Institution: London School of Economics and Political Science		
Unit of Assessment: 14 - Geography and Environmental Studies		
Title of case study: The Transition Pathway Initiative (TPI)		
Period when the underpinning research was undertaken: 2015-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Simon Dietz	Professor of Environmental Policy; Research Lead of TPI	2006 to present
Beata Bienkowska	Deputy Research Lead and Project Manager	2020 to present
Michal Nachmany	Project Manager	2016-2020
Rhoda Byrne; Dan Gardiner; William Irwin; Valentin Jahn; Jolien Noels	Research Assistants	2017 to present
Period when the claimed impact occurred: 2017-2020		
Is this case study continued from a case study submitted in 2014? No		

1. Summary of the impact (indicative maximum 100 words)

Research led by Simon Dietz at the LSE's Grantham Research Institute (GRI) is at the heart of a new global initiative to measure and monitor the progress of big corporations on the transition to a low-carbon economy. The Transition Pathway Initiative (TPI) is a unique partnership between a consortium of 87 big investors with USD23 trillion combined assets under management/advice, a commercial data/index provider (FTSE Russell), an international NGO (Principles for Responsible Investment), and a university (LSE). Investor-led, the aim of TPI is to assess the progress being made by the world's largest public companies on the transition to a low-carbon economy, supporting efforts by the financial sector to tackle climate change. The methodology and results are available online and completely free to access. TPI data is used by investors worldwide, both in re-allocating their capital and in engaging the companies whose shares they own.

2. Underpinning research (indicative maximum 500 words)

A successful transition to a low-carbon economy requires a huge reallocation of capital from high-carbon to low-carbon assets. For corporations to survive, they must radically reduce their carbon footprints (both from their operations and their value chains) by mid-century. Many big investors, motivated by ethical considerations, want to take a lead in driving the low-carbon transition. Others may be less motivated by ethical concerns but nonetheless concerned with managing their investment risks, avoiding, for instance, holding so-called "stranded" fossil fuel assets once demand for coal, oil, and gas has fallen away. The Transition Pathway Initiative (TPI) responds to demand from investors for data supporting their move towards a low-carbon economy. It provides comprehensive, rigorous, and impartial data assembled by Dietz and GRI colleagues about which high-emitting companies are aligned with pathways leading to global warming at, below, or higher than 2°C.

The origins of TPI at LSE: TPI has its roots in two areas of expertise within LSE's GRI and its Department of Geography and Environment. The first is in providing public databases and online tools on climate change. Prior to TPI, GRI had established an international reputation for its Climate Change Laws of the World data tool. This searchable database contains detailed information about climate change legislation and executive acts in 196 countries, and climate court cases in 25 countries. Investors saw the potential to mimic this sort of tool in the corporate domain, with the unit of analysis switching to the company, and approached GRI to develop a new methodology and tool to achieve this.

The second area of expertise relevant to the development of TPI at LSE is in research on climate change and sustainable finance, the latter being one of GRI's six core research foci. Much of the research in this area is conducted in collaboration with the LSE Department of

Geography and Environment (see for example **[1]**). Work on TPI is aligned with this strand of the UoA's strategic agenda.

TPI research approach and methods: the research underpinning TPI is bespoke, with the express purpose of providing structured assessments of the climate actions and performance of large corporations. At the heart of TPI is a research framework developed by Dietz and colleagues in collaboration with FTSE Russell (a subsidiary of London Stock Exchange Group that produces, maintains, licenses, and markets stock market indices). This provides the mechanism by which companies are assessed on: (a) their carbon management practices/disclosures; and (b) their greenhouse gas emissions intensity. Management practices are treated as an input to corporate climate action, while emissions are the ultimate output.

(a) TPI assesses corporate management of carbon emissions by developing a set of indicators (currently totalling 19), each of which tests whether a company has implemented a particular management practice ("Yes/No"). These indicators cover several themes, including disclosure of companies' emissions, whether companies have set emissions reduction targets, corporate governance of climate change, and how companies engage in political lobbying on climate change.

(b) TPI also quantifies companies' carbon footprints and benchmarks them against international climate goals, using integrated energy-economy modelling at the sectoral level. This enables us to answer the question: are companies aligned with the goals of limiting global warming to well below 2°C?

