Climate Finance

Mobilizing the Public and Private Sector to Ensure a Just Energy Transition

Citi GPS: Global Perspectives & Solutions

November 2022

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SUSTAINABLE DEVELOPMENT GOALS

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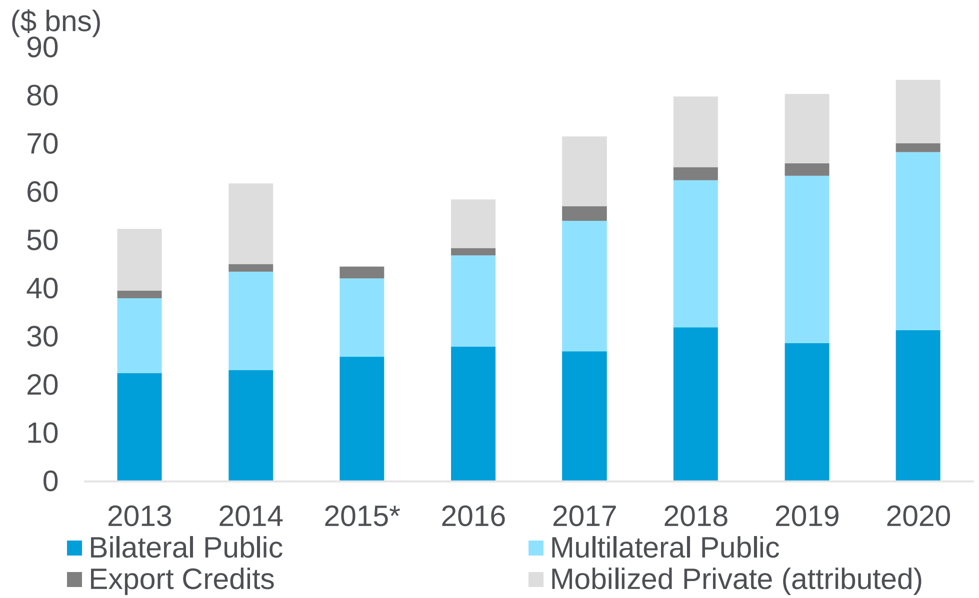
Introduction

Introduction

This report answers two questions (1) What investment is needed in different regions and countries for climate mitigation and (2) how can we mobilise this investment efficiently to enable the world to reach its climate goals?

- $100 billion of climate finance was promised by developed countries to developing countries at COP15 in Copenhagen. There is an agreement that this has not been met. However, this finance will only go so far and much more needs to be mobilised.
- Financing for loss and damage has become important for vulnerable countries affected by climate change.

Climate Finance Provided and Mobilised by Developed Countries to Developing Countries as part of the $100 billion

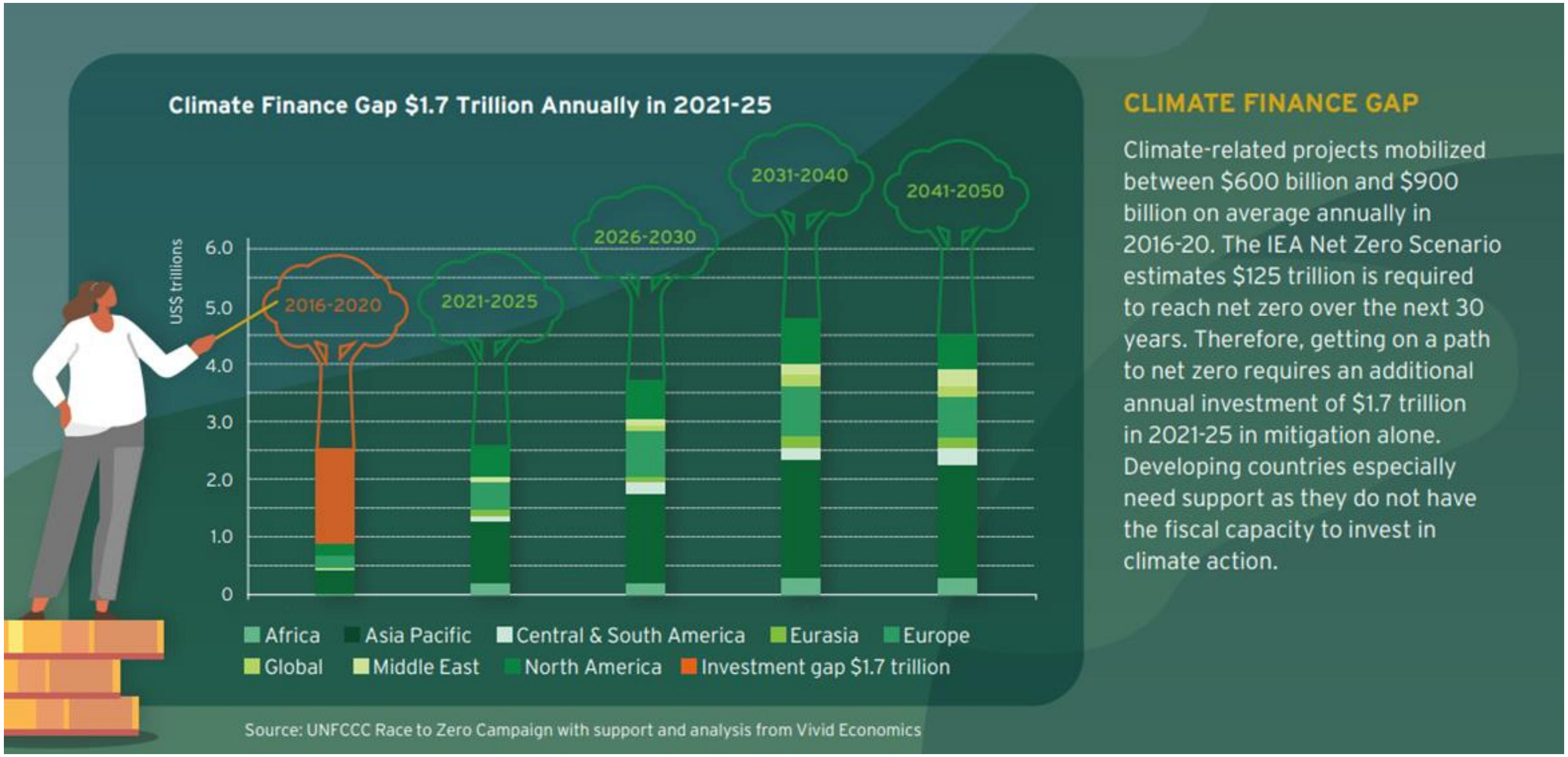


* Missing data

Source: OECD, Citi GPS

Investment Gap of $1.7 Trillion

$ 125 trillion is needed over the next 30 years and this is just for mitigation. Current finance flows are not sufficient and need to be scaled up significantly. 70% of this needs to come from the private sector.



