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THE ROLE OF XBRL IN OVERCOMING CLIMATE-RELATED REPORTING CHALLENGES

A paper by CDP for the SEIm project

Authors: Pedro Faria and Maria Mora



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XBRL INTERNATIONAL



XBRL International (XII) is the international standards organisation which develops and maintains the XBRL standard and related specifications in order to improve business reporting for the public good. It is a global not-for-profit consortium of approximately 650 public and private organisations working together to support the collection, sharing and use of structured data for data reporting and analysis.

XBRL ASIA



XBRL jurisdiction in Asia.

Climate Disclosure Standards Board



Climate
Disclosure
Standards
Board

The Climate Disclosure Standards Board (CDSB) is an international consortium of business and environmental NGOs committed to advancing and aligning the global mainstream corporate reporting model to equate natural capital with financial capital.

We do this by offering companies a framework for reporting environmental information with the same rigour as financial information. In turn this helps them to provide investors with decision-useful environmental information via the mainstream corporate report, enhancing the efficient allocation of capital. Regulators also benefit from compliance-ready materials.

Recognising that information about natural capital and financial capital is equally essential for an understanding of corporate performance, our work builds trust and transparency needed to foster resilient capital markets. Collectively, we aim to contribute to more sustainable economic, social and environmental systems.

EUROFILING



The eurofiling community is an open joint initiative of the European Banking Authority (EBA) and the European Insurance and Occupational Pensions Authority (EIOPA) in collaboration with XBRL Europe, as well as stakeholders as banks, solutions providers, academy and individuals.

The deliverables are Data Point Models, XBRL documents and taxonomies, know-how and materials for Supervisory Frameworks: COREP, FINREP and Solvency II.

CEN WORKSHOP XBRL



The CEN workshop XBRL, whose main objective is *Improving transparency in financial reporting*, has prepared a series of CWA's that promulgate XBRL deliverables on a wider and standardised basis in Europe. CEN is an association that brings together the National Standardization Bodies of 33 European countries. It is one of three European Standardization Organizations (together with CENELEC and ETSI) that have been officially recognised by the European Union and by the European Free Trade Association (EFTA) as being responsible for developing and defining voluntary standards at European level.

THE SPANISH ACCOUNTING AND BUSINESS ADMINISTRATION ASSOCIATION (AECA)



Asociación Española de Contabilidad
y Administración de Empresas

AECA is the only professional Spanish institution that issues Generally Accepted Accounting Principles and Standards, and recommendations concerning good practices in Business management. Founded in 1979, the mission of AECA is to achieve a continuous improvement in the competence level of business professionals.

AECA has distinguished itself to promote the use of the XBRL in non-financial reporting practices. Their XBRL works are acknowledged by XBRL International and publicly available. AECA's work counts with the collaboration and acknowledgement of several major listed corporations along with the major regulatory bodies to promote reporting practices, and support companies in the disclosure of financial, social, environmental and corporate governance information. As a result, AECA is making a significant contribution in Spain introducing novel and valuable reporting practices within regulation and companies' internal management and decision-making processes.

ABOUT SEI METRICS PROJECT

This report was published in the context of the H2020 "Sustainable Energy investment Metrics" project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649982. The project aims to develop a climate performance framework and associated investment products that measure the exposure of financial portfolios to the 2°C economy. The metrics, benchmarks, and tools will enable investors to align their portfolio with decarbonization roadmaps. The project runs from March 2015 to March 2018 and mobilizes over €2.5m in funding. Consortium members in the project include the 2° Investing Initiative, CIRED, WWF Germany, Kepler-Cheuvreux, Climate Bonds Initiative, Frankfurt School of Finance & Management, CDP, WWF European Policy Office and the University of Zurich.

1. INTRODUCTION

With the 2015 Paris agreement, climate change is at the forefront of international policy and business issues. For an orderly transition, business actors need to collect relevant, timely, reliable, material and complete information upon which to base their business strategy. Providers of capital, insurers and regulators also need this information from businesses in a transparent, comparable, clear and verifiable structure so that they can make the best-informed investment decisions and ensure compliance.

