Verra's Project-Based Methodology: Explained

About Kinetic Coalition
Kinetic Coalition connects voluntary and compliance market buyers with countries and projects that need catalytic capital to enable the clean energy transition. By investing in high-integrity energy transition credits (ETCs), buyers can cut power sector emissions in emerging economies – including those tied to their own supply chains – while supporting the shift to clean, reliable energy systems that benefit local communities.

Kinetic is committed to using only high-integrity credits that represent real, additional, and permanent emission reductions. Projects must deliver tangible climate, health, and economic benefits while preventing leakage (when emissions shift from one place to another).

To meet this standard, all ETC methodologies used by Kinetic must, at minimum, align with international benchmarks, including:

- Consistency with Article 6 of the Paris Agreement, which governs how countries can trade verified emissions reductions;
- Consistency with CORSIA (the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation); and
- Meeting the Core Carbon Principles of the Integrity Council for the Voluntary Carbon Markets (ICVCM), which defines what makes a carbon credit credible and effective.

Kinetic Coalition is reviewing a variety of methodologies for potential use, including a Verra-approved methodology that supports the early and permanent retirement of coal-fired power plants (CFPPs), replacing them with clean energy alternatives. The approach aims to accelerate the phaseout of coal while ensuring communities benefit from new energy investments. This methodology is currently under ICVCM review ("VM0052 - Accelerated Retirement of Coal-Fired Power Plants Using a Just Transition, v 1.0"). Kinetic is not yet endorsing this methodology but expects to apply it to projects conditional on ICVCM CCP approval.

This brief aims to explain the VM0052 methodology in simple, accessible terms. For more information, please visit Verra and the Coal to Clean Initiative.

Verra Methodology High-Level Summary:

1. Project Eligibility: Eligible CFPPs must:

- Be **grid-connected**, **non-merchant**, and **non-captive** plants;
- Have **long-term PPAs (≥20 years)** signed before Dec 2023 or be **regulated utilities**;
- Show **positive income** for the last 3 years and be **built before 2022**;
- Have **no new coal commitments** by both owner and, when the owner is a state-owned utility, also the host country; and
- Be located in a country with **NDC (Nationally Determined Contributions) power-sector decarbonization targets**.

Excluded from this methodology: mine-mouth, CHP, merchant, and captive plants.

2. Renewable Energy Pairing: Coal retirement must be **paired with renewable generation** to ensure real emissions cuts and avoid fossil backfill:

- **≥10% of capacity** replaced at project start;
- **≥40% of capacity** replaced by end of first crediting period.

Pairing can be **contractual**, **financial**, **on-site**, **regulatory**, or demonstrated through **integrated resource planning**.

3. Baseline Determination (Counterfactual Retirement): Projects must demonstrate **additionality** – i.e., that early retirement would not occur without credits – by assessing the earliest feasible retirement date across:

- **Technical**, **regulatory, or contractual** retirement scenarios;
- **Financially viable** retirement scenarios (NPV-based analyses) from the perspective of utilities, IPPs, or offtakers.

The **earliest feasible baseline retirement date** becomes the reference for crediting.

4. Quantifying Emissions Reductions: Emissions reductions = **Baseline – Project – Leakage**

- **Baseline:** emissions from continued coal operation, using the lower of historical, reference-plant capacity factors (updated annually), or a default declining capacity factor.
- **Project:** emissions from paired renewables.
- **Leakage:** emissions from unpaired grid generation, including upstream methane for natural gas generation

Grid emission factors are **fixed ex-ante** but **increase dynamically** if grid carbon intensity rises; they do not decrease if grid carbon intensity decreases. This is intended to ensure a conservative approach to crediting.

5. Safeguards and Just Transition: Projects must have a **Just Transition Plan** that:

- Engages with and protects workers and local communities (e.g., job loss mitigation, retraining, site remediation);
- Is fully funded, with **≥2% of net credit revenues** dedicated to implementation;
- Demonstrates **no negative impact on energy reliability or affordability** (confirmed by system operator).

