Increasing transparency and credibility of company climate actions through the Global Climate Action partnerships

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Key Messages

- Climate actions by non-Party stakeholders, including companies, have a significant potential to fill the gap in the global emissions reductions trajectory.
- While accountability of countries as Parties to the Paris Agreement will be ensured under a new 'transparency framework' stipulated in Article 13 of the Paris Agreement, accountability of non-Party stakeholders' voluntary actions and achievements will be considered according to the policies of jurisdictions in which they operate and the stakeholders to whom they committed. Under the UNFCCC, non-Party stakeholders are demonstrating their efforts and progress toward commitments to the global society through the Global Climate Action's NAZCA platform. Information communicated through this platform needs to demonstrate transparency and credibility.
- Companies around the world have built up reporting skills under governmental and private schemes, making GHG emissions reporting an increasingly common practice. Therefore, schemes can shift their focus from raising awareness to increasing the coverage and transparency of reports, which will help companies raise credibility of their reports to the global society. There also needs to be enhancement in guidance to support the strong motivation among companies in tracking and demonstrating achievements toward their targets.
- Companies can contribute to estimating quantified impact of their actions to the global ambition by setting and meeting ambitious and science-based targets, providing transparent and credible reporting, tracking and reporting achievement of targets, engaging with governments and identifying efforts to reduce emissions that are additional to NDCs. The Global Climate Action should recognise companies whom demonstrate these leadership qualities as 'climate action leaders'.
- Companies participating in the Global Climate Action may see opportunities in getting recognition from High-Level Champions for extraordinary efforts, participating in Technical Examination Process and Meetings, and building partnerships with other companies to increase effectiveness of efforts to reduce emissions.

1. Introduction

Bottom-up efforts by companies, cities, and civil societies led to the recognition of the important role of non-Party stakeholders to keep the temperature increase well below 2 degrees Celsius, and pursuing efforts to limit the increase to 1.5 degree Celsius, above pre-industrial levels. The COP21 decision adopting the Paris Agreement "welcomes the efforts of non-Party stakeholders to scale up their climate actions" and "encourages Parties to work closely with non-Party stakeholders to catalyse efforts to strengthen mitigation and adaptation action". Leading companies are active in promoting their role, such as by calling on Parties to connect non-Party stakeholders' actions to higher ambition with every 5-year cycle, starting in 2018 (CDP Worldwide, 2016a). Corporations also brought up the idea of a 'business-determined contribution'.

The Paris Agreement recognised the important role of non-Party stakeholders, which include civil society, the private sector, financial institutions, cities and other subnational authorities (UNFCCC, 2015a). Initiatives by those stakeholders are estimated to contribute around three to four GtCO2e per year to the global greenhouse gas (GHG) emissions reductions (UNEP, 2016; We Mean Business, 2016). In-depth assessments are underway to clarify the relation between these potential reductions and reductions resulting from policies, plans, and targets in countries' Nationally Determined Contributions (NDCs) (Hohne, 2015; UNEP, 2016). The potential contribution for global mitigation as well as the demand for recognition by non-Party stakeholders comes with a stronger requirement for transparency and credibility of achievements.

Accountability of reductions and contributions by countries as Parties to the Paris Agreement will be ensured under a new 'transparency framework' as stipulated in Article 13 of the Paris Agreement. The framework will impose new rules for national-level reporting of GHG and NDC implementation. Accountability of non-Party stakeholders' achievements towards their commitments, on the other hand, will be considered according to the jurisdictions in which they operate and the stakeholders to whom they committed, according to the standards and guidelines they implement. Under the UNFCCC umbrella, non-Party stakeholders are demonstrating their efforts and progress to the global society through Non-State Actor Zone for Climate Action (NAZCA), a platform hosted by the Marrakech Partnership for Global Climate Action.

NAZCA aims to track the mobilization of action that are helping countries achieve and exceed their national commitments to address climate change. NAZCA can be a key platform for accountability of non-Party stakeholders' achievements, especially since it can be expected to display reports of achievements by each company and each commitment in the future.

