

# Climate Transition Center

## Transitioning to a low carbon economy:

Public policy realities that challenge  
companies in building achievable  
transition pathways



## The missing view of the climate transition

Greenhouse gases (GHG) are the driving factor contributing to climate change and the insurance sector sees the impact of climate change firsthand as extreme weather events affect policyholders in many parts of the world. That's why we are committed to transitioning to a low-carbon economy in a responsible and strategic manner — one that is informed by technological and regulatory changes, market forces and climate data.

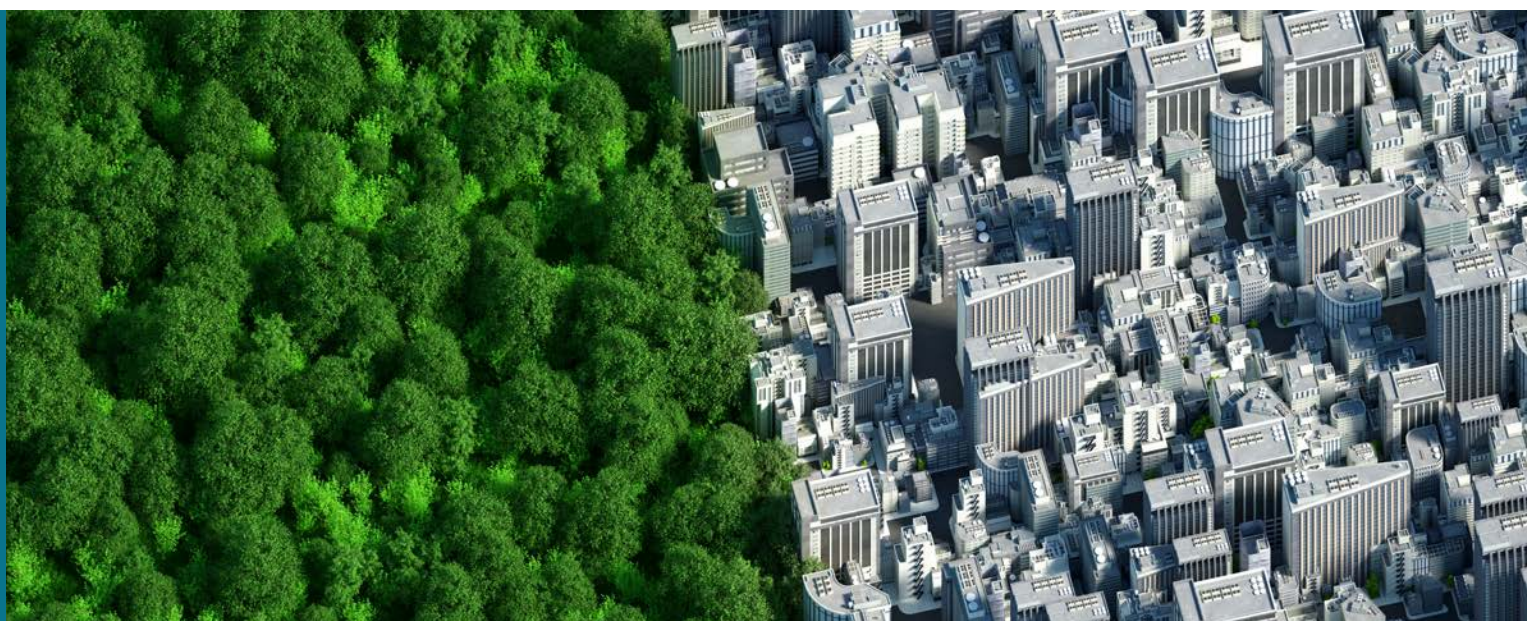
**While many companies are trying to make this transition as well, there continues to be general frustration at the pace of change; it's either happening too fast or too slow. And while the urgency of this change is necessary and the impacts of climate change are real, a pragmatic, actionable framework of how to get to a low-carbon economy remains a critical missing piece.**

That's because companies looking to transition their portfolios do so based on results from climate scenario analysis, but this portfolio-level view does not always portray the whole picture.

For example, companies in the energy sector, facing immense reputational risk pressures, are trying to navigate demand spikes, supply shock and technological realities as they design their own transition pathways. Companies in the other sectors of the economy, such as auto, real estate, retail, are also trying to understand what the energy transition means for them both in their own operations or supply chain.

It's this missing link at the macrolevel that led us to undertake a system-level assessment, leveraging the open-source transition model outputs from the Network for Greening the Financial System (NGFS), to better understanding what transition pathways looked like under different climate scenarios achieving different temperature ambitions.

