



WORKING PAPER:

Managed Coal Phaseout: Metrics and Targets for Financial Institutions

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Acknowledgments and Disclaimer

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About RMI

RMI is an independent nonprofit founded in 1982 that transforms global energy systems through market-driven solutions to align with a 1.5°C future and secure a clean, prosperous, zero-carbon future for all. We work in the world’s most critical geographies and engage businesses, policymakers, communities, and NGOs to identify and scale energy system interventions that will cut greenhouse gas emissions at least 50 percent by 2030. RMI has offices in Basalt and Boulder, Colorado; New York City; Oakland, California; Washington, D.C.; and Beijing.

EXECUTIVE SUMMARY

To achieve the Paris Climate Agreement's goals, coal power generation assets must retire early. Financing the accelerated managed phaseout of high-emitting assets is essential to reducing global emissions and is emerging as a key strategy for financial institutions (FIs) to support the real-economy transition to net zero.

Current approaches to measuring and tracking the climate impacts of financing activities, however, fall short of supporting such managed phaseout strategies. Many climate-related policies FIs have adopted are rooted in reducing financed emissions or reducing exposure to high-emitting sectors such as coal power generation, which can incentivize FIs to divest or withdraw finance from the coal power sector, an action with little proven influence to drive emissions reductions in the real economy.

In our working paper, we elaborate on how new and supplementary approaches to measure, set targets, and disclose progress on managed coal phaseout financing can remove barriers and even incentivize and accelerate FI involvement. Because FI portfolios, exposure, and counterparty types vary, instead of a single metric, we propose a menu of options for approaches that are not mutually exclusive and could work in tandem with existing metrics and target-setting methodologies:

- **Phaseout Plan Coverage:** Tracks the share of an FI's coal assets/clients covered by a credible managed phaseout plan
- **Financed Emissions for Phaseout:** Calculates the financed emissions associated with managed phaseout financing as a separate sub-portfolio, sets additional targets for the sub-portfolio, and provides detailed disclosure on any changes in the sub-portfolio
- **Phaseout Alignment Mapping:** Assesses the degree of 1.5°C alignment of coal assets/clients and tracks the share of an FI's coal assets that are aligned, not aligned but still contributing to decarbonization, or neither aligned nor contributing
- **Phaseout Impact Assessment:** Measures impact, such as through expected emissions savings from early retirement

These proposed metrics have been designed to empower FIs to play a bigger role in accelerating the managed phaseout of coal and to communicate how this is a key net-zero financing strategy that supports real-economy greenhouse gas emissions reductions. We urge FIs to take active steps to integrate managed phaseout into their net-zero transition planning, target setting, and reporting.

We acknowledge the field is emerging and requires development of clearer guardrails and standards. To accelerate the adoption and effectiveness of managed phaseout, we encourage financial-sector practitioners and standard setters to continue working toward refining, expanding on, and standardizing these approaches.

Managed coal phaseout presents a unique climate-aligned investment opportunity for FIs. Using this paper together with RMI's *Financing Mechanisms to Accelerate Managed Coal Power Phaseout* (2023) and *Guidelines for Financing a Credible Coal Transition* (2022) papers, private FIs now have the tools to take the critical first steps on managed coal phaseout.

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Introduction

Managed Phaseout: A Critical Part of Financial Institution Net-Zero Strategies

For financial institutions (FIs), alignment to net zero means more financing of clean industries, but also financing to support the decarbonization of the current stock of high-emitting assets such as coal power generation. Financing for accelerated managed phaseout is essential to reducing global emissions and is one of the four net-zero financing strategies the Glasgow Financial Alliance for Net Zero (GFANZ) highlights for how FIs can support the real-economy transition.¹ In its report released in June 2022, *The Managed Phaseout of High-emitting Assets*, GFANZ describes managed phaseout as a net-zero-aligned approach for the operation and financing of high-emitting assets with clear commitments to retire early.¹

GFANZ aims to support FIs as they establish their own transition plans to effectively engage with their clients, investees, and other stakeholders to facilitate the early retirement of existing high-emitting assets and thereby achieve credible and timely emissions reductions in the real economy. Currently, approaches to measuring and tracking the climate impacts of the financial sector fall short of supporting managed phaseout. In its report *Financial Institution Net-zero Transition Plans*, GFANZ categorized metrics to track progress toward net zero around (1) real-economy transition, (2) financed emissions reductions, and (3) net-zero transition plan implementation (see Exhibit 1).²

Exhibit 1

Managed Phaseout and Key Metrics Support FI Net-Zero Transition Plans

| Metrics that support the implementation of FI Net-Zero transition plans | |
|---|---|
| ▶ Real-Economy Transition | Monitor progress in directing capital to real-economy net-zero transition activities |
| ▶ Portfolio Emissions | Monitor financed emissions reductions with transparency on the link to real-economy emission reductions |
| ▶ Plan Execution | Monitor transition plan implementation across organization |

Source: Adapted from GFANZ's [Financial Institution Net-zero Transition Plans](#)

In this working paper, RMI's Center for Climate-Aligned Finance (the Center) proposes specific metrics for the managed phaseout of coal power generation (hereafter referred to as *managed phaseout* unless otherwise specified) that fall primarily in the first two categories, with an emphasis on supporting real-economy emissions reductions. To date, FIs have mainly set climate-related targets to reduce their own financed emissions (related to the second category) and/or have put targets or policies in place to reduce exposure to high-carbon sectors such as coal power generation. For instance, more than 340 FIs have committed to measure and disclose financed

¹ GFANZ's *Financial Institution Net-zero Transition Plans – Fundamentals, Recommendations, and Guidance* (2022, <https://assets.bbhub.io/company/sites/63/2022/09/Recommendations-and-Guidance-on-Financial-Institution-Net-zero-Transition-Plans-November-2022.pdf>) outlines four key net-zero financing strategies: (1) Climate solutions: Financing or enabling entities and activities that develop and scale climate solutions; (2) Aligned: Financing or enabling entities that are already aligned to a 1.5°C pathway; (3) Aligning: Financing or enabling entities committed to transitioning in line with 1.5°C-aligned pathways; and (4) Managed phaseout: Financing or enabling the accelerated managed phaseout (e.g., via early retirement) of high-emitting physical assets.

