



ESG IN CHECK: SUSTAINABLE NORMATIVE FRAMEWORKS AND CLIMATE FINANCE IN THE WORLD ORDER

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The article dissects the European architecture of ESG – from CBAM to CSRD, passing through green bonds – and exposes its dual nature: internally coherent, yet externally projecting asymmetric costs. Internationally, while China ambivalently pulls the cart of the transition, Europe leads by multiplying its regulatory frameworks; in turn, Africa finds itself confined to the role of a transit territory.

The United States' withdrawal from the Paris Agreement became effective on January 27, 2026, one year after the notification delivered to the United Nations depositary; the intention to also abandon the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC), announced by presidential memorandum on January 7, 2026, remains legally contested.

Still, its practical effects are already being felt. Without US leadership, the normative centre of global climate action has shifted to Brussels: the European Union (EU) has become the main regulatory driver of the transition, with China making a partial and self-interested contribution, and African economies exposed to the side effects of a process whose terms they do not control. To make this architecture intelligible – complex and rarely read together – it is helpful to use a simple image: that of an animal-drawn cart. Europe is the main joint, defining the course and pace of the march; China is the second animal, whose thrust accelerates the advance for both climatic and industrial reasons, and the path along which the cart advances is traversed by more vulnerable trading partners, especially Africans, who risk being run over by the weight of their regulatory wheels.

The image is missing, however, two pieces. There is a lack of the financial harness that effectively pulls the cart – green bonds, bonds linked to sustainability goals, and other instruments that channel capital toward decarbonisation, but which can also serve as a vehicle for a substanceless compliance exercise. And what is missing is questioning the very soil on which the wheels rest: the Ecological Modernisation Theory, born in Western industrial contexts, and the possibility of an ESG (Environmental, So-

cial, and Governance) that incorporates knowledge situated in emerging economies, instead of exporting a single model of sustainability to them.

This article therefore broadens the metaphor, covering the instruments of European architecture, the financial reins that pull it, the ambivalent role of China, the risks projected onto Africa, and the epistemic tensions that permeate these frameworks.

European traction

The Green Deal is the chassis on which the EU transition rests, with the European Climate Law legally enshrining the target of climate neutrality by 2050 (Regulation (EU) 2021/1119). Five harnesses rest on this chassis: sustainability reporting, due diligence in value chains, the taxonomy that guides capital, the internal price of carbon, and the carbon frontier.

The Corporate Sustainability Reporting Directive (CSRD) obliges in-scope companies to report their impact according to the principle of double materiality – the impact of the company on the climate and the impact of the climate on the company. The Corporate Sustainability Due Diligence Directive (CSDDD) extends this logic to value chains, requiring the largest European companies to identify, prevent and mitigate adverse environmental and social impacts also outside the Union's borders – a harness that, like the Carbon Border Adjustment Mechanism (CBAM), projects European obligations onto third-country suppliers, including African ones, without giving them a seat at the table where these obligations are drawn. The CBAM entered its definitive regime on 1 January 2026: importers of iron and steel, cement, aluminium, fertilisers, electricity and hydrogen now have to cover emissions incorporated into their products with cer-

tificates, at a price indexed to the average of European allowance auctions – €75.36 per tonne of CO₂ equivalent in the first quarter of 2026 and €75.28 in the second (European Commission, 2026). The actual sale of certificates does not start until February 2027, but the logic is already fully operative: this is where the European cart narrows the path where its partners operate, because those who are unable to verify the actual emissions are subject to default values plus penalties.

The last two harnesses are price and capital. The Taxonomy Regulation and the Sustainable Finance Disclosure Regulation (SFDR) define what counts as sustainable investment and guide financial flows accordingly; the EU Emissions Trading System (EU ETS), revised by the *Fit for 55* package, fixes the domestic price of carbon and accelerated the annual pace of emissions cap reduction from 2.2% to 4.3%, reinforcing the incentive to relocate production to lower-priced jurisdictions – the carbon leakage that CBAM seeks to halt. In 2026, the price of allowances fluctuated between more than €90 in January and around €60 in March, stabilising near €80 in the summer; the Just Transition Mechanism functions as a social buffer for the most affected European regions.

