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Investing in a just transition: a framework for investors

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Part 1

Why a just transition matters for investors

Introduction

The goal of net zero by 2050 cannot be achieved at the detriment of people and societies, given a core aim of addressing environmental issues is to improve people's lives. We must strive for a "just" and orderly transition to a low carbon society that considers the impact on communities, workers and consumers. Not doing so creates considerable risks for businesses, countries and therefore matters to investors.

What is the just transition?

The International Labour Organization (ILO) provided this definition in 2015: 'A just transition means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind'. The goal of a just transition is to see everyone sharing the benefits of transitioning to zero-carbon, including workers, suppliers, communities and consumers while ensuring access to reliable and affordable energy. In practice, this means avoiding unjust harm or exacerbating inequalities and minimising or remedying any adverse impacts on people resulting from the energy transition.

How does this impact investors?

Governments and businesses both have crucial roles to play in a just transition. Governments can enact regulation and provide financial support to affected people and regions and manage wider concerns around issues such as energy security. Governments face a complex challenge and needs will vary greatly from region to region.

Companies must consider their social impact and take into account the voices of their workers, the communities they operate in, the sustainability of their suppliers, and their impact on consumers. This will not only benefit the societies they operate in, but could also mitigiate potential financial risks that come with neglating social issues.

For the financial industry, not considering social impacts when investing in the energy transition can result in unintended higher costs for portfolio companies, reputational risks and ultimately financial risks. To understand and mitigate these risks, investors can engage with companies on just transition risks and opportunities, as well as specifically invest in businesses that align to just transition principles.

Investors should also be mindful of the varying energy security needs of different economies, and actively work with investee companies to transition in an orderly manner.

The purpose of this paper is to bring to life why a just transition matters for investors and to provide a practical investor framework that highlights best practice approaches to identify leaders and laggards and engagement questions. It focuses on the role of governments and four key groups that need to be considered: workers, communities, suppliers, and consumers.

Our approach to a just transition

Aerdeen signed the Principles for Responsible Investment (PRI) **just transition statement**[1] in 2018 demonstrating our support for the need to consider social impacts of the energy transition. We joined the 'Financing a just Transition Alliance' coordinated by the Grantham Institute of the London School of Economics in 2020 and have undertaken research into material just transition issues across regions and sectors such as the change in workforce and skills needed due to the electrification of vehicles.

We actively engage on material just transition issues, examples include with the autos sector on how they manage job losses and develop their workforce's skillset, and also with renewables developers on how they engage with communities on securing land rights, for example in India. These are captured as case studies in this paper.

Just transition considerations are critical for the mining sector and Aberdeen has joined the Global Investor Commission on Mining 2030. The Commission aims to ensure that the mining industry maintains a clear social license to operate, meets society's needs responsibly without fostering conflict or corruption, operates within planetary boundaries and contributes positively to social development and the environment.

Why do we need a just transition?

Why do we need a just transition?

The need for a just transition to combat climate change was referenced in the 2015 Paris Agreement and reinvigorated in 2021 with the **Just Transition Declaration** launched at the UN Climate Change Conference of the Parties in Glasgow (COP26) which was signed by 17 governments and the European Commission.[II] It is needed to ensure that the energy transition delivers secure, affordable and clean energy, benefitting all impacted stakeholders and managing adverse impacts on people that could destabilise whole regions. In the words of Nick Robins, just transition expert at the London School of Economics (LSE), for investors "This is about actually applying the things you've already committed to in your S pillar" and "how important it is to think of net zero through a people lens."[2]

A just transition helps progress towards several of the UN Sustainable Development Goals (SDGs). At its core, it supports decent work and economic growth (SDG8), and climate action (SDG13), but is also directly connected to affordable and clean energy (SDG 7), reduced inequalities (SDG10), no poverty (SDG1) and industry, innovation and infrastructure (SDG 9).

There is a particular need to support the financing of a just transition in developing countries that are often more reliant on fossil fuels and need to fuel their growth in a clean and affordable way. This was also recognised at COP26 where the first Just Energy Transition Partnership (JETP) was launched. This is a financing mechanism whereby developed countries come together to help high carbon emitting countries which are heavily dependent on coal, transition to a low carbon economy in a just manner.[III]

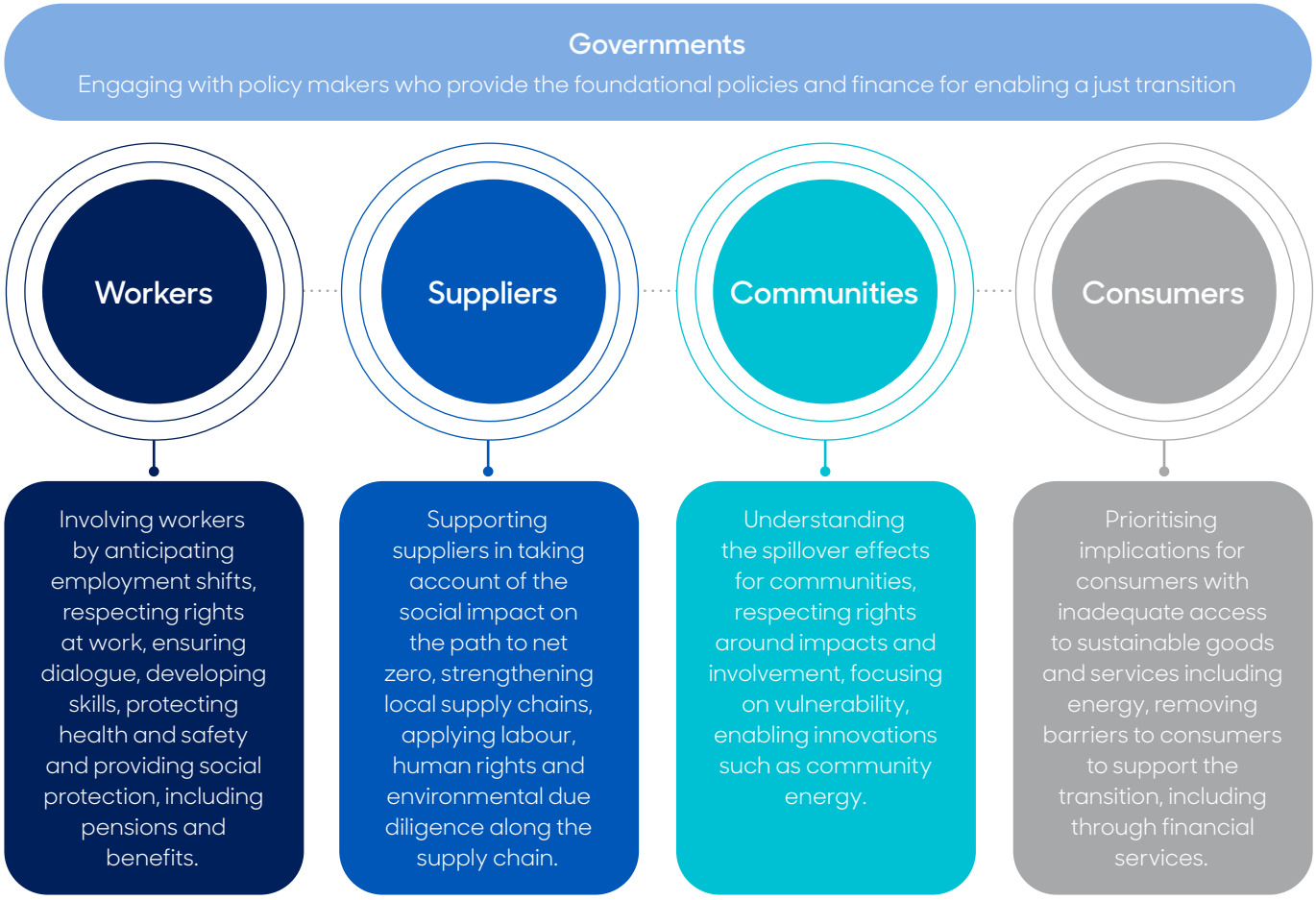
Figure 1: The just transition is closely intertwined with the Sustainable Development Goals

Source: London School of Economics Grantham Institute, Climate change and the just transition - A guide for investor action, 2018.

Key groups impacted by the energy transition

For companies, workforce impacts are often the starting point for just transition considerations. The structural shifts needed to move to clean energy will inevitably bring changes in the labour market, resulting in some jobs becoming obsolete and others being newly created. However, the concept of a just transition needs to be much wider than that. For example, infrastructure requirements affect communities already occupying these areas; increasing demand for transition minerals may add pressure on already vulnerable supply chain workers; and uncertainty around energy supplies and costs can have a significant impact on consumers, particularly those living in or close to poverty. In addition, the policy landscape provides the foundations that drive just transition risks and opportunities for firms.

Figure 2: Stakeholder groups in the just transition[IV]



Source: **Making transition plans just (2022) Grantham Research Institute on climate change and the environment.**

Risks arising from an unjust transition

Consciously addressing the social implications of the energy transition can help society prepare for a strong, resilient low-carbon economy by ensuring that the necessary skills, capacities and social institutions are in place to support it. Not taking into account social factors significantly raises the risk of an "unjust" transition. For example, if energy grids and systems are not transformed in a technologically sound manner, then energy security and reliable energy supplies could be jeopardised. Table 1 provides examples of potential risks and case studies associated with an unjust transition.

Table 1: Examples of risks from an 'unjust' transition

Stakeholder	Workers and communities	Supply chain workers	Communities	Consumers
Social risk example	Stranded workers leading to stranded communities.	Labour abuses.	Rising food prices, malnutrition, hunger.	Energy poverty.
Cause	Lack of support to retrain or relocate employees into new sectors, may leave many behind. Where this amounts to whole communities, the economic and social impacts, including higher unemployment, increased crime, etc. can be significant.	Increasing demand for transition minerals sourced from vulnerable workers or conflict regions may exacerbate or create new labour abuses.	If the biofuel market proves more lucrative than food, incentives for food production may disintegrate, resulting in shortfalls.	Green taxes on fuel disproportionately affects lower-income and/or working-class people.
Real world example	**UK**: In the 1970s, the UK coal industry began a rapid decline. In communities where coal was the dominant source of employment, the economic and social costs were significant, leading to high levels of deprivation, unemployment and a lack of viable work or income options that persisted for multiple generations.	**The Democratic Republic of Congo (DRC)**: Cobalt is a critical component in batteries, the majority of which comes from the DRC. Worker exploitation and abuses in DRC cobalt mines has been well-documented by multiple NGOs.	**Mexico**: In 2007, as corn yields were increasingly diverted from food to response to rising demand for environmentally-friendly biofuels in the US, the price of tortillas rose 400%. Citizens took to the streets in protest. The President at the time had to respond quickly to lower the price (though still higher than previously) to avoid large-scale malnutrition.	**France**: In 2018, a green tax on fuel was announced in France, setting off nearly a month of protest by 300,000 people across the country, known as the 'yellow vest' movement. The largely working class protesters argued that their income was too high to get social welfare but too low to afford the increased fuel prices. The cost of the measures taken by the government in response to the demands of the yellow vests was calculated to be €17 billion.