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Climate Finance Gap - Analysis of Finance needed across regions

No Region is on Track

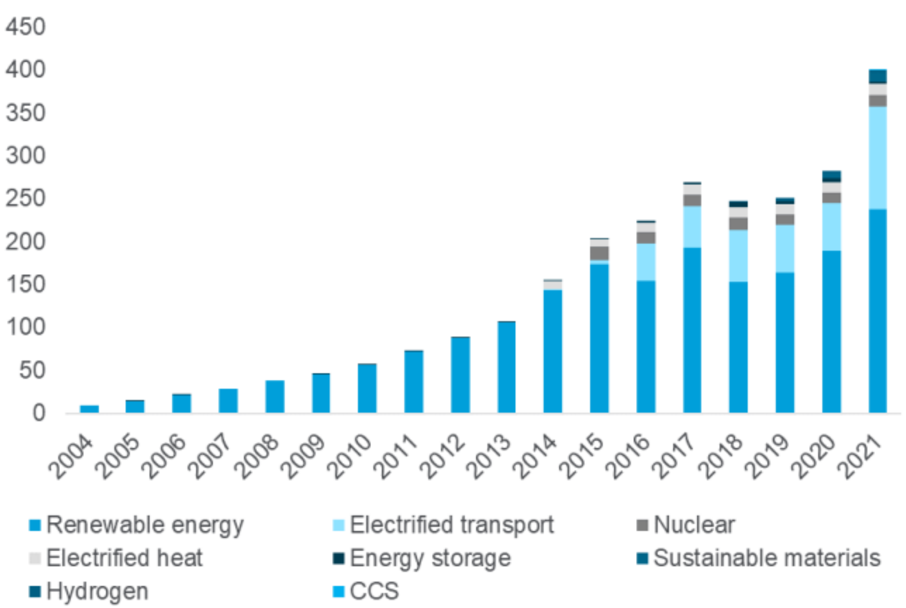
To be on a pathway for net zero we need to mobilise $2.6 trillion annually between 2021-2025, this increases to $3.8 trillion from 2026-2030. No region is currently investing enough in climate action.

Asia Pacific

The region is extremely diverse with 4.4 billion people living in 58 markets. It has the largest share of annual GHG emissions estimated at nearly 50% of total annual emissions, with China and India responsible for 24% and 6.7% respectively.

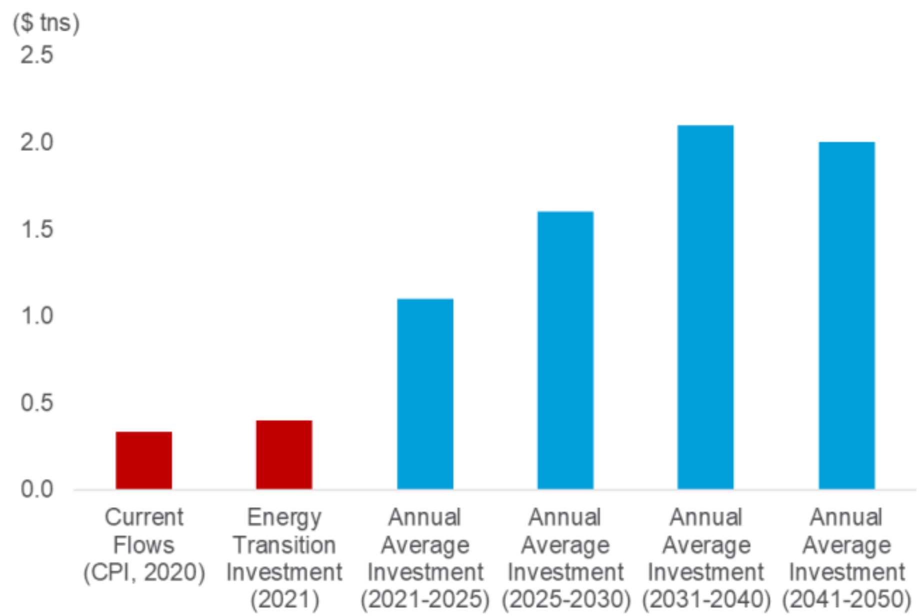
- $300-400 billion was invested in climate action however projected needs are estimated to be $1.1 trillion over the next few years, increasing to $1.6 trillion from 2026-2030

Asia Pacific: Energy Transition Investment ($bns)



Source: BNEF, Citi GPS

Comparison of current flows with projected capital investment (US$trn)



Source: CPI, BNEF, UNFCCC Race to Net Zero with the support and analysis from Vivid Economics, Citi GPS

