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# Global Landscape of Climate Finance 2017

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A CPI Report

## Authors

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## Descriptors

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| Sector | Climate Finance | |
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| Keywords | Climate Finance Flows, Private Finance, Public Finance, Tracking | |
| Related CPI Reports | The Global Landscape of Climate Finance 2015 | |
| | Global Climate Finance: An Updated View on 2013 and 2014 Flows | |
| | The Landscape of REDD+ Aligned Finance in Cote d'Ivoire | |
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## About CPI

Climate Policy Initiative works to improve the most important energy and land use policies around the world, with a particular focus on finance. An independent organization supported in part by a grant from the Open Society Foundations, CPI works in places that provide the most potential for policy impact including Brazil, China, Europe, India, Indonesia, and the United States.

Our work helps nations grow while addressing increasingly scarce resources and climate risk. This is a complex challenge in which policy plays a crucial role.

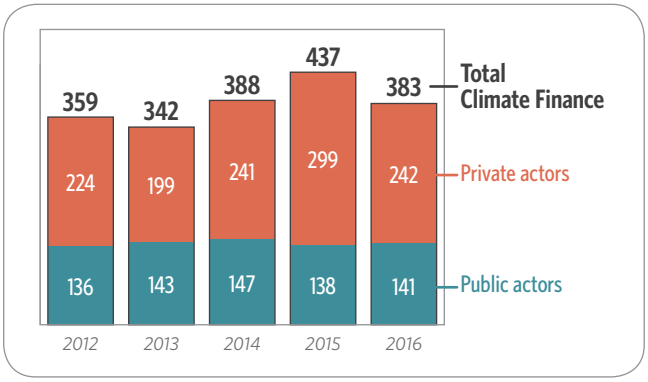
# Executive Summary

Two years since the negotiation of the Paris Agreement, the global community faces significant challenges in mobilizing the investment required to meet the shared goal of limiting global warming to, at most, two degrees Celsius and to adapt to climate impacts. As governments focus on ways to most effectively finance the implementation of their agreed upon nationally determined contributions (NDCs), a wide range of public and private finance actors are aiming to take advantage of the strong political signal delivered by the Paris Agreement, and the numerous investment opportunities the NDCs afford.

Climate Policy Initiative's 2017 edition of the *Global Landscape of Climate Finance* updates the most comprehensive assessment of annual climate finance flows with data from 2015 and 2016, providing, for the first time, a five-year trend analysis on the how, where, and from whom finance is flowing toward low-carbon and climate-resilient actions globally in order to identify trends, gaps, and opportunities to scale up investment. As with previous reports, the figures identified in this Landscape represent overall global finance flows and should be compared with estimates of total investment needed consistent with the goal of limiting global temperature rise to below 2 degrees Celsius.

*Global climate finance flows surged to $437 billion in 2015, before falling 12% to $383 billion in 2016.*

Figure 1: Breakdown of global climate finance by public and private actors 2012-2016 ($bn)




Our findings indicate:

- Climate finance flows reached a record high of $437 billion dollars in 2015, followed by a 12% drop in 2016 to $383 billion, although still higher than flows in 2012 and 2013.[1] Taking into account annual fluctuations, the average flows across 2015/2016 were 12% higher than during 2013/2014.
- The record in 2015 was driven by a surge in private renewable investments, particularly in China, and in rooftop solar power in the U.S. and Japan.
- The decrease in 2016 was due to a combination of both falling technology costs and lower capacity additions in some countries. Technology costs decreased an average of 10% between 2015 and 2016, with particular decreases from solar. At the same time, new capacity additions slowed down in China, which saw a scheduled phase-down in revenue support for wind projects and a greater emphasis on grid integration for existing capacity.
- Annual solar rooftop photovoltaic (PV) and onshore wind capacity additions and investment are on track to meet their share of the 2°C goal, according to the International Energy Agency scenario, and investments in these technologies outpaced fossil fuel power investments by over 100% (IEA 2017c, 2016b).[2] However, a broader scale up of investments across all sectors of the economy is needed. For the energy sector, including energy use in power, transportation, and buildings, the needs total over $1 trillion per year through 2050. Even more is needed in agriculture, forestry, water, and waste to enable a low-carbon transition, while adaptation finance needs are also pressing in order to minimize the costs of climate impacts that are already locked in.
- Part of this scale up in climate finance may be based on the shift of existing investments in traditional fossil fuel activities towards climate-compatible activities. Total upstream and downstream fossil fuel investment in 2016 of $825 billion indicates that significant potentially

1 All figures are in nominal US Dollars unless otherwise specified
2 It should be noted that the IEA scenario represents an estimate of a 50% chance of avoiding a global 2 °C temperature rise

stranded investments could be reallocated to meet low-carbon investment needs (IEA 2017a).

- Within public sources of finance, development finance institutions (DFIs) continue to raise, manage, and distribute the largest share of public finance. National DFIs have reduced commitments by 13% over 2015/2016 compared to 2013/2014, partially due to economic volatility in some emerging markets. Multilateral and bilateral DFIs continue to make strong progress in scaling up climate finance lending in line with their internal institutional 2020 targets. Multilateral DFIs are already over three-quarters of the way to meeting their 2020 targets. They are also joined by new institutions to the landscape, such as the Green Climate Fund, as well as other emerging market-led institutions, such as the Asian Infrastructure Investment Bank and the New Development Bank, providing a combined $2.5 billion of new flows in 2016.
- Although adaptation finance has dropped from 18% to 16% of public finance flows due to the reduction in national DFI flows, multilateral DFIs have provided 29% more on average during 2015/2016 over 2014. These figures continue to represent a partial and uncertain estimate as it is affected by the different accounting approaches used for tracking finance, particularly among national DFIS, and tracking gaps for domestic budgets and private investment.
- While finance remains far below estimates of what is needed, there are several ongoing positive trends that may affect the outlook for scaling up climate finance going forward:
  - » NDC plans being elaborated upon to give clarity to potential investment opportunities
  - » Greening existing public finance flows
  - » Industry-wide discussions on use of climate-related financial risk disclosures and reporting
  - » Greater use of new and innovative blended finance vehicles
- However, there are also several risks to maintaining progress. In particular, the U.S.' announcement of withdrawal from the Paris Agreement and continued economic volatility in major emerging markets such as Brazil and Russia represent challenges.

While *Landscape 2017* presents the most comprehensive information available about which sources and financial instruments are driving investments, and how much climate finance is flowing globally, it does not capture potentially greater flows due to methodological issues related to data coverage and data limitations, in particular, domestic government expenditure on climate finance, and private investments in energy efficiency, transport, land use, and adaptation.

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# LANDSCAPE OF CLIMATE FINANCE IN 2015/2016

**410** BN USD ANNUAL AVERAGE

CLIMATE POLICY INITIATIVE

*Global climate finance flows along their life cycle in 2015 and 2016. Values are average of two years' data, in USD billions.*

## SOURCES AND INTERMEDIARIES

*Which type of organizations are sources or intermediaries of capital for climate finance?*