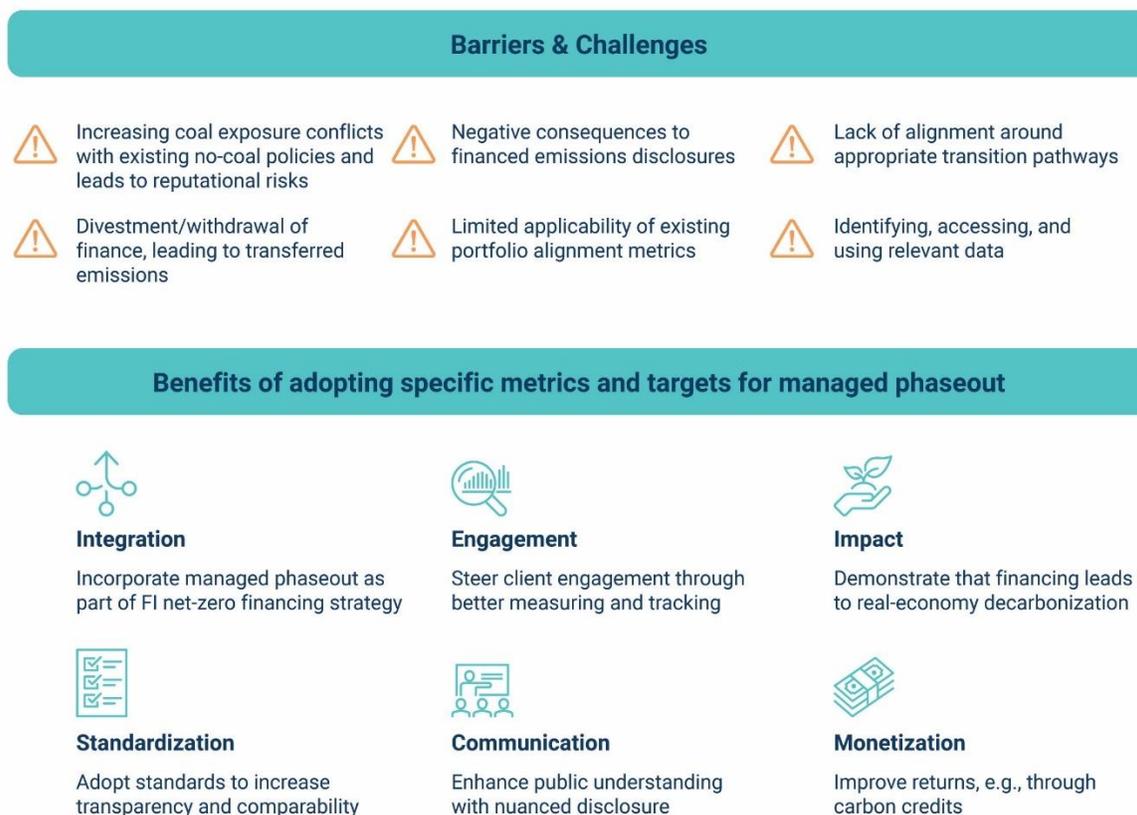
emissions through the Partnership for Carbon Accounting Financials (PCAF) standard and use this as a base to set targets and inform actions.³

Measuring progress in this way can create incentives for FIs to divest or withdraw finance from, for example, coal power assets and entities operating coal power assets. Unfortunately, this action may have unintended consequences including potentially limited impact to drive emissions reductions in the real economy due to emissions leakage as alternative capital sources step in.⁴

Because very few FIs currently disclose to what extent their portfolio emissions or other climate metrics reflect real-world emissions reductions,⁵ portfolio decarbonization may be merely virtual. Furthermore, this approach may lead to stalled progress in reducing emissions and even lead to an increase. For example, as noted in a recent study from the Environmental Defense Fund (EDF),⁶ divesting assets to parties with reduced environmental commitments can enable assets to continue to pollute, and emissions are merely transferred instead of eliminated. The absence of target setting that reflects the phaseout of high-emitting activity can be a barrier to financing meaningful managed phaseout activities. Additional key barriers that improved guidance around financial metrics and targets can help address are found in Exhibit 2.

Exhibit 2

Specific Metrics and Targets for Managed Phaseout Are Designed to Address Barriers



Source: RMI, 2023

To address these challenges, the Center is proposing specific approaches that FIs can adopt to measure, track, and set targets for their managed phaseout financing activities. This will help FIs to better integrate managed phaseout into their net-zero financing strategies while enabling more meaningful and better-informed engagement. Through specific, fit-for-purpose metrics, FIs can demonstrate whether their coal power financing leads to real-economy decarbonization, and clearer guardrails and standards around measurement approaches can help ensure comparability, accountability, and transparency across the financial sector. Additionally, measuring progress and establishing industry standards for calculating emissions savings associated with the early retirement of coal power assets could have the added benefit of supporting the economics of coal phaseout plans; for instance, through the creation of carbon credits.⁷

Approach

The Center's work builds on GFANZ's June 2022 report, *The Managed Phaseout of High-emitting Assets*, action (a), "forward-looking metrics and targets tailored to managed phaseout plans."⁸ We additionally draw from RMI's market-leading technoeconomic expertise at the forefront of developing insights on how to accelerate coal phaseout (see RMI reports *How To Retire Early* and *Financing the Coal Transition*⁹) as well as a track record of working across public- and private-sector stakeholders, including in the financial industry. Our proposed approaches here complement the Center's working paper on private FIs' role in using available coal phaseout financing mechanisms.¹⁰

We have supplemented our own research with bilateral engagement with more than 30 practitioners, including sustainability and sector experts from several FIs and various actors involved in developing sustainability target-setting, metrics, and accounting methodologies and standards. Stakeholder feedback has been incorporated into the guidance to ensure high-level ambitions meet real-world needs for accountability, alignment with global industry decarbonization objectives, and practical applicability to investment decision-making.

This working paper focuses on coal power generation, but elements of the proposed recommendations and new approaches to managed phaseout-focused metrics and targets may apply to other high-emitting assets in other sectors.

Overview of Proposed Approaches to Metrics and Targets for Managed Phaseout

The following proposed approaches to metrics and targets are designed to support and better enable FIs to implement managed phaseout strategies. These approaches are not mutually exclusive, but instead can build on each other and work in tandem with existing approaches. Driven by the need to phase out coal assets rapidly, most of our proposed approaches to metrics focus on tracking real-economy transition and financing of decarbonization, and one of our approaches specifically aims to address issues related to portfolio financed emissions.

Our framework begins with the assessment of managed phaseout plans for coal power-sector portfolios, which requires granular and even asset-level data, and presupposes that FIs are able to distinguish between assets, clients, or investees that have phaseout plans that would result in demonstrable decarbonization impacts and those that would not.

Determining which coal assets and/or entities have credible managed phaseout plans serves as a useful starting point for our first approach to constructing more decision-useful, granular metrics at the FI level to measure FI participation in managed phaseout.

- **Approach 1: Phaseout Plan Coverage** — *Measures which coal assets or clients (either those currently within an FI's portfolio or those that may be newly acquired or financed by an FI) are associated with a credible managed phaseout plan.*

Beyond assessing whether assets or clients are covered by phaseout plans, FIs can evaluate the assets or clients where the FI's financing directly supports managed phaseout and quantify and monitor the financed emissions of what has been separated from wider coal power portfolios.

- **Approach 2: Financed Emissions for Phaseout** — *Complements existing financed emissions-based approaches by (1) carving out managed phaseout assets from broader power or other relevant sector portfolios and measuring and disclosing associated financed emissions separately alongside an explanation of managed phaseout inclusion criteria, (2) setting a separate/additional decarbonization target for the subsegment based on applicable coal retirement pathways to measure and track progress with added nuance, and (3) transparently disclosing what has driven any emissions changes in the managed phaseout sub-portfolio over time.*

To add more rigor to either of the above approaches, FIs can further assess to what extent coal assets or clients are aligned with 1.5°C pathways by layering an additional approach onto the others.

- **Approach 3: Phaseout Alignment Mapping** — *Measures whether coal assets, based on their planned retirement date, or clients with coal assets are either aligned with a 1.5°C pathway, not aligned but contributing to real-economy decarbonization due to early retirement, or neither aligned nor contributing.*

FIs may additionally benefit from estimating and reporting the forward-looking impacts of accelerated early retirement, such as future emissions savings.

