



ACCELERATING THE ENERGY TRANSITION

The Role of Green Finance
and its Challenges for Europe

Pauline DESCHRYVER (ed.)

April 2020

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This study has been carried out within the partnership between the French Institute of International Relations (Ifri) and Policy Center for the New South.

ISBN: 979-10-373-0213-7

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How to quote this document:

Pauline Deschryver (ed.), “Accelerating the Energy Transition:
The Role of Green Finance and its Challenges for Europe”,
Études de l’Ifri, Ifri, April 2020.

Ifri

27 rue de la Procession 75740 Paris Cedex 15 – FRANCE

Tel.: +33 (0)1 40 61 60 00 – Fax: +33 (0)1 40 61 60 60

Email: accueil@ifri.org

Website: Ifri.org

Authors

Pauline Deschryver is a graduate of Sciences Po Paris, HEC Paris and Columbia University, where she specialized in development economics, energy and environmental policy. She contributes to publications and research for the Energy and Environment Program in the Groupe d'Études Géopolitiques (Geopolitical Studies Group). She possesses an expertise in energy transition financing and in the integration of ESG factors into infrastructure investment in emerging economies. Pauline is an Associate investment officer at the IFC, World Bank Group, in the Infrastructure department for Africa and the Middle East.

Charlotte Gardes is currently studying for a PhD in economics on financial markets' accountability in response to climate risk (Paris II – Assas) and is an analyst with the Groupe d'Études Géopolitiques (Geopolitical Studies Group). She is a graduate in economics from Institut d'études politiques de Paris (Paris Institute of Political Studies), in Corporate and Financial Law from the Sorbonne Law School, and in Economics, specializing in Money, Banking and Finance from Paris II University. She specifically studies energy and ecological transition financing-related issues and climate risk for financial institutions.

Théo Maret is an Economics student at ENSAE (the National Graduate School for Statistics and Economic Administration) and HEC Paris, and is an analyst with the Groupe d'Études Géopolitiques (Geopolitical Studies Group). He contributes to research on sustainable finance issues by the Groupe d'Études Géopolitiques, and particularly on the role of multilateral financial institutions in energy transition.

Clémence Pèlerin is a graduate of both Institut d'études politiques de Paris (Paris Institute of Political Studies) and the Institut français du Pétrole (French Institute of Petroleum). She is currently a Portfolio and Program Management Consultant at PwC and is Director of the Energy and Environment Program in the Groupe d'Études Géopolitiques (Geopolitical Studies Group).

Executive Summary

Green finance has been a burgeoning sector since the Paris Agreement and is at the crossroads of financial, socio-economic and environmental challenges. It is hybrid in nature: it uses financial instruments and focuses on environmental issues, while coming under the wider field of so-called “sustainable” finance that assumes a broader approach with the inclusion of socio-economic and governance challenges. It is a catalyst as it facilitates and accelerates the transition to a low-carbon economy. It also includes an increasing range of instruments. From green bonds to green indices, green loans and capital raising activities, the sector is growing both quantitatively and qualitatively. So-called “green” issuance debt alone increased fivefold in nearly three years to reach US \$ 257 billion in 2019, emphasizing its on-going innovation and attractiveness.

Green finance embraces the various objectives of public and private actors. It also raises major questions about the future of our societies: choosing to finance only sectors that are already “green” entails significant socio-economic risks, such as job losses in high-emitting (brown) sectors and stranded assets. Adopting a sequenced approach potentially amounts to locking in polluting activities in the long term and not achieving the Paris Climate Agreement’s objectives (lock-in effect).

In view of the physical risks of climate change (devastation and disasters) and those related to energy transition (stranded assets), climate change is now generally considered as a systematic risk. Public and private actors— institutional investors, banks, regulators, central banks, insurers, credit rating agencies, states, multilateral organizations – are taking action both to better understand the risks posed by climate change, and to capitalize on opportunities in this growing field. Green finance provides the financial sector with instruments to effectively reorient capital towards the low-carbon transition. Against a background of uncertainty about the effects of climate change,¹ green finance also reduces the information asymmetry about risks related to major ecosystem disruptions. The structuring and distribution of “green” products are important growth drivers for many stakeholders and in a wide variety of sectors.

1. “Scientific Uncertainty”, *Nature Climate Change*, Vol. 9, No. 797, October 29, 2019, available at: www.nature.com; M. L. Weitzman, “Fat-Tailed Uncertainty in the Economics of Catastrophic Climate Change”, *Review of Environmental Economics and Policy*, Vol. 5, No. 2, 2011, pp. 275-292, available at: <https://doi.org>.

However, many risks and challenges remain: financial risks, specifically related to high levels of subsidies for the production and use of fossil fuels, and the lack of a single carbon price; structural risks, which hamper the economic attractiveness of sustainable activities, particularly in terms of profitability; and unclear political signals, notably resulting in regulatory uncertainty. Furthermore, the language of green finance remains fragmented and is still relatively vague: there are many reporting frameworks and taxonomies, preventing easy and uniform ownership by stakeholders. Standardized methodologies, requirements and disclosures are critically needed. A common language is required, not only among Europeans but worldwide, to ensure that financing the ecological transition is genuinely effective.

The quality and comparability of non-financial reporting must be significantly improved to ensure its effectiveness. The principle of double materiality of information – financial and non-financial – is crucial. Green finance provides the entire financial system with instruments to accomplish its transition. It also avoids both a “niche” and a lax approach that are conducive to greenwashing and damaging to the sector growth, and, ultimately, to the transitional objective of green finance. As a source of systemic risk, and in view of the challenges of financing the transition, the aim is to ensure that the concept of sustainable finance remains purposeful by integrating environmental, social and governance (ESG) “filters” into the overall operation of capital markets.

