



# Carbon emissions in public markets

analysis of over 2,000 companies on 22 stock exchanges in G20 countries



## Overview

Stock exchanges can play an important role in promoting emissions reductions in their markets. This policy brief provides a unique analysis by examining the Scope 1 carbon emissions of the top 100 companies by market capitalization listed on each of the G20's major stock exchanges. Focusing on companies that are listed on exchanges (rather than a country level view that is more traditionally presented) allows exchanges to understand the state of carbon emissions associated with their largest issuers. This data can serve as a benchmark for exchanges in their efforts to promote net zero emissions among their listed issuers.

## Key Points

- The top 100 issuers on the Shenzhen exchange in China and the Nasdaq exchange in the United States have the lowest levels of Scope 1 emissions.
- Over half of Scope 1 emissions from the top 100 issuers in the G20 are emitted by companies listed on just 5 exchanges.
- Collectively, the 2,199 largest issuers in the G20 produce 5,225 million metric tonnes of CO<sub>2</sub> equivalent direct Scope 1 emissions.
- There are enormous differences between exchanges on the Scope 1 emissions of their top 100 issuers.
- All exchanges will have to work with issuers to support the net zero transition. The starting point is understanding the market baseline.

## The State of Carbon Emissions in G20 Stock Markets

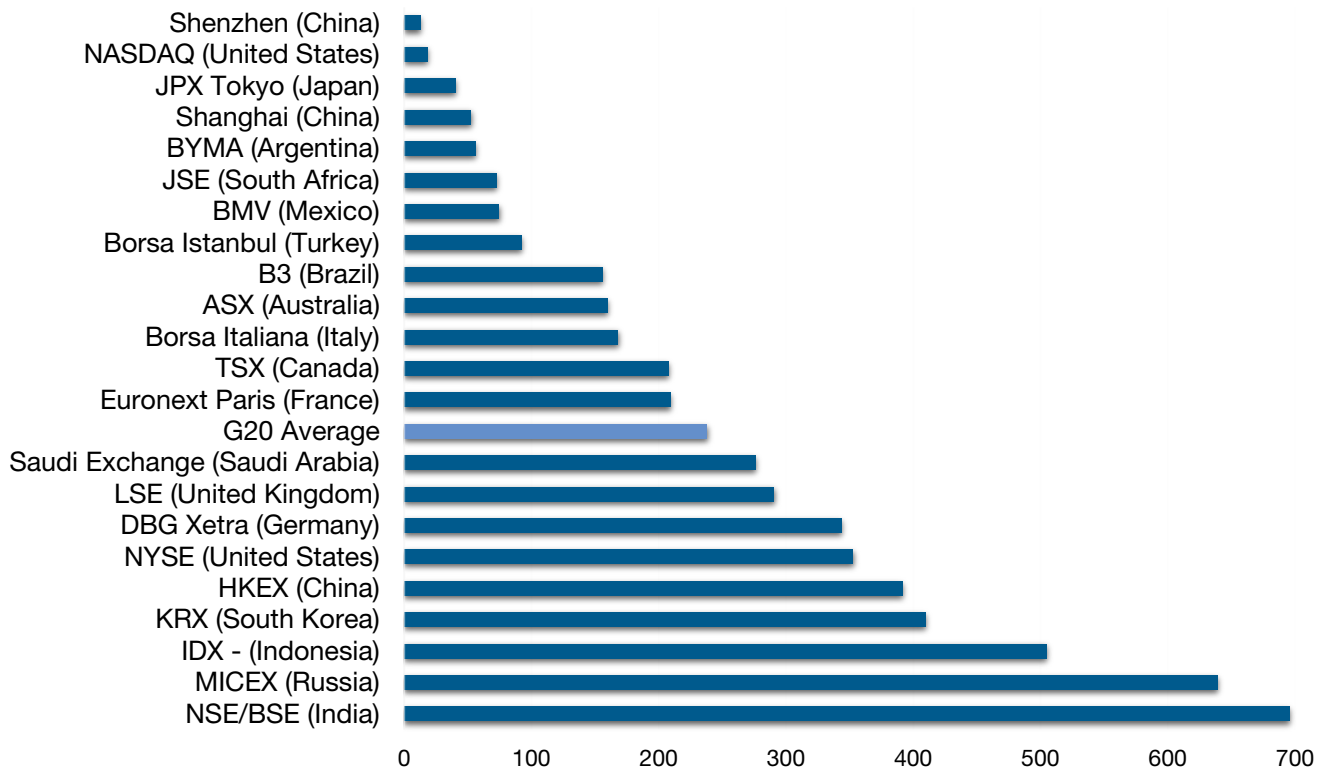
The world is in the midst of a climate crisis and, as emphasised during COP26, urgent action is needed to move toward a net zero emissions world to keep average global temperature rise to no more than 1.5°C above pre-industrial levels. Stock exchanges can play an important role in promoting emissions reductions in their markets by educating market participants on climate risks, encouraging improved climate disclosures and supporting listed companies in defining credible pathways to net zero greenhouse gas emissions.