In this paper, we share key macro insights from the exercise that can inform a company's climate transition pathway. Additional research will be shared with sector-specific insights on macro or system level trends that need to be considered by companies as they continue to develop their own transition pathways.



# Macro-level policy insights

Through our systems-level analysis, we observed the following key considerations for our business strategy and decision-making.

## Global common policy action is unlikely

The time horizons of transition risk vary by region as they are based on different and sometimes divergent policy commitments made by countries. For example, in the last few years the UK, European Union (EU), China, and India have all committed to net-zero emissions, but their time horizons for achieving these goals differ - the UK and EU pledged to do so by 2050, China by 2060, and India by 2070.

This means that each of these countries will be developing policy to deliver ambitions at different time horizons setting up different economic realities by region.

## Coordination of policy action reduces negative economic impact

A surprising insight from our systems-level analysis runs contrary to the current thinking which emphasizes the need for commonality in policy. Our analysis indicates that coordination, not commonality in policy, is the best path to reduce the economic costs of transition risks. As seen in the charts: Regional GDP impact, a coordinated global policy approach would reduce the relative negative impact to GDP across the three regions in every scenario.

## The pace and shape of policy development is informed by the energy and carbon intensity of the corresponding sector

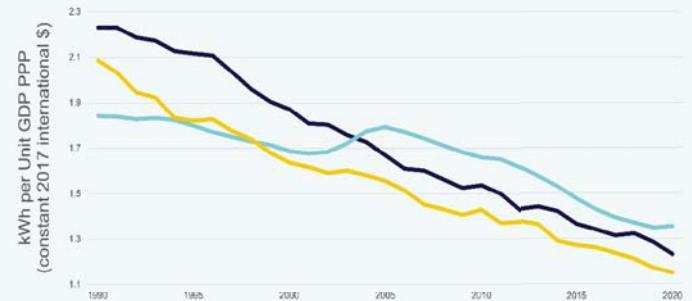
Based on the disproportional GDP impact experienced by different regions, we completed further analysis to understand the reasons for the disparity in impact. This scenario analysis reveals macro-economic impacts stemming from transition risk over time, that are initially influenced by a region's current energy and carbon intensity.

### Energy and carbon intensity of GDP

Energy Intensity of GDP<sup>1,2</sup>

Energy Intensity of GDP provides a basis for projecting energy consumption and its environmental impact with economic growth.

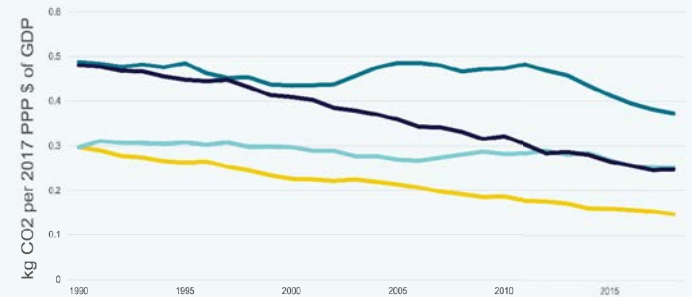
United States Europe Asia



CO<sub>2</sub> Emissions per Unit of GDP<sup>3</sup>

Carbon intensity of GDP can be used to understand how much a country/region's economic growth in contributing to climate change.

US EU South Asia East Asia & Pacific



The more carbon-intensive energy a regional economy consumes, and the higher its economic output, the more prone it is to macro-economic impacts stemming from transition risks. As such, the magnitude and time horizon of policy development to address climate change is expected to be specific to regional economies.





## Divergent, regional energy transition pathways should be expected.

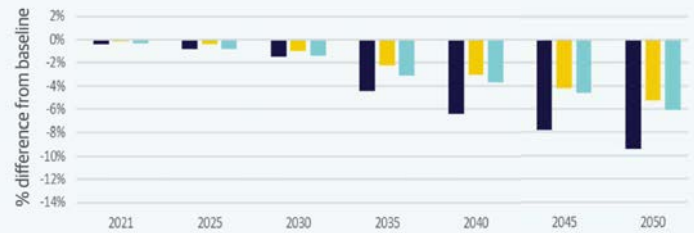
Regional-specific energy transition pathways will impact the type of preferred renewable investment and strategy, further challenging a one-size-fits-all approach to decarbonization. Historical energy transition pathways progressed from coal to oil to natural gas to renewables over time. The EU, while still reliant on fossil fuels, has an ambitious policy in place to transition to renewables in the near future. The U.S., currently at the natural gas phase of its energy transition, is more conservative in its transition to renewable energy sources. However, Asia's energy transition may not go through a sequential transition but could leapfrog from its current reliance on coal to natural gas or renewables.



