

S&P Global Sustainable1 Investor Client Council

Agenda & Subject Briefings



H1, 2024

13:30-17:30 Local Time

S&P Global

Table of Contents

Introduction and Welcome 3

Council Guidelines 4

Agenda and Subject Briefs..... 6

Decarbonization and Pathways to Net Zero Discussion Slides 7

Carbon Accounting: Automotive – Electrification is Getting Complicated Discussion Slides 8

Members of the Council..... 9

S&P Global Council Members 12

S&P Global Attendees..... 14

Legal Disclaimer 16

Introduction and Welcome

Dear Council Members,

Welcome back to a new year of the Investor Client Council. As we commence the second year of our cycle, I want to emphasize the continued importance of the Council to our stakeholders and to the sustainability market. Despite the ups and downs for ESG and sustainability, we continue to believe that together we can make our word better and work towards a greener and more sustainable future.

If you are joining us for the first time – welcome! A welcome packet is available to you on our website and we are thrilled to be including new faces and more value to our discussion.

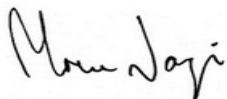
The transition continues to be not only a hot topic but a critical one for achieving our net zero goals and beyond. The shift towards renewable energy sources, coupled with the electrification of transportation holds the key to achieving a sustainable future. We are excited to be welcoming members of our sister divisions, S&P Global Commodity Insights and S&P Global Mobility to discuss the collaborative efforts these sectors promise to reduce carbon and also foster economic growth and social resilience through the climate transition.

Our initiative now also welcomes presentations from our members to help foster a community of collaboration and growth. We are excited to continue along this journey with you and look forward to working together to accelerate this transition, ensuring a greener and cleaner planet for generations to come.

Should you have any questions, comments, or concerns, please kindly reach out to our Council Secretary, Rebecca Taylor at rebecca.taylor1@spglobal.com or Myrna Ghanem at myrna.ghanem@spglobal.com. We hope you will find your membership of the Investor Council a rewarding and valuable experience – as we work together towards a more sustainable future.

Thank you again for your participation and a very warm welcome back to our expert community.

Sincerely,



Mona Naqvi
Chair of the Investor Client Council

S&P Global

S&P Global Sustainable1 Investor Client Council

S&P Global Sustainable1 Investor Client Council 2024 Council Meeting Guidelines

The S&P Global Sustainable1 Investor Council ("Investor Council") is a community of renowned industry experts, who meet regularly to discuss business challenges and opportunities arising from sustainability issues. Its members provide S&P Global with invaluable insights and expertise inform best practices and deepen our firm's understanding to better serve the evolving needs of the market through the creation of relevant products and services.

The below Guidelines are established to ensure all members are engaged in conversations that are legally appropriate while promoting the sharing of insights and expertise relevant to the success of the Investor Council.

Each member of the Investor Council shall hold all information shared with and in connection with the Investor Council in strict confidence. Each member of the Investor Council shall only share such information with any persons or entities who are members of the Investor Council and shall only share such information with any persons or entities who have executed the appropriate Investor Council NDA with S&P Global.

S&P Global Sustainable1 produces a company's S&P Global ESG Score in accordance with its published methodology. S&P Global is committed to the independence and objectivity of its products and services and has policies in place to help maintain an appropriate separation between its different business units, including S&P Global Sustainable1 which develops S&P Global ESG Scores. For the avoidance of doubt, the Investor Council shall not be involved and shall not influence or attempt to influence S&P Global Sustainable1's methodologies, policies, or practices in connection with the S&P Global ESG Score and its related operations. Further, all parties involved with the Investor Council understand that any business relationships any Investor Council member has with S&P Global, and vice-versa, are separate and distinct from the Investor Council.

By participating in the Investor Council, each member of the Investor Council understands and agrees to these Guidelines.

or

Please contact S&P Global Sustainable1 Legal via Mona Naqvi (mona.naqvi@spglobal.com), Rebecca Taylor (rebecca.taylor1@spglobal.com), Myrna Ghanem (myrna.ghanem@spglobal.com), the Investor Council Admin (InvestorClientCouncilAdmin@spglobal.com) if you have any questions about the application of this guidance.

Permitted	Not Permitted
<p>Discuss public or non-commercial matters: market trends; perspectives on ESG regulation; industry studies best practices high-level product development evolution thought processes and concepts S&P Product launches or expansions, including standardized models and analytics, to the extent presented by S&P Global Sustainable in connection with the Investor Council</p>	<p>Discuss non-public: Pricing/commercial policy Marketing efforts Specific or granular cost information Particular customers or vendors No discussion on specificities of scores or methodologies except to the extent already publicly disclosed</p>
<p>Set an agenda for each meeting and review with Legal if any questions.</p>	<p>Discuss specifics of how market trends affect each company or examples of customers Discuss product pipeline ideas, methodology changes, specific business strategies, specific intended developments, trade secrets, or know-how</p>
<p>Raise any concerns about discussion topics at a meeting. If discussions continue, leave the meeting and ensure that your departure is recorded in writing. Report any concerns to Legal.</p>	<p>Allow any departures or deviations from the stated agenda. Allow analytical employees to attend without appropriate legal and compliance review and approval</p>
<p>Remember all written communications (including emails and notebooks) may be disclosable to a regulatory or legal authority (including without limitation a competition authority). Ensure the legitimate professional objective behind discussions is clear in any written communications.</p>	<p>Apply different standards of behaviour to information sharing in a less formal or social setting.</p>
<p>Ensure discussions are accurately recorded.</p>	<p>Use language which could be misinterpreted. Use language that is factually incorrect</p>

Agenda and Subject Briefs



Please see below for access to the document.