Monitoring and reporting on progress made towards commitments enhances transparency of global climate action and builds a body of evidence showing that ambitious action is possible (UNFCCC, 2017a). Identifying emissions can lead to reduction target and reduction efforts, while annual reporting of emissions can demonstrate achievements of targets. A stronger connection between efforts and achievements by non-Party stakeholders and by Parties' can generate valuable practical inputs to the

'Talanoa dialogue'[1] and the global stocktake, increase climate investments, and help to increase the global ambition.

NAZCA groups non-Party stakeholders into cities, regions, companies, investors, civil societies, and cooperative initiatives. Among non-Party stakeholders, companies have the highest level of experience in periodical GHG emissions reporting through corporate social responsibility (CSR) reports and sustainability reports, which frequently include preparation of a GHG emissions inventory, and at times include achievement of targets. Experiences in company reporting can inform activities by other non-Party stakeholders.

In this paper, "companies" include organisations whose main objective is to produce and make profits, who can operate across governmental boundaries. "Companies" include privately owned corporations, state-owned corporations, and public-listed corporations. As one of the non-Party stakeholders, companies have been reporting GHG emissions for, and through, governmental (jurisdictional) reporting schemes (mandatory and voluntary) and private voluntary disclosure schemes. The role and capacity built through the available schemes are revisited and discussed in connection with the increased recognition of the role of non-Party stakeholders, including companies, under the Global Climate Action.

2. Governmental and private reporting programmes have built the drive and skills for companies emissions disclosure

Companies around the world have built the skills on reporting GHG emissions through the experiences in preparing climate disclosure reports, such as inventory of GHG emissions, environmental and climate impact reports, and sustainability performance reports, for both compliance and voluntary purposes. Governmental reporting programmes, private disclosure schemes (e.g. the CDP and The Climate Registry), as well as methodological guidance and standards (e.g. the GHG Protocol and ISO 14064) have been available since the early 2000's to help companies prepare such reports. The reports include, mainly, scope 1 and scope 2 emissions[2]. Understanding the current framework of reporting programmes (see Annex) will be helpful to understand the capacity that has been built and the possible ways to enhance them to help companies meet their global commitments.

Companies report their emissions for self-evaluation, to meet investors' requirements, to satisfy customers, to comply with government regulations, to contribute to the Sustainable Development Goals, among others (Honda, 2016; Google, 2016; Siemens, 2016). They usually start from the intention of publicly communicating corporate social responsibility using available standards. The Global Reporting Initiative (GRI) is one of the

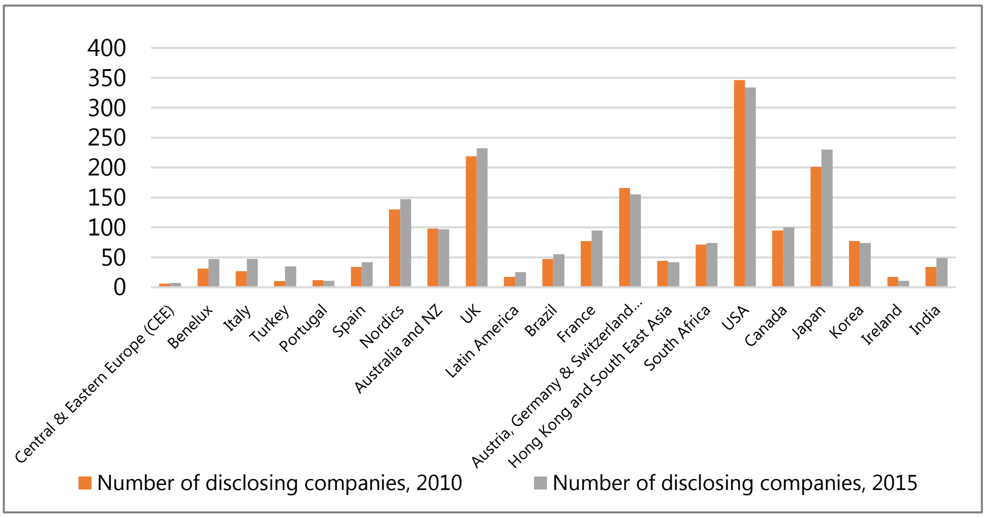
[1] The COP21 decided to start a 'facilitative dialogue' in 2018 to take stock of collective efforts of Parties in relation to progress towards the Paris Agreement long-term goal. After COP23, it is known as 'Talanoa dialogue'. Non-Party stakeholders are welcome to provide inputs to this dialogue.