There are many risks of intentional or unintentional greenwashing for market actors: making wrong investment choices, because they are ill-informed about the real nature of sustainability; seeing their reputation discredited in their clients and fund managers’ eyes; undermining trust and the fundamentals of green finance.

The European Union (EU) has taken the lead on these issues. The European Commission’s (EC) Action Plan on Financing Sustainable Growth of March 2018 aims to reorient capital flows towards a more sustainable economy, integrate sustainability into financial institutions’ risk management and promote transparency and long-term awareness within financial institutions. This Action Plan includes numerous instruments, such as an Ecolabel for financial products, the development of a European standard for green bonds, a so-called “Disclosure” regulation legislating on non-financial reporting by market actors, and the clarification of banking and investment advisors’ duties in terms of integrating ESG factors and incorporating sustainability into prudential requirements for banks and insurers. One of the main instruments is the European “taxonomy” for sustainable economic activities, which is

intended to establish a common language for greening the financial sector by covering a wide range of actors and activities, at least on a voluntary basis. This future taxonomy has major global potential that could boost the EU's normative power. Consequently, these challenges are now the focus of the G20 and its Financial Stability Board (FSB), and that of the United Nations.

The EU's sustainable finance strategy is over the long term, striving to take as comprehensive a view as possible of financial regulation and climate change, and therefore fully redirect capital flows towards financing the transition. The next few months will be critical for the future of the sector, with work continuing on the European taxonomy, the preparation of delegated acts subsequent to the final recommendations prepared by the EU's Technical Expert Group on Sustainable Finance (TEG), and the implementation of the European Green Deal.

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Introduction

The definition of green finance is relatively fluid. It refers to any financial initiative, process, product or service – as well as the relevant financial and fiscal regulations – designed to protect the natural environment and/or to minimize the impact of environmental and climate change on markets and investment.²

Green finance focuses on environmental issues, while being part of the broader field of so-called “sustainable” finance, which takes a more holistic approach by also including socio-economic and governance challenges.³

Strictly speaking, green finance primarily focuses on environmental aspects (i.e. pollution, greenhouse gas emissions, biodiversity, water and air quality). Other aspects also comprise those related to climate change (i.e. energy efficiency, renewables, prevention and mitigation of the impacts of climate change).

The main characteristics of green finance are manifold, namely: a strong role in allocating capital for sustainable purposes and for the benefit of the low-carbon transition; concern about managing the environmental risks (i.e. physical, transitional and liability) faced by the financial sector and economy as a whole; and recognition of policies and infrastructures needed to enable its development.

In effect, according to the OECD, it is a financing tool intended to “realize economic growth while reducing pollution and greenhouse gas emissions, minimizing waste and improving efficiency when using natural resources”.

New financial instruments and policies – such as green bonds, so-called “sustainable” banks, carbon market instruments, green budgeting, “green” monetary policy, pooled financial technologies (fintech), EU green funds, etc. – all of which can be more broadly described as coming under “green finance”, can finance investments with environmental benefit.

2. J.-C. Hourcade, B. Perrissin Fabert and J. Rozenberg, “Venturing into Uncharted Financial Waters: An Essay on Climate-Friendly Finance”, *International Environmental Agreements: Politics, Law and Economics*, Vol. 12, No. 2, 2012, pp. 165-186, available at: <https://doi.org>.

3. M. Aglietta and S. Rigot, “Investisseurs à long terme, régulation financière et croissance soutenable”, *Revue d'économie financière*, Vol. 108, No. 4, 2012, pp. 189-200, available at: www.cairn.info.

Therefore, green finance covers a wide range of financial products and services that can broadly be divided into banking, investment and insurance products. This includes green bonds, green credits, green (and/or ESG) investment funds, and climate risk insurance.

Focus on some key green finance instruments

Green bonds are bonds specifically designed to finance climate and environmental projects. These bonds are generally asset-linked and backed by the issuer's balance sheet. The issuer can be a private company or a public entity (e.g. authorities, states, international agency).

When an issuer wishes to issue a green bond, the project framework is generally based on *The Green Bond Principles*. These principles and guidelines, developed by the International Capital Market Association (ICMA), promote transparency and disclosure of the project details. In accordance with these principles, the annual report should include a list and description of the project grants awarded (use of proceeds) and their expected impact.⁴

Following the success of the green bond market and green loans, which are designed to finance specific projects, banks and borrowers are now showing increasing interest in the unspecified use of proceeds (ESG-linked loans). These loans linked to achieving sustainable development objectives prompt companies to improve their ESG performance by directly tying the financial terms of a loan to pre-set sustainability objectives.

The boom in green investment has also seen the development of a wide range of equities, mutual funds (like Calvert Global Alternative Energy Fund, the CAEIX) and exchange-traded funds (such as Market Vectors Solar Energy for solar power and First Trust Global Wind Energy for wind power).

With its intermediary role, risk management and economic influence, the financial sector therefore plays a key role in orienting the allocation of capital to critical environmental challenges. The sector has also specifically focused on its role in the society since the 2007-2008 economic and financial crisis. It has increased its involvement in development funding, with objectives no longer solely based on creating value for shareholders, but increasingly on generating value for stakeholders.⁵

4. International Capital Market Association (ICMA), "Green Bond Principles", June 2018, available at: www.icmagroup.org.

5. F. Villeroy de Galhau, "Changement climatique: le secteur financier et le chemin vers les 2 degrés", Banque de France, November 30, 2015, available at: www.banque-france.fr.

