

CONSIDERATIONS OF
CONFORMITY
ASSESSMENT FOR THE
CIRCULAR ECONOMY

 **Deytec, Inc.**

Monideep Dey, PhD

Considerations of Conformity Assessment for the Circular Economy

April 2022

Prepared by:
Dr. Monideep Dey¹
President

 **Deytec, Inc.**

23276 Southdown Manor Ter., Unit 105
Ashburn, VA 20148
USA

¹ The author is an expert in public policy, regulation and international standardization, and serves as an US expert in international standardization and trade committees.

© Deytec, Inc. 2022. All rights reserved.

This document is copyrighted. It is the intellectual property of Deytec, Inc. It may not be reproduced, distributed or published unless written permission is obtained from Deytec, Inc. Permission may be obtained via email to: Dr. Monideep Dey at deytec@frontiernet.net

Abstract

The post-COVID recovery offers an opportunity to reverse unsustainable economic trends and build back better, to promote sustainable consumption and production as laid out in SDG 12 and transition to a circular, more resilient and low-carbon economy. Nations are developing a circular economy in the context of the Paris Agreement, the United Nations Sustainable Development Goals (SDGs) and the United Nations Call for Action on Adaption and Resilience. ISO, UNECE and other international standards organizations are developing a number of standards that are essential in supporting the climate agenda; they help adapt to climate change, quantify greenhouse gas emissions and promote the dissemination of good practices in environmental management.

A critical element to ensure the achievement of sustainable develop goals is the assessment of conformity and accountability that such goals are being achieved and in a manner consistent with all the SDGs. Although this document reports specifically on conformity assessment for the Circular Economy that is aimed to serve UN SDG12 – Responsible consumption and production, and also UN SDG-13, Climate action, many concepts and methods discussed here will be applicable more broadly in the implementation of all SDGs.

International Standards also play a crucial role in underpinning the global economy, and creating trust on all aspects of international trade. In the past, advanced economies have been the main participants in the development of international standards with participants from the transition and developing economies only playing a minor role. This paper emphasizes that issues important to developing and transition economies such as those for social and environmental concerns should be addressed in international standards for them to have broad benefit across all nations and to achieve the SDGs worldwide.

Introduction

Over the past century, our world has registered remarkable growth which raised global standards of living and lifted millions out of poverty. Unfortunately, with such economic prosperity come concerns about environmental sustainability.

In 2016, the World Bank [1] estimated that by 2050, the world would have to tackle serious challenges ranging from feeding 9 billion people, to providing access to affordable energy, while managing global greenhouse gas (GHG) emissions. The adoption of the United Nations 17 Sustainable Development Goals (SDGs) [2] – by all United Nations Member States in 2015 – serves as a universal call to action to end poverty by 2030, while at the same time, protecting the planet.

Recognizing the role of circularity in accelerating the achievement of the Sustainable Development Goals, the Sixty-Ninth Commission Session of UNECE Members States in April 2021 was held under the theme: “Promoting circular economy and sustainable use of natural resources in the UNECE region [3]”. Following member States’ decisions at the 69th Commission session on “Circular economy and the sustainable use of natural resources”, UNECE is pooling efforts to help harness the power of trade and economic cooperation for the circular transition [4]. A key principle that should guide sustainability is inclusiveness. To enable a smooth transition to a more circular economy, no one should be left behind in the discussions. UNECE caters to the needs of countries with economies in transition. Traditionally, these countries have not been at the forefront of discussions related to sustainable trade and circular economy.

The UNECE has held a High Level Political Forum on Sustainable Development: Making the circular transition work for a transformative and prosperous post-COVID recovery in July 2021; and included sessions on the circular economy at its Steering Committee on Trade Capacity and Standards: Working

Party on Regulatory Cooperation and Standardization Policies (WP.6) 31st session in November 2021 [5]. The 31st WP 6 meeting specifically included papers and discussion of conformity assessment in a circular economy.