Businesses and investors have an interest in mitigating risks from an unjust transition and can also capitalise on the opportunities that a just transition brings. Furthermore, the significant influence of companies on the society we live in makes their participation in a just transition essential. It is critical for investors to understand these risks and engage with companies to manage them and for governments to set the right policy environment to incentivise a just transition.

The role of governments in incentivising a just transition

The energy transition is differentiated by the need for rapid, large-scale disruption and policy action, which just transition proponents argue are "beyond the capacity of existing markets and institutions to ensure fair outcomes for workers, communities and consumers."[V]

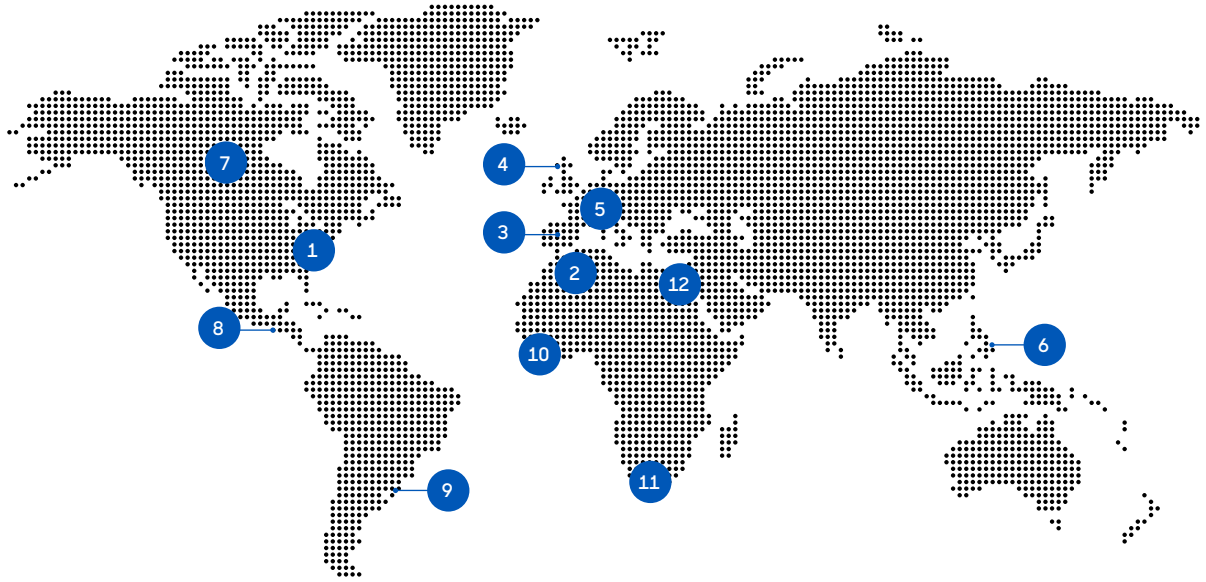
Governments therefore have a primary role in achieving a just transition with dual responsibilities for driving climate action and ensuring appropriate social protections. Governments have a whole economy perspective and control many of the tools that can support a just transition, e.g., fiscal measures, subsidies, trade agreements, infrastructure, regulation, education and social security.

Out of the 170 countries that updated their Nationally Determined Contribution (NDCs) as at October 2022, only 65 (38%) reference the just transition.[VI]

Some policymakers have implemented support schemes to foster a just transition. In the EU, for example, the Just Transition Mechanism (JTM) provides support to regions most affected by the transition and is intended to benefit people, companies, and member states.[VII] India has published a just transition finance roadmap to identify priority actions for financial institutions to support climate action that also helps deliver social benefits in India. Equally, the Monetary Authority of Singapore (MAS) is setting out clear guidance for financial institutions on transition planning, highlight that particularly in relation to a manged coal phase out in Asia, a successful transition 'must ensure that measures are in place to mitigate potential harm to livelihoods and communities'. [VIII]

Figure 3 provides some examples of actions taken by governments to achieve a more just transition. The success of these efforts has varied and is often driven by the political landscape. Mexico for example, despite government efforts to increase engagement with local communities and indigenous people on renewables projects, still faces significant criticism for lack of human rights protections.[IX]

Figure 3: Examples of government action on a just transition (non-exhaustive)[x]



1. **Appalachia, USA**: Federal funding to communities through local and regional partners to address economic and labour dislocations caused by the energy transition.
2. **Morocco**: Redirect fossil fuel subsides to benefit poor and rural communities.
3. **Spain**: Regional action plans to support economic activity, diversification and employment in areas at risk from the phase-out of coal.
4. **Scotland:** Grants for oil & gas workers to undergo training and reskilling in fields with strong employment potential.
5. **EU**: Financial and technical assistance to member states that develop national just transition plans.
6. **Philippines**: Financial incentives for green job creation; pilot with the ILO Green Initiative.
7. **Canada**: Worker transition centres, infrastructure fund to enhance local economic diversification in affected communities and financial support for coal workers.
8. **Mexico**: Series of policies and laws to improve social impact assessment and community consultation on large-scale renewable projects.
9. **Uruguay**: Plant closure process include trade union dialogue; skills development strategy for green jobs; pilot with the ILO Green Initiative.
10. **Ghana**: Reduce fossil fuel subsidies and reform fossil fuel pricing.
11. **South Africa**: Extended, critical engagement with just transition, including a range of assessments social dialogues and policies.
12. **Egypt**: Redirect fossil fuel subsidies to address rising unemployment and slowing growth.

Source: World Resources Institute (2022) Resources. Robins, N. and Rydge, J. (2019) Inevitable Policy Response: Why a just transition is crucial for effective climate action (see endnote for more information).

Just Energy Transition Partnerships

There is a critical need to provide finance to enable a just transition in countries heavily reliant on coal. Given fossil fuel producing countries can veto agreements in UN climate talks, JETPs are essential to make progress more quickly.[3] The first JETP was established in 2021 when the UK, US, France, Germany, and the EU pledged 8.5bn US dollars to help the just transition in South Africa. In 2022, a 5-year investment plan (JET IP) for the package was approved by the South African cabinet. Key areas of investment include electricity, new energy vehicles, gaseous hydrogen (GH2), and cross-cutting (investment in municipalities and development of skills).[4]

The second JETP was set up in 2022 to support Indonesia with $20bn of finance over 3-5 years. This JETP will help expand Indonesia's share of renewables in its power supply, reduce its reliance on coal, and reduce its power sector emissions.[5] However, the plan to retire coal has been halted, as the financing countries claim they are not ready to fund this aspect of the strategy.[6] This brings to the fore the complexities in achieving just transition goals.

Government policy to foster a just transition

ILO sets out clear **guidelines** for governments highlighting nine policy areas to focus on to support a just transition (see Figure 4).

Figure 4: Nine policy areas of ILO's just transition guidelines

Policy foundations	Employment rights
Macro-economic and growth policies	Skills development
Industrial and sectoral policies	Occupancy safety and health
Enterprise policies	Social protection
Active labour market policies	Rights
Social dialogue and tripartism	

Source: **International Labour Organisation (2015), Guidelines for a just transition towards environmentally sustainable economies and societies for all.**

Sovereign just transition bonds

In addition to policy, governments can use sovereign bonds to raise finance for just transition initiatives. The Grantham Research Institute highlights that "a sovereign just transition bond would bring together the classic climate initiatives backed by green bonds and the human dimension of the transition underpinned by the more embryonic field of social bonds." The Institute refers to the ILO's just transition guidelines to help governments find suitable projects.

The issuance volume of sovereign green and sustainability bonds has risen drastically over the last few years. The volume of green bonds has risen from $800m in 2016 to around $80bn in 2022[7]. The first sustainability bonds were issued in 2019 at a volume of $500m. This has risen to around $20bn in 2022.

The formulation of labelled bond frameworks provides sovereigns with an opportunity to articulate their approach to just transition. In Europe for example, France's Caisse des Depots created a framework for its sustainable, green, and social bonds which states that the transition to a low carbon economy "must be fair between all citizens".[8] Another example is Colombia specifying that social bond proceeds should help mitigate social problems and/or generate positive social impacts for specific groups including among others vulnerable people, ethnic groups, unemployed people and rural areas.

Investors should encourage the inclusion of just transition considerations into the frameworks. This should also help asset owners and managers to ensure that their capital does not violate the principles of doing no significant harm through financing projects which could undermine the rights and interests of people and local communities.

Source: **www.unpri.org/sovereign-debt/considering-climate-change-in-sovereign-debt/11894.article.**

Investor initiatives to support a just transition

Action across the investment industry is varied and still a developing area. Many recognise that supporting a just transition is needed but are not very specific about what that entails.

Several investor groups and initiatives have stepped up their activity in this space to help investors incorporate just transition criteria into their thinking. The key initiatives investors can lean on are:

1. **London School of Economics Grantham Institute's Financing a Just Transition Alliance** (FJTA, 2020): The Grantham Institute provides leading research on the just transition. The FJTA (of which Aberdeen is a member) **Just Zero report (2021)**, for example, includes a variety of case studies and investor perspectives on a just transition. The report highlights the importance of financial institutions in a just transition and finds that "Reallocating capital to achieve net zero greenhouse gas emissions can also drive more and better-quality jobs, revitalise communities and reduce inequality in the UK, linking the just transition and levelling-up agendas."[XII] The report builds on the 2018 **guide for investor action on the just transition**.

   The Grantham Institute also published guidance on **Making transition plans just** in 2022. It recommends that investors incorporate the following three aspects in their transition plans in relation to the four stakeholder groups:

   - Anticipate, assess and address the social risks of the just transition.
   - Identify and enable the social opportunities of the transition.
   - Ensure meaningful dialogue and participation in net zero planning.

In October 2023, the Institute published **guidance on embedding the just transition in government policy** which is referenced further below.

2. The **World Benchmarking Alliance Just Transition Assessment** (2021): evaluates both companies' alignments to Paris Agreement goals and how they address social issues. In particular, they consider six just transition related indicators including: social dialogue and stakeholder engagement, planning, green and decent job creation, retaining and re/upskilling, social protection and impact management and policy advocacy.