This architecture has, however, ceased to be a continuously expanding block. Directive (EU) 2026/470 – the *Omnibus I* package, in force since 18 March 2026 – substantially reduced the universe covered: the CSRD now applies only to companies with more than 1,000 employees and either a net turnover of more than €50 million or a balance sheet total of more than €25 million, and the CSDDD to EU undertakings with more than 5,000 employees and a net turnover of more than €1.5 billion, with application postponed to 2028, with no obligation to adopt climate transition plans and without the

harmonised civil liability regime initially envisaged. It is estimated that the universe subject to due diligence will be reduced by around 70% compared to the 2024 text. The analytical consequence is relevant and still little explored: the Union lightened the obligations it imposed on itself, but kept intact the instrument that projects costs outwards – the CBAM came into force in the same quarter in which the *Omnibus I* was approved. The cart has become lighter inside without the wheels weighing less heavily on those in its path. For African suppliers, the effect is twofold: less due diligence means less scrutiny, but also less technical support for performance improvement, while the requirement for verified data at the border remains integral. The architecture is also based on a technical body of standards from the International Organization for Standardization (ISO) – ISO 14064 1:2018, for GHG (greenhouse gas) quantification and verification, and ISO 14001:2015, for environmental management systems – the engineering parts that make the wagon operational for companies around the world, including those that do not have their own monitoring capacity. The strength of the set is the internal coherence between transparency, carbon pricing, and capital allocation; the fragility lies in the way it projects, beyond borders, costs that the most vulnerable partners cannot always absorb and credibility criteria that do not always correspond to their institutional realities. The shift from reporting to actual performance is not automatic: there is a risk that double materiality will become an

exercise in document compliance, with no direct correspondence in strategic climate risk management. On the capital side, however, alignment with Taxonomy already reveals measurable effects. Tonnarello et al. (2025) show, for European companies in the energy sector between 2012 and 2022, that those that disclose alignment indicators present superior market performance and profitability to those that omit them – a sign that the Taxonomy has ceased to be a transparency device and has become a capital allocation mechanism with direct competitive consequences. Eligibility for instruments such as *InvestEU* increasingly depends on such demonstration, which creates normative convergence pressures on countries seeking to attract European capital for renewable projects, including in Africa. It is at this point of contact between reporting and capital that a second, less discussed harness gains relevance: that of financial instruments themselves.

Financial reins: green bonds, SLBs and sukuk

If the Green Deal is the chassis and the CBAM, the CSRD and CSDDD are the regulatory harnesses, the reins that move the cart are the instruments that channel savings into the transition. The best known is the green bond: a security whose proceeds are traceably linked to projects with a defined environmental benefit, according to the ICMA Green Bond Principles (2021 edition) and, in the EU, according to the European Green Bond Standard (Regulation (EU)

2023/2631), applicable since 21 December 2024. Annual sustainable debt issuance labelled as sustainable exceeds half a trillion dollars (Climate Bonds Initiative, 2025), which confirms this instrument as the main vehicle for private financing of the transition – and also as the most exposed to greenwashing, as it depends on the quality of external verification. The European Investment Bank pioneered this market: its Climate Awareness Bonds, launched in 2007, predated the label's generalisation by several years and continue to finance renewable energy and energy efficiency projects in Europe and, increasingly, in third countries. Alongside these, sustainability linked bonds (SLBs) became widespread: instruments whose coupon varies depending on the achievement of previously defined performance targets, without the issuance product being allocated to specific projects. This flexibility has made them attractive to hard-to-abate sectors, such as cement and steel, but has exposed them to harsher criticisms than those levelled at green bonds: unambitious targets, penalties that are too light to change behaviour, and defaults without proportionate reputational consequences fuel growing scepticism about their robustness.