## INSTRUMENTS

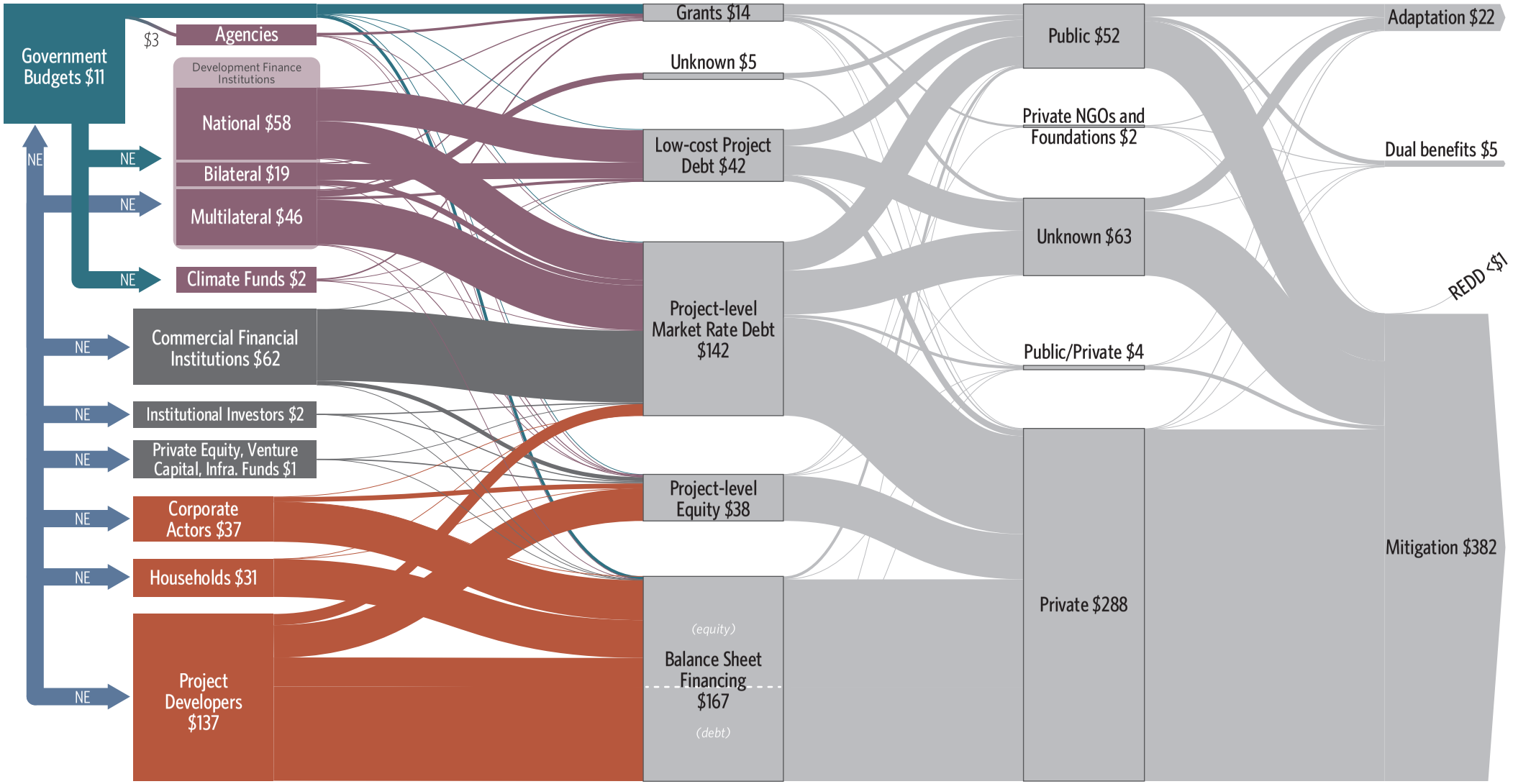
*What mix of financial instruments are used?*

## RECIPIENTS

*Does climate finance go through public or private channels?*

## USES

*What types of activities are financed?*




**KEY**

PUBLIC MONEY | PRIVATE MONEY | PUBLIC FINANCIAL INTERMEDIARIES | PRIVATE FINANCIAL INTERMEDIARIES | FINANCE FOR INVESTORS & LENDERS

NE: NOT ESTIMATED

## 1.1 Sources and Intermediaries

### 1.1.1 PUBLIC FINANCE

*In 2015 and 2016, public finance actors and intermediaries committed an average of $139 billion/year or 34% of total climate finance flows.*

Public climate finance providers include donor governments and their agencies, multilateral climate funds, and development finance institutions (DFIs). Their percentage contribution in the total climate finance dropped from 40% in the 2013/2014 period to 34% in the 2015/2016 period, due to the increase of investments from private finance actors and relatively less finance flowing from national DFIs.[3]

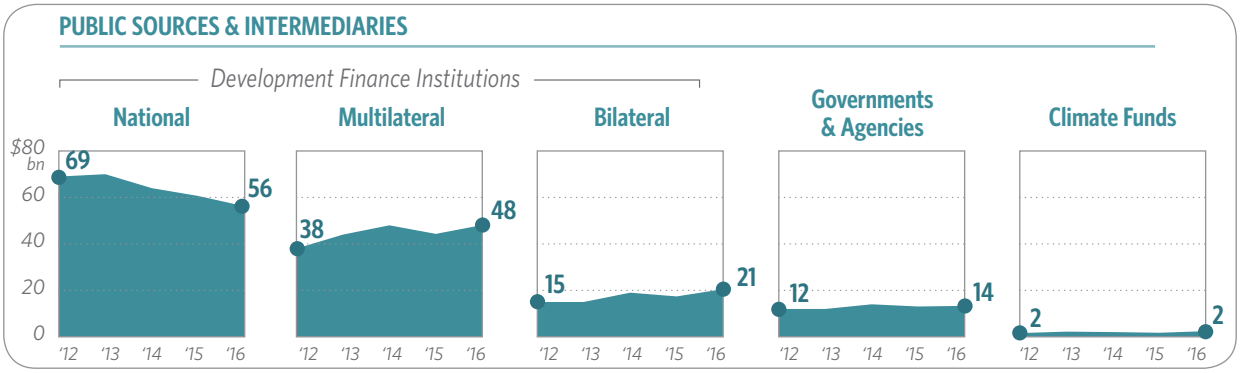
**In 2015 and 2016, DFIs accounted for the majority of public flows contributing, on average, $124 billion annually**, or 89% of the total public finance.[4] In anticipation of the Paris Agreement, six multilateral DFIs committed to targets to scale up climate finance, ranging between 25-40% of total business by 2020 (MDBs 2016). In 2016, all but one of the institutions were on track to meet their 2020 annual target. In aggregate, the multilateral DFI flows in 2016 were at 78% of their annual targets to be met by 2020.

Recent additions to the list of multilateral financial institutions are the Asian Infrastructure Investment Bank and the New Development Bank. The Asian Infrastructure Investment Bank, which began operations in 2016, was founded to address the infrastructure financing gap in Asia. Its contribution to the renewable energy sector was $465 million in 2016. The New Development Bank, sometimes referred to as the BRICS bank, made contributions amounting to $511 million in 2016. This number is likely to increase in the coming years as the Bank intends to earmark 60% of its total lending to renewable energy projects.[5]

Although flows from bilateral DFIs fluctuated across the years, the average over 2015/2016 saw an increase of $2 billion/year compared to 2013/2014. National DFIs saw a gradual decrease in flows over the years from $70 billion in 2013 to $56 billion in 2016, corresponding to a decrease in the National DFI share of overall public flows from 46% in 2013 to 40% in 2016. This may be related to the fact that National DFIs in emerging markets have witnessed sharp downturns of up to 50% in climate finance lending due to economic volatility, including currency devaluations. However, still, across all national, bilateral, and multilateral DFIs, we estimate that the percentage of new commitments targeted towards climate finance has increased from 26% on average in 2014 to 28% for both 2015 and 2016.

**In 2016, multilateral climate funds approved a record amount of climate finance grants and loans, at $2.45 billion, 40% up from 2015.** This surge is mainly due to the Green Climate Fund (GCF), established in 2015. In its first full year of operation, the GCF commitments accounted for 54% of the total flows from climate funds (see box 1).

Figure 2: Sources and intermediaries of public climate finance




Source: OECD 2017; ODI 2017; CPI analysis

3 Data is taken from most recent available year. For those with missing 2016 data we have assumed same amount as in 2015.

4 We classify DFI flows as: Multilateral, where public finance institutions have multiple countries as shareholders and finance flows internationally; Bilateral, where there is single country ownership of the public finance institution and finance flows internationally; National, where there is single country ownership of the public finance institution and finance is directed domestically.