This policy brief provides data on the Scope 1 carbon emissions of the top 100 companies by market capitalization listed on each of the G20's major stock exchanges. Focusing on companies that are listed on exchanges (rather than a country level view that is more traditionally presented) provides a unique perspective to help exchanges better understand the state of carbon emissions associated with their largest issuers. Focusing on Scope 1 emissions (direct emissions from a company) avoids double counting when comparing markets though obviously provides only a partial picture of the extent of decarbonisation efforts required. This data can serve as a useful starting point for exchanges in their efforts to promote net zero emissions among their listed issuers.

### The Data

#### Company Carbon Emissions by Listing Venue: G20 Markets

An analysis of the scope 1 emissions of the top 100 issuers by market capitalization listed on each of the 22 exchanges in the G20\* (million metric tonnes CO2 equivalent)



Source: SSE analysis based on reported and estimated emissions data from Bloomberg New Energy Finance.

\*In the case of the exchange in Argentina, which has less than 100 issuers, all the issuers were included in the analysis.

## Observations

- The top 100 issuers on the Shenzhen exchange in China and the Nasdaq exchange in the United States have the lowest Scope 1 emissions. Together the Scope 1 emissions of the top 100 companies on each of these exchanges combined represent only 0.6% of comparable emissions from the largest companies listed on the remaining G20 exchanges.
- Over half of the Scope 1 emissions from the companies analyzed in the G20 are emitted by companies listed on just 5 exchanges.
- Collectively, the 2,199 largest issuers in the G20 produce 5,225 million metric tonnes of CO<sub>2</sub> equivalent direct Scope 1 emissions.
- There are enormous differences between exchanges on the emissions of their top 100 issuers: the market with the highest emitting top 100 issuers has 50x the level of Scope 1 emissions compared with the market with the lowest emitting issuers.
- Even within the same country, there are significant differences between exchanges, highlighting the difference in industry/sector composition of the companies listed on those markets.
- All exchanges will have to work with issuers to support the net zero transition. The starting point is understanding the market baseline including the specific challenges faced by different industry sectors.

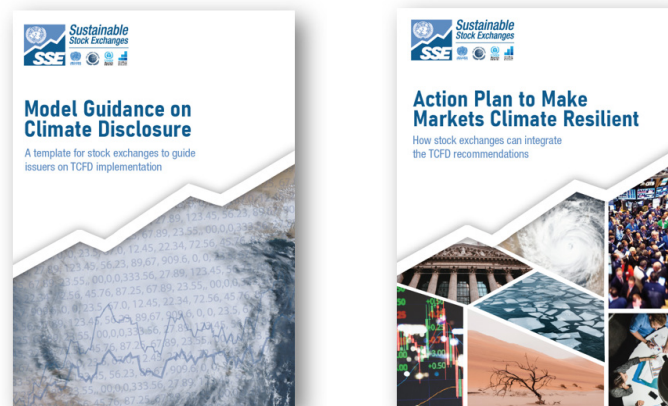
## Helping issuers move to net zero carbon emissions

Accurate and reliable company information is core to the effective functioning of markets. Investors (and other stakeholders) are increasingly demanding climate-related information to assess the extent of company progress towards net zero. Exchanges can play a role, both in meeting the needs of investors and supporting the issuers listed on their markets by providing guidance on and promotion of consistent, comparable and reliable climate disclosure.

Stock exchanges can help issuers with climate-related disclosures by providing guidance and training to their market on implementation of current best practices, including the recommendations of the TCFD, the upcoming guidance of the IFRS Foundation's International Sustainability Standards Board as well as regional approaches such as the European Union's Corporate Sustainability Reporting Directive. This helps companies set internal processes that allow them to better measure and manage their emissions and also helps investors and other stakeholders working with issuers on sector-specific decarbonisation approaches. The UN SSE provides a model guidance on climate disclosure, which is a template that can be used by exchanges and adjusted as necessary to their unique market circumstances.

## Creating a Benchmark for Progress

This report presents the preliminary findings of a new SSE research programme that seeks to track company carbon emissions data organized by primary listing venue. Tracking the carbon emissions of listed companies provides a useful benchmark for exchanges and other key stakeholders to assess progress in promoting a transition to net zero emissions among listed companies. Collaborating with stock exchanges, as well as other relevant international organisations and local partners, the SSE will use this benchmark to guide its own technical assistance and training programmes.



To see more details on SSE guidance for how stock exchanges can influence climate change, visit our publications page at [sseinitiative.org](https://sseinitiative.org).



## About the SSE

The SSE initiative is a UN Partnership Programme organised by UNCTAD, the UN Global Compact, UNEP FI and the PRI. The SSE's mission is to provide a global platform for exploring how exchanges, in collaboration with investors, companies (issuers), regulators, policy makers and relevant international organisations can enhance performance on environmental, social and corporate governance issues and encourage sustainable investment, including the financing of the UN Sustainable Development Goals. The SSE seeks to achieve this mission through an integrated programme of conducting evidence-based policy analysis, facilitating a network and forum for multi-stakeholder consensus-building, and providing technical guidelines, advisory services and training.

## Acknowledgements

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