S&P Global Sustainable1

Investor Client Council

SESSION AGENDA

13.30 – 14.00: Registration & Refreshments

14.00 – 14.10: Welcoming Remarks

14.10 – 14.20: Purpose & Objectives

Mona Naqvi, Chair of the Investor Client Council

14.20 – 14.40: Keynote

14.40 – 15.45: Decarbonization and Pathways to Net Zero (See Attached Briefing)

Exploring how the Energy Trilemma and a shift towards Energy Pragmatism is shaping investment in the Energy Transition.

- Examining the trade-off between energy sustainability, security, and affordability
- S&P Global Commodity Insights' approach to supporting the Energy Transition

15.45 – 16.00: Break

16.00 – 17.00: Automotive – Electrification is Getting Complicated (See Attached Briefing)

Decarbonizing the automotive sector is a complex undertaking, and one looking increasingly fraught.

- Why the industry's transition to electric vehicles is looking increasingly challenging
- Exploring implications for investors' carbon footprints, risk management, and capital allocation
- S&P Global's approaches to whole-lifecycle automotive emissions analysis

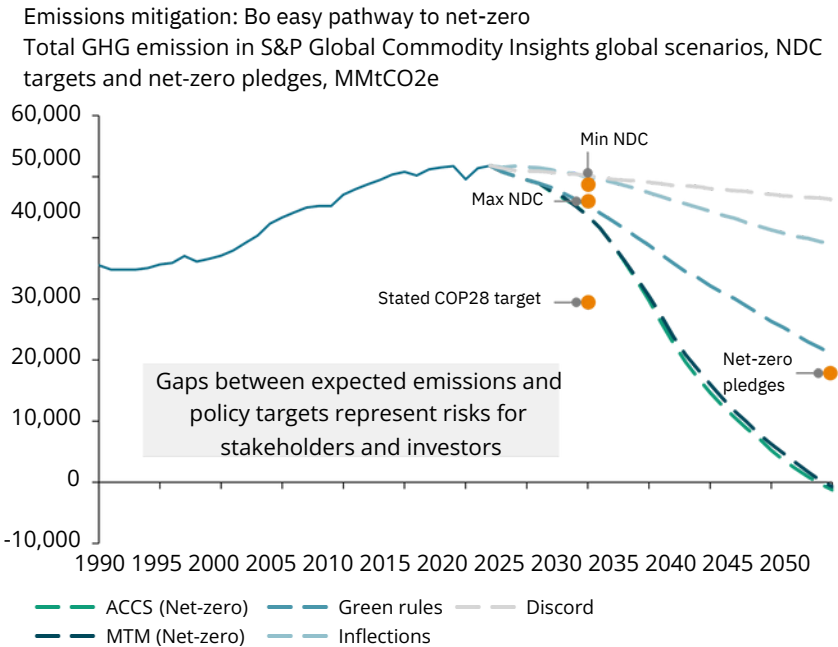
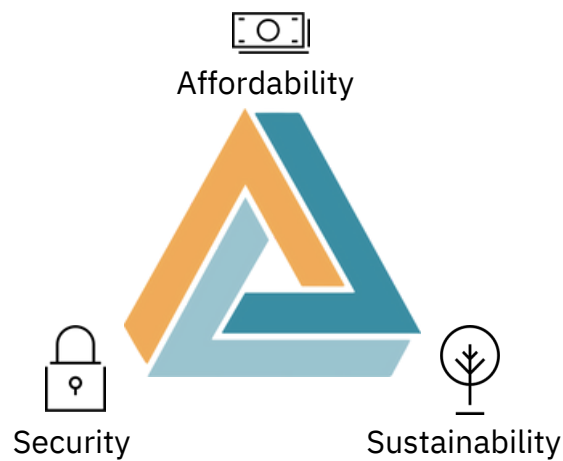
17.00 – 17.20: Keynote

17.20 – 17.30: Concluding Remarks

Mona Naqvi, Chair of the Investor Client Council

17.30 – 20.30: Networking Reception, Drinks & Food

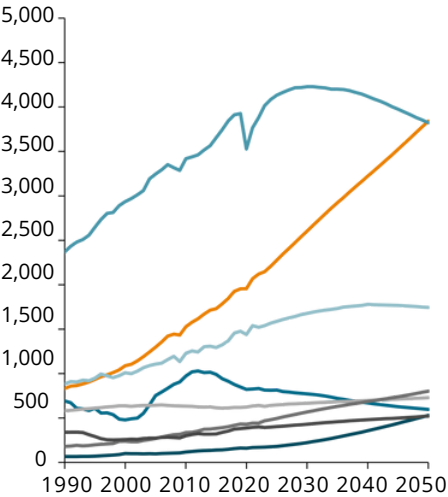
Balancing priorities of the Energy Trilemma in multidimensional path to net-zero – to achieve Net Zero the world must reinvent its energy systems at a scale never attempted in history



