

PRODUCT CLAIMS, SUBSTANTIATION AND CLIMATE-RELATED DISCLOSURES IN THE VALUE CHAIN THROUGH DIGITAL STANDARDS

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EXECUTIVE SUMMARY

Transparency at scale and substantiation of claims is becoming the new baseline for global trade. There is a need to invest now in a coherent and scalable approach to provide digital, verifiable sustainability information across value chains if Asia Pacific Economies wish to protect export markets, strengthen credentials for clean, green and ethical products that underpin nation brands and export premiums.

- Whole-of-value chain claims and substantiations about products are qualitatively different to the point-to-point substantiations required for market access currently required by regulatory or procurement processes.
- Sustainability disclosures and claims, including climate-related are, in particular, very challenging and inefficient to do at scale without the adoption of standardised digital exchanges.
- Although jurisdictions and markets are moving at different speeds – and occasionally pausing requirements- the long-run direction of travel is clear: *What is the product? What is it made from? Where has it been? Why should I buy it? Can you substantiate claims?*

INTRODUCTION

Consumers and other supply chain participants need to be able to rely on the accuracy of claims to be able to make informed purchasing decisions. In many jurisdictions making unsubstantiated claims about products without having reasonable grounds has long been illegal. The requirement to *substantiate* claims through instruments such as certificates of conformance has become commonplace to manage procurement and reputational risk and/or to be compliant with market access requirements. However, until recently the transmission of these certificates between private sector parties (suppliers and buyers/importers) and competent authorities (e.g. phytosanitary and export certificates) has been almost invariably *point-to-point* and *manual* (e.g. physical paper, PDFs etc)¹.

The risk of counterfeit, expired or fraudulently-issued certificates has led to global interest in techniques that could facilitate the detection of such certificates such as 3rd party verification and technical approaches (e.g. distributed ledger ‘block-chain’ or verified credentials). Again, however, these techniques have mainly been deployed on a point-to-point basis and only have been deployed successfully in specific use cases (e.g. bills of lading, legal entity verification) and not often at scale.

What is new, and driven by regulators, procurers and consumers, is the demand for transparency disclosures that necessitate reporting and substantiation of claims across *entire value chains*. Such disclosures are *qualitatively* different to simpler point-to-point product substantiation requirements. This is because there is a requirement for actors to disclose information down the value chain and that key data is required to be summatively aggregated from source to the point-of-consumption.

¹ Familiar examples include Material Test Certificates for product claims that *can be tested* (e.g. marine-grade stainless steel against standards such as EN 10204 or ASTM A240), conformity assessment certificates for claims that are *non-testable*, *credence* or *value chain-based* such as ‘organic’ (Biogro), ‘halal’ (JAKIM). Arguably more challenging can be substantiation of claims related to indigeneity of the producer (e.g. <https://openknowledge.fao.org/server/api/core/bitstreams/91c19566-29af-4fe3-afe2-be054ae48ccd/content>; https://www.researchgate.net/publication/382853002_A_report_on_Maori_views_on_provenance_authenticity_and_traceability_PAT_on_taonga_species_during_commercialisation).

BACKGROUND: TRACEABILITY, VISIBILITY AND TRANSPARENCY

Before addressing the challenges of claims and substantiation of claims, it is important to distinguish between three related concepts: traceability, visibility, and transparency:

