TRANSITION FINANCE HOW-TO GUIDE SERIES

How To Map the Transition Footprint of a Company

RMI

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Introduction

Transition plans and other transition-relevant data disclosures have become increasingly commonplace. However, decision-useful analyses of this data and use cases within financial institutions (FIs) are still being explored and iterated upon. Corporate transition assessments are one process by which FIs can distill the swathe of transition data into usable insights.

As outlined in RMI's report *Creating Transition Intelligence*,[1] effective transition assessments require going beyond high-level disclosures of emissions and targets, instead focusing on a deeper asset-level analysis of transition strategy, risks, and opportunities. A foundational step in this transition assessment process is transition footprint mapping.

Transition footprint mapping is the process of assessing a company's assets, activities, and geographic operations to understand where its business is most exposed to the energy transition and the potential risks and opportunities of this exposure that warrant further evaluation. This must be a granular, asset-level process because even companies in the same sector and region can face different risks and opportunities based on their unique circumstances. This process helps FIs to answer questions such as:

- Where are a company's emissions concentrated in its corporate structure? Which assets are responsible for the greatest share?
- How long will carbon-intensive assets be operational? Does that conflict with policy ambitions in the jurisdictions where the company operates?
- Is a company investing in new carbon-intensive assets, locking its business into long-term emissions and transition risk?

Transition footprint mapping further provides the critical inputs for other elements of a detailed and robust transition assessment such as investment alignment,[2] technology and market feasibility, and policy alignment.

Scope of this guide

This guide provides practical, step-by-step guidance for FIs on how to conduct transition footprint mapping for corporations across sectors and geographies. It is intended to help FIs integrate asset-level analysis into their corporate transition assessment processes, thereby enhancing their ability to generate granular, decision-useful transition intelligence.

The steps covered in this guide are:

Throughout the guide, an example application of each step is provided for a fictional Southeast Asian power producer.

Who this guide is for

This guide is written for banks, asset managers, insurers, and development FIs who assess counterparties' transition readiness or integrate climate considerations into financial decision-making. It is most relevant to sustainability, risk, strategy, and sector coverage teams, as well as those developing or implementing transition finance frameworks and assessment tools.

As with transition assessments broadly, effective application of transition footprint mapping requires cross-functional collaboration. Although sustainability teams may lead on methodology and data interpretation, credit, risk, and front-office teams play critical roles in applying results to client engagement, portfolio analysis, and capital allocation. This guidance may also support regulators, data providers, and civil society organizations performing transition assessments and promoting consistency in transition finance practices.

STEP 1

Assess Double Materiality

Double materiality refers to evaluating both the financial materiality of assets to the company and how the company's own operations and activities affect the environment through emissions, resource use, or other ecological effects. The focus of this guide is emissions impact, but other sustainability indicators could also be included.

Putting this into practice starts with identifying core business activities by gathering data on revenue and profit streams, production segments, and emissions sources. It is useful to classify these activities in sectoral and technological categories because this enables more direct comparison across firms, as well as comparison with sectoral transition pathways. This information can typically be found in company disclosures or through direct engagement with the company. If not, it could be obtained from third-party data sources, which also have the advantage of centralizing and standardizing financial and transition data so that this assessment process can be scaled across a portfolio.

Once this data is collated, a double materiality assessment is conducted to prioritize areas of focus:

Financial Materiality

Analyze revenue and profit composition across activities and sectors, and their trends over time to identify key business drivers and how the company's value model is evolving.

Transition Materiality

Collect emissions data across Scopes 1, 2, and 3 by business line to identify which activities account for the largest share of the emissions footprint and how this has changed historically. Where emissions data may be lacking, review company activities to identify high-energy and high-carbon activities such as fossil fuel power or heat generation.

In many cases, financial and transition materiality will overlap, with the most emissions-intensive business activities also driving a significant share of revenue. However, there may also be cases where the most material business activities from a transition perspective are not as financially material. This does not stop the assessment process, but may change the engagement model with such a company. For example, this reduces the risk profile of the company with respect to the transition, but it could still be an area for engagement to support meeting institutional climate targets.