- **Approach 4: Phaseout Impact Assessment** — *Focuses on measuring the forward-looking impacts of early coal asset retirement by calculating unrealized future emissions savings, avoided fossil fuel generation, or capacity reductions driven by the early retirement of the coal assets. Furthermore, this approach can enable the structuring of meaningful incentives for managed phaseout outcomes, including the potential monetization of carbon credits.*

Exhibit 3

Proposed Approaches to Metrics and Targets for Managed Phaseout

| Approach | 1 Phaseout Plan Coverage | 2 Financed Emissions for Phaseout | 3 Phaseout Alignment Mapping | 4 Phaseout Impact Assessment |
|-------------|--|--|---|--|
| Key Enabler | Assess Phaseout Plan | Estimate Financed Emissions | Assess 1.5°C Alignment | Estimate Emissions Savings |
| Metrics | Share of coal assets with a managed phaseout plan | Financed emissions related to eligible coal phaseout assets | Share of 1.5°C-aligned coal assets | Forward-looking impact of managed phaseout (e.g., emissions savings) |
| Targets | Increase the share of coal assets with a managed phaseout plan | Separate decarbonization targets for eligible coal phaseout assets | Increase the share of 1.5°C-aligned coal assets | Define minimum emissions savings to be achieved |

Source: RMI, 2023

These approaches (summarized in Exhibit 3) vary in terms of applicability, feasibility, and complexity. FIs may find some approaches and metrics better suited than others to address their unique requirements and near-term opportunities to use existing or new financing to support the managed phaseout of coal.

Most approaches require access and analysis of granular, asset-level data, which may include greenhouse gas (GHG) emissions, power plant generation volumes and capacity, historical and expected operational patterns (baseload versus peak), geographical location, role in the wider power system/grid, market characteristics (regulated versus unregulated), ownership, and planned operational lifetime, among others.

Developing benchmarks for managed phaseout-specific metrics requires certain fundamental building blocks or enablers and capabilities, including being able to assess managed phaseout plan credibility, estimating or linking to existing financed emissions inventories, selecting 1.5°C-aligned climate scenarios and coal pathways and assessing alignment, and estimating future emissions savings (see Exhibit 3). For some of the assessments, FIs and/or asset owners may benefit from or be obliged to use third-party service providers for data, assessment, or verification (e.g., carbon credits from emissions savings).

FIs' exposure to coal assets comes in different forms (see Exhibit 4), which impacts the applicability of the above metrics. Banks and investors (debt and equity) have different types of exposure and use various financial instruments to finance power generation companies at corporate or asset levels. For instance, banks involved in corporate lending may apply the metrics to track clients, and, in the case of project finance or asset-level lending, to track individual assets. Institutional investors and asset owners may apply the metrics to track investees. Metrics can be applied to existing exposure or to evaluation of new opportunities.

The structure of the counterparty also has an impact on metric selection and suitability, because measuring the impact of financing for a diversified utility may be more complex than for a company with an all-coal fleet. Another dimension to consider is whether FIs are exposed to coal assets and clients through primary markets where they provide additional or new financing to the entities (e.g., through an issuance of a transition bond or extension of a sustainability-linked loan) or through secondary markets where they purchase securities that are already issued (e.g., shares in an existing managed transition vehicle) that does not extend new financing.

For each of the proposed approaches in the following section, we comment on the suitability and adaptability of the proposed metric depending on the particular FI use case – whether the use of proceeds is known (e.g., transition bond where proceeds are earmarked to finance decommissioning activities) or unknown (sustainability-linked loan extended to a diversified utility) – and counterparty type.

Exhibit 4
Use Cases and Types of Financing

| Source of Financing | | Use of Proceeds | Type of Financing | Counterparties | |
|------------------------------|-----------------|-----------------|--|---|--|
| Corporate Finance | Listed Equity | Unknown | Unknown use of proceeds (General corporate purposes funding) |  Utility Inc. | |
| | Private Equity | Unknown | | | |
| | Corporate Bonds | Unknown | | | |
| | | Known | | | |
| | Loans | Unknown | Known use of proceeds |  Coal Utilities Co. | |
| | | Known | | | |
| Capital Markets Facilitation | Unknown | | | | |
| | Known | | | | |
| Project Finance | Equity | Known | | |  Coal Plant Co. |
| | Loans | Known | | | |

Source: Adapted from PCAF, [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#), second edition, 2022

Below, we cover each proposed approach in more detail, including what existing challenges the metric aims to solve, an overview of the concept, proposed metrics and targets (including units), methodology considerations, applicability across FIs, and illustrative examples of use cases. We also outline identified benefits, disadvantages, and uncertainties.

In Depth: Proposed Approaches to Metrics and Targets

Phaseout Plan Coverage

Problem statement and rationale: FIs need to distinguish between existing or potential new financing for coal assets that have a credible managed phaseout plan in place versus those that do not. By doing so, they can ensure their financing, advisory services, and engagement resources and efforts are contributing to real-economy decarbonization and communicate this externally.

Concept: This binary approach tracks which power-sector clients or assets have a credible managed phaseout plan in place for their coal-related business and assets. It can also measure the amount of financing provided for assets with and without a plan.

Suggested metrics:

- Percentage of coal power generation portfolio (measured either by number of assets/clients, or weighted by output or capacity) with a credible managed phaseout plan
- Dollar amount of financing provided and/or facilitated for coal power generation portfolios with and without a credible managed phaseout plan (in instances where it can be determined that the financing is provided explicitly for managed phaseout activities)

Potential targets:

- Increased percentage of coal power generation portfolio with a credible managed phaseout plan up to XX% by year YYYY (e.g., 85% coverage by 2025, 100% by 2030)
- Set a deadline by which time all financing extended or facilitated for coal power generation is only provided to assets or clients with credible managed phaseout plans

Example:

| | Baseline 2021 | | FY 2022 (actual) | | Target 2025 |
|---------|---|--|---|---|---|
| Metrics | % of portfolio covered by managed phaseout plan | Financing provided to managed phaseout portfolios (million \$) | % of portfolio covered by managed phaseout plan | Financing provided to managed phaseout portfolio (million \$) | % of portfolio covered by managed phaseout plan |
| | 50% | 105 | 60% | 155 | 85% |

Methodology considerations:

- **Defining coal assets/clients:** To calculate the above proposed metrics, FIs would need to determine what they designate as a coal asset or client. For coal-only assets (a single coal power plant) or coal-only utilities (coal-only fleet) this is straightforward, whereas for more diversified power generation companies FIs would need to determine an appropriate threshold based on, for example, percentage of revenues from coal power generation.
- **Explanation of changes:** To increase transparency and rigor with this approach, we recommend disclosing the number of assets/clients with and without a credible phaseout plan each year to enable visibility as to whether an increase in the plan coverage percentage metric might be because the FI has

divested assets with no plan, or because clients have actually adopted a credible plan to retire assets early, or because the FI has provided new financing to an asset with a credible phaseout plan.

- **Metric selection and expansion:** Coal power generation assets may vary in size and capacity. Hence, the number of assets or clients with a phaseout plan or amount of financing provided to them may not be as decision-useful in terms of climate impact. Instead, FIs can consider incorporating capacity, production volume, or other elements to provide granularity and weight adjustments to the portion of a portfolio with phaseout plan coverage, although this would add complexity to this approach.
- **Assessment of managed phaseout plans:** FIs should assess the credibility and eligibility of managed phaseout plans with rigor and, ideally, against externally verified and recognized criteria, although there are no fully standardized criteria for guaranteeing a phaseout plan is credible. In principle, assessments should be based on the level of ambition and early retirement time lines, and at minimum the phaseout planned should have a positive climate impact, result in demonstrable emissions savings, and support an entity's and the power sector's overall alignment with 1.5°C (or well below 2.0°C) goals.