6. Verification and Crediting

- **Crediting begins** once the plant is **decommissioned** and renewables meet the minimum pairing level.
- **Crediting ends** at *the earlier of:*
    - Baseline retirement date;
    - Reversal of "no new coal" commitment; or
    - There is a maximum crediting period of 21 years (7 years × 3 renewals = 21 years).
- **Third-party validation and verification** are required, and credits are listed on Verra's public registry.

Frequently Asked Questions:

What types of coal plants can utilize the methodology?

The methodology only applies to coal plants that are connected to the national electricity grid and not co-located with coal mines ("mine-mouth" plants). It also focuses only on plants in regulated electricity markets or those operating under long-term power purchase agreements – contracts that guarantee stable revenue for many years. These plants are the hardest to shut down early because they still make money and have secure financial backing, even as renewable energy becomes cheaper. That's why they often need extra financial support – such as from energy transition credits – to make early retirement possible. In simple terms, this approach targets profitable coal plants that would otherwise keep running for many years. By supporting their closure and replacement with clean energy, the credits help achieve emissions reductions that wouldn't happen without this incentive.

Why doesn't the methodology apply to other coal plant types?
The methodology currently does not apply to the following types of plants:

- *Non-grid-connected captive coal plants:* Captive power plants supply localized electricity to an end-user – typically an industrial facility or other energy-intensive commercial end-user. The methodology does not apply to off-grid captive coal plants as these plants would require a distinct approach to estimating emissions reductions.
- *Mine mouth coal plants:* Mine mouth coal plants operate close to the coal mines that supply their fuel. Because mine mouth plants are often a critical revenue source for the mine, closing a mine mouth plant can have stronger upstream impacts on mine workers and surrounding communities. As such, retirement of a mine mouth coal plant is more likely to require systemic and/or regional responses to support the economic transition of the region, which are more challenging to implement through project-level approaches.
- *Combined Heat and Power (CHP) Plants:* In addition to generating electricity, CHP plants supply heat to end-users, for example high-temperature heat for industrial processes or for heating buildings via district energy systems. The technologies and solutions for replacing CHP plants with clean alternatives are different – and typically more complex – than for coal plants supplying only electricity services. CHP plants therefore would require a different approach to estimating emissions reductions.
- *Merchant Power Plants:* Merchant plants sell electricity and electricity services into competitive markets, such as a wholesale power market. They face greater exposure to market uncertainty and competition from cheaper, cleaner alternatives. The baseline retirement date of a merchant plant is therefore sensitive to a broader range of variables that can be difficult to project (e.g., RE and battery energy storage cost declines, fuel prices, future regulation). Due to the difficulties in determining a baseline retirement date, merchant plants are not currently eligible for crediting under the CCCI methodology.

Why should coal owners be paid to retire their assets – would regulation or mandated closure be a better method to accelerate retirement?
In most developing and emerging economies, governments are not yet requiring, or even considering requiring, the early shutdown of coal plants that remain profitable and have many years of operation left. The methodology is designed to focus specifically on these plants – those who would not close without additional financial support. That is why it prioritizes coal plants owned by regulated utilities and those operating under long-term power purchase agreements. These plants are often shielded from market pressures or clean energy policies that make other coal plants less competitive, meaning they're likely to keep running unless new incentives encourage early retirement.

Additionally, resources are needed to address negative impacts for workers and communities. Transition credit projects – and transition credit revenues – aim not only to shift a plant owner's financial incentives for the most challenging coal plants, but also to proactively plan for and cover the costs of coal plant closures on workers and local communities.