On the one hand, green finance opens up traditional capital markets to the creation and distribution of a range of products and services able to provide financial returns while delivering positive results for the environment. On the other hand, it corrects some shortcomings in the market and the financial system: it takes costs and economic benefits which are not generally priced – external factors, such as air and water pollution; it facilitates the financing of long-term sustainable infrastructure that would otherwise be difficult to fund; and it integrates and promotes non-financial information in investment decision-making.⁶

Therefore, the challenge of green finance is to align capital flows with climate objectives, particularly those agreed upon after COP21 and the signature of the Paris Agreement. Three recent global trends show the momentum of this burgeoning instrument.

- For the private sector, there is a growing number of products (i.e. green bonds, green investment funds, etc.) and services (i.e. rating, analysis, indices, specialized instruments) to finance green assets.
- Public and multilateral actors are not to be outdone with the launch of working groups on non-financial reporting and the alignment of financial systems with transition objectives towards a low-carbon economy. Various platforms and institutions are working on these challenges, such as the Task Force on Climate-related Disclosures (TCFD), appointed by the Financial Stability Board (FSB), which has published recommendations on greater transparency for companies and financial actors. In 2018, the UN Principles for Responsible Investment (UN-PRI) initiative adopted the TCFD's recommendations in its reporting framework. Since 2020, investors signing the UN-PRI have been required to integrate specific climate indicators aligned with the TCFD's recommendations (indicators SGO1, SGO7CC and SG13CC)⁷ in their investment decision-making process; however public disclosure of this reporting remains voluntary.⁸ As for states, around two-thirds of G20 members have started to implement the TCFD's recommendations through one or several mechanisms: political and regulatory commitment, such as the EU's so-called "Disclosure" regulation; formal engagement with the private sector through the issuing of guidelines

6. C. Berthaud, J. Evain and M. Scolan, *Pour une stratégie française de la finance*, December 2017.

7. United Nations-supported Principles for Responsible Investment (UN-PRI), "PRI Reporting Framework 2019. Strategy and Governance", November 2019, available at: www.unpri.org.

8. UN-PRI, "TCFD-Based Reporting to Become Mandatory for PRI Signatories in 2020", February 18, 2019, available at: www.unpri.org.

and action plans; or through legislation.⁹

- With support from the High-Level Expert Group on Sustainable Finance (HLEG), formed in 2016, the EU launched an ambitious Action Plan in 2018, followed by the Green Deal at the end of 2019. Nationally, many states have taken initiatives to develop green finance and better oversee the integration of climate risk by regulators and supervisors, particularly France, the United Kingdom and the Netherlands.
- Finally, multi-stakeholder, voluntary commitment is increasing significantly. Banks, insurance companies, investment funds, and asset managers are increasingly committed to aligning their investment strategies with the Paris Agreement's objectives, through a variety of international alliances, like Climate Action 100+. The majority of development banks have also committed to significantly increasing their operations and financing in favor of fighting climate change.

Many green instruments are available to these actors, who must subsequently decide whether they i) wish to encourage and promote sectors that are already “green” or at least those that may become so in the very short term; ii) support sectors that cannot become green quickly for economic reasons; or iii) penalize those that are not green by divesting financially.

For the first option, the main recipient sectors are renewable energy generation, distribution and storage, energy efficiency in domestic and industrial buildings, green transportation, recycling, pollution prevention, water conservation and reforestation. A whole range of greens exist within these sectors, from the lightest to the darkest, with the latter being the most conventional.

For the second option, the debate is ongoing: is it really green finance or, rather, transitional financing? In this instance, the objective is to support the effective management of physical and transitional risks. The targeted sectors are specific segments of the fossil fuel and mining industry, particularly minerals essential to the low-carbon economy, such as lithium and cobalt, and heavy industries, such as cement, aluminum and iron. Therefore, the entire “light green” to “light brown” range of the spectrum now divides investors and regulatory and supervisory authorities.

The third option is divestment from particularly polluting and energy-intensive sectors, such as coal or oil – or more generally, conventional and unconventional hydrocarbons. Divestment from fossil fuels has increased

9. Cambridge Institute for Sustainability Leadership (CISL), “Sailing From Different Harbours. G20 Approaches to Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosures”, May 2018, available at: www.cisl.cam.ac.uk.

significantly since COP21. More than 900 additional investors, including asset managers, pension funds and insurers, have committed to divest from coal between 2014 and 2019 (Climate Action 100+).

At the center of or outside of the spectrum, the most commonly disputed areas or those more rarely referred to as “dark green” ones include, for example, carbon capture and storage (CCS), nuclear energy and fossil fuel efficiency technologies.

Green finance covers a fast-growing field, with undeniable potential to contribute to climate change financing. This potential has its limits and risks: to what extent are the instruments and discourse claiming to be sustainable finance greenwashing? Is the current trend promoting green finance, and driven by diverse actors, conducive to the consolidation or fragmentation of this new field? Are all types of organizations – public and private – justified in using and deploying green finance mechanisms? There are as many questions as answers currently being compiled.

This study firstly introduces the various challenges experienced by green finance. Despite a solid growth, with a growing number of instruments and participation by diverse actors, green finance is limited by a lack of standardization and significant differences between the assorted markets and stakeholders. This situation requires consolidation efforts and an ambitious governance to tackle the global challenge of climate change. The EU has been leading this battle so far.

Secondly, there is a need to outline the EU’s vision and initiatives: the European Green Deal and the future European taxonomy demonstrate a strong normative and political commitment to climate. Turning this progress into an opportunity, not only at the European level but also at the global level, with shared outcomes, is however a work in progress, whose major challenges are identified here with recommended solutions.