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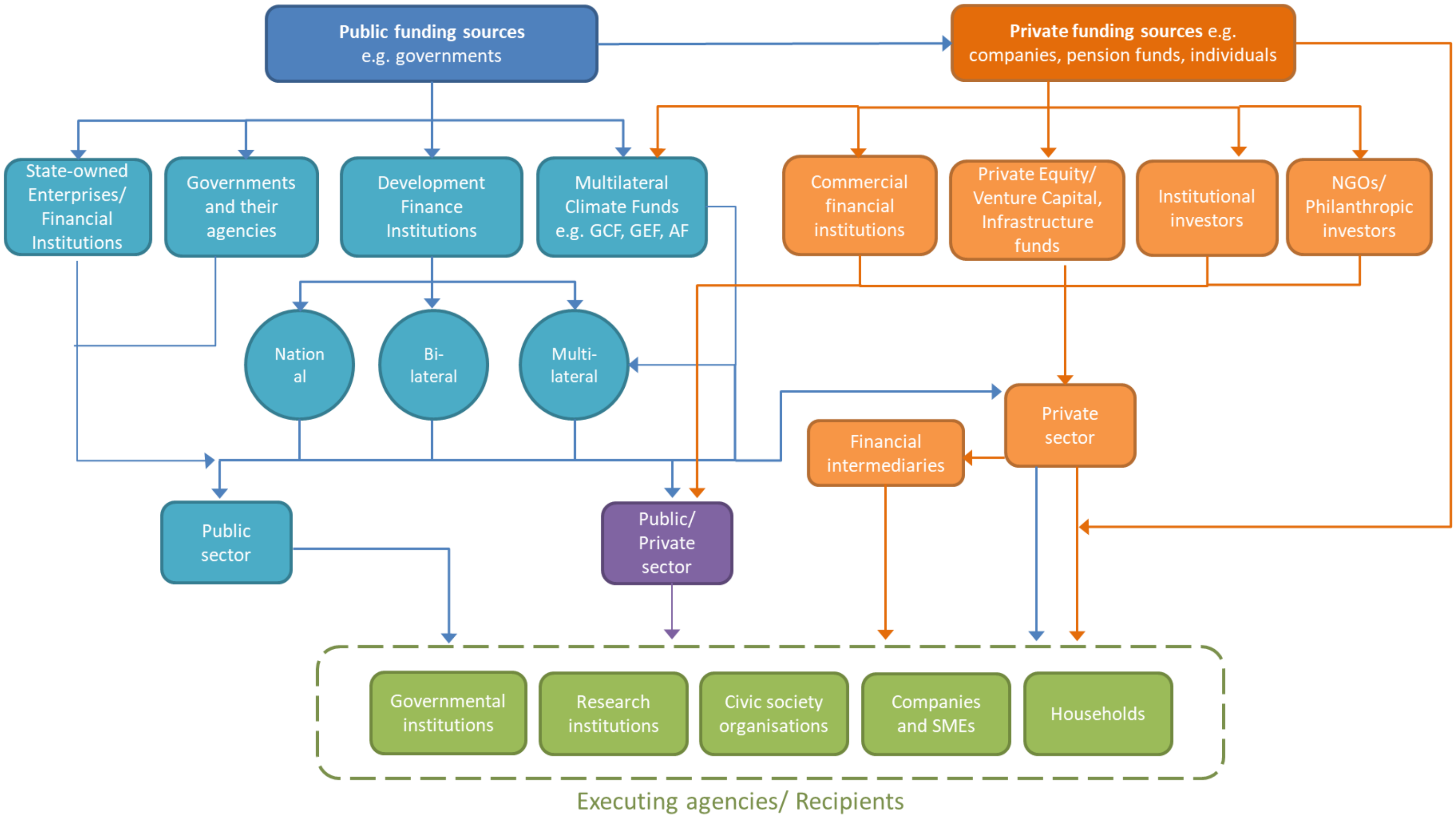
Making it Happen

The Complexity of Climate Finance- Key Players

Climate Finance Architecture is complex, it includes many sources and intermediaries providing different forms of climate finance that flow through various channels. It uses a different variety of instruments and approaches from many different key players.