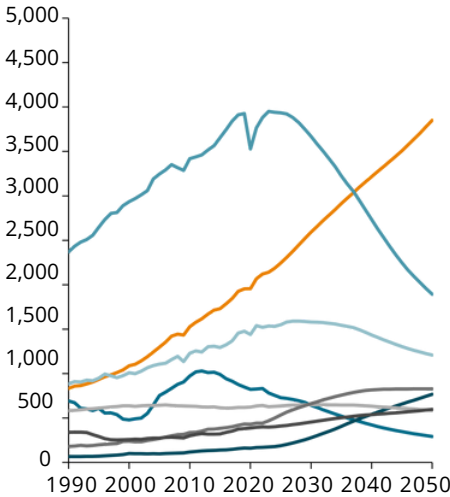
Data compiled Oct. 2, 2023
 ACCS = Accelerated Carbon Capture and Storage; MTM = Multitech Technology Mitigation; NDC = Nationality Determined Contributions
 Source: S&P Global Commodity Insights

The future of final energy use is electricity, which by 2050 will account for a 27% to 40% share of total energy

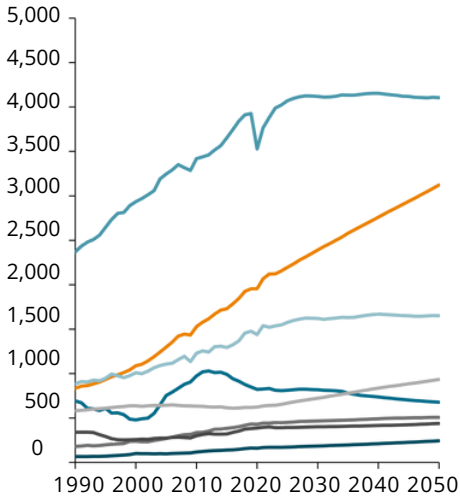
Inflections: Global trends in final energy demand, MMtoe



Green Rules: Global trends in final energy demand, MMtoe



Discord: Global trends in final energy demand, MMtoe

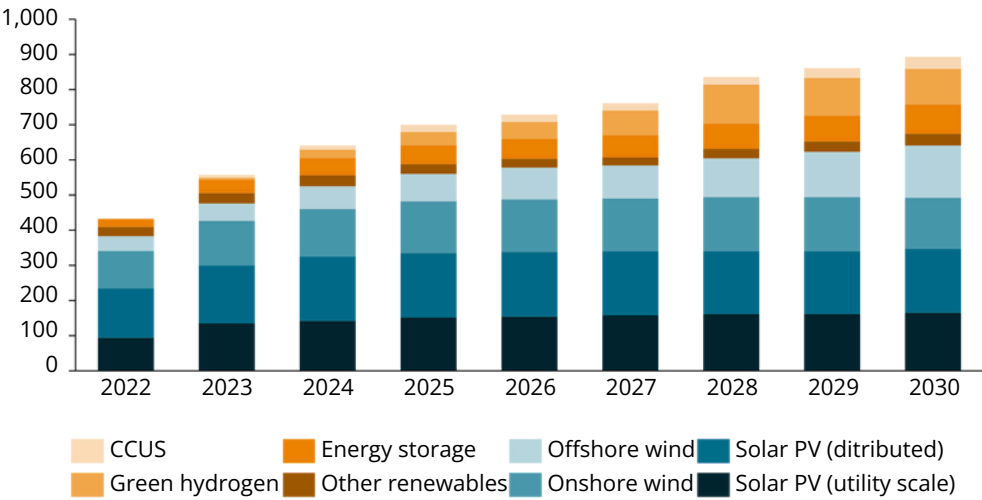


Electricity Oil Hydrogen Modern biomass
Gas Coal Traditional biomass Other

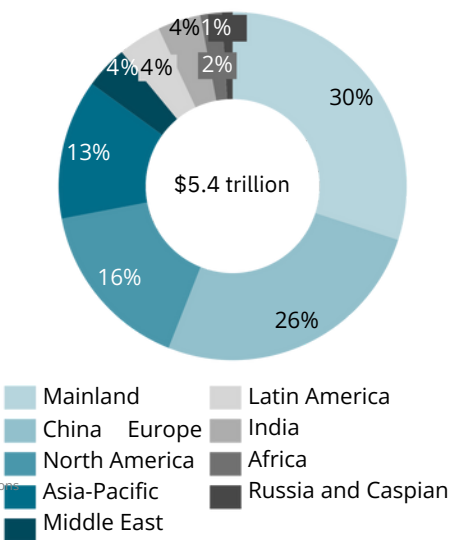
Data compiled July 2023.
Source: S&P Global Commodity Insights.
© 2024 by S&P Global Inc. All rights reserved.