Asset-level phaseout plans: Asset-level phaseout plans can be laid out explicitly within wider asset owner/operator transition plans and climate commitments. At minimum, asset-specific phaseout plans should indicate a planned time frame for retirement and any factors that may alter that time frame. GFANZ's *The Managed Phaseout of High-emitting Assets* report elaborated on expectations for disclosure and features for managed phaseout plans that can serve as a useful introduction to what elements FIs should consider when assessing phaseout plans.

One example of emerging work in this field is a project conducted by a partnership between RMI, Climate Bonds Initiative (CBI), and Climate Policy Initiative (CPI) to develop criteria and guidelines to assess the climate and social credibility of financial transactions that aim to accelerate the managed phaseout of coal-fired power plants.¹¹ These guidelines for financing a credible coal transition include the assessment of transition pathway credibility and whether a transaction results in emissions savings, mitigates the risk that intended climate outcomes are not achieved, and aims to protect workers, communities, and other stakeholders from the possible negative impacts of the coal-to-clean transition.

A credibility assessment should also take into account additional just transition considerations such as local socioeconomical, political, and cultural factors. Further work is needed to establish consensus on standardized criteria, build tools to assess the credibility of managed phaseout plans, and clarify how to translate asset- or transaction-level plans back up to the entity level. Externally verified criteria to analyze the credibility and measure the progress of such plans would add rigor to this process.

Entity-level transition plans: When considering the credibility of multi-asset utilities with company-level climate targets and transition plans, FIs should look for the company to embed and clarify its plant-level phaseout plans in those commitments. Transition plans can further demonstrate credibility by clearly supporting and outlining the capital expenditure needs related to coal phaseout against a disclosed transition pathway and time line. Several tools are available that aim to generally assess company-level climate targets and transition, including those developed by Assessing Low Carbon Transition, Climate Action 100+ (CA100+), and Transition Pathway Initiative that, although they do not necessarily focus on managed phaseout, could be used as proxies and starting point.¹² Also, some FIs have developed bespoke methodologies to assess company-level transition plan credibility, combining both quantitative and qualitative assessments using in-house and third-party methodologies.¹³

Applicability:

| <ul style="list-style-type: none"> • Broadly applicable to all asset classes, types of financing, and counterparties • Requires FIs to define eligible coal assets or clients, which is relatively straightforward for coal-only assets/ utilities • Defining eligible coal assets or clients is potentially more complex for diversified utilities • Determining appropriate attribution of general corporate financing provided where use of proceeds is unknown to managed phaseout activities may be challenging | Use of Proceeds | | Counterparties | | |
|--|---|---|--|---|---|
| | Known | Unknown |  Utility Inc. |  Coal Utilities Co. |  Coal Plant Co. |
| |  |  |  |  |  |

| Pros (+) | Cons (-) |
|---|--|
| Relatively simple to use and implement | Does not necessarily distinguish whether managed phaseout plan is aligned with 1.5°C pathway |
| Can be applied across FIs and asset classes | Impact of the financing provided to assets with a plan is unclear (e.g., decarbonization, emissions savings) |
| | Criteria to assess the viability and credibility of phaseout plans lacks consensus |
| | Potential differences exist between entity-level transition plans (which may include asset phaseout) and credible asset-level phaseout plans |

Financed Emissions for Phaseout

Problem statement and rationale: Financed emissions-based decarbonization targets adopted by FIs may disincentivize FIs from financing managed phaseout transactions because this would lead to a near-term increase in financed emissions (until the asset being financed is retired). This can lead to potential reputational issues because voluntary target setting has been followed by pressure to show a clear downward trajectory, as well as the risk of not meeting sectoral interim targets.

Given that financed emissions have gained traction and are being demanded by stakeholders such as shareholders and civil society groups, FIs can consider breaking down financed emissions and carving out eligible phaseout assets into a separate bucket with a more nuanced explanation of the sub-portfolio’s contents, goals, and targets. This would help FIs to (1) demonstrate their progress against tailored targets, (2) set more granular targets for assets planned for phaseout, and (3) not be penalized for having or taking on high-carbon assets (and their associated financed emissions) on their balance sheet as long as a credible phaseout plan is in place and the FI’s involvement is actively enabling the implementation of such a plan.

Concept:

- **Step 1 – Calculate financed emissions associated with managed phaseout assets/clients:** Similar to the first approach, coal power assets or clients should be separated from other sector assets. Such assets should be limited to those where FI support is explicitly being provided to accelerate their retirement.

Associated financed emissions (absolute or intensity) would be calculated and disclosed alongside an explanation of the FI’s managed phaseout sub-portfolio strategy and goals.

- **Step 2 — Set separate targets:** Once the managed phaseout sub-portfolio has been identified, a separate financed emissions target would be set to bring absolute emissions or intensity down by a specific time line, with any new financing for coal phaseout being accounted for by adjusting the sub-portfolio’s baseline and explaining that new managed phaseout-designated assets were included.
- **Step 3 — Explain the changes:** To increase transparency about what has driven changes in the managed phaseout sub-portfolio, FIs can evaluate and disclose to what extent changes in portfolio emissions have been driven by (1) shifts in portfolio composition and (2) real-economy decarbonization.

Suggested metrics:

- Absolute financed emissions (million tons [Mt] CO₂e) of managed phaseout sub-portfolio
- Emissions intensity (kg CO₂e/megawatt-hour [MWh]) of managed phaseout sub-portfolio

Potential targets:

- Absolute financed emissions percentage reduction target from baseline by year YYYY (based on planned retirement time lines for the assets)
- Emissions intensity of managed phaseout sub-portfolio target down to XX kg CO₂e/MWh from baseline by year YYYY

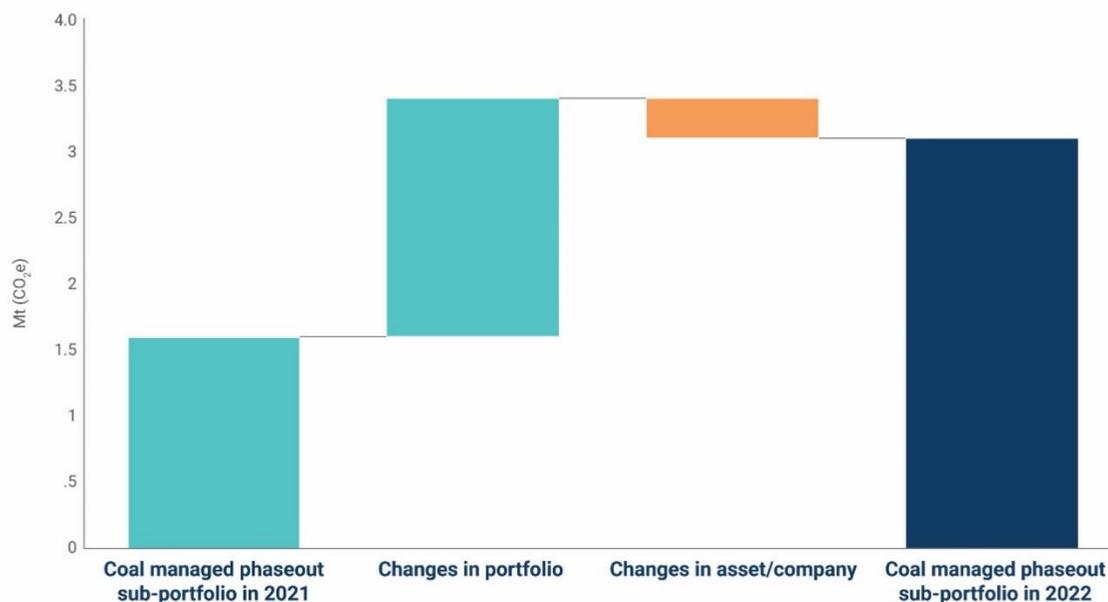
Example:

