



Climate change and investment portfolios



Part II: Addressing the carbon exposure of your investments



Real world implementation options for investors looking to manage their equity portfolio carbon exposures

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The first piece in our series on climate change and investment portfolios focused on the measurement of a company's carbon exposure.¹ In this paper we turn to actionable carbon management strategies available for investors.

Fossil fuel reserves and greenhouse gas (GHG) emission statistics provide valuable, yet incomplete, insights into a firm's overall climate exposure. Due to an increasing level of sophistication in climate finance and rapid improvements in company-level carbon data, investors can now better manage the carbon exposure of their equity investments.² In this paper, we look at carbon management strategies and identify four ways investors can address the carbon exposure of their equity portfolios. These strategies are:

1. Exclusions
2. Decarbonisation
3. Proxy voting and engagement
4. Green impact investing

There is no single 'one size fits all' solution for investors. Carbon management continues to evolve rapidly, driven by industry best practice, investor demand and regulation. It does seem likely though, that investing without regard to environmental impact will soon be considered an undesirable relic of the past.

Recent climate change initiatives in New Zealand

- Mandatory climate-related financial disclosures for large organisations, including fund managers, banks and crown financial organisations
- Target net zero emissions of all GHGs (except biogenic methane by 2050)
- Fossil fuel free default KiwiSaver funds

¹ Climate change and investment portfolios – Part I: What are carbon metrics? (Steinbarth & Tirodkar, 2021).

² While carbon management strategies and datasets for fixed income and alternative asset classes are gaining traction, there is a significant need for growth in sophistication and data availability before they catch up to that of equities.

Carbon management strategies for equity portfolios

Below we define and discuss each of the four carbon management strategies that investors can adopt to reduce the carbon intensity of their equity portfolios. Each differ in complexity and 'relative risk', highlighting that investors can develop customised strategies that most closely align with their specific objectives and constraints.

(i) Exclusions

Exclusionary (or divestment) strategies are often the first port of call for investors thinking about carbon exposure or other environment, social and governance (ESG) issues. This approach typically involves the complete removal of securities from an investable universe that meet a pre-established criterion. Exclusions-based approaches are already commonly used for investments in sectors such as tobacco and controversial weapons or armaments. While an exclusions-based strategy could be driven by either ethical or investment performance motivations, the implementation approach is usually the same.

Within a carbon-exclusion policy, a particular GHG intensity and/or fossil fuel reserve threshold is chosen. Any company with exposure exceeding this threshold would be removed from the opportunity set. The thresholds established can be set to reflect an investor's carbon reduction goals. For example, an investor with a goal of reducing their carbon exposure by 20% can work backwards by choosing an exclusion threshold which allows this goal to be met.

GHG exclusions involve the divestment of companies that generate significant carbon emissions in their business operations. Fossil fuel exclusions are narrower in scope and only exclude investments based on their ownership of fossil fuels, such as oil, coal and gas.

The primary advantage of an exclusionary policy is its relative ease in implementation. Additionally, assuming the policy is clearly defined, the portfolio impact is easily understood (i.e. a fund holds no shares of companies involved in coal extraction). An obvious weakness of the exclusions approach is that it can be challenging to aim for a target level reduction in emissions; as while some high emitters may be excluded, other emitters that are just below the threshold may end up being overweighted, impacting the final carbon exposure of the total portfolio. Further, the full universe of stocks (both excluded and included) needs to be reassessed on a regular basis to account for changes in carbon metrics at the corporate level.

Deciding what to exclude

Exclusions-based programs are centred around identifying which securities should be removed from the opportunity set due to business activities or emissions metrics. When considering divestments based on GHG emissions, investors must acknowledge that almost all companies have some emissions. There is an emissions spectrum, meaning that investors considering carbon divestment must first identify where their threshold exists on that spectrum.³ GHG emissions-based exclusions contrast with other common divestment strategies, such as tobacco, where the deciding factor is usually binary in nature.

In contrast to emissions, fossil fuel exclusions are relatively straightforward, as only a small subset of firms own any fossil fuel assets. However, investors still need to determine how much fossil fuel assets a company can own before deciding to divest.

