



Economic implications of the proposed amendments to the GHG Protocol Scope 2

EY | Energy Consulting

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■ ■ ■
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Key outputs

While the proposed GHG Protocol Scope 2 requirements aim to improve accuracy, they could deliver limited benefits while significantly slowing the energy transition...

①

Stalls electrification rather than advancing it

Stricter criteria would force companies to rebuild their electrification strategies, while fossil alternatives remain technically mature, widely available and contractually simple, contradicting the direction of electrification policies of IEA and EC.

②

Discourages the adoption of renewable PPAs

Existing PPAs would see a reduction in their recognized value, while future PPAs would face higher costs to meet the new requirements, making them unable to compete with fossil fuel alternatives.

③

Slows down renewables deployment

Without asset-level grandfathering, existing investments would lose value, while the financing of new projects may become asymmetric, with some becoming significantly more challenging due to reduced bankability and less investment appetite.

④

Undermines affordability of compliance and industrial competitiveness

Maintaining current compliance levels would increase procurement costs by at least ~x4, driving up prices and directly affecting customers and industrial competitiveness.

...making a voluntary, flexible and grandfathered implementation essential to preserve investment certainty, decarbonization targets and allow the market to adapt

Executive summary

- 1 On 20 October 2025, the GHG Protocol opened public consultations to revise its Scope 2 Guidance, proposing to tighten accounting through deliverability and hourly matching; while beneficial in intent, the way these changes are implemented could send adverse signals by adding new barriers.
- 2 Mandatory stricter criteria could distort industrial electrification policies and energy transition goals, seriously threatening to slow the pace of transition at national, regional and global scale.
- 3 Incremental compliance costs would rise materially, as tighter deliverability and hourly-matching rules raise the procurement cost per eligible MWh by at least ~x4.
- 4 Hourly matching is particularly challenging for electro-intensive demand, covering mismatches would require storage, hybridisation or overbuild, increasing renewable procurement LCOE by x1.5. Existing contractual instruments could reduce compliance value by 10-40%, depending on the technology, discouraging electrification and green-premium uptake.
- 5 Deliverability would penalise the mismatch between renewable resources and demand, more than doubling LCOE in constrained locations and putting a material share of European and US Corporate PPAs at eligibility risk, particularly long-distance virtual PPAs and unbundled certificates.
- 6 At enterprise level, stricter criteria could open a recognised decarbonisation gap, making it materially more expensive to preserve the same reduction, pressuring climate targets and weakening the competitiveness of industrial electrification versus fossil alternatives.
- 7 At market level, it could lead to asymmetric impacts. Existing contractual instruments may lose recognised value, eroding the green-premium, accelerating the shift towards rolling PPAs and weakening project bankability and WACC, with the scope of grandfathering becoming the decisive variable.
- 8 Tougher emissions-accounting criteria would fragment markets and force complementary standards to either align with GHG Scope requirements, diverge from them, or introduce additional flexibility. This could increase complexity, create inconsistencies across frameworks, and trigger a cascade effect that may reduce or redirect renewable energy investments.

Agenda

1

Regulatory and
geographic
context

2

Impact of the
hourly matching
criterion

3

Impact of the
deliverability
criterion

4

Enterprise,
market and
systemic impacts

5

Conclusions

A detailed photograph of an industrial facility, likely a refinery or chemical plant, at night. The scene is filled with complex piping, structural steel, and various industrial vessels. Numerous bright blue and white lights are scattered throughout the facility, creating a high-contrast, industrial atmosphere. The background is dark, making the illuminated structures stand out.

Regulatory and geographic context

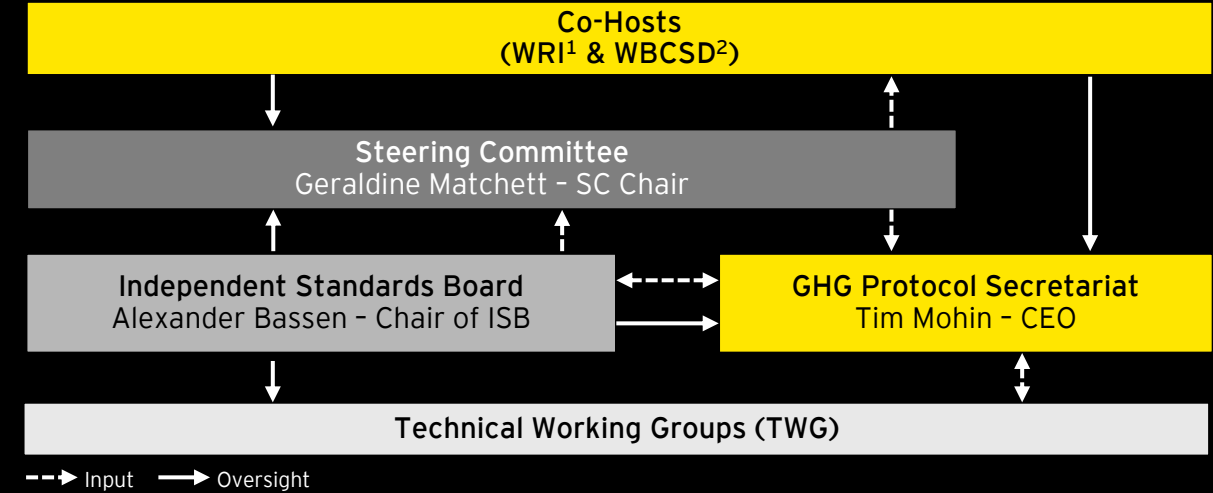
Scope 2 electricity reporting is under review through GHG Protocol public consultations

What is GHG Protocol?

- The **GHG Protocol** is the **global initiative** that develops the **most widely used standards for corporate greenhouse gas accounting**, classifying emissions into **Scope 1 (direct)**, **Scope 2 (purchased energy)** and **Scope 3 (value chain)**.
- In 2025, GHG Protocol launched public consultations on proposed updates to the Scope 2 Guidance and on electricity-sector consequential accounting.



GHG Governance Structure



SCOPE 2 ACCOUNTING METHODS AND CONSEQUENTIAL IMPACT FRAMEWORK

Scope 2 covers indirect GHG emissions from purchased or acquired electricity, steam, heat and cooling consumed by a company, reported through two inventory methods and complemented by a consequential impact approach:

Location-based accounting method

Reflects the average emissions intensity of the grid where electricity is consumed, using geographic emission factors.

Market-based accounting method

Reflects emissions based on contractual instruments purchased by the company, such as **PPAs**, **Guarantees of Origin**, **RECs** or other **Energy Attribute Certificates**.

Consequential accounting

Assesses the real-world emissions impact of electricity-sector actions, estimating whether corporate procurement leads to **avoided emissions** or **additional clean energy deployment** that would not have occurred otherwise.

The following analysis estimates the potential impacts if the proposed Scope 2 changes are confirmed

Proposed Scope 2 revisions would tighten market-based claims through geographic and hourly eligibility filters

Current GHG Protocol Scope 2 framework

Market-based procurement

Under the 2015 Scope 2 market-based framework, companies can account for eligible contractual instruments to match electricity consumption on an annual MWh basis, regardless of strict geographic or hourly alignment between renewable generation and consumption:

1. Companies calculate their **annual electricity consumption**.
2. They procure **renewable contractual instruments** for an equivalent volume of MWh.

Implementation timeline for GHG Protocol Scope 2 Updates											
2025 Public Consultations				2026 Final Guidance expected				2027 New Standards effective			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Technical working groups				Draft revisions		Public consultation		Revised standards release			

Proposed GHG Protocol Scope 2 framework

Hourly matching

When generation can be claimed

The proposal requires **hourly matching** between consumption and generation, limiting the accounting of contractual instruments to generation occurring in the **same time intervals** as consumption:

1. Companies would need to calculate an **hourly electricity consumption profile**.
2. Hours without coincident renewable generation would require **storage, hybridisation, over-procurement or complementary instruments**.