1. *Traceability* is the ability to trace the history, application of or location of an object. This sounds very technical, and it is, but it's easy to understand. Traceability is the past leading up to the present – enabling a supply chain to ‘tell a story’ about the past movement and the current status of a product. Traceability helps answer questions like: *Where has my product been? Who has handled it? And where should it be right now?* But it isn’t possible to get a complete picture of the present, or the state of the product “right now”, without visibility.
2. *Visibility* provides a more holistic view of the supply chain. For example, *Where are my raw materials? Where are my packaging components? How much is available? Where is it destined to be at a future date? And, is it headed to the right destination?* Visibility is about the present but also about the future, giving the power to make better decisions. However, increasingly regulators, procurers and consumers are after enhanced transparency for products.
3. *Transparency* is the availability of information about the specific product, the processes used in its creation, and even about the locations and parties involved in producing and distributing the product. Transparency has been described as a ‘double-click’ on the life of the product within supply chain visibility data. Consider a complex product such as a lithium-ion battery. The same product could be manufactured at different manufacturing sites destined for the same target market. This means that the same product will have different data to describe the origins, parties and locations – that is, their traceability will be different. Which materials make up the actual device under consideration? To provide the most accurate data, buyers need to understand and perhaps verify the traceability of the specific product in question. Being able to do this allows questions like *Does this food contain any known allergens? Was this sustainably produced? Did the manufacturer have the required certifications to support the labelling claims? How do I safely recycle this product?*

A DEVELOPING INTERNATIONAL CONSENSUS FOR ENVIRONMENTAL, SUSTAINABILITY AND GOVERNANCE DISCLOSURES: UN/CEFACT RECOMMENDATION NO. 49.

The highest profile of emerging demands for substantiation of claims and transparency disclosures in the trading and regulatory environment are those related to climate and sustainability (collectively often known as Environmental, Sustainability and Governance disclosures or ESG). It has been argued that ESG will demand a “*profound shift in how organizations communicate their sustainability commitments and their production practices. This shift will lay the groundwork for a possible future marked by enhanced transparency, accountability and trust*”²

A key input to guide Asia Pacific policy makers should be the recently issued *UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Recommendation No. 49: Transparency at Scale – Fostering Sustainable Value Chains*^{3, 4}.

Recommendation 49 provides policy guidance for governments to:

1. Make sustainability information about products more reliable and comparable and scalable.
2. Help businesses – especially small and medium enterprises (SMEs) – meet new reporting and market access requirements.
3. Build trust in claims about environmental, social, and human rights practices.

² <https://unece.org/trade/documents/2025/05/session-documents/recommendation-no-49-transparency-scale-fostering>

³ <https://unece.org/trade/documents/2025/05/session-documents/recommendation-no-49-transparency-scale-fostering>

⁴ See also OECD work on responsible business conduct due diligence legislation (DAF/INV/RBC(2025)17).

Directly linked to UN Sustainable Development Goal 12 (responsible consumption and production) and frameworks like the Paris Agreement and International Labour Organization standards, Recommendation 49 promotes the idea of “transparency at scale” where there is an expectation that:

- Information about sustainability must be high quality, verifiable, interoperable across countries, and accessible;
- Digital tools like Digital Product Passports (DPPs) will hold reliable data on a product’s origins, materials, emissions, labour conditions, and end-of-life handling;
- Governments, businesses, and independent auditors will issue digitally verifiable certificates and credentials.

In short, it is argued that policy makers should plan for a future where every product could be required to come with a trusted digital record of its sustainability story, from farm or factory to consumer to recycling. Failure to plan for such an eventuality could lead to product claims being seen as inconsistent, unverifiable, or amounting to ‘greenwashing’.

A ‘DEEP DIVE’ ON HOW THE EUROPEAN UNION IS DRIVING THE SUSTAINABILITY CHALLENGE

Globally the European Union has been seen as *the* key trading bloc where sustainability as an outcome is driving requirements for substantiation of claims and transparency⁵. Many requirements originate with the 2019 ‘Green Deal’⁶ or the Corporate Sustainability Reporting Directive (which had its origins in 2014). Both of these initiatives are driving business and trade processes within Europe and for those wishing to sell to Europe to maintain market access. Seen by some as trade barriers these requirements have been the focus of lobbying to delay or derail implementation. However, even where there has been a pause in momentum for implementation (such as the 2025 ‘Omnibus’ process to simplify and reduce administrative burdens), the long-run direction of travel has been clear: *What is the product? What is it made from? Where has it been? Why should I buy it? Can you substantiate claims?*

Examples of key interventions include:

European Union Deforestation Regulation (EUDR).

