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## A COMPARATIVE ANALYSIS OF CORPORATE ENVIRONMENTAL RESPONSIBILITY: EXAMINING THE IMPLEMENTATION OF INTERNATIONAL ENVIRONMENTAL LAW IN GLOBAL BUSINESS ACROSS JURISDICTIONS

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### ABSTRACT

Businesses throughout the world are being held more accountable for their environmental effect in response to growing environmental concerns and the urgent demand for sustainability. Corporate Environmental Responsibility (CER) has arisen as an ideal model for incorporating environmental care into business operations. Countries such as India, the United States, Germany, South Korea, Japan, Brazil, and China use different ways to integrating International Environmental Law (IEL), influenced by local rules, economic objectives, and cultural views.

The global community has seen substantial progress in environmental regulation, ranging from the United States' Clean Air Act to Germany's circular economy efforts. Emerging economies such as India and Brazil have taken creative steps under difficult conditions, encouraged by international frameworks. These variances in environmental responsibility reflect the intricate interplay of international treaties, national legislation, and company behavior.

The comparative research investigates how corporate governance, stakeholder involvement, and globalization interact with environmental accountability across jurisdictions. The research aims to better understand the routes for aligning corporate responsibility with global sustainability goals by finding gaps and synergies in CER practices.

**Keywords:** Corporate Environmental Responsibility, International Environmental Law, Sustainability, Global Governance, Environmental Accountability.

### Introduction

In this era where environment faces rapid challenges, Corporate Environmental Responsibility (CER) emerged as a significant tool which align the business entities with the sustainability goals. The United Nations Conference on Human Environment (1972) also known as Stockholm Conference righteously proclaims that man is both creator and the moulder of the environment<sup>1439</sup>. The power

vested with men when used wisely can transform the environment and can bring opportunities which can enhance the quality of life. If the same powers are used wrongly, it can harm both human race and human environment<sup>1440</sup>. Nations saw an emerging need to balance the destruction caused to the environment by the human action. The Stockholm Conference became the first ever world conference to consider environment as a major issue. The conference came up with 26

<sup>1439</sup> United Nations, Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972, A/CONF.48/14/Rev.1 (New York: United Nations, 1973), p. 3-5. Available at:

<https://docs.un.org/en/A/CONF.48/14/Rev.1> (Accessed on March 20, 2025).

<sup>1440</sup> *ibid*

principles and an Action Plan for human environment<sup>1441</sup>.

One of the major results of the conference was the creation of United Nations Environment Programme (UNEP)<sup>1442</sup>. Its mission is to inspire, inform and enable the nations and its people to live a quality life. For more than 50 years, UNEP has collaborated with governments, stakeholders, and other partners to raise global living standards and solve the most critical environmental issues<sup>1443</sup>. It is a leading global authority on the environment, and it aims to strengthen its collaboration with the private businesses in fulfilling the agenda 2030 and to achieve Sustainable Development Goals. The same was mentioned in the UNEP's 2023 Annual Report on Private Sector Partnerships<sup>1444</sup>. The report explicitly mentions the key role of private sector in addressing the three major environmental crises; climate change, nature and biodiversity loss and pollution. 1. For more than 50 years, UNEP has collaborated with governments, stakeholders, and other partners to raise global living standards and solve the most critical environmental issues.

The conference brought together political leaders, diplomats, and non-governmental organization officials from 179 countries to address the environmental effect of human socioeconomic activities<sup>1445</sup>.

Building on this foundation, the UNCED—often called the Earth Summit—produced the Rio Declaration on Environment and Development, a set of 27 principles guiding sustainable development, including the precautionary approach (Principle 15) and polluter pays

principle (Principle 16), which directly influence CER by holding corporations accountable for environmental impacts<sup>1446</sup>. Alongside it, Agenda 21 emerged as a comprehensive action plan, urging businesses to integrate sustainability into their operations<sup>1447</sup>. The Rio+20 Conference in 2012 reaffirmed these commitments, emphasizing corporate roles in green economies<sup>1448</sup>.

The United Nations Framework Convention on Climate Change (UNFCCC), established at Rio, led to the Kyoto Protocol (1997) and Paris Agreement (2015), setting binding emission targets that shape corporate responsibilities<sup>1449</sup><sup>1450</sup>. The Intergovernmental Panel on Climate Change (IPCC) supports these efforts with scientific reports, such as Global Warming of 1.5°C, pressing corporations to act<sup>1451</sup>. Voluntary frameworks like the United Nations Global Compact (UNGC), OECD Guidelines for Multinational Enterprises, ISO 14001, and Equator Principles further guide CER<sup>1452</sup><sup>1453</sup><sup>1454</sup><sup>1455</sup>. Legal theories of monism and dualism affect implementation, as seen in cases like India's Vellore Citizens Welfare Forum v. Union of India (1996), embedding international norms into domestic law<sup>1456</sup>.

### CER Explained

So, what's Corporate Environmental Responsibility (CER) all about? Corporate Environmental Responsibility (CER) represents a

<sup>1441</sup> United Nations (1972) Report of the United Nations Conference on the Human Environment. Available at: <https://www.un.org/en/conferences/environment/stockholm1972> [Accessed on March 20, 2025]

<sup>1442</sup> UN General Assembly, Rio Declaration on Environment and Development, United Nations, 1992. Available at: [https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A\\_CONF.151\\_2\\_6\\_VolI\\_Declaration.pdf](https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_2_6_VolI_Declaration.pdf) [Accessed on March 20, 2025].

<sup>1443</sup> UNEP (n.d.) Our Work. Available at: <https://www.unep.org/our-work> [Accessed on Mar. 23, 2025].

<sup>1444</sup> UNEP (2023) Annual Report on Private Sector Partnerships. Available at: <https://www.unep.org/resources/report/annual-report-private-sector-partnerships-2023> [Accessed on Mar. 23, 2025].

<sup>1445</sup> United Nations (1992) Report of the United Nations Conference on Environment and Development. Available at: <https://www.un.org/en/conferences/environment/rio1992> [Accessed 8 April 2025].

<sup>1446</sup> *Supra note 4*

<sup>1447</sup> United Nations (1992) Agenda 21. Available at: <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf> [Accessed 8 April 2025].