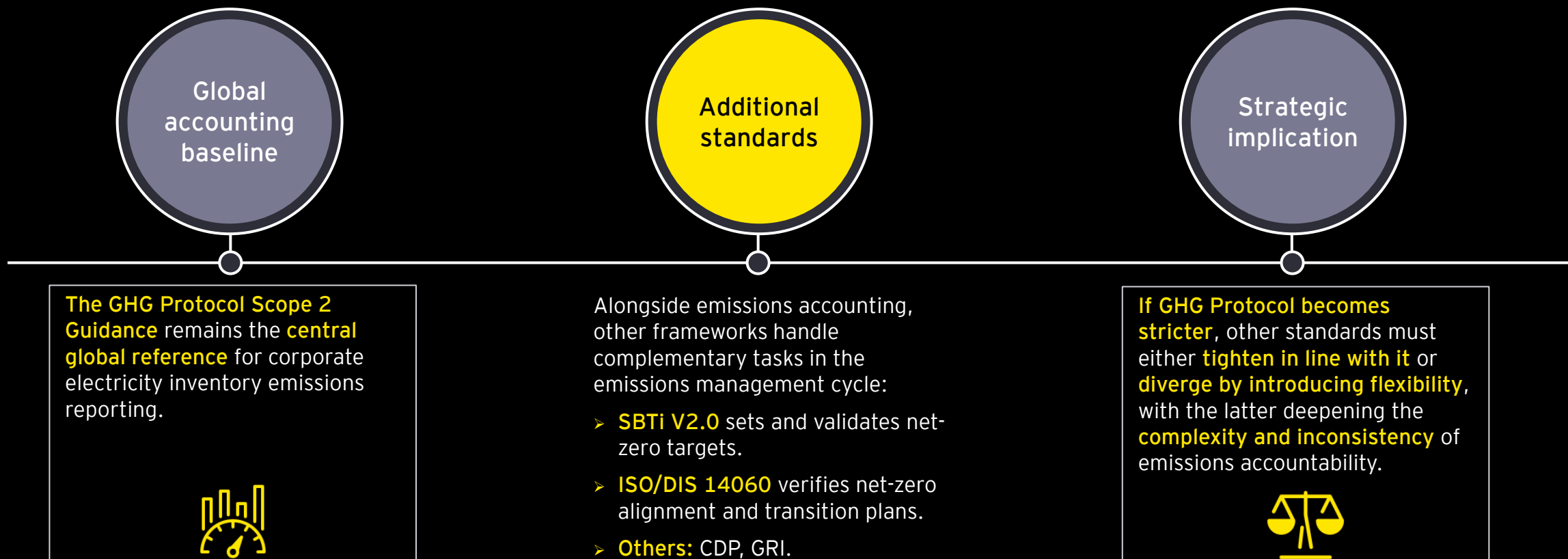
Deliverability

Where generation can be claimed

The revision would make **deliverability** a stronger condition for market-based claims, requiring **all contractual instruments** to reflect a closer link between **renewable generation** and the **location where electricity is consumed**:

1. Procurement would need stronger **geographic alignment** with consumption.
2. Remote high-resource projects could become less valuable if generation is not considered **deliverable to the buyer's load**.

The GHG Protocol operates within a broader ecosystem of complementary climate standards



Pressure on procurement costs and PPA value would undermine decarbonisation appetite and ripple upward into national, regional and global energy and environmental policies, while cascading across complementary standards

Beyond deliverability and hourly matching, additionality may emerge as a third eligibility concept

Although **additionality** is not a core Scope 2 inventory requirement, its potential use as an **eligibility criterion** could reduce the **sustainability value** of **existing renewable assets and legacy PPAs** precisely where **renewable deployment has been most successful**

What additionality asks

Additionality assesses whether a corporate action **causes emissions reductions** or clean energy deployment that **would not have occurred otherwise**.

Why existing assets are exposed

Under a **strict additionality interpretation**, existing renewable assets may struggle to demonstrate that their generation is **incremental**, especially in **mature markets**, thereby reducing the **value of existing renewable generation for corporate sustainability claims**.

Business case implication

If **existing assets, or assets determined non-additional beyond a determined number of operational years, are excluded from eligible** corporate demand, the addressable pool of **sustainability-driven buyers narrows**, potentially **weakening PPA prices**, reducing the **value of green attributes** and deteriorating **expected returns** for projects whose financing case relied on corporate offtake.

FROM RENEWABLE SUCCESS TO ELIGIBILITY RISK

1

Areas with **high renewable penetration** present a large installed net-zero asset base



2

Strict additionality narrows eligibility to **new / enabled capacity**



3

Existing generation, despite being renewable, may lose its sustainability value and face additional curtailments



4

Corporate demand shifts away from legacy output



5

Legacy PPAs face repricing, renegotiation and return pressure



6

Depending on the definition of additionality, it could cascade into new assets' business case and value generation¹

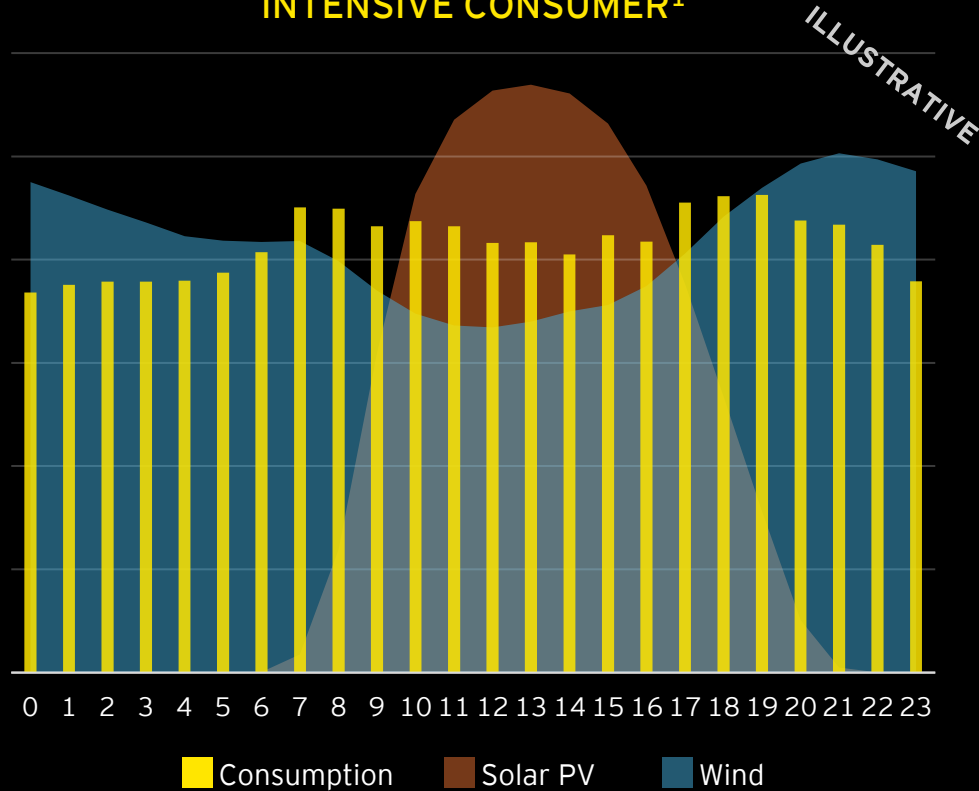
From a decarbonisation perspective, it is not appropriate to equate an existing asset of a certain age with an emitting generation plant, as their carbon footprints and contributions to climate objectives are fundamentally different

A detailed photograph of an industrial facility, likely a refinery or chemical plant, at night. The scene is filled with complex piping, scaffolding, and various industrial vessels. Numerous bright blue and white lights are scattered throughout the structure, creating a high-contrast, illuminated environment. The overall color palette is dominated by dark blues and greys, punctuated by the intense colors of the artificial lighting.

Impact of the hourly matching criterion

24/7 matching becomes difficult when continuous industrial demand meets intermittent renewable supply

ILLUSTRATIVE HOURLY LOAD PROFILE OF AN ELECTRO-INTENSIVE CONSUMER¹



Most impacted sectors:
Chemicals, metals, gigafactories and other continuous-process industries

CONTINUOUS LOAD VS INTERMITTENT SUPPLY

Electro-intensive consumers typically have a **stable and continuous electricity demand profile**, with limited ability to shift consumption across hours.

Under an **hourly matching** requirement, this creates a structural challenge:

- **Solar generation** is unavailable during night-time hours.
- **Wind generation** can be highly variable and may not coincide with consumption needs.
- **Seasonal generation profile** also varies over the year and affects hourly matching.