Global governance is crucial to scaling up green finance to foster the energy transition

The boom in sustainable finance

Sustainable finance has developed considerably since the signature of the Paris Agreement in 2015 that stipulates the alignment of financial flows with climate objectives as per the terms of its Article 2.1. A few figures make it possible to evaluate this development. The report on the development of sustainable finance, published by UNEP FI in 2018, indicates that governments are not standing still: it lists 267 initiatives related to sustainable finance in the world at the end of 2017, as opposed to 131 in 2013. These initiatives are distributed across 55 countries, including all of the G20 countries.¹⁰

The G20, which accounts for 80% of greenhouse gas emissions, focused on this issue during the Chinese presidency in 2016 with the launch of the Green Finance Study Group (GFSG). The Japanese Prime Minister, Shinzo Abe, who hosted the 2019 G20 meeting, stated that the climate was at the top of the agenda during his presidency. While the G7 historically was more focused on climate issues than the G20, which includes emerging countries, Trump's presidency has significantly reduced its effectiveness in this area. This trend is also set to increase during the US presidency of the G7 in 2020. Diplomats are looking for ways to bypass this obstacle, by working on sustainable finance at ministerial meetings (mainly G7 finance and G7 environment) and through coalitions with private actors. The latter, launched at the summit, are intended to hide the lack of political consensus. At the G20 Finance Ministers' and Central Banks' meeting under the Saudi presidency on February 22 and 23, 2020, Russia and Saudi Arabia expressed their growing interest in these issues.

10. UN Environment Finance Initiative (UNEP FI), "Repenser l'impact pour financer les objectifs de développement durable (ODD)" [Rethinking Impact to Finance SDGs (Sustainable Development Goals)], November 2018, available at: <https://unepfi.org>.

While the World Economic Forum in Davos is increasingly focusing on climate and environmental challenges, UN Secretary General António Guterres commended this year the increasing number of financial institutions and asset managers making carbon neutrality a priority in their investments.¹¹

Sustainably managed funds are also steadily growing, according to the Global Sustainable Investment Alliance. They amounted to \$ 30,700 billion in 2018, or a 34% increase compared to 2016. They have particularly increased from \$ 12,040 to \$ 14,075 billion in the EU – which is the largest area where funds are based – and from \$ 8,723 to \$ 11,995 billion in the United States.

Although the definitions and standards have not yet been decided on, the combined issuance of so-called “green” debt, loans and bonds, totaled nearly \$ 250 billion in 2018, while it was around \$ 50 billion in 2015. In 2019, they reached nearly \$ 260 billion.¹²

Although the EU has historically been at the forefront of developing sustainable finance, new state or supranational actors have emerged in recent years – like Japan and China, but also the International Monetary Fund and development banks. In 2019, the United States was the largest issuer of green bonds, both corporate and sovereign combined, followed by China, then France, Germany and the Netherlands.¹³

The Financial Centers for Sustainability (F4CS) initiative, which was created under the auspices of UNEP FI, aims to promote competition between different capital markets in the area of sustainable finance and to help spread best practices. The founding members at the launch in Casablanca in 2017 included Astana, Casablanca, Dublin, Frankfurt, Geneva, Hong Kong, London, Luxembourg, Liechtenstein, Milan, Paris, Seoul, Shanghai, Shenzhen, Stockholm, Toronto and Zurich. Nevertheless, there is great disparity between these markets. Although there are initiatives in place in most of them, London and Paris have a distinct advantage at this stage with more developed structures.

In July 2019, the United Kingdom presented an ambitious strategy for sustainable finance. By creating a Green Finance Institute that will bring together public, private and institutional actors, the country is shaping a specific holistic vision of government action on sustainable finance. Also,

11. “At Davos, UN Chief Urges ‘Big Emitters’ to Take Climate Action”, *UN News*, January 23, 2020, available at: <https://news.un.org>.

12. Climate Bonds Initiative (CBI), “2019 Green Bond Market Summary”, February 2020, available at: www.climatebonds.net.

13. *Ibid.*

there is a highly political dimension to maintaining the London financial market's attractiveness in a post-Brexit environment.

In France, the organization Finance for Tomorrow, under the auspices of Paris Europlace, brings together all of the actors in the Paris financial market within issue-specific working groups, for example on biodiversity or climate risk. Climate Finance Day has also been organized every year since 2014, with the 2019 event marked by the opening up the event to the United States and China. In order to develop technical expertise, two commissions bringing together private and public actors were also created by the national supervisory authorities, as well as a market greening observatory bringing together professional organizations in alignment with the July 2019 climate commitment. In addition, the Banque de France as Secretary of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) contributes by conducting specific research. Therefore, there is currently a real risk of fragmentation among the various initiatives that the EC's International Platform for Sustainable Finance or the centralized British model avoid to a certain extent. Nevertheless, such a development remains indicative of the rise of sustainable finance as a political, economic and financial issue.

Consequently, the challenge now consists in defining and adopting standards for sustainable finance. These will be political in nature, as they determine the financing of an economic model and therefore of consumption patterns, energy mixes and types of mobility.

The establishment of green taxonomies is a perfect example of this, with simultaneous initiatives by the EU, China and Canada – but also by many private actors and NGOs. Given the potential burden of compliance with taxonomies for issuers and financial actors globally, it is unlikely that so many taxonomies will coexist in the longer term, which explains the interest of the various actors involved.

An ever-changing set of actors: financial actors at the forefront

Sustainable finance is becoming increasingly important in the strategy of various financial actors. Several factors are causing them to change their practices. Firstly, global awareness of the challenges of climate change has increased since the Paris Agreement. In addition to monitoring by NGOs, which produce many reports on financial actors' environmental practices, clients, savers and citizens also tend to demand greater transparency on these issues.