Company data originate from a content analysis of all relevant company disclosures, including financial and sustainability reports. A team of analysts applies an assessment protocol to the data, judging what actions each company does and does not take, as well as extracting data necessary to quantify carbon footprints. This is conducted by a research team at GRI, led by Dietz. FTSE Russell provide the underlying data processed by Dietz's team. All company assessments are subject to extensive quality assurance, including internal peer-review and review of draft assessments by the companies themselves **[2]**. Each company is assessed annually, with the first batch being released in January 2017.

Summary overview of TPI findings to date: TPI assessments now cover 368 of the world's highest-emitting companies across 16 sectors. This represents a large share of the emissions of the world's publicly listed companies. Looking across the database, we find that, while a majority of companies have implemented basic carbon management practices such as introducing a corporate policy on climate change, few have implemented more strategic practices such as undertaking climate scenario planning and using an internal carbon price in capital budgeting **[3] [4]**.

Further analysis indicates that companies separate into a class that hardly undertakes any carbon management practices, and a class that undertakes most. Perhaps surprisingly, most of the corporate emissions targets that do exist are aligned with the Paris Agreement goals of limiting global warming to 2°C or below. The problem is that most companies are yet to set quantified targets. This implies that investors and other stakeholders should focus on persuading companies to set long-term corporate targets, as part of a larger set of carbon management practices. This is an important step if those companies are to align themselves with the Paris Agreement goals and investors, in turn, are to claim that their own investments are contributing to avoiding dangerous climate change.

3. References to the research (indicative maximum of six references)

[1] Dietz, S., Bowen, A., Dixon, C., and Gradwell, P. (2016). Climate value at risk of global financial assets. *Nature Climate Change*, 6(7), pp. 676-679. DOI: 10.1038/nclimate2972.

[2] Dietz, S., Jahn, V., Nachmany, M., Noels, J., and Sullivan, R. (2019). *Methodology and Indicators Report: Version 3.0*. Transition Pathway Initiative. Available at: https://www.transitionpathwayinitiative.org/publications/65.pdf

[3] Dietz, S., Fruitiere, C., Garcia-Manas, C., Irwin, W., Rauis, B., and Sullivan, R. (2018). An assessment of climate action by high-carbon global corporations. *Nature Climate Change*, 8, 1072-1075. DOI: 10.1038/s41558-018-0343-2.

[4] Dietz, S., Byrne, R., Gardiner, D., Jahn, V., Nachmany, M., Noels, J., and Sullivan, R. (2019). *TPI State of Transition Report 2019.* Transition Pathway Initiative. Available at: https://www.transitionpathwayinitiative.org/publications/36.pdf

Additional research assistance was provided at LSE by Emma French, Glen Gostlow, Margarita Grabert, Nikolaus Hastreiter, Perry Jackson, Vitality Komar, Emily van der Merwe, Antonio Scheer, Jeremy Sung, and Patricia Yague.

4. Details of the impact (indicative maximum 750 words)

Climate change is one of the defining global risks of the 21st century. To avoid its worst impacts, the global economy needs to make the transition from fossil fuels to renewable energy, from energy-intensive modes of production to energy-efficient ones, and from extensive use of land and unsustainable practices in agriculture to a food system with a smaller carbon footprint. TPI, which is available free-of-charge to investors, provides a powerful new tool supporting this transition.

Improving the quality and availability of investor data

An "orderly transition" (to quote former Governor of the Bank of England, Mark Carney) requires investors to be empowered with information about the climate change positioning of companies they are or may be investing in. TPI aims to achieve this by providing independent, open-access data showing whether or not the world's largest high-emitting companies are adapting their strategies to align with international climate goals. Whether they come from an ethical or risk-management perspective, its investor supporters use TPI because they have identified the need for an academically robust yet simple and practical tool to inform their investment decisions, shareholder engagement and voting, and to track company progress over time. Although many environmental/social/governance (ESG) data providers and products are available, TPI is distinctive in being open-access, easy to use, and based directly on peer-reviewed academic research. Its advantages were recognised in June 2020 when TPI was named ESG Assessment Tool of the Year at the Sustainable Investment Awards, hosted by Environmental Finance **[A]**.