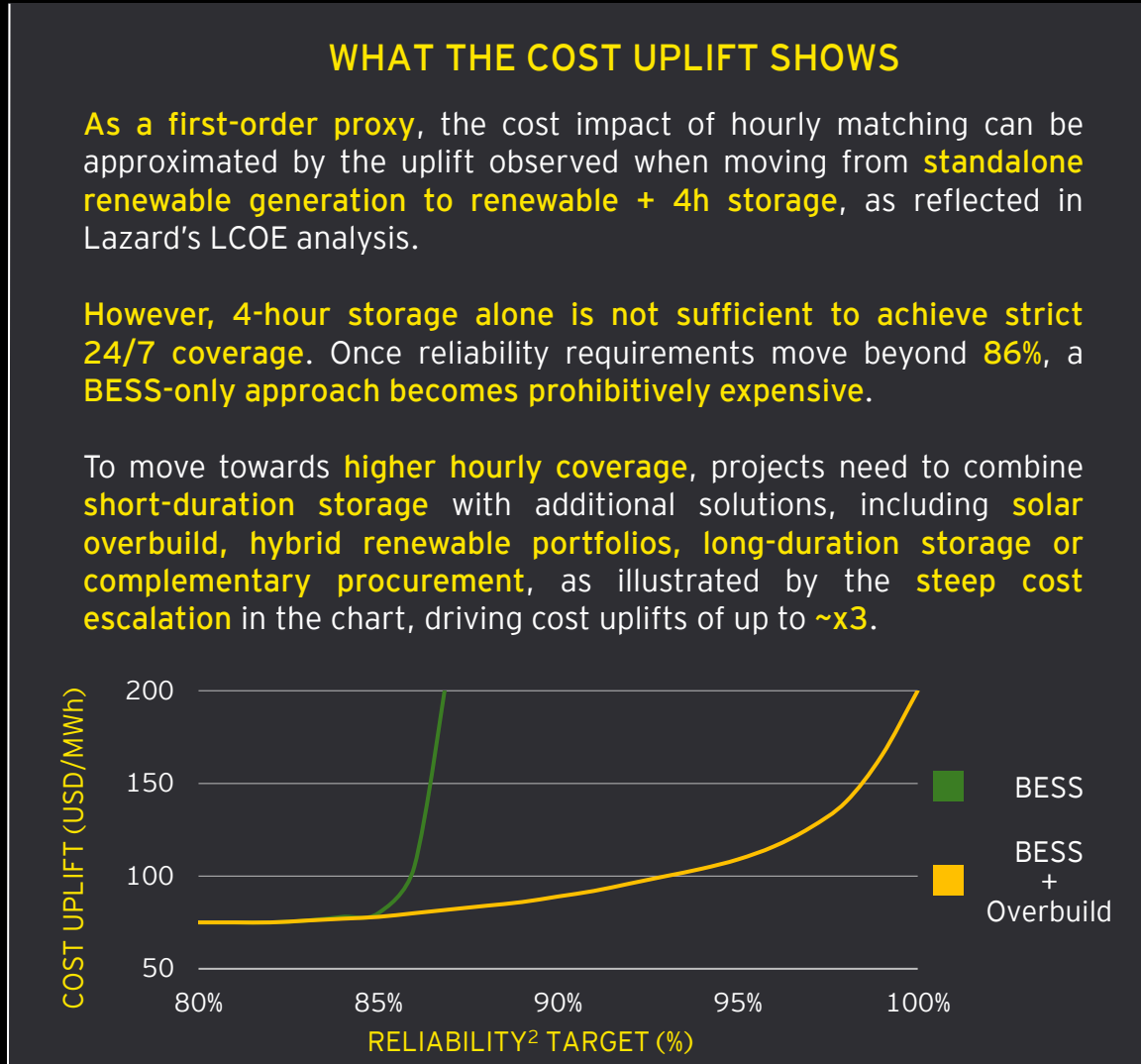
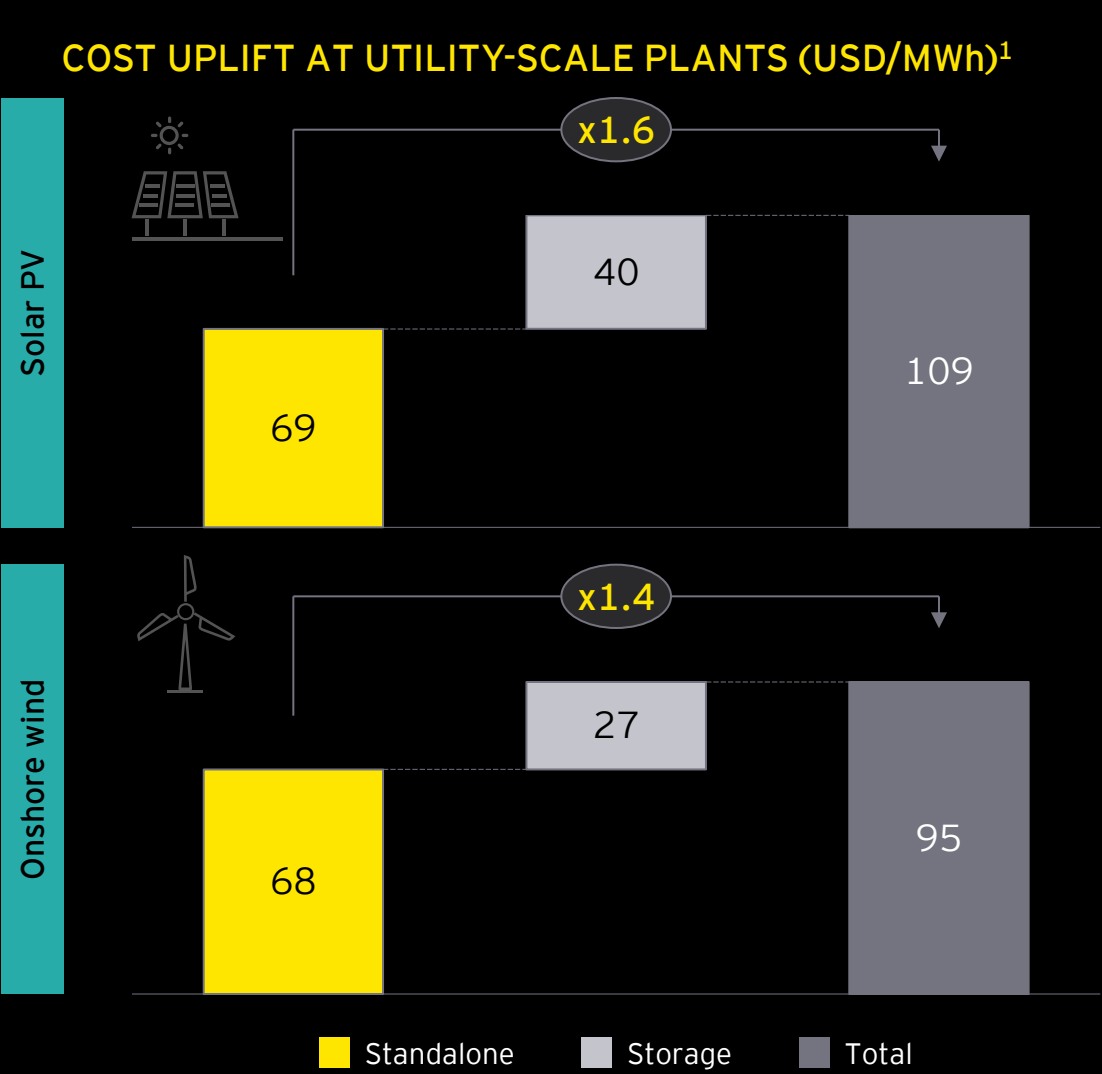
As a result, standalone solar or wind PPAs may be insufficient to cover a full 24/7 load profile, requiring **storage, hybridisation, over-procurement or complementary contracts** to preserve recognised renewable coverage.

Potential consumption unmatched²

Solar PV ≈ 40%

Wind ≈ 10%

Hourly matching could materially increase renewable project and procurement costs by requiring storage and complementary solutions

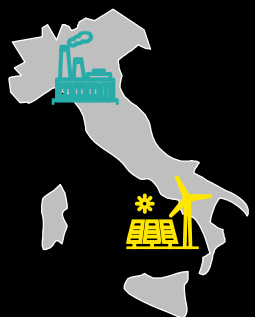




3

Impact of the deliverability criterion

Renewable generation is increasingly concentrated away from key consumption hubs



Italy

Renewable resources are concentrated in southern regions and islands, while electricity demand is heavily concentrated in the industrial north.



Germany

Northern Germany concentrates a large share of wind generation, while major industrial demand is located in the south and west of the country.



Brazil

Brazil's strongest wind and solar resources are concentrated in the Northeast, whereas the main industrial and consumption centres are located in the South and Southeast.



France

Wind and solar development varies significantly by region, while demand remains concentrated around large urban and industrial areas such as Île-de-France and northern/eastern industrial regions.



Spain

Renewable generation is concentrated in high-resource solar and wind areas, particularly in the south, centre and northwest of the country, while demand is concentrated around Madrid, Catalonia, the Basque Country and Mediterranean industrial corridors.