In this illustrative example, an FI has carved out financed emissions related to coal managed phaseout assets to a separate sub-portfolio and set separate decarbonization targets for those assets. Since 2021, the FI has added an additional coal client to its portfolio. That client has a plan in place to completely phase out coal by 2025, and the FI is directly supporting that early retirement through managed phaseout financing, leading to an increase in the FI’s absolute financed emissions and emissions intensity in FY2022 reporting.

| Financed emissions | Baseline 2021 | | FY 2022 (actuals) | | Target 2025 | | Target 2030 | |
|---|----------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------------|
| | Mt CO ₂ e | kg CO ₂ e/MWh | Mt CO ₂ e | kg CO ₂ e/MWh | Mt CO ₂ e | kg CO ₂ e/MWh | Mt CO ₂ e | kg CO ₂ e/MWh |
| Power-sector portfolio | 4.5 | 351 | 6.0 | 402 | 3.6 | 301 | 2.0 | 125 |
| Power-sector portfolio (excluding managed phaseout) | 2.9 | 290 | 2.9 | 290 | 2.0 | 125 | 2.0 | 125 |
| Coal managed phaseout sub-portfolio | 1.6 | 1015 | 3.1 | 1072 | 1.6 | 1015 | 0.0 | 0 |

Exhibit 5

Enhanced Disclosure



Source: RMI, 2023

At the end of FY2022, the FI will disclose a nuanced narrative explaining that, although it appears its near-term absolute and intensity emissions spike upward, as showcased in Exhibit 5, this spike is mostly driven by changes in portfolio by providing managed phaseout financing for a coal client to facilitate the early retirement of a coal asset balanced with emissions reductions at the company/asset level. As such, the FI can still expect to achieve its longer-term targets.

Methodology considerations:

- **Sub-portfolio financed emissions:** Carved-out financed emissions should not be subtracted from the FI's overall financed emissions reporting, such as through PCAF, to maintain compliance with existing, standardized methodologies, but instead should be additionally reported alongside overall and power-sector emissions. In calculating financed emissions, attribution would need to be incorporated as per the PCAF standard. We recommend disclosing both absolute and emissions intensity values.
- **Scope of sub-portfolio assets and financing:** Most investors and lenders are exposed to coal power generation via entity-level general corporate purpose financing (versus directly held/financed assets). However, to make this approach credible, impact oriented, and implementable, only those assets where an FI has provided (or facilitated) financing explicitly to support the managed phaseout or where financing is structured to effectively incentivize early retirement, for instance through robust key performance indicators (KPIs) and terms and conditions (e.g., covenants) tied to early retirement, should be included in scope. Furthermore, attribution of coal power-related financed emissions associated with general corporate purposes (i.e., with unknown use of proceeds) where financing is provided to diversified utilities would be complex and require guardrails to mitigate perceived risks of greenwashing.

- **Target setting:** Tracking the decarbonization of and setting separate targets for the coal phaseout sub-portfolio require using climate scenarios and net-zero models that provide specific pathways for the coal power generation sector and, if possible, also regional granularity (e.g., International Energy Agency Net-Zero Emissions [IEA NZE] and University of Technology Sydney One Earth Climate Model [UTS OECM]). Applying this approach to complement existing power-sector metrics and targets may require FIs to use the same design judgments, criteria, and assumptions they have already adopted. This could include the use and selection of a specific benchmark scenario, defining the scope of emissions included, using the same sources for data and attribution factors, among others.
- **Explaining the changes:** As encouraged by GFANZ, FIs should also consider developing metrics to monitor the progress of changes in portfolio composition.¹⁴ By transparently disclosing the changes, FIs could further increase transparency related to the climate performance of their portfolios by assessing and disclosing whether changes in managed phaseout sub-portfolio emissions are (1) driven by shifts in portfolio composition, that is, whether portfolio changes are caused by withdrawal of finance, divestments, or portfolio reallocations; or (2) due to investee company improvements and emissions reductions at the asset or company level.

As explained by 2° Investing Initiative in its recent report, company-level changes can be broken down into whether changes are caused by (1) the company divesting coal plants (which may continue to emit under new ownership) or (2) closing down coal plants (where emissions reductions occur in the real world). The Paris Agreement Capital Transition Assessment (PACTA) is working on implementing a Tracking Asset-level Changes approach into the PACTA tool and methodology, starting with the power sector, with a goal of moving toward integrating this across the entire PACTA approach.¹⁵

- **Re-baselining:** In addition to enhanced disclosure, baselines and targets may need to be adjusted to account for any major changes in size (through selling or acquiring) of the carved-out managed phaseout sub-portfolio or due to unexpected, such as major geopolitical, events. Otherwise, the target would be at risk of disincentivizing the financing of coal phaseout or incentivizing divestment or withdrawal of such finance. Such baseline adjustments should also be transparently disclosed.

Applicability:

| <ul style="list-style-type: none"> • Most applicable to those assets or clients where an FI has provided or facilitated financing explicitly to support managed phaseout • Can also be applied to assets or clients where general financing is structured to effectively incentivize early retirement, but would require robust KPIs • Not as recommended to be used for general corporate purpose financing (unknown use of proceeds), especially for diversified utilities, due to complications with attribution | Use of Proceeds | | Counterparties | | |
|--|---|---|--|---|---|
| | Known | Unknown |  Utility Inc. |  Coal Utilities Co. |  Coal Plant Co. |
| |  |  |  |  |  |

| Pros (+) | Cons (-) |
|--|---|
| Complements already existing financed emissions-based approaches | Effective sub-portfolio target setting requires the use of granular pathways and data related to the useful/economic life, coal-pathway-determined retirement point, and credibility of a managed phaseout plan, which can make this approach more challenging especially given limitations on consistent, quality data |
| Relatively simple to embed into existing processes | Financed emissions approaches in general lack the ability to communicate forward-looking impact. Although the carved-out sub-portfolio would include assets or clients with forward-looking plans, the reporting of an FI on actual financed emissions will need to be accompanied by a clear narrative to explain the story not adequately captured by the financed emissions metric |
| Simple to illustrate and understand | Because this approach uses annually reported financed emissions, there is a time lag to measure and report progress (e.g., a plant might be closed down, but the FI still reports financed emissions that year). |

Phaseout Alignment Mapping

Problem statement and rationale: FIs need to understand and demonstrate which of, and to what extent, their coal assets or clients are aligned with 1.5°C pathways. Some assets or clients may not be 1.5°C aligned, but still contribute to real-economy decarbonization. Mapping to an alignment scale could help FIs see how their assets are expected to contribute to real-economy decarbonization and guide FIs on their engagement efforts to areas with the most potential and support needed.

Concept: Measure to what extent coal power assets or power-sector clients with exposure to coal power generation are (1) credibly aligned with a 1.5°C pathway, (2) not aligned but contributing to real-economy decarbonization due to early retirement, or (3) neither aligned nor contributing as per below, with alignment ideally assessed on a regionalized or country-specific basis. This approach can be overlaid on the first two approaches to add rigor and ambition.