Where information is made available however, regulators, investors, creditors and underwriters are faced with the difficulties of:

- 1) Access to that information to inform their decisions;
- 2) Quality of such voluntary disclosure; and
- 3) How to interpret the disclosure.

The lack of action on, and decision-making to mitigate climate change is also a consequence of the following reporting gaps:

- 1) The financial significance and exposure of assets to climate change is not assessed or disclosed; this exposure is driven by local factors and granular data might be needed to assess it (e.g. asset level data);
- 2) Misalignment between the reporting of material non-financial information and financial reporting, with the links between the two still not fully perceived by both preparers and users of information;
- 3) Data quality concerning incompleteness, reliability, comparability, verifiability and structure; and
- 4) Availability of information systems that facilitate the disclosure and use of combined information within the decision-making processes of companies, their stakeholders, regulators and supervisory entities.

The Financial Stability Board (FSB), at the direction of the G20 countries, has set up the Task Force on Climate-related Financial Disclosures (TCFD) to draw up recommendations on voluntary disclosure. In this paper, we present the use of eXtensible Business Reporting Language (XBRL) as a potential solution to the availability of, and access to information. In a sister paper,¹ we present further recommendations for improving the quality of climate-related disclosure and increasing the volume of companies disclosing. By ensuring that climate change disclosures are made in a globally consistent fashion and instantiate those policies through standardisation, in a machine consumable fashion the FSB can ensure the utility of its efforts in this field. This is based on CDP's experience of 14 years of collecting climate-related disclosures on behalf of investors representing over \$100 trillion of managed assets and with over 5,500 companies disclosing in 2015.

¹ "Pitfalls of disclosure – improving quality and availability of climate related disclosure." – CDP 2015

2. TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

In 2015, the FSB established the TCFD as an industry-led group to make recommendations for improving principles and practices for voluntary climate-related disclosure. The TCFD is comprised of a diverse group of experienced members to lead it, drawing from disclosure users, preparers, and market participants from a variety of industries and regions (TCFD, 2016). They are due to issue their final report back to the G20 by mid-2017, thus attempting to address current reporting gaps by:

- 1) Supporting the disclosure of climate-related financial risks and opportunities;
- 2) Promoting alignment across existing disclosure regimes;
- 3) Improving the production of consistent, comparable, reliable, clear and efficient information; and
- 4) Increasing the consideration of environmental matters on decisions in the short, medium and long-term, making the use of environmental information easier.

3. THE ROLE OF TECHNOLOGY: OVERCOMING CLIMATE-RELATED REPORTING CHALLENGES THROUGH XBRL.

To overcome current climate-related reporting challenges, it is relevant to consider the role that technology, and XBRL in particular, could play.

XBRL is a standard technology used by regulators and supervisory agencies all over the world to gather financial information from large corporations, financial institutions, SMEs and public administrations. XBRL is in use within more than 60 countries at present, implemented by over 100 regulators, covering some 10 million companies worldwide. Key regulators involved in its implementation include the U.S. Securities and Exchange Commission (SEC), which adopted rules in 2008 requiring public companies and foreign private issuers to provide financial statements in XBRL, and to publish their financial statements on their corporate websites using XBRL (SEC, 2008). Since then, other regulatory agencies around the world have enacted similar mandates. In Europe, XBRL is one of the recognised standards by the European Commission to address the Digital Single Market Strategy (European Commission, 2016). In fact, it is now required for external financial reporting by the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA), and the European Central Bank (ECB). XBRL is also being examined by the European Securities and Markets Authority (ESMA) to act as the European Single Electronic Format for reporting within securities markets (Figure 1). XBRL has long been adopted by the main regulators in Japan, is the reporting format in use across the Chinese public markets and is currently being implemented as an important part of the Russian Central Bank's digitalisation program. The standard is supported by a broad ecosystem of stakeholders, including hundreds of software vendors from around the world. When implemented carefully, the burden on industry can be low, although it is important to follow a range of best practices to ensure optimal outcomes in this regard.