So how should investors identify exclusionary thresholds for fossil fuel reserves and carbon emissions? We offer some thoughts below.

Carbon emissions: These are the releases of GHGs into the atmosphere through normal business activity. GHG measurement is complex, as gasses may be emitted at different parts of the value chain. The standard approach to measuring carbon emissions is through a classification framework called the Greenhouse Gas Protocol (GHGP). The GHGP sets standards in the calculation, reporting and analysis for GHGs, such as carbon. It disaggregates emissions into three 'scopes', or subsets. Investors must first consider which scopes they are interested in using when determining their exclusionary thresholds. Due to the complexity in measurement and the lack of coverage, Scope 3 emissions are not usually used in divestment screens. Investors then need to determine whether they are interested in absolute emissions or emission efficiency; the latter being emissions scaled by firm size or revenue.

Following this, investors must select a threshold whereby firms with excessive emissions are screened out of the portfolio.⁴

Fossil fuel reserves: Fossil fuel reserves are natural fuels, such as coal or gas, which release GHG emissions when burned. Whereas emissions data are theoretically applicable to the entire universe, reserves data only applies to a subset of companies that hold fossil fuel assets on their balance sheets. As a result, any exclusions based on fossil fuels will be particularly concentrated in a few subsectors.

GHGP Emission Scopes

Scope 1: Direct emissions generated by a company due to business activities.

Scope 2: Indirect emissions generated by energy purchased or consumed by a company. Scope 2 emissions of one company are Scope 1 emissions of another.

Scope 3: All upstream (e.g. supply chain, employee commuting) and downstream (e.g. customer use of products) emissions not captured in Scope 2. Difficult to measure and often the largest source of emissions.

³ Some investors use the Carbon Underground 200 list as an input into their divestment program.

⁴ For more details on the measurement of carbon metrics, see [Climate change and investment portfolios – Part I: What are carbon metrics?](#) (Steinbarth & Tirodkar, 2021).

Changes to the investable universe

Removing potential investments from an opportunity set has risk/return implications. To provide an estimate of the impact, investors can evaluate the risk/return characteristics of a portfolio with exclusions relative to one without.

Earlier research⁵ shows that relative to a broad global equity index portfolio, minor exclusions in the range of 1% do not dramatically alter risk/return characteristics. However, exclusions above 2% begin to have an impact, while exclusions above 5% substantially alter the risk/return characteristics of the original portfolio. Therefore, investors adopting exclusionary strategies should recognise the potential impacts, particularly as the magnitude of exclusions increases.

Investors should also carefully consider the implications of any exclusionary policies. There is a potential for internal contradictions for those investors that adopt exclusionary policies. Divesting from companies that are making substantial investments in green energy through blunt 'no fossil fuels' policies highlights a particular challenge. Likewise, holding the bonds of sovereigns or corporates that are involved in harmful environmental activities, while divesting from shares involved in those same activities, opens investors up to criticism of window-dressing. We recommend that the goals of all investment programs are regularly evaluated and assessed to avoid any such contradictions.

(ii) Decarbonisation

'Decarbonisation' is another strategy used to manage portfolio carbon exposure. In essence, decarbonisation is a strategy whereby an investor underweights companies with higher carbon exposures. Often, this strategy is implemented through an optimisation process that reduces the total carbon exposure of a portfolio while preserving its risk/return characteristics as much as possible. For the remainder of this paper, the term 'decarbonisation' is used synonymously with the aforementioned optimisation process.⁶

Decarbonisation is used to reweight investments within a portfolio to have lower total portfolio carbon exposure while maintaining its original attributes. This often takes the form of 'decarbonised' equity index portfolios, but we are also seeing more active managers offer low carbon versions of their actively managed strategies and funds. Unlike the blunt divestment approach, decarbonisation strategies acknowledge that most companies sit on a GHG emissions spectrum and provide an avenue for ongoing investor exposure and engagement with a company. Managed well, decarbonisation strategies can provide investors with greater flexibility than exclusions-based strategies while also recognising the grey areas of carbon metrics.