Type of coal plant	**Rationale for prioritization in methodology / disincentives for early retirement**	**Why a mandated closure with no compensation is less likely to occur for these plants**	**Why market-based regulation that increases the cost of coal power is less likely to lead to the coal plant's retirement**
Coal plants owned by a	These plants typically fall under rate of return regulation, where a utility	Rate of return regulation supports utilities to remain financially sustainable and ensure their ability to make	Additional costs, for example due to carbon taxes, are often passed onto ratepayers. Regulation that

regulated utility	is allowed a regulated rate of return on its investments. This return is integrated into electricity tariffs that are approved by a regulator; where tariffs are subsidized to support energy affordability, some of these returns may be covered by additional subsidies.	investments in long-lived assets. Undercutting a utility's ability to recover its costs and realize a fair return to support future investments can lead to underinvestment in electricity infrastructure, financial insolvency of utilities, and long-term electricity reliability issues.	has required stricter pollution control technologies for coal has sometimes led to utilities investing more capital into coal plants, thereby making coal-fired power more expensive to ratepayers and extending the operational life of the coal plant in many cases.
Coal plants with PPAs	These plants have secured upfront, long-term contracts that set out the terms for the purchase of their electricity and other services. These contracts will typically stipulate price and minimum offtake volumes, which helps ensure a coal plant's returns.	PPAs are critical to mobilize private investment in long-lived power generation assets – not only for coal but also clean energy. Canceling PPAs without compensation can erode investor confidence in PPAs and negatively impact the deployment of clean generation. Canceling a PPA can also negatively impact the credit rating of an offtaker. In many markets, offtakers are state-owned utilities, where impacts to a utility's credit rating can have cascading impacts on sovereign creditworthiness.	Variable costs, such as carbon costs, can often be passed onto offtakers and their customers. In addition, because PPAs may have minimum offtake or "take-or-pay" provisions, which require offtakers to purchase a certain volume of electricity generation, raising the cost of coal generation may not effectively reduce its dispatch, and instead lead to higher costs for electricity customers.

The costs of renewables and storage are declining; how does the methodology ensure that closure and a clean energy transition would not have happened otherwise (i.e. why is this necessary and how is it additional)?

As a starting point, it's important to note that while declining costs of renewables such as solar PV and wind have made new renewable energy generation competitive with coal-fired generation in many places, retiring a coal plant often requires building replacement resources that can provide dispatchable generation and that support grid stability. Commonly, renewables paired with battery energy storage are proposed as replacement options for coal, which in many markets are not yet competitive with existing coal. Finally, costs of coal, solar/wind, and batteries vary among and even within countries. For all these reasons, existing coal plants in many places remain competitive on economic grounds. As a result, retiring them early and replacing them with dispatchable power requires additional sources of finance, such as energy transition credits.

Under the Verra methodology, when setting a baseline retirement date for a coal plant, project developers must first ask whether the plant could have closed early anyway – for example, if clean energy became so cheap that regulators or owners would have shut it down regardless of any new incentives.

For coal plants owned by regulated utilities:
Developers must examine whether the utility could use a financial tool called "accelerated depreciation" – essentially speeding up how quickly it recovers its investment in the plant. This can make it possible to retire a coal plant earlier and replace it with cheaper clean energy. However, this option usually requires regulatory approval and can be politically difficult because it may cause short term increases in electricity prices, even if it saves consumers money in the long run.

For coal plants under long-term power contracts (over 20 years):

Developers must look at whether the buyer of the electricity (known as the "offtaker") could end the contract early and instead purchase cheaper clean energy. In theory, this could make financial sense if the savings from switching outweighs the costs of breaking the contract. In practice, however, early termination is often difficult because of 1) high upfront costs for ending the contract; 2) legal restrictions that limit when termination is allowed, and 3) the risk of damaging the creditworthiness of an offtaker if they default.

In short, project developers must show that early retirement wouldn't happen without support from transition credits, and that all realistic financial and regulatory alternatives have been carefully considered.