To meet this power demand growth, investments in renewables, storage, green hydrogen production and CCUS are expected to hit \$900 billion per year in 2030

Annual investment in renewable power and storage by technology, \$ billion, real 2023

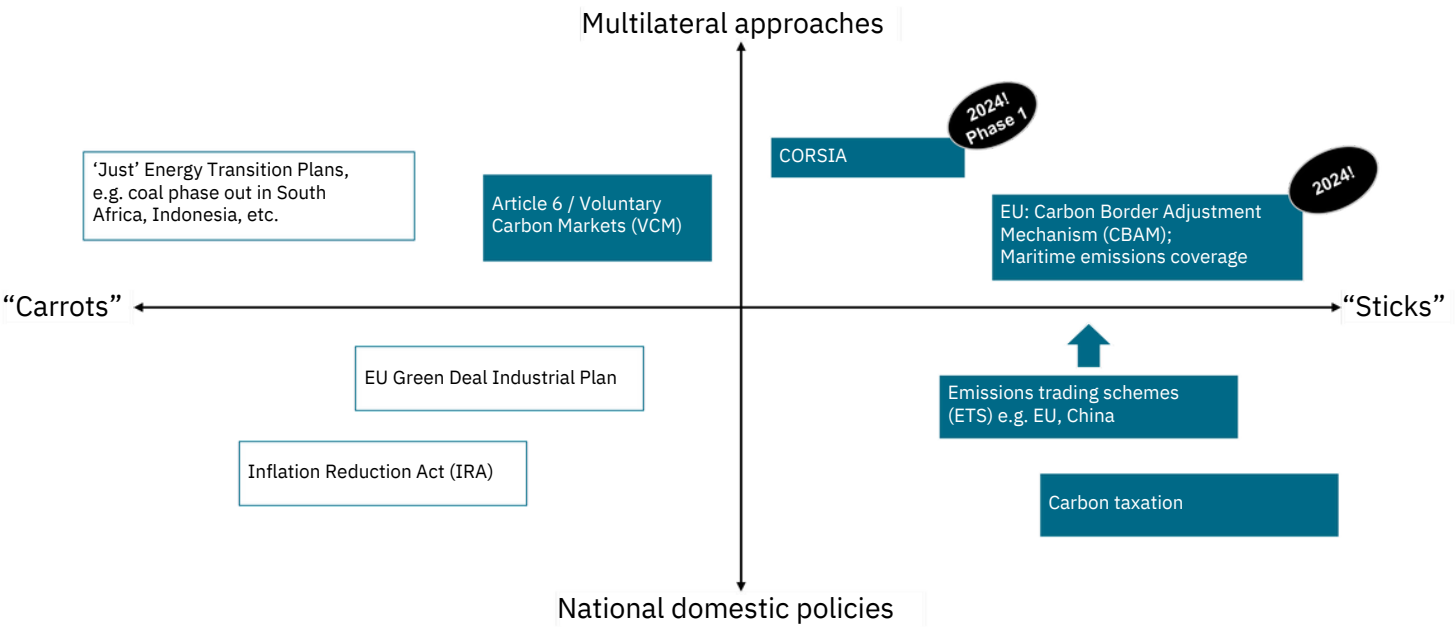


Cumulative investment in renewable power and electricity storage, by region, 2024-30, percent