[2] Scope 1 emissions are direct GHG emissions that occur from sources owned or controlled by the company. Scope 2 emissions are indirect GHG emissions from the generation of purchased electricity consumed by the company (The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, 2004)

oldest and most common standards for overall company performance. In 2016, GRI 305 standard on emissions was released, based on the GHG Protocol Corporate Standard. The GHG Protocol Corporate Standard (2004) is the most widely used guidelines focusing on methods for GHG emissions reporting. The ISO 14064-1:2006 guides organization-level quantification and reporting of GHG emissions and removals. More recently, the Climate Disclosure Standard Board's Climate Change Reporting Framework (CDSB) was released, offering companies a general framework for producing high quality and transparent company reporting with a comparable quality of financial reporting (CDSB, 2012).

The CDP has assisted the investor community in calling transparency and credibility of businesses environmental performance to inform investors' decision-making process. As the largest voluntary environmental disclosure scheme in the world, CDP data may best represent the current global situation of voluntary disclosure of GHG emissions by companies. In 2015, GHG emissions data were collected from more than 1,900 companies in 51 countries (CDP Worldwide, 2015). The growing number of participating companies in various countries (Figure 1) shows that the trend among companies to monitor and communicate GHG emissions is becoming common business practice. More companies disclosing through the CDP are located in developed countries, including the United Kingdom, Austria, Germany, Switzerland, Japan, and the United States, but companies in emerging economy countries (Korea, India, and Brazil) have started to join.

- Figure 1: Trend in number of companies disclosing information to the CDP



Source: Author, based on CDP reports

Voluntary reporting programmes have helped companies to build the necessary skills to meet environmental disclosure regulations (KPMG International et al., 2016). Nationwide GHG reporting by companies have been in place for more than 10 years in Japan and the United Kingdom. More recently, Brazil, China, France, Mexico and South Africa introduced mandatory GHG reporting for companies (see Annex). In 2014, the European Union (EU) issued a Directive on non-financial reporting by large companies, which includes environmental reporting and may include GHG emissions. In addition to a facility-level mandatory GHG reporting programme, the United States Environmental Protection

Agency (US EPA) awards companies that demonstrate leadership in GHG management including in goal setting and achievement.

As demand for transparent and credible company GHG emissions disclosure will increase from more jurisdictions, financial institutions, and consumers, improvement of climate disclosure will be a strategic move for companies to stay competitive. The potential challenge for companies may be whether governmental requirements will implement measurement, reporting, and verification (MRV) framework at the same level as those implemented under existing voluntary schemes connected to investors. Jurisdictions with a plan to introduce or improve such regulations need to consider the existing schemes so that companies can avoid redundancy of work.

Complementary to MRV of GHG emissions, it is crucial to promote transparency and credibility of companies' claims on progress and achievements in reducing GHG emissions. Ideally, data credibility need to be confirmed by a third-party. Getting independent verification from assurance companies has been a familiar practice in the sustainability reporting of the world's biggest companies (CDSB, 2016) but it has yet to become common among other companies. In a survey conducted by the KPMG, 36 percent of the world's 250 largest companies that report on carbon did not invest in either internal or external verification of data (KPMG International, 2015). Without assurance, however, companies may risk the credibility and accountability of their reports and commitments to their jurisdiction, investors, and to the global community.

The credibility rules under a number of governmental programmes are apparently more lax than under the private programmes (see Annex). The mandatory reporting programmes of France, Mexico and China do apply strict requirements including a third-party verification. Japan, South Africa and the UK mandatory programmes do not require independent assessment. The South African programme makes exceptions when a report is insufficient, while the Japanese programme penalizes intentional fraudulence. Verification practice can be expected to grow in the EU region, as large public-interest entities need to get independent assurance for their non-financial disclosure. The US EPA Climate Leadership Awards requests third-party verification on company GHG reporting. Finally, Brazil's voluntary programme gives freedom to the reporting companies on whether to be verified by a third-party. Possible rationales for not requiring third-party involvement in a governmental programme are that, first, the programme's main priority is raising companies' awareness, and second, the governmental agency managing the programme puts measures to ensure data credibility.

Comparatively, the private programme CDP requires third-party verification, unless a Continuous Emissions Monitoring Systems (CEMS) is used. The Climate Registry only publishes members' achievements verified by one of its approved third parties. The Japanese Keidanren's (Japan Business Federation) voluntary programme does not require a third-party verification but recommends a peer-review process.

Expectations for credible GHG emissions reporting will increase in more jurisdictions, and companies are likely to comply. Therefore, the focus of policymakers and schemes can shift from raising awareness to improving the coverage (for example by adding scope 3 emissions reporting) and credibility of reports. Under governmental reporting programmes, clear recommendations or guidelines regarding applicable verification methods standards will be helpful for companies. The programmes can guide companies to use existing international standards, such as those from International Organization for Standardization (ISO)[3], applied by Brazil and the United Kingdom, and International Standard on Assurance Engagements (ISAE)[4], used by France and the United Kingdom, as reference for their report. Governmental agencies can also disseminate additional voluntary tools to enhance transparency of mitigation actions. Engaging with voluntary schemes, obtaining verification, and strengthening institutional processes of governmental verification can improve credibility, especially to support companies in meeting their commitments to the global society.

The scope of disclosure by the programmes mentioned above has so far covered only disclosure of emissions (GHG emission inventory). Only Japan's voluntary programme, the CDP, and The Climate Registry encourage disclosure of targets in reducing emissions. Many of the mandatory programmes, however, were set up in anticipation or as part of implementing a cap-and-trade programme, and some were set up for implementing carbon tax measures. In these cases, therefore, there are implied expectations of company efforts to reduce emissions. Nevertheless, adding a part of target setting and including recommendations and guidance can help companies prepare a roadmap to reduce their emissions. On the other hand, an update of existing methods and standards to emphasise the importance of credibility, targets, and tracking emissions, will be useful. Updated guidelines will help companies in tracking and reporting progress towards their commitment to the global society.

3. The Global Climate Action partnerships hold a leading role in improving transparency and credibility of company disclosure and tracking of progress on the global level

Over the past decade, countries, investors and voluntary disclosure programmes have built awareness and readiness of companies in disclosing their emissions to meet their responsibilities to their legal jurisdiction, investors and consumers. As the world is becoming borderless, companies are increasingly interested in making a presence and promoting achievements to the global society. Companies are getting themselves closer to the UNFCCC, the institution coordinating global climate change policies and actions.

Under the UNFCCC umbrella, companies, as non-Party stakeholders, are encouraged to demonstrate their efforts to reduce GHG emissions separately from Parties, through the UNFCCC's NAZCA platform. NAZCA is the main component of the Global Climate Action, which aims to facilitate cooperative climate action among Parties and non-Party stakeholders to support implementation of more climate action and raise ambition.

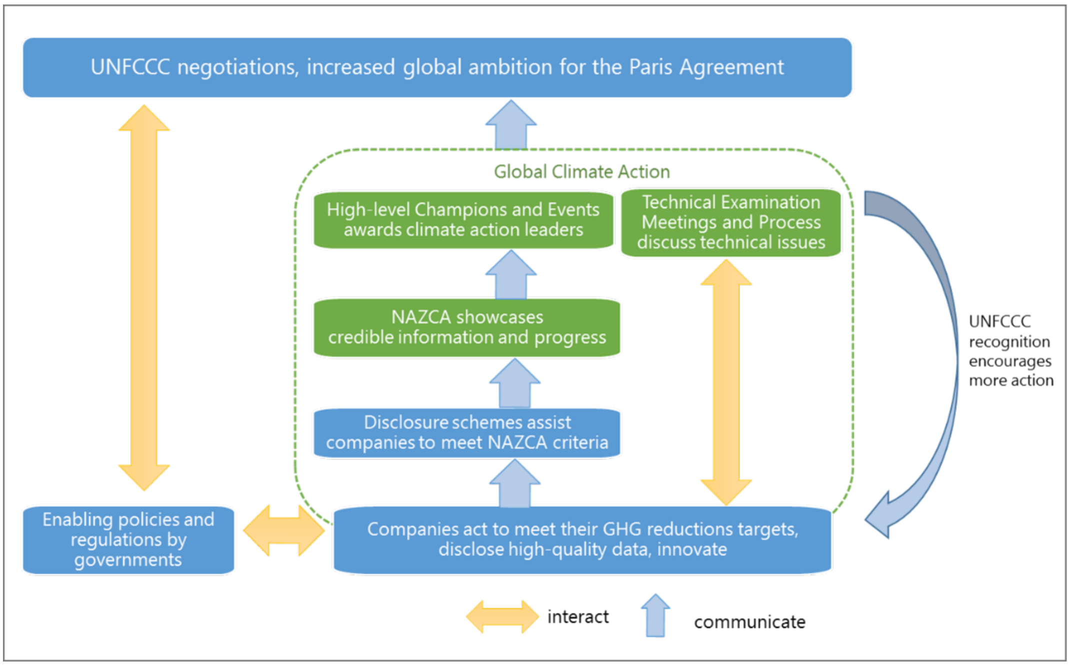
The Global Climate Action also provides a roadmap for how the UNFCCC process will

[3] ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions

[4] ISAE 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information and ISAE 3410: Assurance Engagements on Greenhouse Gas Statements

support climate action by Parties and non-Party stakeholders, thereby also strengthening the role of non-Party stakeholders in the UNFCCC processes. The partnership plays a significant role in catalysing company actions as well as improving data transparency and credibility, and tracking progress towards GHG reduction targets in a quantified manner (Figure 2). The G20 recognises the importance of NAZCA and the non-Party stakeholders in the implementation of the Paris Agreement by encouraging non-Party stakeholders to register their actions through the NAZCA (G20, 2017).

- Figure 2: The Global Climate Action Partnership role for the global ambition



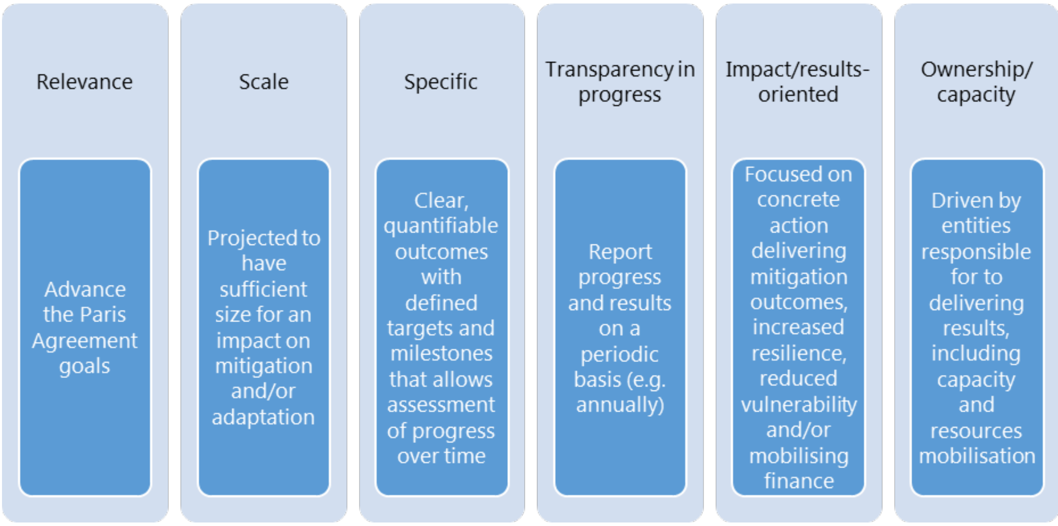
Source: Author

NAZCA offers visibility and enhances the tracking of actions through a database of commitments and actions. As a database, NAZCA is unique in the way it promotes real actions, as opposed to calls for action or information sharing. Moreover, NAZCA has a mandate not only to demonstrate commitments by non-Party stakeholders, but also to track progress of achievement, which requires periodical reporting of quantified GHG emissions and achievements toward targets to reduce GHG emissions.

Any institution wishing to record their commitments on NAZCA should be registered with one of the six NAZCA partners[5] and meet six criteria, including having well-defined targets and reporting progress (Figure 3). This means mitigation actions displayed in NAZCA should deliver publicly available, periodical information of quantified outcomes and be open for assessments to ensure transparency and credibility.