A third instrument, less present in the European debate but with growing relevance for Africa, is the green sukuk: a financial instrument compatible with the principles of Islamic finance, structured as a beneficial ownership in a tangible asset rather than an interest bearing loan, the proceeds of which finance environmental projects. Indonesia issued the world's first sovereign green sukuk in 2018, and Malaysia has since consolidated a mature corporate market. For African economies with significant Muslim populations – Egypt, Nigeria, or the Sahel countries –, it is a channel potentially more aligned with local savings preferences than the conventional green bond, even though its use on the continent remains marginal compared to the potential.

Added to this family are blue bonds, aimed at the ocean economy – of which Seychelles offered, in 2018, one of the first sovereign examples –, debt-for-nature swaps, which have allowed countries such as Belize, Ecuador and Gabon to renegotiate sovereign debt in exchange for conservation commitments, and the transition obligations, designed for car-

FIGURE 1. EUROPEAN CLIMATE ARCHITECTURE INSTRUMENTS AND EXTRATERRITORIAL EFFECTS

Source: Own elaboration based on the legal acts listed in the References.

Instrument	Main objective	Effect on non-EU partners
European Climate Law	Climate neutrality by 2050	Sets normative expectations for third countries
CSRD (as revised by <i>Omnibus I</i>)	Sustainability reporting based on double materiality	Puts pressure on non-EU companies integrated into European value chains
CSDDD (as revised by <i>Omnibus I</i>)	Due diligence on human rights and environmental impacts across the value chain	Extends European requirements to suppliers in third countries; the scope has been reduced by around 70%
Taxonomy and SFDR	Define what qualifies as a sustainable activity and investment	Affect access to European capital for non-EU projects
CBAM (definitive regime since 2026)	Prices the embedded emissions of imports	Places additional costs on exporters of steel, aluminium, cement, fertilisers, electricity, and hydrogen
EU ETS / <i>Fit for 55</i>	Sets the carbon price for covered sectors	Creates incentives to relocate production outside the EU
Just Transition Mechanism	Supports European territories affected by the transition	Serves as an institutional model for supporting third countries

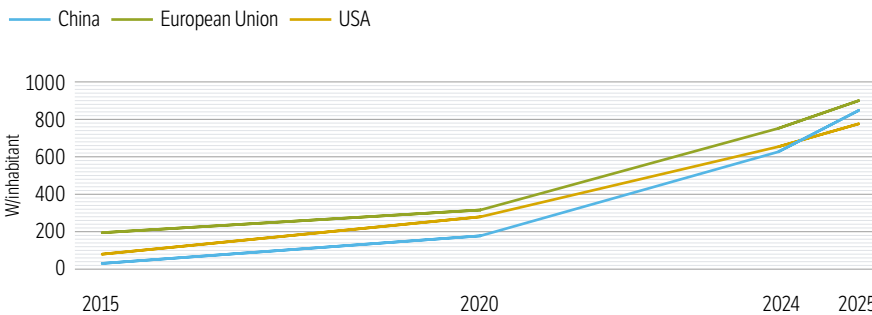
FIGURE 2. THE RELATIVE WEIGHT OF THE EU, CHINA, AND AFRICA IN THE ENERGY TRANSITION

Sources: IEA (2025); Ember (2025); IRENA (2026); ISO (2025); European Commission (2026).