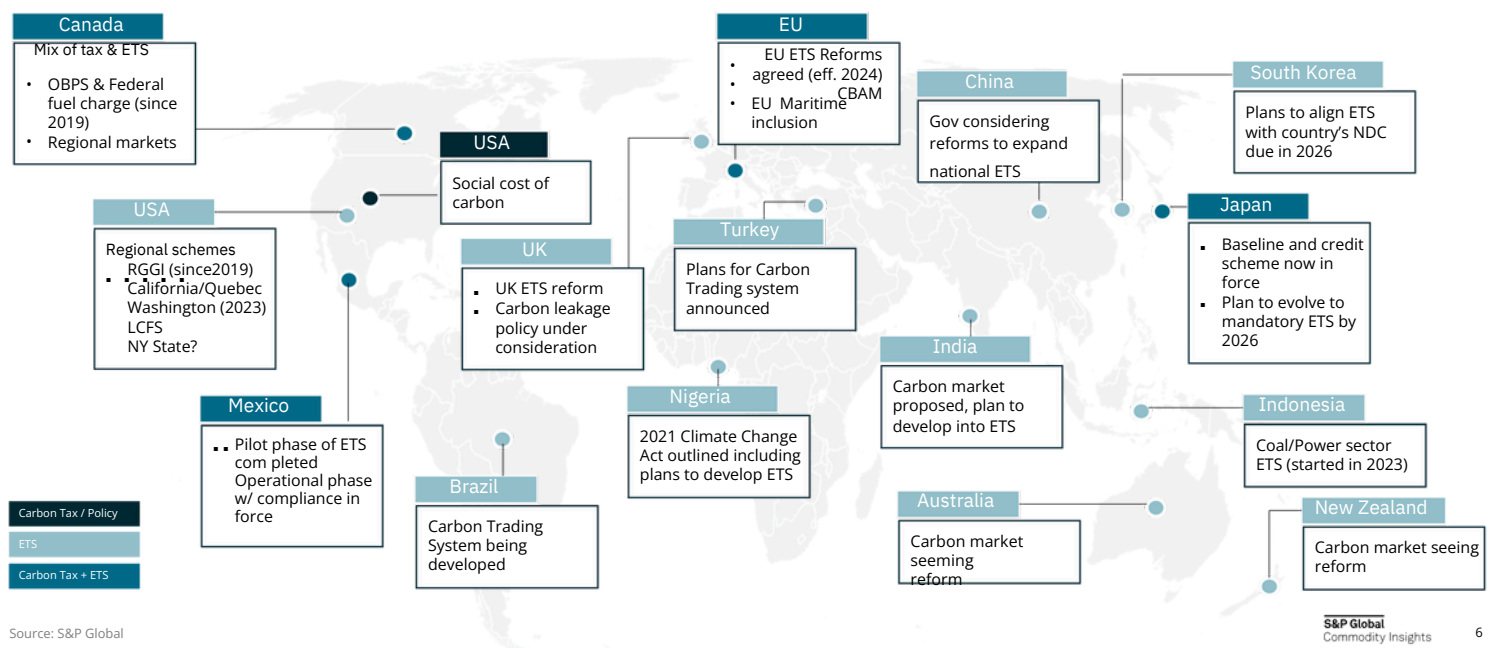
Note: Investment for generating assets. Investments are estimated by multiplying annual gross additions by a benchmark capex. DG = distributed generation, installations <5 MW. Storage includes batteries, does not include pumped hydro. Green hydrogen includes electrolyzer capex. CCUS, includes power and other sectors. As of February 2024.
Green hydrogen (electrolyzer) investments are based on the August 2023 Inflections outlooks. Expectations on costs and capacity additions have evolved and will be reflected in the new outlooks due to be published later in 2024.
Source: S&P Global Commodity Insights.

Key differences emerging in approaches towards climate policy – as well as carbon finance, carbon pricing and carbon markets



Compliance carbon pricing continue to expand globally: 25% of global emissions covered by carbon pricing – increased adoption can be observed across major carbon emitters

Compliance carbon pricing schemes and recent developments, selected schemes



S&P Global Commodity Insights is expanding its coverage and measurement of carbon intensity of commodities, on crude oil & beyond, to add GHG transparency

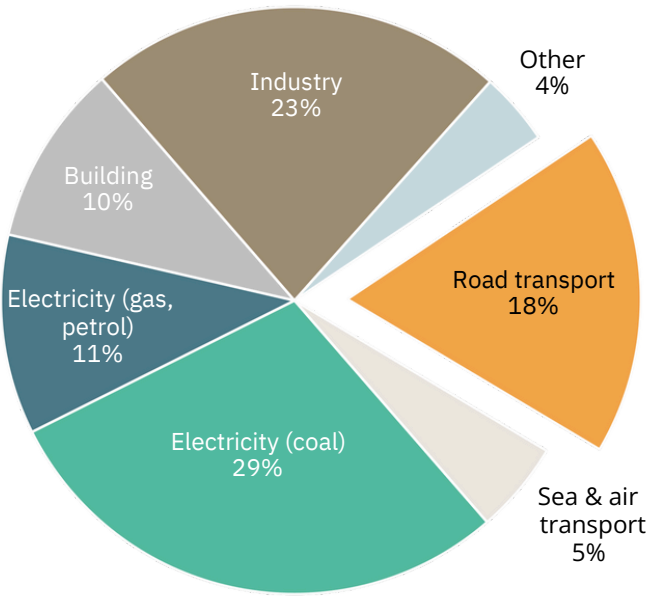


Platts Periodic table of oil: The 6th edition
Crude quality and carbon intensity have increased in importance with the energy transition. This chart by S&P Global Commodity Insights represents the most diverse and key streams in global oil markets.