Developments in legislation, such as at European level, also force changes, just like the overall discourse of policymakers, who clearly state their intention to legislate on this issue. In this respect, it is interesting to note that non-binding initiatives are also succeeding. A key example is the commitment in July 2019 by all actors in the Paris financial market, under the auspices of the French Minister of the Economy, to submit an independent carbon divestment strategy from 2020.¹⁴

Finally, the climate change-related financial risk specifically encourages financial actors to change. In 2015, Mark Carney, who was then Governor of the Bank of England, presented climate change-related financial risk as systemic¹⁵ in his notable keynote speech on the “Tragedy of Horizons”. He emphasized the disparity between the short-term horizon of market actors and policymakers, and the longer-term horizon of climate change. Physical risk can instantly reduce the value of assets, just like transitional risk that is expected to produce so-called stranded assets.

The changes vary according to the type of financial institution:¹⁶

- Banks cover a wide variety of activities. Therefore, they will have to change their offer for clients in retail banking, but also the lending and financing decision models to better integrate climate considerations that can have a tangible effect on counterparty risks. Trading floors use frameworks that are also at risk of not operating due to extreme fluctuations in the markets caused by climate change. The impact is less clear for merchant banking activities, such as mergers and acquisitions insofar as the bank is not directly exposed to counterparty risks, apart from the payment of fees. However, reputation risk could become an important factor.
- Asset managers will also need to better grasp the fluctuations in asset values due to climate change, and especially stranded assets. All asset classes are expected to be affected, including sovereign bonds. The increased frequency of extreme climate events can bring countries to the verge of collapse, as shown by the recent drought in Zimbabwe or Zambia. Climate change could also create new investment strategies due to increasing volatility on financial markets. Finally, the issue of passive investment and greening of indices (mainly introduced by the

14. Finance for Tomorrow, “Déclaration de Place: une nouvelle étape pour une finance verte et durable”, July 2, 2019, available at: <https://financefortomorrow.com>.

15. M. Carney, “Breaking the Tragedy of the Horizon – Climate Change and Financial Stability”, September 29, 2015, available at: www.bis.org.

16. European Systemic Risk Board (ESRB), “Too Late, Too Sudden: Transition to a Low-Carbon Economy and Systemic Risk”, Reports of the Advisory Scientific Committee, No. 6, February 2016, available at: www.esrb.europa.eu.

European Benchmark Regulation in 2019) will be key to align capital flows with climate objectives.

- Insurers bear the brunt of climate risk on two fronts on their balance sheet. While considerable fluctuations can affect their investments on the markets, alike asset managers, insurers will also have to deal with an upsurge in claims due to climate hazards. A recent typical example of physical risk is the bankruptcy in 2019 of the Californian energy supplier, PG&E, after the fires that ravaged California. The courts found that the power lines were the cause of the fires and the company's insurers are therefore facing extremely high disbursements. Until 2000, initiatives in this industry addressing the challenges of sustainable development were limited. This trend has changed since the 2000s, with major initiatives on disaster risk reduction and access to insurance products in the context of climate change.¹⁷ More recently, these actors have come together under the auspices of the Sustainable Insurance Forum (SIF), established in 2016 and bringing insurance supervisors and regulators together internationally under the leadership of the United Nations and in alignment with the Principles for Sustainable Insurance (PSI). More than 100 insurance organizations have adopted the PSI, with actors representing more than 20% of global premium volume and \$ 14 billion in assets under management.¹⁸

The cover for damage caused by weather events is becoming a major public policy issue worldwide. In August 2019, the reinsurer, Swiss Re, estimated its economic losses related to natural disasters for the first half of the year at \$ 40 billion, or a decrease of 12% compared to the first half of 2018.¹⁹ However, the losses covered had decreased by 30%; the reinsurer explains this by large claims in India or East Africa, in countries where the insurance industry is not very developed. There is concern that the situation could worsen, since the most exposed countries are often frontier or emerging markets.

17. Initiatives such as the Consultative Group to Assist the Poor (CGAP), the Working Group on Microinsurance (2002), the ClimateWise Principles (2007), the Access to Insurance Initiative (2009), the Kyoto Statement of The Geneva Association (2009), the Geneva Association and the UNEP FI Principles for Sustainable Insurance (PSI) (2012).

18. J. McDaniels, N. Robins and B. Bacani, "Sustainable Insurance: The Emerging Agenda for Supervisors and Regulators", UNEP FI-Sustainable Insurance Forum, 2017, available at: www.unepfi.org.

19. Swiss Re, "Swiss Re Institute Estimates Global Economic Losses of USD 44 Billion From Catastrophes in the First Half of 2019", August 15, 2019, available at: www.swissre.com.

The role of regulatory and supervisory authorities must be consolidated

There is a lot of ongoing debate about the role of supervisory authorities and central banks in addressing climate change, raising many technical and political issues. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) has conducted significant research on this matter. This network, which was established in December 2017 at the One Planet Summit in Paris by the Banque de France, now brings together approximately 50 members and observers, including the Basel Committee and the IMF. Members are working on integrating climate risk into financial supervision and central banks' market operations.

The Federal Reserve (Fed) is currently notably absent from this network, in accordance with the Trump administration's environmental policy – although Jay Powell, Chair of the Board of Governors, recently publicly opened the door to his institution joining the NGFS.²⁰ Although the White House's position on the Paris Agreement remains unchanged, some “cracks” are emerging. Among them, there are mainly the submission of a draft carbon dividend bill by Republicans, or a series of legislative proposals – currently blocked by the Senate – on the non-financial transparency of issuers and portfolio management companies.²¹ The CFTC has also taken a stance on climate risk assessment for financial institutions.²²

More generally, the role of supervisory authorities in tackling climate change is focused on two main areas:²³

- Effectively integrating climate risk and the threats it poses to financial stability into supervisory mechanisms. In particular, stress tests will have to evolve to take these new challenges into account, for which the barriers are mainly technical: the definition of economic and climate scenarios on which the stress tests will be based; and the modeling of

20. G. Davies, “Central Banks Begin to Grapple with Climate Change”, *Financial Times*, January 12, 2020, available at: www.ft.com.