Alignment of coal assets or coal client entities can be divided into three categories as per the degree of alignment to 1.5°C and contribution to real-economy decarbonization:

1. **Aligned:** Planned retirement of coal assets is set to come before or at the asset-specific coal-pathway-determined 1.5°C-aligned retirement point, or a client with exposure to coal power generation assets is, as a whole entity, 1.5°C aligned.
2. **Not aligned but contributing to real-economy decarbonization:** Planned retirement of a coal asset comes after the 1.5°C-aligned coal-pathway-determined retirement point, but before the economic life of the asset, or a client with exposure to coal power generation is not fully 1.5°C aligned but contributes to decarbonization via early retirement of its coal assets.
3. **Not aligned and not contributing:** Planned retirement expected well after 1.5°C-aligned coal-pathway-determined retirement point; retirement time unknown or expected at the end of the economic life of the asset, or client entity, as a whole, is not 1.5°C aligned.

Suggested metrics:

- Percentage of coal power generation portfolio (measured either by number of assets/clients, or weighted by output or capacity) in each of the three categories
- The degree of misalignment of assets within the unaligned categories expressed in years
- Dollar amount of financing extended or facilitated for coal power generation portfolios for each category
- Financed emissions (absolute or intensity) associated with each category

Potential targets:

- Share of aligned clients and assets increased and share of not aligned and not contributing assets decreased by a certain time
- Reduction of degree of misalignment of assets within the unaligned categories expressed in years
- Set a deadline by which time all financing extended or facilitated for coal power generation is only provided to assets or clients in the aligned category
- Reduction of financed emissions within the unaligned categories (absolute or intensity)

Example:

In this illustrative example, during FY2022, an FI has acquired an additional coal asset (Coal 1) that has a plan in place to completely phase out coal by 2025.

Step 1: Track metrics internally for assets

| Asset | Expected economic retirement year | 1.5°C-aligned retirement year | Phaseout plan | Planned phaseout year | Alignment category | Degree of misalignment (years) |
|--------------|--|--------------------------------------|----------------------|------------------------------|------------------------------|---------------------------------------|
| Coal 1 | 2040 | 2025 | Yes | 2025 | Aligned | Aligned |
| Coal 2 | 2045 | 2027 | Yes | 2030 | Not aligned but contributing | 3 |
| Coal 3 | 2045 | 2030 | No | n/a | Not aligned not contributing | 15 |

Step 2: Aggregate metrics

| Metric(s) | Baseline 2021 | | | FY 2022 (actual) | | | Target 2025 | | |
|------------------------------|---------------|-----------------------|----------------------|------------------|-----------------------|----------------------|-------------|-----------------------|----------------------|
| | % of assets | \$ financing provided | misalignment (years) | % of assets | \$ financing provided | misalignment (years) | % of assets | \$ financing provided | misalignment (years) |
| Aligned | 0% | 0 | n/a | 20% | 50 | n/a | 40% | 125 | 0 |
| Not aligned but contributing | 50% | 60 | 2.6 | 40% | 60 | 2.6 | 40% | 75 | <3 |
| Not aligned not contributing | 50% | 100 | 16.0 | 40% | 100 | 16.0 | 20% | 25 | <5 |

Methodology considerations:

- Asset/entity/portfolio level:** The alignment assessment considerations below focus mostly on assessing asset-level alignment to decarbonization pathways. For a diversified utility, we acknowledge that not every asset is or needs to be 1.5°C aligned if the entity as a whole is aligned. As such, for diversified utilities with coal power generation, FIs can assess whether the entity as a whole is 1.5°C aligned using either asset-based approaches (as described below) or entity-level transition plan assessment tools like those mentioned in approach 1’s methodology considerations. Although portfolio alignment tools for managed phaseout are still nascent, FIs could also use this approach to assess and disclose the overall 1.5°C alignment of their coal power portfolio.
- Alignment assessment:** This approach requires the selection of an appropriate climate pathway and coal phaseout scenario against which to benchmark individual assets and their expected retirement dates to see if they are 1.5°C aligned or not. The urgency to phase out unabated coal is widely recognized in various climate scenarios. The IEA Net Zero Emissions by 2050 (NZE) scenario calls for a 55% cut by 2030, reducing unabated coal generation in emerging markets and developing economies by 45% by 2030, and full phaseout of unabated coal by 2040.¹⁶ We recommend using climate scenarios and net-zero models that provide specific pathways for the coal power generation sector and, if possible, also regional granularity (e.g., IEA NZE and UTS OECM).

Applying industry-wide pathways with regional nuances to individual coal assets (with a lack of asset-level data), which have their own technoeconomic lifespans often going beyond coal net-zero time lines, is challenging. One example of work in this field that could potentially be replicated and scaled in other markets is the plant-by-plant coal retirement pathways in Indonesia developed by the Center for Global Sustainability at the University of Maryland. This was done by translating national net-zero pathways to coal retirement schedules and assessing technical (age, size, and combustion technology), economic (profitability), and environmental performance (CO₂ emissions, local air quality, health impact, and water security) of individual plants to develop a retirement priority ranking to guide decision-making.¹⁷ An additional example is work being done by the Carbon Tracker Initiative to determine plant-by-plant retirement time frames globally.

As a useful proxy and starting point, FIs can use various capital allocation Paris alignment assessments. PACTA, for instance, bases its assessments on planned capital expenditures and production capacity relative to a range of climate change scenario pathways for the sector.¹⁸ Alternatively, Carbon Tracker Initiative has developed asset-level retirement schedules for coal- and gas-fired power generation

capacity and new planned additional carbon-emitting assets in a range of climate change scenarios as a basis for such assessments as part of the CA100+ Net Zero Company Benchmark.¹⁹

Carbon Tracker models coal- and gas-fired power generation phaseout, taking into account the relative economics, age, technology, and efficiency of each unit. By applying various regional power demand scenarios out to 2050, it assesses the alignment of each generation unit to various climate change scenarios and provides indicators. Carbon Tracker is currently working on bringing further granularity to asset-level economics by incorporating energy systems and just transition modeling and is additionally incorporating circularity into its phaseout scenarios.

- Metric selection:** The degree of misalignment in years for an asset can be calculated as the difference between the asset-specific coal-pathway-determined retirement year and the planned phaseout year. In the case that there is no planned time line for phaseout, one could use the expected useful or economic life instead as a proxy. An aggregate degree of misalignment in years for each bucket can be calculated as a weighted average (e.g., using financing, emissions, capacity). In our illustrative example above, the aggregate degree of misalignment in years is weighted by financing. The metric of years of misalignment does not easily apply for diversified utilities, and, as a simplified metric, it does not take into account size or other factors.

Applicability:

| <ul style="list-style-type: none"> • This approach could be applied across FIs and asset classes and could be used on top of Financed Emissions for Phaseout or to add nuance to Phaseout Plan Coverage • Potential challenges in applying to multi-asset utilities due to difficulties in measuring alignment of individual coal assets as a part of a coal-only utility or more diversified utility • Potential complications in attributing finance provided when use of proceeds is unknown, especially for diversified utilities, across different buckets | Use of Proceeds | | Counterparties | | |
|--|---|---|---|--|--|
| | Known | Unknown |  Utility Inc. |  Coal Utilities Co. |  Coal Plant Co. |
| |  |  |  |  |  |

| Pros (+) | Cons (-) |
|---|---|
| Can be applied across FIs and asset classes | Criteria to assess the viability and credibility of transition and phaseout plans lack consensus. |
| Simple to illustrate and understand | Granular pathways are needed and various assumptions must be made with imperfect data, including assessment of the useful or economic life, to come up with an asset-specific retirement point. |
| Using proxy assessments can be helpful starting point | Readily available information on asset-specific retirement benchmarks is limited. |

Phaseout Impact Assessment

Problem statement and rationale: To recognize the decarbonization impact from coal phaseout even when emissions reductions are realized in the future, forward-looking metrics and targets can be used to assess the positive climate impacts of early retirement and incentivize FIs to finance such assets and transactions. Moreover, a forward-looking approach can help address challenges related to financed emissions-based metrics, which provide a backward-looking view and do not facilitate an understanding of the transition pathway that assets or companies need to follow.