Indicator	EU	China	Africa
CO ₂ emissions (Gt, 2024)	2.6	12.6	1.5
Solar PV module production (GW, 2025)	45	750	3
Average carbon price (€/tCO ₂ , 2026)	≈ 75	8 to 10	No consolidated market
ISO technical committees on climate related standards (2025)	24	18	4

FIGURE 3. INSTALLED SOLAR CAPACITY PER INHABITANT, 2015-2025 (W/inhabitant)

Sources: Installed capacity data are drawn from IRENA's Renewable Capacity Statistics (2016, 2021, 2025, and 2026 editions), supplemented by figures from China's National Energy Administration, IEA-PVPS, and SolarPower Europe. Population data come from the World Bank (for China and the United States) and Eurostat (for the EU). All 2025 figures are preliminary estimates. EU data refer to the EU 27 for the 2020–2025 period and to the EU 28 for 2015 (which includes the United Kingdom).



bon-intensive sectors that do not yet have a fully green technological alternative but are committed to a reduction trajectory. The proliferation of labels has an ambiguous effect on metaphor. On the one hand, it multiplies the available reins, including in financial traditions where the conventional green obligation finds no natural demand. On the other, a label architecture without convergent taxonomies risks becoming a source of opacity: who verifies whether an SLB finances a credible transition, and according to what criteria, when most second-party entities remain based in Europe or the United States? The African sustainable debt market – Nigeria issued the continent's first sovereign green bond in 2017, followed by more modest initiatives in Kenya and South Africa – remains structurally dependent on external certification infrastructures, reproducing on the financial front the asymmetry already visible in ISO technical committees.

Chinese ambivalence

China is simultaneously the largest absolute emitter of greenhouse gases and the world's largest producer of solar panels, batteries and electric vehicles. Its 15th Five-Year Plan (2026-2030) calls for constructive leadership in multilateral climate governance, without giving

up its own emissions trajectory – a real push, but conditioned by industrial interests. Between 2010 and 2025, the scale of Chinese production contributed to a reduction of about 80% in the cost of solar electricity, making this technology competitive in many African regions without the need for subsidies (IRENA, 2026). This contribution does, however, come at a regulatory price: the China national ETS prices carbon at between €8 and €10 per tonne, a fraction of the European value, which encourages precisely the industrial relocation that CBAM seeks to halt. China also participates in fewer ISO climate technical committees than the EU, despite being the largest global emitter – a sign that the rules of the transition continue to be shaped by those who build them, not by those who simply follow them. The absolute aggregates in Figure 2 favour, by construction, the larger economies: they say how much is produced and how much is emitted, but not how much has actually been installed per inhabitant. It is this second metric that allows us to distinguish the country manufacturing the transition from the one deploying it at home – and it is in this metric that the Chinese position becomes most legible. Figure 3 compares installed solar capacity per capita in China, the European Union, and the United States over the last decade.

The interpretation is twofold. In 2015, installed capacity per capita in the European Union was more than six times higher than that of China; in 2025, this advantage was reduced to around 6% – approximately 904 versus 852 watts per capita. China has gone from being just the factory of panels to also becoming one of the territories where they are most installed, and did so in ten years. The United States has followed an intermediate path and is now pursuing its expansion outside of any multilateral normative discipline.

This convergence qualifies the initial metaphor: the second animal no longer limits itself to pushing; it pulls with almost the same force – but it remains tied to a carbon price signal about ten times lower than the European one. The contrast between equivalent deployment and unequal pricing is exactly what CBAM seeks to correct, and it is what makes China's ambivalence structurally distinct from a simple delay: it is not a capacity problem; it is a policy choice. There is still a telling absence in the graph – Africa, whose solar capacity per inhabitant is counted in a few tens of watts, would disappear in the scale. The path along which the cart advances continues to be, for its inhabitants, narrower rather than faster.

Official Chinese discourse is not, in fact, limited to replicating the Western vocabulary of ecological modernisation: the notion of “ecological civilisation” (*shengtai wenming*), enshrined in the Constitution in 2018, invokes Taoist and Confucian references to harmony between human beings and nature to internally legitimise a trajectory that, in practice, remains anchored in industrial growth and export competitiveness. It is a case of selective appropriation of knowledge situated in the service of an agenda whose material effects do not diverge as much from Western ecological modernisation as the rhetoric suggests – but illustrates how even the powers that build the rules feel the need to anchor them in their own cultural narratives, a resource that is rarely recognised in smaller economies.