Part of the European Union’s (EU) biodiversity strategy, the EUDR is regulator-driven requirement designed to prevent products imported to the EU and exported from the EU from contributing to global deforestation or forest degradation. Positive evidence is required that substantiates that products using wood, rubber, cattle, coffee, cocoa, palm oil and soybean (or products which require these as part of their manufacture) are not sourced from land that had been deforested or degraded after December 31, 2020. This regulation applies to operators who place these commodities on the EU market, regardless of whether they are domestically sourced or imported. The declarations require that the products are:

- Deforestation-free;
- Have been produced in accordance with the relevant legislation of the country of production; and
- Are covered by a *Due Diligence Statement* (as prescribed by the EU)

Originally slated for implementation by 30 December 2024, implementation was delayed by one year to give companies and authorities more time to better prepare for its implementation. The Regulation is currently intended to be binding from 30 December 2025

⁵ Although the European Union is seen as being in the vanguard of ESG policy, there are due diligence requirements in Asia-Pacific, including Australia’s Modern Slavery Act (2018) and the US Uyghur Forced Labor Prevention Act (2021).

⁶ European Green Deal is the European Union’s 2019 growth strategy to “transform the EU into a modern, resource-efficient, and competitive economy by achieving climate neutrality by 2050”. A comprehensive package of policy initiatives sits under the Green Deal, including new legislation, funding, and economic measures across sectors like energy, transport, and agriculture, to reduce greenhouse gas emissions.

for large operators and traders, while micro- and small companies will have to apply it as of 30 June 2026 (although these dates are under consultation for revision).

EU Carbon Border Adjustment Mechanism

In what has been seen as a controversial move by the European Commission, the Carbon Border Adjustment Mechanism is intended to impose a carbon levy on certain imported goods to prevent carbon leakage and ensure a level playing field for EU industries that are subject to stringent climate regulations by their own domestic regulations. Designed to be based on the amount of embodied carbon in a product, the concept is to incentive a move to cleaner technologies. Currently only in the data collection and reporting phase of implementation, it will initially target imports of cement, iron and steel, aluminium, fertilisers, electricity and hydrogen.

Digital Product Passports (DPP).

DPPs are intended to be a digital 'identity card' for products, components, and materials, aiming to enhance transparency, promote sustainability, and facilitate circularity by providing easy access to information about a product's lifecycle, including reuse and recycling information. The concept for a DPP originated in the EU and was promulgated under the European Ecodesign for Sustainable Products Regulation. The EU's focus sectors include textiles, electronics, and batteries, as well as product types like furniture, construction materials, and chemicals. Intended to not only inform consumers about the environmental impact of their purchases but also act as a "*circularity information system*" and ..."*encourage the an industry's transition from a linear to a circular economic model*" ('CIRPASS', 2023). The EU see that they can create global standards for DPPs, not only by impacting global businesses that sell to the EU, but also via the International Standardization Organisation (ISO) fast-track process that the European standards body CEN has under the Vienna agreement.

China has recently announced that it is seeking to implement their own DPP and seek to build in a degree of interoperability with the EU's DPP. International Standardization Organisation (ISO) is attempting to develop standards.

The Green Claims Directive

This directive, proposed in March 2023, would require companies to "substantiate the voluntary green claims they make in business-to-consumer commercial practices, by complying with a number of requirements regarding their assessment (e.g. taking a life-cycle perspective)"⁷. If this directive is promulgated, the impact on exporters will require substantiation by third party verification agencies in a manner like already required to export products with the claim 'Organic'⁸.

Modern Slavery

Linked to the EU's Corporate Sustainability Due Diligence Directive (2024)⁹, EU member states are required to transpose into law requirements seeking assurance that human rights have been protected in the supply chain of goods. Known generically as protection against 'modern slavery' companies supplying goods are required to set up processes that identify

⁷ See [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2023\)753958](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2023)753958)

⁸ Note that micro enterprises as defined by the European Commission (ie. companies with fewer than 10 employees and less than €2 million in revenue) may be exempted from substantiation requirements.