United Kingdom

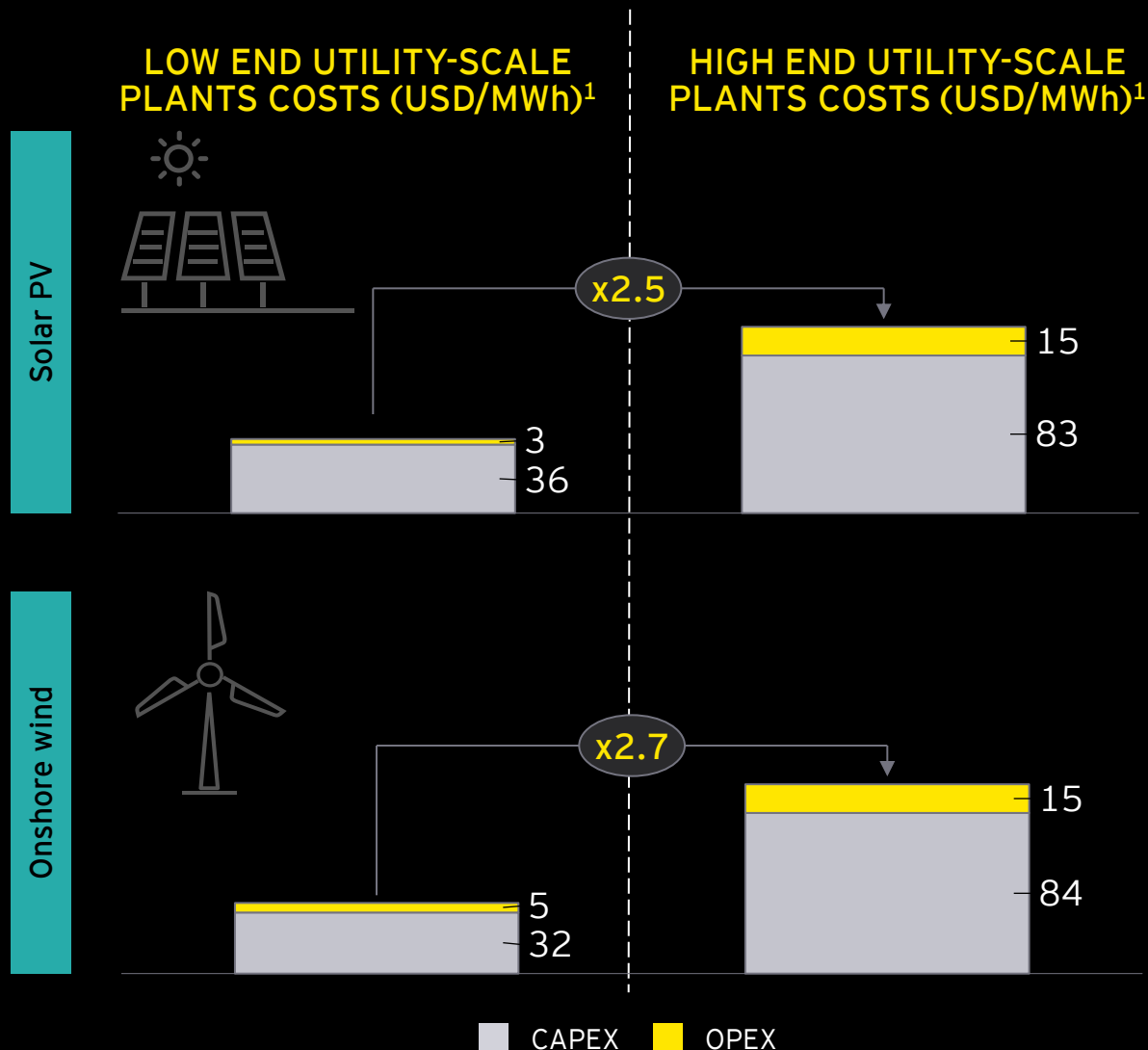
Renewable generation growth is strongly concentrated in Scotland and offshore wind zones, while the largest demand centres are located further south, including England's urban and industrial areas.



United States of America

The strongest wind resources are concentrated across the Great Plains and Midwest, while leading solar resources are concentrated in the Southwest; however, major demand centres are largely located on the coasts and around large urban / industrial hubs.

Deliverability constraints could more than double costs by reducing access to optimal renewable resource areas



METHODOLOGY & READING

Lazard's low-end and high-end LCOE² ranges are used to approximate the potential cost impact of deliverability-driven siting constraints:

1. Low-end is interpreted as a proxy for resource-optimised project conditions.
2. High-end reflects less favourable or constrained siting conditions, including lower capacity factors, higher CAPEX and higher O&M.

Under this approach, deliverability constraints could increase the cost per eligible MWh by limiting access to the best renewable resource locations and pushing procurement towards less optimal, demand-proximate siting conditions, and in highly constrained locations reducing incentives to decarbonise, adding additional barriers to existing ones (permitting, grid capacity, etc).

In parallel, existing PPAs linked to remote high-resource assets could face eligibility risk under stricter rules if the associated generation is not considered deliverable to the buyer's load.

Geographic deliverability barriers could potentially affect up to 85% of current PPAs in the most exposed markets in Europe, weakening its integrated grid

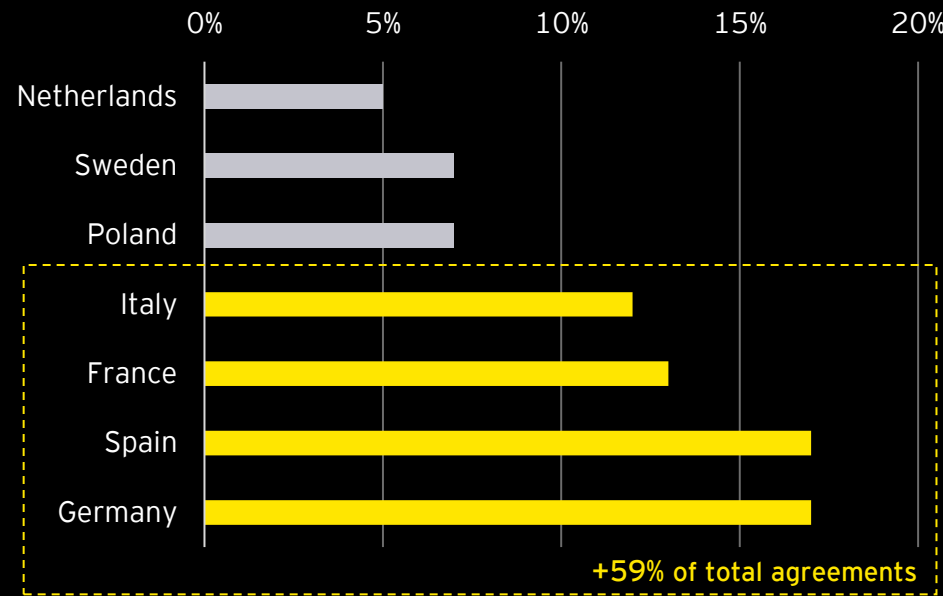


MARKET CONCENTRATION AND DELIVERABILITY RISK

- 1. Around 300 Corporate PPAs were signed in the EU-27 and Norway in 2024, almost three times more than in 2020.
- 2. The market is concentrated in a few large countries, with Germany, Spain, France and Italy alone accounting for 59% of total deal volume.
- 3. Within these markets, Physical & Virtual PPAs² are the dominant contract types. Both formats could be exposed under the new criterion, virtual PPAs when generation sits outside the deliverable boundary and physical PPAs under cross-zone or boundary redefinition.

	Physical	Virtual	On-site	Self-generation	Other
Germany	83%	4%	5%	-	8%
Spain	52%	28%	13%	-	7%
France	80%	-	7%	10%	3%
Italy	85%	7%	7%	-	1%
+85% of PPAs ³					

