

What is transition anyway?

The meaning, the finance, and the complexities

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- ◆ Transition is often discussed, but there is little agreement on what it means – is it about energy, climate, or even finance?
- ◆ Our focus is mostly on climate transition – from a high- to a low-carbon economy – we see it as a direction, not a destination
- ◆ We provide thoughts on investing in and financing the transition and explore issues like the impact on supply chains and tech

Which transition? It's not clear exactly what is meant by the widely used term *transition*. There is no universally agreed definition although that there are different *types* of transition: climate, energy, finance, to name just a few. Each are subtly different in their pursuit of change and in what they encompass. We offer some high-level insights into what is meant by the climate transition and how various classifications fuel uncertainty. We think that transition is a *direction* and not necessarily a *destination*. As such, there may be multiple pathways with some more efficient than others. We're also mindful about the possibility of 'transition washing'.

Is one stakeholder more equal than others? The perspective of the stakeholder matters because decisions are not always clear cut. The climate transition intersects with *social needs* like healthcare as well as *economic systems*, such as politics and trade, but also the *natural ecosystems* that we depend on. Balancing these is challenging as stakeholders have different priorities and the consequences can play out over different timeframes – job losses in the short term, financial returns over the medium term or the planet's health over the longer term. Transition is not static.

Are all bases covered? The full note looks at some implications from the transition and try to give a flavour of the myriad of issues that could be affected, or should be considered, when looking at the transition. **Trade flows** will shift as different materials are required for a low carbon economy; **supply chains** will evolve as businesses adapt to stricter regulations; the **energy** industry will change but what opportunities are there beyond just renewables; is **hydrogen** really a panacea; how will electricity **grids** evolve to cope; new technologies such as **artificial intelligence** could accelerate the transition; how will these changes be tracked and enabled?

Can we afford it and is it fair? Current financial flows are nowhere near what is required – but how best to allocate financial resources to where it would make the most impact? The barriers to transition finance are not easy to overcome, especially as no stakeholder wants to pay for additional costs. Affordability means something different to individuals, businesses, investors, and governments. The **just transition** is supposed to ensure fairness, but leaving no one behind is almost impossible, so trade-offs must be balanced with synergies. Regulations are helpful, but only if they are carefully thought out, with transition plans in place. Transition is complicated.

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The meaning of transition

- ◆ The transition is often mentioned but there is little agreement on what it means – sustainable, green, climate, energy, just, finance?
- ◆ The Big Five segments – energy, transport, industry, buildings and agriculture – impact ‘human systems’, ecosystems and economics
- ◆ Taxonomies vary by market, with different structures, starting and end points; these variations enable the risk of ‘transition washing’

What is meant by the transition?

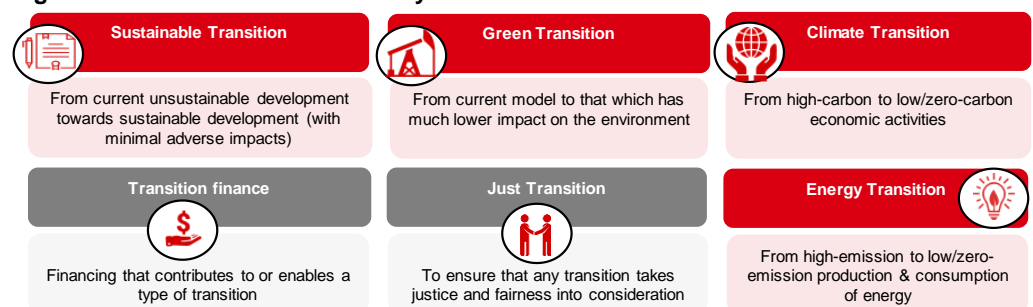
Transition involves a start and end point, and a period of time

Transition means change: There is no universally agreed definition of transition. It is a term that is used fairly casually, but there’s a mix of meanings behind it. *A dictionary definition of transition is a movement or change or process, over time, from one state to another.* Essentially, transition could refer to the change from one physical or economic state to another; in theory, it involves a starting point and an end point, and a period of time in between. The problem we face when discussing transition is that neither of those factors are well defined. For example, the start point is usually now; the end point is difficult to define because there are so many possible configurations; the period of time is not set.

Transition can cover many issues; most do not define what kind of transition they are referring to

But what kind of change? Transition can refer to a whole host of different issues. We give examples of what transition could refer to in Figure 1. These are all subtly different from each other, and we have tried to be concise to give an indication of the variance – much lengthier definitions would be required to set categorical boundaries. We note that even climate finance is the subject of a prolonged debate within the UN.