Concept: Estimate positive climate impacts driven by early retirement based on, for example, future emissions savings, reduced coal-fired generation capacity, or reduced coal powered generation.

Suggested metrics:

- Cumulative CO₂e emissions savings that are expected to materialize due to early retirement
- Generation reduction: MWhs of annual coal power generation reduced driven by early retirement enabled by financing from an FI
- Capacity reduction: Megawatts (MWs) of coal power capacity reduced driven by early retirement enabled by financing from an FI
- Years that retirement time line has been accelerated

Potential targets:

- We note that a target-setting approach for emissions savings or other metrics above may be complex and heavily context related. In principle, emissions savings being greater than zero could be sufficient because this would demonstrate real-economy decarbonization and applying a higher emissions savings threshold might exclude some transactions that would deliver environmental, health, social, or power-sector co-benefits, which may be a priority to wider stakeholder communities.

Example:

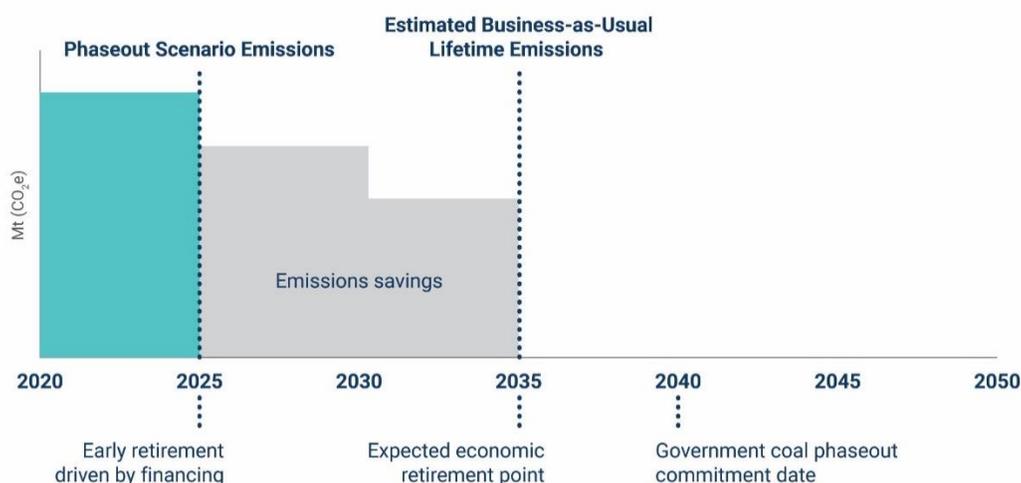
Our illustrative and simplified example and following considerations focus on the emissions savings concept. In our example, an FI is considering financing the early retirement of a coal plant using the following assumptions related to estimating annual emissions and retirement time lines.

| Annual emissions (Mt CO ₂ e) | Timelines | | Lifetime emissions (Mt CO ₂ e) and Attribution | | |
|--|-----------|--|---|---|----|
| Based on expected power generation 2022-26 | 4.5 | Planned phaseout year | 2025 | Expected business-as-usual lifetime emissions | 51 |
| Based on expected power generation 2027-31 | 3.6 | Government coal phaseout commitment date | 2040 | Expected Phaseout Scenario emissions | 18 |
| Based on expected power generation 2032-35 | 2.7 | Estimated economic retirement year | 2035 | Expected lifetime emissions savings | 33 |
| | | Early retirement in years | 10 | % of financing provided by FI | 50 |
| | | | | FI share of expected lifetime emission savings (Mt CO ₂ e) | 17 |

The FI, having financed 50% of the managed phaseout transaction, estimates it has supported expected CO₂e emissions savings for 10 years (see Exhibit 6), 2.7–4.5 Mt CO₂e per year, taking into account expected decreases in generation due to expected declining capacity factors (in 2027 and 2032), totaling 33 Mt of CO₂e emissions savings, that is, 17 MT CO₂e attributed to the FI's financing. This can also be measured with respect to the amount of financing provided (note: emissions savings calculated would not offset financed emissions).

Exhibit 6

Emissions Savings from Coal Early Retirement



Source: RMI, 2023

Methodology considerations: We acknowledge that estimating future emissions savings driven by the expected early retirement of a coal asset can be challenging in the absence of a standardized methodology. Key elements to consider include:

- Establishing baseline:** For any emissions savings calculations, selecting and establishing a proper baseline or business-as-usual (BAU) scenario is crucial. Calculating a baseline for coal early retirement is not without challenges because a robust and decision-useful assessment would require both granular, asset-level data as well as analysis of system-level factors over an extended time line. At the coal plant level, this would include expected generation capacity (which does not result in a one-to-one link to emissions reductions), associated emissions footprint and emissions factors, technical age, typical operating patterns, and load factors. At the energy system level, this would require analysis of system-wide considerations, including the plant's role within the wider electricity grid system and relative cost competitiveness. To improve the robustness of the assessment, a percentage of the likelihood of retirement by certain time lines and probability of other expected events could also be incorporated into this calculation.
- Retirement time lines:** To add rigor to this approach, avoid overestimating expected emissions savings, and ensure the approach incentivizes early retirement that sufficiently contributes to global climate goals, emissions savings calculations should be based on the economic retirement point of the asset instead of the technological retirement point. FIs can further disclose transparent assumptions on how the economic retirement point is determined. At minimum, emissions savings should only be calculated if the expected fair value of the asset is still positive when the accelerated retirement occurs. To ensure the phaseout sufficiently contributes to global climate goals, any planned managed phaseout should occur no later than any country-specific coal phaseout time line, proposed to be the earlier of a country's

coal phaseout commitment date or a country-specific coal phaseout date aligned with a robust 1.5C scenario.