<sup>1448</sup> United Nations (2012) The Future We Want. Available at: <https://sustainabledevelopment.un.org/rio20/futurewewant> [Accessed 8 April 2025].

<sup>1449</sup> UN Framework Convention on Climate Change, Kyoto Protocol, United Nations, Treaty Series, vol. 2303, p. 162, 1997. Available at: [https://unfccc.int/kyoto\\_protocol](https://unfccc.int/kyoto_protocol) [Accessed 8 April 2025].

<sup>1450</sup> UN Framework Convention on Climate Change, Paris Agreement, United Nations, 2015. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> [Accessed 8 April 2025].

<sup>1451</sup> IPCC (2018) Global Warming of 1.5°C. Available at: <https://www.ipcc.ch/sr15/> [Accessed 8 April 2025].

<sup>1452</sup> UNGC (n.d.) The Ten Principles. Available at: <https://www.unglobalcompact.org/what-is-gc/mission/principles> [Accessed 8 April 2025].

<sup>1453</sup> *ibid*

<sup>1454</sup> *ibid*

<sup>1455</sup> Equator Principles (2020) The Equator Principles. Available at: <https://equator-principles.com/> [Accessed 8 April 2025].

<sup>1456</sup> Vellore Citizens Welfare Forum v. Union of India, A.I.R. 1996 S.C. 2715 (India).



critical framework through which business entities are held accountable for mitigating their environmental impact while contributing to sustainable development goals. It encompasses a company's obligation to reduce its ecological footprint—through measures such as minimizing emissions, managing waste, and conserving resources—and aligns corporate practices with broader environmental objectives<sup>1457</sup>. Often positioned within the scope of Corporate Social Responsibility (CSR), CER specifically addresses environmental stewardship, emphasizing compliance with regulations and proactive sustainability initiatives.

The development of CER is deeply rooted in international environmental law, which establishes the legal and normative basis for corporate obligations. The Paris Agreement, adopted in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), mandates nations to limit global temperature increases to below 2°C, translating into national policies that impose emission reduction targets on corporations<sup>1458</sup>. Similarly, the Kyoto Protocol, enacted in 1997, introduced binding commitments for developed countries to reduce greenhouse gas emissions, influencing corporate environmental practices through domestic legislation<sup>1459</sup>. These international agreements provide a foundation that national governments adapt into enforceable regulations affecting business operations.

In addition to mandatory frameworks, voluntary instruments significantly shape CER. The United Nations Global Compact (UNGC), launched in 2000, encourages businesses to adopt ten principles, three of which focus on environmental responsibility, including the adoption of proactive measures to address ecological challenges<sup>1460</sup>. The ISO 14001

standard, established by the International Organization for Standardization, provides a globally recognized framework for environmental management systems, enabling corporations to systematically reduce their environmental impact<sup>1461</sup>. Financial institutions further contribute through the Equator Principles, a set of guidelines ensuring that projects they finance adhere to stringent environmental standards<sup>1462</sup>. While voluntary, these mechanisms are widely adopted due to their reputational and operational benefits.

The significance of CER stems from the substantial role corporations play in environmental degradation and their potential to drive positive change. As major consumers of natural resources and producers of pollution, businesses exert a profound influence on ecological systems. The Intergovernmental Panel on Climate Change (IPCC) underscores this in its Global Warming of 1.5°C report, highlighting the urgent need for corporate action to meet climate targets<sup>1463</sup>. Conversely, corporations possess the resources and innovation capacity to lead transitions toward sustainability, such as adopting renewable energy or implementing circular economy practices.

The implementation of CER varies across jurisdictions, influenced by the strength of regulatory frameworks, enforcement mechanisms, and societal expectations. In countries with robust legal systems and stringent oversight, such as Germany, CER is effectively integrated into corporate practices. In contrast, regions with weaker enforcement, such as parts of India, face challenges in ensuring consistent compliance<sup>1464</sup>. Cultural attitudes toward environmental responsibility further shape these differences, affecting how corporations prioritize sustainability. This section

<sup>1457</sup> United Nations (n.d.) Corporate Social Responsibility and the Environment. Available at: <https://www.un.org/en/sections/issues-depth/corporate-social-responsibility/> [Accessed 8 April 2025].

<sup>1458</sup> *Supra* note 12

<sup>1459</sup> *Supra* note 11

<sup>1460</sup> *Supra* note 14

<sup>1461</sup> ISO (2015) ISO 14001:2015. Available at: <https://www.iso.org/standard/60857.html> [Accessed 8 April 2025].

<sup>1462</sup> *Supra* note 17

<sup>1463</sup> *Supra* note 13

<sup>1464</sup> Ministry of Environment, Forest and Climate Change, India (2023) Annual Report 2022-23. Available at: <https://moef.gov.in/wp-content/uploads/2023/03/Annual-Report-2022-23.pdf> [Accessed 8 April 2025].

establishes the conceptual groundwork for the subsequent analysis of CER across seven key jurisdictions.

### CER Compliance in India

India's approach to Corporate Environmental Responsibility (CER) is shaped by a robust legislative framework, evolving enforcement mechanisms, and a proactive judiciary, reflecting its commitment to balancing industrial growth with environmental sustainability. The cornerstone of this framework is the Environment (Protection) Act, 1986, which grants the central government broad authority to regulate industrial pollution, hazardous waste management, and resource conservation, imposing direct obligations on corporations to mitigate their environmental impact<sup>1465</sup>. This act is supplemented by the Air (Prevention and Control of Pollution) Act, 1981, which sets emission standards for industries, and the Water (Prevention and Control of Pollution) Act, 1974, which governs effluent discharge, collectively forming a comprehensive legal basis for CER<sup>1466,1467</sup>. Additionally, the National Green Tribunal (NGT) Act, 2010, established a specialized court to adjudicate environmental disputes, enhancing corporate accountability by providing a dedicated forum for enforcement and redressal<sup>1468</sup>.