S&P Global
Commodity Insights

The automotive sector generates one-sixth of global carbon emissions

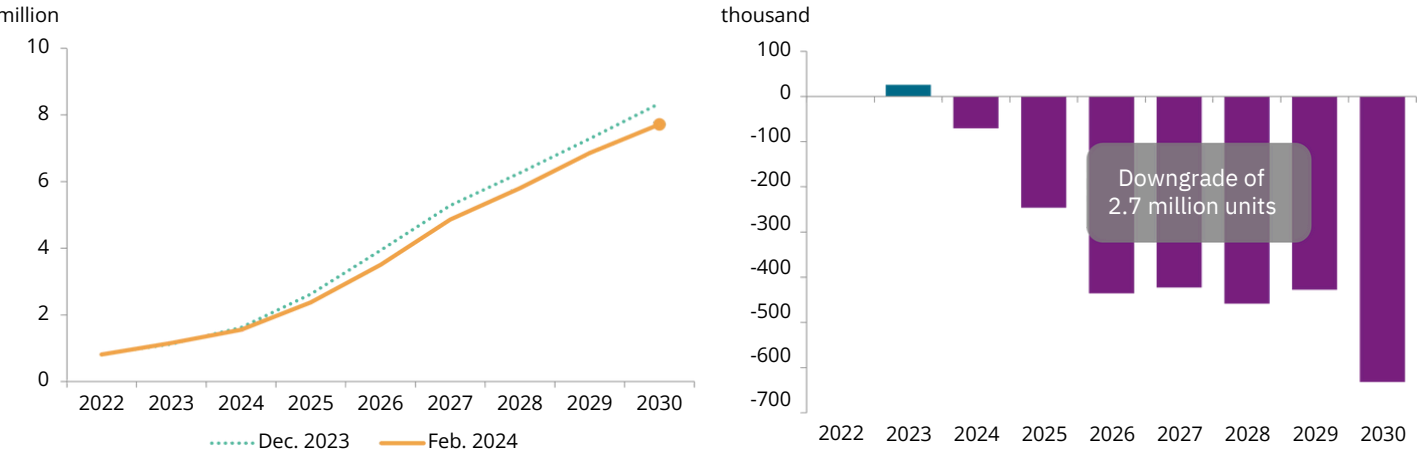
Global CO emissions



Data compiled January 2024.
Sources: IEA; S&P Global Mobility.

Expectations for electric vehicle adoption are weakening

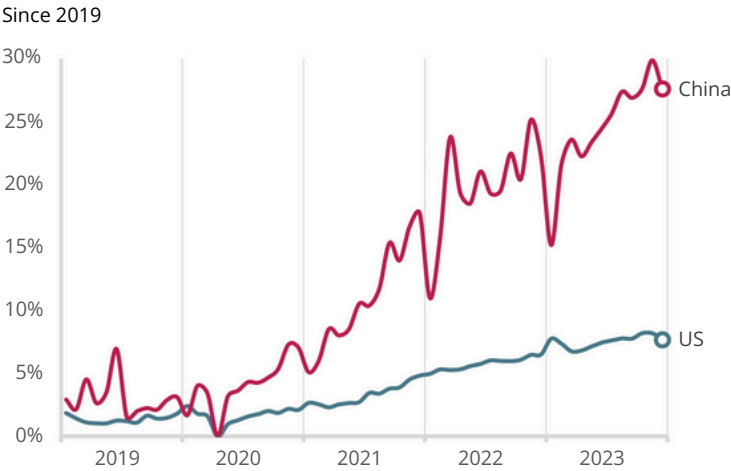
North American production forecast change, Dec 2023 vs Feb 2024



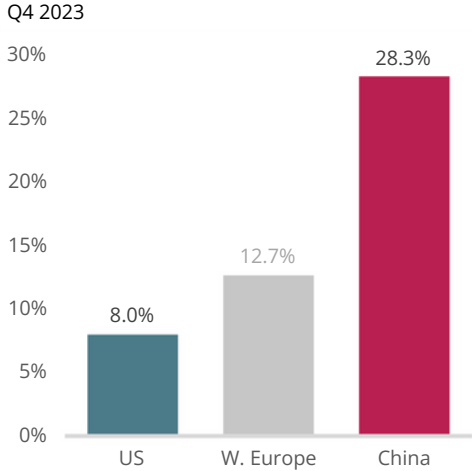
Data compiled March 4, 2024
Source: S&P Global Mobility

Electric vehicle penetration diverging among key regions

Battery electric vehicle sales as % of market



Source: S&P Global Mobility - Global Light Vehicle Registrations



China is maturing into an export superpower

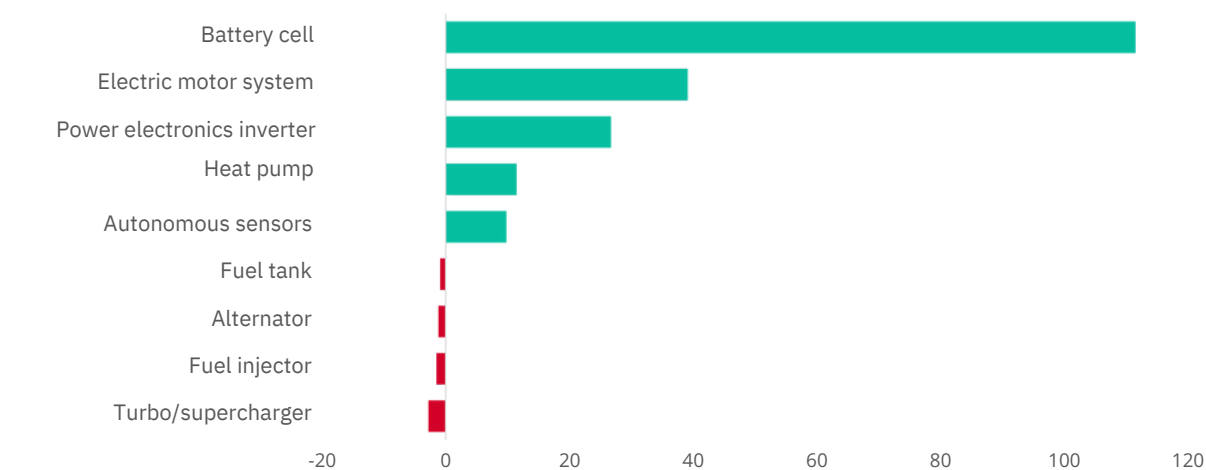
Vehicle sales (millions of units)



