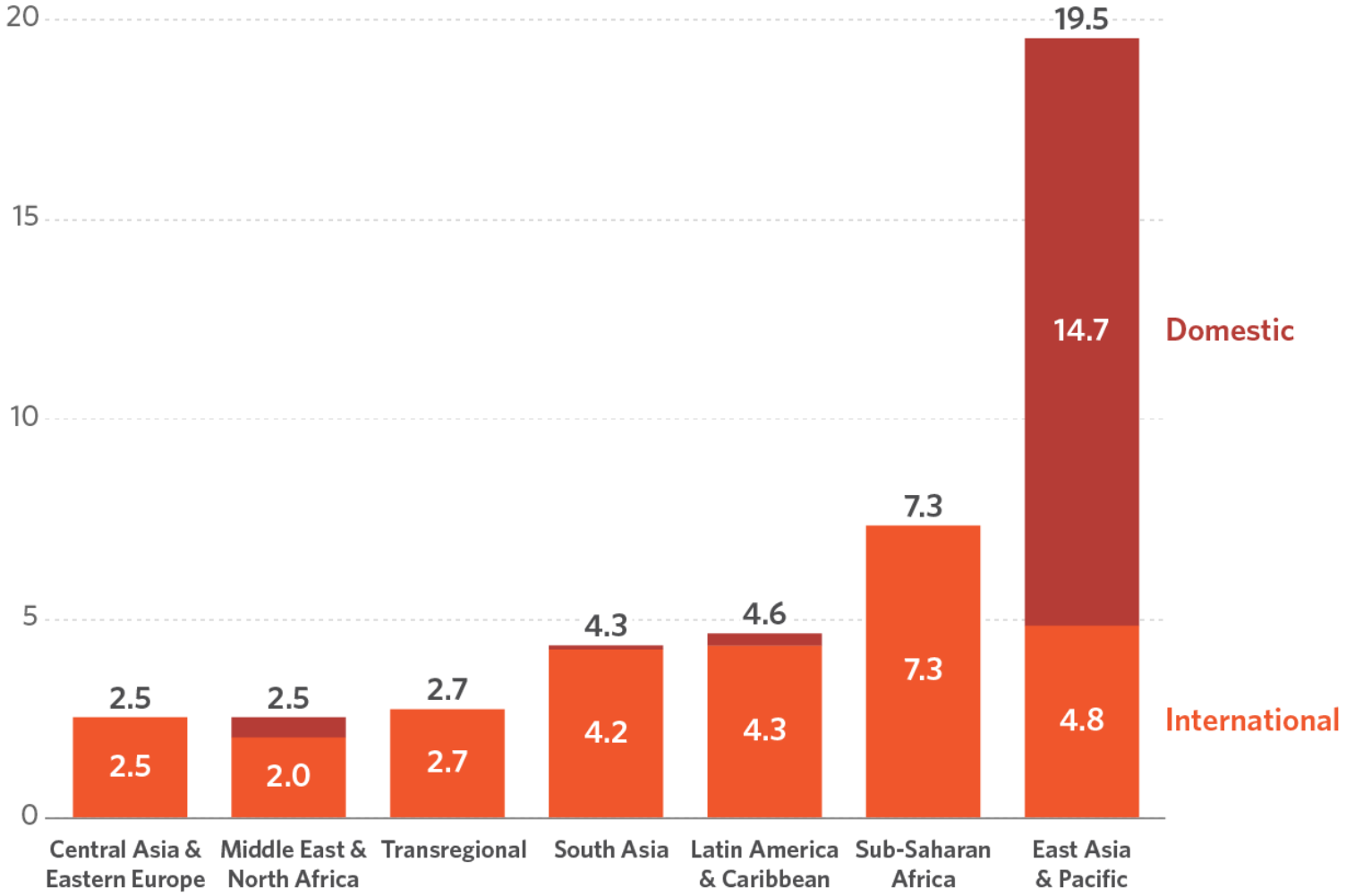


Adaptation finance accounted for 14% of all 2019/2020 public finance flows.

Commitments from all DFIs together accounted for 80% (USD 36.8 billion) of average adaptation financing. Multilateral DFIs therein accounted for the largest share of adaptation finance (35%, 16.1 billion) followed by national DFIs (34%, 15.4 billion).