For many investors, a key goal of a decarbonisation strategy is that it delivers comparable risk/return characteristics of a standard portfolio. Minimising tracking error can be implemented through constraining active share or other active risk factors.⁷

To illustrate the consequences of decarbonisation, Chart 1 below shows how a portfolio's back-tested tracking error changes relative to stronger decarbonisation targets based on Weighted Average Carbon Intensity (WACI)⁸ reductions.⁹

⁵ See our recent research in the paper entitled [Negative screening and performance consequences: How much is too much?](#) (Ross & Ouyang, 2018).

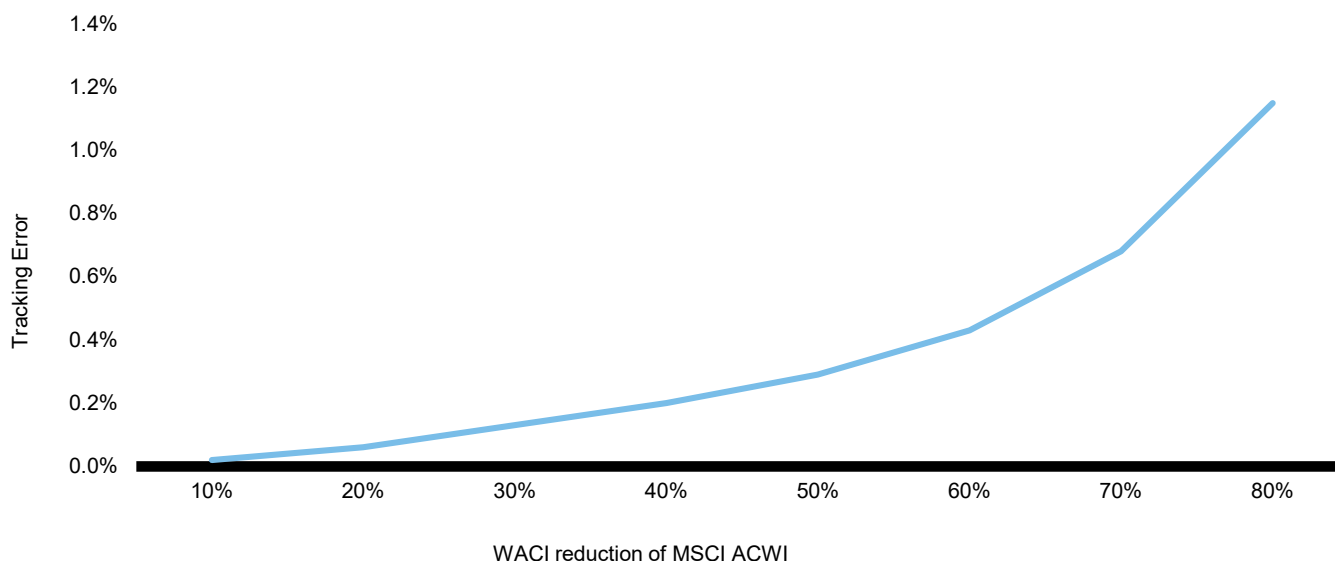
⁶ Decarbonisation through optimisation is the primary approach used by Russell Investments. Other asset managers may implement their decarbonisation strategies using alternative processes. The optimisation approach is the strategy that is explored in this paper.

⁷ An example of another active risk is active beta - the difference between the original portfolio and decarbonised portfolio's market risk exposure.

⁸ WACI is an aggregated, portfolio-level carbon exposure metric. WACI is detailed in our earlier paper: [Climate change and investment portfolios – Part I: What are carbon metrics?](#) (Steinbarth & Tirodkar, 2021).

⁹ For illustrative purposes, we applied a basic carbon reduction algorithm solving for the portfolio that achieves the lowest active share while meeting the carbon reduction. This is an unconstrained optimisation that only targets WACI and active share. Whilst different techniques will lead to slight differences in tracking error, we find that an inflection point of around a 50-60% reduction is stable to other methods such as a tracking error optimisation or sector constraints, etc. This becomes more difficult in concentrated portfolios that begin with a WACI well above benchmark.