[5] Disclosure and cooperation initiatives such as the CDP, carbonn Climate Registry, The Climate Group, the Investors on Climate Change, the UN Global Compact, the Covenant of Mayors, the Climate Bonds Initiative and the UNEP Climate Initiatives Platform.

- Figure 3: NAZCA criteria for climate actions



Source: UNFCCC, 2017b

As of November 2017 as many as 2,138 companies have voluntarily declared 3,084 individual commitments to climate actions through the NAZCA platform. Furthermore, cooperative initiatives among companies have declared 1,270 commitments. Most of the commitments are relevant to the Paris Agreement, have orientation towards impact or results, and are self-driven.

Individual commitments by companies vary from commitments to reduce emissions, improve energy efficiency improvement, set an internal carbon price, increase climate resilience, use renewable energies, improve energy consumption effectiveness in building, to change of transportation mode. Most of the companies are committing to actions through the CDP as NAZCA's partner. Therefore, the companies listed in NAZCA may not be additional to those that have disclosed emissions data to the CDP.

Commitments to reduce emissions typically include a reduction target in percentage of GHG emissions by a target year compared to a base year. Companies committing to those targets are likely to use the GHG Protocol Guidelines and the CDP guidance. In the future, NAZCA can be expected to display progress and report by companies in reducing emissions, compared to each committed target. Credibility of information becomes more important. NAZCA, together with its data partners, can further increase capacity and involvement of companies to ensure accountability to a larger audience. One way to demonstrate accountability is assurance or verification.

So far, only limited information can be found regarding the intention to assure data quality. A registered commitment by the Cement Sustainability Initiative includes a commitment to report annually on progress including third-party assurance. Although not all commitments by initiatives were made and will be monitored through data partners, those initiatives and their member companies can use available standards, methodologies, guidelines and assurance methods, and may additionally use new voluntary tools to improve transparency.

Cooperation and knowledge sharing among companies in the same sector through those cooperative initiatives can be helpful in applying those standards and guidelines, setting individual targets, conducting peer review, and even in increasing cost-effectiveness of third-party assurance. Through NAZCA, companies can find and build cooperation with partners working and aiming for similar targets. While data partners hold a major role, the NAZCA platform itself can encourage committed companies to align with governmental reporting programmes and to provide assurance using available standards in order to be displayed through the NAZCA.

Transparent and credible GHG disclosure, meeting ambitious and science-based targets, progressive reporting on achieving targets and proactive engagement with governments on NDCs can contribute to estimating the quantified impact of mitigation actions to global ambition. The Global Climate Action should recognise companies and other non-Party stakeholders who demonstrate this leadership as 'climate action leaders'. Furthermore, the Global Climate Action partnerships and NAZCA platform can facilitate the process to identify companies' mitigation efforts that are additional to the NDC.

Alignment and contribution from climate actions to the implementation of NDCs (as well as SDGs) can benefit from a multi-stakeholders discussion. Practical experiences and solutions from companies will also contribute to addressing technical challenges and cross-cutting issues related to reporting, such as reporting of scope 3 emissions[6] and the needs for updating available reporting and disclosure standards. For example, scope 3 emissions are still underreported by companies (CDSB, 2016) due to the lack of methods and the surrounding governmental issues. Japanese companies may contribute with their experiences in this field as the Japanese reporting programme covers scope 3 emissions.

Finally, NAZCA also can facilitate companies with more opportunity to provide inputs to the UNFCCC processes. By participating in the Global Climate Action, companies should get more opportunities to observe negotiations and participate in Technical Examination Processes and Meetings, which involve experts from national and subnational governments, companies, financial institutions, and international organisations, as well as providing collaborative inputs to the Talanoa dialogue.

[6] Scope 3 emissions are a consequence of the activities of a company, although not occurring directly from company's activities, but from sources not owned or controlled by the company. They include emissions from materials suppliers and use of sold products.