The largest recipient of international adaptation finance is Sub-Saharan Africa, but commitments fall well short of region's needs

Figure 6.3: Adaptation finance by region (USD bn, 2019/2020 annual average)

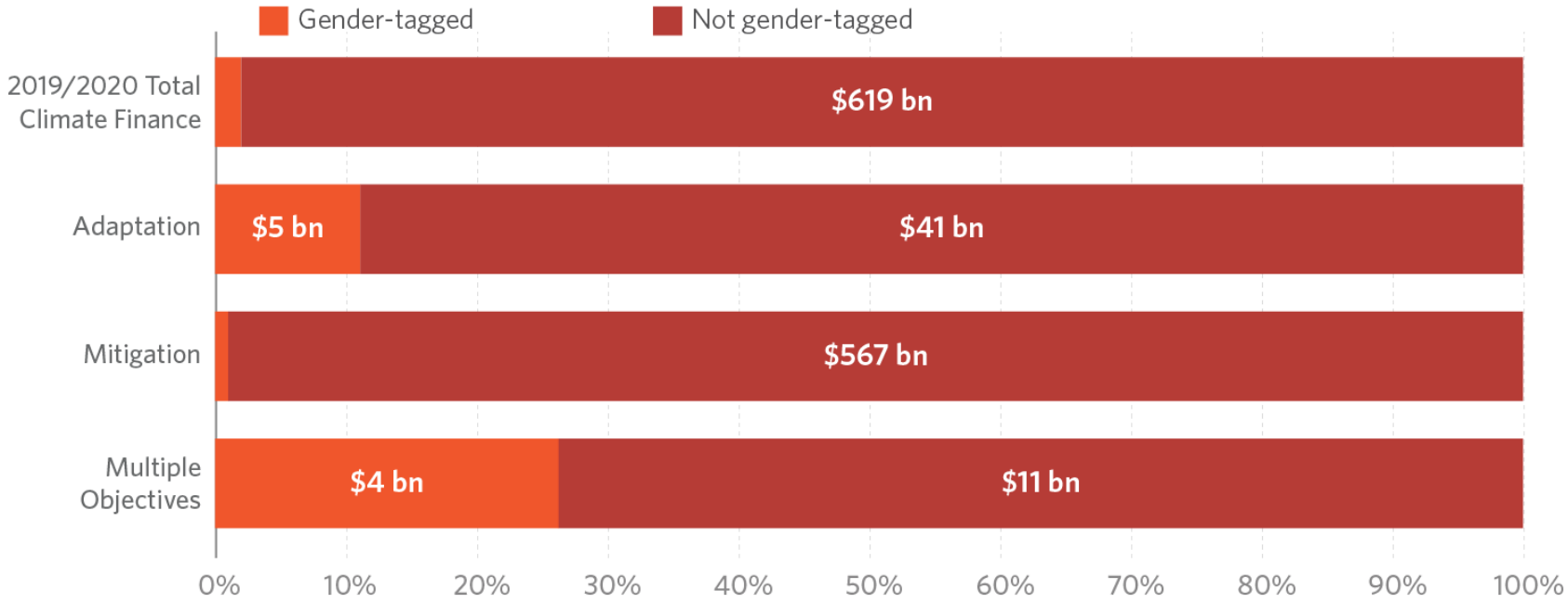


The top ten most vulnerable countries to climate change are all in Sub-Saharan Africa (SSA) (ND-GAIN, 2021). SSA received the greatest share (25%) of international adaptation finance, but commitments are at the lower end of regional adaptation needs estimates of USD 7-15 billion per year by 2020 (AfDB 2019; UNEP 2014).

Adaptation in East Asia and Pacific (EAP) is primarily financed by public domestic actors. 37% of all adaptation flows are sourced domestically, with EAP (largely China) accounting for the majority of those domestic commitments (88%, USD 14.7 billion).