   The assessment had 5 key findings: [XIII]

   - The vast majority of high-emitting companies are failing to demonstrate efforts towards a just transition.
   - People most at risk are being left out of decisions that affect their future.
   - Companies must commit to reskilling workers or risk a stranded workforce.
   - Businesses are still not using their influence to protect people, manage social impacts and advocate for a just transition.
   - A just transition needs to be underpinned by companies' respect for human rights.

3. **Climate Action 100+ (CA100+) Net Zero Benchmark Just Transition indicator** (2022), assessed by the Transition Pathway Initiative (TPI) Centre and FTSE Russell: CA100+ is the largest global engagement initiative on climate change and a CA100+ net zero benchmark has been developed to assess the largest global emitters against 10 indicators. A beta just transition indicator was developed in 2022 and re-designed in 2023 based on ability to assess progress and available data. According to the **most recent findings** (2023), 33% of firms covered by the benchmark are partially aligned to the just transition criterion (with the remaining 67% not aligned), and only 3% have developed just transition plans in consultation with stakeholders.[XIV]
4. **Impact Investing Institute (III) Just Transition Criteria** (2023): a practical framework for fund managers who want to invest in the just transition and align their products with just transition principles. The III highlights three core elements of a just transition, defined by the G7 Impact Taskforce that provide a good foundation for assessing just transition alignment.

Table 2: G7 Impact Taskforce just transition elements

 Advance climate and environmental action	 Improve socio-economic distribution and equity	 Increase community voice
Moving the world to net zero can be achieved through two complementary investment areas: climate mitigation or reduction action, and carbon removal. To reduce net emissions to zero, focus is needed on both. Other investment areas that are critical to the achievement of this Element include those that protect and restore natural capital, including biodiversity, and those that support adaptation and resilience to the effects of climate change.	Positive climate and environmental outcomes must be complemented with those that support the needs of people. Investments should not entrench or exacerbate existing burdens for vulnerable or marginalised groups. Products should be accessible and local communities should be included in fair opportunities and jobs. They must also ensure that the goods and services they produce are affordable, and that costs and profits are evenly distributed, globally and regionally.	Community voice should incorporate components that help to improve social dialogue and agency, from local engagement to participation in decision making. Financial actors should ensure stakeholders are heard, and that their views and needs are responded to in any financing transaction purporting to contribute to a just transition. These stakeholders include workers, communities, and consumers – in particular, those affected by transition action and those from marginalised and indigenous communities.[XV]

Source: **Just-Transition-Criteria.pdf (impactinvest.org.uk).**

A four-step framework for investor action on the just transition

The just transition is very broad in scope and it can be difficult to know where to start when evaluating a country's or company's progress in this space. We propose that investors interested in incorporating just transition considerations follow a **four-step framework:**

01	**Step 1: Investment research integration** – Assess the most material just transition risks and opportunities to identify leaders and laggards across sectors and regions.
02	**Step 2: Corporate engagement** – Engage with companies on how they are managing material just transition risks, bring in key stakeholders views and understand the social impact on them.
03	**Step 3: Capital allocation and product alignment** – Allocate capital to help finance a just transition and enhance sustainability-focused products by assessing just transition alignment.
04	**Step 4: Policy advocacy and sovereign engagement** – Advocating for policies that help foster a just transition and engage with policymakers.

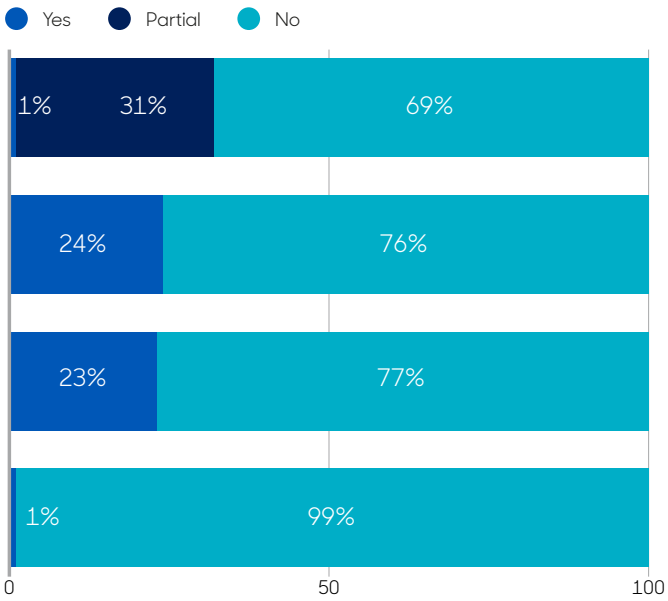
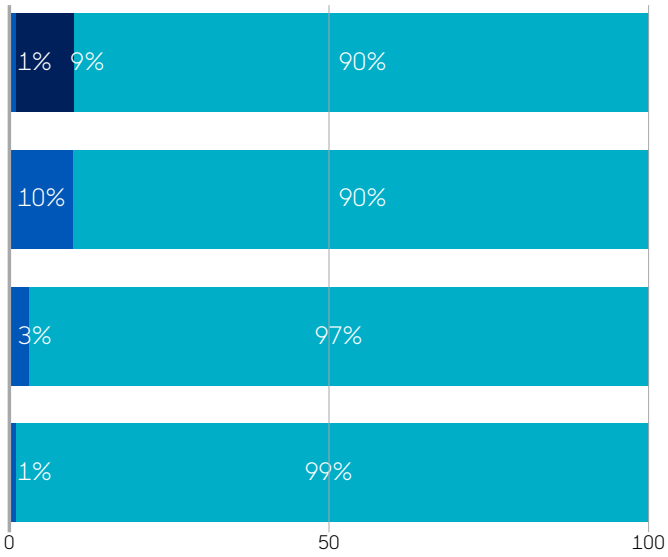
Step 1: Investment research integration

A core objective is to identify just transition leaders and laggards where there are material risks, and also opportunities – at corporate and country level. Frameworks such as CA100+'s Net Zero Benchmark and the G7 Impact Taskforce's just transition elements can act as tools for investors to complement fundamental bottom-up analysis and identify credible actions on a just transition.

Corporates

Investors can use the CA100+ net zero benchmark data which assesses 170 of the highest emitting companies against 10 climate indicators. Disclosure indicator 9 relates to the just transition and the sub-indicators considered are highlighted below: [XVI]

Table 3: Climate Action 100+ Net Zero Benchmark – Just transition indicator 9

Just transition sub-indicator (2023 version)	Alignment
9.1 Just Transition commitment* The company has committed to the principles of a Just Transition.	
9.1a Commitment to a just transition The company has committed to decarbonise in line with defined Just Transition principles, recognising the social impacts of its decarbonisation efforts.	
9.1b Commitment to workers The company has committed to retain, retrain, redeploy and/or compensate workers affected by its decarbonisation efforts.	
9.1c Commitment to stakeholder consultation The company has committed that new projects associated with its decarbonisation efforts are developed in consultation with affected communities and seek their consent.	
9.2 Just transition planning & monitoring The company has disclosed how it is planning for and monitoring progress towards a Just Transition.	
9.2a Just transition plan The company has developed a Just Transition plan for how it aims to support workers and communities negatively affected by its decarbonisation efforts.	
9.2b Stakeholder consultation The company's Just Transition plan was developed in consultation with workers, communities and other key stakeholders affected by its decarbonisation efforts.	
9.2c Just transition KPIs The company discloses the quantified Key Performance Indicators it uses to track its progress towards the objectives of its Just Transition plan.	

*total 101% due to rounding.

Source: **Climate-Action-100-Net-Zero-Company-Benchmark-Framework-2.0..pdf (climateaction100.org).**

The key findings of the 2023 assessment are:

- **Where there is a commitment, it appears to be focused on workers.** Only 24% of companies commit to aligning with Just Transition Principles (9.1a) and 23% commit to retaining, retraining and re-deploying or compensating workers impacted by decarbonisation efforts (9.1b)
- **A small minority have a plan and measure success.** Only 10% disclose a just transition plan (9.2a) and only two companies have KPIs in their plan (9.2c).
- **Stakeholder engagement is a major gap.** Only two companies have committed to consulting with and seeking consent of affected communities when developing decarbonisation projects (9.1c). Only five companies (3%) have developed their transition plans in consultation with key stakeholders (9.2b).

There is clearly a lot of progress to be made on this indicator, particularly when it comes to listening to the voice of impacted stakeholders. Investors can use the 2023 results as a baseline to measure progress against, particularly for companies that score poorly which they may want to engage with.

Case study:

A just transition leader

SSE, a UK utility, has developed a principles-based just transition strategy (see Figure 5). It is leading by example in recognising the importance of a just transition to its business and implementing it in practice. But when considering the CA100+ net zero benchmark just transition assessment, SSE falls short on two sub-indicators: 9.1c – a clear commitment to engaging communities to shape their plans and 9.2c, disclosing KPIs as part of its just transition plan. This provides a useful steer for focus areas when engaging with SSE.

Figure 5: SSE's 20 Principles for a Just Transition[9]

SSE's 20 principles for a just transition				
	Transitioning into a net zero world		Transitioning out of a high-carbon world	
SSE's principles for good, green jobs	SSE's principles for building and operating new assets	SSE's principles for building and operating new assets	SSE's principles for people in high-carbon jobs	SSE's principles for supporting communities
1. Guarantee fair and decent work 2. Attract and grow talent 3. Value employee voice 4. Boost inclusion and diversity	5. Co-create with stakeholders 6. Factor-in whole-system costs and benefits 7. Make transparent evidence-based decisions 8. Advocate for fairness	9. Support competitive domestic supply chains 10. Set social safeguards 11. Share value with communities 12. Implement responsible developer standards	13. Re-purpose thermal generators for a net zero world 14. Establish and maintain trust 15. Provide forward notice of change 16. Prioritise retraining and redeployment	17. Deliver robust stakeholder consultation 18. Form partnerships across sectors 19. Promote further industrial development 20. Respect and record cultural heritage

[5] Just Transition | SSE.

Sovereigns

There are many country-level indices that provide views on environmental and social policies, but not many reference the just transition specifically. One recently developed tool that does is the Transition Pathway Initiative's 'Assessing Sovereign Climate-related Opportunities and Risks' **(ASCOR) framework**. It assesses countries on climate change across three pillars – emissions pathways, climate policies and climate finance. Importantly, the climate policies assessment includes a just transition indicator (CP6) which considers four questions for assessing country performance on the just transition:

- Has the country ratified fundamental human, labour and indigenous rights conventions?
- Does the country have an inclusive and institutionalised approach on just transition?
- Does the country have a green jobs strategy?
- Does the country integrate just transition into its carbon pricing?

Step 2: Corporate Engagement

Engagement is key to learn more about a company's operations and plans to facilitate a just transition. Table 4 on the following page provides a set of engagement questions across the four impacted stakeholder groups – workers, communities, suppliers and consumers and what a good response should include. This is an optional list to select from, depending on the most material issues for the investee company.