This document initially presents the fundamentals of a circular economy, followed by a discussion of the importance of conformity assessment in the circular economy. It concludes with perspectives and examples on applications of conformity assessment tools in a circular economy emphasizing the importance of assessing conformity with social and environmental standards.

Circular Economy Fundamentals

Circularity is defined as the ability of the process to retain the value of products, materials and resources in the economy for as long as possible and to minimize, to the extent possible, the generation of waste along all the steps of the value chain. Figure 1 is one illustration of the cycle in the Circular Economy [6].

The circular economy is a new and inclusive economic paradigm that aims to minimize pollution and waste, extend product lifecycles and enable broad sharing of physical and natural assets. It strives for a competitive economy that creates green and decent jobs and keeps resource use within planetary boundaries [4]. Sustainability and Circular Economy are part of the same system. It is recognized that a Circular Economy needs to be viewed in a holistic manner, a new economy versus the current linear economy. This will necessitate a structural change in the economy with new policies promoted by government.

A circular economy addresses each step of the value chain – from production to consumption, repair and remanufacturing, waste management, and secondary raw materials that are fed back into the economy [7]. Examination of the entire supply chain is essential. Circular economy is not just about waste avoidance.

The global market and global value chains (GVCs) are involved in the production of most goods. Therefore, the consideration and discussion of a circular economy involves discussion of the whole global value chain. Consideration of the circular economy therefore involves tangible and non-tangible sustainability issues of the global value chain such as trade, economic factors, corporate responsibility, labor, human health and rights.

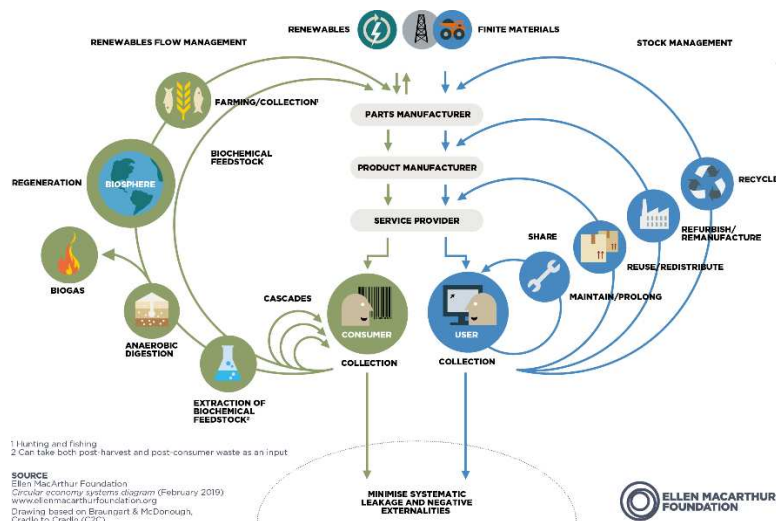


Figure 1 Schematic of a Circular Economy (Ellen MacArthur Foundation)

The Importance of Conformity Assessment in the Circular Economy

Protection of Public Interest and Environment

The use of standards in public administrations, policymaking and the development of laws will be beneficial in the development of a circular economy. In a UNECE project many of the policymakers were not sufficiently aware of the benefits of standards, including for conformity assessment, in public administration. In order to demonstrate that specific goals of circular economy (SDG 12 and 13) are being met, verification of the actions for the achievement of related indicators for a circular economy is necessary through the use of internationally recognized conformity assessment standards.

The importance of technical standards and standards for conformity assessment, complemented with enforceable mandatory regulations for sustainable development, including for a circular economy, has been stressed by international development agencies. Governments and civil society representatives should be equipped to analyze and confirm information disclosed through sustainability reporting. The underutilization of sustainability data, including for a circular economy, particularly in the case of governments will be detrimental to achieving the goals of a circular economy. Government should have the ability (financial and personnel) to monitor and enforce, while promoting market forces to encourage increased awareness in industry and civil society [8]. International conformity assessment standards will play a key role in the monitoring and enforcement of government mandates, especially those related to the environmental, the loss of biodiversity, the loss of quality of soil, air, water in the value chain, and other new challenges.