A gender lens in climate finance is emerging in the public sector, but data is scarce

Figure 6.4: Climate finance and gender tagging (USD bn, 2019/2020 annual average)



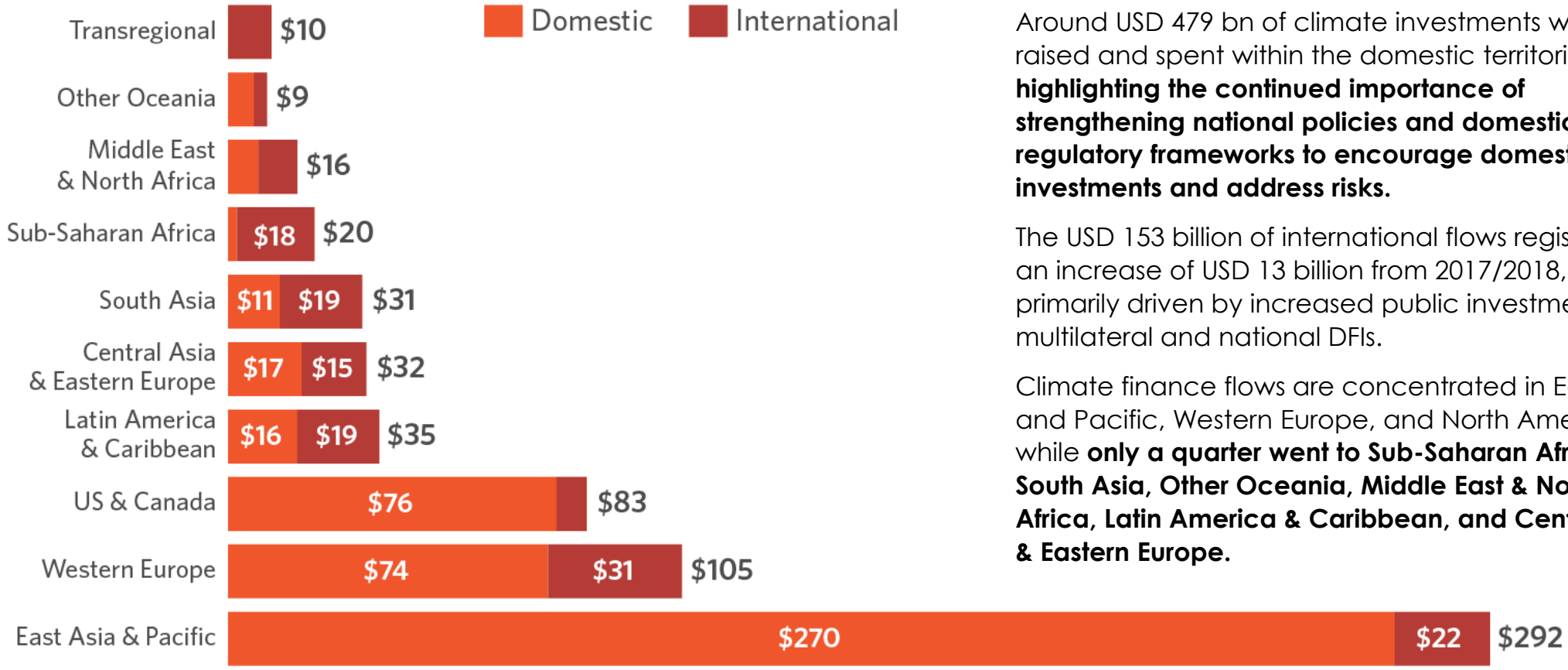
Adaptation and projects with Multiple Objectives appear to offer the most potential for incorporating gender-tagging, currently reporting 11% and 27% respectively. Only 0.7% of tracked mitigation projects were gender-tagged.

More granular, project-level reporting can help to assess the landscape of gender-sensitive climate finance, in turn allowing us to measure progress towards attaining several different sustainable development goals simultaneously. Currently, gender-tagging is scarce amongst private institutions.