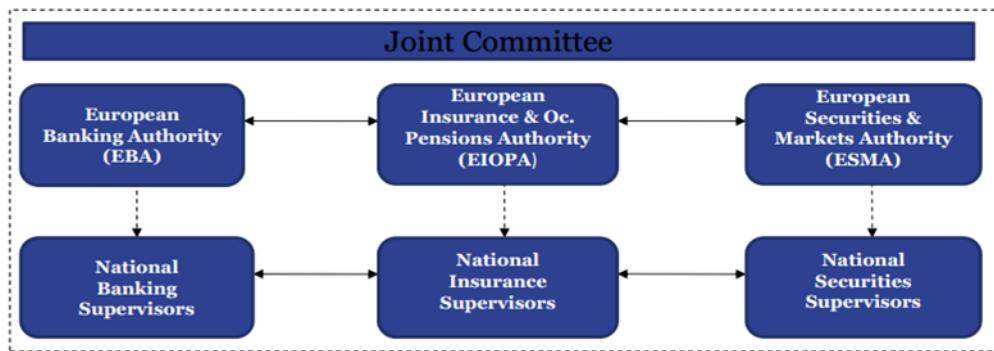


Figure 1 - XBRL implementation within the European System of Financial Supervision

The standard is managed by a not-for-profit consortium, with 700 members from around the globe, with an explicit public interest purpose to enhance the accountability and transparency of global business performance through the development of open data exchange standards in this field.

WHAT IS THE PLACE OF XBRL IN ORGANISATIONS?

XBRL was born as a solution to overcome the limitations in traditional and mainly paper-based disclosures, such as 'one size fits all' reports, print medium fixation and one-way communication. It serves as a solution to issues in traditional reporting such as the ones highlighted by Mora and Mora (2012):

- 1) the vast amount of organisational information, both audited and unaudited;
- 2) the lack of connection between firm publications; and
- 3) the inefficiencies of a PDF-based format for report delivery.

HOW DOES XBRL WORK?

For a financial disclosure regimes like International Financial Reporting Standards (IFRS) and US Generally Accepted Accounting Principles (US GAAP) or for nonfinancial disclosure regimes like the CDP information requests, the CDSB Climate Change Reporting Framework and Global Reporting Initiative's G4 guidelines, and its corresponding statements and reports, a single XBRL taxonomy is created. The taxonomy is where the rules and data definitions are organised. It is comprised of a set of elements (i.e., Key Performance Indicators and narratives) and all the presentation, calculation and standard logic rules that are in effect. Once created, the XBRL taxonomy is made public as an open source file on the internet. Then, for a specific firm, software can be used to create an XBRL instance (the report itself), containing the specific facts and figures for a certain period. The XBRL instance can be checked against the taxonomy by all parties (reporting entity, a regulator, or even the public) in order to guarantee its data quality and reliability, as the taxonomy contains data quality checks that any XBRL engine can validate. The validation rules supported in XBRL allow a good level of data quality, from basic rules to validate data types (number, text, precision), to more complex rules relating to elements that have been disclosed. For example, rules can be implemented to check if a breakdown of emissions is equal or not to the total emissions reported, or a CO₂ intensity figure (tCO₂/revenue) is actually in line with revenue and emissions figures reported.

The creation of an XBRL taxonomy implies the agreement of all interested parties (regulators, IT experts, academics, industry). Once the taxonomy is made public, the reporting entity must

(for mandatory reporting schemes) or may (for voluntary reporting initiatives) prepare and publish the necessary XBRL reports. The report can be for multiple recipients: the corporate website, an official reporting platform, a data repository, etc. Once the data is generated in XBRL, business facts are more accessible for any kind of data analysis application, and enable all users to make easy and fast calculations, rankings, benchmarks, and comparisons. The reporting entity itself can also benefit from this digital format for management, consolidation or internal auditing purposes (Figure 2).