But before diving into the stakeholder specific questions, it is useful to understand the overarching approach to governance, oversight and impact assessment on the just transition.

A first conversation on the just transition should consider three initial questions:

- Do you have a just transition strategy to assess and manage the social implications of your transition plans and have you quantified the financial risks related to negative social impacts?
- If so, how is this strategy implemented, overseen and how is success measured?
- How do you bring in the voice of relevant stakeholders that are impacted by your transition strategy such as workers, communities and consumers?

Key sectors to begin with include energy, mining, autos, and agriculture. We believe these will be some of the most affected sectors where the just transition will be a material issue.

Table 4: Just transition corporate engagement framework

Just transition engagement framework	
Engagement questions	**What a good answer should include**
First discussion on just transition	
1. Do you have a just transition strategy to assess & manage the social implications of your transition plans, have you quantified the risks related to negative social impacts?	1. The company can evidence that the assessment and quantification of social impacts has been undertaken and is documented to make a clear case for action based on the financial risks.
2. If so, how is this strategy implemented, overseen and how is success measured?	2. Evidence to show that there is Board/Exec level oversight with governance structures in place to make sure the strategy is implemented and clarity on what success looks like including KPIs.
3. How do you bring in the voice of relevant stakeholders that are impacted by your transition strategy such as workers, communities and consumers?	3. Evidence that views from different stakeholders were actively sought and incorporated i.e., decisions were made/changed based on the input, but also feedback from stakeholders that they feel heard.
Workers	
1. How do you manage the impact on the employees in your business as a result of your transition strategy e.g., restructuring and reducing the number of workers, providing new opportunities to learn new skills and work in green jobs?	1. The company has assessed job losses and the need for restructuring and redundancies. It has a strategy to manage the impact on the business and make sure workers are treated fairly. E.g., funding for reskilling/ upskilling programmes, provide opportunities in green jobs, voluntary redundancies and early retirement packages. Working with unions to help avoid strikes.
2. Have you consulted your employees in your climate transition plan and restructuring process?	2. There is clear documented evidence of employees consulted in the climate transition and restructuring plans. It must demonstrate that employees have had significant input and that the company has acted on the input.
3. Are there worker shortages within your supply-chain that can hinder your transition plan. If so, what actions are you taking to mitigate these?	3. The company has carried out an assessment on worker shortages in their supply chains and is engaging with their suppliers on this issue.
Communities	
1. How has your company assessed the impact on communities within the different regions it operates in and adapted its policies and frameworks accordingly?	1. The company is aware of regional differences relating to the needs and background of different communities and has done an impact assessment of their transition activities on communities, reflected this in their policies and frameworks.
2. What is your strategy for engagement with the local community and how do you know it's successful? How are their views on your operations that affect them taken into consideration?	2. Engagement with communities is clearly documented and as frequent as required. Metrics are used to help track and monitor issues. The company must have a strategy to ensure community voices are heard and an easy process for communities to be able to have a say in operations that affect them.
3. Do you have a policy on Free, Prior, and Informed Consent (FPIC)?	3. The company must have a policy on FPIC and have ongoing engagement on this. This is particularly important in emerging markets where many lack official documentation to their land.
Suppliers	
1. Do you have policies/frameworks in place to assess the sustainability of your supply chains and engage with your suppliers on their social impact and just transition policy?	1.The company has sound policies/frameworks and can demonstrate meaningful, ongoing engagement with their suppliers on their social impact and just transition policy.
2. How are you preparing for Corporate sustainability due diligence (CSDDD) to meet supplier due diligence requirements? (Where applicable).	2. The company has a sound formal framework/plan to help prepare for CSDDD.
3. Are you able to source where all of the materials in your products come from and identify social risks within your supply chain?	3.The company has mapped where all materials are sourced, is aware of any risks associated with their supply chain and are taking steps to manage those risks.
Consumers	
1. Do you assess the affordability of your products for consumers across different income groups?	1. The company has demonstrated they consider the impact of their product pricing on consumers and takes action to ensure lower income groups are not significantly disadvanaged and can access their products. Engages with policy makers on this to support energy security and affordability.
2. Do you engage with policy makers to help support energy affordability and security for consumers?	2. The company engages with policy makers on this to support energy security and affordability. has sound plans to manage current and impending regulations.

Step 3: Capital allocation and product alignment

Interested investors can allocate capital to help enable a just transition by investing in solutions across different assets, including infrastructure, equities and bonds that align with just transition principles.

Just transition alignment can be done at asset and product level. For example, SDG aligned investment strategies can help foster a just transition.

At Aberdeen we offer four SDG aligned investment strategies to cater to investors' different risk appetites and investment goals. They offer different asset class options: equities and fixed income; and diverse market exposures, including Asia, emerging markets (EM) and global; as well as varied engagement and impact reporting.

Investing in real assets is another important lever to support SDGs and a just transition. The Aberdeen infrastructure case study below showcases how this can be done in practice.

Case study: Puerto Antioquia

Investing into the build and operation of a new port facility at Puerto Antioquia, on the Atlantic coast of Colombia to create better access to sea routes, resulting in social benefits and reduced carbon emissions.

Primary impact

Initial handling capacity of 600,000 20 foot containers (TEU) (expansible to 800,000 TEU), 1.15m tonnes of general cargo/year, 3m tons of bulk cargo, and 60,000 vehicles.

Wider impacts

1,600 construction jobs, commitment to fill 80% with regional residents, priority to members of local ethnic communities plus c.17,000 indirect jobs.

Commitment to the protection of workers' rights as well as specific guarantees related to freedom of association and non-discriminatory management and hiring practices. Strategic alliances with workforce training institutions dedicated to increasing employment rates among the local population.

Reduced CO_2 emissions:
↓ 70m km p.a. truck travel distance =
↓ CO_2 of 21.6m kg p.a.
↓ ship travel distance = ↓maritime CO_2 of 45.1m kg p.a.
Better Infrastructure allows > efficient vessels → c60% ↓emissions per TEU-km.

Natural habitat net increase of c500% (2km²). Measures taken to minimise impacts to natural habitats. Management plans in place to protect local habitats and deliver net gain.

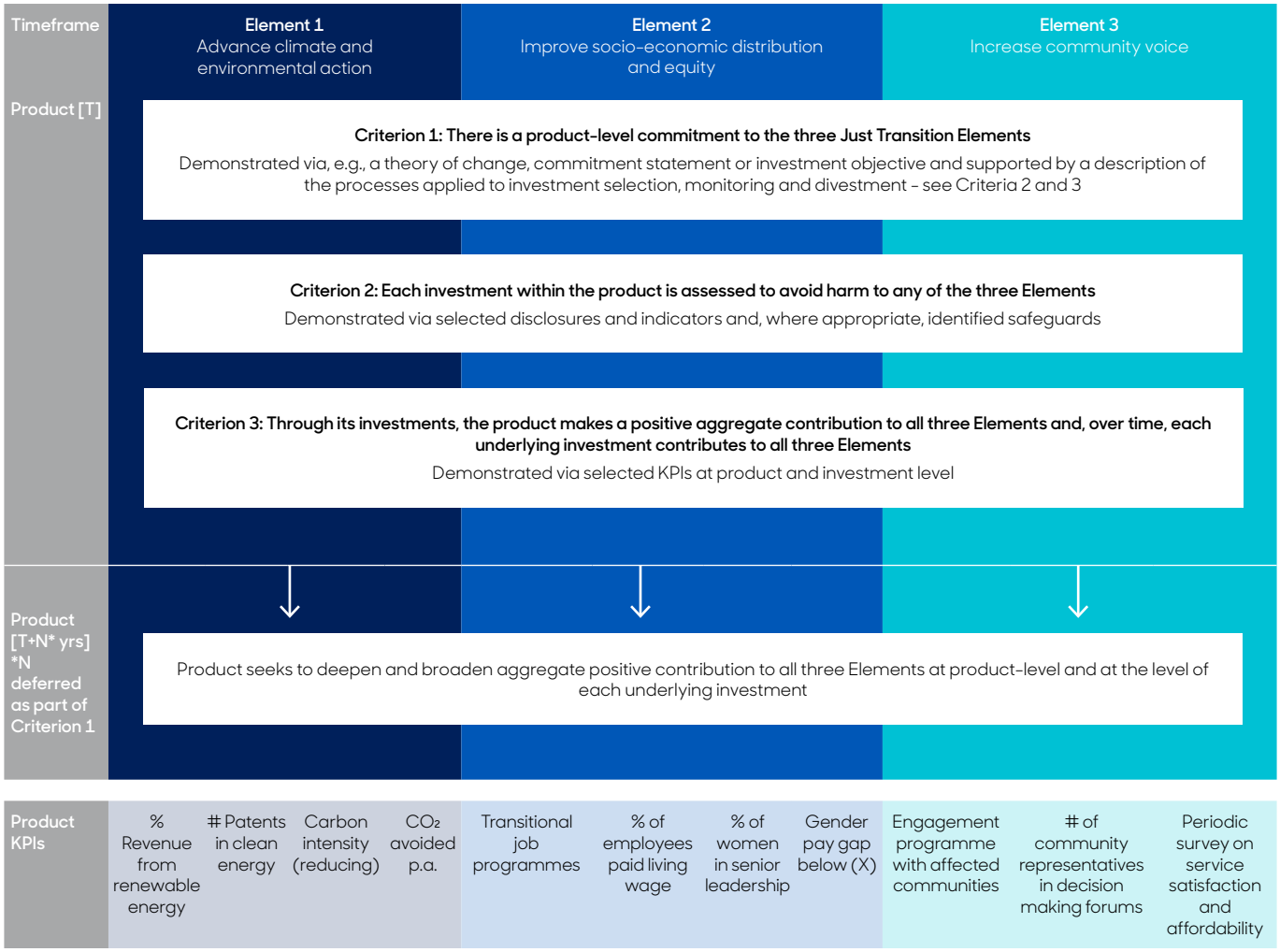
The Project has developed a Resource Efficiency and Pollution Prevention Plan, containing sub-plans for the following thematic areas: atmospheric and noise control; solid and hazardous waste; and pesticide use and management.

673m USD Public Private Partnership, key to the economic and social development of the Uraba/ Antioquia region in Columbia.

Source: Aberdeen, 2023.

Where appropriate and in line with the objectives of an investment product, the III provides three criteria that investment products need to meet to show alignment to a just transition. [XVII] These are shown in Figure 6 below and should be applied across all three just transition elements, with clear KPIs to measure progress.

Figure 6 – Just transition product alignment criteria, III



Source: **Just-Transition-Criteria.pdf (impactinvest.org.uk)**.