Chart 1: WACI reduction vs tracking error for the MSCI ACWI



Source: Russell Investments, 2020

Meaningful reductions in WACI can be achieved with relatively low increases in tracking error. For example, a 50% reduction in portfolio carbon exposure can be achieved with a resulting tracking error of 0.3% relative to the original portfolio.¹⁰ This is because high carbon emissions are concentrated in relatively few sectors (i.e. small proportions of the universe contribute large shares of emissions). However, as the targeted WACI reduction rises, so too does the tracking error.

Decarbonisation of indexed portfolios

Construction of a decarbonised index portfolio begins with the parent benchmark as the investable universe, such as the MSCI ACWI. Investors should first choose which variables they wish to positively or negatively tilt (i.e. overweight or underweight) relative to the benchmark. Typically, this process culminates in some combination of negative tilts to GHG emissions and fossil fuel reserves, and positive tilts to favourable ESG characteristics, such as renewable energy generation. The investor should also consider which portfolio characteristics they wish to preserve. For instance, if they wish to maintain the risk/return characteristics of the parent benchmark, they may set measures of benchmark-relative risk such as active risk or tracking error as constraints in the optimisation process. To ensure the portfolio retains the broad characteristics of the chosen index, constraints on relative exposures by industry, sector, country, and company are also introduced. Companies with significant coal-related activities are typically excluded altogether as these businesses often have very high levels of net carbon emissions.

The decarbonisation optimisation process tilts away from the securities or firms with large carbon exposure such that the ending carbon exposure is lower than the benchmark. The optimisation process seeks to create a portfolio which meets the goals of lower carbon exposure, while minimising active share.

Index providers such as MSCI, S&P Dow Jones, and FTSE Russell have all developed decarbonised equity indices, allowing those with sufficient assets the ability to track those through an indexed mandate with a fund manager. Additionally, there are increasing numbers of low carbon index-oriented pooled funds for investors to utilise, although it should be acknowledged the options are fairly limited for New Zealand investors.

Chart 1 is most applicable to 'decarbonisation' of a broad equity index portfolio. Trade-offs between WACI reductions and tracking error depend on how concentrated GHG emissions intensity is for firms relative to their weights in the universe benchmark.

Russell Investments has adopted this rules-based, index-oriented decarbonisation approach in its Low Carbon Global Shares Fund, which has achieved its goals of reduced carbon emissions and reserves with about 50 basis points of annualised tracking error relative to its benchmark. This illustrates that decarbonisation can be a pragmatic way of incorporating investors' views on carbon-exposed companies while maintaining the integrity of the portfolio.

¹⁰ Although not illustrated in Chart 1, we find that a 100% WACI reduction generates a tracking error of over 10%.

Decarbonisation of actively managed portfolios

While potentially more challenging than an indexed portfolio, the decarbonisation of an actively managed portfolio does not necessarily require major changes to investment strategy or approach. Decarbonisation strategies can be implemented by an investor's fund manager or, for those that are of sufficient scale to have multiple segregated accounts, at the total portfolio level through an overlay strategy.

Adding explicit carbon reduction mandates to existing active managers (or investing in an available low carbon 'version' of the strategy) is a means for investors to decarbonise their equity portfolios. The underlying fund manager would manage the portfolio subject to aggregate carbon exposure guidelines. These could either be absolute, i.e. a total level of carbon emissions, or relative to the benchmark or existing portfolio, i.e. a percentage reduction in emissions. Many investors have announced carbon emission reduction commitments along these lines, for instance, stating that they will reduce the carbon emissions of their portfolio by 50% by a future date. Other investors have targeted reductions relative to the overall share market, as represented by a capitalisation-weight index such as the MSCI ACWI.