7. Geographic Flows

Three-quarters of tracked investments flowed domestically

Figure 7.1: Domestic and international climate finance flows by region of destination (USD bn, 2019/2020 annual average)



Around USD 479 bn of climate investments were raised and spent within the domestic territories, **highlighting the continued importance of strengthening national policies and domestic regulatory frameworks to encourage domestic investments and address risks.**

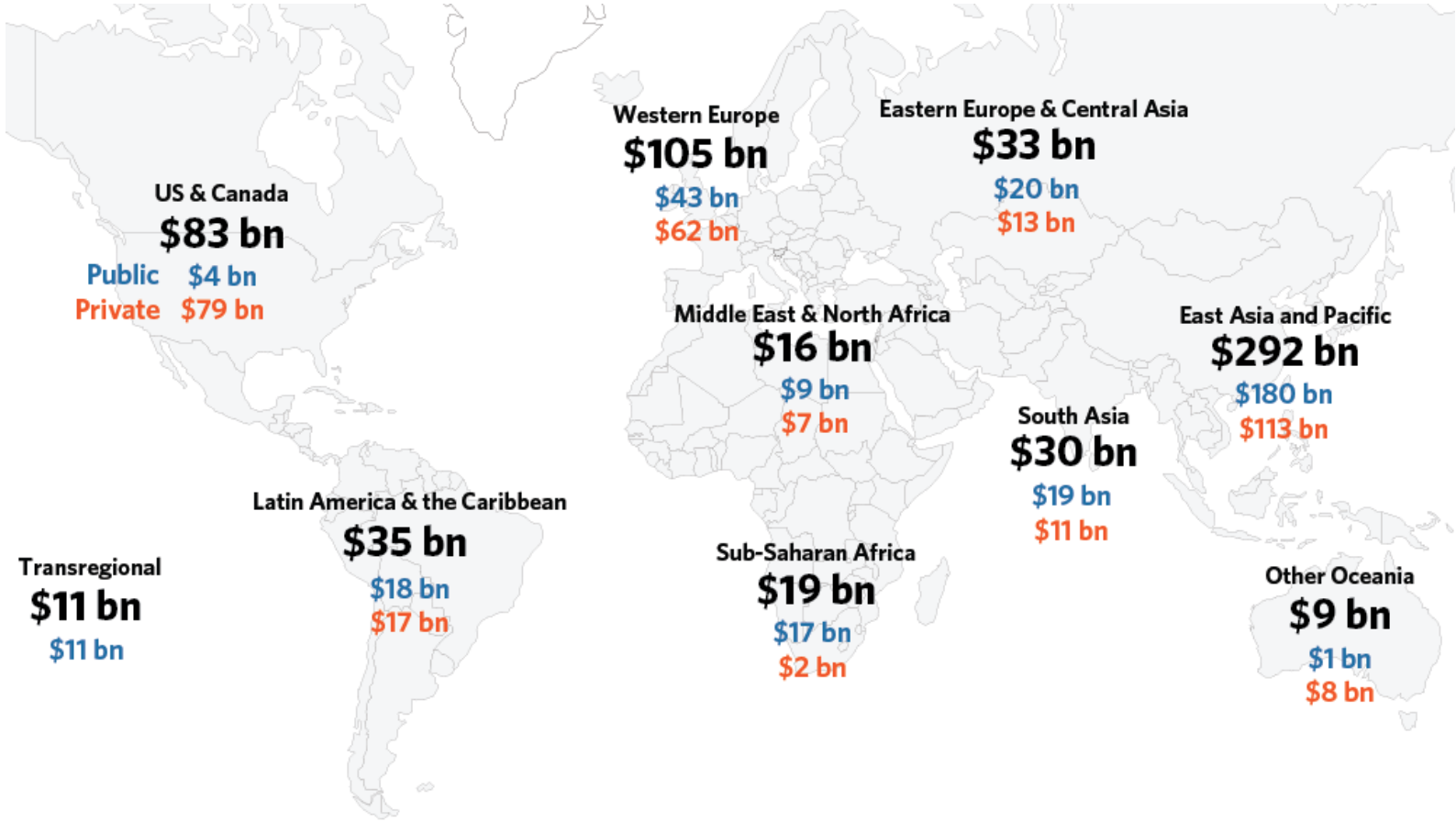
The USD 153 billion of international flows registered an increase of USD 13 billion from 2017/2018, primarily driven by increased public investments from multilateral and national DFIs.