These III just transition criteria can of course be used not only for product alignment, but also to identify investment risks and opportunities, assess asset-level alignment and to shape engagement focus areas. The III offers funds to be piloted using their proposed methodology which Aberdeen is currently considering exploring further.

Step 4: Policy advocacy and sovereign engagement

Interested investors can advocate can policies that support the just transition and engage with policy makers on this topic. This helps reduce systemic and financial risks for investors and improves outcomes for people. For example, infrastructure projects may have large implications for a just transition and be financed via sovereign bonds, providing an opportunity to engage.

Engaging with sovereigns

Influencing sovereigns through direct engagement is usually more difficult than engagement with corporates, that's why policy advocacy and leveraging opportunities to be vocal about just transition related policies is important. Investors can engage with sovereigns on the just transition using:

- the TPI ASCOR just transition indicator
- the ILO **guidelines** highlighting nine policy areas of action for the just transition
- the LSE publication recommending that policy makers should embed just transition considerations at each phase of the policy cycle:
  - Phase 1. Planning and analysis
  - Phase 2. Participation and deliberation
  - Phase 3. Policy design for transitional assistance
  - Phase 4. Implementation and accountability
  - Phase 5. Monitoring and evaluation

In addition, policy advocacy and sovereign engagement should highlight that a just transition strategy should be embedded in the country's NDC and set the expectation that the government should assess and manage the social impacts of the energy transition across different stakeholders groups:

- **Workers**: Are policies in place and funding available to help workers in the transition to a low carbon society. For example, a green jobs strategy, upskilling courses etc?
- **Communities**: Are policies in place to protect communities that are at risk from experiencing negative effects from climate projects and have affected communities been consulted (i.e., transmission lines over community land, relocation, etc.)?
- **Consumers**: Are policies in place to protect consumers in the transition to a low carbon economy, providing adequate funding dedicated to ensuring consumers will be able to access affordable clean energy?

The challenges of achieving a just transition

Achieving a just transition means avoiding, minimising or compensating for (where avoiding or sufficiently minimising is not possible) adverse social impacts from the energy transition.

Understanding what this means in practice is challenging for a number of reasons:

Data limitations: Complex social issues often defy a purely quantitative approach. Corporate disclosures on social issues are generally very poor, making it difficult to understand their approach and contributions. In many instances, qualitative assessments and active engagement add meaningful insights that change our understanding of what are appropriate, realistic goals and progress. However, qualitative assessments also require judgements to be made, which makes consistency a challenge.

Measuring success and progress: There is no 'one size fits all' approach to a just transition. In defining success and tracking progress, it is important to consider local conditions, such as economic development, energy infrastructure availability and the range of active business sectors in the region, among others. What's more, a just transition is not only an outcome, but also a process in itself. Therefore, the ways in which we track progress and the action required to achieve a just transition will evolve over time and vary by geography. However, the recent emergence of frameworks presented above helps navigate these complexities.

Unclear roles and responsibilities: Fully addressing the just transition requires action from governments, businesses, investors, consumers and civilians. Currently, there is a lack of clarity about specific actions, roles and responsibilities in order to achieve a just transition, particularly when it comes to corporates and governments. Companies have a significant role to play in the transition, however, can they realistically be expected to be responsible for the transition in a region indefinitely, particularly if governments take policy action to drive it? These lines have yet to be determined.

The need for a systems approach: The just transition is so broad in scope that it requires a whole systems approach across sectors, technologies and supply chains. Governments, businesses, and investors, globally, must come together to foster a successful just transition. This is a highly complex task, given that environmental and social situations and political contexts vary greatly by region.

What's next?

Despite the complex and challenging backdrop, investors can take actions to embed just transition considerations into their investments, engagements and products by using the frameworks and questions outlined in this paper. They can also advocate for more policy support to incentivise mobilisation of private capital for a just transition and provide transparency in their climate transition plans. As investor focus on a just transition increases, businesses will need to be able to demonstrate how their strategies and operations are aligned by considering the frameworks presented in this paper. The outcomes of COP28 will be critical for shaping government action to drive a just transition for all.

It is important to note that the four-step framework is a proposal that has not been fully implemented at Aberdeen yet but is a resource we draw upon as we are evolving our approach to embedding just transition criteria into our thinking. As next steps, we want to pilot suitable funds using the lll just transition criteria and explore the data available on just transition assessments in more detail to help inform and strengthen our engagements.

In the remainder of the paper, we take a deeper look at the four areas of the just transition that need to be considered by investors and how best to incorporate this into decision making & engagement to facilitate a just transition and manage the risks: workers, suppliers, communities and consumers.

Part 2

Key impacted stakeholder groups

01
Workers

The transition to a low-carbon global economy will have consequences for jobs and workers, the level of disruption depending on the sector and region. The risks and opportunities related to this are critical for investors to understand and engage on.

How will the transition to net zero affect workers?

At the aggregate level, the prevailing view is that the transition to a net zero economy would lead to more job gains than job losses. Job creation and destruction will vary greatly amongst countries and sectors. Countries with stringent climate policies and a higher proportion of workers in the industrial sector, for example, will face the transition more acutely. According to McKinsey's calculation based on a Net Zero 2050 scenario,[10] the transition could create in total c. 200 million jobs and displace c. 185 million jobs, resulting in a net impact of around 15 million more jobs by 2050. [XVIII]

Greening the economy changes occupations and skills in two main ways:

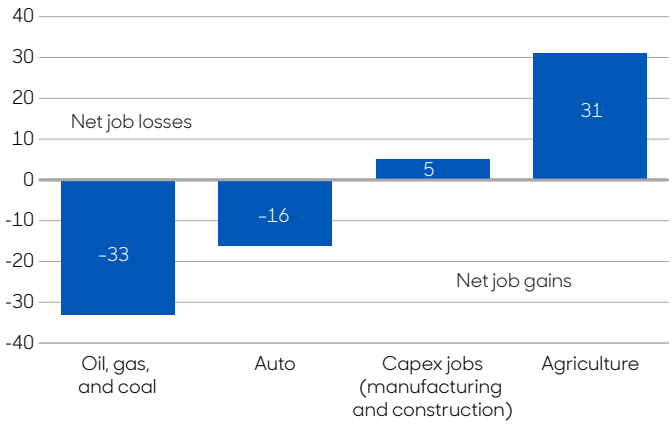
- Existing occupations may undergo reskilling or upskilling as existing skills are applied to new products or materials (which require new knowledge), or new skills are added into the mix of existing skill sets. For example, many construction occupations now involve the use of new green materials, requiring new knowledge and techniques.
- New green-specific roles emerge for sets of work tasks that require new skills. Solar-panel installers or wind-turbine technicians fall into this category. There may also be hybrid occupations that build new job profiles by uniting various specialist areas, such as that of agricultural meteorologist in developing countries, which combines expertise in both meteorology and agricultural sciences.

Which sectors will be most impacted?

Estimation in terms of job numbers is generally based on net zero 2050 scenarios and differs significantly between research organisations, but there is consensus on the sectors which are predicted to experience net job gains or net job losses as illustrated in Figure 7.

Figure 7:

Millions of jobs

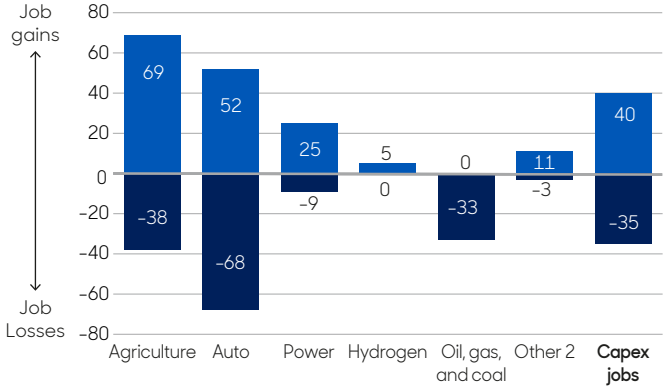


Source: **The-net-zero-transition-what-it-would-cost-and-what-it-could-bring-final.pdf (mckinsey.com)**.

Figure 8 shows that the gains and losses from the transition are not binary (i.e., only gains or only losses) but that most sectors will experience both, but at different scales. The auto sector for example is estimated to experience net job losses despite demand for new jobs to produce electric vehicles (EVs). Our own engagement with some of the major auto manufacturers adds evidence to this estimate.

Figure 8: Total job shifts by sector

Millions of jobs

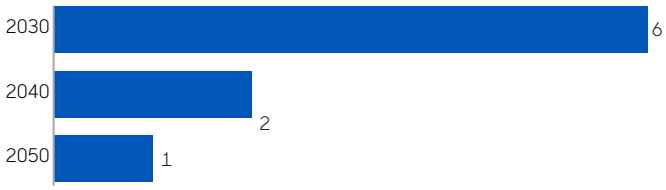


Source: McKinsey Global Institute **the-net-zero-transition-what-it-would-cost-and-what-it-could-bring-final.pdf (mckinsey.com)**.

Changes in employment as a result of the net zero transition is a dynamic progress. This means that some of the job gains would be transitory whereas others more secure. For example, McKinsey's analysis shows that, in construction, manufacturing, and other industries associated with the buildout of low-emissions physical assets, gross changes in employment shifts could be as high as about 6 million by 2030, but will gradually reduce to around 1 million by 2050 (assuming net zero by 2050), which highlights the potential transitory nature of these jobs (see Figure 9). [XXI]

Figure 9: Job gains in construction and manufacturing based on a net zero 2050 scenario[XXII]

Employment shifts, gross changes associated with a net-zero transition, million jobs



Job gains associated with the transition would be front-loaded when the majority of building insulation would be installed.

Includes direct and indirect jobs

Capex (gains)

Capex (losses)

Source: **McKinsey Global Institute the-net-zero-transition-what-it-would-cost-and-what-it-could-bring-final.pdf (mckinsey.com).**

Which countries will be most impacted?

The impact on jobs varies by country and depends on its economic exposure to the net-zero transition. The transition will affect lower-income and fossil fuel producing countries more acutely, such as Pakistan, India, Bangladesh, Kenya, Nigeria and Indonesia. Significant fossil fuel production also creates high exposure for some countries, such as Qatar, Russia and Saudi Arabia. Countries with relatively higher shares of jobs, GDP, and capital stock in sectors with emissions-intensive operations, products and supply chains, are more exposed to the transition.

Regions that stand to benefit most from a new job creation perspective are Americas, Asia Pacific and Europe according to the ILO, given their higher exposure to sectors that are predicted to have net job gains.[XXIII] It is important to note that even within developed countries, the impacts of the net zero transition on jobs will be felt unevenly in different regions.

Why does this matter to investors?