For quantitatively-oriented, highly-diversified managers, the decarbonisation process can be implemented along the same lines as index portfolios. Assuming the fund manager can measure the carbon exposure of the companies in their investment universe, and provided they use an optimisation model, they can simply add aggregate carbon exposure as a constraint. In doing so, high carbon emission shares are reduced or eliminated from the portfolio, which can then be replaced by similarly attractive shares.

Adopting a decarbonisation strategy is arguably more of a challenge for high-conviction fundamental managers. Decarbonising portfolios with high benchmark weights to firms with large carbon exposures might result in significant active risk (dependent on the relative importance of each stock in the portfolio). In practice, we witness more high-conviction fund managers offering products that incorporate climate change considerations within the investment strategy, rather than pure 'decarbonised' versions of their core strategies. It may also be that in the eyes of the manager, carbon exposure can only be reduced by constructing a significantly different portfolio. This constraint may subsequently impose significant challenges for high-conviction managers around expectations of alpha potential, performance measurement and accountability.

An option available to large-scale investors – decarbonisation overlays

Many large-scale local investors, such as KiwiSaver fund managers, sovereign funds and industry schemes, utilise multiple equity managers through segregated mandates within their portfolios. For these investors, an integrated decarbonisation overlay strategy is a potential carbon management strategy. Under this model, the investor continues to appoint and terminate its managers as is typical. However, instead of trading their portfolios individually through segregated accounts and in isolation, the managers move to a model portfolio approach implemented at the total portfolio level either internally by the investor, or externally via a specialist third party implementation manager.

The managers submit 'buy' and 'sell' lists, in effect, the model portfolio, while the implementation manager is responsible for trading the portfolio, reducing trading costs through netting trades and meeting emission carbon reduction goals (using a consistent definition) through adjusting the total portfolio as necessary.

As part of this process, the investor must decide which set of securities to include in the universe (i.e. the opportunity set for the implementation manager). They may include the entire asset class universe (i.e. the global equity universe) or just the subset of securities that were originally included in the underlying manager model portfolios (i.e. the aggregate portfolio holdings). The advantage of the former strategy is that it allows the implementation manager, through an optimisation strategy, to substitute securities that are similar in character to those emitted or reduced, but have lower emissions, potentially resulting in a more efficient implementation. In contrast the latter approach maintains the holdings integrity of the underlying manager portfolios in that the implementation manager is simply 'decarbonising' the aggregate portfolio, rather than substituting securities that share similar characteristics.

The overlay approach allows for flexibility in terms of the selection of underlying managers and allows for a more dynamic method of adjusting the portfolio's total carbon exposure

High conviction portfolios – the decarbonisation challenge

Relative to highly diversified index-like portfolios, high conviction portfolios are typically much more concentrated and subject to higher stock specific risk. If a high conviction portfolio's carbon emissions are concentrated in a few companies, removing or scaling back those positions will significantly reduce the emissions of the total portfolio.

However, that action will also potentially introduce significant tracking error of the decarbonised portfolio relative to the 'standard' portfolio. As a result, maintaining the integrity of highly concentrated portfolios while decarbonising can be challenging. For large scale investors with multiple equity managers, it can be more efficient to manage carbon metrics at the total portfolio level, rather than at the individual portfolio level.

through time. It may appear complicated, but the many levers available through such an approach allow the investor to dynamically adjust their decarbonisation strategy as conditions merit and market evolve. The overlay approach also removes the need for external active managers to have access to the carbon exposure data that is used by the investor. This is due to the implementation manager acting as a single, centralised entity with responsibility for adjusting the portfolio's carbon exposure to ensure a total portfolio target is achieved using a consistent definition of 'decarbonisation'.

For this reason, the investor need not limit their potential manager line up to those with subscriptions to carbon data nor worry about differences in data or methodologies. Lastly, an overlay can simplify attribution analysis as the effect of decarbonising the portfolio is directly measured through the returns of the overlay, which can be separated from the security selection effects.

The approach described above clearly adds complexity, at least in the set-up of the portfolios, and it would only be a viable option for the largest investors or fund managers. However, once complete it offers an efficient way for investors to manage the carbon exposure of their equity portfolio at the aggregate level while reducing the potential loss of alpha that one might expect were it done on a portfolio by portfolio basis. Russell Investments currently employs Enhanced Portfolio Implementation (EPI) in many of our multi-manager equity funds and portfolios and have used this approach to implement decarbonised multi-manager equity portfolios for several large-scale overseas clients.