Climate finance flows are concentrated in East Asia and Pacific, Western Europe, and North America, while **only a quarter went to Sub-Saharan Africa, South Asia, Other Oceania, Middle East & North Africa, Latin America & Caribbean, and Central Asia & Eastern Europe.**

Notes: The list of countries for each region are available in Annex III

East Asia & Pacific remained the main region of destination for climate finance

Figure 7.2 : Destination region of climate finance, by public/private (USD bn, 2019/2020 annual average)



Notes: The list of countries for each region are available in Annex III

Almost half (USD 292 billion) of 2019/2020 tracked global climate investments went to East Asia & Pacific (EAP), up by USD 43 billion compared to 2017/18. **An estimated 81% of the investments in the EAP region were concentrated in China** which could be attributed to continuing strong government support through public spending and national policies towards better investment climate.

Climate projects in economically advanced regions of Western Europe, US & Canada, and Other Oceania were primarily funded by private finance, while the rest sourced their climate investments mostly from public sources.

All regions were mainly funding mitigation actions, with 80% of the mitigation investments concentrated in the high-emitting regions of US & Canada, Western Europe, and East Asia & Pacific.

8. Recommendations

Conclusions and key recommendations

1. Increase the scale of finance - this decade will make or break the transition to a sustainable, net zero world

- Finance flows are nowhere near the estimated needs. High-emissions investment in the meantime continues to flow in key sectors, which are curbing the impact of new finance in climate mitigation and adaptation. Climate investment should count in the trillions, whereas fossil fuel investments should virtually stop in this decade.
- Over the past few years, we've seen a flurry of initiatives targeting net zero emissions and aligning finance with the Paris Agreement. However, real economy investment volumes and emission trends are yet to show.
- No sector is on track to meet the required investment levels. For example, annual renewable energy investments need to at least triple and adaptation finance needs to increase at least fourfold. Moreover, private sector investment falls short in most emerging economies which is alarming considering limited public finance space post-COVID.
- Enabling policies and innovative financial solutions are needed to create bankable investment. With policy incentives that support the low-carbon shift, and due to falling technology costs, private climate mitigation finance at scale will make financial sense in most regions and sectors.

2. Public and private actors should prioritize data on credible climate action and impact on the ground

- Currently available disclosure initiatives fall short of providing standardized information on climate investment. Information on investment levels in adaptation, buildings, and industry sectors are scarce, **particularly from the private sector**, and lack shared science-based standards. This information is essential in assessing collective progress, crafting effective policies, and directing finance where it will have the most impact.

- More data is required at the country level. Domestic public budget expenditure on climate related activities is not universally available. This is critical information to mainstream and integrate climate framework, policies, and laws into national and sectoral budgets. Public bodies should embed the process of assessing climate finance flows at the programmatic level as we need to better monitor progress and needs of climate finance by country, sectors, and actors to ensure we are on track and filling gaps.

Conclusions and key recommendations

3. We need credible and coordinated net zero commitments with clear transition plans, including interim goals

- Achieving net zero by 2050 will require **all public and private actors to align practices, investments, and portfolios with our collective goal of limiting the global warming to 1.5C**.
- However, public and private sectors do not have a commonly accepted definition of climate finance nor an understanding of what all financial actors should be doing at minimum. The siloed approach on the common definitions could impede the pace of change and impact on the real economy.
- Coordination across silos of public and private financial actors are needed to ensure coherence and impact on net zero and sustainability, in alignment with science and with support of civil society.

4. Call for structural changes by focusing on the nexus between the environment, the economy, and the people

The urgent ramping up of mitigation investments is imperative, particularly for developed economies, while building resilience and adaptative capacity should be the critical agenda of climate finance for all economies.

Structural changes could lead us to identify broader benefits and indicators, considering planetary and social boundaries:

- Just transition: Consider the needs and wellbeing of the most vulnerable (rural poor, women, youth, indigenous population)
- Real economy: Consider broader impacts of financial sector's net zero efforts
- Planetary and environmental boundaries: Consider how the transition can ensure avoiding the destruction of natural capital and biodiversity

Annex

CLIMATE POLICY INITIATIVE

I. Data Tables for climate finance in 2019/2020

Table A.1: Breakdown of global climate finance by public and private actors (USD bn)

Actor	2019	2020	2019/2020 Average
Private	280	340	310
Commercial FI	111	134	122
Corporation	111	136	124
Funds	8	3	5
Households/Individuals	47	64	55
Institutional Investors	3	4	3
Public	**343**	**300**	**321**
Bilateral DFI	47	23	35
Export Credit Agency (ECA)	1	1	1
Government	41	35	38
Multilateral Climate Funds	4	3	4
Multilateral DFI	62	67	65
National DFI	137	103	120
Public Fund	2	2	2
SOE	12	13	13
State-owned FI	38	52	45
Total	**623**	**640**	**632**