This duality – competing technologically while claiming normative leadership – also creates a risk of fragmentation: China may prefer to develop its own benchmarks rather than adopt the European and ISO normative frameworks, giving rise to two parallel climate certification systems. Its emissions market and national standards

for green companies suggest partial convergence, not full alignment. In 2025, African countries participated in only four ISO technical committees on climate related standards, compared to 24 for the EU and 18 for China (ISO, 2025) – an asymmetry that initially shapes who sets the technical standards for the transition.

Situated knowledge: from ecological modernisation to ESG decolonisation

The architecture of ESG is, in practice, based on the assumptions of Ecological Modernisation Theory (EMT) (Huber, 1982; Mol & Spaargaren, 2000): it holds that technological innovation and market mechanisms are sufficient to resolve the environmental crisis, without questioning economic growth. The problem is not this theory itself, but its uncritical export to contexts that do not share the same robust institutions – and that were often shaped by colonial processes that generated different priorities. “Sustainability” thus ends up meaning only what is measurable by categories defined in Brussels, not always what best protects ecosystems and local communities. However, there are alternative frameworks, such as the Andean Buen Vivir (Gudynas, 2011) or the African Ubuntu (Ramose, 1999), that understand well-being in a relational and communal way, not as a mere correction of externalities. These are not folklore: they are complete conceptual systems that change what is measured and who measures it. The issue is therefore epistemic – not just one of resources. ISO standards are not neutral: they incorporate assumptions about what counts as credible evidence. The metaphor of the wagon wheels is illuminating: they were designed for European institutional soil; when they encroach on other social terrains, instead of rolling, they dig ruts. Extending the path is necessary, but it is also necessary to rethink the design of the wheels.

Africa, just transition and some conclusions

Africa is the continent that suffers most from this projection. CBAM threatens to reduce the competitiveness of exports such as steel, aluminium, and fertilisers, with real impacts in Mozambique, South Africa, and Egypt, exacerbated by the absence of local carbon markets. The European Union has already launched technical assistance

programmes and financial partnerships, but these continue to operate within the European conceptual framework, without substantially integrating situated knowledge. The concept of just transition, in fact, is read differently by Brussels, the Member States and local communities – which explains why the same architecture can be seen, at the same time, as just and as generating new asymmetries.

Four structural tensions emerge from this: between environmental effectiveness and distributive justice; between internal coherence and external fragmentation (with China creating its own standards); between regulation and technical standardisation (ISO standards become quasi-prescriptive); and between normative universalisation and situated knowledge. These tensions are interconnected: external fragmentation feeds on the refusal to recognise other knowledge as legitimate, and the proliferation of financial instruments will only be fair if it comes with local verification infrastructure. *Omnibus I* adds a fifth question mark: if the EU lightens its internal rules but maintains external ones, the legitimacy of the whole will increasingly depend on the quality of the partnership it builds with those who stand in its way. Ultimately, the effectiveness of European architecture is also measured by how it manages the effects it projects beyond its borders. A cart that advances without looking at those in its path causes damage and loses legitimacy. If Europe wants fair climate leadership, it has to treat just transition mechanisms as a model to be extended to the most vulnerable partners – rather than as a side effect to be managed later. This implies diversifying financing (recognising vehicles such as the green sukuk or debt-for-nature swaps) and accepting that European ecological modernisation is one path between several, the authority of which stems from market power, not from unquestionable conceptual superiority. Technical assistance and more African participation in standards are positive steps, but they still depend on decisions taken in Brussels. The sustainability of European architecture will depend, at its core, on its ability to manage external distributive and epistemic effects with the same rigor with which it manages internal climate objectives – and to recognise that a wider wagon, capable of accommodating different knowledge, goes further than just a faster one. ●

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