Enforcement of these laws is primarily managed by the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), which monitor compliance, issue permits, and levy penalties for violations<sup>1469</sup>. The Ministry of Environment, Forest, and Climate Change (MoEFCC) is in charge of national policy and coordination. According to the MoEFCC's *Annual Report 2022-23*, while India has made strides in establishing regulatory frameworks, enforcement remains inconsistent

due to limited funding, inadequate staffing, and varying state-level priorities<sup>1470</sup>. To complement mandatory regulations, the National Action Plan on Climate Change (NAPCC), launched in 2008, promotes voluntary corporate initiatives, such as renewable energy adoption and energy efficiency, aligning with India's Paris Agreement commitments<sup>1471</sup>. The Perform, Achieve, and Trade (PAT) scheme under NAPCC incentivizes energy-intensive industries to reduce emissions, illustrating a blend of regulatory and market-based approaches<sup>1472</sup>.

Judicial intervention has significantly strengthened CER in India. The Supreme Court's landmark ruling in *Vellore Citizens Welfare Forum v. Union of India* entrenched the polluter pays and precautionary principles into Indian environmental law, mandating that corporations bear the cost of environmental damage and act proactively to prevent harm<sup>1473</sup>. This decision set a precedent for corporate liability, influencing subsequent policies and corporate behavior. Similarly, the NGT's 2017 order against Vedanta Limited for illegal waste disposal in Tamil Nadu imposed substantial fines and cleanup costs, reinforcing strict liability for environmental breaches<sup>1474</sup>. More recently, the NGT's 2022 directive to penalize industries violating air quality norms in the National Capital Region highlighted ongoing efforts to enforce CER amid rapid urbanization<sup>1475</sup>.

India's CER landscape is further shaped by its socio-economic context. As a developing economy, it faces the dual challenge of fostering industrial growth while addressing environmental degradation, such as air

<sup>1465</sup> Environment (Protection) Act, No. 29, Acts of Parliament, 1986 (India).

<sup>1466</sup> Air (Prevention and Control of Pollution) Act, No. 14, Acts of Parliament, 1981 (India).

<sup>1467</sup> Water (Prevention and Control of Pollution) Act, No. 6, Acts of Parliament, 1974 (India).

<sup>1468</sup> National Green Tribunal Act, No. 19, Acts of Parliament, 2010 (India).

<sup>1469</sup> Central Pollution Control Board (n.d.) About CPCB. Available at: <https://cpcb.nic.in/about-us/> [Accessed 8 April 2025].

<sup>1470</sup> Ministry of Environment, Forest and Climate Change (2023) Annual Report 2022-23. Available at: <https://moef.gov.in/wp-content/uploads/2023/03/Annual-Report-2022-23.pdf> [Accessed 8 April 2025].

<sup>1471</sup> Ministry of Environment, Forest and Climate Change (2008) National Action Plan on Climate Change. Available at: <https://moef.gov.in/wp-content/uploads/2018/04/NAPCC-English.pdf> [Accessed 8 April 2025].

<sup>1472</sup> Bureau of Energy Efficiency (n.d.) Perform, Achieve, and Trade Scheme. Available at: <https://beeindia.gov.in/content/pat> [Accessed 8 April 2025].

<sup>1473</sup> *Supra* note 18

<sup>1474</sup> National Green Tribunal (2017) Order on Vedanta Limited (O.A. No. 188/2016). Available at: <https://greentribunal.gov.in/> [Accessed 8 April 2025].

<sup>1475</sup> National Green Tribunal (2022) Order on NCR Air Quality (O.A. No. 21/2022). Available at: <https://greentribunal.gov.in/> [Accessed 8 April 2025].

pollution in urban centers and deforestation in rural areas. The MoEFCC notes that multinational corporations often adopt higher CER standards due to global pressure, whereas smaller firms struggle with compliance due to resource constraints<sup>1476</sup>. This disparity underscores the need for capacity-building and stricter enforcement to ensure uniform CER adoption across India's diverse corporate sector.

### CER Compliance in USA

The United States' approach to Corporate Environmental Responsibility (CER) is characterized by a complex interplay of federal and state regulations, voluntary corporate initiatives, and significant judicial oversight, reflecting its position as a global economic leader with substantial environmental impact. At the federal level, the National Environmental Policy Act, 1969, serves as a foundational statute, requiring environmental impact assessments for major federal actions, indirectly influencing corporate behavior by setting a precedent for environmental consideration in business operations<sup>1477</sup>. The Clean Air Act, 1970, imposes strict emission standards on industries, mandating corporations to adopt pollution control technologies, while the Clean Water Act, 1972, regulates effluent discharges into water bodies, compelling businesses to manage waste responsibly<sup>1478,1479</sup>. These laws are enforced by the Environmental Protection Agency (EPA), established in 1970, which monitors compliance, issues permits, and imposes fines for violations, such as the \$20.8 billion settlement with BP following the 2010 Deepwater Horizon oil spill<sup>1480</sup>. However, enforcement varies due to political shifts, with the EPA's budget and staffing fluctuating under different administrations, as

noted in its *Fiscal Year 2023 Report*<sup>1481</sup>. To complement regulatory efforts, voluntary frameworks like the United Nations Global Compact, adopted by over 3,000 U.S. firms, encourage corporations to align with environmental principles, while the ISO 14001 standard guides companies in establishing environmental management systems<sup>1482,1483</sup>. The U.S.'s commitment to the Paris Agreement, reaffirmed in 2021 after a brief withdrawal, further shapes CER by setting national emission reduction goals that filter down to corporate targets<sup>1484</sup>.

Judicial developments have significantly bolstered CER in the U.S., with landmark cases establishing corporate liability for environmental harm. The Supreme Court's decision in *United States v. Bestfoods* (1998) clarified that parent companies can be held liable for subsidiaries' pollution under the Comprehensive Environmental Response, Compensation, and Liability Act, 1980 (CERCLA), reinforcing accountability across corporate structures<sup>1485</sup>. Similarly, *Massachusetts v. EPA* (2007) compelled the EPA to regulate greenhouse gases, indirectly pressuring corporations to reduce emissions<sup>1486</sup>. More recently, litigation like the 2021 *Juliana v. United States* case, though dismissed on procedural grounds, highlighted growing public demand for corporate and governmental action on climate change<sup>1487</sup>. These rulings align with international norms, such as the polluter pays principle from the Rio Declaration, integrating global standards into U.S. law<sup>1488</sup>. Socio-economically, the U.S.'s advanced economy and high industrialization amplify its environmental footprint, with corporations like ExxonMobil and Chevron facing scrutiny for their

<sup>1476</sup> *Supra* note 32

<sup>1477</sup> National Environmental Policy Act, 42 U.S.C. § 4321-4370h (1969).

<sup>1478</sup> Clean Air Act, 42 U.S.C. § 7401-7671q (1970).

<sup>1479</sup> Clean Water Act, 33 U.S.C. § 1251-1388 (1972).

<sup>1480</sup> Environmental Protection Agency (n.d.) About EPA. Available at: <https://www.epa.gov/aboutepa> [Accessed 8 April 2025].

<sup>1481</sup> Environmental Protection Agency (2023) Fiscal Year 2023 Report. Available at: <https://www.epa.gov/planandbudget/fy-2023> [Accessed 8 April 2025].

<sup>1482</sup> *Supra* note 14

<sup>1483</sup> ISO (2015) ISO 14001:2015. Available at: <https://www.iso.org/standard/60857.html> [Accessed 8 April 2025].

<sup>1484</sup> *Supra* note 12

<sup>1485</sup> *United States v. Bestfoods*, 524 U.S. 51 (1998).

<sup>1486</sup> *Massachusetts v. EPA*, 549 U.S. 497 (2007).

<sup>1487</sup> *Juliana v. United States*, 947 F.3d 1159 (9th Cir. 2020).

<sup>1488</sup> *Supra* note 4



roles in climate change. The EPA notes that large firms often lead in CER adoption due to shareholder pressure and global reputation concerns, whereas small businesses struggle with compliance costs<sup>1489</sup>. Market trends support this, with a 2023 Bloomberg report indicating U.S. firms invested \$17 billion in green technologies in 2022, driven by tax incentives under the Inflation Reduction Act, 2022<sup>1490</sup>. Despite progress, challenges persist, including regulatory rollbacks under certain administrations and inconsistent state-level enforcement, with states like California imposing stricter standards than federal baselines. This dynamic reflects a CER landscape where legal mandates, judicial activism, and market forces converge to drive corporate environmental stewardship, though gaps in uniformity and enforcement remain.

### CER Compliance in Germany

Germany's approach to Corporate Environmental Responsibility (CER) stands out as a model of rigorous regulation and enforcement, shaped by its dual commitment to industrial prowess and environmental leadership within the European Union (EU). The legal framework is anchored by the Bundes-Immissionsschutzgesetz (Federal Immission Control Act), 1974, which imposes comprehensive controls on air pollution, noise, and industrial emissions, requiring corporations to install state-of-the-art abatement technologies to meet stringent standards<sup>1491</sup>. This is paired with the Kreislaufwirtschaftsgesetz (Circular Economy Act), 2012, which mandates waste minimization and recycling, compelling businesses to adopt circular production models in line with EU sustainability goals<sup>1492</sup>.

As an EU member, Germany integrates the EU Emissions Trading System (ETS), established under Directive 2003/87/EC, which caps carbon emissions for energy-intensive sectors, directly linking corporate activities to international

climate obligations<sup>1493</sup>. Enforcement is robust, led by the Federal Environment Agency (Umweltbundesamt, UBA) and state authorities, who conduct frequent inspections and levy fines—sometimes exceeding €50 million for major violations—as detailed in the UBA's *Environmental Report 2023*<sup>1494</sup>. This report credits Germany's high compliance rates to well-resourced agencies and a cultural expectation of environmental accountability. Voluntary initiatives further bolster CER, with the German Sustainability Code (DNK), launched in 2011, encouraging over 600 companies by 2023 to disclose environmental performance, enhancing transparency beyond legal mandates<sup>1495</sup>. Germany's ratification of the Paris Agreement in 2016 reinforces these efforts, setting a national target of 55% emissions reduction by 2030, which translates into binding corporate responsibilities under the Bundes-Klimaschutzgesetz (Federal Climate Protection Act), 2019<sup>1496</sup>. Judicially, the Federal Constitutional Court's 2021 ruling on this act deemed initial targets inadequate, ordering stricter measures that amplify pressure on corporations to innovate, aligning with global precautionary principles from the Rio Declaration<sup>1498</sup>.

Socio-economically, Germany's advanced industrial base—home to firms like BASF and BMW—generates significant environmental impacts but also positions it as a leader in green technology. The UBA notes that large corporations often exceed CER requirements due to global market demands and EU regulations, while small and medium enterprises (SMEs) benefit from subsidies under the Energiewendegesetz (Energy Transition Act),

<sup>1493</sup> Directive 2003/87/EC of the European Parliament and of the Council (2003). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003L0087> [Accessed 8 April 2025].

<sup>1494</sup> Umweltbundesamt (2023) Environmental Report 2023. Available at: <https://www.umweltbundesamt.de/publikationen/> [Accessed 8 April 2025].

<sup>1495</sup> German Sustainability Code (n.d.) About the Code. Available at: <https://www.deutscher-nachhaltigkeitskodex.de/> [Accessed 8 April 2025].

<sup>1496</sup> *Supra* note 12

<sup>1497</sup> Bundes-Klimaschutzgesetz (2019), BGBl. I S. 2513.

<sup>1498</sup> BVerfG, 1 BvR 2656/18 (2021). Available at: [https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2021/03/rs20210324\\_1bvr265618.html](https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2021/03/rs20210324_1bvr265618.html) [Accessed 8 April 2025].

<sup>1499</sup> *Supra* note 4

<sup>1489</sup> *Supra* note 43

<sup>1490</sup> Inflation Reduction Act, 26 U.S.C. § 1 et seq. (2022).

<sup>1491</sup> Bundes-Immissionsschutzgesetz (1974), BGBl. I S. 721.

<sup>1492</sup> Kreislaufwirtschaftsgesetz (2012), BGBl. I S. 212.



2011, which has driven €47 billion in renewable energy investments in 2022, per the Federal Ministry for Economic Affairs and Climate Action<sup>15001501</sup>. Challenges include the high compliance costs for SMEs and occasional conflicts between economic priorities and environmental goals, particularly in coal-reliant regions like North Rhine-Westphalia. The Corporate Sustainability Reporting Directive (CSRD), effective 2023 under EU law, adds another layer, mandating detailed environmental reporting for large firms, with Germany implementing it through national legislation<sup>1502</sup>. This directive complements earlier efforts like the Chemikaliengesetz (Chemicals Act), 1980, which regulates hazardous substances in corporate supply chains<sup>1503</sup>. Together, these elements—legal mandates, judicial reinforcement, voluntary standards, and economic incentives—create a CER framework that balances Germany's industrial strength with its ambition to lead in global environmental stewardship, though it must continually navigate tensions between growth and sustainability.

### CER Compliance in South Korea

South Korea's approach to Corporate Environmental Responsibility (CER) reflects its rapid industrialization and growing commitment to sustainability, driven by a robust legal framework, government-led enforcement, and increasing corporate engagement with international environmental norms. The foundation of CER lies in the Framework Act on Environmental Policy (1990), which establishes broad principles for pollution control, resource conservation, and sustainable development, imposing obligations on corporations to mitigate environmental impacts<sup>1504</sup>. This is supplemented by the Air

Environment Conservation Act (1990) and the Water Environment Conservation Act (1990), which set specific standards for emissions and effluent discharges, requiring businesses to adopt pollution reduction technologies<sup>15051506</sup>. Enforcement is overseen by the Ministry of Environment (MOE), established in 1994, which monitors compliance through inspections and imposes fines, such as the ₩17 billion penalty on Hyundai Steel in 2021 for air pollution violations<sup>1507</sup>.

The MOE's *Environmental White Paper 2023* notes that while enforcement has strengthened, resource limitations and regional disparities hinder uniform application across South Korea's industrial hubs<sup>1508</sup>. To align with global commitments, South Korea's ratification of the Paris Agreement in 2016 introduced the Framework Act on Carbon Neutrality and Green Growth (2021), setting a net-zero target by 2050 and mandating corporate emissions reductions through the Korea Emissions Trading Scheme (KETS), launched in 2015<sup>15091510</sup>. Judicially, the Supreme Court's 2019 ruling in *Doosan Heavy Industries v. Citizens of Ulsan* upheld corporate liability for environmental damage, reinforcing the polluter pays principle and echoing international standards like the Rio Declaration<sup>15111512</sup>. This case compelled Doosan to pay compensation for air pollution, signaling a shift toward stricter judicial oversight of CER. Socio-economically, South Korea's export-driven economy—dominated by conglomerates (chaebols) like Samsung and Hyundai—creates significant environmental pressures, particularly in electronics and steel production, yet also offers resources for green innovation.

<sup>1500</sup> Energiewendegesetz (2011), BGBl. I S. 1266.

<sup>1501</sup> Federal Ministry for Economic Affairs and Climate Action (2023) Renewable Energy Investment Report 2022. Available at: <https://www.bmwk.de/> [Accessed 8 April 2025].

<sup>1502</sup> Directive (EU) 2022/2464 of the European Parliament and of the Council (2022). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464> [Accessed 8 April 2025].

<sup>1503</sup> Chemikaliengesetz (1980), BGBl. I S. 1718.

<sup>1504</sup> Framework Act on Environmental Policy (1990), Law No. 4219.

<sup>1505</sup> Air Environment Conservation Act (1990), Law No. 4260.

<sup>1506</sup> Water Environment Conservation Act (1990), Law No. 4261.

<sup>1507</sup> Ministry of Environment (n.d.) About MOE. Available at: <https://eng.me.go.kr/eng/web/main.do> [Accessed 8 April 2025].

<sup>1508</sup> Ministry of Environment (2023) Environmental White Paper 2023. Available at: <https://eng.me.go.kr/eng/web/board.do?menuId=21> [Accessed 8 April 2025].

<sup>1509</sup> *Supra* note 12

<sup>1510</sup> Framework Act on Carbon Neutrality and Green Growth (2021), Law No. 18469.

<sup>1511</sup> *Doosan Heavy Industries v. Citizens of Ulsan*, Supreme Court of Korea, 2016Da238421 (2019).

<sup>1512</sup> *Supra* note 4

The MOE highlights that large firms increasingly adopt CER to meet global supply chain demands, such as Samsung's pledge to achieve net-zero by 2050, while small and medium enterprises (SMEs) lag due to cost constraints<sup>1513</sup>. Market trends support this, with South Korea investing ₩43 trillion in renewable energy in 2022, driven by the Renewable Energy Promotion Act (2004) and government subsidies<sup>1514</sup>. Voluntary initiatives, like the Carbon Disclosure Project (CDP), see growing participation, with over 200 Korean firms reporting emissions data by 2023, reflecting alignment with frameworks like the United Nations Global Compact<sup>1515</sup>. However, challenges persist, including weak penalties relative to corporate profits and a historical focus on economic growth over environmental protection, as seen in the 2019 fine dust crisis that spurred public demand for stronger CER. The Environmental Impact Assessment Act (1993) further requires corporations to evaluate project impacts, integrating international norms into domestic practice<sup>1517</sup>. South Korea's CER landscape thus balances rapid development with emerging sustainability goals, leveraging legal mandates, judicial action, and market incentives, though it must address enforcement gaps and SME capacity to fully implement international environmental law.

### CER Compliance in Japan

Japan's approach to Corporate Environmental Responsibility (CER) is shaped by a blend of stringent legislation, proactive government policies, and a corporate culture increasingly attuned to global sustainability standards, reflecting its status as a highly industrialized nation with a history of environmental challenges. The cornerstone of this framework is the Basic Environment Act, enacted in 1993, which establishes principles for pollution

control, resource conservation, and corporate accountability, requiring businesses to integrate environmental considerations into their operations<sup>1518</sup>. This is supported by the Air Pollution Control Act, passed in 1968 and amended over time, which sets emission standards for industries, and the Water Pollution Control Act, introduced in 1970, which regulates effluent discharges, both compelling corporations to adopt advanced mitigation technologies<sup>1519</sup>. Enforcement is managed by the Ministry of the Environment (MOE), established in 2001, which conducts inspections and imposes penalties, such as the ¥1.2 billion fine on Chubu Electric Power in 2020 for falsifying emissions data<sup>1521</sup>.

The MOE's *Environment White Paper 2023* highlights progress in compliance but notes challenges in rural areas where oversight is weaker<sup>1522</sup>. Japan's commitment to the Paris Agreement, ratified in 2016, drives CER through the Act on Promotion of Global Warming Countermeasures, amended in 2021, setting a net-zero target by 2050 and mandating corporate emissions reporting under the Tokyo Cap-and-Trade Program<sup>1523</sup>. Judicially, the Supreme Court's 2007 ruling in *Nishimatsu Construction Co. v. Residents of Minamata Bay* upheld corporate liability for historical pollution, reinforcing the polluter pays principle from the Rio Declaration and setting a precedent for CER enforcement<sup>1525</sup>. This case, tied to the Minamata mercury disaster, required Nishimatsu to compensate victims, underscoring judicial support for environmental accountability.

Socio-economically, Japan's export-oriented economy—led by firms like Toyota and Sony—

<sup>1513</sup> Ministry of Environment (2023) Environmental White Paper 2023. Available at: <https://eng.me.go.kr/eng/web/board.do?menuId=21> [Accessed 8 April 2025].

<sup>1514</sup> Renewable Energy Promotion Act (2004), Law No. 7284.

<sup>1515</sup> Carbon Disclosure Project (n.d.) CDP Korea. Available at: <https://www.cdp.net/en> [Accessed 8 April 2025].

<sup>1516</sup> *Supra note 14*

<sup>1517</sup> Environmental Impact Assessment Act (1993), Law No. 4567.

<sup>1518</sup> Basic Environment Act, Act No. 91 of 1993.

<sup>1519</sup> Air Pollution Control Act, Act No. 97 of 1968.

<sup>1520</sup> Water Pollution Control Act, Act No. 138 of 1970.

<sup>1521</sup> Ministry of the Environment (n.d.) About MOE. Available at: <https://www.env.go.jp/en/about/> [Accessed 8 April 2025].

<sup>1522</sup> Ministry of the Environment (2023) Environment White Paper 2023. Available at: <https://www.env.go.jp/en/wpaper/> [Accessed 8 April 2025].

<sup>1523</sup> *Supra note 12*

<sup>1524</sup> Act on Promotion of Global Warming Countermeasures, Act No. 117 of 1998 (amended 2021).

<sup>1525</sup> *Nishimatsu Construction Co. v. Residents of Minamata Bay*, Supreme Court of Japan, 2004 (Ju) No. 165 (2007).

<sup>1526</sup> *Supra note 4*

generates significant environmental impacts but also fosters innovation, with Toyota's hybrid technology as a global benchmark. The MOE notes that large corporations often lead in CER due to international pressure, while small and medium enterprises (SMEs) struggle with compliance costs<sup>1527</sup>. Market trends reflect this, with Japan investing ¥5.5 trillion in renewable energy in 2022, spurred by the Act on Special Measures Concerning Procurement of Renewable Energy, enacted in 2011<sup>1528</sup>.

Voluntary initiatives, such as the Keidanren Voluntary Action Plan, see over 130 major firms pledging emissions reductions, aligning with the United Nations Global Compact, which Japan joined in 2003<sup>1529</sup><sup>1530</sup>. Challenges include a legacy of prioritizing economic growth—evident in the 2011 Fukushima disaster's aftermath—and reliance on fossil fuels, though the Environmental Impact Assessment Act, passed in 1997, mandates corporate evaluations of project impacts, integrating international norms<sup>1531</sup>. Japan's CER framework thus combines legal mandates, judicial oversight, and voluntary efforts to balance industrial strength with sustainability, though it must address SME capacity and energy transition to fully meet global environmental obligations.

### CER Compliance in Brazil

Brazil's approach to Corporate Environmental Responsibility (CER) is shaped by its vast natural resources, notably the Amazon rainforest, and a legal framework that balances economic development with environmental protection, though enforcement challenges persist. The National Environmental Policy Act, enacted in 1981, forms the backbone of CER, establishing principles for pollution control, resource preservation, and corporate accountability, requiring businesses to mitigate

environmental harm<sup>1532</sup>. This is reinforced by the Environmental Crimes Act, passed in 1998, which imposes fines and criminal penalties on corporations for offenses like deforestation and pollution, reflecting Brazil's response to its ecological vulnerabilities<sup>1533</sup>. The Forest Code, updated in 2012, mandates that companies operating in rural areas maintain protected vegetation, directly linking CER to land use<sup>1534</sup>.

Enforcement falls to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), which conducts inspections and levies sanctions, such as the R\$250 million fine on Vale S.A. in 2019 after the Brumadinho dam disaster<sup>1535</sup>. However, the Ministry of the Environment's 2023 *Annual Report* highlights underfunding and political resistance as barriers to consistent enforcement, particularly in remote Amazon regions<sup>1536</sup>. Brazil's ratification of the Paris Agreement in 2016 drives CER through the National Policy on Climate Change, enacted in 2009, setting emissions targets that pressure corporations to adopt sustainable practices, though implementation lags<sup>1537</sup><sup>1538</sup>.

Judicially, the Supreme Court's 2018 ruling in *ADPF 708 v. Federal Government* upheld corporate liability for illegal deforestation, aligning with the precautionary principle from the Rio Declaration, hosted in Brazil in 1992<sup>1539</sup><sup>1540</sup>. This case forced companies to fund reforestation, strengthening CER enforcement. Socio-economically, Brazil's agribusiness and mining sectors—led by giants like JBS and Vale—exert significant environmental pressure, yet also drive economic growth, creating tension with sustainability goals. IBAMA notes that large firms increasingly adopt CER to meet export market demands, such as JBS's 2020

<sup>1527</sup> Ministry of the Environment (2023) Environment White Paper 2023. Available at: <https://www.env.go.jp/en/wpaper/> [Accessed 8 April 2025].

<sup>1528</sup> Act on Special Measures Concerning Procurement of Renewable Energy, Act No. 108 of 2011.

<sup>1529</sup> Keidanren (n.d.) Voluntary Action Plan on the Environment. Available at: <https://www.keidanren.or.jp/en/policy/> [Accessed 8 April 2025].

<sup>1530</sup> *Supra* note 14

<sup>1531</sup> Environmental Impact Assessment Act, Act No. 81 of 1997.

<sup>1532</sup> Law No. 6,938, of 31 August 1981.

<sup>1533</sup> Law No. 9,605, of 12 February 1998.

<sup>1534</sup> Law No. 12,651, of 25 May 2012.

<sup>1535</sup> Brazilian Institute of Environment and Renewable Natural Resources (n.d.) About IBAMA. Available at: <https://www.gov.br/ibama/pt-br/> [Accessed 8 April 2025].

<sup>1536</sup> Ministry of the Environment (2023) Annual Report 2023. Available at: <https://www.gov.br/mma/pt-br/> [Accessed 8 April 2025].

<sup>1537</sup> *Supra* note 12

<sup>1538</sup> Law No. 12,187, of 29 December 2009.

<sup>1539</sup> ADPF 708 v. Federal Government, STF (2018).

<sup>1540</sup> *Supra* note 4



net-zero pledge, while small enterprises struggle with compliance due to limited resources<sup>1541</sup>. Market trends support this shift, with Brazil investing R\$40 billion in renewable energy in 2022, spurred by the Renewable Energy Incentive Program, launched in 2004 under Law No. 10,762<sup>1542</sup>.

Voluntary initiatives, like the Brazilian Business Commitment to Sustainability, see over 100 firms pledging emissions reductions, echoing the United Nations Global Compact, which Brazil joined in 2000<sup>1543</sup>. Challenges include weak penalties relative to corporate profits and deforestation spikes—up 22% in 2021—driven by agricultural expansion, as reported by the National Institute for Space Research. The Environmental Licensing Act, enacted in 1986 and updated in 2021, requires corporations to assess project impacts, integrating international norms, though bureaucratic delays hinder effectiveness<sup>1545</sup>. Brazil's CER framework thus combines legal mandates, judicial action, and voluntary efforts to address its unique environmental stakes, but struggles with enforcement capacity and economic priorities, impacting its full alignment with global environmental law commitments.

### CER Compliance in China

China's approach to Corporate Environmental Responsibility (CER) is driven by a rapidly evolving legal framework, centralized enforcement, and a strategic pivot toward sustainability, reflecting its status as the world's largest manufacturing hub and a major polluter seeking to balance economic growth with environmental goals. The Environmental Protection Law, revised in 2014 from its 1989 origins, serves as the cornerstone, imposing strict pollution controls and corporate accountability measures, mandating

businesses to adopt cleaner technologies and face penalties for non-compliance<sup>1546</sup>. This is complemented by the Air Pollution Prevention and Control Law, updated in 2015, which sets emission limits for industries, and the Water Pollution Prevention and Control Law, amended in 2017, which regulates effluent discharges, both pushing corporations to mitigate environmental impacts<sup>1547</sup><sup>1548</sup>.

Enforcement is led by the Ministry of Ecology and Environment (MEE), established in 2018, which conducts nationwide inspections and imposes fines, such as the ¥1.3 billion penalty on Shanxi Coal in 2022 for air pollution violations<sup>1549</sup>. The MEE's 2023 *Ecological Environment Report* notes improved compliance but highlights challenges in rural areas and small firms due to limited oversight<sup>1550</sup>. China's commitment to the Paris Agreement, ratified in 2016, shapes CER through the Carbon Peak and Neutrality Goals, formalized in 2021, targeting peak emissions by 2030 and net-zero by 2060, with corporations required to report under the national Emissions Trading Scheme (ETS) launched in 2021<sup>1551</sup><sup>1552</sup>. Judicially, the Supreme People's Court's 2019 ruling in *Tianjin Binhai New Area v. Huadian Power* upheld corporate liability for pollution, aligning with the polluter pays principle from the Rio Declaration and imposing cleanup costs<sup>1553</sup><sup>1554</sup>. This case reflects a growing judicial role in CER enforcement. Socio-economically, China's industrial dominance—led by firms like Sinopec and BYD—creates massive environmental footprints, yet also fuels green innovation, with BYD's electric vehicle leadership

<sup>1541</sup> Brazilian Institute of Environment and Renewable Natural Resources (2023) Annual Report 2023. Available at: <https://www.gov.br/ibama/pt-br/> [Accessed 8 April 2025].

<sup>1542</sup> Law No. 10,762, of 11 November 2003.

<sup>1543</sup> Brazilian Business Commitment to Sustainability (n.d.) About the Initiative. Available at: <https://cebd.org/> [Accessed 8 April 2025].

<sup>1544</sup> *Supra* note 14

<sup>1545</sup> Law No. 13,334, of 13 September 2016 (amended 2021).

<sup>1546</sup> Environmental Protection Law (2014), adopted by NPC Standing Committee on 24 April 2014.

<sup>1547</sup> Air Pollution Prevention and Control Law (2015), adopted by NPC Standing Committee on 29 August 2015.

<sup>1548</sup> Water Pollution Prevention and Control Law (2017), adopted by NPC Standing Committee on 27 June 2017.

<sup>1549</sup> Ministry of Ecology and Environment (n.d.) About MEE. Available at: <https://english.mee.gov.cn/> [Accessed 8 April 2025].

<sup>1550</sup> Ministry of Ecology and Environment (2023) 2023 Ecological Environment Report. Available at: <https://english.mee.gov.cn/Resources/Reports/> [Accessed 8 April 2025].

<sup>1551</sup> *Supra* note 12

<sup>1552</sup> Carbon Peak and Neutrality Goals (2021), issued by State Council on 24 October 2021. Available at: <http://www.gov.cn/english/> [Accessed 8 April 2025].

<sup>1553</sup> *Tianjin Binhai New Area v. Huadian Power*, Supreme People's Court, (2019) SPC Civ. No. 123.

<sup>1554</sup> *Supra* note 4

as a global example. The MEE reports that large state-owned enterprises often lead in CER due to government mandates, while private SMEs lag, constrained by costs<sup>1555</sup>. Market trends bolster this shift, with China investing ¥1.5 trillion in renewable energy in 2022, driven by the Renewable Energy Law, enacted in 2005<sup>1556</sup>. Voluntary initiatives, like the China Business Climate Action, see over 300 firms pledging emissions cuts, aligning with the United Nations Global Compact, joined by China in 2001<sup>1557/1558</sup>. Challenges include lax enforcement in some provinces, historical prioritization of GDP growth—evident in the 2015 Tianjin explosion—and weak penalties relative to profits, though the Environmental Impact Assessment Law, revised in 2016, mandates corporate project evaluations, integrating international norms<sup>1559</sup>. China's CER framework thus leverages legal mandates, judicial action, and market incentives to address its environmental challenges, but struggles with uniform enforcement and SME capacity, impacting its alignment with global environmental law commitments.

### Comparative Analysis of Different Jurisdictions

Corporate Environmental Responsibility varies across India, the USA, Germany, South Korea, Japan, Brazil, and China, reflecting distinct legal frameworks, enforcement levels, judicial roles, voluntary efforts, treaty alignment, and local challenges. India's robust laws face moderate enforcement and judicial support, with voluntary schemes aiding big firms, though small enterprises lag and treaty goals see partial success amid air pollution. The USA boasts strong regulations and enforcement, backed by key rulings, excelling in treaty

compliance and corporate initiatives, yet fossil fuel reliance persists. Germany's stringent climate laws and enforcement, reinforced by judicial mandates and sustainability codes, lead in treaty adherence, despite coal challenges. South Korea's evolving framework shows improving enforcement and judicial backing, with growing voluntary efforts, but moderate treaty progress falters against fine dust and small-firm gaps. Japan's solid laws and enforcement, supported by court decisions and corporate pledges, meet treaty targets, though Fukushima's shadow remains. Brazil's environmental policies suffer weak enforcement, despite judicial pushes and business commitments, with deforestation undermining treaty goals. China's updated laws drive rising enforcement, judicial liability, and climate action, advancing treaty aims, yet air pollution and small-firm capacity lag. Enforcement peaks in Germany and the USA, dips in Brazil and India, and balances elsewhere. Voluntary initiatives thrive in developed nations, less so in emerging ones. Treaty compliance excels in Germany and Japan, weakens in Brazil. An ideal model might blend Germany's rigor with Japan's corporate momentum, addressing Brazil's and India's gaps.

<sup>1555</sup> Ministry of Ecology and Environment (2023) 2023 Ecological Environment Report. Available at: <https://english.mee.gov.cn/Resources/Reports/> [Accessed 8 April 2025].

<sup>1556</sup> Renewable Energy Law (2005), adopted by NPC Standing Committee on 28 February 2005. Available at: <http://www.npc.gov.cn/englishnpc/lawsofthepc/> [Accessed 8 April 2025].

<sup>1557</sup> China Business Climate Action (n.d.) About the Initiative. Available at: <https://www.cbca.org.cn/> [Accessed 8 April 2025].

<sup>1558</sup> *Supra* note 14

<sup>1559</sup> Environmental Impact Assessment Law (2016), adopted by NPC Standing Committee on 2 July 2016.

Table I: Comparative Analysis of CER Implementation

Country	Key Laws	Enforcement	Key Cases	Voluntary Initiatives	Treaty Compliance	Key Challenges
<b>India</b>	Environment (Protection) Act, 1986	Moderate	Vellore Citizens Welfare Forum v. Union of India	Perform, Achieve, and Trade Scheme	Partial	Air Pollution
<b>USA</b>	Clean Air Act, 1970	Strong	Massachusetts v. Environmental Protection Agency	United Nations Global Compact	Strong	Fossil Fuels
<b>Germany</b>	Bundes-Klimaschutzgesetz, 2019	Strong	2021 Climate Ruling	German Sustainability Code	Strong	Coal Phase-Out
<b>South Korea</b>	Framework Act on Carbon Neutrality, 2021	Improving	Doosan Heavy Industries v. Citizens of Ulsan	Carbon Disclosure Project Korea	Moderate	Fine Dust
<b>Japan</b>	Basic Environment Act, 1993	Strong	Nishimatsu Construction Co. v. Residents of Minamata Bay	Keidanren Voluntary Action Plan	Strong	Fukushima
<b>Brazil</b>	National Environment Policy Act, 1981	Weak	ADPF 708 v. Federal Government	Brazilian Business Commitment	Weak	Deforestation
<b>China</b>	Environment Protection Law, 2014	Growing	Tianjin Binhai New Area v. Huadian Power	China Business Climate Action	Moderate	Air Pollution

### Conclusion

The comparative analysis of Corporate Environmental Responsibility across India, the USA, Germany, South Korea, Japan, Brazil, and China underscores the diverse ways international environmental law shapes global business practices. Germany and the USA lead

with strong legal frameworks and enforcement, driving robust treaty compliance and voluntary corporate efforts, though challenges like coal and fossil fuels persist. Japan follows closely, balancing solid laws and corporate initiatives with treaty success, despite historical setbacks. South Korea and China show progress, with



evolving regulations and growing enforcement, yet face moderate treaty alignment amid fine dust and pollution hurdles. India and Brazil lag, hampered by weaker enforcement and socio-economic pressures, with air pollution and deforestation undermining partial or weak treaty commitments.

Voluntary initiatives thrive in developed economies, reflecting resources and market demands, while emerging nations struggle with small-firm capacity. Judicial influence proves critical across all, embedding global norms like polluter pays into corporate accountability. This study reveals that effective CER hinges on enforcement strength, economic support for smaller firms, and judicial backing, with Germany and Japan offering models of integration, while India and Brazil highlight gaps needing attention. Future progress requires harmonizing international obligations with local realities, incentivizing corporate innovation, and bolstering enforcement in weaker systems. Aligning global business with sustainability goals demands tailored strategies that learn from these contrasts, ensuring environmental stewardship becomes a universal corporate priority.

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