How does the methodology support a just transition for impacted communities and workers?
The methodology includes "just transition" requirements to make sure coal plant retirement projects not only cut emissions but support the people and communities affected by the transition. This means projects must be designed to ensure that workers, local communities, and vulnerable groups are not left behind as coal plants close and clean energy takes their place. These safeguards help turn emissions reductions into broader social and economic benefits, creating a fair and equitable transition to cleaner energy future.

Key elements include:

- **Inclusive stakeholder engagement:** proponents must identify and map stakeholders, assess vulnerabilities, and maintain ongoing consultation. Processes for consensus-building and mediation are required, ensuring transparency and trust.
- **Assessments and safeguards:** projects must evaluate potential social, economic, and environmental impacts, with explicit safeguards to avoid material negative effects on energy access, affordability, or local environments (including remediation of toxic coal ash and chemicals).
- **Benefit-sharing and support measures:** minimum standards include severance packages, early retirement benefits, re-employment or reskilling opportunities, job-seeking support, and community development initiatives. These measures are designed to maintain livelihoods and social cohesion.
- **Financing commitment:** projects must dedicate at least 2% of expected net revenues from credit sales to Just Transition activities, and ensure the plan is fully funded and deliverable.
- **Implementation and accountability:** each project must prepare a detailed just transition plan, covering communication strategies, job mitigation provisions, budgeting and risk assessments, and governance structures. Implementation progress is monitored and reported.

Together, these requirements ensure that transition credit projects can act as catalysts for a fair, transparent, and adequately financed transition, aligning climate goals with social justice.

Does the methodology discourage host country governments from adopting policies to retire existing coal plants? How does it avoid the "moral hazard" problem of a perverse incentive for governments to not take action?
In addition to targeting coal plants that are least likely to close even if stronger regulation was enacted, the methodology also sets strong eligibility requirements for both governments and plant owners to ensure projects align with genuine climate ambition. To qualify for energy transition credits, a project must be located in a country whose national climate plan under the Paris Agreement (known as a Nationally Determined Contribution, or NDC) includes specific goals to cut power sector emissions and expand renewable energy, backed by a clear strategy or policy for achieving those goals.

All coal plant owners must commit to building no new coal plants. If the owner is a state-owned utility, the "no new coal" pledge must also come from the national government.

The methodology also includes a built-in incentive for countries to ensure their grids are not becoming more emissions intensive: the number of credits generated under the methodology depends in part on the grid emissions factor, or the average emissions intensity of other generation sources on the same electric grid. If

the grid emissions factor increases – for example, if the coal power is replaced with other fossil fuels – fewer credits are generated.

The methodology is designed to apply to projects and countries that are truly moving toward clean energy, not just closing a single coal plant.

How does the methodology ensure emissions reductions, and specifically that retired coal is not just replaced with other coal (or gas) generation?
As noted in the answer to question [6] above, the methodology requires asset owners (including governments in the case of state-owned utilities) to commit to no new coal, and host countries must have power sector plans and policies in place to support the grid's decarbonization over time.

Beyond these eligibility conditions, the methodology's approach to quantifying emissions reductions takes a conservative approach to estimating both baseline and leakage emissions. It would be very difficult for a project to be viable if (1) it has low shares of paired renewable energy to replace the retired coal plant's generation, and (2) it is in a market with high shares of coal or gas generation. In particular, emissions from the marginal grid generation must account for upstream methane associated with natural gas, and the methodology outlines specific cases where the project would be required to assume 100% coal as the marginal grid generation (e.g., in markets with excess coal capacity).

What does it mean to "pair" renewable energy with coal retirement?
The methodology credits projects where coal power assets are retired early and replaced with new renewable electricity generation (i.e. coal retirement "paired" with RE deployment). Projects focused just on coal retirement are therefore not eligible.