5 See New Development Bank website: http://www.ndb.int/president_desk/ndb-president-60-funding-will-renewables/

**At approximately 10% of overall public flows, international finance from donor governments and their agencies to developing countries stayed constant throughout 2014-2016 at $14 billion.**[6] U.S. federal agencies accounted for $2 billion of climate finance in 2015, which may be under threat should proposed policy take effect. As with previous reports, the figures identified in the *Landscape 2017* should not be confused with amounts that may count towards the $100 billion per year developed countries committed to mobilize in the Copenhagen Accord, and reaffirmed in Paris, to assist developing countries.

**Box 1: Was there a 'Paris effect' in mobilizing climate finance?**

The 2015 record-high in mobilizing total climate finance at first glance suggests a correlation with the momentum associated with COP21 and the lead up to the Paris Agreement. However, under the surface, the story is more complicated.

The increase in overall finance in 2015 was not due to a major scale up of public finance, (despite a small increase in grants provided as official development assistance), but rather due to an increase in private finance, as falling renewable costs and continued strong policy environments led to record investments (see section 1.1.2). Additionally, there was, in fact, an overall decline in public finance in 2015, however, this reflects regular annual fluctuations in flows from multilateral and bilateral DFIs – the annual average across 2013/2014 and 2015/2016 remain roughly the same.

That said, there were some signals that momentum in 2015 may have made a small difference, and may make a larger difference ahead:

- The private finance data show noted increases in direct investment by institutional investors and increased lending by commercial banks, which may have been mobilized through the various investor engagement initiatives organized through conveners such as UNEP, the Principles for Responsible Investment, and the Global Investor Coalition on Climate Change.
- Forty three governments committed $10.3 billion to the Green Climate Fund before the end of 2015, and, as a result, 54 projects have been financed for a total of $2.6 billion by October 2017, replacing much needed low-cost or risk-taking capital as other climate funds come to a close. Still, the U.S. has since announced, along with its intention to withdraw from the Paris Agreement, that it will not commit the remaining $2 billion of its $3 billion pledge to the Green Climate Fund, thus dropping overall pledges to the Fund to $8.3 billion.

Overall, while it is difficult to clearly determine a "Paris effect" on financial flows, it's worth recognizing that public finance commitments often take years to translate into investments due to lengthy budget approval processes, board deliberations, project proposal cycles, etc. Thus, public finance may increase in the coming years as the public investment cycles catch up with the stated commitments made prior to the Agreement. Moreover, many of the political commitments made before and during negotiations were in the context of 2020 targets, thus there may be significant growth from some donors and public finance institutions in the coming years.

6 This is partly explained by 2016 data for government and agencies is as yet unavailable.

### 1.1.2 PRIVATE FINANCE

*Private climate finance averaged $270 billion/year during 2015 and 2016, which was 23% higher than the annual average in 2013/2014. A record high of $299 billion was recorded in 2015, followed by a 19% decline in 2016, though 2016 was still higher than the years prior to 2015.*

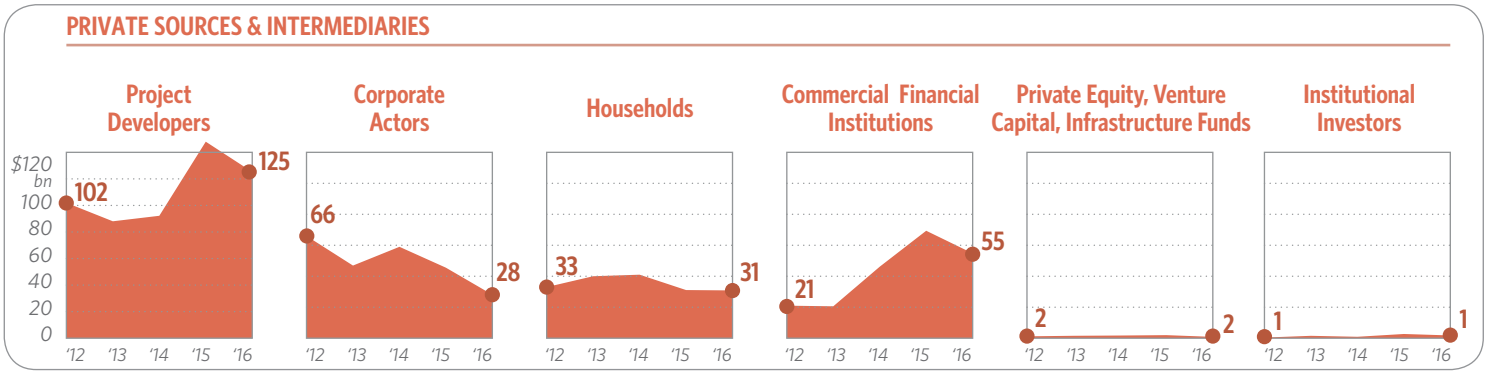
Private finance flows in this Landscape include financial commitments by corporations and project developers implementing new renewable energy projects, commercial bank project lending, institutional investors' direct infrastructure investment, and households investing savings.

**Project developers are consistently driving the largest volume of private finance**, accounting for $148 billion of finance in 2015 and $125 billion in 2016. Developers in China, the U.K., and the U.S. were most active in sourcing finance for projects in their own countries.

Corporations and households consistently account for 10-15% of total private finance flows. U.S. and Japanese households and corporations were particularly active in the rooftop solar photovoltaic (PV) market in 2016 and 2015. At $9.6 billion, U.S. households increased rooftop solar PV investment by 21% in 2015 and now represent 31% of the total market. Japanese corporations invested $23 billion in solar PV installations in 2015, however, investment declined to $7 billion in 2016.[7] Commercial finance institutions have also taken a larger role. The share of more traditional lenders in the climate financing mix signals a maturing technology market in some areas

The Landscape looks at project-level, primary financing data to capture new money targeting climate-specific outcomes and excludes activities that are more typical for institutional investors, such as re-financing or investments into project developers. It therefore may err toward minimizing the role of institutional investors and infrastructure funds. However, we did capture increased direct investments in climate finance from these actors by $2 billion in 2015. For more information on the drivers of private finance flows, including the role of declining technology costs and policy environments, see section 1.4.