(iii) Proxy voting and engagement

Shareholder proxy voting and engagement (a component of active ownership) relates to the use of voting rights linked to equity ownership to improve the management of companies. Engagement differs from traditional exclusions or decarbonisation strategies in that it does not shy away from ownership of companies with carbon exposure, but instead attempts to use voting rights and other incentive-based tools to improve the approach of the target companies.

Proxy voting and engagement lends itself to equity portfolios, as other mainstream asset classes do not typically provide voting rights. Investors who are directly invested in companies are able to vote themselves, while investors who are invested in unit trusts rely on fund managers to implement proxy votes on their behalf. Unlike exclusions or decarbonisation, engagement is not prescriptive. Engagement strategies typically depend on the underlying company that is being invested in.

Investors should also keep in mind the class of shares they own, as they may provide superior or inferior voting rights relative to other classes (i.e. preferred shareholders typically do not have any voting rights). Investors should take care to examine their contractual rights to vote when taking on such a strategy. The power of an investor to influence operations is linked to the size of their holdings in the target company. Investors with large holdings will find it easier to improve management practices due to their greater voting rights. In contrast, smaller investors may find it difficult to change practices, particularly if acting on their own.

Within the context of carbon exposure, engagement typically begins with encouraging management teams to increase disclosure, or improve practices around GHG emissions, energy use, wastage, water management and resource depletion. Engagement strategies do not have to be constrained to carbon issues; other climate-related concerns are often addressed through engagement. Often the best engagement strategies press for changes which are value-neutral or value-enhancing.

Investors looking to use proxy voting and engagement policies should look to develop explicit engagement policies. This allows investors to ensure that their engagements over time do not lead to contradictory outcomes. Many investors use third-party organisations to implement their proxy votes.

Within the industry, engagement policies have begun to change corporate attitudes to topics ranging from gender and racial diversity through to executive compensation and employee welfare. We see the same in the climate change discussion too; many companies have acknowledged climate change and their role in it. Increasingly, companies are incorporating climate goals within their corporate objectives. For example, the oil sector has experienced significant pressure from shareholders and shareholder groups (e.g. Climate Action 100+) in recent years regarding their approach to carbon emissions and climate change. Most would acknowledge there is far more work to do, but the changes in management words and actions across a number of topics highlights the potential of robust engagement strategies.

Enhanced Portfolio Implementation

Enhanced Portfolio Implementation, or EPI, is an efficient way to manage multi-manager equity portfolios.

EPI leverages a centralised trading and portfolio management process with Russell Investments responsible for executing the investor's investment strategy through the insights delivered by its underlying fund managers.

The investors stand to benefit from greater control and customisation (i.e. decarbonisation and other ESG-related objectives) while seeking to deliver efficiencies through sizeable reductions in trading activity.

Climate Action 100+ is an investor collective representing over \$54 trillion in assets under management. The group is co-ordinating on engagement efforts with companies with the aim of improving climate change governance, reducing emissions and increasing climate-related financial disclosures. Russell Investments has been a member of the action group since 2020.

(iv) Green impact investing

Investors can also alter the carbon exposure of their investment activities by allocating capital to companies that are actively seeking to improve the climate situation through the development of products and services. This “advancement” provides a route for investors to do something about the climate impact of their total portfolio, while minimising the disruption to their existing investment strategy and manager line-up. Investors should also pay attention to whether their impact investing strategy is implemented in primary or secondary markets.

Environmental improvement may be achieved through existing equity portfolios or via specific ‘green fund’ allocations. This strategy has the advantage of being relatively straightforward to implement and monitor and enables investors to say that they are directly investing capital in companies that are attempting to improve the climate situation. Rather than simply reducing exposure to harmful companies, investors can invest in a manner that generates positive change. Such an approach may be particularly attractive for investors with clients, constituents or beneficiaries that are demanding tangible ‘proactive’ changes in investment strategy to reflect climate change realities.