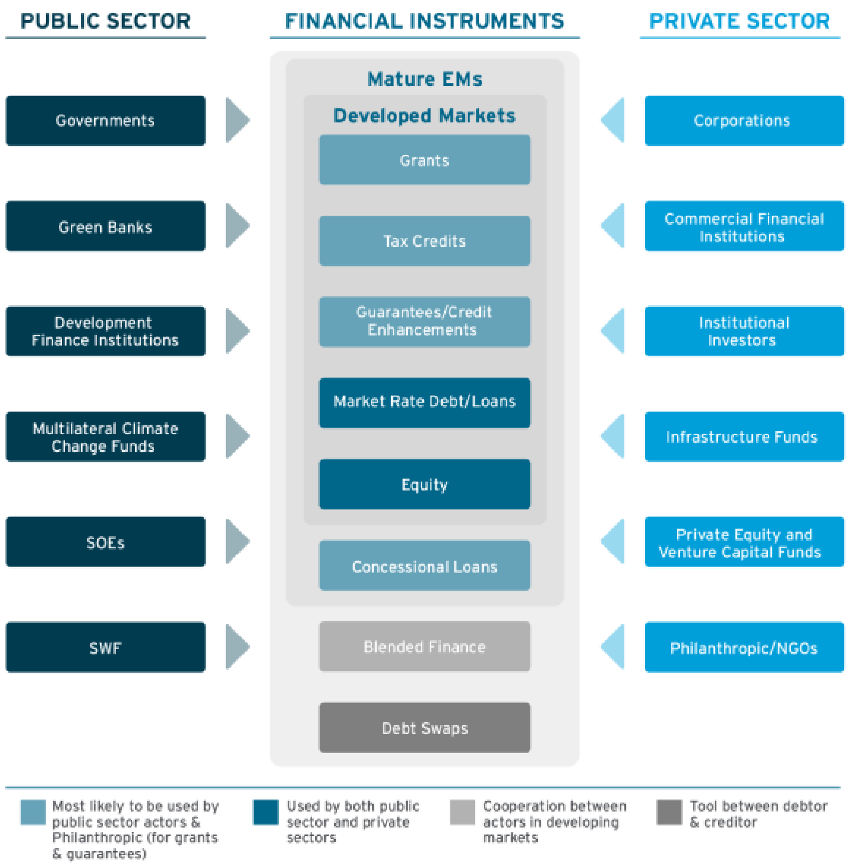


Source: Adapted from Climate Investment Funds (CIF), Citi GPS

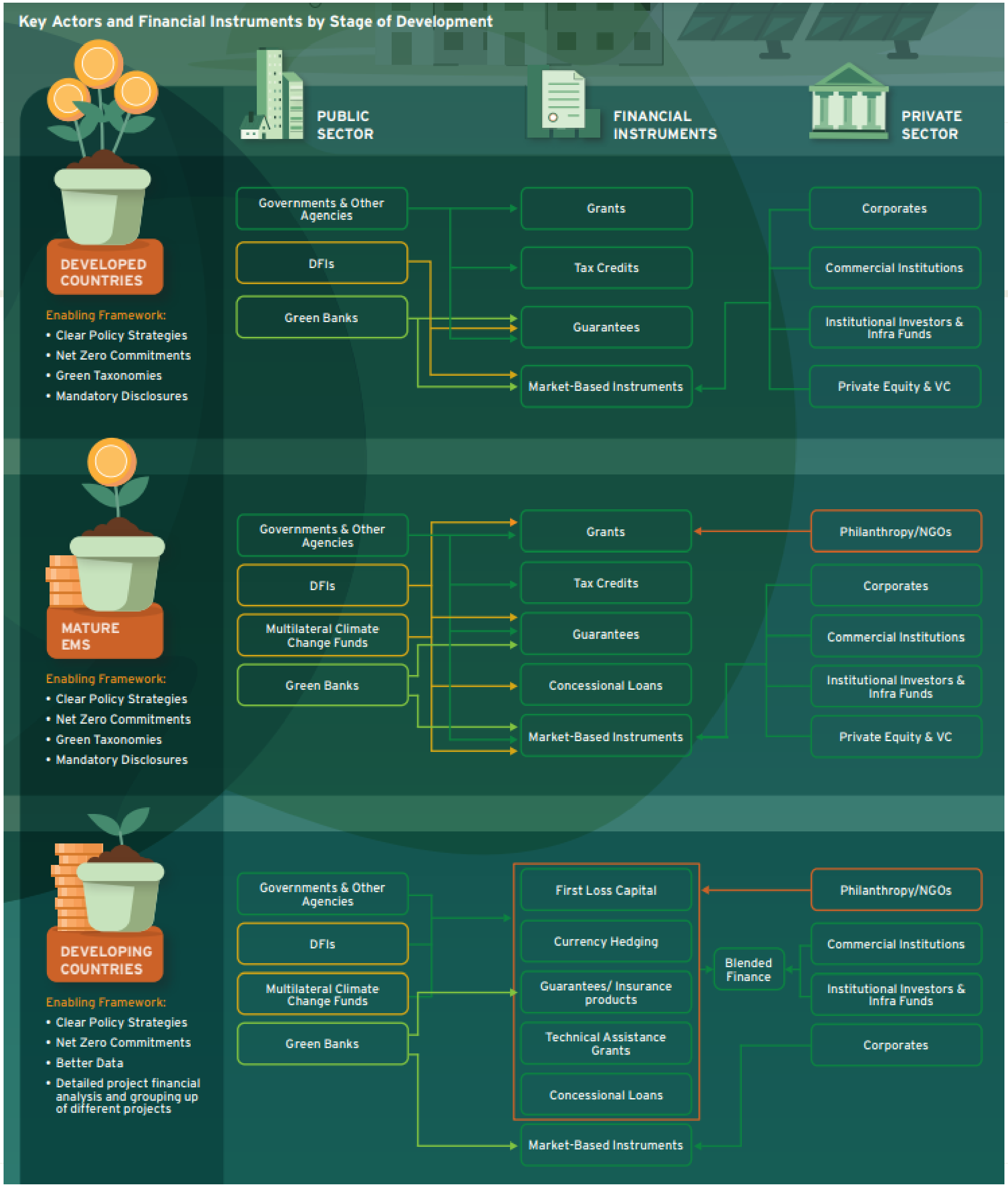
Actors and Financial Instruments to Mobilise Private Capital

There are several different financial tools that could be used by both the public and private sector. There is not one approach that work in all countries, not all are appropriate across all economies and country contexts.

Public and Private Actors and Financial Instruments that could be used



Source: Citi GPS



Source: Citi GPS

Developing Countries

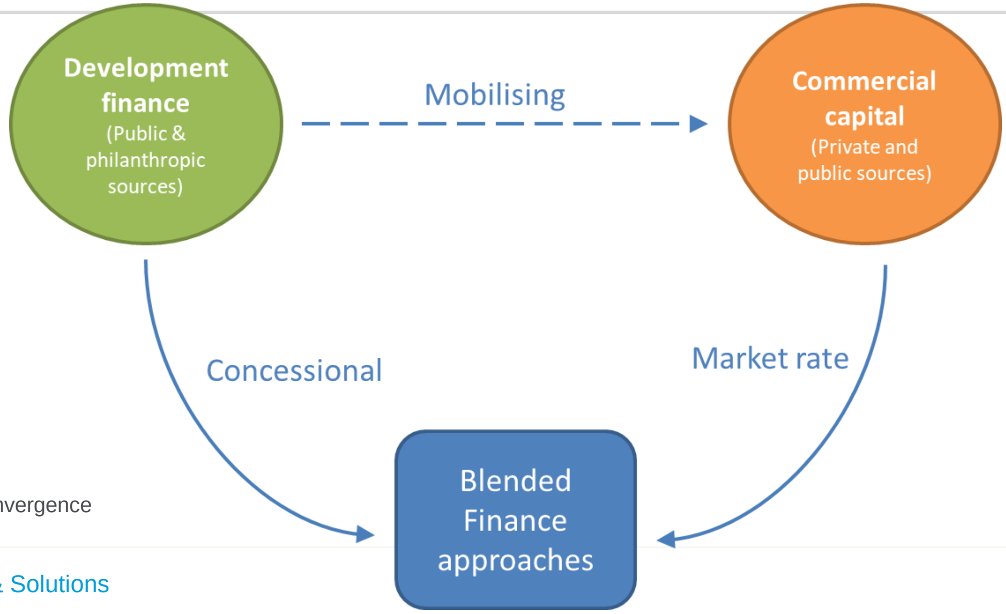
- There are many countries that fall into this category, each with different income levels, economic growth projections and sovereign credit ratings. However, in general many nations have a hard time attracting private investment.
  - Lack of enabling frameworks needed and lack of climate change policies
  - Common perception of high risk in many of these countries
  - Sovereign credit ratings that are below investment grade for some countries
  - Currency risk exposure which is a major investment barrier for debt and equity investors
  - Small investment amounts – many projects are below the minimum size threshold to attract cross border investors and asset managers
  - Lack of reliable data
  - High debt in some of these countries

Developing Countries (continued)

A different model is therefore needed.

- Blended finance structures need to be put in place - governments, DFIs and philanthropic organisations are ideal institutions to put down catalytical capital - blended finance for climate is still rather low- $39 billion between 2015-2020
- Direct agreements with other countries - e,g. Just Energy Transition Partnerships
- Article 6.2 and 6.4 and voluntary carbon market
- REDD+

Blended Finance Architecture



Source: Citi GPS, adapted from Convergence

Case Study - US

Second largest emitter of annual GHG emissions, energy-related emissions are responsible for 90%. It has under invested in climate action, although there are regional differences.

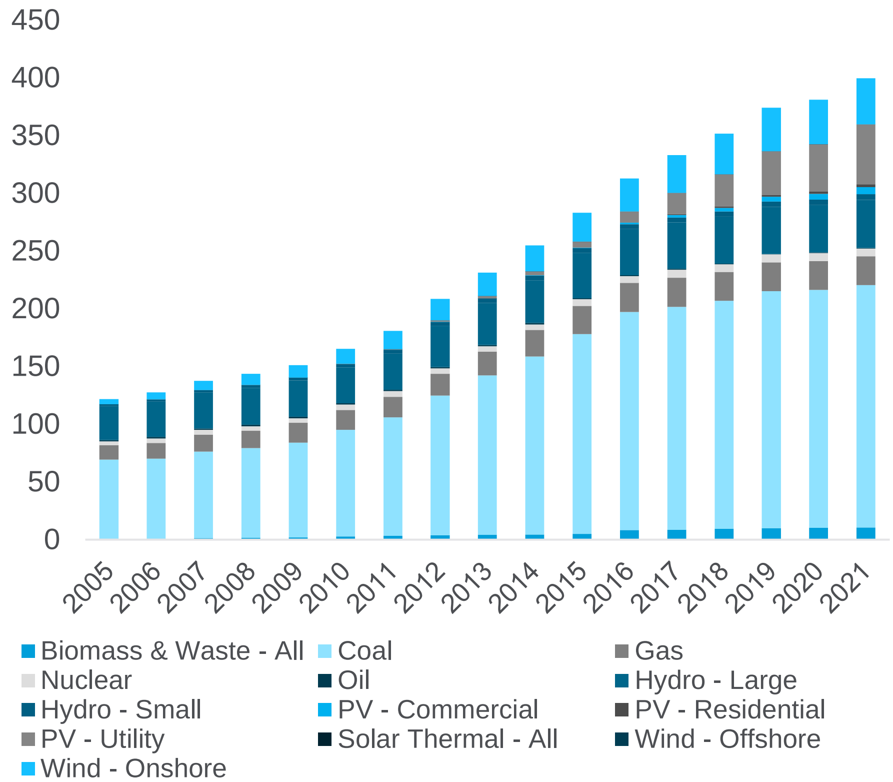
- Investment needed for climate mitigation is $5 trillion through to 2030, $500 billion per annum
- Current investment ranges from $80 to $120 billion per annum
- US government passed the Inflation Reduction Act
  - A total of $369 billion has been earmarked for clean energy and climate mitigation
  - Tax credits and funds have been approved for renewables, energy storage, nuclear, clean hydrogen, CCS, biofuels and renewable fuels, electric vehicle subsidies, decarbonization of buildings and forestry support as well as new waste emission charges for methane leakages
  - The creation of a National Green Bank dedicated to climate mitigation – direct deposit of government is $27 billion but the aim is to attract private capital- it is estimated that for every $1 invested, the bank can attract 3x in co-sponsor private capital
  - All these initiatives will help mobilise private sector investment
  - It is expected that this legislation would reduce US emissions by 40% by 2030 compared to 2005 levels

Case Study - India

India was responsible for 6.7% of global GHG emissions in 2019 with the majority of emissions attributed to the electricity sector, which is dominated by coal. Emissions from agriculture were also quite large.

- Investment needed for climate mitigation is $2.5 trillion between 2015-2030, approx $170 billion p.a. and an upward of $10 trillion to meet its net zero commitment
- India is rapidly investing in renewables. It has become one of the largest renewable energy markets due to its rise in power demand coupled with government support and transparency
- Funds for renewables in the form of equity and debt come from a variety of sources – foreign utilities, oil and gas majors, Indian conglomerates, international banks, Indian private banks and DFIs.
- It has committed to increase its renewables to 500 GW compared to 158GW

India: Cumulative Power Generation Capacity (GW)



Source: BNEF, Citi GPS

Case Study - South Africa

17th largest emitter (1.13% of global emissions), and the highest emitter in Africa. Energy in particular coal use is responsible for the majority of emissions. Coal is also a major export for the country.

- Investment needed for climate mitigation is estimated at approximately $100 per year, 70% earmarked for mitigation
- Unemployment is high in the country and the coal sector employs up to 200,000 workers
- State-owned Eskom produces approx. 90% of electricity needs, it estimates that it needs $27 billion to accelerate transition away from coal
- At COP26, a deal was reached under the banner Just Energy Transition Partnership
  - $8.5 billion in grants and cheap loans over the next 5 years, funded by US, EU, UK, France & Germany. There are 3 main goals-
  - Early retirement of coal plants
  - Build cleaner energy sources
  - Support for coal-dependent regions

Adaptation Finance

- Some examples of adaptation needs
  - UNEP states that adaptation costs could reach $280-500 billion per year by 2050 for developing countries
  - India estimates it needs over $200 billion of investment in adaptation from 2015-2030
  - African countries state that the region needs $61 billion per annum for adaptation
  - It is not just developing countries and EMs need to invest in adaptation, developed countries also need to invest to ensure infrastructure is resilient
- In COP26 it was agreed that 5% of the share of proceeds from the carbon credit mechanism under Article 6.4 would be set aside for the adaptation fund
- We are also seeing many more countries set up their National Adaptation Plans
- Even though we manage to limit temperature increase to a 1.5 or 2oC, we still need to invest in adaptation as we will still face impacts from climate change

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Conclusion

Opportunities

There are still several challenges that need to be overcome for climate action, however there are also opportunities.

- It is estimated that conservatively there could be $26 trillion in direct economic benefits from this green transition- indirect economic benefits are not included
- 65 million additional low-carbon jobs (equiv. to workforce of UK and Egypt combined)
- An increase in government revenue from carbon taxes and from a review of fossil fuel subsidies
- Most importantly we would avoid 700,000 premature deaths from air pollution
- The Green Transition should be seen as a growth opportunity rather than just a cost, the consequences of not doing anything are far greater and will be felt by all

Conclusion

There is a significant investment gap in climate action, and we need to scale up investment substantially.

- Some steps that could help mobilise investment include :
  - Developing consistent, clear and commonly accepted definitions, taxonomies and methodologies to assess current and future climate finance flows
  - Reduce the complexity and fragmentation of the global climate finance architecture
  - Improve the understanding of the respective mandates of the public and private sector
  - All countries should establish clear and concise policies and strategies
  - Developed and Mature EMs should use financial tools that encourage more private investment
  - Developed countries need to meet their $100 billion commitment
  - Developing countries that do not have the right enabling frameworks should develop a detailed analysis of potential projects
  - DFIs need to work with both public and private sector
  - Private sector should scale up initiatives that encourage public and private partnerships
  - We need to scale up investment for adaptation

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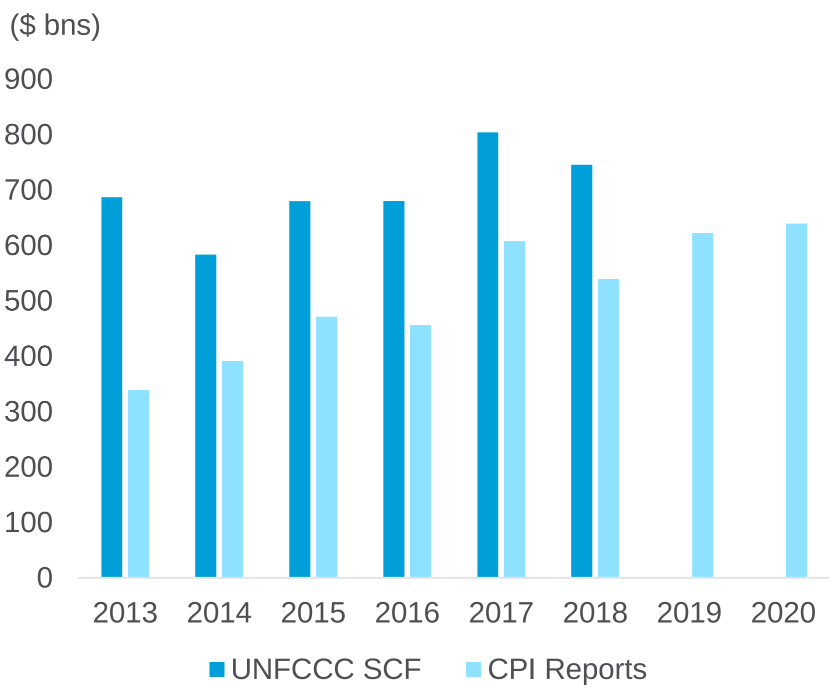
Extra slides

Current Climate Finance Flows

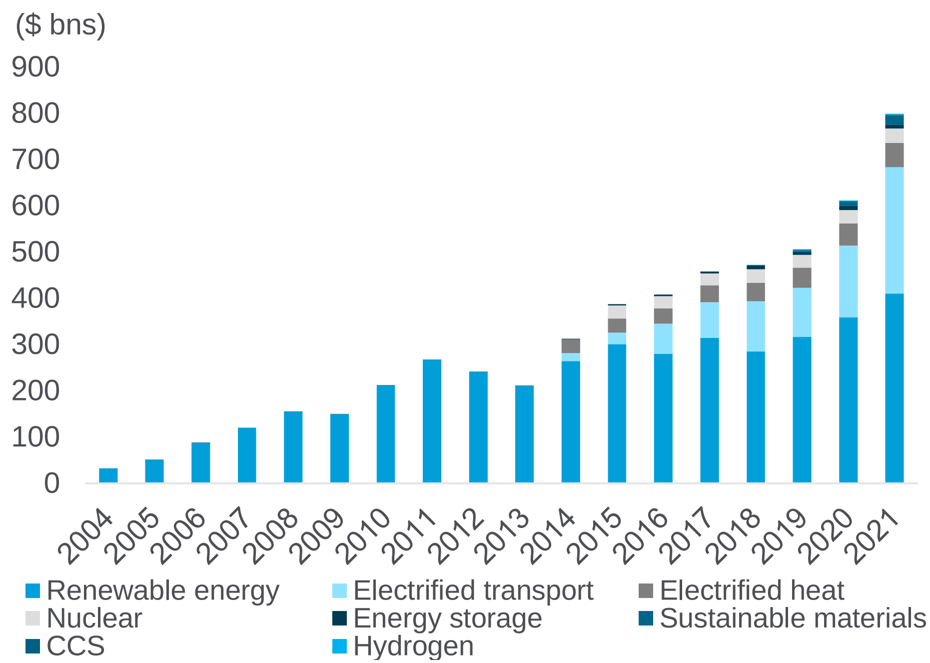
Current Finance Flows are estimated between $600-900 billion per annum. Climate finance data can be uncertain and difficult to obtain, with no one source capturing all the data.

Annual Climate Finance Flows ($bns)



Source: UNFCC Standing Committee for Finance, CPI, Citi GPS

Energy Transition Investment ($bns)

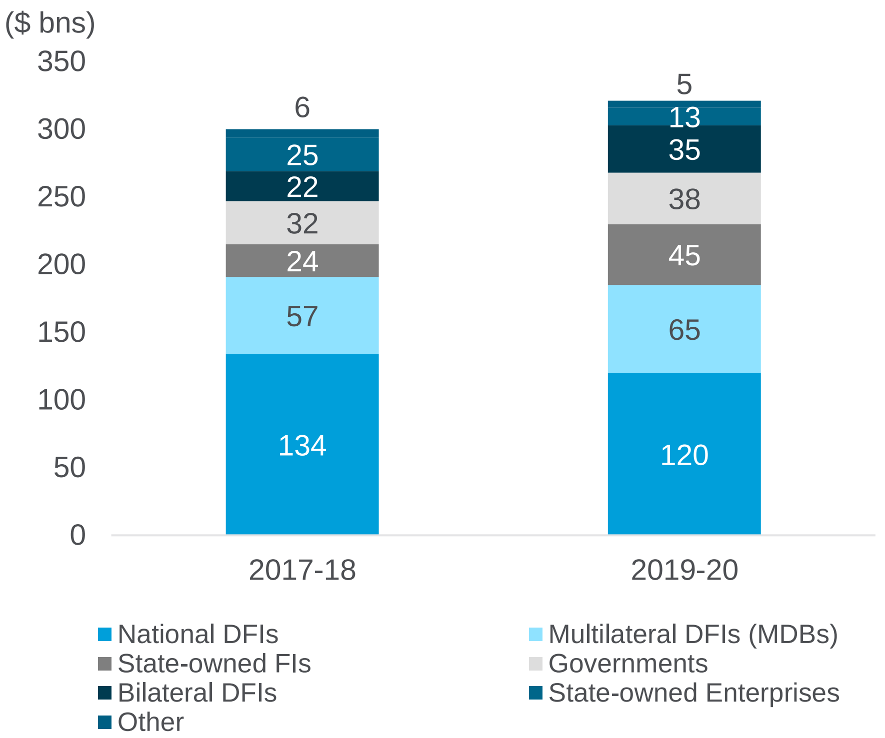


Source: BNEF, Citi GPS

Current Public and Private Finance

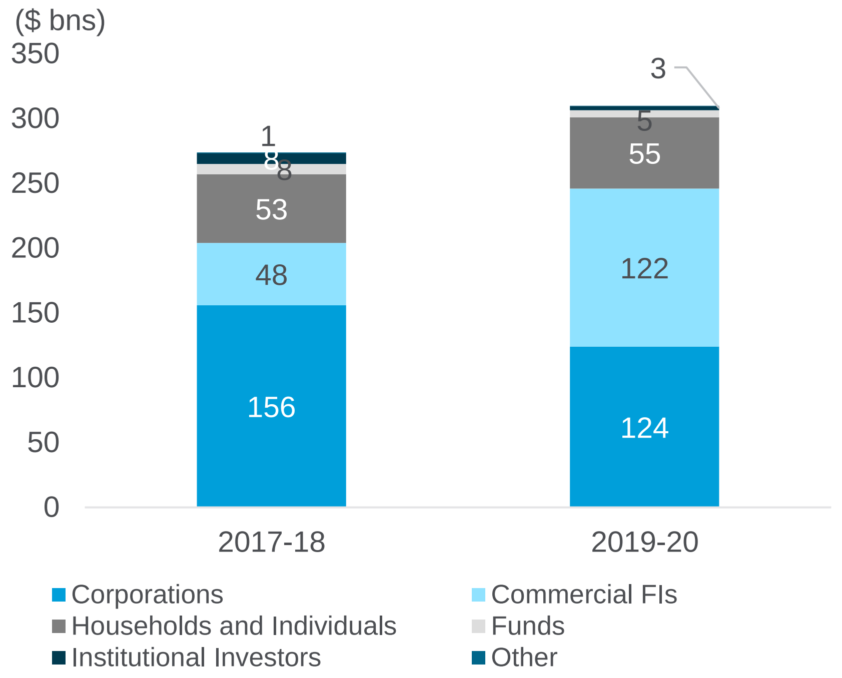
$321 billion of climate finance (51%) came from public sources with DFIs accounting for the majority of public finance. The rest came from the private sector with most of investment coming from commercial institutions and corporations.

Global Finance Flows from Public Sources ($bns)



Source: CPI, Citi GPS

Global Finance Flows from Private Sources ($bns)

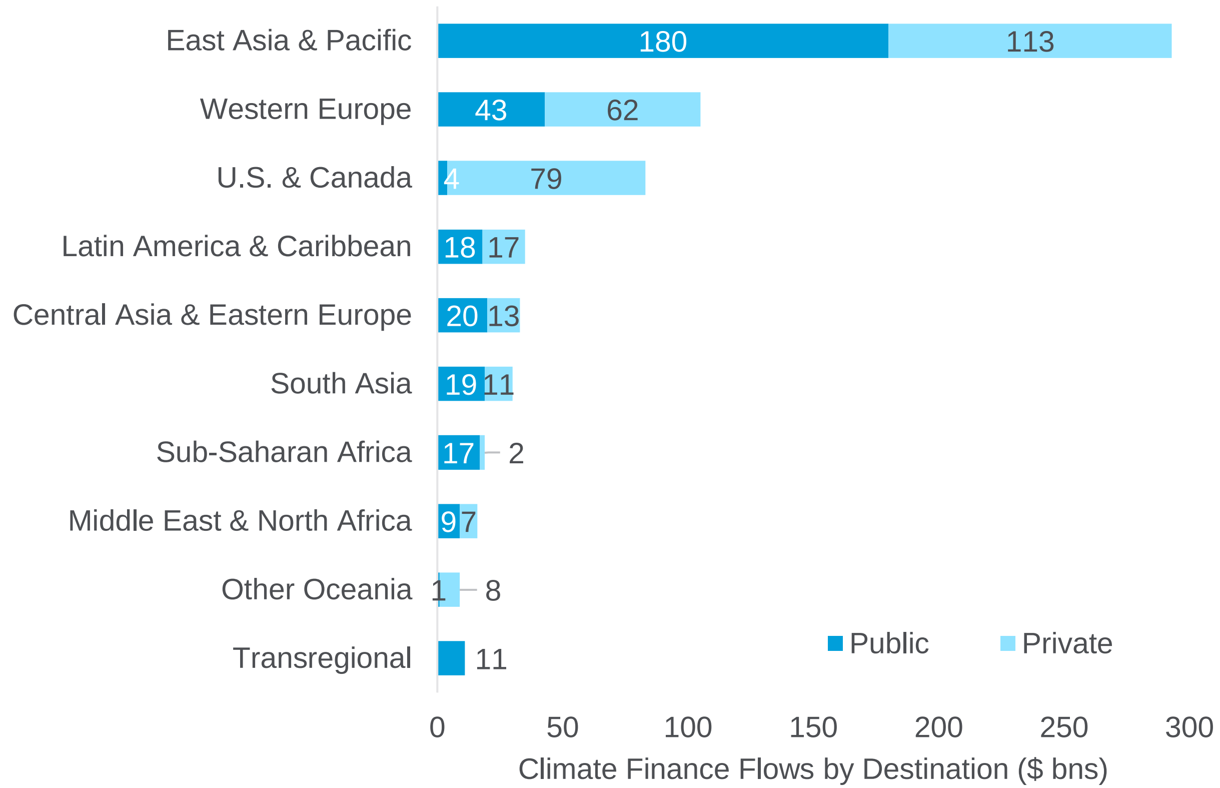


Source: CPI, Citi GPS

Public and Private Finance by Destination

The split between public and private sector finance differs per region.

Public and Private climate finance flows by destination ($bns)

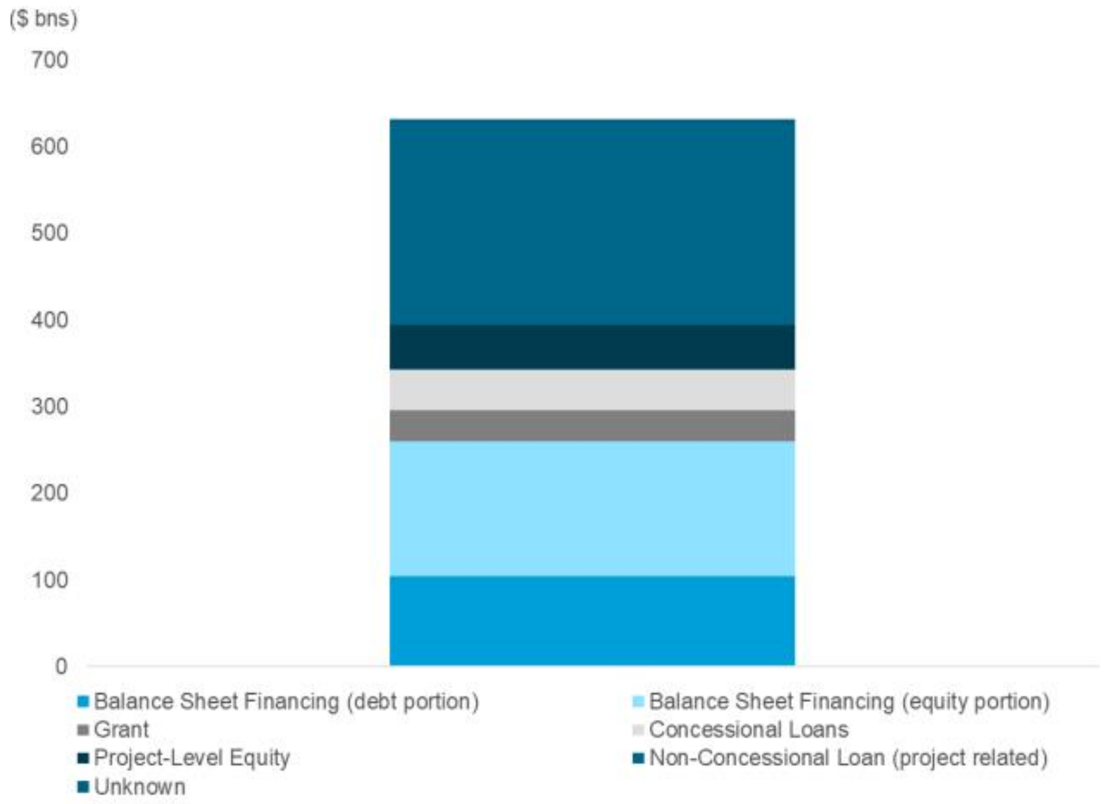


Source: CPI, Citi GPS

Financial Instruments

There are a variety of financial instruments that can be used to mobilise climate finance. Non-concessional loans accounted for 37% of total climate finance (or $232bn), followed by equity mainly from corporates.

Financial Instruments used in 2019-2020



Source: CPI, Citi GPS

Developed Economies

- Developed markets have a whole range of financial tools that could be used
  - Governments are implementing different instruments such as grants, tax credits, loans, carbon taxes, carbon markets and the establishment of green banks
  - They have the right enabling frameworks and detailed strategies of how to achieve net zero, taxonomies for green investment, appropriate disclosures such as the TCFD and efficient and reliable institutions
  - Private equity and venture capital also play a significant role in these countries

Mature Emerging Markets

- In Mature EMs we are seeing similar financial instruments being deployed as those in developed markets - this depends where, as these markets are rather different.
  - However, even though institutional investors work in these countries, the funds are smaller when compared to DMs
  - The perceived risk in mature EMs is higher than DMs
  - Improving enabling frameworks such as establishing green taxonomies and more concise climate change policies, as well as more structured government finance can encourage more private investment
  - SOEs are also more active in these countries and have a large role to play in climate financing
  - The use of concessional finance through DFIs and philanthropic organisations and NGOs is still important in certain regions in these countries especially where there is a lack of infrastructure
  - The advantage of some of these EMs is the volumes needed, the scale of some of these investments and the growing populations and emergence of skilled labour force

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