Figure 2 - Benefits of XBRL (XBRL International, 2016)

XBRL is used primarily for the exchange of financial, risk management information and solvency ratios² under mandatory and voluntary filing programmes. Environmental and sustainability reporting initiatives, including CDP, the Climate Disclosure Standards Board (CDSB) and the Global Reporting Initiative (GRI), have initiatives promoting the disclosure and use of their data through XBRL to enhance the adoption and impact of their data for decision-making purposes (Hoffman and Mora, 2013). Through its initiative, CDP has been working with the XBRL community to incorporate specific requirements within the XBRL standard which are necessary for environmental reporting practices and its community. CDP regularly participates in XBRL conferences and meetings where issues of standardization and adoption of the standard are discussed. Because XBRL provides very well understood mechanisms for defining reporting requirements in a multi-lingual context and allowing filers to use their language of choice while allowing consumers to review it in their own, the use of the business reporting standard for this initiative seems especially relevant. XBRL International is developing mechanisms that allow the republication of XBRL data using a wide range of technologies, including JSON.

² XBRL has been the technical solution to implement the banking supervision regulations that have come out after the financial crisis and which imply the transmission and analysis of large volumes of data.

By expanding the adoption of XBRL in financial, risk management, environmental and sustainability reporting, policy makers and industry leaders can address climate-related financial reporting challenges and drive new business opportunities in corporate reporting.

In the following sections we explain how XBRL can be a solution for better financial and environmental accountability, exchange of information and decision making when it comes to sustainability.

HOW CAN XBRL INCREASE THE PERCEPTION UNDERSTANDING OF FINANCIAL SIGNIFICANCE?

Understanding the financial significance of environmental aspects depends on the ability to easily identify, in a data-driven way, their financial impacts. This requires a convergence of the current financial and environmental reporting practices adopted by corporations. For that purpose, firstly, a common agreement between financial and non-financial initiatives is necessary to identify what levels of convergences or alignments exist; and secondly, technology is required to make these agreements applicable to bring the benefits to the market. From the technology side, XBRL is the “Rosetta stone” that can facilitate this convergence, since:

- 1) it is the shared technology between financial and non-financial reporting initiatives, benefitting from a very broad ecosystem of existing XBRL capable software from large and small ERP and reporting vendors alike;
- 2) it is a proven technology that can facilitate the convergence (alignment) across frameworks, namely in terms of granular data representation and validation across countries and industries;
- 3) it is able to provide an automatic and low cost data feed to the financial data supply chain;
- 4) its value is recognized by environmental reporting initiatives like CDP, CDSB and the Japanese Voluntary Environmental Reporting scheme; and
- 5) XBRL is already an adopted solution by preparers and users of corporate reporting information for their decision-makings with an established community of practice.

Bringing together financial and climate change reporting using XBRL enables preparers to integrate different corporate aspects and address the interests of a wide range of stakeholders in understanding the long-term financial, social and environmental success of companies.

HOW CAN XBRL PROMOTE ALIGNMENT ACROSS EXISTING DISCLOSURE REGIMES?

XBRL can help alignment between different reporting frameworks since it is able to represent relationships between different reporting models. This means that XBRL enables the generation of a coherent framework for climate-related financial disclosures using elements of information that can be found in recognised financial, risk management and environmental frameworks that use XBRL, such as IFRS and US GAAP (Accounting), Basel III (Banking), Solvency II (Insurance), CDP, CDSB and GRI frameworks. This can improve the consistency of climate-related data across disclosure frameworks, reduce the reporting burden for preparers, and facilitate the data interpretation by the users. As an example, the climate exposure of a bank’s lending portfolio is likely to require the detailed and granular data of its

lending portfolio³. This is already reported for banking supervision in Europe. The characterization of a few more climate-relevant aspects associated with each loan, for example by the economic activities code like the NACE⁴ codes, could facilitate the generalized assessment of the climate exposure of banks to high-carbon and high-risk projects and companies, given a common level of analysis and appropriate methodologies.

HOW CAN XBRL FACILITATE USEFUL, CONSISTENT, COMPARABLE, RELIABLE, CLEAR, AND EFFICIENT DISCLOSURE?