How companies manage the impacts of the transition on their workforce will pose considerable investment risks and opportunities for investors. There are two main types of risks facing companies within the sectors most exposed to the energy transition: restructuring risks and human capital risks.

Restructuring risks

Restructuring is inevitable for the transition to a low carbon economy and doing this responsibly is critical to a just transition. Corporations must endeavour to restructure their business responsibly, by:

- Including their employees in the restructuring process.
- Limiting redundancies.
- Endeavouring to reduce the negative consequences of redundancies.[XXIV]

Failing to restructure responsibly can lead to poor business outcomes including lower employee morale, reduced efficiency by hiring from the outside instead of reskilling/upskilling current employees[XXV] and adverse media coverage.

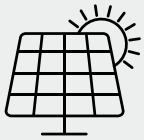
Human capital risks

These mainly manifest in skills mismatches and skills shortage which can impede a company's progress on the green transition. According to the International Energy Agency (IEA), the energy sector already faces difficulty hiring qualified talent to keep pace with clean energy's uptick. If solar and wind installations reach four times today's annual level in 2030, as called for in IEA's net zero scenario, these labour constraints could impede the world's ability to accelerate the shift to a low-carbon future.[XXVI]

Arguably, these risks can be better managed through effective government policies and the inclusion of skills for green transition into the formal vocational training system. Based on ILO's survey, while most countries have environmental policies, there are only a handful of countries with policies at either the national or the regional level for skills development (e.g., Denmark, Estonia, France, Germany, United Kingdom, US, China, India, South Korea, the Philippines and South Africa). Similarly, few countries have incorporated skills for the green transition into the formal vocational training curriculum. [XXVII]

Green jobs

Across all countries, green jobs are forecasted to be a source of employment growth. Sectors with the greatest employment potential are construction, agriculture, renewable energy and environmental goods and services. [XXVIII]



What is a green job?

According to the ILO, a green job helps: [XXIX]

- Improve energy and raw materials efficiency
- Limit greenhouse gas emissions
- Minimize waste and pollution
- Protect and restore ecosystems
- Support adaptation to the effects of climate change

Beyond the above, the ILO broadens the definition of a green job, including the attributes of 'decent work', for a job to be considered green. [XXX]

The ILO defines decent work as "... productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

What actions can investors take?

Investors can allocate capital to companies that manage the risks and opportunities of a just transition well, for example, by demonstrating human capital management practices that support the creation of green jobs. Impact investors could also measure the number of green jobs created by a company to demonstrate the potential positive impact of their investments beyond financial return.

Investors can look to the tools available to assess the impact on workers:

CA100+ net zero benchmark criteria

- **Metric 9.1b:** The company has committed to retain, retrain, redeploy and/or compensate workers affected by decarbonisation efforts.
- **Metric 9.2a:** The company has developed a Just Transition plan for how it aims to support workers and communities negatively affected by its decarbonisation efforts.
- **Metric 9.2b:** The company's Just Transition plan was developed in consultation with workers, communities and other key stakeholders affected by its decarbonisation efforts. [XXXI]

World Benchmarking Alliance indicators and guidance

- The company demonstrates how it engages both in social dialogue - including with unions (or equivalent worker bodies where the right to freedom of association and collective bargaining is restricted under law) - and more broadly with stakeholders, in the development of its just transition planning.
- The company has a set of timebound, measurable indicators to mitigate the social impacts of the low carbon transition on workers.
- The company has a public commitment to create and provide or support access to green and decent jobs as part of the low carbon transition.
- The company assesses and discloses the risks of employment dislocation caused by the low carbon transition and related impacts on workers and affected stakeholders. [XXXII]
- Creating, providing or supporting access to green and decent jobs for an inclusive and balanced workforce.
- Retraining and re-and/or up-skilling workers for an inclusive and balanced workforce. [XXXIII]

Once companies have been identified, investors can engage on a just transition for workers using the questions below:

Table 5: A just transition for workers

Engagement questions	What a good answer should include
1. How do you manage the impact on the employees in your business as a result of your transition strategy e.g., restructuring and reducing the number of workers, providing new opportunities to learn new skills and work in green jobs?	1. The company has assessed job losses and the need for restructuring and redundancies. It has a strategy to manage the impact on the business and make sure workers are treated fairly. E.g., funding for reskilling/ upskilling programmes, provide opportunities in green jobs, voluntary redundancies and early retirement packages. Working with unions to help avoid strikes.
2. Have you consulted your employees in your climate transition plan and restructuring process?	2. There is clear documented evidence of employees consulted in the climate transition and restructuring plans. It must demonstrate that employees have had significant input and that the company has acted on the input.
3. Are there worker shortages within your supply-chain that can hinder your transition plan, if so, what actions are you taking to mitigate these?	3. The company has carried out an assessment on worker shortages in their supply chains and is engaging with their suppliers on this issue.

Case study:

Aberdeen just transition engagement with the autos sector

At Aberdeen, we have engaged extensively with autos companies on their plans to manage the transition to a low carbon economy. As EV production requires fewer employees, there will be a decrease in workers in this sector and a need for different skills.

From our engagements, it is clear that auto businesses are very aware of the impact of the transition on their workers and have plans and policies in place to help manage negative outcomes. Many invest in training and upskilling opportunities for current employees in the first instance. Autos firms are looking at a natural reduction in employees, offering those the end of their careers early retirement packages where possible, and do not plan to replace them.

This can partially be attributed to where the corporation is located, i.e., in most European countries, companies will engage with the unions on a natural reduction in employees. Overall, the companies we have engaged with have a clear preference to upskill their current workforce.

BMW for example has taken clear measures to support a just transition for its employees. This includes continuous employee training and establishing an academy where 2,300 different training seminars are organised (including health & safety and e-mobility cooperation with universities). This academy is also available to suppliers. BMW conducts annual surveys which have been stable for years. Focusing on employee optimism for the future the results are above 80%.

02
Suppliers

We must not only consider the environmental and social impact of companies we invest in, but those in a company's supply chain where many human rights violations can be hidden. Businesses cannot claim to be sustainable and promoting a just transition if the suppliers they use are not adhering to these values.

How will the transition to net zero affect suppliers?

Fundamental shifts in the way we produce energy, manufacture goods, and create new low carbon products will include inevitable changes in supply chains. For example, minerals and metals are required for low carbon energy infrastructure, such as solar panels and batteries. The mining sector is therefore a key part of the supply chain for renewables companies, but has been riddled with human rights abuses particularly in relation to community impacts. Suppliers not upholding human rights must be held to account and companies must have clear due diligence process in place to make sure just transition principles and human rights are adhered to in their supply chains.

Supplier due diligence regulations

Dependent on the region, companies are subject to regulations on supplier due diligence.

Of particular relevance to a just transition, France's Corporate Duty of Vigilance Law (2017) requires large companies to detect and prevent adverse environmental impacts and human rights abuses resulting from their direct business activities, business activities of corporations they have control over, and activities of their suppliers and subcontractors.

In 2021, the EU Conflict Minerals Regulation came into effect. The law requires EU based companies that import tin, tantalum, tungsten, and gold (3TG), the minerals which are most often associated with human rights abuses, to check and ensure the minerals they import are not funding conflict or illegal practices. Importers must follow the Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and High-Risk Areas, a five-step framework by the Organisation for Economic Co-operation and Development (OECD).

Importers must:

- Establish strong company management systems;
- Identify and assess risk in the supply chain ;
- Design and implement a strategy to respond to identified risks;
- Carry out an independent third-party audit of supply chain due diligence, and;
- Report annually on supply chain due diligence.

Why does this matter for investors?

Undertaking due diligence on supply chains helps companies mitigate risks, including reputational risk by association with potentially problematic suppliers, which in turn has financial implications for the firm and for investors.

In addition, there may be regulatory risks and increased costs for companies struggling to meet CSDDD requirements. Companies that are already taking into account the sustainability of their suppliers will likely find this regulation less onerous than those that are not.

What actions can investors take?

Investors should incorporate supply chain related just transition questions into their engagements. We would like to see companies:

- Undertake due diligence on the sustainability of their suppliers.
- Have continuous engagement with their suppliers on sustainability concerns.
- Encourage transparency from their suppliers on sustainability issues.

Table 7: Supply chain engagement questions

Suppliers	
Engagement questions	**What a good answer should include**
1. Do you have policies/frameworks in place to assess the sustainability of your supply chains and engage with your suppliers on their social impact and just transition policy?	1. The company has sound policies/frameworks and can demonstrate meaningful, ongoing engagement with their suppliers on their social impact and just transition policy.
2. How are you preparing for CSDDD to meet supplier due diligence requirements (Where applicable)?	2. The company has a sound formal framework/plan to help prepare for CSDDD.
3. Are you able to source where all of the materials in your products come from and identify social risks within your supply chain?	3. The company has mapped where all materials are sourced, is aware of any risks associated with their supply chain, and are taking steps to manage those risks.

03

Communities

Many companies have a significant effect on the communities where they undertake their business operations. It is therefore crucial that companies are aware and manage their social impact positively.

How will the transition to net zero affect communities?

This section focuses on two major issues that acutely affect communities which need to be addressed to enable a just transition: green conflict minerals and competition for land and resources.

Green conflict minerals

The technologies required to facilitate the shift to renewable energy require significant mineral and metal inputs from the mining sector. The IEA has highlighted the minerals and metals needed for clean energy technologies in the table below. [XXXV]

Figure 10: Critical mineral needs for clean energy technologies

	Copper	Cobalt	Nickel	Lithium	REEs	Chromium	Zinc	PMGs	Aluminium
Solar PV	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Wind	🔴	🟢	🟡	🟢	🔴	🟡	🔴	🟢	🟡
Hydro	🟡	🟢	🟢	🟢	🟢	🟡	🟡	🟢	🟡
CSP	🟡	🟢	🟡	🟢	🟢	🔴	🟡	🟢	🔴
Bioenergy	🔴	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟡
Geothermal	🟢	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢
Nuclear	🟡	🟢	🟡	🟢	🟢	🟡	🟢	🟢	🟢
Electricity networks	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴
EVs and battery storage	🔴	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴
Hydrogen	🟢	🟢	🔴	🟢	🟡	🟢	🟢	🔴	🟡

Relative importance of minerals for a particular clean energy technology: High: 🔴 Moderate: 🟡 Low: 🟢

Shading indicates the relative importance of minerals for a particular clean energy technology, which are discussed in their respective sections in this chapter. CSP = concentrating solar power; REEs = rare earth elements; PGM = platinum group metals. * In this report, aluminium demand is assessed for electricity networks only and is not included in the aggregate demand projections.

Source: International Energy Agency (IEA) (2022) The Role of Critical Minerals in Clean Energy Transitions [Online]. Available at **www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions** (Accessed 5 January 2023).