Once investors have targeted the environmental goals they wish to align their portfolio with, they may begin a green impact investing strategy. They may rely on quantitative datasets (e.g. investments in renewable energy or GHG emissions reductions), or on qualitative data (e.g. ESG climate ratings or reduction goals set by management). Because the themes an investor may be interested in may vary significantly, there is no prescriptive approach for green impact investing, and accordingly, the issues that are targeted do not have to be limited to carbon.

Investors must develop portfolio key performance indicators (KPIs) that can be used, alongside performance metrics, to measure portfolio outcomes. Investors may create climate targets which can be used to measure the environmental outcomes of their green impact investing programme.

Unlike the other strategies discussed in this paper, impact investing is applicable to a range of asset classes. Asset classes of interest to impact investors include equities, debt and real assets, both in private and public markets.

A fast-developing example of impact investing on the fixed income side includes the green bond market (sometimes referred to as climate bonds). Green bonds are debt instruments that are sold to fund projects or supply chains that actively improve the environment. Green bonds include a range of security types, which include “use of proceeds” bonds, project bonds, green securitised bonds, or green loans. Each type of bond has its own cashflow structure and set of rules through which proceeds are used for environmental improvement. Originators of green bonds must be certified by third parties, such as the Climate Bond Standard Board, which ensure that funds are used for acceptable ‘green’ projects.

Investors must also consider the financial risk and return outcomes from green impact investing. Like all investments, impact investments too have risk and return trade-offs. Depending on the nature of themes the investor wishes to consider, their impact investing portfolio may be exposed to specific risks, such as country or sector risk. Investors should understand these risks and position their strategy, and the rest of their portfolio, in a manner that diversifies as much risk as possible. Some risks, however, may be desired – specifically, those risks that are rewarded.

Difficulties around green impact investing include data limitations. Accounting standards for measuring the social outcomes of impact investments are still developing. Furthermore, it may be difficult to quantify singular metrics that measure the KPIs of multiple green themes at once. Lastly, investors may struggle to find managers who are specialists in impact investing in the specific asset class the investor is interested in.

For more information on impact investing as an ESG investing strategy, see our recent paper on the topic.¹¹

¹¹ [Impact is the new black](#) (Steele, Hazelton, & Rizvi, 2020).¹¹

Summary of carbon management strategies

There are pros and cons to each of the carbon management strategies addressed in this paper. As highlighted, the area remains something of a work-in-progress, so there are significant challenges and some contradictions in approaches that are currently employed by investors. However, all offer investors the opportunity to make contributions through explicit reductions in carbon emissions of equity portfolios.

In Table 1, we summarise the advantages and disadvantages of the carbon management policies outlined in this paper. While some investors may choose to focus on one particular strategy, others may choose to blend approaches.

Table 1: Summary of carbon management strategies

	EXCLUSIONS	DECARBONISATION	PROXY VOTING & ENGAGEMENT	GREEN IMPACT INVESTMENT
Benefits	Straightforward to implement for investors with scale to operate segregated accounts	Pragmatic approach that acknowledges carbon exposure lies on a spectrum	Potentially high impact, 'active-ownership' strategy	Proactive approach, putting 'money where the mouth is'
	Easy to understand and simple to monitor and manage	Low impact on risk/return characteristics of aggregate portfolio	Does not require change of total portfolio investment strategy	Does not require wholesale change of total portfolio investment strategy
	Allows 'piggy-backing' off exclusions lists of high-profile investors (e.g. NZ Super)	Provides the most flexibility and works particularly well for well diversified portfolios	Real world solution that recognises the practical realities of the current situation (i.e. to make a real difference, the high emitters need to improve too)	Emission targeting in the investment portfolio can offset emissions elsewhere in portfolio (like buying carbon offsets)
	Allows for blanket policies which may resonate with clients or fund beneficiaries (e.g. no investment in fossil fuel companies)	Allows for targeting of specific reductions in emissions in absolute or relative terms		
Challenges	Can be a blunt tool and opens investors up to claims of hypocrisy and inconsistency	Requires a significant amount of data on underlying holdings	Reliance on fund managers/third party providers to implement proxy votes and/or engage with management	Difficulty in identifying appropriately skilled managers
	For smaller investors, they are limited by the availability of appropriately screened products.	Can be complicated with need for optimisation software	Large shareholding required to ensure change	Potentially high-risk investments
	Does not consider the spectrum of carbon emissions	May not materially improve real economic outcomes	Requires ongoing effort from the investor	Data constraints on measuring portfolio KPIs and outcomes
	May lead to adverse portfolio outcomes	Challenging to implement across high conviction portfolios		