How to establish "pairing": Many countries are building out new renewable generation even in the absence of a transition credit project. The methodology aims to incentivize renewables deployment *beyond* what was already planned under business-as-usual. Consequently, renewable energy is considered "paired" with coal retirement under the one or more of the following circumstances: (1) it is built on the coal plant site and utilizes the same interconnection; (2) it utilizes a PPA that was renegotiated from a coal to an RE PPA; (3) it was enabled by a coal-to-clean financing package; (4) a regulator approves the retirement explicitly if the RE capacity is built; or (5) a regulator or system operator shows that new renewable electricity generation comes online earlier or at a greater capacity than projected in the current approved regulatory resource plan of the system operators.

Why are pairing levels set at 10% on a capacity-basis at the project start date and 40% on a capacity basis at the end of the first crediting period? Why not require 100% pairing?
Level of RE pairing: Overall the methodology creates strong incentives for a project proponent to maximize the level of RE deployed to replace coal because crediting is tied to emissions reductions, which are calculated based on the extent of replacement renewable energy. Stronger pairing levels (i.e. more replacement renewable energy) leads to greater emissions reductions, and therefore more credits generated. Less replacement renewables means fewer credits.

Our understanding is that the intension behind the current version of the methodology not requiring higher levels of RE pairing are:

- *Empowering system operator decision-making:* Higher RE pairing requirements could constrain system operators' degrees of freedom for effectively deploying resources to meet their system needs. For example:
    - Timing of RE deployment: Paired RE projects must be deployed within a project's crediting period (typically 7-10 years), which limits an operator's ability to structure a more moderate

phase-in of renewables as appropriate. Requiring rapid phase-in of (variable) RE in line with crediting timelines could lead to grid challenges.
    - Resource mix: Crediting methodologies are biased toward technologies that can more easily be monitored, reported, and verified (MRVed), like utility-scale renewables. A system operator may want to utilize alternative, less MRV-able clean resources to support system reliability after a coal plant retires (e.g., demand-side measures and resources).
- *Lowering project complexity:* Transition credit projects entail transaction costs, for example to register, validate, and MRV a project. These transaction costs can potentially delay or add complexity to RE + storage projects. As a result, it could be faster to scale overall RE + storage in a market by developing them outside of transition credit projects.

How can we be sure transition credit projects don't impact grid reliability? Renewables like solar and wind are not like-for-like substitutes for coal.
In practice, no coal retirement project can move forward without close coordination with the country's power system operator and energy regulator, the agencies responsible for keeping electricity reliable and affordable. To qualify for energy transition credits, each project must show written approval from these authorities confirming that replacing a coal plant with clean energy won't compromise grid reliability or raise electricity costs.

Often, regulators will only approve a coal plant's closure if the replacement energy mix includes not just renewables, but also battery storage (allowing the project to provide dispatchable electricity to the grid) and/or essential grid-stabilizing technologies such as synchronous condensers (devices that help balance power flower and maintain grid stability.) Revenue from transition credit can help make these technologies financially viable, especially in emerging markets and developing economies.

In other markets, coal utilization has decreased as the share of clean energy resources has increased. Since historic coal utilization may not be indicative of future utilization, how do you ensure we don't overcredit projects?
Baseline emissions – or the estimated coal plant emissions in the absence of transition credits – depend on a coal plant's assumed dispatch (or capacity factor) in the baseline scenario. Specifically, to be as conservative as possible, the coal plant's capacity factor for determining baseline emissions must be *the minimum* of:

- The plant's historical capacity factor, and
- The capacity factor of other "reference" coal plants operating in the country or, where no reference coal plants exist, the methodology assumes the capacity factor will decrease (details about this decrease are stipulated in the methodology).

This approach aims to ensure a conservative approach to quantifying baseline emissions:

- In a case where rapidly growing electricity demand increases the utilization of coal plants in a country, credits would only be generated based on the coal plant's historic utilization.
- In a case where market dynamics reduce the utilization of coal plants in a country, credits would be based on a declining utilization rate, in line with the coal plants remaining in operation.

Finally, credits are not generated based on forecasts but instead are based on parameters that are tested and confirmed (through monitoring, reporting, and verification (MRV) processes) based on actual data after a coal plant's retirement.