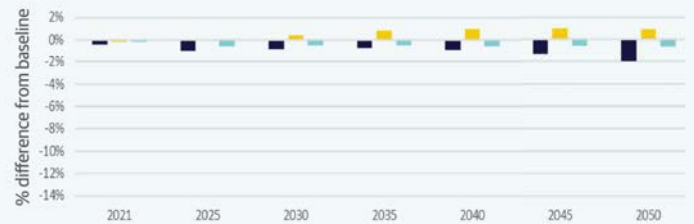
### Regional GDP impact<sup>4</sup>

United States Europe Asia

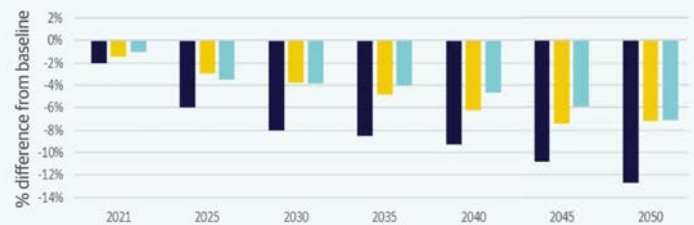
#### Delayed Transition



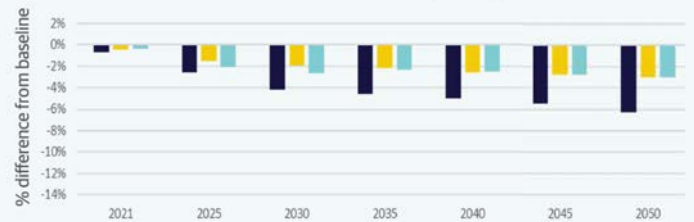
#### Below 2°C



#### Divergent Net-Zero



#### Nationally Determined Contributions (NDCs)



# Implication for companies

The TCFD describes transition risks as those stemming from policy and legal, reputational, market, and technology changes. At Liberty Mutual, our systems-level analysis helped us understand how different types of transition risk can challenge businesses:

**Policy risk:** The most immediate and greatest source of climate-related transition risk relates to policy, in terms of both policy ambition and the pace of adoption. Through our systems-level analysis, we observed key takeaways related to policy transition risk that need to be taken into consideration for our business strategy and decision-making – further detailed above.

**Reputational risk:** Reputational risk could also challenge companies in the short term, particularly if they fail to communicate how they are mitigating risk and adapting business strategy to climate change.

**Market risk:** Policy influences market-related transition risk, but multiple models indicate market-related transition risk is still 5-10 years away, barring major exogenous factors.

**Technology risk:** While technology transition is evolving at a rapid pace, the models show that it is not likely to disrupt existing businesses in the short-term. Insights from technology transition provide areas of strategic opportunities that should be explored. Given policy risk is the immediate source of transition risk, the lack of coordinated policy approaches will challenge companies, particularly global companies, who will need to design their transition pathways to meet differing economic realities. This could result in creating increased reputational risk from stakeholders who prefer a commonality and not coordinated approach.

## What can companies do?

- Understand macro-economic impacts of the transition to a low carbon economy and the impacts to the company's business
- Conceptualize what the energy transition will mean for its business
- Consider what kinds of changes need to be undertaken at the sector business level to support the energy transition
- Proactively monitor policy and quasi-regulatory discussions related to the company's sectors (needs to be done globally to understand what expectation are being set. They influence investors even if it does not become regulation in country
- Start incorporating these insights into the overall business strategy

<sup>1</sup>"Statistical Review of World Energy." BP Global, <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

<sup>2</sup>"GDP per capita, PPP (constant 2017 international \$) - East Asia & Pacific | World Bank." World Bank Open Data, <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=Z4>.

<sup>3</sup>"GDP per capita, PPP (constant 2017 international \$) - East Asia & Pacific | World Bank." World Bank Open Data, <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=Z4>.

<sup>4</sup>"NGFS Climate Scenarios Database: Technical Documentation V2.2 | NiGEM Model with GCAM Inputs." NGFS, [https://www.ngfs.net/sites/default/files/ngfs\\_climate\\_scenarios\\_technical\\_documentation\\_phase2\\_june2021.pdf](https://www.ngfs.net/sites/default/files/ngfs_climate_scenarios_technical_documentation_phase2_june2021.pdf)

Send questions or comments to:  
[sustainability@libertymutual.com](mailto:sustainability@libertymutual.com)