SHARE OF EU-27 + NORWAY CPPAs SIGNED IN 2024¹

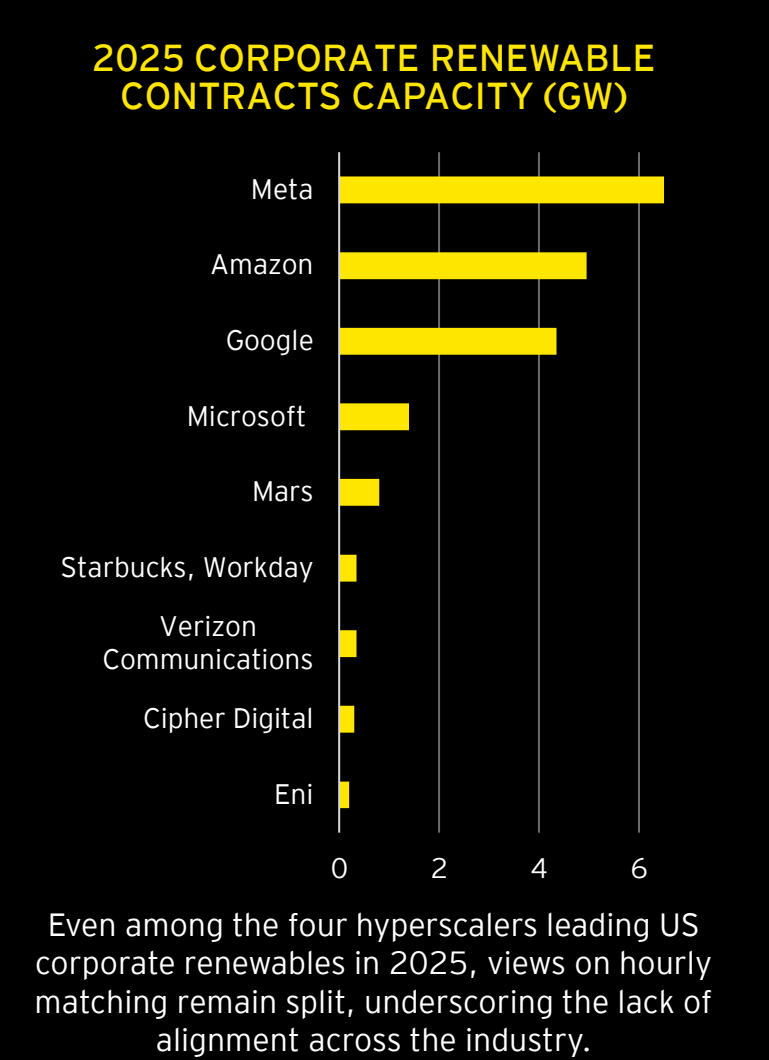
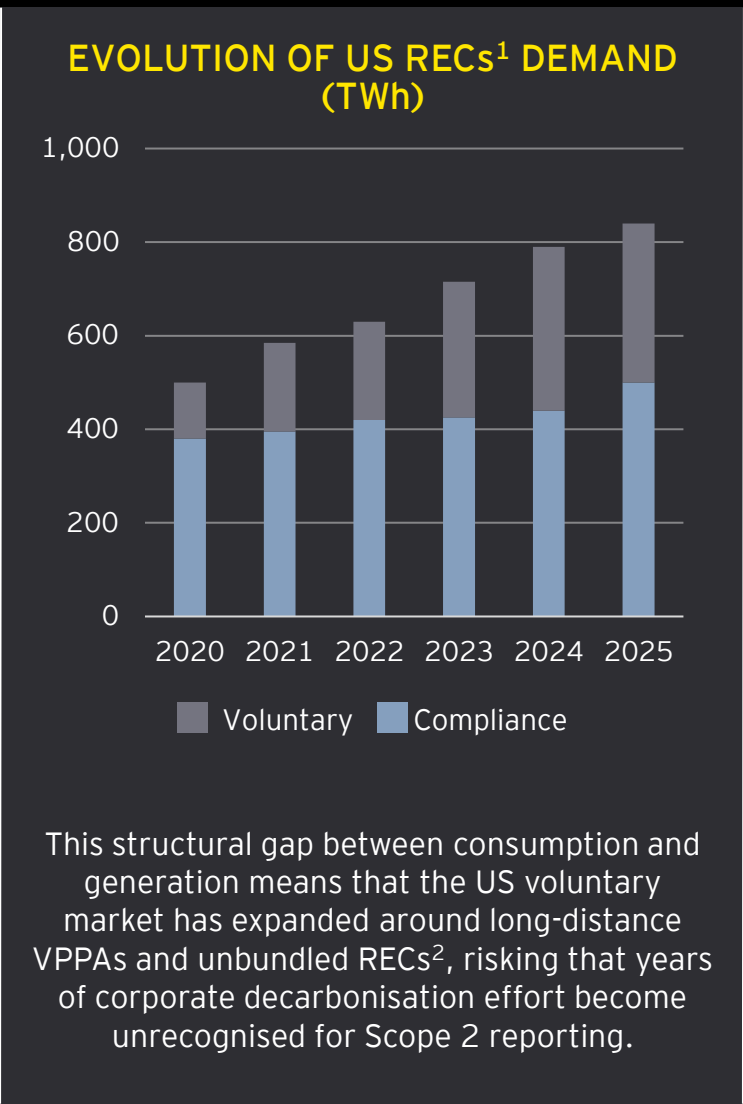
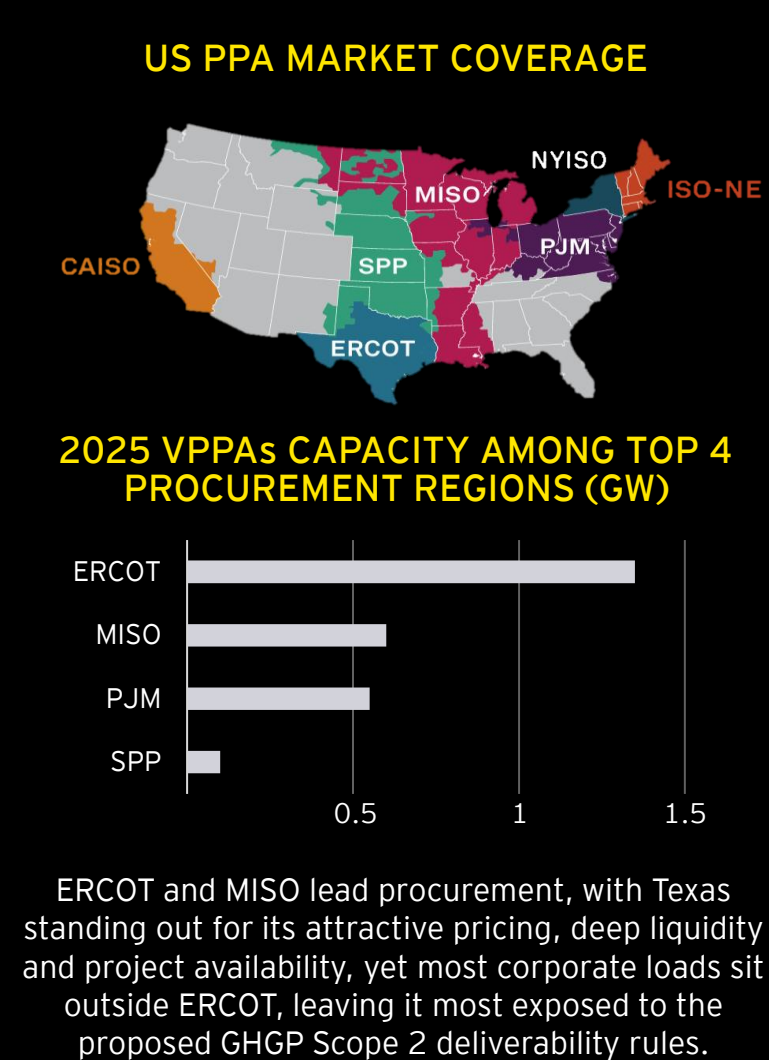


Illustrative example

With 83% Physical PPAs in a heavily industrialised economy, Germany could face high Scope 2 eligibility risk, driving contract scarcity, price increases through renegotiation and pressure on industrial competitiveness.

Deliverability barriers could potentially affect up to 85% of current European PPAs, pushing against the EU's 2023 Electricity Market Design Reform (designed to promote long-term contracts via PPAs) and its drive to cut electricity bills and boost clean-energy competitiveness

The US voluntary renewables market has tripled in five years, but its architecture is exactly what the Scope 2 revision would restrict



Companies with manufacturing footprints in Africa and Asia could struggle to comply with stricter Scope 2 rules

	SECTOR	ENTERPRISE
	Tech	 Microsoft and AWS operate cloud regions and hyperscale data centres in South Africa, India, UAE and Singapore.
	Automotive	 Volkswagen and BMW manufacture vehicles in South Africa (Kariega and Rosslyn), exporting to global markets.
	Gigafactories	 LG Energy Solution operates EV battery cell manufacturing in Indonesia through HLI Green Power, a joint venture with Hyundai.
	Chemicals	 Dow operates chemical manufacturing plants in India, including Taloja, Lote Parshuram and Sunguvarchatram.
	Steel Industry	 ArcelorMittal operates steel production facilities in South Africa, including Vanderbijlpark, Saldanha and Newcastle.
	Pharma	 Pfizer operates pharmaceutical manufacturing sites in India, including Goa, Visakhapatnam and Ahmedabad.
	Food & Beverages	 Both Coca-Cola and Heineken operate dozens of bottling or brewing facilities across Africa and Asia.

Many EU and US companies have located their operations in Africa and Asia, where renewable electricity supply is often structurally limited

As a result, these companies could face a Scope 2 compliance gap, with few local options to procure compliant generation

The proposed Scope 2 revision would entail material challenges to the existing industrial base



1 Unnecessary cost escalation

Deliverability requirements could **more than double the cost per eligible MWh (~x2.5 solar PV, ~x2.7 onshore wind)** by restricting access to optimal resource areas and raising procurement complexity, without a proportional climate benefit.



2 Restriction of signed PPAs

Contracts tied to generation outside the buyer's deliverable boundary could face Scope 2 **eligibility risk**, potentially affecting **up to 85%** of PPAs in exposed **European markets** and most **US cross-ISO virtual PPAs**, creating **contract scarcity and price renegotiation**.



3 Challenges in areas such as Asia and Africa

Companies with manufacturing footprints in Africa and Asia (where renewable supply is structurally limited) could face a **Scope 2 compliance gap** with few local options, **forcing them to relocate or absorb non-compliant emissions** regardless of intent.



4 Electrification disincentive

If clean electricity cannot be recognised under Scope 2, the **incentive to electrify weakens**, industries may retain mature oil & gas options, locking in Scope 1 emissions and **slowing decarbonisation** rather than accelerating it.