21. The *ESG Disclosure Simplification Act*, introduced in the summer of 2019 and then reintroduced in January 2020, is the latest addition to the list of proposed ESG disclosure legislation that the House of Representatives Committee on Financial Services passed during 2019. For example, in July 2019, the same committee passed the *Climate Risk Disclosure Act* (still under review in the Senate) that would establish a comprehensive framework for climate risk disclosure by public companies. Taken as a whole, these bills start to lay the foundation for a comprehensive ESG disclosure framework for US public companies.

22. R. Behnam, “Changing Weather Patterns: Risk Management for Certain Uncertain Change”, Commodity Futures Trading Commission (CFTC), February 14, 2020, available at: www.cftc.gov.

23. D. Schoenmaker, R. van Tilburg and H. Wijffels, “What Role for Financial Supervisors in Addressing Systemic Environmental Risks?”, *DSF Policy Paper*, No. 50, April 2015.

the climate change impact chain from physical assets to financial actors' balance sheets.

- Combating greenwashing, which is likely to develop, particularly for products distributed to retail banks' clients. The debates about the European legislation, particularly the taxonomy, show how difficult it is to define objective sustainability criteria for financial products. These debates should logically emerge from the markets, where the supply of so-called sustainable products is growing, while the standards remain fragmented.

The role of central banks in the context of climate change is the focus of a fierce political debate, regarding their market interventions, and particularly asset buy-back programs. There were many calls during 2019 to make quantitative easing (QE) the main vehicle for financing the ecological transition, given the volumes involved. Critics of such a move generally argue that the green asset market is too limited, that market neutrality is important in central bank operations, or that the mandate of central banks should not replace that of governments.²⁴

The European Central Bank, under its new President, could probably significantly change its stance on the issue. During her hearings before the legislature, Christine Lagarde showed her openness towards a possible "green QE" once the European taxonomy was in place.²⁵ The strategic review, launched on January 23, 2020, and whose results will be revealed in December 2020, will provide "an opportunity to think about how to address sustainable development issues in (its) monetary policy framework."²⁶

In addition to targeted asset buybacks, central banks, like all asset managers, will nevertheless be required to take climate change risk into account in their own-account business.

The rating agencies come into play

The credit rating agencies' role is to assess an issuer's creditworthiness and therefore their likelihood of defaulting as accurately as possible. They are not obviously intended to integrate environmental criteria in an arbitrary

24. E. Campiglio, "Beyond Carbon Pricing: The Role of Banking and Monetary Policy in Financing the Transition to a Low-Carbon Economy", *Ecological Economics*, Vol. 121, January 2016, pp. 220-230, available at: <https://doi.org>.

25. R. Gualtieri, "Draft Report on the Council Recommendation on the Appointment of the President of the European Central Bank", European Parliament's Committee on Economic and Monetary Affairs, August 29, 2019, available at: www.europarl.europa.eu.

26. C. Lagarde, Letter from the President of the European Central Bank to Mr. Ernest Urtasun, November 21, 2019, available at: www.ecb.europa.eu.

manner (like non-financial rating agencies), but will be required to measure the impact of climate risk on the likelihood of default.

The adopted perspective is therefore critical. For example, a less developed country choosing to apply a deforestation policy to set up a factory could see its financial rating increase, as the resulting revenue would reduce the likelihood of default in future years though an improvement in its fiscal situation. However, the destruction of an ecosystem may make the country more vulnerable to physical climate risk in the longer term and ultimately increase the risk of default.

After ignoring these challenges for a long time, the takeover of many non-financial rating agencies by historical credit rating agencies in recent years shows an increased interest by actors in these challenges.²⁷ In November 2019, Moody's downgraded Exxon's long-term AAA rating outlook from stable to negative, stating, in addition to financial pressures, increasing climate change-related risks, including exposure to legal proceedings and negative impacts from regulatory and fiscal developments in many countries.²⁸

States as Regulators

The challenge for regulators in the area of sustainable finance is now twofold. First and foremost, it is a way of combating climate change and achieving objectives set in the short, medium and long term. As such, it needs to be an integral part of global environmental policy.

Sustainable finance also represents a challenge in terms of attractiveness and influence for governments. The introduction of new financial products and changes to financial infrastructure represent business opportunities, and financial markets have a vested interest in being at the forefront in order to be competitive.

In this respect, the sustainable finance strategies adopted by France and the United Kingdom for their respective markets in Paris and London are closely linked to post-Brexit attractiveness issues. Both countries nurture the ambition to create a global hub for sustainable finance, as demonstrated by the establishment of the British Green Finance Institute, heavily subsidized by the government, or the repeated support of the French government for the Finance for Tomorrow initiative, as

27. I. Chaperon, "Bataille autour de la notation extra-financière", *Le Monde*, July 22, 2019, available at: www.lemonde.fr.

28. B. Nauman and A. Gross, "Credit Rating Agencies Focus on Rising Green Risks", *Financial Times*, November 27, 2019, available at: www.ft.com.

demonstrated by the closing speech made by the French Minister of Economy and Finance at the Climate Finance Day in November 2019.

Multilateral institutions, financial or non-financial

Multilateral institutions have been at the forefront of the development of sustainable finance for many years: for example, in 2007, the European Investment Bank (EIB) issued the world's first green bond.