Figure 3: Sources and intermediaries of private climate finance




Source: BNEF 2017a; CPI analysis

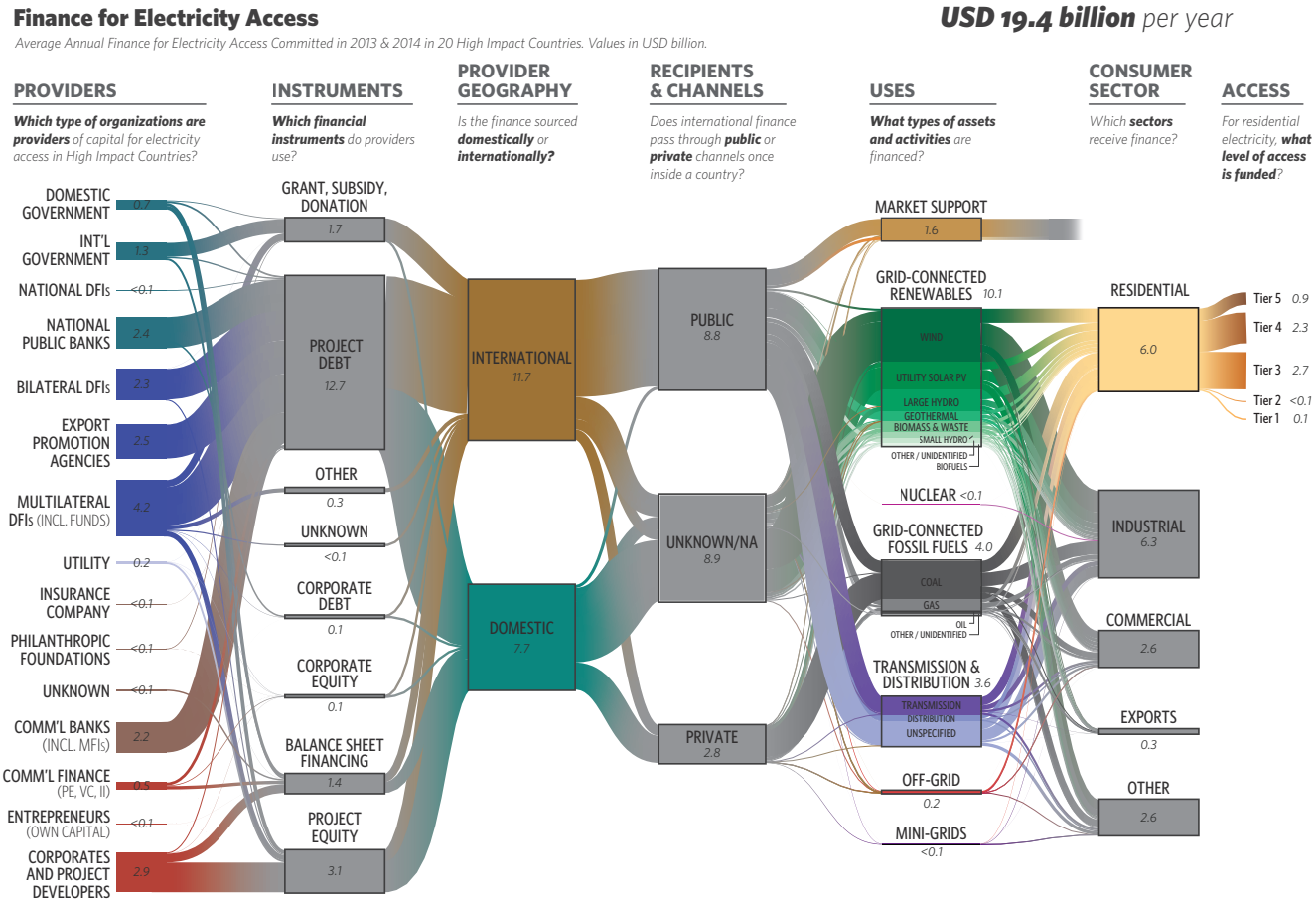
7 Household and corporate investment are different types of private investment with different drivers which will be the subject of future work.

**Box 2 Mapping finance for energy access – where climate finance helps meet the Sustainable Development Goals**

Several Sustainable Development Goals relate to climate change, including #7 – ensuring universal clean energy access, #10 – making cities sustainable and resilient, and, of course, #13, combatting climate change. In an ideal setting, the volume and impacts of climate finance would be integrated with the tracking of progress towards the Sustainable Development Goals (SDGs).

The recently published report "Understanding the Landscape: Tracking Finance for Electricity and Clean Cooking Access in High-Impact Countries" (SE4All, 2017) conducted a similar tracking exercise to the *Global Landscape of Climate Finance* but with a narrower focus, tracking financial commitments for energy access as it relates to Sustainable Development Goal #7 in 20 developing countries whose populations suffered from the highest access deficits across 2013/2014. The study tracked all types of investment for energy access, including electricity generation through both fossil fuel and renewable technologies, electricity transmission and distribution, and clean cooking.

The study found that $19.4 billion per year, on average, was committed to the electricity sector by public and private, international and domestic actors. This is far below the $45 billion required annually to achieve universal electrification by 2030. Much of the finance focused on more expensive grid-based infrastructure, with only a small portion invested in decentralized renewable energy solutions, which can deliver basic modern energy services more quickly and at less cost to rural and hard to reach areas.




For more: https://climatepolicyinitiative.org/publication/understanding-landscape-tracking-finance-electricity-clean-cooking-access-high-impact-countries/

## 1.2 Instruments

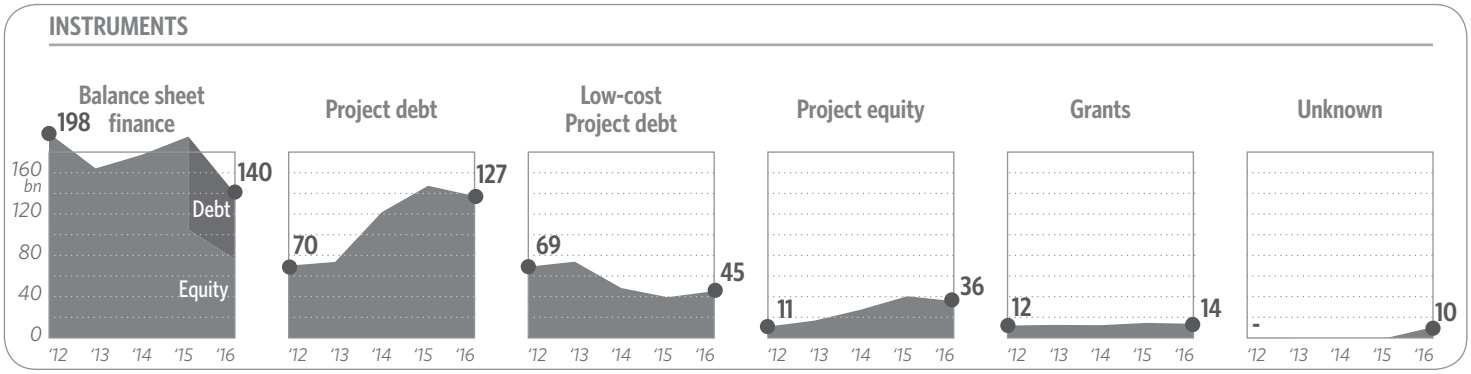
*Market rate debt, through project or corporate finance, was the largest financial instrument used to channel climate finance, at an average of $219 billion/year during 2015/2016, accounting for 54% of the total.*

**Market-rate debt, at $219 billion/year, on average, during 2015 and 2016, is the most important financial instrument used to channel climate finance flows.** Specifically, project finance debt, driven by project cash flows, comprises 35% of all flows. Balance sheet debt, typically raised by corporate actors and project developers to finance new projects internally, accounts for 19% of the total across 2015 and 2016.

Low-cost or concessional debt provided by public actors, such as climate funds and DFIs, accounted for 10% of flows across 2015 and 2016, reduced from 17% by comparison to 2013/2014 flows, where national DFIs were more active in financing projects.

Equity investments can take place through the balance sheet, or at the project level in which investments are paid back from project cash flows, with no-recourse or limited recourse to the project sponsors. Our analysis shows that equity investments through balance sheets comprise 22% of the total commitments in 2015/2016, whereas equity investments at the project level represent 9% of total commitments. These two types of equity investments constitute the next largest form of instrument, after debt, followed by grants at 3%.

Figure 4: Breakdown of climate finance flows by instrument ($bn)




**Box 3 Landscape innovations for greater detail on climate finance flows**

The 2017 edition of the Landscape includes two methodological changes in order to offer greater clarity on climate finance flows. These include:

- Applying gearing ratio assumptions to balance sheet financing. Gearing ratios indicate the ratio of a project's level of long-term debt compared to the total capital. This methodology allows us to estimate total debt and equity flows for renewable energy projects, whereas previous editions of the Landscape identified balance sheet financing as the largest instrument without distinguishing between debt and equity for project investments. The gearing ratio assumptions applied in this Landscape account for technology and country-specific conditions. These new flows have been categorized as balance sheet debt and balance sheet equity to retain continuity with previous editions.
- Applying up-to-date technology investment costs to take full account of the fall in technology costs associated with renewables. For per MW installed investment costs, we have complemented existing estimates with a wider range of sources and controlled for country markets to better capture investments as they relate to impact (BNEF 2017b, IEA 2016a, IRENA 2016).

## 1.3 Recipients

Cataloguing the recipients of public climate finance assists in understanding if private capital is being mobilized over the long-term. During 2015 and 2016, an average of 13% of publicly sourced climate finance went to private sector entities, 1% to private sector NGOs or foundations, 2% to public-private entities, and 38% to other public entities such as UN agencies and DFIs. 46% of the public climate finance recipients remain untracked due to data limitations, an increase from 40% over 2013/2014, impeding further analysis.