Figure 1: The term ‘transition’ subtly refers to different issues



Source: HSBC

There isn’t necessarily a prescribed order to transition, but it could be argued that the *sustainable transition* is all encompassing; the *green transition* is a subset of sustainable to some degree; that the *climate transition* is a subset of green; that *energy transition* is a sector and hence subset of climate. Meanwhile, all of the various types of transition require financing – hence *transition finance* (although the finance sector itself might also transition), and that all transitions should be *just transitions* in some way.

Tighter definitions of transition are required

Clearly, much tighter definitions are required – for instance, in the case of energy, it should be the production and consumption of all forms of energy. We do not attempt to put strict definitions on the various forms of transition in this report, but focus mostly on the **climate transition**, taking this to mean the transition from a high carbon economy to low carbon economy.

The perspective of each stakeholder is important to consider

Stakeholder perspectives: For **governments and regulators**, it means setting climate goals and targets, and putting in place policies to implement this. For **businesses and corporates**, it means a move away from high carbon activities to low/zero carbon activities, to reach agreed goals. For **investors and financiers**, it means using finance and investments in a way that is beneficial to the climate.

Pathways vs directions: The actual transition will be different across markets and across industries because they are starting at different points, have different end states and varying timeframes to get there. The pathways are certainly not linear, which means that sometimes, seemingly counter-intuitive activities over the short term may be considered beneficial over the long term. Essentially, in our view, climate transition is a direction, not a destination.



Climate transition is a direction, not a destination

The implications of climate transition

In our view, *climate transition* affects all segments of the economy but in different ways. It also covers the *energy transition* (how energy is used across the economy); it also involves, to some extent, the *resilience* (business activities, supply chains, etc) to changes that will come to bear as a result of a changing climate – whether it be physical, policy or consumer preferences.

Transition won't be perfect as many parts of it are in a constant state of flux






Climate calculus: We do not think that the transition will be perfect. Many projects consider a wide range of aspects but how wide this net is cast can affect costs, benefits, co-benefits, and different stakeholders. With this in mind, we believe the climate transition should try to minimise the negatives and maximise the positives (some call these trade-offs vs synergies) – although we also recognise that what may be positive for one stakeholder may be negative for another stakeholder. Whilst consideration of these is appropriate, discussing all these is beyond the scope of this report.

Differentiation and integration in the economy

Staying high-level, there are five main economic segments affected by the climate transition, broadly speaking (Figure 2). Again, they are not usually precisely defined and there are many overlaps, such as industry using energy. In addition, how far up or down the value chain we choose to go can determine the emissions level and impact of these segments.

For example, agriculture is broadly defined as the production of crops and livestock for food and non-food purposes. However, if we go up the value chain, it's not just the agricultural methods used, but also the land where agriculture takes place, i.e. was it significantly altered from its previous state (wetland, peatlands, forest); if we go down the chain, it's how the produce is stored, processed, packaged, transported, sold, consumed, wasted.

Figure 2: Examples of the Big Five economic segments in the climate transition

 Energy and Power	Fossil fuels to renewables across systems but also grid upgrades
 Industry	Energy input and processes (big ones => ferrous, aluminium, cement, glass, chemicals)
 Transport	Oil to electrification of various modes but also charging/energy density
 Building & cities	Design and construction, materials, use of buildings, end of life
 Agriculture	More carbon efficient production, distribution, less food waste

Source: HSBC

'Holding all else equal' is not helpful when considering transition because a change in one issue affects others

Transition can come with co-benefits, but full balance is difficult to achieve

Markets are different hence transition in these markets will be different

Effectiveness of transition options depends on the market

Interconnections: There are many, many overlaps and many, many sub-sectors and nuances associated with the Big Five above. The sub-issues are rarely clear cut. For example, energy is important for improving standards of living yet the availability of different resources is not uniform across different markets. Agriculture is both a perpetrator and a victim of climate change. Different industries matter to different markets depending on their stage of economic and social development. Modes of transportation vary depending on the location. Buildings and cities come with a history and culture.

There are also employment issues, access issues, fairness issues, equality issues, biodiversity and social co-benefits, and of course financial considerations. *All are important in their own right and warrant deeper research – however, we do not attempt to go too deep in this report. Instead, we highlight some of the considerations that may affect transition.*

Transition will vary between markets

Given the above discussion about the endowment of resources, economic and social development, as well as location and geography, the transition options that work in one market may not be as cost effective or as easy to implement in other markets.