The output of this step is an identification of the company's most material business activities that both drive financial performance and contribute most significantly to transition-related risks and impacts. This narrows the focus of the remaining analysis to the most transition-relevant business lines to reduce the data and resource requirements.

Example

In this example, which will carry through each step of this guide, a fictional Southeast Asian independent power producer (IPP), GenCo, is being assessed. This starts with the double materiality assessment of step 1.

Financial Materiality	Transition Materiality
• Power generation accounts for 100% of revenue because this is an IPP that does not operate transmission or distribution assets. • Coal and gas generation accounts for 95% of revenue, with renewables making up the remaining small, but expanding, portion. • The fossil fuel assets have long-term power purchase agreements (PPAs), which ensure guaranteed returns, providing financial stability but anchoring fossil dependence.	• In 2024, Scope 1 emissions were 7.0 million tons of carbon dioxide equivalent ($MtCO_2e$) (91% from coal, 9% from natural gas), Scope 2 were negligible, and Scope 3 emissions were 0.87 $MtCO_2e$, originating mainly from upstream coal mining and gas extraction.

This is a simple case where the most financially and environmentally material assets are the fossil fuel generation assets, particularly coal generation assets, and the company does not have other business lines to consider for materiality.

STEP 2

Gather Asset-Level Data

Following the double materiality assessment, which identifies the most relevant business activities, the next step is to map the physical asset base for these activities in detail and link each asset to its geographic and policy context. This should include consolidating data on all transition-relevant assets currently in operation, as well as projects in the investment pipeline.

Key features to capture for each asset include:

Key features of asset data to capture

- **Asset name, location, and equity ownership share**
- **Emissions and/or emissions intensity**
- **Production volume**
- **Technology/fuel type**
- **Expected/recorded start dates**
- **Retirement date**
- **Planned retrofits for existing assets**
- **Contractual or policy constraints**

This data can be obtained from a number of sources:

- Direct engagement with corporations

- Company disclosures (e.g., sustainability reports, transition plans, financial statements, or project-level documentation)
- Public databases (e.g., Global Energy Monitor [GEM], International Energy Agency [IEA], International Renewable Energy Agency [IRENA], or sector-specific open datasets)
- Commercial providers (e.g., S&P Capital IQ, BloombergNEF)
- Third-party or regulatory filings (e.g., permitting databases, environmental impact assessments, or national registries)

The output of this step is a consolidated dataset of all current and planned assets, with ownership and technology detail, operation and retirement dates, and location.

Example

GenCo's assets are mapped using a public database (note the data in this example is fictional), which provides capacity, technology, age, and location (see Exhibit 1). All assets are 100% owned by GenCo.

Exhibit 1 **GenCo's assets**

Asset	Country	Generation Technology	Capacity (MW)	Commissioned Year	PPA Expiry
Coal Plant A	Indonesia	Coal (supercritical)	600	2015	2042
Coal Plant B	Indonesia	Coal (subcritical)	400	1995	2027
Gas Plant A	Malaysia	Natural gas combined cycle	300	2010	2030
Solar Plant A	Vietnam	Solar photovoltaic	120	2022	2040
Wind Farm A	Vietnam	Onshore wind	80	2023	2043

RMI graphic. Source: RMI analysis

STEP 3

Calculate Company Metrics

With the asset-level data, expected retrofit and retirement timelines can be identified. This requires compiling available data on technical, contractual, and policy factors that determine when assets are likely to be retired or retrofitted. This includes:

1. **Company-reported timelines:** Announced retirement or retrofit schedules from corporate disclosures, sustainability reports, or transition plans.