Annex

Governmental and private GHG reporting programmes

Country and name of legislation	Nature	Target	Coverage of disclosure	Methodologies or reference standard	Third-party verification
Brazil GHG Protocol Program	Voluntary	Company	Disclosure of emissions (GHG emission inventory)	The GHG Protocol (Brazil version)	Voluntary, by independent third-party accredited under ISO 14065
France Grenelle II Law Article 225	Mandatory	Company	Disclosure of emissions (GHG emission inventory)	The Greenhouse Gas Protocol and ISO 14064-1	Mandatory (refers to ISAE 3000)
Japan GHG Accounting and Reporting System	Mandatory	Company (with >3,000 tCO2e annual emission)	Disclosure of emissions (GHG emission inventory)	Reporting manual of the Accounting and Reporting System	Voluntary
United Kingdom Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013	Mandatory	Company	Disclosure of emissions (GHG emissions inventory) including emissions outside the UK	The GHG Protocol	Voluntary (refers to ISAE 3000, ISAE 3410, ISO 14064-3:2006, and AccountAbility AA1000)
European Union (Directive 2014/95/EU related to disclosure of non-financial and diversity information by certain large undertakings and groups)	Mandatory	Large public-interest entities	Disclosure of emissions (GHG emission inventory)	Decided by each Member State	Decided by each Member State
South Africa National Atmospheric Emissions Inventory System	Mandatory	Company (with >100,000 tCO2e annual emission)	Disclosure of emissions (GHG emission inventory)	2006 IPCC Guidelines for National Greenhouse Gas Inventories	Not required, except when the report is found to be insufficient (independent assessment is required)

Mexico National Emissions Registry	Mandatory	Company (with >25,000 tCO2e annual emission)	Disclosure of emissions (GHG emission inventory)	National Emissions Registry methodologies, adhering to IPCC Guidelines	Mandatory (every three years)
China GHG Reporting on Enterprise Level	Mandatory (for several subnational jurisdictions)	Company (minimum requirement varies)	Disclosure of emissions (GHG emission inventory)	GHG Reporting on Enterprise Level methodologies	Mandatory
United States Environmental Protection Agency (US EPA) Climate Leadership Awards (cancelled from 2018)	Voluntary	Company	Disclosure of emissions (GHG emission inventory), reduction target, and disclosure of reduced emissions	The Greenhouse Gas Protocol	Mandatory
Private voluntary scheme	**Geographical coverage**	**Target**	**Coverage of disclosure**	**Methodologies or reference standard**	**Third-party verification**
CDP	Global	Investors, companies, cities, states and regions	Disclosure of emissions (GHG emissions inventory) Forecast of emissions change required if target is not set	The Greenhouse Gas Protocol	Required, unless a Continuous Emissions Monitoring Systems (CEMS) is used
The Climate Registry	North America	Companies	Disclosure of emissions (GHG emission inventory, facility-level)	The Greenhouse Gas Protocol and ISO 14064-1	Voluntary, but TCR website shows only the achievement of members that have obtained third-party verification
Japan Keidanren's GHG Accounting and Reporting system	Voluntary	Company	Disclosure of emissions (GHG emission inventory), reduction target, and disclosure of reduced emissions	Keidanren's GHG Accounting and Reporting system	Voluntary, but peer review between companies is recommended

Source: see References

References

Brazil GHG Protocol Program website. http://www.ghgprotocolbrasil.com.br/?locale=en

CDP Worldwide, 2015. *CDP's 2016 Climate Change Information Request*. CDP Worldwide, England.

CDP Worldwide, 2016a. *The Paris effect: How business is factoring in the Paris Agreement*. CDP Worldwide, England.

CDSB, 2016. *Comply or explain: A review of FTSE 350 companies' environmental reporting and greenhouse gas emission disclosures in annual reports*. CDP Worldwide on behalf of the Climate Disclosure Standards Board (CDSB), London, England. http://www.cdsb.net/sites/default/files/cdsb_comply_or_explain.pdf

The Climate Registry, 2016. *General Reporting Protocol for the Voluntary Reporting Program Version 2.1, January 2016*. The Climate Registry, United States of America.

Department of Environmental Affairs South Africa, 2017. *Technical Guidelines for Monitoring, Reporting and Verification of Greenhouse Gas Emissions by Industry, Version No: TG-2016.1, April 2017*.

Department of Environmental Affairs South Africa, 2017. *National Environmental Management: Air Quality Act (39/2004): National Greenhouse Gas Emission Reporting Regulations, Gazette number: 40762*.