Many of these minerals and metals will see exponential growth in demand as the world transitions to cleaner energy sources. For example, according to the World Bank, demand for lithium will increase by 965% in 2050 compared to production levels in 2017. [XXXVI] The race to extract minerals and metals heightens the risk of irresponsible business activities and makes engagement and due diligence on companies operating in this space even more critical.

The mining sector is already central to the economies of many countries and regions, providing employment, income and trade opportunities, which can stimulate sustainable development. [XXXVII] However, the sector also tends to be strongly associated with human rights abuses – at times these abuses are so severe that they spark violent internal conflict or devastate vulnerable communities.

The International Institute for Sustainable Development (IISD) points to a number of ways in which mineral extraction can fuel human rights risks, including conflict over access to land, displaced communities, and gaining control of the extraction and trade of valuable minerals.[XXXVIII]

IISD's 2018 analysis[XXXXI] combines the Fragile States Index [XLI] and Corruption Perception Index and overlays this information with established mineral reserves (defined as resources known to be economically feasible for extraction). From this analysis, the IISD concluded that **cobalt, copper, graphite and rare earths** are of particular concern, with significant deposits concentrated in potentially vulnerable regions which investors need to pay particular attention to.

Global Investor Commission on Mining 2030

This Commission (which Aberdeen are part of) was launched in January 2023 to address the systemic risks faced by the mining sector that challenge its social license to operate and the role it needs to play in providing the minerals for the low-carbon transition. It aims to consider the standards, practical steps and investment needed to secure mining's future, recognising the central role the mining industry must play in the just transition to a low-carbon economy and the vulnerability of supply chains to mineral demand.

Competition for land and resources

As natural resources become scarcer and land use requirements for renewables grow (e.g., for wind farms and hydropower plants), competition for land and resources will increase and potentially create tension or social conflict. According to the UN Environment Programme (UNEP), between 1946-2006 at least 40% of all intrastate conflicts have a link to natural resources. [XLII]

Indigenous communities are often particularly affected. Indigenous peoples have additional human rights protections via the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), which requires Free, Prior and Informed Consent (FPIC) in relation to land use. Many indigenous groups have a heighted awareness of environmental considerations and actively advocate for the transition to a low-carbon economy – however, these groups are sometimes resisting renewable energy projects due to unaddressed impacts on their livelihoods. Many lack official documentation to their rights to land, making it easy for land to be allocated to renewable projects without ensuring FPIC is upheld. This can lead to significant protests, social unrest and conflicts with communities.

When considering the responsible use of land, it is also essential to consider the responsible decommissioning of fossil fuel assets, not only for the environment but for communities that are in close proximity to these sites. Coal mines in particular are very hazardous due to causing highly-acidic water and polluted land and can have major health impacts that businesses need to manage and avoid.

Why does this matter to investors?

For companies, human rights risks and opportunities, including those associated with a just transition, fall into three areas – reputation, operations and regulation. The fallout from failing to respect human rights can hit any or all of these, ultimately affecting asset valuations.

Operational risks

Operational risk and human rights are closely connected to the idea of a 'social licence to operate' (SLO). The SLO is a concept that recognises a company can only continue to operate as long as its employees, stakeholders and wider society are willing to tolerate it. It is comparable to a regulatory licence in that, if revoked, it can potentially disrupt operations and lead to business losses. The financial consequences can be severe as illustrated in the case study below.

Case study:

Las Bambas mine, Peru

Peru is the world's second largest copper producer, after Chile. Las Bambas mine, which is owned and operated by MMG Ltd, produces 2% of the country's total copper output. [XLIII] In April 2022, Las Bambas went offline for two months due to community protests over the construction of a second open-pit mine (known as Chalcobamba). These were not the first protests at the mine. According to the BBC, between 2016 and April 2022, operations at Las Bambas were interrupted due to protests on more than 400 days. [XLVI] While operations have resumed, talks with community leaders have reportedly stalled, leaving risks of further protests and operational disruption. In addition, MMG has no timeline for commencing construction on Chalcobamba, which was originally expected to be online by the end of 2022. [XLV]

Using MMG's production volume estimates for Las Bambas, the operational shut-downs due to protests between 2016 and 2022 resulted in a loss of approximately 395,000 tonnes of copper concentrate, the equivalent of more than a year's production volume. [XLVI] MMG profits dropped by $504 million in the first six months of the year due to protests at Las Bambas and falling copper prices. [XLVII]

Adopting a robust policy that ensures respect for human rights enables companies to operate more efficiently and effectively, particularly in complex or unfamiliar environments, or areas of conflict. Community engagement is a recognised way of establishing and maintaining an SLO, especially where land rights are weak, environmental impacts are likely, or where the local economy is dependent on a small number of industries for employment. A strong engagement approach can add considerable value for businesses. A study of 19 publicly traded gold-mining companies revealed that two-thirds of their market capitalisation was a function of the firm's stakeholder engagement practices; only one-third reflected the value of gold in the ground. [XLVIII]

Reputational risk

Controversies related to a lack of engagement and consideration of community needs can do significant and lasting financial damage. Research has shown that, over five years, major ESG controversies wiped out $500 billion of market capitalisation from the S&P 500 Index. [XLIX]

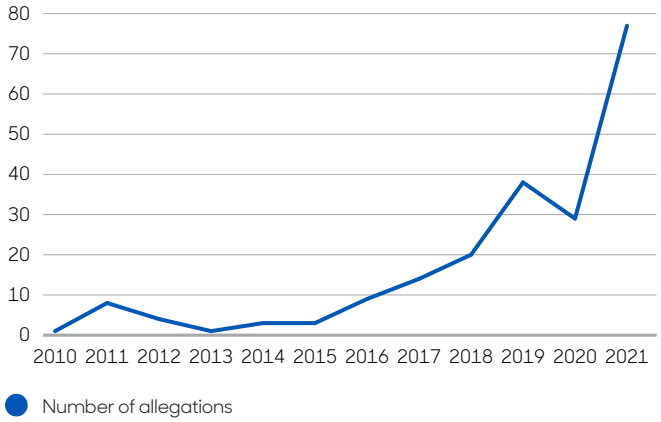
As well as avoiding risks, there are multiple financial benefits for companies to establish and maintain a strong, positive corporate reputation for respecting human rights. These include increased investor confidence, building customer loyalty, strengthening business partnerships and supply chain, and attractive and retaining talent.

Regulation

Since 2015, climate change related lawsuits have more than doubled to over 2,000 total cases globally (figure as of 2022) [L]. There is an emerging trend in cases brought by indigenous people and affected communities that utilise human rights arguments to question the distribution of the benefits and burdens of the energy transition. In Mexico, for example, a court cancelled EDF's contract for a wind energy project following a lawsuit filed by the Unión Hidalgo community due to inadequate consultation. [LI]

Figure 11: Company allegations 2010-2021

Number of times Business & Human Rights Resource Centre approached companies about allegations.



Source: Business & Human Rights Resource Centre (2021) Renewable Energy & Human Rights Benchmark 2021 [Online]. Available at **www.business-humanrights.org/en/from-us/briefings/renewable-energy-human-rights-benchmark-2/** (Accessed 5 January 2023).

The Business & Human Rights Resource Centre (BHRRC) research into this issue shows that allegations of abuse are rising, particularly in Latin America and Asia. Between 2010-2020, the BHRRC identified over 200 allegations of human rights abuses related to renewable energy projects. Hydropower projects have a notably poor track record [LII], but almost half of the allegations (44%) are from the wind and solar sectors. Allegations include: killings, threats, and intimidation; land grabs; dangerous working conditions and poverty wages; and harm to indigenous peoples' lives and livelihoods. [LIII]

The BHRRC has developed a benchmark to assess the human rights policies and practices of renewables companies. Overall, BHRRC found the results to be 'profoundly concerning, with companies scoring an average of just 28%.' [LIV] Companies scored the lowest in areas that BHRRC considers to be the most critical human rights risks: land rights, indigenous people's rights and protections for human rights defenders. [LV]

What actions can investors take?

A key priority is to engage with firms they invest in to understand how these engage with communities. We would like to see companies:

- Have ongoing and meaningful engagement with local communities.
- Ensure the voices of the local communities are genuinely taken into account.
- Have a positive effect on local communities.
- Engage with government to tackle environmental and social issues.

In addition to the resources outline in this section, investors can look at the following tools available to assess how companies are managing the impact they have on communities.

CA100+ net zero benchmark criteria:

- **Metric 9.1c**: The company has committed that new projects associated with its decarbonisation efforts are developed in consultation with affected communities and seek their consent.
- **Metric 9.2.b**: The company's Just Transition plan was developed in consultation with workers, communities and other key stakeholders affected by its decarbonisation efforts.

World Benchmarking Alliance indicators and guidance

- The company must have a clear process in place to identify job dislocation risks and impacts applicable for both stakeholder groups: its workforce (employees, non-employee workers) and communities.
- The company discloses its process(es) for identifying skills gaps for workers and affected stakeholders in the context of the low carbon transition, which involves engaging with unions (or equivalent worker bodies where the right to freedom of association and collective bargaining is restricted) and communities.
- The company must disclose how, through its contractual agreements, it expects its business relationships to contribute to social protection (e.g. pensions and healthcare) for workers and communities. This could, for example, be through its supplier code of conduct or procurement principles.

BHRRC tracker

The BHRRC developed a tracker to assess the human rights practices of companies producing transition minerals. They track 103 companies producing 6 minerals (cobalt, copper, lithium, manganese, nickel and zinc). Between 2010-2021, there were 495 allegations of human rights abuses against these companies, one-third of which relate to attacks* on human rights defenders.[11] Almost 60% of the allegations relate to just 12 companies. [LVI]

Table 8: Communities related engagement questions

A just transition for communities	
Engagement questions	**What a good answer should include**
1. How has your company assessed the impact on communities within the different regions it operates in and adapted its policies and frameworks accordingly?	1. The company is aware of regional differences relating to the needs and background of different communities and has done an impact assessment of their transition activities on communities, reflected this in their policies and frameworks.
2. What is your strategy for engagement with the local community and how do you know it's successful? How are their views on your operations that affect them taken into consideration?	2. Engagement with communities is clearly documented and as frequent as required. Metrics are used to help track and monitor issues. The company must have a strategy to ensure community voices are heard and an easy process for communities to be able to have a say in operations that affect them.
3. Do you have a policy on Free, Prior, and Informed Consent (FPIC)?	3. The company must have a policy on FPIC and have ongoing engagement on this. This is particularly important in emerging markets where many lack official documentation to their land.