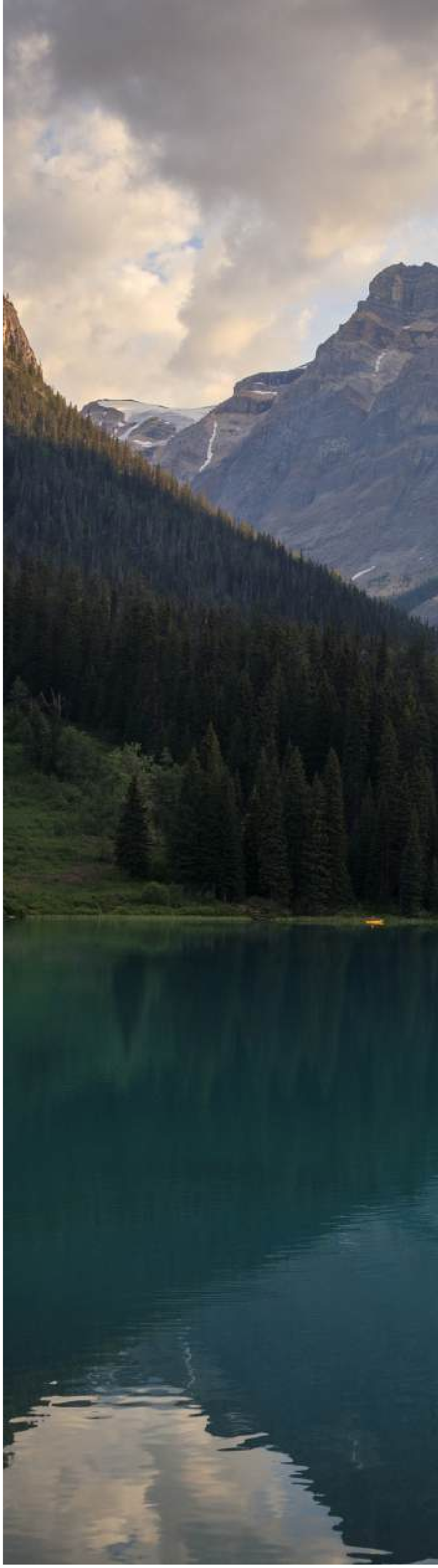
2. **Technical cycles:** Industrial assets may have predictable retirement or refurbishment timelines, such as blast furnace relining for steelmaking plants, which is performed approximately every 20 years.[3] Estimates can also be made based on the average technical life for similar assets operating in the same region.

3. **Contractual structures:** Long-term offtake agreements such as PPAs can constrain retirement options because firms wish to maximize their profitability.

4. **Policy drivers:** Coal phase-out targets, carbon pricing, and other decarbonization policies can establish deadlines that are either binding or incentivized. This also overlaps with the next step on identifying transition pathways.

Cross-referencing multiple data sources reduces the risk of relying on optimistic or outdated assumptions.

The output of this step is a comprehensive view of each existing asset's expected retrofit and retirement schedule.



Example

For each asset, PPA length and retirement data from the asset database are combined with knowledge of the typical technical life of these technologies and relevant policy targets for coal generation (see Exhibit 2).

Exhibit 2 **GenCo's assets' retirement details**

Asset	Retirement/Retrofit Details
Coal Plant A	Most recently added fossil-based asset. Technical life extends to 2055, but its PPA ends in 2042. Indonesia has a conditional coal phase-out target of 2040 with Just Energy Transition Partnership (JETP) support, and an unconditional phase-out target of 2050.
Coal Plant B	Nearing its end of life, with retirement expected by 2030. Its most recent PPA has just been given a short-term extension but will expire in 2027.
Gas Plant A	The PPA expires in 2030 but the technical life extends to the early 2040s.
Solar Plant A	Recently added asset, with a technical life until the late 2040s. PPA runs to 2040.
Wind Farm A	Most recently commissioned asset, with PPA running to 2043, and a 20–25-year technical lifespan. Turbine upgrades as well as a 100-megawatt expansion to the farm have been announced, ensuring continued operation.