Department for Environment Food and Rural Affairs (DEFRA) of the United Kingdom. *Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting guidance, June 2013*. DEFRA, London, United Kingdom.

The European Parliament and the Council of the European Union, 2014. *EU Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups*. http://ec.europa.eu/finance/company-reporting/non-financial_reporting/index_en.htm

Global Reporting Initiative, 2013. *The external assurance of sustainability reporting*. Global Reporting Initiative, Amsterdam, the Netherlands. https://www.globalreporting.org/resourcelibrary/GRI-Assurance.pdf

Global Reporting Initiative, 2016. *GRI 305: Emissions 2016*. Global Reporting Initiative, Amsterdam, the Netherlands. https://www.globalreporting.org/standards/gri-standards-download-center/gri-305-emissions/

Group of Twenty (G20), 2017. *Annex to G20 Leaders Declaration: G20 Hamburg Climate and Energy Action Plan for Growth*. http://www.consilium.europa.eu/media/23547/2017-g20-climate-and-energy-en.pdf

Hohne, N. 2015. *Impacts of non-state and subnational action (presentation at COP21, December 2015):* https://newclimate.org/2015/12/07/impacts-of-non-state-and-subnational-action/

International Organization for Standardization (ISO). *ISO 14064-1:2006 Greenhouse gases -- Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*. International Organization for Standardization, Geneva, Switzerland.

https://www.iso.org/standard/38381.html

KPMG International et al., 2016. *Carrots & Sticks: Global trends in sustainability reporting regulation and policy*. KPMG International, GRI, United Nations Environment Programme (UNEP) and The Centre for Corporate Governance in Africa (at the University of Stellenbosch Business School).

KPMG International, 2015. *Currents of change: The KPMG Survey of Corporate Responsibility Reporting 2015*. KPMG International, Switzerland. www.kpmg.com/crreporting

Ministry of Environment and Natural Resources Mexico website. https://www.gob.mx/semarnat/acciones-y-programas/registro-nacional-de-emisiones-rene (accessed in November 2017). Ministry of Environment and Natural Resources (SEMARNAT), Mexico City, Mexico.

Ministry of the Environment Japan website for Accounting and Reporting System. http://ghg-santeikohyo.env.go.jp/ (accessed in November 2017). Ministry of the Environment Japan, Tokyo, Japan.

Ministry of the Environment Japan, 2012. *Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain* (accessed in November 2017). Ministry of the Environment Japan, Tokyo, Japan.

Non-State Actor Zone for Climate Action (NAZCA) website. http://climateaction.unfccc.int (accessed in November 2017).

OECD, 2012. *Corporate Greenhouse Gas Emission Reporting: A Stocktaking of Government Schemes*. OECD, Paris, France.

UNEP, 2016. *The Emissions Gap Report 2016*. United Nations Environment Programme (UNEP), Nairobi, Kenya. http://uneplive.unep.org/theme/index/13#egr

UNFCCC, 2015. *Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015. Addendum. Part two: Action taken by the Conference of the Parties at its twenty-first session*. FCCC/CP/2015/10/Add.1. Decision 1/CP.21.

UNFCCC, 2017a. *Yearbook of Global Climate Action 2017: Marrakech Partnership*. United Nations Climate Change Secretariat, Bonn, Germany.

UNFCCC, 2017b. *Marrakech Partnership for Global Climate Action*. http://unfccc.int/files/paris_agreement/application/pdf/marrakech_partnership_for_global_climate_action.pdf

Siemens, 2016. Sustainability Information 2016. Siemens AG, Munich, Germany. https://www.siemens.com/investor/pool/en/investor_relations/siemens_sustainability_information2016.pdf

United States Environmental Protection Agency Center for Corporate Climate Leadership website. https://www.epa.gov/climateleadership/about-climate-leadership-awards-partners (accessed in November 2017).

We Mean Business, 2016. *The Business End of Climate Change Full Report 2016*.

http://www.businessendofclimate.org/

World Business Council for Sustainable Development and the World Resources Institute, 2004. *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition.*

The author would like to thank Dr. Yuji Mizuno of IGES and Dr. Noim Uddin of CPMA International for their valuable comments on the earlier version of this paper.

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