Taken together, these challenges risk raising costs, fragmenting the PPA market and disincentivising electrification, slowing the very decarbonisation the framework aims to accelerate

New industry would face a choice between locating where compliant renewables are available and opting for a non-decarbonised path with fewer constraints

WHERE NEW INDUSTRY MUST DECIDE

1

NEW-BUILD INDUSTRY WITH HEAVY ELECTRICITY DEMAND

New electro-intensive industrial facilities planned in the coming years are among the largest new electricity consumers and the main drivers of long-term Corporate PPA demand.

2

LOCATION FILTER FOR THE DECARBONISATION PATH

For companies committed to decarbonisation with electrification options available, Scope 2 tightening adds a new barrier to already scarce options: only markets with sufficient deliverable renewable capacity, hourly matching data and PPA infrastructure will be viable for compliant procurement.

3

DIVERGENT PATH FOR THOSE NOT DECARBONISING

Companies not prioritising Scope 2 alignment retain full flexibility to locate based on cost, labour, market access or fiscal incentives, without new constraints. Scope 2 tightening could therefore make non-decarbonisation-driven investment flow to other geographies.

MARKET-LEVEL EVIDENCE

Locating where renewables are available

Google's new data centre chose Texas, connecting to a solar and wind project and getting online in 18 months.

Stegra chose Boden specifically for direct access to hydro and wind generation, contracting renewable electricity with Uniper and Axpo to power Europe's largest electrolyser at its green steel plant.

Locating where constraints are lower

AWS is investing in two new data centre campuses in Mississippi, a state with abundant gas generation, competitive tax incentives and grid availability.

TSMC's semiconductor complex in Phoenix is being built despite the region's heavy dependency on gas and coal generation.

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Enterprise, market and systemic impacts

The impacts of the proposed changes are generated across enterprise, market and systemic levels



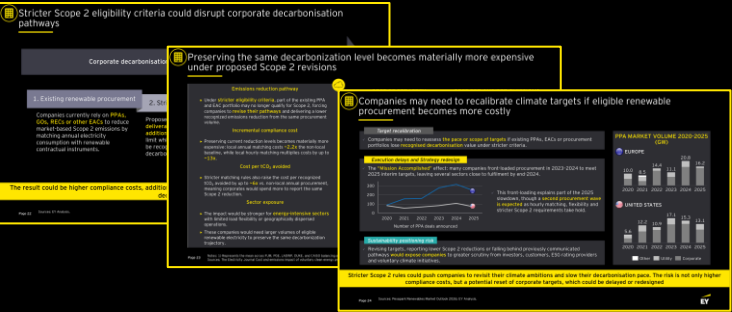
Enterprise level



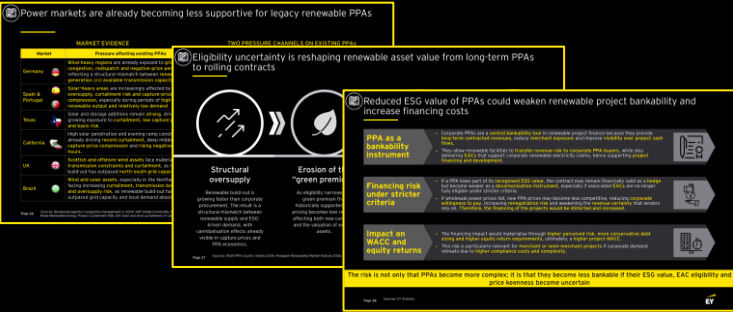
Market level



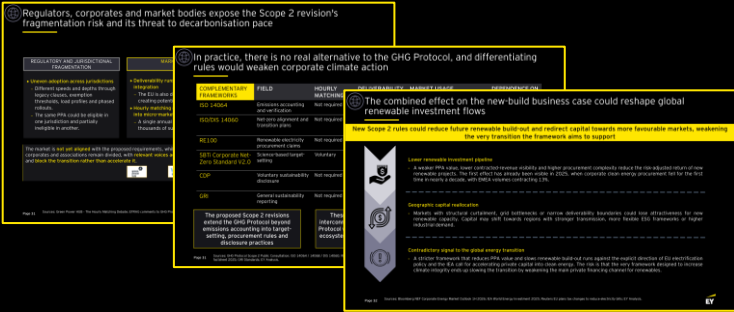
Systemic level



- ▶ How stricter criteria raise compliance costs, widen the decarbonisation gap and pressure corporate climate targets and electrification.



- ▶ How eligibility uncertainty harms PPA and asset value, reshapes contracts and weakens project bankability.



- ▶ How opposition, fragmentation and weaker investment signals could reshape global renewable capital flows.



Stricter Scope 2 eligibility criteria could disrupt corporate decarbonisation pathways

Corporate decarbonisation pathway under stricter Scope 2 criteria

1. Existing renewable procurement

Companies currently rely on **PPAs, GOs, RECs or other EACs** to reduce market-based Scope 2 emissions by matching annual electricity consumption with renewable contractual instruments.

2. Stricter eligibility filters

Proposed requirements on **deliverability, hourly matching and additionality-related claims** could limit which renewable electricity can be recognised towards corporate decarbonisation targets.

3. Recognised decarbonisation gap

Part of the existing renewable procurement portfolio may remain contractually valid but become less useful for Scope 2 / sustainability claims, creating a gap between **contracted renewable electricity** and **recognised eligible renewable electricity**.

The result could be higher decarbonisation costs, additional procurement needs and slower progress against corporate net-zero targets



Preserving the same decarbonisation level might become materially more expensive under proposed Scope 2 revisions

Emissions reduction pathway

- ▶ Under **stricter eligibility criteria**, part of the existing PPA and EAC portfolio may no longer qualify for Scope 2, forcing companies to **revise their pathways** and delivering a lower recognised emissions reduction from the same procurement volume.
- ▶ The analysis uses **non-local annual matching** as the baseline, assuming companies can source **renewable electricity from the lowest-cost location** in the U.S., resulting in a **reference procurement cost of \$10/MWh**.

Incremental compliance cost

- ▶ Preserving **current reduction** levels could become **materially more expensive**: local annual matching costs **~x2.6** the non-local baseline, while **local hourly matching** multiplies costs by at least **~x4**.

Cost per tCO₂ avoided

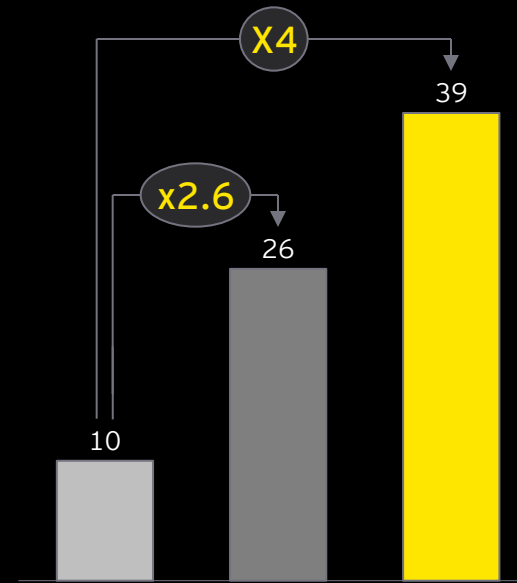
- ▶ Stricter matching rules may also raise the **cost per recognised tCO₂** avoided by **~x6** vs. non-local annual procurement, meaning corporates would spend more to report the same Scope 2 reduction.

Sector exposure

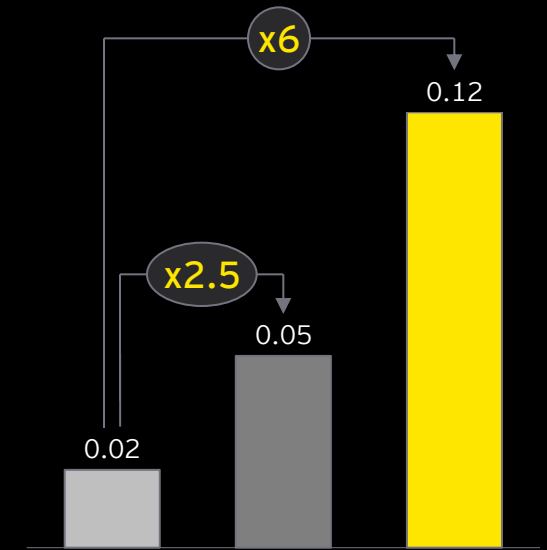
- ▶ The impact would be stronger for **energy-intensive sectors** with limited load flexibility or geographically dispersed operations.
- ▶ These companies would need **larger volumes** of eligible renewable electricity **to preserve the same decarbonisation trajectory**.