Benefits for Industry

There can be big savings to industry, including SMEs, from a circular economy, but confidence and quality requirements will be an issue unless internationally recognized conformity assessment standards are used. The participation of industry (especially big businesses) is important for the success of a circular economy, including for establishing requirements and conformity assessment methods [9]. Industry will need to use internationally recognized conformity assessment standards to be credible and to comply with regulations.

There is growing evidence of the challenges of social auditing—a procedure also used to certify and verify standards compliance—in uncovering or mitigating human and labor rights issues in companies' global value chains [8]. Given the mutually reinforcing relationship between the SDGs and human rights, the pitfalls of certification and verification audits and lack of accountability may compromise achieving the SDGs, including for a circular economy. An examination of schemes, especially of their assurance and worker engagement arrangements and culture, as well as for more sustainability regulation—including mandatory human rights and environmental due diligence—for companies across their operations and global value chains in a circular economy will be beneficial [8]. Industry will gain greater credibility and recognition in a system where it can demonstrate to civil society its compliance with established regulations.

Linkage to Trade

A transition towards a more resource efficient and circular economy has broad interlinkages with international trade, through cross border supply chains, end-of-life value chains, and services trade. Estimates from the UN Conference on Trade and Development (UNCTAD) show that standards and regulations have an impact on approximately 80 percent of the world's trade in commodities. Trade can provide important opportunities to achieve economies of scale to use materials in a sustainable way and to drive resource efficiency and circular economy initiatives [10]. At the same time, it is essential to ensure that these trade flows do not result in environmental degradation.

A circular economy aims to transform the current linear economy into a circular model to reduce consumption of finite material resources by recovering materials from waste streams for recycling or reuse, using products longer, and exploiting the potential of the sharing and services economy. Circular economy policies and initiatives largely take place domestically at the national or regional level. However, they have important interlinkages with international trade. The importance of conformity assessment guidelines and standards have been widely recognized in ongoing discussions at the WTO.

Development of International Conformity Assessment Standards

At a micro level, conformity assessment is a link between technical standards and the products, services, and processes we use in real life. There are different way of demonstrating conformity with requirements in the technical standard. The objective of conformity assessment at the micro level is to provide stakeholders confidence on the goods and services, demonstrating that they meet the expectations set by the technical requirements in a standard, and that they will perform as expected and are always safe for use. At the macro level, conformity assessment is necessary to confirm that the overall goals of the SDGs are all being met, particularly those related to social and environmental factors. Social factors include human rights, child labor, gender equality, and effect on indigenous people.

In the past, developed nations (the Global North) provided the main initiatives behind the development of international standards. Although developing countries (the Global South) are members of the International Organization for Standardization (ISO), they have not played a central role in the standards development process in the past. ISO's committee on conformity assessment (CASCO) has developed conformity standards that now play a central role in the international market. These conformity assessment standards have become of interest to developing countries as they look to export goods from their countries and grow their economies. International organizations have initiated efforts to enhance the participation of representatives from nations of all economies to facilitate trade and achieving the SDGs.

Perspectives on Conformity Assessment Tools and Options

Conformance in a Circular Economy can be conducted both at a global level as is presently done for sustainability reporting, and also for key elements in the circular economy cycle. This would be a tiered approach to assessment of conformity in a circular economy. Both tiers are important, however, global performance indicators will play a much more important role in judging the success of a circular economy.

Assessing Conformance at the Global Level

GoF47 and GRI

As corporate social responsibility (SR) emerges as a new business paradigm, sustainability reporting (SR) is increasingly recognized globally as an important instrument of transparency and accountability, contributing to companies' efforts to achieve sustainability. The Group of friends of paragraph 47 (GoF47) [11], a voluntary group of national governments are in the forefront of the discussions on SR and the necessary legal framework to promote disclosure about sustainability-related information. The special feature of this group is its government-led nature. It aims at promoting the discussions about SR and the practice of globally developing and exchanging best practices and policy guidance in this area. GoF47 is dedicated to strengthening an international culture of corporate transparency and accountability as key elements of a well-functioning economy that enhance the private sector's contribution to sustainable development. The group believes that the widespread practice of SR has the potential to contribute to the assessment of sustainability impacts by the corporate sector and to encourage sustainable business practices.

Today, the Global Reporting Initiative (GRI) is the most used guide for SR due to the broad acceptance of its principles and indicators. The well-known GRI Guidelines have recently been transformed into a “set of modular, interrelated GRI Sustainability Reporting Standards (GRI Standards)” mainly to improve the structure and format of contents [12]. The reporting standards can be used in conjunction with ISO 26000, Social Responsibility [13], and IWA 26:2017 Using ISO 26000:2010 in management systems [14].

Governments and civil society representatives presently do not appropriate information disclosed through SR as much as other actors closely related to companies—such as investors, shareholders and labor unions. This underutilization of sustainability data is particularly noted in the case of governments. Although always recognized as an important stakeholder group in promoting SR, they are not well equipped to use SR optimally. The ineffective and weak impact of governments on SR is the result of state inability (financial and personnel) to monitor and enforce, and to downsize traditional command-control roles while promoting market forces to encourage better behavior in industry and civil society. This imposes more and more responsibility on civil society and citizens to fulfil governments’ roles [8].

National and international discussion still focus on the technical implementation of SR practices in a business environment, while not accounting for the broader role of stakeholders such as the government and civil society. In order to enable SR to become a strong instrument of assessing companies’ activities or performance in relation to sustainability issues, challenge lies in providing those stakeholders with the conditions for better use of disclosed information.

There is also a need to simplify corporate sustainability reports in order to generate meaningful and comparable data. Even though the GRI is the most accepted and used methodology, its use of about 90 key performance indicators and a myriad of measurements renders its comprehension and comparability between companies difficult, if not impossible, for most people.

World Bank Group

The World Bank has developed The Environmental and Social Framework (ESF) that applies to all its Investment Policy Financing (IPF) projects [15]. It makes important advances in areas such as labor, non-discrimination, climate change mitigation and adaptation, biodiversity, community health and safety, and stakeholder engagement – including expanding the role of public participation and grievance mechanisms. The ESF enhances the World Bank’s commitment to sustainable development through ten Environmental and Social Standards (ESS) that are designed to support Borrowers’ environmental and social (E&S) risk management. These standards contain performance indicators of sustainable development. The International Finance Corporation (IFC) of the World Bank Group has also developed similar standards and performance indicators for the projects it finances. Presently, there is an initiative to harmonize these standards between multilateral development banks (MDBs) such as The World Bank, IFC, Inter American Bank, and Asian Development Bank.

Currently, there are challenges in the use of these indicators as conformity with the standards may not easily be assessed as the standards are not always mandated by the banks or the national governments in which the projects are implemented. Improved mandatory requirements and transparency is required for all stakeholders to assess conformance, including by civil society.

Assessing Conformance at the Micro Level for Products and Goods

ISO’s committee on conformity assessment (CASCO) has developed standards that include management systems standards, standards for the certification of products, services and processes, and also for verification and validation of claims [16]. These standards contain requirements for bodies providing conformity assessment services and are mainly used for third party certification. These standards do not contain the performance indicators or metrics against which conformity is to be assessed. They also

are not presently used in the assessment of environmental and social standards in the broader framework and goals of the SDGs.

ISO/IEC 17029, Conformity assessment – General principles and requirements for validation and verification bodies [17], contains general principles and requirements for the competence, consistent operation and impartiality of bodies performing validation/verification as conformity assessment activities, which is understood to be a confirmation of reliability of information declared in claims. The claim at a high level can be made that the objectives of the circular economy as defined by mandatory regulations and supporting voluntary standards are being met. The claim could be made in a high level report submitted by a corporation or other entity to a government agency or other party. Such a report could be subject to an audit by a government agency, or government may mandate that the claim be certified by a 3rd party. An effective management system is today an essential business ingredient and having it audited and certified to a standard brings a number of benefits. Certification bodies that use the ISO/IEC 17021 series are able to ensure competent audit teams, with adequate resources, following a consistent process and delivering impartial results. Some countries have or are considering development of a management system standard for a circular economy.

Applied more generally, ISO/IEC 17029:2019 can also support broader sustainability claims as discussed earlier. A claim can be a high-level statement about a characteristic of a product, or about a process or an organization associated with that product (traceable asset). A sustainability claim is a claim that covers one or multiple sustainability dimensions (economic, environmental, and social).

Certification systems are costly for the producer and the costs are eventually borne by consumers. There is presently a big industry based on certification systems that can be beneficial, but may also be overused and constitute barriers to trade, especially when the requirements are imposed on transition or developing economies. Audit and certification bodies should be used only in high risk situations after performance of a risk assessment. Certification of individual products and goods in a circular economy to indicate performance of the whole cycle can become very costly and is unnecessary. Assessment of key elements in the cycle based on risk along with use of performance indicators on the global performance provides an efficient means to determine accomplishment of the SDGs.

Assessing Conformance at Key Elements of the Cycle

Efforts are underway for eco-design standards on sustainable consumption of materials, of energy and of other resources such as fresh water [7]. Emissions to air, water or soil are also being addressed as well as pollution through physical effects such as noise, vibration, radiation, electromagnetic fields. Standards for generation of waste material, and reuse, recycling and recovery of materials and/or of energy are under development, as well as for reparability, durability, upgradability, and for recyclability of devices such as electronic displays, commercial refrigeration appliances, washing machines and vacuum cleaners.

Some elements of a circular economy may be defined as key and subject to assessment of conformity to established standards based on risk analysis, as discussed above.

The following section provides an example on a key industry for which a circular economy has been identified as important, and in which the development of standards and guidelines are actively being pursued.

Examples of Good Practices

Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector

To advance sustainability and circularity in value chains, traceability and transparency are key priorities. In line with the goals of the United Nations 2030 Agenda, and particularly Sustainable Development Goal 12 on sustainable consumption and production, traceability and transparency support industry efforts to effectively identify and address actual and potential negative impacts in the areas of human rights, the environment, and human health [18].

Traceability and transparency helps companies to make risk-informed decisions, and achieve accountability for sustainability claims and anchor business models to responsible business conduct. This helps them to respond to the increasing demand for information from key value chain actors, including governments, investors, nongovernmental organizations (NGOs), workers associations and collaborative initiatives.

Companies in the garment and footwear industry presently have a limited view of the network of business partners within their value chain and do not have access to the full story behind their products and the way they have been manufactured. Most can identify and track their immediate suppliers, but information is often lost about the suppliers of their suppliers, which prevents them from exercising due diligence along their value chain.

Greater transparency empowers consumers to make better informed consumption choices, as they have more reliable information about the sustainability and circularity claims about products and processes. As a result, traceability and transparency have great potential to build trust among all industry actors. High-income countries tend to operate more in the downstream part of the value chain where there is greater capital investment and more consumer-linked activities such as design, branding and retailing, consumption, and post-consumption activities. Low-, middle-income and transition economy countries tend to mainly intervene in the upstream part of the value chain, where there are more labor-intensive activities such as farming, harvesting, ginning, spinning, dyeing, weaving, stitching, tanning, cutting and finishing. Traceability and transparency will be beneficial to all actors when considered across the entire value chain.