Source: S&P Global Mobility – Light Vehicle Forecasts

Supply chains will be substantially reconfigured

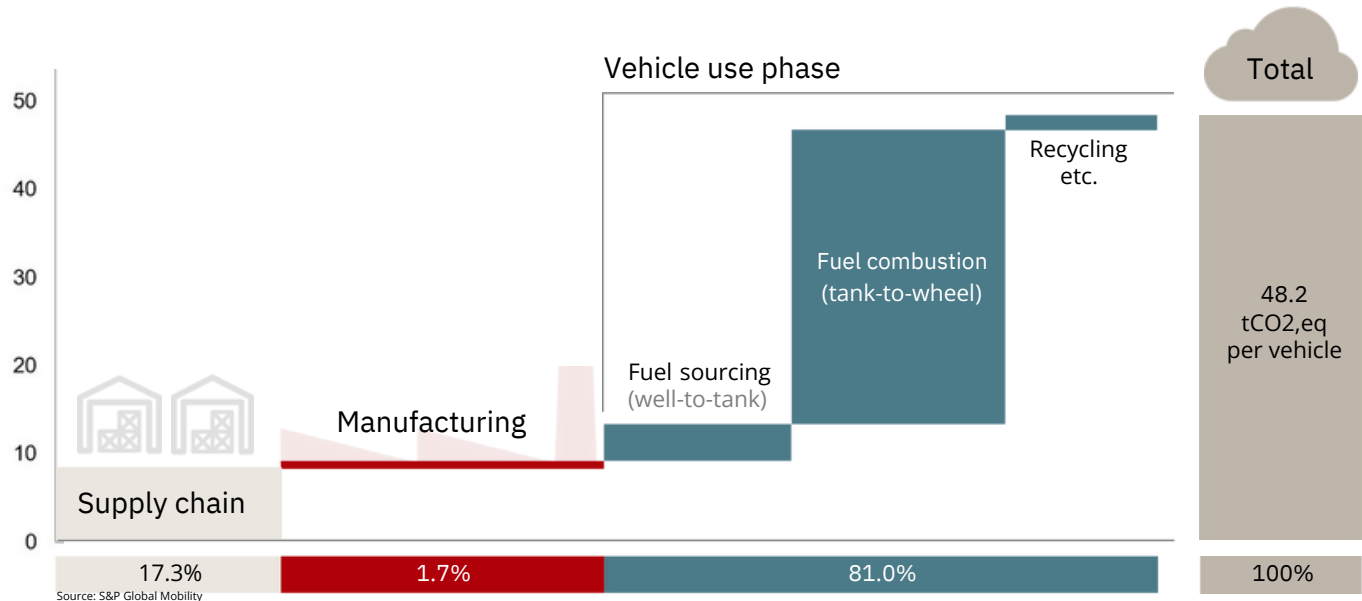
Forecasted demand change, notable automotive component markets 2024-29 (\$bn)



Source: S&P Global Mobility Supply Chain Technology

Total emissions: Use phase of vehicles is the primary driver

Example manufacturer CO2 breakdown (tCO2,eq/vehicle)