PROCUREMENT COST (USD/MWh)¹



COST PER AVOIDED EMISSIONS (USD/kg CO₂)¹



- **Non-local Annual Matching** - Current Industry Standard
- **Local-only Annual Matching** - Adds geographic deliverability
- **Local-only Hourly Matching** - Adds hourly matching + geographic deliverability



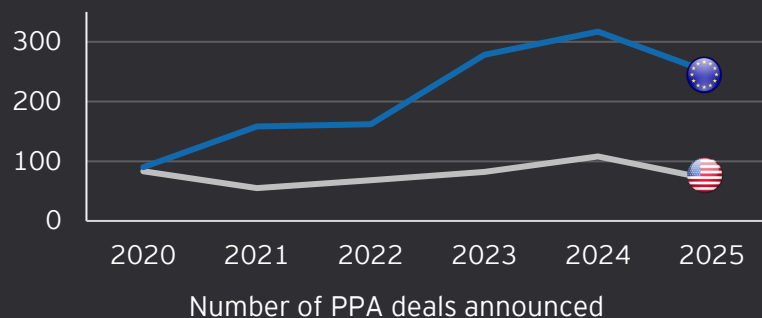
Companies may need to recalibrate climate targets if eligible renewable procurement becomes more costly

Target recalibration

- ✓ Companies may need to reassess **the pace or scope of targets** if existing PPAs, EACs¹ or procurement portfolios lose **recognised decarbonisation** value under stricter criteria.

Execution delays and strategy redesign

- ✓ The **"Mission Accomplished"** effect: many companies front-loaded procurement in 2023-2024 to meet 2025 interim targets, leaving several sectors close to fulfilment by end-2024.



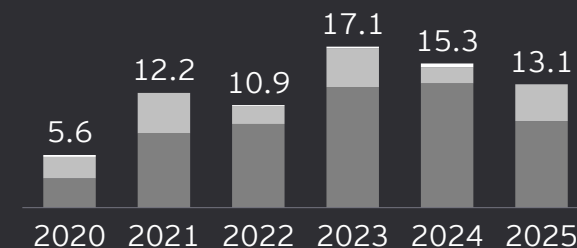
- ✓ This front-loading explains part of the 2025 slowdown, though a **second procurement wave is expected** as hourly matching, flexibility and stricter Scope 2 requirements take hold.

Sustainability positioning risk

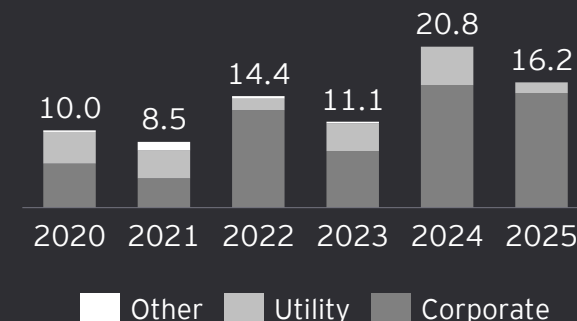
- ✓ Revising targets, reporting lower Scope 2 reductions or falling behind previously communicated pathways **would expose companies** to greater scrutiny from investors, customers, sustainability rating providers and voluntary climate initiatives.

PPA MARKET VOLUME 2020-2025 (GW)

EUROPE



UNITED STATES



More complex Scope 2 rules could push companies to revisit their climate ambitions and slow their decarbonisation pace. The risk is not only higher compliance costs, but a potential setback to corporate targets, which could be delayed or redesigned²



Scope 2 tightening could turn electrification from a competitive advantage into a stranded effort

WHY ELECTRIFICATION COULD STALL

1

HIGHER COMPLIANCE
EFFORT AND
DEVALUATION OF
PAST PROGRESS

- Stricter eligibility criteria would force companies to **rebuild parts of their electrification strategies** to meet the new framework, while **existing PPAs, EACs and renewable contracts** aligned with the 2015 Scope 2 logic could **lose part of their recognised value**, partially eroding the progress already made.

2

LOSS OF
COMPETITIVENESS
VS FOSSIL
ALTERNATIVES

- Higher complexity and cost of compliant electrification could weaken its competitive position against **oil & gas options**, which remain technically mature, widely available and contractually simple, **despite their structural exposure to geopolitical shocks** such as the Russia-Ukraine war or Iran-related tensions in the Strait of Hormuz, thus leading to **locked-in Scope 1 emissions** and **delaying decarbonisation decisions**.

3

MISALIGNMENT
WITH
ELECTRIFICATION
POLICIES

- The EU is actively working to **reduce electricity bills and improve the cost competitiveness of clean electricity versus fossil fuels**, including proposed tax adjustments aimed at narrowing the price gap. Stricter Scope 2 rules would push corporate electrification in the **opposite direction**, deepening this policy contradiction.



Power markets are already becoming more challenging for renewables investments

MARKET EVIDENCE

Market	Pressure affecting existing PPAs
Germany 	Wind-heavy regions are already exposed to grid congestion, redispatch and negative-price periods , reflecting a structural mismatch between renewable generation, available transmission capacity and local consumption
Spain & Portugal  	Solar-heavy areas are increasingly affected by oversupply, curtailment risk and capture-price compression , especially during periods of high renewable output and relatively low demand .
Texas 	Solar and storage additions remain strong , driving growing exposure to curtailment, low capture prices and basis risk .
California 	High solar penetration and evening ramp constraints are already driving record curtailment , deep midday capture-price compression and rising negative-price hours .
UK 	Scottish and offshore wind assets face material transmission constraints and curtailment , as renewable build-out has outpaced north-south grid capacity .
Brazil 	Wind and solar assets , especially in the Northeast, are facing increasing curtailment, transmission bottlenecks and oversupply risk , as renewable build-out has outpaced grid capacity and local demand absorption.

TWO PRESSURE CHANNELS ON RENEWABLES INVESTMENTS

Curtailment & grid saturation

High renewable penetration is already creating periods of **oversupply, grid congestion and redispatch** in mature markets. If strict additionality narrows **sustainability eligibility** towards new or explicitly enabled assets, existing renewable output in these constrained areas could face **lower physical delivery value** and **reduced sustainability demand**, with additional renewable buildout potentially exacerbating these constraints.

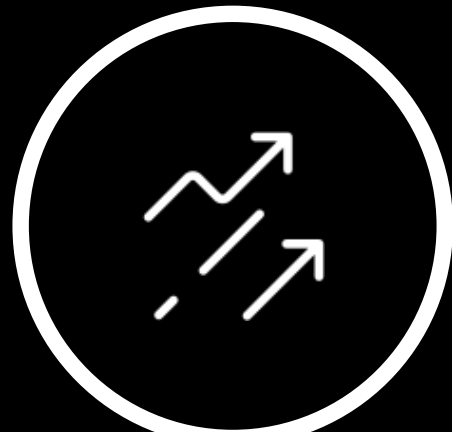
Capture-price compression & business case erosion

Negative-price periods and low capture prices are already weakening **PPA economics**. If legacy output loses part of its **sustainability value** under stricter additionality criteria, corporate **willingness to pay** could decline, increasing **repricing, renegotiation or replacement-procurement risk**, particularly for legacy PPAs.

The proposed requirements might risk exacerbating curtailment and negative pricing, particularly in highly renewable markets such as Spain and Brazil. Given the already low-carbon electricity mix in these systems, such measures could impose unnecessary costs and adversely impact the economics of existing renewable generation assets.

Structural uncertainty would reshape the PPA market with Scope 2 eligibility rules driving the shift

Triggered by Scope 2 revision



Structural oversupply

Renewable build-out is growing faster than corporate procurement. The result is a structural mismatch between renewable supply and sustainability-driven demand, with cannibalisation effects already visible in capture prices and PPA economics.

Erosion of the “green-premium”

As eligibility narrows, the green-premium that historically supported PPA pricing becomes less reliable, affecting both new contracts and the valuation of existing assets.

Shift towards rolling PPAs

Rolling PPAs (short contracts chained over time) would gain ground because they limit long-term exposure but weaken the contracted revenue base used to finance new renewable projects.

Fragmented market and price dispersion

The renewable market may evolve into a multi-quality system, where the value of each MWh depends on hour, location and contractual eligibility. This is likely to reduce liquidity and increase price dispersion.



Renewable projects would face reduced bankability, increasing financial risks and overall costs

PPA as a bankability instrument

- Corporate PPAs are a **central bankability tool** in renewable project finance because they provide **long-term contracted revenues**, reduce **merchant exposure** and improve **visibility over project cash flows**.
- They allow renewable facilities to **transfer revenue risk to corporate PPA buyers**, while also delivering **EACs** that support corporate renewable electricity claims, hence supporting **project financing and development**.



Financing risk under stricter criteria

- If a PPA loses part of its **recognised sustainability value**, the contract may remain financially valid as a **hedge** but become weaker as a **decarbonisation instrument**, especially if associated **EACs** are no longer fully eligible under stricter criteria.
- If wholesale power prices fall, new PPA prices may become less competitive, reducing **corporate willingness to pay**, increasing **renegotiation risk** and weakening the **revenue certainty** that lenders rely on. **Therefore, the financing of the projects could be distorted and become more expensive.**



Impact on WACC and equity returns

- The financing impact would materialise through **higher perceived risk**, **more conservative debt sizing and higher equity return requirements**, ultimately, a **higher project WACC**.
- This risk is particularly relevant for **merchant or semi-merchant projects** if corporate demand retreats due to **higher compliance costs and complexity**.