Figure 3 below is a summary of some of the mitigation options by the intergovernmental panel on climate change (IPCC). The IPCC helpfully allocates a potential contribution to mitigation and the potential costs involve. Although the focus of Figure 3 is mitigation (adaptation and resilience issues are related and dealt with elsewhere by the IPCC¹), we note that all of the options fall into the climate transition.

Many markets, many options: We highlight these to show that there are many options, that the effectiveness of these will vary depending on where they are deployed, and to indicate the cost of implementing some of these solutions. To complicate matters, transition activities also intersect with human systems, such as societies and communities, as well as economic systems through trade and investment, but also with ecosystems such as natural resources and biodiversity and the dependencies of these (e.g. agriculture), all shown in Figure 4. Disaggregating these from each other is challenging; not giving enough due consideration to any of these can be problematic; giving full consideration to them all is costly and time consuming. A balance is required and in some circles, the balance is often such that no one is fully happy, or everyone is equally unhappy.

¹ Please see our summaries of the IPCC AR6: *IPCC climate science: The twelve key points you need to know* (10 Aug 2021); *Impacts & adaptation – the 10 points you need to know* (1 Mar 2022); *Mitigation options – the 10 points you need to know* (5 Apr 2022); *Synthesis report – all about urgency and ambition* (21 Mar 2023).

Figure 3: Transition options by sector, their costs and contribution to reductions

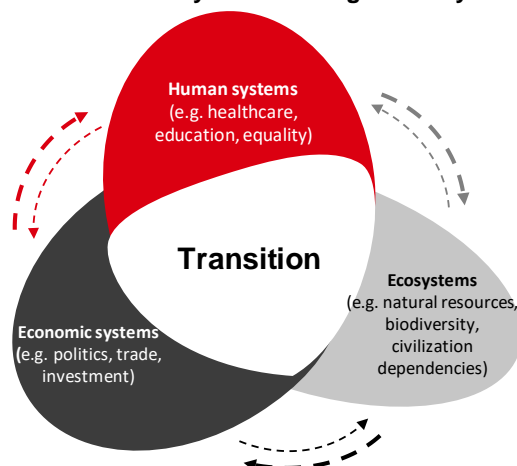
Energy		AFOLU	
Wind Energy	Medium	Carbon sequestration in agriculture	Medium
Solar Energy	High	Reduce CH ₄ and N ₂ O emissions in agriculture	Low
Bioelectricity	Low	Reduced conversion of forests and other ecosystems	High
Hydropower	Low	Ecosystem restoration, afforestation, reforestation	Medium
Geothermal energy	Low	Improved sustainable forest management	Low
Nuclear Energy	Low	Reduced food loss and food waste	Low
Carbon capture and storage (CCS)	Low	Shift to balanced, sustainable healthy Diets	Low
Bioelectricity with CCS	Low		
Reduce CH ₄ emissions from coal mining	Low		
Reduce CH ₄ emissions from oil and gas	Low		
Buildings		Transport	
Avoid demand for energy services	Low	Fuel efficient light and heavy duty vehicles	Low
Efficient lighting, appliances and equipment	Low	Electric light and heavy duty vehicles	Low
New buildings with high energy performance	Low	Shift to public transportation, bikes, e-bikes	Low
Onsite renewable production and use	Low	Shipping - efficiency and optimization	Low
Improvement of existing building stock	Low	Aviation - energy efficiency	Low
Enhanced use of wood products	Low	Biofuels	Low
Industry and Other			
Energy efficiency	Low		
Material efficiency	Low		
Enhanced recycling	Low		
Fuel switching (elec., nat gas, bio-energy, H ₂)	Medium		
Feedstock decarbonisation, process change	Low		
CC(U)S	Low		
Cementitious material substitution	Low		
Reduction of non-CO ₂ emissions	Low		
Reduce emission of fluorinated gas	Low		
Reduce CH ₄ emissions from solid waste and wastewater	Low		

Potential contribution to net emissions reduction: High/ Medium/ Low

Net lifetime cost of options: No cost allocation due to high variability or lack of data (♦)

Source: IPCC, AR6, WG II, SPM (based on Figure SPM.7)
Note: AFOLU = Agriculture, forestry, other land use

Figure 4: The intersection of various systems arising from any transition



Source: HSBC

Taxonomies for transition – variations across markets

Different markets employ slightly different taxonomies

Since the introduction of the EU Taxonomy, many jurisdictions have been following suite and tried to develop classification systems to define 'environmentally sustainable' or 'green' economic activities. The EU Taxonomy includes activities which make a substantial contribution to the EU's environmental objectives while doing significant harm to any of those objectives. In contrast with EU, some taxonomies include 'transition activities'. However, there is no universal definition or criteria of 'transition activities' used by regulators and the interpretation of 'transition' varies with jurisdiction. Financing 'transition activities' is thus more challenging as borrowers and lenders might follow different taxonomies or definitions for transition.