Institutional Investors Group on Climate Change

The Institutional Investors Group on Climate Change (IIGCC) has begun to develop a framework which can help investors target net-zero carbon exposures within their portfolio. This means that the total emissions associated within an investor's portfolio, based on some metric, are zero or below. In order to impact the real economy, the transition to net zero emissions must be done so at scale and across all major asset classes. The IIGCC acknowledge that there is no 'one-size fits all' strategy for investors to decarbonise their portfolio in alignment with the Paris Agreement. Among their recommendations for the various asset classes available for investment, the IIGCC recommends weighting investments based on Paris alignment criteria and revenues generated from activities aligned with the Paris Agreement criteria. The framework stresses the need to not only divest from companies with inconsistent activities with credible net zero pathways, but also engage with them in an attempt to improve practices. While the framework does not provide explicit recommendations on how to do this (i.e. exclusions vs decarbonisation), it allows investors to choose their preferred approach based on their needs. When attempting to adopt this framework, investors should understand each of the options available to them will yield outcomes consistent with the aims of the framework. We note that this may be achieved through any one of the carbon management strategies outlined in this paper.

Conclusion

In this paper, we illustrate how investors can manage the carbon exposure of their equity portfolios. The implementation strategies we highlight are used by many of the largest global investors and can be customised to meet the specific requirements of local investors. These strategies can assist investors in meeting new carbon exposure reporting requirements, while also providing a concrete path towards building portfolios that align with New Zealand's net zero 2050 targets.

Many of us hope for the day that all investments are made with an eye on the environmental impact, but globally diversified, multi-asset investors should acknowledge that carbon mitigation strategies are still a work in progress. Reporting of Scope 3 emissions remains incomplete, while many investors are yet to address the carbon exposures of assets other than equities. Through their holding of bonds of some sovereign states, for instance, some ethically minded environmentally focused investors may inadvertently be funding high carbon footprint activities, such as fossil fuel exploration and extraction. Index providers and fund managers have made significant progress in recent years in development indices and investment products that provide a means for investors to target the carbon footprint of their fixed income portfolios, but this remains a nascent part of the investment landscape today. There is still much work to be done.

It is also important for investors to recognise that academic evidence has yet to determine if there is a relationship between carbon exposure, risk and investment returns. Much of the current evidence points to the existence of physical and transition risks culminating from climate shocks, however there is little empirical evidence on whether these risks have already been 'efficiently' priced into related securities. It may be that carbon exposures are already a factor that investors consider when evaluating opportunities, but it remains to be seen whether this is exploitable or something that provides investors with long-term excess returns. Our advice to investors is to evaluate claims of 'low carbon' outperformance with a critical eye.

Finally, investors need to be mindful of the limitations in all carbon-mitigation efforts. Signalling, engagement, tilts, divestments, and proactive funding of 'green' companies may make a positive contribution in the global effort to combat the negative effects of climate change, but government intervention and behavioural changes by the general population are simultaneously required. Indeed, carbon taxes, trading schemes, government investment and environmental regulations are all likely to have a more immediate impact.

'Strong returns and good for the environment', in the context of global multi-asset investing, may resonate from a marketing perspective, but there remain significant challenges and limitations in implementing portfolios that genuinely do no harm.

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The authors would like to acknowledge the significant efforts of former colleague, Julian Darby, in compiling this research.

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