While this initial view would indicate a more negative picture for whether public finance is effectively leveraging private investment, it is, however, important to note that guarantees and insurance instruments, key leveraging tools for channeling private capital, are not captured by the Landscape in order to avoid double-counting. In fact, donor governments, agencies, and DFIs have reported a 37% increase between 2014 and 2015 in private climate finance mobilized through such instruments to $7.2 billion (OECD 2017). Multilateral DFIs also report an increase in private sector mobilization between 2015 and 2016 from $11 billion to $15.6 billion (MDBs 2016, 2017).

**Box 4: Data limitations and gaps**

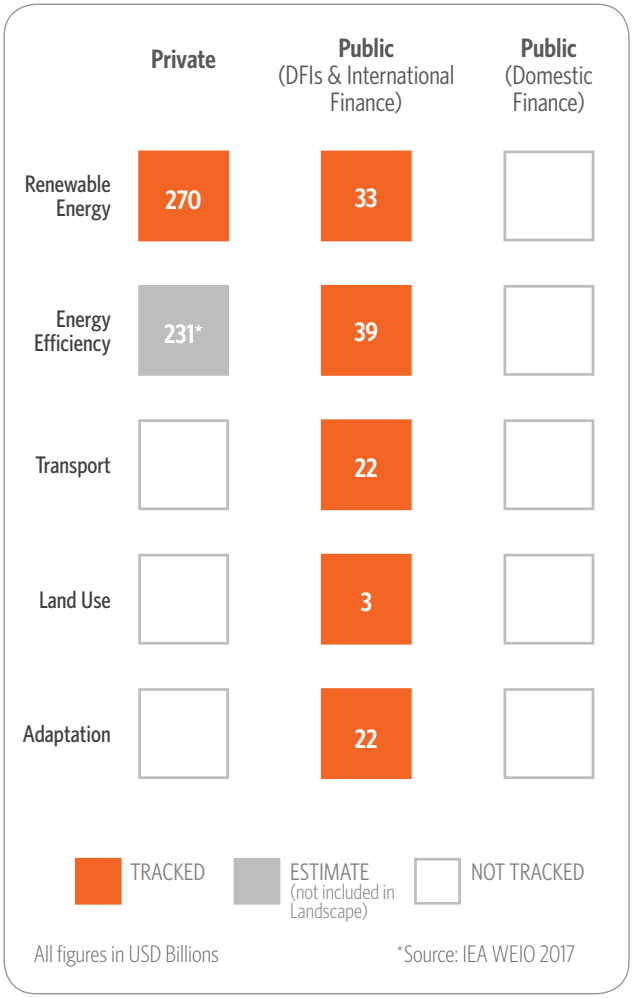
In line with previous editions, the *Landscape 2017* includes primary investments into productive assets at the project level to capture new money targeting climate-specific outcomes, and seeks to capture a non-double-counted estimate of financial flows. For this reason, finance provided through some financial instruments such as guarantees or insurance, green bonds, government revenue support schemes, and fiscal incentives, or investments in manufacturing or equipment sales, are not counted due to the potential for double-counting against project investments costs. Although, in the case of subsidies, in many countries such costs do reflect a non-double-counted estimate, there are significant data limitations to measuring this component.

However, the *Landscape 2017* does not capture potentially greater flows due to data limitations as illustrated in figure 5, in particular:

- Domestic public climate finance from governments. While coverage from national development banks is comprehensive, public budgets dedicated to domestic climate action, in particular domestic public procurement or infrastructure investment and government shares in state-owned enterprises investments has data limitations.
- Private investments in energy efficiency, transport, land use, and adaptation.[1]

Future editions will explore the potential to expand coverage to these areas. Please see the methodology document for more information.

Figure 5: Accounting gaps in tracking climate finance




1 IEA (2017) estimates $231 billion in energy efficiency investments in 2016 through sales of appliances and building investments, however is not comparable to project level investment.

## 1.4 Sectors

In sectors, we first look at investments aimed at helping the world mitigate climate change, including renewable energy and energy efficiency, before turning to investments aimed at helping communities adapt to the effects of climate change.

### 1.4.1 MITIGATION

**Mitigation activities accounted for an average of 93% of climate finance between 2015 and 2016. Of that investment, 74% was for renewable energy generation.** However, this high ratio of renewable energy to other sectors is likely a reflection of the relative lack of private finance data disclosure on new investments in energy efficiency and other mitigation-relevant sectors.

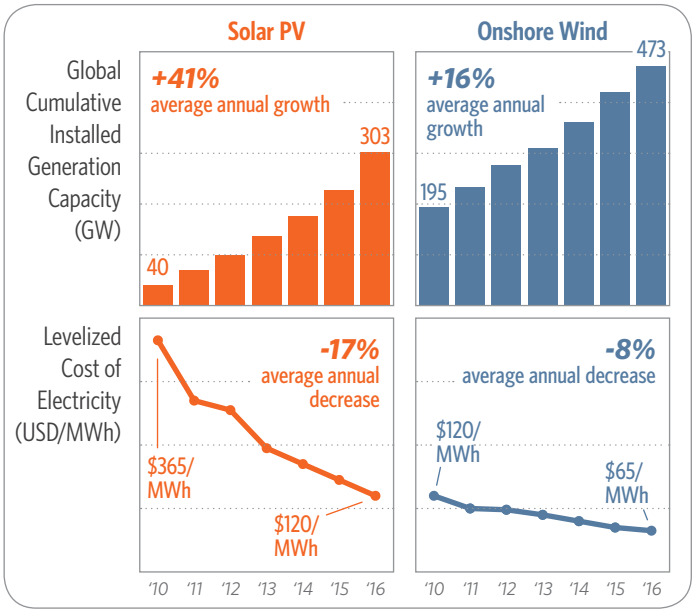
*Investment in renewable energy reached a record high in 2015. This was a result of greater deployment, particularly in China, the US, and Japan.*

**In 2015, total renewable energy investment increased by 25% from its 2014 level, driven by an increase in capacity additions. Capacity additions and investment in renewable energy were particularly high in China**, where the private sector invested over $60 billion in solar power and $48 billion in wind power, followed by the U.S. with $27 billion in solar power and $15 billion in wind power. Japan also showed strong growth in solar, with $31 billion tracked. Significant global capacity additions meant that investment tracked in 2015 increased despite the falling costs of solar and wind power (see figure 6).

In 2016, average renewable energy technology costs continued to decrease, with the dollar-per-megawatt ($/MW) cost for solar and wind projects falling by around 10% from the previous year. However, capacity additions in 2016 were lower than 2015, especially due to a slowdown in China, which accounted for half of worldwide capacity additions in the year 2016. This China slowdown was driven by abnormally high spending in 2015 as developers sought to complete projects ahead of a reduction in the China feed-in-tariff (REN, 2017) and as grids prioritized integration of existing capacity instead of new builds to solve congestion issues. (FS-UNEP, 2017).

Overall, the lower 2016 deployment, combined with the impact of lower technology costs, resulted in a decrease in total investment in 2016 from 2015 levels.

Figure 6: Global cumulative solar PV and wind installed capacity and levelized solar and onshore wind electricity costs



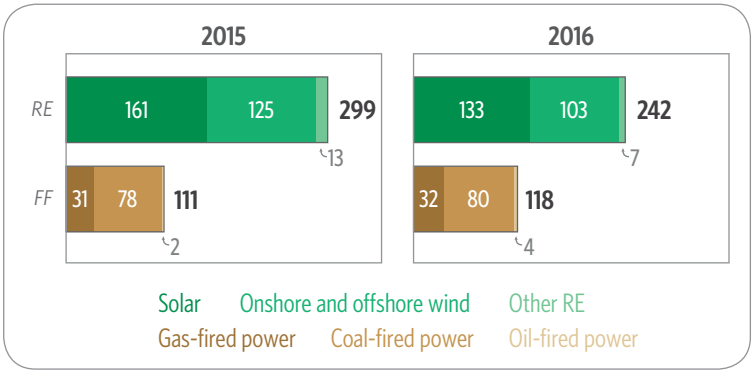

Sources: Cumulative installed capacity figures see REN21, 2017. LCOE figures see IRENA, 2015; IRENA, 2013; World Energy Council, 2016a; World Energy Council, 2016b; REN 21, 2017.Levelized cost figures are used for onshore wind only as the majority of installed wind capacity globally is composed of onshore installation.