⁹ <https://eur-lex.europa.eu/eli/dir/2024/1760/oj>

risks, act on them, track progress and report transparently. Many sustainability schemes have updated their standards to include chapters on human rights protection¹⁰.

THE CHALLENGE OF CLIMATE-RELATED DISCLOSURES ACROSS VALUE CHAINS

As the examples above illustrate, climate-related and similar value chain disclosures and substantiation requirements are designed to provide stakeholders (regulators, procurers, consumers) with essential information about a product or company's environmental footprint across its entire life cycle. These disclosures are crucial for investors, consumers, and regulatory agencies to assess sustainability risks and opportunities. However, current reporting mechanisms often lack *standardisation*, leading to *inconsistencies* and *inefficiencies* in tracking emissions and sustainability commitments throughout value chains. Importantly, current reporting processes just don't scale.

Key challenges include:

- Supply chain data fragmentation: Information is often reported in varied formats, making cross-industry comparisons difficult;
- Inconsistent standards: Different jurisdictions mandate distinct reporting requirements, complicating global compliance;
- Trust and verification issues: Ensuring the accuracy of reported data requires robust claim substantiation mechanisms.

As outlined above, the UN/CEFACT Recommendation 49 helpfully outlines steps that policy makers should adopt:

1. Develop a national policy for transparency at scale – prioritising high-impact sectors (e.g., food, agriculture, fisheries, forestry, minerals);
2. Adopt digital supporting tools – such as the new UN Transparency Protocol (UNTP¹¹) – to ensure compatibility across borders;
3. Digitise government services – making permits, certificates, and trade documents verifiable online;
4. Promote uptake – by educating businesses, supporting SMEs, and incentivising industry participation to develop industry 'playbooks'¹² to build local capacity;
5. Engage internationally – aligning with partners and joining initiatives like the Sustainability Pledge¹³.

WHY ARE DIGITAL STANDARDS SO IMPORTANT?

It is increasingly clear that the seamless sharing of disclosures and substantiation of claims across the value chain at an affordable and scalable cost necessitate a 'global language of business'¹⁴. There is increasing recognition that businesses and governments must adopt digital standards and protocols that are global in nature (or at least interoperable and intelligible to downstream supply chain participants in export markets).

The key components identified are:

- *Standardised Data Elements*: Implementing globally recognised frameworks such as the Sustainability Accounting Standards Board (SASB) and the International Sustainability Standards Board (ISSB) can ensure uniformity in reporting.

¹⁰ An example is the NZ government's official Eco Choice scheme which offers 3rd party verification of Type 1 ecolabels).

¹¹ <https://spec-untp-fbb45f.opensource.unicc.org>

¹² An example, developed by the Finish Innovation fund, is <https://www.sitra.fi/en/publication/digital-product-passport-playbook/#summary>

¹³ <https://thesustainabilitypledge.org>

¹⁴ See the Digital Standards Initiative (<https://dsi.iccwbo.org>) backed by the International Chamber of Commerce (ICC), Enterprise Singapore, the Asian Development Bank, the World Trade Organisation and the World Customs Organisation

- *Structured Data*: Once key data elements are agreed they desirably need to be encoded in a manner that allows the data elements to be identified, intelligible and accessible by downstream actors. (This structuring is analogous to the ‘tagging’ of data by Hyper-Text Markup Language (HTML) that powered the World Wide Web). Note that, at present there is no agreed standard for transportation of such frameworks down the value chain, although many governments and businesses are aligning with the UN Transparency Protocol¹⁵.
- *Cryptographic techniques*: Tamper-proof digital technologies such as Verifiable Credentials (VCs) or distributed ledger technology (Blockchain) can securely store climate-related claims and substantiations contains verifiable information about a person, organisation, or thing and provide an immutable record of disclosures and preventing data manipulation.
- *Application Programming Interfaces (APIs)*: Application Programming Interfaces, are sets of rules and protocols that allow different software applications to communicate and exchange data. APIs act as bridges, enabling applications to interact and share features or functionality, simplifying development and integration. As such they can facilitate real-time data exchange between companies and regulatory bodies, ensuring timely and accurate reporting.