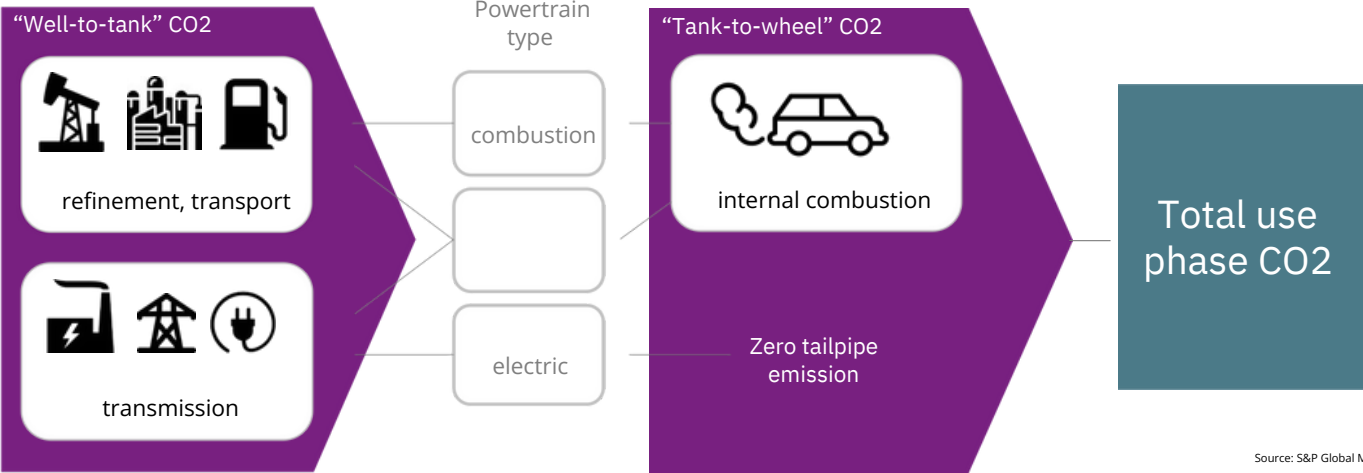
Methodology and Data Flow

Use phase CO₂ emissions, vehicle manufacturer

Input data	Calculation	Output
------------	-------------	--------

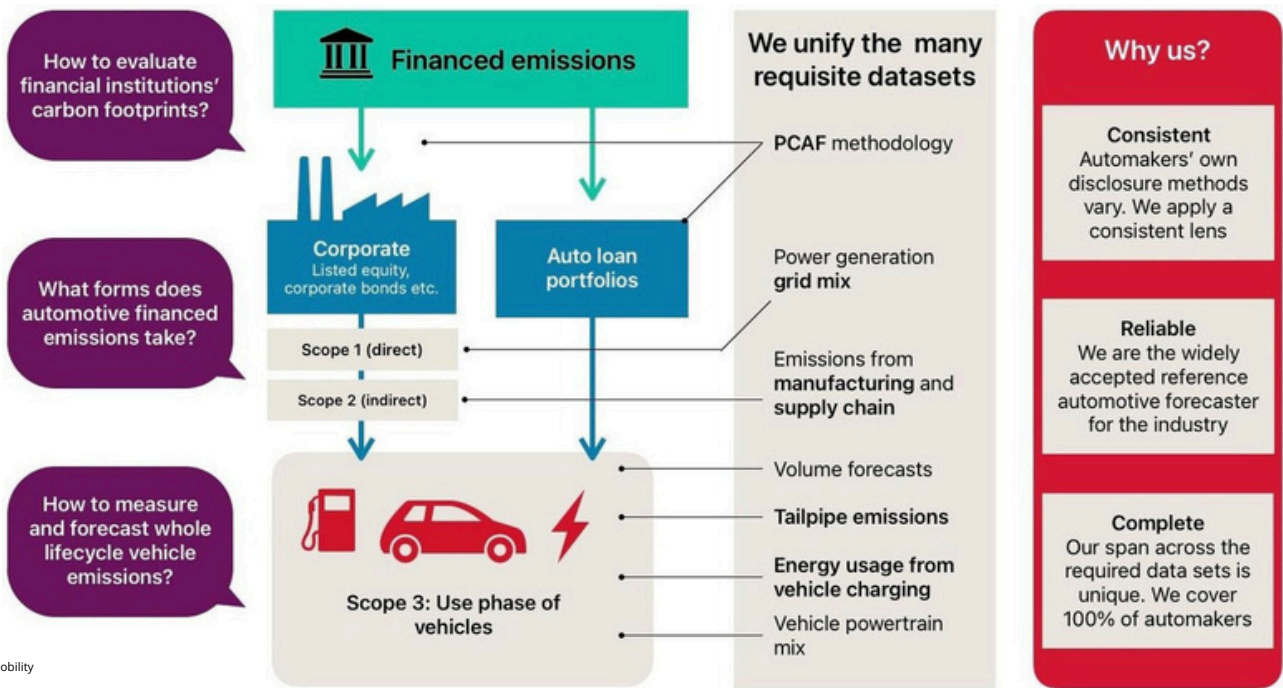
Fuel production CO ₂ intensity	Electricity production CO ₂ intensity	Regional energy mix
---	--	---------------------

Combustion CO ₂ intensity	Lifetime miles	Vehicle sales volumes
--------------------------------------	----------------	-----------------------



Source: S&P Global Mobility.

Many implications for financed emissions



Source: S&P Global Mobility

S&P Global Sustainable1 Investor Client Council

Disclaimer

Copyright © 2024 by S&P Global Inc. All rights reserved.

These materials have been prepared solely for information purposes based upon information generally available to the public and from sources believed to be reliable. No content (including index data, ratings, credit-related analyses and data, research, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of S&P Global. The Content shall not be used for any unlawful or unauthorized purposes. S&P Global and any third-party providers, (collectively S&P Global Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Global Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON "AS IS" BASIS. S&P GLOBAL PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Global Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global's opinions, quotes and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Global may provide index data. Direct investment in an index is not possible. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Global assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P Global does not endorse companies, technologies, products, services, or solutions.

S&P Global keeps certain activities of its divisions separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions of S&P Global may have information that is not available to other S&P Global divisions. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P Global may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P Global reserves the right to disseminate its opinions and analyses. S&P Global's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge) and www.ratingsdirect.com (subscription), and may be distributed through other means, including via S&P Global publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees