AIMCo 2020 Taskforce on Climate-related Financial Disclosures (TCFD) Report

Climate change has emerged as one of the most pressing systemic risks of our time. Countries and market participants are increasingly focused on aligning their activities with the Paris Conference of Parties (COP) 21 Agreement, designed to limit global warming to well below 2°C above pre-industrial levels, while pursuing efforts to limit warming to within 1.5°C by the year 2100. According to the Intergovernmental Panel on Climate Change, greenhouse gas emissions (GHG) must approach net-zero by mid-century to achieve warming within 1.5°C. As of early 2020, 121 nations, including Canada, representing 49% of global GDP have set or declared intentions to set net-zero targets by 2050.

AIMCo is committed to doing our part to better understand climate risks and opportunities across our portfolios, so we may maximize risk-adjusted returns for our clients over the long term. Climate change has been a key ESG focus area for AIMCo since 2015. We recently updated our Strategic Position on Climate Change, initially issued in 2015, to reflect an evolving regulatory and disclosure landscape. AIMCo publicly endorsed the G-7 and G-20 investor statements calling for policy action on climate change, and the FSB Task Force on Climate-related Financial Disclosure (TCFD) recommendations. We've contributed to climate-related consultations for the TCFD and Canada's Expert Panel on Sustainable Finance; and we are actively participating in a Canadian Standards Association Group initiative to develop a "made-in-Canada" transition taxonomy.

This is AIMCo's second TCFD Report. We encourage investee companies and all market participants to disclose their climate-related information in accordance with the TCFD framework.

TCFD Framework

Governance

Role of the Board: AIMCo's Board oversees the governance of responsible investment at AIMCo and approves the Responsible Investment (RI) Policy. The Board is regularly briefed on AIMCo's ESG performance, strategy and ESG trends related to climate change.

Role of Management: AIMCo's Responsible Investment Committee (RIC) comprised of senior management approves overarching RI strategies, including with respect to climate change. At AIMCo we have regular touchpoints on sustainability-related matters across all asset classes and investment functions. Our Infrastructure, Private Equity and Real Estate asset classes have all established sustainability guidelines and committees, while regularly scheduled meetings are held between RI and Client Relations, Fixed Income, Public Equities and Risk Management.

TCFD Working Group: Over the past two years, an internal cross-functional working group has focused on implementing the TCFD recommendations at AIMCo. The effort is led by the RI team, with representation from the CFO office, Economics & Fund Strategy, Public Equities, Risk Management and Valuations teams. This year, the TCFD working group focused on expanding carbon footprinting across asset classes, and on addressing qualitative, narrative-based climate scenario analysis.

Strategy

Navigating the transition to the low-carbon economy is a strategic priority for AIMCo. We recognize the business imperative of integrating climate change into our investment strategies and view the physical, regulatory and reputational risks of climate change as material to our clients' objectives, especially over the medium and long-term investment horizons.

For AIMCo's publicly traded portfolios, we continue to engage with issuers, individually and collaboratively, to better understand their climate strategy and processes to mitigate exposure to climate change risks. We exercise voice by voting to support and advocating for decision-useful climate-related corporate disclosure. Our Infrastructure & Renewable Resources portfolio has invested $3.7 billion in low-carbon assets. The renewable resources portion of this portfolio is comprised of investments in timberland and agriculture, contributing to the removal of carbon emissions from the atmosphere. In our Real Estate portfolio, 95% of our Canadian office assets have green building certifications.

Our Real Estate and Infrastructure asset classes participate in the GRESB Survey, which requires disclosure of assets' environmental risk management processes. AIMCo's participating assets consistently score at or above the GRESB benchmark.

Considering the current climate-related disclosure landscape, we are committed to the following four active management strategies in alignment with our commitments as a PRI signatory:

1. To exercise shareholder voice by voting to promote climate-related disclosure
2. To engage with investee companies and promote climate-related disclosure
3. To advocate with policymakers, regulators and stock exchanges to encourage climate-related disclosure guidance
4. To take an active role in collaborative research regarding appropriate management of key elements such as carbon, plastics, methane and water, promote best practices and benchmark firms' performance on these metrics over time

Through our involvement in the G7 Investor Leadership Network's Climate Change Action Committee, we have contributed to guidance documents that can assist investors in implementing the TCFD and in understanding appropriate sector decarbonization pathways. For more info, go to: https://www.investorleadershipnetwork.org/en/climate-disclosures/

Risk Management

Identifying Climate Risks in the Long Term

The TCFD recommends investors conduct forward-looking scenario analysis to better understand potential investment risks and opportunities arising from various warming outcomes. A range of scenarios should be chosen, for both physical climate change impacts (e.g. severe weather events) and for transition-related impacts (e.g. regulations such as carbon pricing). Each set of scenarios should include a "business-as-usual" scenario, resulting in warming of greater than 2°C by 2100, and a low-carbon scenario, resulting in warming of less than 2°C by 2100.

The scenarios used are neither forecasts nor predictions of the future, but instead depict plausible future states, given key underlying assumptions, allowing organizations to then evaluate potential impacts and identify mitigating strategies. Investors can use scenario analysis to inform a climate readiness assessment of the portfolio/fund under each scenario, to guide investment analysis and strategy.

Scenario Analysis

AIMCo employed qualitative, narrative-based scenario analysis to identify risks related to climate change and opportunities that could potentially arise in the medium term (10 years) and over the long term (20 years). The goal was to understand potential impacts and investment implications for our portfolios.

This first iteration of AIMCo's scenario analysis focused on transition risks and is based on a widely used, off-the-shelf framework recommended by the TCFD — the International Energy Agency (IEA)'s World Energy Model. From this model, two scenarios with differing decarbonization pathways were chosen — the Stated Policies Scenario (STEPS), which effectively functions as the "business-as-usual" scenario, and a contrasting Sustainable Development Scenario (SDS) — which features as the low-carbon scenario.

Developing an in-depth understanding of each scenario allowed us to compare two distinct, plausible futures by examining the impact of associated market and regulatory forces, and learning what tools, or levers, are available to investors, companies and countries to promote economy-wide decarbonization. Major themes for levers include: reducing energy demand, shifting the energy mix, managing emissions and the use of market and regulatory factors to encourage decarbonization. The table below describes several levers that were identified for both scenarios. We will discuss these levers in further detail, along with key signposts or leading indicators which can help identify which scenario and associated decarbonization pathway is more likely to occur.

Reducing Energy Demand

- Adopt energy efficiency targets and standards
- Employ smart technology
- Pursue low-carbon fuel options

Shifting Energy Mix

- Increase renewable investments
- Decarbonize the electricity sector
- Electrify the transportation sector

Managing Emissions

- Support carbon capture, utilization and storage (CCUS)
- Promote reforestation
- Reduce fugitive methane emissions

Market and Regulatory Factors

- Expand carbon pricing
- Develop widespread emissions trading programs
- Issue green, sustainabililty and transition bonds

Overall Trends in IEA STEPS and SDS

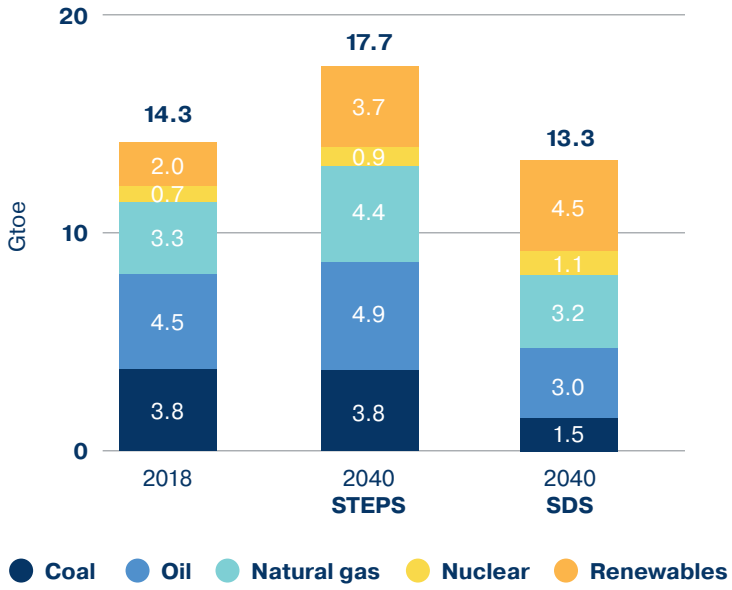
The IEA scenarios are focused on four carbon intensive sectors: power, industry, transportation and buildings. Both the STEPS and SDS scenarios begin with the same macroeconomic assumptions for population and economic growth through 2050. However, each employs a different combination of energy-related policies and levers to reduce emissions across the four carbon intensive sectors, resulting in a different set of market risks, opportunities and outcomes. The risks and opportunities are much more pronounced in the SDS scenario, which represents a fuller transformation of the energy sector.

Overall energy demand and the composition of energy mix differ widely between STEPS and SDS by 2040 (see Figure 1). According to the STEPS scenario, energy demand grows 1% per year through to 2040, while in the SDS scenario overall energy demand decreases — it is lower in 2040 than it is today. In comparing the emissions pathway modelled in STEPS to the one modelled in SDS, the energy system is significantly transformed, relying on a combination of deeper energy efficiency gains, faster and steeper deployment of renewables, electrification and carbon capture, utilization and storage (CCUS).

Although the STEPS scenario aligns with countries' COP 21 stated commitments, ironically it falls far short of the COP 21 global emissions goals. That's because even though the growth of global GHG emissions slows, it does not peak before 2040, resulting in global warming exceeding 3°C in 2100 (see Figure 2).

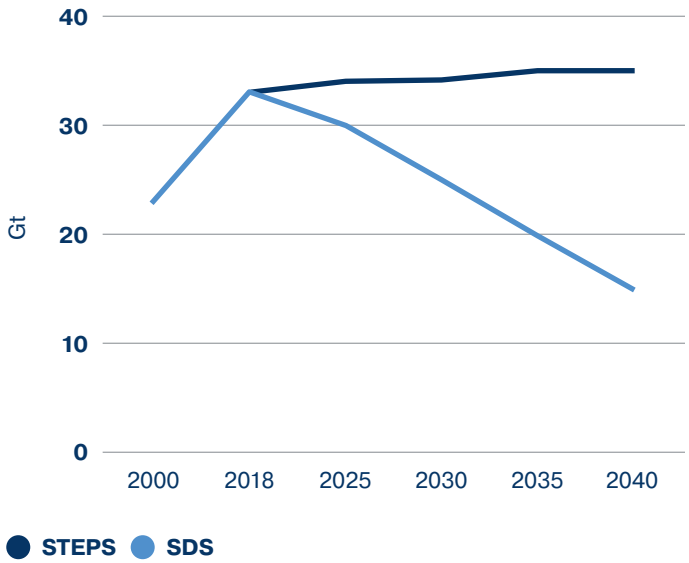
By contrast, the SDS scenario takes a back-casting approach. It follows the required decarbonization trajectory for the energy system to maintain a global temperature increase below 2°C by 2100, to achieve the transition to a low-carbon economy.

Figure 1: Energy Demand by Scenario and Fuel Type



IEA (2019), World Energy Outlook 2019

Figure 2: CO_2 Emissions Pathways by Scenario



IEA (2019), World Energy Outlook 2019

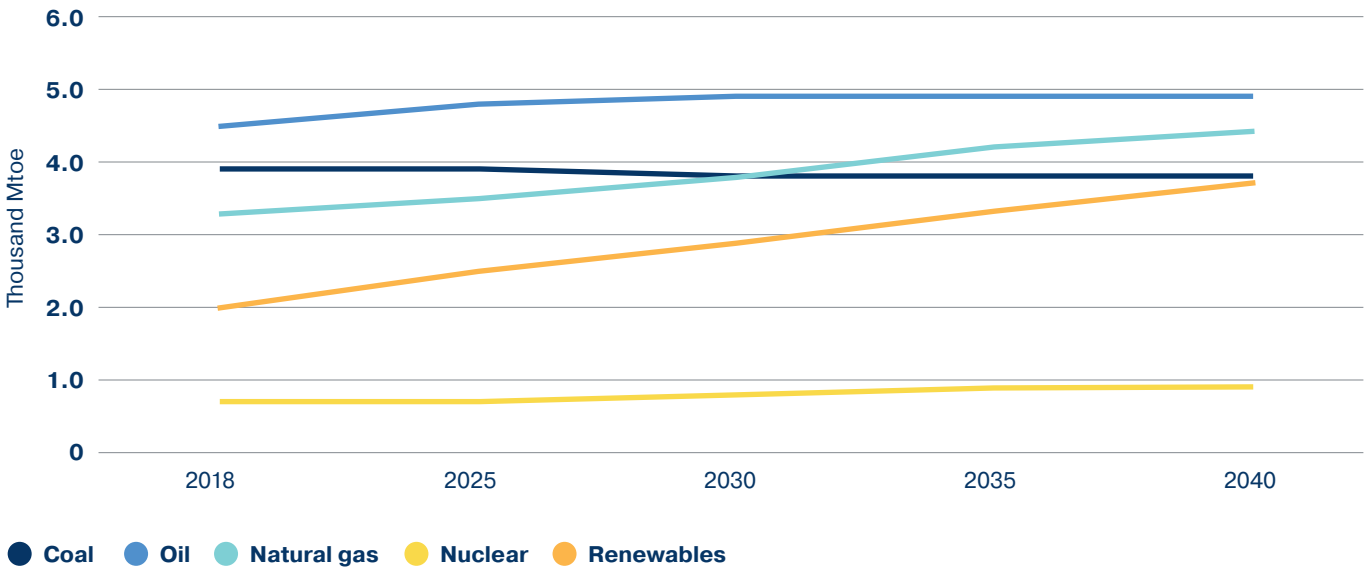
Identified Risks & Opportunities in STEPS and SDS

STEPS Medium (2030) and Long Term (2040 and Beyond)

In the STEPS scenario, the global energy mix in 2040 changes only marginally compared to today. While demand for coal and oil decrease, demand for natural gas grows, with the highest rate of market growth occurring in renewables. In both scenarios, energy demand growth shifts to developing markets — Asia, Africa and the Middle East — but in STEPS, unlike SDS, this growth in demand is met by traditional fossil fuels, like coal.

In STEPS, the world looks to technology to increase energy efficiency and encourage lower emissions across carbon-intensive sectors. Carbon pricing is implemented in parts of the world, but increases modestly, ranging between USD 24-44/tonne by 2050. This "business-as-usual" scenario reduces emissions slightly through increased energy efficiency, technology and targets, and results in fewer risks and opportunities overall for AIMCo, compared to SDS. Opportunities include investing in technologies to retrofit older assets, as well as in renewables which comprise an ever-higher share of the electrical grid. Risks include the impact of carbon pricing on investee firms' costs, operations and customer demand, potentially resulting in lower valuations of existing assets.

STEPS Energy Demand



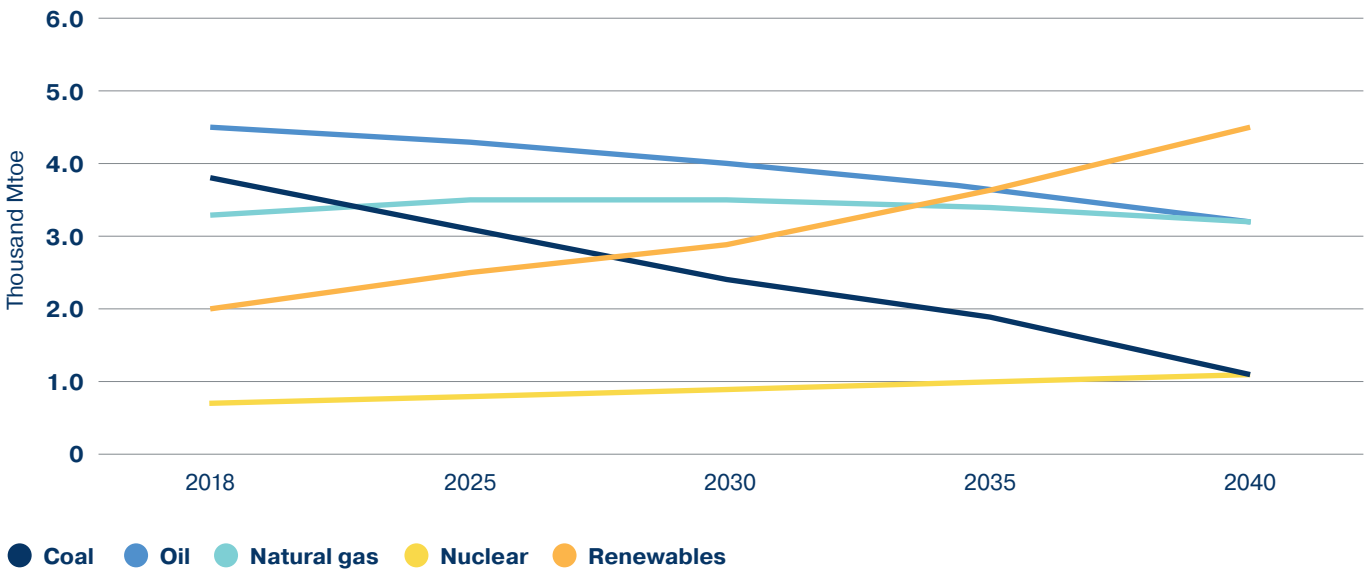
IEA (2019), World Energy Outlook 2019

SDS Medium (2030) and Long Term (2040 and Beyond)

The SDS scenario represents a significant transformation of the energy system to align with the COP 21 commitment to keep temperature increase well below 2°C by 2100. In this IEA scenario, the power sector is mostly decarbonized by 2050, with wind and solar emerging as the top two sources of electricity generation. By 2040, the transportation sector is almost fully electrified, and biofuels are broadly adopted in aviation and shipping. Demand for fossil fuels (coal, oil and natural gas) in 2040 is 33% lower than it was in 2018.

In this scenario, decarbonization policies and levers are far more stringent than in STEPS, enabling rapid transformation. For example, whereas in the STEPS scenario the opportunity for decarbonized includes reducing buildings' emissions year over year, in SDS the focus is on actively moving towards net zero buildings. The range of carbon pricing in STEPS is pegged at a higher level — USD 125-140/tonne. The need for a strategy on negative emissions is vital, requiring greater emphasis on CCUS and switching to lower-carbon fuels, such as hydrogen.

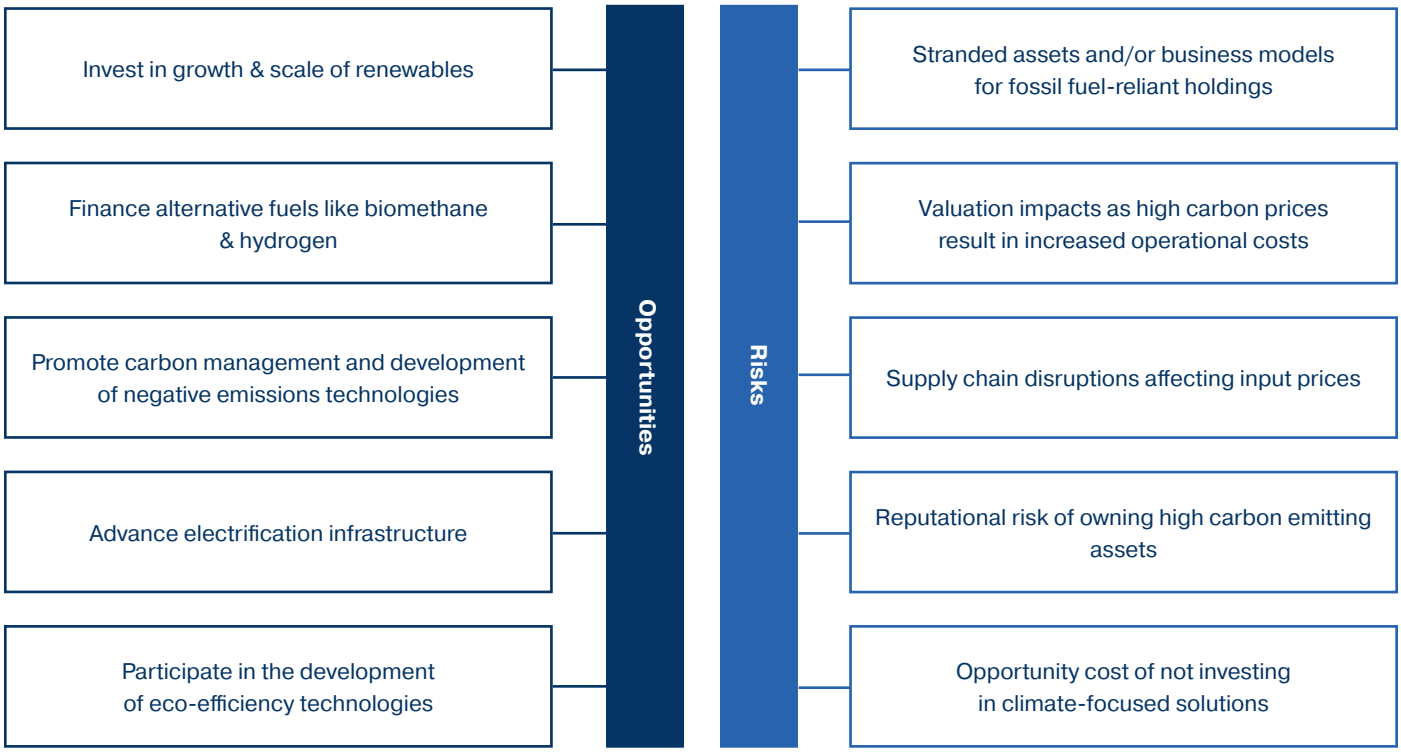
SDS Energy Demand



IEA (2019), World Energy Outlook 2019

In SDS, assets and companies' ability to adapt is imperative across all industries as the world itself transforms. Below are the identified risks and opportunities for AIMCo under this scenario.

Opportunities & Risks for AIMCo under SDS



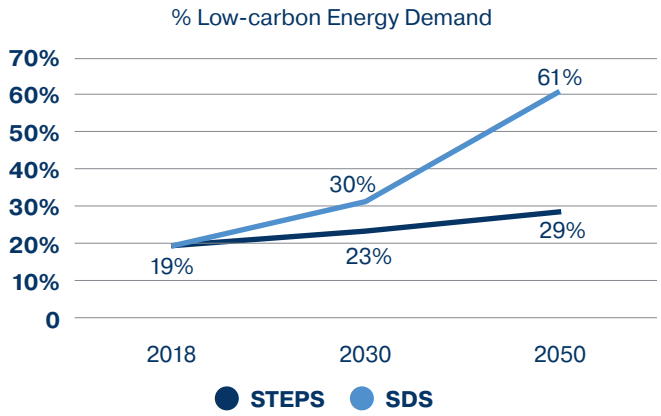
Which Decarbonization Pathway Is the World On?

Navigating the transition to a low-carbon economy will be complex and will require a concerted effort from investors, policymakers, the market and society at large. Monitoring factors such as the trajectory of carbon pricing, volume of electric vehicle sales or adoption of charging infrastructure offers valuable insights to inform our understanding of the direction and pace of the transition, and which of the two distinct decarbonization pathway is more likely to occur. The IEA has offered the following key signposts that can be monitored, for alignment with its scenarios.

Changing Energy Demand

Energy demand is expected to rise in the coming decades to accommodate global economic development in emerging markets. This increase in demand can be met by various low-carbon sources like hydropower, bioenergy and other renewables.

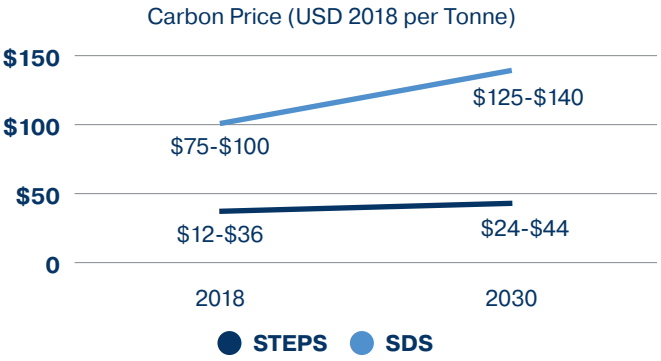
IEA (2019), World Energy Outlook 2019



Managing Emissions Through Markets

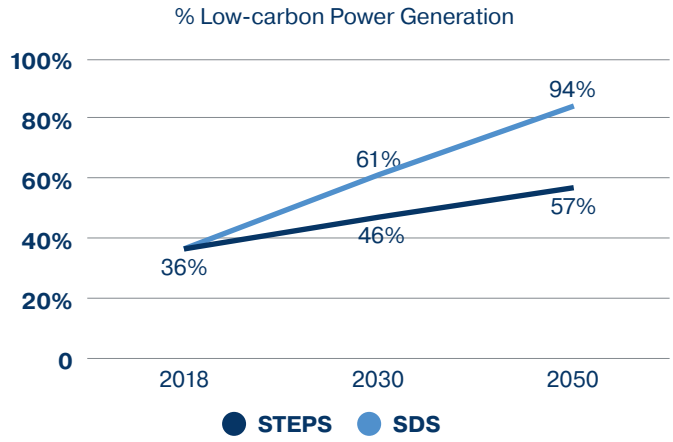
Carbon prices are a key market mechanism aimed at managing carbon emissions. Higher carbon prices incentivize investments in efficiency, alternative sources and CCUS, ultimately reducing GHGs emitted into the atmosphere.

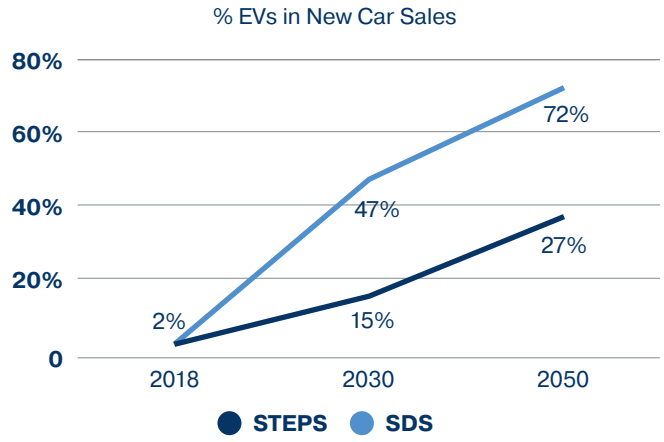
IEA (2019), World Energy Outlook 2019



Shifting Energy Mix

Electrification is an enabler of decarbonization. With low-carbon technology development, major sectors like transportation are electrified. Due to this, there is increased demand for electricity in the power sector. Low-carbon power generation like solar and wind, enable indirect emission reductions in sectors like transportation and industry.





IEA (2019), World Energy Outlook 2019

Metrics & Targets

AIMCo has been monitoring the absolute emissions and emissions intensity of our long only public equities' holdings since 2016. In addition, our Real Estate portfolio has been monitoring material environmental metrics for water efficiency, energy efficiency and waste diversion per square foot.

There are three current accepted methodological approaches to calculate a carbon footprint (see equations in notes), each attributing emissions to the investor differently, while offering valuable insights. These are:

1. The GHG Protocol or Owned Emissions method which attributes emissions to the investor proportionate to the investor's equity holdings only
2. The Financed Emissions method which attributes emissions to the investor proportionate to the investor's equity and debt holdings
3. The Weighted Average Carbon Intensity (WACI) method which attributes emissions to the investor based on the portfolio's relative exposure to carbon intensive industries

Our Carbon Footprint Philosophy & Scope

In our first TCFD report in 2019, we disclosed the carbon footprint of our long only public equities' holdings using the TCFD recommended WACI method and the owned emissions methods for 2015-2018 inclusive.

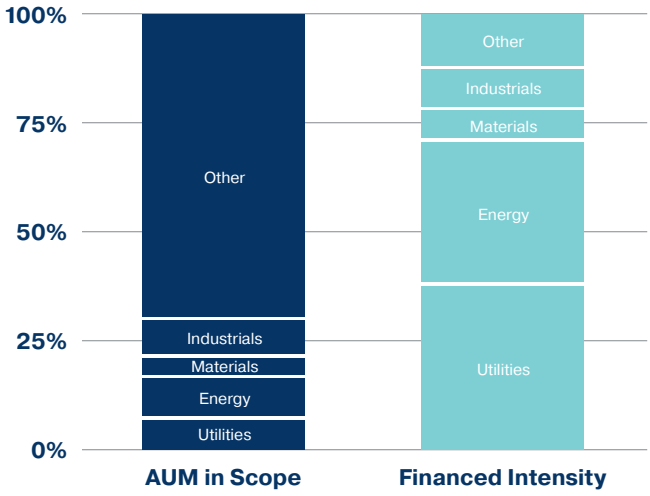
Our objective in 2020 and beyond is to expand the scope of our carbon footprint across asset classes to capture as much of our assets under management (AUM) as possible, reflecting valid investment strategies. As such, the GHG Protocol or Owned emissions method has become less relevant as it only considers equity holdings. Instead, we added the financed emissions method in order to calculate the absolute emissions and emissions intensity of our holdings, allowing us to expand our carbon footprint calculations across four asset classes: Public Equities, Fixed Income (corporate debt), Infrastructure and Real Estate. Under this method, we increased the scope of our carbon footprint from 26% of our AUM in 2018, to 60% in 2019. While the new approach does not allow for comparison with previously disclosed metrics owing to the lack of a common denominator, it enables AIMCo to increase the scope and coverage of our carbon footprinting exercise allowing for a more complete assessment of climate-related risks.

AIMCo's Carbon Footprint

AIMCo's absolute emissions using the Financed Emissions method are approximately 4 million tonnes CO_2e, and emissions intensity under the Financed Emissions method is 59 tonnes CO_2e/$million invested. Under WACI, emissions intensity is 239 CO_2e/$million revenue. Our WACI this year is higher than last year's 194 CO_2e/$million revenue primarily due to adding additional asset classes to the analysis.

AIMCo Carbon Footprint	2019
AIMCo Absolute Financed Emissions (tCO_2e)	4,187,933
AIMCo Financed Emissions Intensity (tCO_2e/$million invested)	59
Weighted Average Carbon Intensity (tCO_2e/$million revenues)	239
Total AIMCo AUM ($billion)	119
Carbon Footprint AUM ($billion)	71

Financed Intensity 2019



A key finding remains consistent, even when accounting for methodology changes — the vast majority of AIMCo's emissions continue to come from four carbon intense sectors: utilities, energy, materials (mining) and industrials. In our latest carbon analysis, we found that while these sectors represent approximately one quarter of AIMCo's holdings, they disproportionately contribute approximately 90% of the fund's overall emissions intensity.

Notes on Carbon Footprint Calculation

Carbon accounting methodology and attribution to the investor is an evolving, iterative process. The Partnership for Carbon Accounting Financials (PCAF) and its recently released *Global Carbon Accounting Standard for the Financial Industry* provided guidance in our approach, as did discussions with our peers and research into their approaches. Data challenges include: lack of disclosed carbon data, unverified carbon data, the difficulty of accurately proxying emissions for non-disclosed carbon data and the complexity of carbon attribution across various investment instruments (e.g. derivatives exposure). Despite these challenges, AIMCo is committed to calculating our CO2 footprint to assess climate-change-related risks and opportunities using the best available data and accepted methodologies. Our carbon footprint journey will continue to evolve as quality carbon data becomes more available, allowing us to expand our analysis across AUM.

We used the following terms, assumptions and formulas in our calculations:

- Dollars reported are CAD unless otherwise noted.
- Emissions are expressed in terms of carbon dioxide equivalents (CO_2e).
- Results presented reflect snapshots of the portfolio investments' carbon intensity as of December 31, 2019.
- Calculations consider scope 1 and scope 2 emissions as defined by GHG Protocol. We do not take into account emissions that emanate from the use of companies' products, also known as scope 3 emissions, as data is limited, and invites double counting.
- For Public Equities and Fixed Income Corporate Bond holdings MSCI data was used. Many issuers publish their emissions annually in conjunction with annual financial reports, and for those that do not disclose their emissions, MSCI uses a proprietary method to estimate and assign emissions.
- The Public Equities carbon footprint calculation is inclusive of long and short positions, and equity derivatives.
- The Fixed Income carbon footprint calculation is inclusive of short-term and long-term corporate debt.
- The Real Estate carbon footprint includes only standing domestic assets with self-reported emissions (Canadian assets that are fully built and/or >90% leased).
- The Infrastructure carbon footprint includes direct and co-investments where holdings are valued over $100 million as of December 31, 2019, and which have self-reported their emissions (excludes fund investments).
- Equations for the three currently accepted carbon footprint methodologies are listed below. GHG Protocol is no longer being reported as it only considers equity holdings.
- M$1= one million dollars; w_i = the weight of the holding within the portfolio

Method	GHG Protocol or Owned Emissions	Financed Emissions	WACI
Carbon Intensity	$\sum_{i}^{n} \frac{\text{Carbon Ownership}_i}{\text{Holding Market Value}_i} * M\$1 * w_i$	$\sum_{i}^{n} \frac{\text{Carbon Ownership}_i}{\text{Holding Market Value}_i} * M\$1 * w_i$	$\sum_{i}^{n} \frac{\text{Holding Market Value}_i}{\text{Portfolio Value}} * \frac{\text{Scope 1\&2 tCO}_2\text{e}_i}{\text{Issuer's \$M revenue}_i}$


AIMCo