We look at some key jurisdictions and how they define (or don't define) transition below.

◆ EU Taxonomy – proposed extension

To achieve the EU's environmental goals, many sectors and activities must speed up their decarbonisation pace or shift to a more sustainable operation. However, they cannot reach the green threshold set by the EU Taxonomy and thus cannot access green finance for investment in their transition. The EU Sustainable Finance Platform therefore proposed to extend the Taxonomy to include transition activities that is **between do no significant harm (DNSH) and substantial contribution technical criteria**. However, the European Commission hasn't adopted the definition of transition activities or recommendation on the EU Taxonomy suggested by its sustainable finance adviser.

◆ ASEAN Taxonomy – traffic lights

The ASEAN Taxonomy uses a traffic light system (i.e. green, amber, and red) to classify the degree of contribution to an environmental objective by an activity. Based on the technical screening criteria, the Taxonomy defines 'amber' or transitional activities as those that **represent a progressive movement on the path to a more sustainable ASEAN while causing or potentially causing significant harm**. Amber activities should have a **realistic plan to remediate the harm within five years**. If the harm hasn't been remediated within five years, the 'amber' activity will be re-classified as 'red' activity.

◆ Singapore-Asia Taxonomy – not quite on the 1.5°C road

The Monetary Authority of Singapore calls the Singapore-Asia Taxonomy the world's first multi-sector transition taxonomy. The Taxonomy defines "transition activities that **are not presently on 1.5°C pathway** but are either (1) **moving towards a green transition pathway within a defined time frame**; or (2) **facilitating significant emissions reductions in the short term with a prescribed sunset date**." Notably, the Taxonomy also introduces a new mechanism to finance early retirement of coal power plants with a new class of transition credits.

◆ China's Green Low Carbon Transition Industries Catalogue – just green

On 29 February 2024, the National Development and Reform Commission of China revamped its Green Industries Catalogue (2019) to Green Low Carbon Transition Industries Guidance Catalogue. The Transition Catalogue provides a list of 246 transition industries recognised by the Chinese government and separates them into seven themes (i.e. energy efficiency and emissions reduction, environmental protection, resources recycling, green energy transition, ecosystem restoration, green infrastructure, and green services). The revision aims to broaden the Catalogue coverage and promote transition finance. However, **the methodology behind the selection of transition industries or a clear definition of 'transition' is not disclosed**. The revised Catalogue does not separate 'green industries' and 'transition industries', marking a notable difference from the aforementioned taxonomies.

Standards or taxonomies
should reduce the 'transition
washing' risk ...

... but ongoing monitoring is
another daunting task.

Can taxonomies reduce 'transition washing' risk?

Transition finance or transition funds typically provide monetary support to emissions-intensive activities to accelerate their transition to low-carbon and sustainable business (see page 22). However, the absence of a universal definition or standard for 'transition' could come with a risk of 'transition washing' (which is derived from 'greenwashing' – giving the perception that something is more green than it really is). 'Transition washing' is where transition finance or funds do not actually facilitate transition to low carbon business or align to the Paris Agreement temperature goal. It's a question of climate integrity.

Considering most of those taking transition finance are heavy emitters, transition finance inevitably risks the potential to compromise on environmental integrity. Thus, the consequences of transition washing could be even more serious than greenwashing. In this regard, several banks and governments have been developing various transition finance frameworks and taxonomies to reduce the 'transition washing' risk. Some require heavy emitters to set transition plans and targets, such as the Singapore-Asia Taxonomy and International Capital Market Association's Climate Transition Finance Handbook. However, varied definitions of 'transition' make evaluating the credibility of a climate polluter's transition journey difficult.

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The transition to a greener future is complex and multi-faceted, involving everything from financing to affordability. As mentioned above, we view transition as a direction, not the destination. The full report contains a deeper look into these issues, highlighting the challenges and opportunities that lie ahead.

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