Changing capital allocation and company behaviour

TPI's investor supporters now number 87 asset owners and managers with a collective USD23 trillion of assets under management/advice. The very large scale of their combined assets means the investors supporting TPI have the potential to materially affect the allocation of capital between clean and dirty assets, as well as to change the behaviour of the companies they are investing in. Illustrative use case examples are provided here of some of the ways in which TPI is changing capital allocation and company behaviour across a range of sectors. These examples illustrate specific types of impact in specific companies using TPI. The sorts of impacts outlined here are felt at a very significant scale through the much wider use of the tool.

Informing investment decisions

The **Länsförsäkringar Alliance** is unique in the Swedish banking and insurance market. Its 23 customer-owned regional insurance companies cooperate to offer customised insurance solutions to their combined 3.9 million customers. Asset-owner subsidiaries of the Alliance have combined assets under management of USD32 billion. Länsförsäkringar is an active signatory of the UN-supported Principles of Responsible Investment (PRI) and has a comprehensive screening policy based on global standards including the UN Global Compact, Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, and UN Guiding Principles on Business and Human Rights. This screening policy excludes its investment in controversial sectors such as weapons, tobacco, and online gambling. Climate-related exclusions screen out selected mining and fossil fuel energy companies which derive more than 5% of revenue from thermal coal or oil sands.

Länsförsäkringar began using TPI data in its investment activity in 2019, particularly to inform its definition of "companies in transition". This is important because companies deemed to be "in transition" are exempted from these climate-related exclusion policies. A company defined by Länsförsäkringar as "in transition" effectively has a second chance to receive or retain their investment provided their business model is not based on the extraction of fossil fuels. The Responsible Investment team at Länsförsäkringar explains: "*We want to encourage energy producers and utility companies that have started to move away from fossil fuels, and made a commitment to transition*" **[B,** p. 11**]**. TPI assessment tools help Länsförsäkringar decide which companies really have made this commitment and are therefore exempted from its investment exclusions policy:

> *"We strive towards implementing more sophisticated exclusion policies and we realised that a static exclusion list based on current performance failed to distinguish between companies which are on a journey towards better climate performance and those which are not. Using TPI data allows us to support those companies which are on this journey."* **[B,** p. 11**]**

Helping investors understand and push for improvements in company behaviour
TPI data is used by the **Universities Superannuation Scheme** (USS), one of the largest occupational pension schemes in the UK, with some GBP68 billion in assets under management. The scheme is mandated to integrate ESG considerations such as climate risk into their investment processes and to apply them across all asset classes. In 2019, the USS UK Voting Policy was updated to integrate TPI data into voting decisions. This means that the TPI Management Quality scores are now used by the USS to benchmark the quality of climate governance for investee companies across the world. According to the USS' Head of Responsible Investment, TPI research helps them to identify those companies that are lagging in their management of the climate transition, and to encourage them to improve:

> "*We encourage portfolio companies with weak performance to enhance their corporate disclosure by responding to TPI's information requests. And from this year (2020) we have started to vote against or abstain on the resolution to receive the report and accounts where companies have the poorest management quality score, as assessed by the TPI. We also plan to ratchet this up in following years*." **[B**, p. 13**]**

TPI data therefore helps USS both to understand and push for improvements in its investees' performance. In turn, this also helps USS to manage the risk that low-performing investees present and thereby to potentially improve financial returns for its members.

TPI is also an official data-provider to the **Climate Action 100+ Initiative**, launched in December 2017 at the One Planet Summit and targeting the highest emitting companies globally. Signed by more than 450 investors with more than USD39 trillion in assets under management, the Initiative has targeted 160 of the world's highest-emitting corporations to improve their management of climate change and reduce their carbon footprint. Climate Action 100+ uses TPI data to monitor the progress of the corporations it targets, to engage those corporations on specific management practices and actions they are not taking but should be taking, and to measure whether the initiative itself is making a difference. The first Climate Action 100+ progress report, informed by TPI research, was published in late 2019. It found that 9% of the 161 target companies now have Paris-aligned targets **[A]**.