**Interestingly, for both 2015 and 2016, private investment in renewable electricity generation exceeded new fossil-fuel power generation investment by over 100%.** According to the IEA's World Energy Investment report (2017a), total investment in fossil fuel power generation (not counting extraction) stood at $118 billion in 2016, and was composed of:

- $80 billion of coal-fired power investment (around 80GW of capacity)
- $34 billion of gas-fired power investment (around 40GW of capacity)
- $4 billion of oil-fired power investment (installed capacity not disclosed)

By contrast, total investment in renewable electricity tracked in the *Landscape 2017* exceeded the IEA's estimates of investment in fossil-fuel power in 2016, commanding $242 billion (solar power accounted for $133 billion (52 GW) and wind power $103 billion (61 GW)). The story in 2015 was similar with renewable power accounting for $299 billion to fossil fuel power's $111 billion.

Figure 7: Comparison of private investment in renewable energy and fossil fuel power generation




Notes: upstream and downstream oil and gas investment is excluded from the chart given that a proportion of this expenditure relates to end uses other than electricity such as petrochemicals and heating; the proportion relating only to power generation was not available. A proportion of coal mining investment relates to mining metallurgical coal however the majority is likely to relate to coal used in power generation. Figures for renewable energy are based on CPI analysis. All other chart figures are based on the World Energy Investment 2016 (IEA, 2016) and World Energy Investment 2017 (IEA, 2017a) reports.

The picture becomes less clear when investment in oil, gas, and coal extraction is included; although total fossil fuel investment in 2016 fell 18%, driven in part by lower upstream costs, the figure still stood at $825 billion.[8] While this figure eclipses total renewable energy investment, a proportion of oil and gas related spending ultimately relates to non-energy uses such as medicines, lubricants, and plastics.[9]

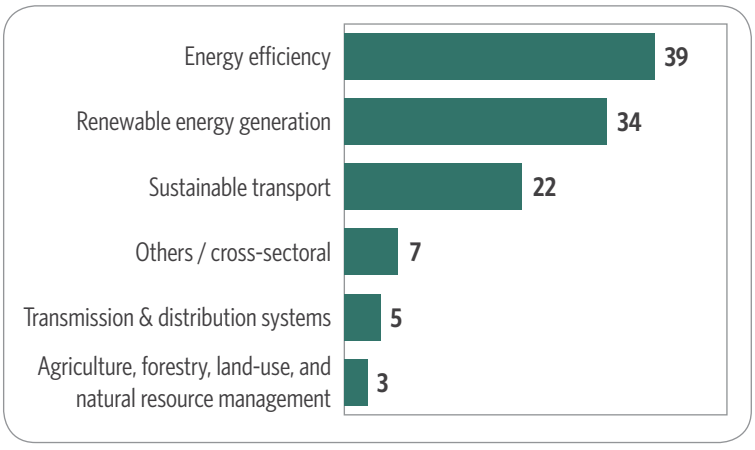
*While renewable energy deployment and investment are strong, investment in other sectors are lagging far behind what's needed to reach climate goals. Still, public investment in energy efficiency outpaced renewable energy for the first time in 2015/2016.*

Investment in wind and solar is currently on track to meet 2°C deployment pathways (IEA 2017c).[10]

However, the vast majority of other energy sector technologies in electricity, transport, and buildings, as well as global natural resource and adaptation investments remain underfunded according to the IEA scenarios.

**Energy efficiency is now the priority focus of public investment in mitigation.** Of public finance directed to the mitigation sector, energy efficiency has overtaken renewable energy as the major focus of investment. This suggests that the public sector is shifting to a critical role in overcoming hurdles to realize the significant potential of energy efficiency. The sector received $39 billion, on average, over 2015 and 2016, with its share increasing from 24% during the 2013/2014 period to 35% for the 2015/2016 period. Sustainable transport also saw an increase in average annual investment from $19 billion from 2013/2014 to $22 billion from 2015/2016. Public spending on renewable energy, on the other hand, decreased by $11 billion on average and nine percentage points from 2013/2014 to 2015/2016, while private investment for renewables increased, suggesting that renewable energy is becoming a commercial investment choice in more markets.

Figure 8: Average annual public finance investment in mitigation 2015/2016, most notable sectors




Source: OECD 2017, ODI 2017, CPI analysis

8 Upstream and downstream investment, and any electricity-generating investment.
9 In 2015 approximately 85% of oil demand was used for transportation and other energy uses, with the balance in non-energy uses. (IEA, 2017b).
10 Calculation using IEA 2-degree scenario goals in 2025 and cumulative installed capacity in 2015 shows that around 45 GW of solar and 62 GW of onshore wind installation per year over the period of 2015-2025 would be required for deployment of these technologies to remain consistent with a 50% chance of limiting global temperature increase to 2 degrees. (IEA 2016b, 2017a, 2017b).

### 1.4.2 ADAPTATION

*Adaptation flows as a proportion of public climate finance decreased from 18% during 2013/2014 to 16% during 2015/2016, largely due to methodological changes in climate finance reporting in the national DFI category. Multilateral DFIs have increased adaptation finance by 29%.*

Preliminary estimates on finance flowing to adaptation show that this area has received a smaller share of public climate finance from 18%, on average, from 2013/2014 to 16% from 2015/2016. While multilateral have increased adaptation commitments by approximately 29%, national DFIs have seen a fall of 50%, although the latter is due largely to changes to how institutions are reporting on adaptation finance. Better metrics and more harmonized understanding is needed across reporting institutions to enable more accuracy in tracking adaptation finance flows.

**Of the adaptation sectors, water and wastewater management captured 51% of public finance, on average, during 2015/2016**, which was down from 57% in 2013/2014. Land use adaptation in the form of agriculture and forest management has increased from 11% in 2013/2014 to 19% of adaptation finance in 2015/2106. Other disaster risk management interventions such as early-warning and rapid response systems have increase from 7% in 2013/2014 to 11% in 2015/2016, or $1.9 to $2.4 billion/year on average. Such investments will become more valuable to reduce the impacts of climate change over time. For example, the recent hurricanes in the U.S., Harvey and Irma, have estimated costs of $290 billion in economic damages.

Figure 9: Public climate finance by use ($bn)

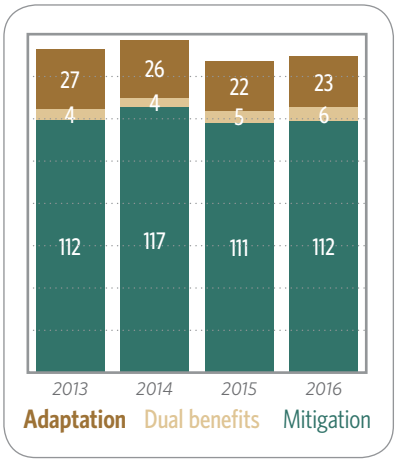
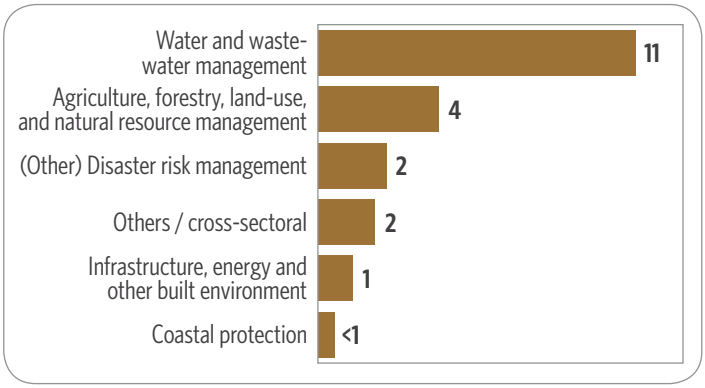
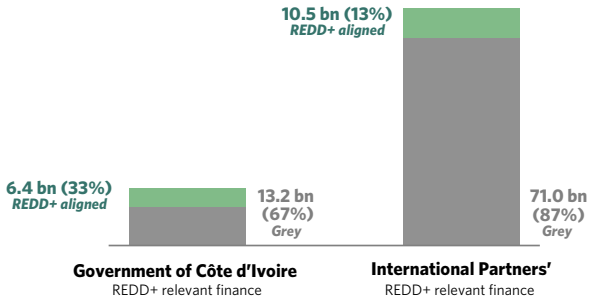



Figure 10: Average annual public investment in adaptation 2015/2016, most notable sectors)




**Box 5 Landscape innovations for greening existing flows in Cote d'Ivoire**

CPI's Landscape analyses throughout the years have provided a baseline to track domestic and international public finance contributing to country climate commitments and strategies. In 2016, analysis carried out for the government of Côte d'Ivoire identifies the nature and volume of domestic and international public finance contributing to limiting deforestation and encouraging sustainable land use in 2015. By looking at finance flowing into relevant sectors (known as "grey finance") like agriculture, forestry, energy, and mining, the report identified opportunities to "green" the finance already in place so that it can also support the National REDD+ Strategy. CPI identified the potential to increase finance aligned with the National REDD+ Strategy by over five times to $169 million just by greening existing finance. Additionally, new sources of finance can be raised through fiscal measures, incentives for local governments, and a dedicated National REDD+ Fund.



## 1.5 Geographic Flows

*Over 2015/2016, 79% of finance was raised domestically, an increase from 74% over 2013/2014.*

Over 2015/2016, an annual average of $324 billion, or 79% of the finance, stayed within the country of origin. This trend of strong domestic investment preference is a continuation from 2014 where 74% of the investments were domestic. As in previous Landscapes, this reveals the strong domestic preference of investors where country risks are well understood. It also highlights how effective domestic policy targeting investor risks may unlock investment at scale.

Figure 11 Domestic and international flows by source, 2014-2016 ($bn)

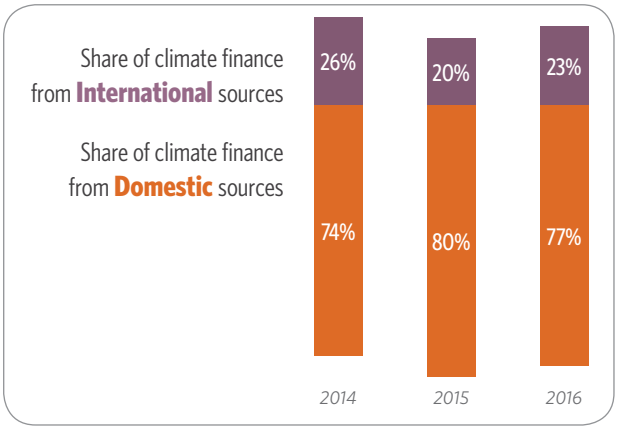
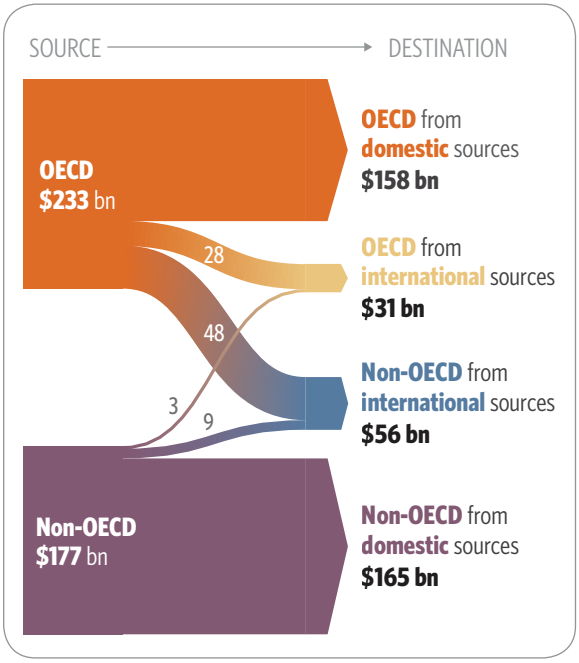



Figure 12: International and domestic climate finance flows ($bn)

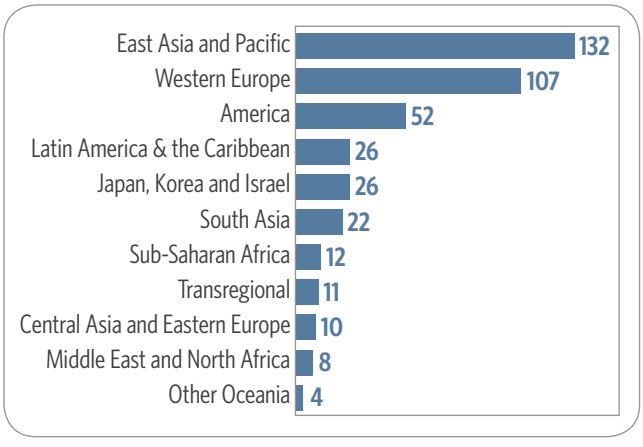



While global climate finance flows are dominated by domestic investments in high or middle-income countries, developing countries rely relatively more on international capital in sourcing climate finance.

We estimate that 12% of total flows or $48 billion/year flowed from OECD to non-OECD countries on average during 2015/2016.[11] This represents an increase from 2013/2014 from 11%.[12] Non-OECD countries are not just recipients of international flows. We tracked $3 billion/year on average of climate finance flowing from non-OECD to OECD countries and $8 billion of flows between different developing countries.

In non-OECD regions, East Asia and Pacific remains the largest destination for climate finance with $132 billion/year, or 32% on average for 2015/2016. This was a marked increase of 24% from the 2013/2014 period. South Asian flows saw the largest rise by 48% over the time frame to now reach $22 billion. In OECD countries, Western Europe and the Americas saw increases of 11% and 28% to $107 billion and $52 billion respectively. Flows across Sub-Saharan Africa, Latin America, and the Caribbean remained static, while Japan, Korea, and Israel saw a decrease of 29% to $26 billion.

Figure 13: Average annual climate finance breakdown by region of destination 2015/2016




11 OECD countries are those countries who are members of the Organisation for Economic Co-operation and Development, including a few countries listed as Non-Annex I Parties to the UNCCC (http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php) (Chile, Mexico, Korea, Israel, San Marino).

12 Note that we have slightly adjusted our methodology, recognizing information gaps hinder a proper understanding of international private investments. For this and other reasons, as per previous Landscape reports, the figures identified in the *Landscape 2017* should not be confused with amounts that may count towards the $100 billion per year developed countries committed to mobilize to assist developing countries.

## 1.6 Outlook on Scaling Up Climate Finance

Looking forward, the prospect for increased climate finance faces some significant headwinds:

- Although, the overall decline of climate finance in 2016 is partially explained by continued falling costs in competitive renewable technologies, it was also driven by a slowdown in new projects.
- Overall, despite investments in onshore wind and solar PV being on track, renewable energy remains just one part of one economic sector. Investment in other sectors continues below the estimated 2°C investment needs (IEA 2016b). Adaptation finance in particular remains well below stated aims to balance mitigation and adaptation finance, notwithstanding increases in funding from multilateral DFIs.
- The planned U.S. withdrawal from the Paris Agreement points to a fall of $2 billion, or 20% of pledged finance to the Green Climate Fund that would have otherwise deployed much needed grants, equity, concessional loans, and risk mitigation instruments to scale up private finance. It remains to be seen if levels of climate finance from U.S. federal agencies, $2 billion on average each year, may also decrease due to the withdrawal.

Yet, the data in *Landscape 2017*, and particularly the five-year trends, show that the longer-term tendency of climate finance is pointing in the right direction. China, for example, accounts for a large portion of the slowdown in new renewable energy projects, however, it is expected to meet its national targets. In the U.S., continued engagement of private investors such as households and corporates in renewables remains constant. In public finance, governments have maintained absolute flows while multilateral DFIs, as a category, have increased commitments in line with their 2020 targets.

Additionally, there are several trends that together may have a positive effect on mobilizing climate finance flows to the scale required in order to stay within a 2°C pathway. We discuss four such trends in the following sections.

### 1.6.1 GOVERNMENTS RESPONDING TO NEEDS FOR LONG-TERM TRANSITION

Article 2.1c of the Paris Agreement includes a long-term goal to "make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development." The articulation of a long-term and systematic finance goal in an international agreement can bring focus to efforts to engage financial system actors through the UNFCCC and other forums (see 1.6.2). However, it may also ensure that domestic governmental spending, as a whole, is consistent with 2°C pathways. As signatories of the Paris Agreement, governments should consider how to report on the consistency of their investments in the context of detailing Nationally Determined Contributions (NDCs), as well as assessing collective progress in the Facilitative Dialogue under the UN process in 2018.

Efforts to improve the tracking of domestic public finance on both sides of the balance sheet, new investment and revenue support policies offered by governments as they implement their NDCs, as well as stronger policy frameworks that signal less risk to private investors together will have an overarching impact on improving the effectiveness of domestic government spending.

### 1.6.2 FINANCIAL SYSTEM ACTION

A number of initiatives continue to engage broader capital markets, the financial system, and large corporations to align with low-carbon and climate-resilient development. Tools, investment criteria, and frameworks to help private investors deduce what constitutes as low-carbon and climate-resilient investments are becoming more commonplace. These initiatives include the following:

- 300 corporations have committed to set science-based targets on their emissions profile in line with 2-degree scenarios, to assist investors in assessing their low-carbon commitments.[13]
- The Task Force on Climate-related Financial Disclosure) established by the Financial Stability Board launched its final report in June 2017, emphasizing the need for investors and asset managers to implement scenario analysis in evaluating the physical and transition risks to climate change, as well as opportunities to create investor value over the long-term.[14]

13 See Science Based Targets website: http://sciencebasedtargets.org/2017/09/18/more-than-300-to-set-science-based-targets/
14 See TCFD website: https://www.fsb-tcfd.org/

- The implementation of article 173, requiring reporting on portfolio alignment with low-carbon transitions, for French-based investors underscores the potential for more active regulatory environments governing asset allocation by investors.[15]

The overall engagement and commitment to reporting and target-setting of corporations and private investors, particularly institutional investors, is a positive signal for financial system action. Later this year, CPI will launch a report exploring methods to track the interlinkage of these actions with increases in climate finance flows across the financial system.[16]

### 1.6.3 GREENING EXISTING PUBLIC FLOWS AND REDIRECTING POTENTIALLY STRANDED CAPITAL

Since 2011, efforts by public finance institutions have contributed to greater transparency and clarity on climate finance flows.[17] Efforts to build on progress include accounting for low-carbon transition investments against a direct carbon footprinting approach, as well as efforts to mainstream climate resilience into public investment decisions and tracking associated impact metrics. The development of these new metrics will support broader assessments of how green existing public flows are, as well as whether or not flows are directed to potentially wasted or stranded projects, like for fossil fuel energy or other high-carbon uses. For example, CPI's work on integrated energy productivity illustrates a potential of integrating project level indicators into project design to increase overall environmental and social productivity of investments that assist climate and development needs.

Still, there is more work to do in aligning public finance investments with low-carbon and climate-resilience needs. This is particularly relevant in the context of both the Paris Agreement and the Sustainable Development Goals. Specific areas for improvement are:

- Climate resilience. With regards to climate resilience, sectors like water supply, agriculture, and general infrastructure all have significant capacity to adapt to climate impacts, and therefore require a greater focus to ensure that climate resilience is integrated into public investments.
- Channeling finance from high-carbon activities. High-carbon investments not only detract from low-carbon efforts, but may eventually be stranded (or "wasted") as projects lose value in a low-carbon economy. In the U.S., Europe, and Australia, for example, investments in existing high-carbon assets have already been devalued. Public finance in high-carbon activities, particularly from multilateral institutions, has therefore received significant attention.[18]
- At the national DFI level. While multilateral and bilateral DFIs have made some progress on greening existing finance, national DFIs may be the next frontier. A number of multilateral and bilateral DFIs engage and channel finance through national level counterparts in developing countries. The prospect of green banking initiatives supported by public and private investors may assist national DFIs experiencing reduced investments due to economic volatility, as well as potentially highlighting wasted expenditure and increasing overall climate finance by national DFIs and commercial banks.

### 1.6.4 GROWTH IN BLENDED FINANCE VEHICLES TO ATTRACT INSTITUTIONAL INVESTMENT

While this Landscape tracks new and primary investments into projects, it does not capture refinancing, acquisitions, or public offerings. As a result, large institutional investors and asset managers who operate primarily in secondary markets make up less than 1% of the total finance captured in the Landscape (typically, as equity investors invest in renewable energy projects with government support). However, analysis of submissions for the *Global Innovation Lab for Climate Finance* (the Lab)[19],a public-private collaboration where ideas for new climate finance instruments are identified, analyzed, and stress-tested to scale up private investment, reveal that the most targeted source of private finance for new instruments are institutional investors.

There are several initiatives, including the Lab, that work to tailor investment opportunities to these investors, and/or work to equip them with the tools needed to understand these investment opportunities, with a

15 See news report: https://www.ipe.com/countries/france/france-aims-high-with-first-ever-investor-climate-reporting-law/10011722.fullarticle
16 CPI, forthcoming, Supporting the Momentum of Paris: A Systems Approach to Accelerating Climate Finance.
17 See the joint MDB reports on climate finance and the International Development Finance Club (IDFC) Green Finance Mapping Report.
18 See Christianson et al (2017), Bodnar et al (2017). Gerasimchuk et al (2017)
19 For more information see https://www.climatefinancelab.org/

focus on opportunities in energy efficiency, water, land use, insurance, and adaptation sectors, specifically. Most of these opportunities, however, still require some public finance – in other words, they are blended finance vehicles – a point that underscores the continued demand for public risk-taking capital or co-financing.

### 1.6.5 THE OTHER NEXT STEP: IMPROVING TRACKING AND DATA COVERAGE

While each of the efforts listed in the previous sections is important to increasing the scale of climate finance, greater coverage and depth of climate finance tracking can provide the necessary evidence to target climate finance most effectively.

**Expanding data coverage and tracking of climate finance flows will assist in capturing how finance is enabling a low-carbon and climate-resilient transition, providing decision makers with better evidence to frame policy and target finance more effectively in line with global goals.** In particular:

- Further methodological work is needed to better cover all climate-related investments in primary assets, particularly energy efficiency, transport, land use, and adaptation as well as by domestic public actors.
- Efforts by governments, development finance actors, and engaged private investors on improving climate finance definitions in the use of tracking metrics and how they may relate to green finance and the Sustainable Development Goals offer the potential to greatly expand reporting and flow data.
- In addition, highlighting the potential of managing the financial risks of climate change in reallocating finance from high-carbon to low-carbon assets can further deepen the knowledge of where the capital needed to fill the investment gap may come from.
- Finally, detailed analysis on the relationship between primary and secondary financial markets, specifically project finance and capital markets, is needed to understand how pools of capital flow into new, additional investments.

CPI remains committed to improving the understanding and transparency of the global climate finance landscape by continuing a work program in these areas. By shedding light on the intersection between public policy, finance, and private investment, this work aims to help decision makers optimize the use of their resources in support of a low-carbon, climate-resilient global economy.

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