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Table A.2: Financing for adaptation & mitigation split by public and private sources (USD bn)

Sources	2019	2020	2019/2020 Average
Private	280	340	310
Adaptation	0	2	1
Mitigation	279	335	307
Multiple objectives	1	3	2
Public	343	300	321
Adaptation	42	48	45
Mitigation	288	240	264
Multiple objectives	14	12	13
Total	**623**	**640**	**632**

Table A.3: Breakdown of global climate finance by instruments (USD billion)

Instrument	2019	2020	2019/2020 Average
Balance sheet financing (debt portion)	97	113	105
Balance sheet financing (equity portion)	131	179	155
Grant	38	34	36
Low-cost project debt	58	37	47
Project-level equity	56	46	51
Project-level market rate debt	239	226	232
Unknown	5	5	5
Total	**623**	**640**	**632**

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Table A.4: Breakdown of global climate finance by Use and by Sector (USD bn)

Use/Sector	2019	2020	2019/2020 Average
Adaptation	42	49	46
Agriculture, Forestry, Other land uses and Fisheries	5	4	4
Buildings & Infrastructure	1	1	1
Energy Systems	1	0.2	0.3
Industry	0.03	0.01	0.02
Information and Communications Technology	0.25	0.24	0.24
Others & Cross-sectoral	19	25	22
Transport	2	1	1
Waste	0.01	0.02	0.01
Water & Wastewater	15	19	17
Mitigation	566	576	571
Agriculture, Forestry, Other land uses and Fisheries	7	9	8
Buildings & Infrastructure	35	22	28
Energy Systems	321	342	332
Industry	9	5	7
Information and Communications Technology	0.1	0.1	0.1
Others & Cross-sectoral	21	17	19
Transport	169	177	173
Waste	1	3	2
Water & Wastewater	2	1	1
Multiple objectives	15	15	15
Agriculture, Forestry, Other land uses and Fisheries	2	2	2
Energy Systems	2	1	2
Others & Cross-sectoral	9	10	9
Transport	1	0.1	0.4
Water & Wastewater	1	2	2
Total	**623**	**640**	**632**

Table A.5: Breakdown of Energy System Sector total climate finance by sub-sector (USD billion)

Energy System Sub-sector	2019	2020	2019/2020 Average
Fuel Production	1	1	1
Other/Unspecified	1	1	1
Policy & National Budget Support & Capacity Building	1	1	1
Power & Heat Generation	313	332	322
Power & Heat Transmission & Distribution	8	8	8
Total	**324**	**343**	**334**

Table A.6: Breakdown of Transport Sector total climate finance by sub-sector (USD billion)

Transport Sub-sector	2019	2020	2019/2020 Average
Aviation	0	0	0
Other/Unspecified	92	60	76
Policy & National Budget Support & Capacity Building	2	0	1
Private Road Transport	59	106	82
Rail & Public Transport	17	10	14
Transport-oriented Urban Development and Infrastructure	1	1	1
Waterway	0	0	0
Total	**171**	**178**	**175**

Table A.7: Breakdown of Buildings & Infrastructure Sector total climate finance by sub-sector (USD billion)

Buildings & Infrastructure Sub-sector	2019	2020	2019/2020 Average
Appliances & Lighting	0	0	0
Building & Infrastructure Construction Work	21	9	15
HVAC & Water Heaters	14	14	14
Other/Unspecified	0	0	0
Policy & National Budget Support & Capacity Building	0	0	0
Total	**36**	**23**	**29**

Table A.8 – International and domestic climate finance flows (USD billion)

OECD/Non-OECD destination	2019	2020	2019-2020 Average
Domestic	478	479	479
non-OECD	294	302	298
OECD	184	176	180
Unknown	0	0	0
International	145	161	153
From Non-OECD to OECD	3	4	3
From Non-OECD to Other Non-OECD	19	29	24
From OECD to non-OECD	78	79	78
From OECD to Other OECD	44	49	46
From Transregional to Non-OECD	1	1	1
From Transregional to OECD	0	0	0
Total	**623**	**640**	**632**

Note: International public finance flows with transregional destination are assumed to be directed to non-OECD countries.