Informing shareholder voting
TPI data, including the Carbon Performance Indicator and Management Quality Scores, have been used by major shareholders to inform the way they vote on company policies. This has, for example, helped to drive down emissions in the auto industry via the use of TPI by **international asset management firm, Robeco**. Robeco manages assets of EUR146 billion, with EUR131 billion in ESG-integrated assets. They use TPI data to inform extensive engagement on climate change with the companies of which they are shareholders. In 2019, analysts in Robeco's Active Ownership team voted at a record 5,926 shareholders meetings and had 229 companies under engagement. Robeco has particularly contributed to the development of the engagement strategy with European automakers under the Institutional Investors Group on Climate Change and Climate Action 100+. TPI data is critical in these engagements. Robeco's Engagement Specialist explains:

"*With so much conflicting information out there, one of the benefits of using TPI assessments is the consistency of data. By tracking the same indicators each year, using the same scenario assumptions, we can see real change over time - or identify where it's not happening*." **[B**, p. 5**]**

Robeco's engagements, in collaboration with other investors under the Climate Action 100+ initiative, have already yielded positive results, with two European carmakers setting time-bound net-zero emissions targets. Robeco is also beginning to use TPI Management Quality scores in its voting policy and in 2020 will begin voting against certain board proposals at companies with a low Management Quality score **[B**, p. 5**]**.

Supporting the development of more new tools to drive the low-carbon transition
As well as being an important resource in its own right, TPI is also being used to support the development of additional tools promoting the "orderly transition" to a low-carbon economy. The **Church of England Pensions Board**, working with FTSE Russell, has used TPI data in its development of a new climate investment index intended to actively drive change. This, the FTSE TPI Climate Transition Index, was launched in January 2020 with an allocation of GBP600 million from the Church of England (CoE) Pensions Board, which manages approximately USD3.7 billion of assets. TPI data is used to make this the first global index to embed forward-looking carbon performance **[B**, p. 15**]**.

The index investment fund is designed specifically to reward those companies with public targets aligned to the Paris Agreement, whilst significantly underweighting or excluding those that do not. In the oil and gas sector, for example, the Index includes Shell and Repsol which, according to the TPI tool, had (at the time of writing) aligned their emission reductions plans with a Paris pathway. ExxonMobil, Chevron, and BP, by contrast, are all excluded, though they would be allowed to join the Index if they subsequently set Paris-aligned targets. A month after the launch of the Index, BP announced that it will strive to join Shell and Repsol by working to reach net zero by 2050.

At its launch, the Archbishop of Canterbury commented that the Index "*demonstrates that it is possible to act, to take leadership and in doing so challenge the market*" **[C]**. It also shows that a third generation of climate indexes, genuinely able to drive climate action, is now possible. The CoE Pensions Board has issued an open invitation for other pension funds to consider this approach. Its own investment portfolio has been significantly improved by its use of the Index, reducing its overall carbon intensity by 49%. The Index methodology has resulted in improvements in its portfolio in relation to climate-relevant metrics, including: an increase of 35% in exposure to green revenues; a reduction of 69% in exposure to fossil fuel reserves; and a reduction of 36% in exposure to operational CO_2 **[C]**.

LSE research is essential to TPI. In 2018, TPI won the "Finance for the Future Award" in the category "Driving Change Through Education, Training and Academia". According to the judges' citation: "*The Grantham Research Institute is central to the Transition Pathway Initiative, enabling investors to make climate-competent decisions using academically rigorous data via a clearly accessible and open-source tool"* **[D]**.

5. Sources to corroborate the impact (indicative maximum of ten references)

[A] Environmental Finance, "ESG Assessment Tool of the Year: Transition Pathway Initiative (TPI)", 30 June 2020. Also references use of TPI in the Climate Action 100+ progress report.

[B] Transition Pathway Initiative (2020), "Case studies from global investors on how TPI data is being used to enhance their investment decision-making".

[C] Church of England, "Church of England Pension Board invests £600 million in global new stock index backing the Paris Climate Agreement", press release, 30 January 2020.

[D] Institute of Chartered Accountants in England and Wales, "Capital winners in Finance for the Future awards", November 2018. The Finance for the Future Awards celebrate financial leadership and innovation in business, public, and not-for-profit sectors.