The risk is not only that PPAs become more complex; it is that they could become less bankable if their sustainability value, EAC eligibility and price keenness become uncertain, raising the cost of financing renewable projects and ultimately, increasing consumers' bills



Grandfathering scope will largely determine whether existing renewable investments retain or lose recognised value

Grandfathering is the **transition clause** designed to protect existing investments, **allowing contracts signed under the current Scope 2 framework to remain eligible** for market-based claims during a defined transition period.

The open consultation debates:

- Length of the grandfathering period.
- Scope of eligible instruments.
- Whether protection applies at contract or asset level.
- Conditions of applicability.

Length of the transition period	Scope of eligible instruments	Contract vs. asset-level protection	Conditions of applicability
Public consultation responses range from fixed multi-year periods to full contract life protection. A shorter period would accelerate repricing and renegotiation risk across existing portfolios.	Whether grandfathering applies to long-term PPAs only, or extends to unbundled EACs, green tariffs and utility programmes. The current draft leans toward long-term contracts as the primary category.	Protection must apply to the underlying asset, including all EACs, GOs and RECs it will generate. Asset-level grandfathering is key to preserve the investment thesis under which existing renewable projects were financed.	Contracts must have met the applicable Scope 2 Quality Criteria at signing. Additional feasibility measures being considered include phased implementation, load profiles, and exemption thresholds for smaller organisations.

Contract-only protection heightens the risk to the existing generation fleet, devaluing past investments and undermining confidence in future projects



Regulators, corporates and market bodies expose the Scope 2 revision's fragmentation risk and its threat to decarbonisation pace

REGULATORY AND JURISDICTIONAL FRAGMENTATION

► Uneven adoption across jurisdictions

- Different speeds and depths through legacy clauses, exemption thresholds, load profiles and phased rollouts.
- The same PPA could be eligible in one jurisdiction and partially ineligible in another.

MARKET AND INTEGRATION FRAGMENTATION

► Deliverability runs against the EU electricity market integration

- The EU is also debating reshaping bidding zones, creating potential dual instability for PPA eligibility.
- **Hourly matching could split the EAC and GO market into micro-markets**
 - A single annual market could fragment into thousands of submarkets by hour and location.

STANDARD COMPETITION AND DUAL-TRACK RISK

► SBTi V2.0 is developing its own hourly matching approach

- Separate timelines and criteria could diverge from the GHG Protocol revision.
- Companies could face a dual-track compliance challenge, with PPAs eligible under one framework and not under another.

The market is **not yet aligned** with the proposed requirements, while key players broadly **agree on the direction**, there is **no clear consensus**. Regulators, corporates and associations remain divided, with **relevant voices actively opposing the proposal**, warning it could ultimately **undermine climate ambition** and **block the transition rather than accelerate it**.





In practice, there is no real alternative to the GHG Protocol, and differentiating rules would weaken corporate climate action

COMPLEMENTARY FRAMEWORKS	FIELD	HOURLY MATCHING	DELIVERABILITY	MARKET USAGE	DEPENDENCE ON GHG SCOPE 2
ISO 14064 ¹	Emissions accounting and verification	Not required	Not required	Global standard for GHG inventory audit	Interoperability with GHG Protocol
ISO/DIS 14060 ¹	Net-zero alignment and transition plans	Not required	Not required	Emerging international reference for net-zero claims	Compatible with GHG for underlying accounting
SBTi Corporate Net-Zero Standard V2.0	Science-based target-setting	Voluntary	Applies with legacy clause and sector-based flexibility	3,000+ companies committed to net-zero targets	Requires Scope 2 reporting under GHG Protocol
CDP	Voluntary sustainability disclosure	Not required	Not required	20,000+ companies report annually	Reporting fully aligned with GHG Protocol
GRI	General sustainability reporting	Not required	Not required	10,000+ organisations report globally	Depends on GHG Protocol

The proposed Scope 2 revisions extend the GHG Protocol beyond emissions accounting into target-setting, procurement rules and disclosure practices

These frameworks are deeply interconnected and a shift in the GHG Protocol without alignment across the ecosystem would fragment corporate climate action

A stricter GHGP could push other frameworks to align by tightening or implementing their own criteria, amplifying the overall regulatory pressure on corporate climate strategies



The combined effect on the new-build business case could raise renewable costs and reshape global investment flows distorting energy transition global target

New Scope 2 rules could raise renewable costs, reduce future build-out and redirect capital towards more favourable markets, slowing the very transition the framework aims to support



Lower renewable investment pipeline

- A weaker PPA value, lower contracted-revenue visibility and higher procurement complexity may reduce the risk-adjusted return of new renewable projects. The first effect has already been visible in 2025, when corporate clean energy procurement fell for the first time in nearly a decade, with EMEA volumes contracting 13%.



Geographic capital reallocation

- Capital may shift towards regions with stronger transmission, more flexible frameworks or higher industrial demand, creating sunk investments in high-resource areas and potentially driving development to other less resource-efficient, higher-cost locations.



Contradictory signal to the global energy transition

- A stricter framework that reduces PPA value and slows renewable build-out runs against the explicit direction of EU electrification policy and the IEA call for accelerating private capital into clean energy. The risk is that the very framework designed to increase climate integrity ends up slowing the transition by weakening the main private financing channel for renewables.

A detailed photograph of an industrial facility, likely a refinery or chemical plant, at night. The scene is filled with complex piping, scaffolding, and large storage tanks. Numerous bright blue and white lights illuminate the structures, creating a high-contrast, industrial atmosphere. The background is dark, emphasizing the artificial lighting of the facility.

Conclusions

Each proposed requirement pursues greater accuracy, but would deliver a limited benefit at a high economic cost

HOURLY MATCHING	DELIVERABILITY	ADDITIONALITY	DISPROPORTIONATE OUTCOME
WHAT IT AIMS TO ACHIEVE Align clean generation and consumption hour by hour, improving the accuracy of Scope 2 inventories and avoiding 'solar-at-night' style claims.	WHAT IT AIMS TO ACHIEVE Ensure clean energy could physically reach the consumer, by requiring generation within the same grid or bidding zone, avoiding claims from distant, non-deliverable markets.	WHAT IT AIMS TO ACHIEVE Ensure procurement drives new renewable capacity rather than reshuffling existing certificates, maximising real climate impact.	Marginal gains in reporting accuracy would be achieved at the expense of much higher costs, weaker renewable bankability and slower decarbonisation.
AT WHAT COST Requires costly firming (storage, clean-firm capacity) to cover mismatches, increasing cost by at least ~x1.6 for solar PV and ~x1.4 for onshore wind with 4h storage, and by up to ~x3 depending on the reliability target. 	AT WHAT COST Restricts siting to sub-optimal resource areas, more than doubling the cost per eligible MWh (~x2.5 solar PV, ~x2.7 onshore wind). 	AT WHAT COST Excludes existing renewable assets, or new assets after a limited number of operational years, from eligibility, especially in mature markets, eroding their value and raising procurement complexity and cost. 	MAIN IMPACTS  Higher project risk  Reduced financing attractiveness  Capital shift across markets  Green-premium erosion

The very framework designed to increase climate integrity could end up slowing the energy transition by weakening the main private financing channel for renewables

Tighter Scope 2 requirements may reshape renewable economics, raise costs and require compromise to protect industrial electrification

1

Cost escalation

Compliance would become more expensive across the chain and be passed on to corporate buyers.

2

Value erosion

Existing PPAs, EACs and guarantees of origin could lose recognised value, weakening the original business case and adding uncertainty over future developments.

3

Investment and electrification slowdown

Higher compliance cost and lower value would reduce investor appetite, raise industrial electricity costs and slow electrification. And at the end, increasing consumer's bills.

FINAL TAKEAWAYS

COMPROMISE SOLUTIONS WILL BE ESSENTIAL TO PRESERVE ACCOUNTING INTEGRITY WITHOUT:



ERODING EXISTING INVESTMENTS



CAUSING MARKET FRAGMENTATION AND UNCERTAINTY



UNDERMINING AFFORDABILITY AND INDUSTRIAL COMPETITIVENESS



DISTORTING DECARBONISATION TARGETS AT NATIONAL, REGIONAL AND GLOBAL SCALE

ENABLED BY:

- ✓ VOLUNTARY IMPLEMENTATION
- ✓ MAINTAINING INTERCONNECTED SYSTEMS AS A DELIVERABILITY ZONE
- ✓ AVOIDING ANY ADDITIONALITY CRITERIA
- ✓ ASSET-LEVEL GRANDFATHERING
- ✓ FEASIBILITY-BASED ROLLOUT

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