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Table A.9: Breakdown of global climate finance by region of destination (USD billion)

Region	2019	2020	2019/2020 Average
Central Asia and Eastern Europe	35	29	32
East Asia and Pacific	278	305	292
Latin America & Caribbean	37	33	35
Middle East and North Africa	16	15	15
Other Oceania	10	8	0
South Asia	30	30	0
Sub-Saharan Africa	19	19	19
Transregional	11	10	11
US & Canada	88	79	84
Western Europe	100	110	105
Total	**623**	**640**	**632**

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II. Available data on climate investment need through 2050

CPI Sector	Annual investment needs (USD bn)			# Scenario	Data Sources
	Low	Mean	High		
Total Mitigation:	**4,961**	**7,272**	**11,098**		
Energy Systems:	**1,495**	**3,287**	**6,594**		
Renewable Energy:	662	1,142	1,983		
Renewable Power	620	1,074	1,896	5	BNEF, 2021; IRENA, 2021a; IEA, 2021a
Biofuel & Biogas	42	68	87	3	IRENA, 2021; IEA, 2021a; IEA, 2020b
Electricity T&D	556	727	854	5	BNEF, 2021; IRENA, 2021; IEA, 202a
Innovation:	277	1,418	3,757		
Integration solutions (Hydrogen, Pumped Hydro, Storage)	277	1,286	3,266	5	BNEF, 2021; IRENA, 2021; IEA, 2021a
CCUS	0	132	491	5	BNEF, 2021; IRENA, 2021; IEA, 2021a
Buildings & Infrastructure:	**480**	**800**	**1,119**		
Energy efficient buildings	441	749	1,057	2	IEA, 2021a; IRENA, 2021a
Renewables direct uses and district heat	39	50	62	2	IEA, 2021a; IRENA, 2021a
Industry, Waste & Wastewater:	**280**	**364**	**448**		
Efficient and Low-carbon processes	280	364	448	2	
Transport:	**2,449**	**2,565**	**2,681**		
BEV	1,422	1,445	1,468	2	BNEF, 2021b; IEA, 2021a; CPI
EV Chargers	100	125	150	2	IEA, 2021a; IRENA, 2021
Rail & Urban Transport	770	770	770	1	IEA, 2019
Energy Efficiency	157	225	293	2	IEA, 2021a; IRENA, 2021
AFOLU:	**256**	**256**	**256**		
Forestry - Re/Afforestation	152	152	152	1	UNEP, 2021
Agriculture – Sylvopasture	104	104	104	1	UNEP, 2021
Total Adaptation:	**180**	**180**	**180**	1	GCA, 2020
Mangrove and Peatland Restoration	11	11	11	1	UNEP, 2021
Total CF	**5,141**	**7,452**	**11,278**		

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III. Description of regions by countries

Region	Countries and territories
Central Asia and Eastern Europe	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Russia, Serbia, Slovakia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan
East Asia and Pacific	Cambodia, China, Cook Islands, Fiji, Guam, Hong Kong, Indonesia, Japan, Kiribati, Korea, Democratic People's Republic, Korea, Republic, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Niue, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Taiwan, Thailand, Timor Leste, Tonga, Tuvalu, Vanuatu, Vietnam, Wallis and Futuna
Latin America & Caribbean	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela, Anguilla, Aruba, Bonaire, Sint Eustatius and Saba, Cayman Islands, Curaçao, Falkland Islands, French Guiana, Guadeloupe, Martinique, Montserrat, Puerto Rico, St. Barthélemy, Saint Martin, Turks and Caicos Islands, Virgin Islands, West Indies
Middle East and North Africa	Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, Yemen
Other Oceania	Australia, British Indian Ocean Territory, Christmas Island, Cocos (Keeling) Islands, French Polynesia, French Southern Territories, New Caledonia, New Zealand, Norfolk Island, Northern Mariana Islands, New Caledonia, Pitcairn, Tokelau
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Democratic Republic, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe, Mayotte, Réunion, Saint Helena
US & Canada	Bermuda, Canada, United States of America
Western Europe	Andorra, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom

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