RMI Graphic. Source: Centre for Research on Energy and Clean Air and RMI analysis

STEP 4

Choose Appropriate Benchmarks

Steps 1 to 3 outline the data-gathering process necessary for transition footprint mapping and transition assessments broadly. The next step is to select benchmarks derived from suitable transition pathways for evaluating the carbon lock-in and transition risk of existing and pipeline assets.

RMI's report *Leveraging Transition Pathways* lays out a process for selecting and interpreting pathways to derive usable benchmarks for transition assessments.[4] RMI has also developed a transition pathway repository that is intended to serve as a reference for standardized information and benchmarks from all the pathways available for a given sector and region.[5] As of this writing, the repository's coverage is limited to the power sector in Southeast Asia, but this coverage will be expanded to other sectors and regions in 2026.

For transition footprint mapping, the most relevant pathways would be any that the company has used to set its targets, Nationally Determined Contributions (NDCs) for the relevant countries of operation, regional policy-driven pathways, cost-driven technology pathways, or pathways used for portfolio steering and benchmarking within the FI (these are often high-ambition but low-granularity global pathways for global FIs). In each case, the sunset dates for high-carbon technologies should be extracted from the pathway if available to enable analysis of carbon lock-in in the next step.

Benchmarks can also come from peer companies operating in the same region, or from aggregated market data for the whole region. Collecting similar retrofit and retirement data as in step 3 for peer companies or the whole market in a given region can reveal whether the company being assessed is moving ahead of or behind competitors with respect to the energy transition.

The output of this step is a range of technology sunset dates for the company's most carbon-intensive assets on the basis of different transition pathways and market data.

Example

GenCo's fossil fuel assets operate in Indonesia and Malaysia. The coal and climate policies of these jurisdictions will be the most material to GenCo's business. Their renewable assets operate in Vietnam. This makes Vietnam's policy environment less relevant to transition risk, but still worth reviewing from the perspective of deploying more renewable assets. The policies highlighted here come from these countries' NDCs and power development plans (PDPs). Note some overlap with step 3 because phase-out targets were also a policy driver of retirement (see Exhibit 3).

Exhibit 3 **Policy goals relevant to GenCo's fossil fuel assets**

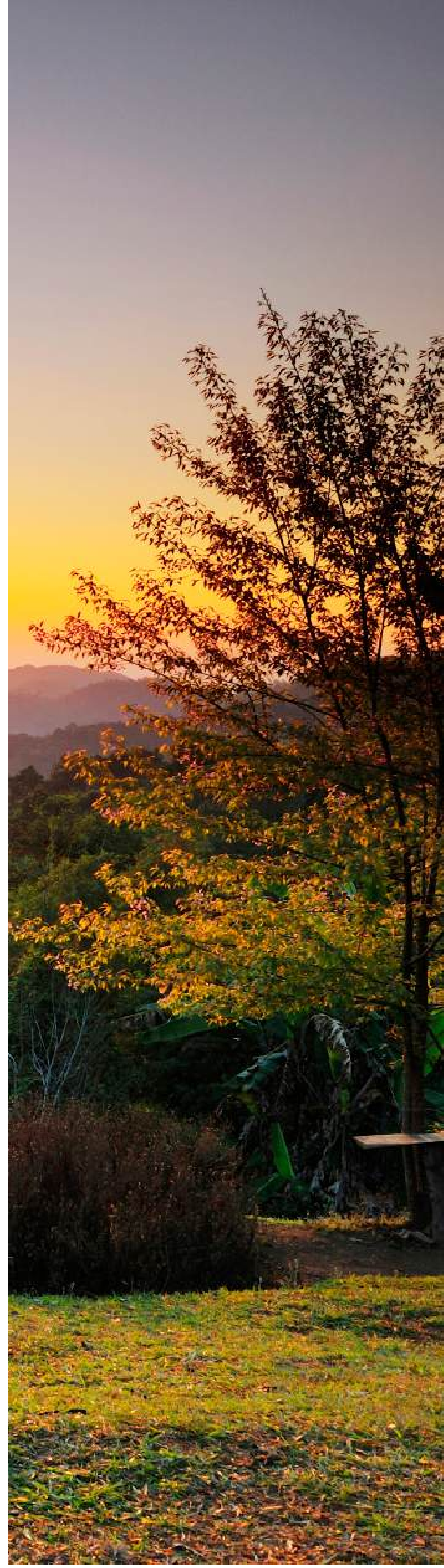
Policy Goal	Indonesia	Malaysia	Vietnam
Coal phase-out target	2050 (unconditional) 2040 (with JETP support)	2044	2050
Net-zero target	2060	2050	2050
Renewables share target in PDP	40%–45% of capacity by 2035	40% of capacity by 2035	28%–36% of capacity by 2030