Standardisation is key to facilitate the exchange of the information, formalizing technical requirements to ensure the quality of the information. Through data standardisation in an open digital format, XBRL can help enhance data quality and data analysis through:

- 1) An open mechanism to represent contextualised business facts under defined business requirements (presentation, period, legal references, calculation) and data quality;
- 2) Enabled data-driven decision management, given the detail of the data represented;
- 3) Improved accessibility and integration of the information to any application or management process, as it is an open standard; and
- 4) Standardised validation and comparability of information.

As an example, XBRL can be used as a means to implement existing taxonomies characterizing high-carbon/low-carbon products and assets⁵ which, coupled with granular revenue data, can facilitate the automatic analysis of current and future exposure to the low-carbon transition.

HOW CAN XBRL SUPPORT THE EVOLUTION OF INFORMATION SYSTEMS FOR CLIMATE RISK-RELATED FINANCIAL DISCLOSURE?

XBRL allows information to be accessible to any application for data processing and analysis for easy and fast calculations, rankings, benchmarking, and comparisons. These are required features to build better Information Systems for sustainability. The use of XBRL by Information Systems represents progress towards the improvement of internal processes at strategic, management and operational level inside companies. Financial and non-financial reporting initiatives trust XBRL as the best way to standardize, exchange and validate the information that they manage. Thus, Information Systems using XBRL can respond to stakeholder demands in areas of financial and environmental sustainability, from the step of initial data preparation, subsequent disclosure through to effective data-driven management.

The use of XBRL for non-financial reporting by Information Systems is not happening yet. One of the reasons is that XBRL is still in the initial implementation stage for some non-mandatory initiatives and the lack of action to move XBRL towards their potential audiences. For example, CDP, CDSB and GRI have been publishing their XBRL taxonomies to the public since 2012 and 2010 respectively, however, they have not yet evolved their systems to be able to

³ Example of breakdowns by the European Banking Authority:
<https://www.eba.europa.eu/documents/10180/1028653/ITS+on+Supervisory+reporting.pdf/9212b4e7-37a1-4bbf-8409-2cc450d8513e>

⁴ Nomenclature of Economic Activities is the European statistical classification of economic activities.

⁵ For a review of those taxonomies check 2ii paper on "[Decree implementing Article 173.vi of the French Law for Energy Transition – Challenges and first recommendations](#)".

accept, validate or publish information in XBRL or other open data standards. XBRL, like any other data standard, needs the engagement of the open and private software community to develop tools and Information Systems to bring the benefits and value of XBRL to companies and their stakeholders, including investors, governments, suppliers and academics. CDP is currently taking further actions, such as updating its annual taxonomies, evolving its reporting system, and working more closely with the software community and their stakeholders on their use of XBRL as a way to increase the adoption of its data.

4. CONCLUSIONS

The TFCF has a clear mandate from governments, companies and investors to improve the disclosure landscape so that they can better manage climate-related financial risks. However, several challenges have to be addressed to increase the use of climate-related information for the purposes of financial and corporate decision making. Decisions depend on information and XBRL provides a mechanism to drive and strengthen data-driven decision making that is inclusive of climate and financial aspects, thereby overcoming the pending challenges on climate-related financial reporting. It offers the following benefits:

- 1) It connects the environmental and financial information models, increasing their significance for the purpose of decision making;
- 2) It reduces the costs of reporting, enabling data to be consistent, structured and usable across different existing disclosure regimes;
- 3) It improves the data quality, facilitating data validation, comparisons against external data, and provision of more transparency in financial and extra-financial reporting; and
- 4) It enhances the usefulness of the information supporting better information systems to drive short and long-term decisions.

The inclusion of XBRL as a key digital reporting technology within the TFCF recommendations could provide both a potential mechanism to overcome existent challenges and maximise the future development of a sustainable economy, by providing a better picture of the financial risks associated with climate change and other sustainability matters, strengthening the dialogue between companies and shareholders and evolving it to include a broader set of stakeholders, including global public opinion.

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