- **Additionality and comparability:** One of the key considerations of forward-looking impact is additionality, that is, to what extent the financing an FI is extending or facilitating will accelerate the coal phaseout, or whether the plant would have closed relatively soon regardless. One way to compare the relative impact and additionality would be to calculate the CO₂e emissions savings ratio (calculated as cumulative emissions savings as a share of BAU expected emissions). A higher ratio would demonstrate larger expected relative emissions savings. This ratio could then be used to assess the impact as well as compare and prioritize assets and projects. To further improve comparability, an evolution of this approach could lead to value-based metrics, for instance, a return on carbon metric that would quantify the financial value of emissions savings to make it easier for FIs to compare the expected impact of opportunities.
- **Attribution:** Connecting impact (emissions savings) to financing adds complexity beyond calculating financed emissions. Given the forward-looking and cumulative nature of the emissions savings, attribution would need to be carefully considered. PCAF has discussed certain forward-looking ways to account for the attribution of future emissions in its *Capital Market Instruments Discussion Paper 2021*,²⁰ and the same forward-looking methodologies could potentially be applied to managed phaseout financing as well.
- **Reporting:** FIs or service providers can use this approach to estimate the *expected* impact of their financing; however, to ensure accountability, FIs can also report *realized* emissions savings annually ex post, preferably verified by a credible third-party service provider.
- **Standardization:** This concept requires robust guidelines and guardrails to properly estimate and make assumptions on the above variables to avoid unintended consequences — for instance, overestimating the potential emissions reductions or inflating the economic life of an asset — to ensure the concept incentivizes the right additional actions. Standard setters working on this field, such as the GHG Protocol, could coordinate with the financial sector to create robust guidelines for such an assessment in connection with their avoided emissions work.²¹ PCAF has also provided guidance on how to calculate and incorporate emissions reductions from renewable energy and energy efficiency projects, which could serve as a starting point to expand the methodology to early retirement-driven emissions savings as well.²² Project Frame is another example of work underway to create frameworks and tools to assess the impact of climate investments.²³
- **Net Present Climate Value:** Given the need for early ambition and that emissions are cumulative and there is a limited amount of time to reduce them, a ton of carbon saved today can have more climate impact than a ton of carbon avoided in five years' time. Therefore, emissions savings could be discounted using an appropriate discount factor to further incentivize near-term action and decarbonization. However, further work is needed to determine the basis and appropriate rate for such a discount factor (options could include but are not limited to emissions reduction rate or social cost of carbon). Emissions savings could be further utilized to quantify a Net Present Climate Value (NPCV) for the managed phaseout transaction (described below).
- **Carbon credits:** The concept of emissions savings could also provide an opportunity to create carbon credits, but further work would be needed to ensure robustness. This could result in added revenue for the managed phaseout transaction as a direct alternative to operating a coal plant — a significant potential benefit in supporting the economics of managed phaseout transactions as elaborated on in our *Financing Mechanisms to Accelerate Managed Coal Power Phaseout* working paper.²⁴

Applicability:

| <ul style="list-style-type: none"> • This approach could be applied across FIs, asset classes, and counterparties and could be used on top of the Financed Emissions for Phaseout or Phaseout Alignment Mapping approaches • Especially useful to assess new investment and lending opportunities • Potential challenges in assessing and attributing the impact of general corporate purpose financing (unknown use of proceeds) for managed phaseout-related activities | Use of Proceeds | | Counterparties | | |
|--|---|---|--|---|---|
| | Known | Unknown |  Utility Inc. |  Coal Utilities Co. |  Coal Plant Co. |
| |  |  |  |  |  |

Pros (+)

Fully forward-looking approach to quantifying the benefits and incentivizing early retirement

Same calculations could provide basis for emissions savings-driven carbon credits as potential alternative revenue source for coal plant operators

Cons (-)

No fully standardized methodology on how to properly assess future emissions savings from early retirement.

Over- or underestimating some of the assumptions could have unintended consequences, such as overestimating the potential emissions reductions in the real world, inflating the economic life of an asset, or overestimating the potential benefit from carbon credits, which could impact the risk and return dynamics.

Conclusion and Next Steps

Key Recommendations

Managed phaseout is one of four key approaches GFANZ has highlighted on how FIs can support the real-economy net-zero transition, and, when done right, it is one of the most impactful ways to decarbonize the real economy. FIs need to continue to take active steps to dramatically increase the use of managed phaseout as an integral part of their net-zero planning and target setting. With ambitious, high-level commitments and targets comes accountability. FIs can consider enhancing their metrics and targets to embed managed phaseout-specific considerations as a means to better facilitate and demonstrate FIs' contribution to real-economy decarbonization.

Although this field is rapidly emerging, it lacks standards and best practices. Therefore, we recommend financial sector professionals, industry experts, and standard setters work together to create clearer guidelines, guardrails, and criteria on what counts as a credible managed phaseout plan to reduce the risk of being perceived as greenwashing.

Areas for Continued Work

Some of the approaches to metrics and targets outlined in this paper are relatively novel, and further work is needed to improve their robustness and ensure they can be implemented across FIs.

Assessment of Managed Phaseout/Transition Plan Credibility

The ability of an FI to assess the viability of counterparty transition and managed phaseout plans is crucial. This means assessing against externally verified and recognized criteria, which, in the absence of a standardized methodology to do so along with a lack of adequate asset-level data, continues to be a challenge. Ongoing work to provide general guidance on entity-level transition plans is being done by groups including GFANZ, which has released its *Expectations for Real-economy Transition Plans*,²⁵ but today FI access to specific, consistent, decision-useful information remains difficult. As mentioned above, RMI, CBI, and CPI worked in partnership to develop guidelines to help clarify and define criteria (including just transition considerations) to assess the credibility of coal transition transactions.²⁶ FIs have additionally noted the benefits of having an external reviewer verify whether a coal phaseout transaction is credible, but to date no standardized validating entity exists.

Portfolio Alignment

Integrating managed phaseout in available portfolio alignment metrics remains a challenge. As noted by the GFANZ work stream on portfolio alignment, the asset-level nature of measuring alignment for managed phaseout activity presents several challenges for a practitioner seeking to apply the nine key judgments, or modeling choices, needed to determine a metric for the degree of associated warming with a portfolio.²⁷ In addition to the challenges in accessing granular historic and forecasted asset-level data, granular benchmark scenarios that reflect asset-level considerations such as carbon efficiency, age, and design life are also lacking. Such benchmarks for managed phaseout metrics are difficult to construct because phaseout assets tend to not have a gradual, downward trajectory before abruptly reducing capacity or closing.

Additionally, to properly consider factors ranging from regional considerations to asset-level details, pathways may need to have a high level of granularity. With limited data and lacking granular benchmarks, it is difficult to assess and measure how individual assets are aligned with sectoral pathways, and translating asset- or client-level alignment to portfolio-level alignment adds more complexity. Additionally, managed phaseout time lines, while otherwise credible and resulting in real-economy decarbonization, may not be fully in line with 1.5°C

pathways. Further work is therefore required to integrate managed phaseout into portfolio alignment metrics. GFANZ's work stream on portfolio alignment plans has listed managed phaseout as a key area for further work.²⁸

Emissions Savings, Carbon Credits, and Net Present Climate Value

Further work is needed to develop ways to properly estimate future emissions savings, including factors such as plant efficiencies, capacity factors, and shifts from baseload to peak capacity, as well as determining the appropriate economic life of an asset, including wider energy systems considerations. One potential idea to further incentivize early retirement would be to discount the future emissions savings, increasing the relative value of near-term emissions reduction and avoidance. However, determining an appropriate discount factor for future emissions remains an additional challenge. To further incentivize forward-looking approaches, it is also worth exploring whether emissions savings due to early retirement could create robust carbon credits as an alternative revenue stream to coal power generation for coal asset owners.

Attribution

Attribution of financing may be challenging given the nature of managed phaseout and potential mismatch of financing tenors versus phaseout time lines. For instance, a loan to a client may be up to three years, while the phaseout of the client's coal is planned to occur afterward. Further work may be needed to address attribution considerations related to managed phaseout approaches.

Next Steps

To further develop these approaches and begin to implement them, financial industry practitioners, alliances, and standard setters all can play a role. FIs involved in managed phaseout could begin to pilot one or multiple proposed approaches to metrics, which would likely enable the metrics to be further refined through iterative testing. FIs, alliances, and standard setters should also work together to create more robust guidelines and criteria for transition and managed phaseout plans as well as develop robust standards to assess emissions savings driven by the early retirement of high-emitting assets. Although this paper focused on coal power generation in particular, new approaches for managed phaseout-specific targets and metrics could be leveraged to broaden the coverage from coal power generation to incentivize FIs to finance managed phaseout for other high-emitting asset types and real-economy sectors as well.

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