The United Nations, in addition to its project finance activities, has sought to be a catalyst. Through UNEP FI and the Global Compact, it has initiated the Principles for Responsible Investment, which now bring together more than 2,600 investors. More recently, finance was the focus of discussions at the UN Climate Action Summit held at the end of September 2019.

The OECD is working in accordance with its mandate to develop public policies on sustainable finance – it has established the Center for Green Finance and Investment for this purpose.

The World Bank is also contributing to the development of sustainable finance, particularly through its private sector subsidiary, the International Finance Corporation. The IMF's role in this area is historically less clear, but Christine Lagarde and her successor Kristalina Georgieva have shown strong political leadership. With climate risk becoming a systemic risk, the alignment of financial flows with climate objectives does not seem to contradict the IMF's mandate that includes financial and economic stability or the fight against poverty. The IMF Managing Director stated at the Annual Meetings in October 2019 that the institution would now systematically take climate risk into account in its economic and financial surveillance work. In a research paper published on February 5, 2020, the IMF also stated that it wanted, "to extend and deepen the coverage of climate risks in assessments under the Financial Sector Assessment Program", on the inclusion of physical and transitional risks²⁹.

At European level, the idea of establishing a "European Climate Bank" was a highlight of the May 2019 European elections. Two institutions are now in a position for this role: on the one hand, the EIB, and on the other, the European Bank for Reconstruction and Development (EBRD). The broader challenge for the EU is to streamline its activities in terms of financing development and ecological transition.

29. T. Adrian, J. Morsink and L. B. Schumacher, "Stress Testing at the IMF", International Monetary Fund (IMF), February 5, 2020, available at: www.imf.org.

A *Wise Persons Group* therefore submitted a report on the subject to the EC in October 2019 (EU Council 2019) and many political factors need to be taken into account, particularly the influence of the United States and the United Kingdom among the EBRD's shareholders. The experts' report ultimately recommended establishing a European Climate and Sustainable Development Bank with a mandate similar to the EBRD's, but leaves open the possibility of basing itself on one or other of the institutions or even forming a joint venture.

Companies

In any discussion on sustainable finance, it should be borne in mind that the role of the financial system is ultimately to finance the real economy – and therefore predominantly non-financial companies. Although some are forced to change through drivers such as shareholder engagement, others are striving to voluntarily adjust their business model to remain competitive and resilient as part of the low-carbon transition.

In addition to possible pressure from investors to initiate the transition, the cost of financing companies should also change with the development of green finance, and particularly indices and taxonomies. This explains the lobbying efforts made by companies during the drafting of the European taxonomy. Those whose model is based on an excluded activity could encounter difficulty in obtaining financing from many investors who will apply the highest standards in terms of sustainability.

Limited expansion of the green bond market, lack of standardization and threats of greenwashing

The green bond market is burgeoning. This sector, which is highly oriented towards euro-denominated issues with “investment grade” ratings, grew significantly in 2019. Last December, the green bond market exceeded € 500 billion, giving it a leading position in the sustainable bond market.³⁰

However, this financial mechanism is sometimes marred by a risk of greenwashing, due to a lack of liquidity and poor transparency, traceability problems and reporting on the use of funds.

Green bonds are a promising instrument for channeling low-carbon investments, but they need to be developed. Currently, they are less tradable than conventional bonds and they do not meet investors' liquidity

30. Climate Bonds Initiative, “2019 Green Bond Market Summary”, *op. cit.*

needs. Their actual liquidity on the secondary market is very limited: they only represent between 1 and 2% of the total value of outstanding bonds (according to the database published by Refinitiv).

Another factor restricting the expansion of the green bond market is the size of the projects to be financed, which are generally too small in nature to attract institutional investment. Minimum investment values are needed to compensate for transaction costs (including due diligence); with an average minimum value of € 50 million in the EU and \$ 100 million in the United States.

The lack of high-quality data and standardized frameworks to facilitate an appropriate valuation and strategic planning process is an additional obstacle for the green bond market. Expected indicators and information relate to anticipated reductions in greenhouse gas emissions, supply chain structure, carbon pricing process, and physical and transitional climate risks. Furthermore, given the largely voluntary nature of reporting of emissions by companies, the quality of reported data is not very credible. Finally, there is no standard for reporting this data, hence reports whose contents and thoroughness are sometimes deemed convoluted.

In 2019, more sustainable labels, such as transition bonds or ESG-linked bonds began to emerge. A transition label, such as the one promoted as part of the European Ecolabel, must also ensure that it does not open the door to brown industries, companies and activities or ones likely to remain so, hence increasing the risk of greenwashing. Conversely, such a label should encourage these companies to make the transition by means of the commitment requirements and appropriate thresholds for all the products involved, and therefore remain attractive in terms of financing flows.

ESG-related Difficulties

Investment products integrating ESG factors into their portfolios are particularly popular with investors. The global market for assets under management invested in sustainable investment increased by 34% between 2016 and 2018, reaching \$ 30.7 trillion.³¹

However, the standards defining the degree of ESG performance are relatively flexible and holdings in green ETFs can turn out to be brown. The *Wall Street Journal* recently reported that eight out of the ten largest

31. Global Sustainable Investment Alliance (GSIA), "2018 Global Sustainable Investment Review", 2018, available at: www.gsi-alliance.org.

American sustainable funds are invested in oil and gas companies³² that are regularly criticized by environmental campaigners. Furthermore, green index funds tend to be over-represented in the new technology sector: the five main indices focusing on American equity from an ESG perspective also have large holdings in companies such as Microsoft and Google.

Although sustainable investment is growing (according to an HSBC survey,³³ 60% of investors and just under half of issuers have an ESG strategy and the proportion for both categories is higher than 80% in the EU) and studies tend to show a higher financial return, many challenges still persist.