A just transition: India and the issue of land rights

Over the last several years, India, the third-largest emitter of CO_2 in the world, has made great strides to increase its renewable energy capacity. In the country's push to accelerate renewable energy, the issue of land rights is an area that's potentially overlooked by many investors. Reputational damage, adverse media coverage, and project delays are all risks that can arise from these land conflicts.

With India's ambitious renewables capacity target, vast quantities of land are required for solar farms. This can come at the expense of local communities using it for livestock grazing and farming purposes. These common lands, often referred to as orans by locals, have been used for generations by communities with no legal ownership of the land, which is a common practice in India.

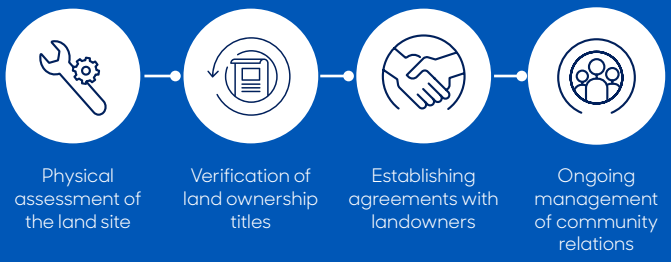
The Indian government has classified some of these common lands as wastelands, limiting the ability to provide fair compensation to local communities for its use, for example for renewable energy production. Many farmers who do own land only own small plots and lease more from the government. But these are often informal agreements and therefore, the farmers have limited access to benefits such as credit, insurance, and subsidies. Local communities often cannot afford to pursue legal matters, which results in conflict resolution through informal negotiations, and payoffs.

Corporate engagement and due diligence are important avenues investors can use to help mitigate risk and facilitate change. Investors can engage with renewable-energy developers and set out clear expectations on land-rights issues, including:

- The company is aware of land-rights risks and has policies to address concerns.
- The company ensures that the voices of local people are heard.
- The company delivers benefits to local people.

We've identified four stages of land procurement best practice:

Figure 12: Best practices in the procurement of land



Encouraging transparency allows companies to demonstrate they have properly assessed these concerns in their plans. There must be FPIC from existing landowners and land beneficiaries for the approval of such projects.

The considerable growth in renewables in India provides investors with a big opportunity to support the energy transition. At Aberdeen, we regularly engage with the renewables companies we invest in to help ensure land has been procured fairly. Our engagements across the sector enabled us to identify companies that were not only aware of the risks but have been proactive and open to engaging with investors to address the issue of land rights. For example, some companies lease land from the original landowners and employ the local communities onsite. This not only allows original landowners to retain titles over the land, but also provides consistent income. Safeguarding the interests of local communities requires companies to establish and maintain sound and long-lasting relationships with landowners and surrounding land beneficiaries.

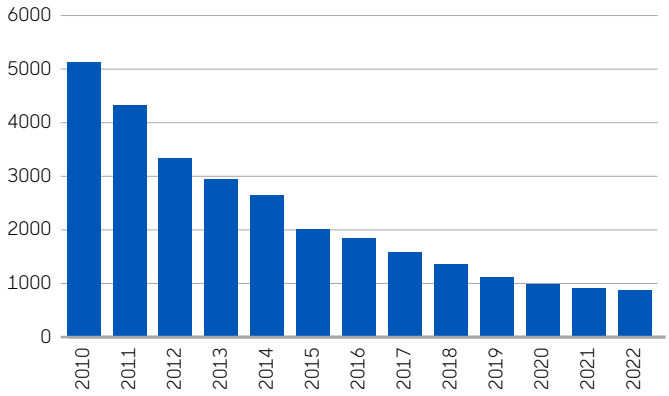
04
Consumers

The transition to a low carbon economy has implications for energy security, and how customers can access clean and affordable energy.

SDG7 is to "ensure access to affordable, reliable, sustainable and modern energy for all". Hundreds of millions of people globally still do not have access to electricity. [LVII] In developing countries, energy poverty is more acute, particularly in rural areas. In more developed regions, consumers have access to energy but are becoming more conscious of their environmental impact, but also rising energy costs. Policymakers and businesses are endeavouring to provide people with more sustainable options, but these options need to be affordable, too. Connecting people to sustainable sources of energy continues to be a challenge and the transition to a low-carbon society is likely to impact energy costs in both developing and developed markets. At the same time, the cost of solar and wind energy has fallen significantly, and is already cheaper than fossil fuels-based electricity production in some regions, such as India.[12] But this doesn't necessarily translate into cost benefit to the end user.

Figure 13: Average installed cost for solar photovoltaics worldwide from 2010 to 2022

Cost in US dollars per kilowatt installed



Source: **https://www.statista.com/statistics/809796/global-solar-power-installation-cost-per-kilowatt/.**

How will the transition to net zero affect consumers?

Affordability and reliable access

Rising fossil fuel prices strengthen the need for affordable renewable energy. Although we have seen a reduction in energy prices this year in many regions (2023), between January and April 2022, the World Bank's energy price index rose by 26.3%, exhibiting the acute increases in coal, oil, and natural gas prices resulting from a range of problems, including supply and demand issues. Price increases such as those in 2022 can put significant pressure on consumers. [LVIII]

In 2022, fossil fuel subsidies reached $7 trillion (7.1% of GDP).[13] This was an increase in $2 trillion from 2020, as a result of government support to help curb rising energy prices. This highlights the dilemma for governments between affordability and reducing reliance on fossil fuels. Removal of these subsidies could impact those on lower incomes the most. Carbon pricing mechanisms may also increase energy prices as companies pass on these costs to consumers.[14]

From a structural point of view, integrating renewable energy into current power grids can be complex and expensive, which might limit renewable energy expansion and restrict energy access for some consumers.[15] According to the IEA, only 15% of the global population uses 50% of clean energy supplied, with the majority of these consumers living in advanced economies. However, as renewable technologies have become more efficient and widespread, this this may continue to make clean energy more affordable for more consumers. In some places, such as India, electricity from renewables is cheaper than fossil fuel-based electricity, and its share of renewables in total energy supply is increasing[16]. It is crucial for governments to ensure that energy remains affordable and accessible for consumers, and that they are not forgotten in the pursuit of a low carbon economy.

The transition to a low carbon society facilitates the development of decentralised systems that may empower consumers. By promoting solutions such as solar microgrids, off-grid solar systems, rooftop solar panels, and community wind farms, the transition may improve energy access and affordability for consumers, particularly in remote or underserved areas.

Environmentally friendly technology continues to progress, however, these are still generally only accessible for wealthier consumers. For example, as EVs become more prevalent, and low-carbon public transportation options continue to improve, some consumers now have access to a range of eco-friendly alternatives for their daily travel.[17] However, EVs are still generally not affordable for consumers with lower incomes. Governments can issue grants to help make low carbon transport more attainable for all.

Why does this matter for investors?

If different groups of society are unable to afford access to reliable energy, this can lead to major protests and destabilise whole regions, leading to systemic risks and financial implications for businesses, governments and investors.

Reputational risk

There is a reputational risk of investing in companies that provide basic needs, such as energy, which ramp up prices for consumers whilst taking large profits. This may also lead to protests and financial implications for companies and governments as illustrated in the case study below.

Demand implications

It can also lead to reduced demand from consumers who cannot afford the cost of more sustainable options and may look for alternatives/substitutions with financial implications for businesses.

Germany's Energiewende initiative is a long-term strategy aimed at transforming the country's energy system by focusing on renewable energy sources, increasing energy efficiency, and reducing greenhouse gas emissions. This plan seeks to create a more sustainable and environmentally friendly energy landscape while also promoting economic growth and energy security. As the initiative progresses, consumers are likely to witness a gradual shift in their energy supply, with a greater focus on clean and renewable sources like solar, wind, and biomass. In the long run, a well-managed just transition is expected to result in more stable energy prices, improved air quality, and potentially lower overall energy costs, thus benefiting both the environment and consumers in Germany. [LIX]

The 2018 "yellow vests" movement was a clear example of consumer backlash against unaffordable energy in pursuit of climate goals. In President Macron's efforts to decarbonise, a fuel tax was imposed and many argued that this had a disproportionate negative financial effect on low income groups. This was the catalyst for violent protests. The total cost of responding to these protests stood at 17 billion euros in April 2019. [LX]

Trucking federations stated they had incurred 400 million euros in operating losses as a result of the protests, with protestors blocking access to fuel depots. Furthermore, a French oil company announced that 75 of its petrol stations had dried up because of protestors preventing access. [LXI]

What actions can investors take?

Investors can work with policy makers to emphasise the importance of the "just" aspect in the transition to a low carbon society and help ensure affordable access to energy as well as mitigate scenarios of consumer protests. In turn, this may reduce financial risks arising from unjust government policies which could negatively impact businesses. Key areas of focus to help consumers in the transition include financial support, energy efficiency programmes and targeted subsidies.

It is also important for investors to understand how firms assess and manage the impact their transition strategy has on consumers. We would like to see companies:

- Demonstrate they have taken their consumers affordability and access into consideration.
- Demonstrate engagement with policymakers (where applicable) to provide support to deliver sustainable and affordable products.

Investor just transition tools related to consumers are currently limited. The below CA100+ benchmark sub-indicators were included in the 2022 beta version of the just transition indicator but were dropped in the 2023 version. So, there is no assessment data available, but using these indicators can be helpful in company engagements:

- Sub-indicator 9.4 Action, Metric a): The company supports low-carbon initiatives (e.g. regeneration, access to clean and affordable energy, site repurposing) in regions affected by decarbonisation.
- Sub-indicator 9.4 Action, Metric c): The company takes action to support financially vulnerable customers that are adversely affected by the company's decarbonisation strategy.

Table 9

Consumers	
Engagement questions	**What a good answer should include**
1. Do you assess the affordability of your products for consumers across different income groups?	1. The company has demonstrated they consider the impact of their product pricing on consumers and takes action to ensure lower income groups are not significantly disadvanaged and can access their products. Engages with policy makers on this to support energy security and affordability.
2. Do you engage with policy makers to help support energy affordability and security for consumers?	2. The company engages with policy makers on this to support energy security and affordability. has sound plans to manage current and impending regulations.

Conclusion

Not taking into account social factors whilst pursuing climate ambitions can come at significant financial cost for businesses, governments and investors. Over the coming decades there is likely to be more stringent policy aimed at decarbonising, and consequently it is important for investors to understand how the governments and companies they invest in are managing this in a socially just way, understanding the impact on the key stakeholder groups they affect and take their voice into consideration.

Investors can apply the four-step framework outlined in this paper to take action and embed just transition considerations into their investment processes, engagements, products and policy advocacy.

Importantly, addressing just transition issues will not only mitigate financial risks, but also greatly benefit our global society as we move towards net zero. Investors have clear, effective actions they can take and should not underestimate the influence they have in facilitating a just transition.

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