RMI Graphic. Source: Centre for Research on Energy and Clean Air, Malaysia Ministry of Economy, KPMG

These policy benchmarks will be the most relevant from a transition risk perspective, but there are others that could provide additional information:

- Peer comparison with other IPPs in these jurisdictions — do they have similar asset bases of a similar age? In lieu of individual peers, the average age and PPA expiry dates of coal assets across the region could also be used. This would indicate how unique GenCo's position in the market is, or if other IPPs and utilities are facing similar challenges to align with policy objectives.
- The IEA Announced Pledges Scenario provides a Southeast Asia region-specific power scenario based on meeting NDC objectives. This scenario is aligned with a 1.7°C temperature outcome and could be used as a higher ambition benchmark to assess alignment with portfolio-level targets.

STEP 5
Evaluate Transition Exposure



The technology timelines of interest from the last step can now be used to benchmark the company's own asset timelines to identify areas of concern. Interpretation of this comparison will depend on which benchmarks are used. Exhibit 4 summarizes how comparison with different benchmarks could be interpreted.

Exhibit 4 **Benchmark sources and their interpretation**

Benchmark source	Interpretation
Pathways used to set company targets	This indicates whether the company is well positioned to deliver on its targets given its planned operation of high-intensity assets, and whether it is genuinely aligned with the level of ambition suggested by its targets.
NDCs or policy-driven pathways	This provides a measure of policy risk if the company plans to operate high-carbon assets beyond dates that would conflict with policy objectives.
Technology roadmaps	Depending on the assumptions in the specific pathway, this can indicate when different technologies are expected to become cost-competitive, highlighting potential transition risk in cases where high-carbon assets lose profitability compared with low-carbon alternatives.
Portfolio-level target pathways	This indicates how the company will contribute to meeting portfolio targets.
Peers and market averages	Peer comparison can also be an indicator of transition risk, where laggards are exposed to shifting trends and may not be well positioned to take advantage of market and/or policy changes in response to the transition.

RMI Graphic. Source: RMI analysis

In each case, the findings could serve as a topic for engagement with the company to identify how it is intending to address any identified transition risks. This can further drive exploration of options for early retirement of high-emissions assets where needed to mitigate risk, align with climate targets, and take advantage of emerging trends toward low-carbon alternatives.

This analysis is particularly relevant for high-emissions technologies in the investment pipeline, where there is still an opportunity to pivot to low-carbon alternatives and prevent long-term transition risk exposure. In this case, pathways can also be explored for what low-carbon alternatives are available and the rate at which these will scale under different scenarios.

Example

Comparison between retirement timelines and the coal phase-out targets and net-zero targets has already been previewed in step 3. It is further explored here for each of the fossil fuel generation assets (see Exhibit 5).