UNECE is providing industry actors with a set of internationally agreed practices on traceability and transparency for the harmonized collection and transmission of data for tracking and tracing materials, products, and processes across an entire value chain, including all involved facilities and intermediaries, and includes related information about the sustainability performance of these value chain participants. While specifically developed for the garment and footwear industry, such internationally agreed practices for advancing traceability and transparency have applications in cross-industry value chains, thus contributing to the achievement of several goals of the United Nations 2030 Agenda, and particularly for the circular economy that supports Sustainable Development Goal (SDG) 12 on responsible consumption and production.

Providing industry and other relevant stakeholders with a set of internationally agreed practices will help to ensure the reliability of sustainability claims in the areas of human rights, fair labor practices, the environment, consumer interests and anti-corruption, while also allowing for simplification, cost-efficiency and improved organizational processes, especially for small and medium sized enterprises (SMEs) and industry actors in less-advanced economies.

Conclusions and Recommendations

International development organizations such as the UNECE and the World Bank are addressing aspects of conformity assessment for the implementation of the SDGs, including SDG 12, Responsible

Consumption and Production. A key aspect noted is the holistic approach adopted to address all aspects of sustainable development, including social and environmental issues, for a just transition.

Challenges lie ahead in transparency and for enhancing the ability for governments and civil society to monitor the successful transition to sustainable development in a circular economy. Public policy, regulations, performance indicators and conformity assessment methods need to be developed and harmonized for the successful implementation of programs. Certification of all products in a circular economy is not necessary or recommended, most important is whether the circular economy promotes a just and inclusive transition to sustainable growth by addressing environmental and social issues important to all entities in the global value chain.

It is recommended that international standardization organizations be reorganized to be more inclusive, and to adopt a mandate to address issues important to developing and transition economies for sustainable development. Addressing issues important to developing and transition economies will benefit advanced economies through increased trade worldwide. Technical standards and those for conformity assessment should be developed in an integrated manner such that they can be more easily utilized in the governance of sustainable development.

References

1. [World Bank Group Climate Change Action Plan 2016-2020](#), World Bank Group, 2016.
2. [Sustainable Development Goals \(SDGs\)](#), United Nations, Department of Economic and Social Affairs, Sustainable Development, 2015.
3. [Trade and Economic Cooperation for Circular Economy](#), United Nations Economic Commission for Europe (UNECE), Trade Program.
4. [The Circular Economy](#), UNECE, Trade Program.
5. [Thirty-first Session of the Working Party on Regulatory Cooperation and Standardization Policies \(WP.6\)](#).
6. [Circular Economy Diagram](#), Ellen Macarthur Foundation.
7. The EU Circular Economy package – life cycle thinking to life cycle law, Richard Hughes, ScienceDirect, The 24th CIRP Conference on Life Cycle Engineering, Procedia CIRP 61 (2017) 10 – 16.
8. [Sustainability Standards and Global Governance](#), *Experience of Emerging Economies*, Springer Open Access, 2020.
9. [Standards for the Sustainable Development Goals](#), United Nations Economic Commission for Europe (UNECE), ECE/TRADE/444, October 2018.
10. [International Trade and the Transition to a Circular Economy](#), OECD, October 2018.
11. [Group of friends of paragraph 47 \(GoF47\)](#).
12. [The global standards for sustainability reporting](#), GRI.
13. [ISO 26000, Social responsibility 2010](#), International Organization for Standardization.
14. [IWA 26:2017 Using ISO 26000:2010 in management systems](#), International Organization for Standardization.
15. [Environmental and Social Framework](#), The World Bank Group.
16. [ISO's Committee on Conformity Assessment \(CASCO\)](#).
17. [ISO/IEC 17029:2019, Conformity assessment — General principles and requirements for validation and verification bodies](#).
18. [Recommendation No. 46: Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector](#), United Nations Economic Commission for Europe, Centre for Trade Facilitation and Electronic Business, January 2022.