Artificial Intelligence-driven (AI) solutions are increasingly being seen as tools to detect inconsistencies in reported data and enhance the credibility of disclosures. Underlining the importance of standards, it is becoming clear that AI benefits from being built off standardised identity and structured data and, given good data, is much less likely to ‘hallucinate’¹⁶.

IMPLEMENTATION STRATEGIES

For digital standards to be effectively implemented across value chains public and private stakeholders should:

- Recognise that digital chapters of Free Trade Agreements need to move past ‘best endeavours’ and concepts of ‘harmonization’, but must specify the application of international standards in trade;
- Collaborate on Standardisation Initiatives: Industry-wide cooperation is essential to develop and implement interoperable digital standards that can be adopted globally;
- Invest in Digital Infrastructure: Companies must upgrade their digital capabilities to support automated climate-related reporting;
- Mandate Supplier Compliance: Organisations should require suppliers to adopt standardised digital disclosure practices to ensure transparency across the value chain;
- Engage Regulatory Bodies: Close collaboration with policymakers will help align corporate reporting requirements with regulatory frameworks.

WHY ALL THIS MATTERS TO ASIA PACIFIC – WHAT ARE THE BENEFITS?

Global trade is shifting. As outlined in this paper, countries and consumers increasingly want proof that products are sustainable, ethical, and trustworthy. Businesses are under increasing pressure to show where their products come from, how they are made, and what happens at the end of their life. In the absence of the ability for consumers, regulators, and trade partners to access *and* trust sustainability claims, product claims will be inconsistent, unverifiable, or amount to ‘greenwashing’.

For Asia Pacific, and especially those economies that rely on exports of food, fibre, and manufactured products, this is both a challenge and an opportunity. If Asia Pacific can show leadership in transparent, trustworthy sustainability reporting, exporters will gain better access to

¹⁵ <https://spec-untp-fbb45f.opensource.unicc.org>

¹⁶ AI ‘hallucinations’ are when a large language model (LLM) perceives patterns or objects that are non-existent, creating nonsensical or inaccurate outputs.

markets and avoid being locked out by stricter overseas rules. However, currently there is no agreed Asia Pacific approach to product substantiation, especially for sustainability and/or climate disclosures/claims, albeit individual economies are developing frameworks in isolation. For policymakers, this is both a **risk management** and **strategic opportunity** issue.

- **Risk:** If exporters cannot prove sustainability credentials digitally, they risk exclusion from key markets.
- **Opportunity:** By adopting a aligned, national frameworks along the lines of UN/ECE's Recommendation 49, economies can strengthen their reputation for clean, green, and ethical products – reinforcing national brands and supporting export premiums.

It is recommended that Asia Pacific policy makers, working through APEC, seek to adopt a coherent and globally-focussed approach to product claims and substantiations and transparency, particularity for sustainability and climate-related disclosures. If adopted, this framework could deliver direct advantages to the region:

- Market access & competitiveness: exporters can demonstrate compliance with EU and Asian market sustainability requirements;
- Consumer trust: Shoppers at home and abroad can make informed choices;
- Fairer competition: Transparent standards prevent “greenwashers” from undercutting genuinely sustainable producers;
- SME support: Lower compliance costs make it easier for smaller NZ firms to participate in global trade;
- Trade facilitation: Faster customs clearance when digital records replace paper certificates;
- Risk management: Better tracking of supply chains reduces vulnerability to fraud, labour abuses, or environmental scandals.