Exhibit 5 **GenCo's asset benchmarks**

Asset	Relevant Benchmark	Implications for Asset
Coal Plant A	Indonesia's 2040/2050 coal phase-out target and 2060 net-zero target	Technical life extends to 2055, but this conflicts with the coal phase-out targets. Given Indonesia's phase-out targets, the PPA is unlikely to be renewed. This could also be a candidate for early retirement with JETP support to meet the 2040 target. Further shifts in national policy could drive retrofits or early closure well before its operational limit.
Coal Plant B	Indonesia's 2040/2050 coal phase-out target and 2060 net-zero target	This plant will retire well in advance of the phase-out target, at the end of this asset's technical life. GenCo will need to decide whether and how to replace this capacity given that Indonesia and Malaysia both have moratoriums on new coal projects.
Gas Plant A	Malaysia's 2050 net-zero target	The technical life extends to the early 2040s, signaling retirement before the net-zero target. However, renewing the PPA beyond 2030 will depend on cost-competitiveness as renewables enter the market in Southeast Asia.

RMI Graphic. Source: RMI analysis

The key takeaways from this analysis are:

- The potential for early retirement of Coal Plant A with JETP support to align with a 2040 phase-out target.
- The risk to revenues as Gas Plant A's PPA expires and it has to compete with low-cost renewables on the grid.
- The risk of further investments in fossil fuel generation that would lock in emissions for decades and are likely to conflict with net-zero targets.

This analysis also reveals opportunities for GenCo. The national renewables capacity targets present an opportunity to take advantage of potential policy support for these targets to deploy additional renewables because GenCo already has experience constructing and operating these assets. Additionally, the role of Gas Plant A, and any new natural gas generation assets, on the grid may shift to supporting grid flexibility for renewables deployment, rather than serving as base capacity. To minimize transition risk and support the deployment of more renewables projects, Gas Plant A and any other gas plants in the project pipeline should be designed (in terms of both technology and contract terms) to support this application.

Looking Ahead

This guide outlined how FIs can apply transition footprint mapping to gather transition-relevant data and develop an understanding of a company's exposure to transition risk. This kind of analysis requires asset-level granularity to evaluate specific technologies and retirement timelines, looking beyond company-level targets and Scope 1, 2, and 3 disclosures.

Transition footprint mapping is not an isolated exercise. The asset-level data and insights developed through this process form the analytical foundation for other components of transition assessments, including investment alignment,[6] technology and market feasibility, and policy alignment. Together, these elements enable FIs to move from basic analyses geared purely to disclosure, toward forward-looking, decision-useful intelligence that can inform risk management, corporate engagement, and business development.

Implementing these results across these use cases will require coordination across sustainability, credit, risk, and front-office teams, as well as investments in data infrastructure and analytical capacity. As FIs refine their methodologies, collaboration with external data providers, policymakers, and civil society organizations will be critical to improving data availability, comparability, and transparency.

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Disclosures

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About RMI

Endnotes

1 Nicholas Halterman, Lizzy Harnett, and Estefanía Marchán, *Creating Transition Intelligence*, RMI, August 2025, **https://rmi.org/insight/creating-transition-intelligence-enhancing-corporate-transition-assessments-for-financial-decision-making/**.

2 Hannah Barton and Thomas White, *How to Assess the Alignment of Corporate Investment Pipelines*, RMI, December 2025, **http://rmi.org/insight/how-to-assess-the-alignment-of-corporate-investment-pipelines**.

3 Maeve Masterson et al., *Reline or Revitalize: The Narrowing Window to Modernize the US Steel Industry*, RMI, January 2025, **https://rmi.org/reline-or-revitalize-the-narrowing-window-to-modernize-the-us-steel-industry/**.

4 Nicholas Halterman et al., *Leveraging Transition Pathways: How financial institutions can use pathways to inform transition intelligence*, RMI, September 2025, **https://rmi.org/insight/leveraging-transition-pathways/**.

5 "Transition Pathway Repository," RMI, last modified December 2025, **https://pathways.rmi.org**.

6 Barton, *How to Assess the Alignment of Corporate Investment Pipelines*, 2025.

Aubrey McKinnon, Hannah Barton, and Thomas White, *How to Map the Transition Footprint of a Company*, RMI, December 2025, **https://rmi.org/insight/how-to-map-the-transition-footprint-of-a-company**.

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