The lack of structure and standards in the sector opens the door to greenwashing, as there is no clear definition of what counts as sustainable investment. The ESG scores, which are supposed to clarify the debate, are often just as confusing. More and more organizations are rating and ranking companies according to various ESG criteria that funds managers can use to build a sustainable portfolio. But the methodologies vary significantly, so companies can have conflicting scores. For example, Tesla is considered by MSCI to be the best performer among global car manufacturers, but also one of the worst by the FTSE.³⁴

Standardized reporting frameworks abound – the Sustainability Accounting Standards Board (SASB), Global Reporting Initiative (GRI) and the framework based on the Task Force on Climate-related Financial Disclosures – to provide companies with guides for identifying and making information on sustainability issues available to investors. However, these frameworks are not currently compulsory, and there is no equivalent for checking disclosure by fund managers practicing ESG investment. Without standardized regulations, there is consequently no penalty to counter greenwashing practices.

In a European economy, which is still highly dependent on fossil fuels (with differences depending on the sectors and countries), moving towards a low-carbon economy requires finding a balance between a niche approach, which is limited to the already “dark green” sector, and an inclusive, but highly lax approach, opening the door to greenwashing and unlikely to achieve the Paris Agreement’s objectives. To some extent there are different options. The first is to simultaneously support the best

32. A. Otani, “ESG Funds Enjoy Record Inflows, Still Back Big Oil and Gas”, *The Wall Street Journal*, November 11, 2019, available at: www.wsj.com.

33. East & Partners, “Sustainable Financing and ESG Investing Report”, September 2018, available at: www.sustainablefinance.hsbc.com.

34. In 2018, Tesla’s ESG scores were respectively 21, 54 and 56 out of 100 according to FTSE, MSCI and Sustainalytics.

performers and those in the high emission (brown) sector to encourage these companies to move to the other end of the spectrum. Investing in the transition of sectors that contribute the most to global emissions – including heavy industry (18% of emissions), heavy transport (13% of emissions) and agriculture, forestry and land use (24% of emissions)³⁵ – is challenging. Financial and economic difficulties can arise with higher investment costs and/or ill-adapted revenue models, as well as technical challenges, due to a lack of technological solutions to decarbonize these sectors.

Other challenges are the risk of carbon lock-in, that of stranded assets which is becoming a major concern for shareholders, and the social and financial risk of transition. Many assets have a long life cycle, ranging from approximately 15 years for cars, 50 years for fossil power plants and up to 100 years or more for buildings. Subsequently, any financing in these sectors can lock in carbon emissions for the future, preventing any alignment with a 1.5° C trajectory. Conversely, removing these assets requires societal transformation, with the development of public services and jobs closely linked to these sectors.

Another possibility, not unrelated to the first one, is to adopt an intermediate approach. The natural gas sector is specifically targeted with its inclusion in decarbonization scenarios that are compatible with the objectives of the Paris Agreement. However, many challenges remain for this source of energy to become green³⁶ and such an approach maintains and boosts the sector, with expanding natural gas networks being incompatible with the long-term requirement to eliminate fossil-fuel emissions.

A more extreme approach is to only promote virtuous sectors, with financial instruments that have strict criteria, excluding the brown sectors – and which may be combined with a proactive approach, with divestment procedures. The development of the European taxonomy has highlighted these challenges, with the inclusion of three categories of economic activities (cf. below).

35. Energy Transitions Commission (ETC), “Mission Possible: Reaching Net-Zero Carbon Emissions From Harder to Abate Sector by Mid-century”, November 2018, available at: www.energy-transitions.org.

36. Provided that solutions are found for the problems of flaring, venting and fugitive methane emissions along the natural gas supply chain.

Europe's lead in sustainable finance: positioning and approaches to consolidation

A strong political ambition to sustainably green the financial system

The EU has played a key role in the development of green finance, in two ways: firstly in reconciling the “horizons” (i.e. short term for the financial sector, medium term for the regulator and long term for the climate); and, secondly, in providing the financial sector with the instruments to effectively enable it to reorient capital to the low-carbon transition while reducing the information asymmetry on climate change risks.

This pioneering nature of EU policy on sustainable finance is substantiated by a number of arguments, both political and economic – first and foremost the implementation of the Sustainable Development Goals in the EU by 2030, meeting the EU's climate and energy objectives, as set out in its sustainability strategy. In this way, the EU also aims to provide new investment and employment opportunities, while ensuring the long-term competitiveness of the European economy. More broadly, this approach is at the heart of the capital market union project, which emphasizes both the crucial role of the financial system and the requirement to “radically change (its) way of working” as set out in the EC's March 2018 Action Plan for Financing Sustainable Growth.

Initially, the low-level involvement of investors and capital holders in the low-carbon transition was justified by three types of key barriers, that were behind the mispricing of sustainable projects compared to projects harmful to the environment:

- Economic and financial barriers: including those related to high levels of subsidies for fossil-fuel production and use, green investment vehicles still under development and maturing, and the lack of a single carbon price discouraging companies from offering low-carbon solutions on the market.
- Structural barriers: reducing the economic attractiveness of sustainable activities.

- Unclear political signals: resulting in regulatory uncertainty or shortcomings, particularly in the financial and energy sectors – and subsequently offering limited opportunities to predict and manage risks for investors.³⁷

Progress on the 2018 Action Plan and publication of the Green Deal: a long-term strategy for sustainable finance

This Action Plan aims to achieve three objectives in accordance with the guidelines described in November 2015 by the Governor of the Banque de France, namely: reorient capital flows towards a more sustainable economy; integrate sustainability into financial institutions' risk management; and promote transparency and the long-term view within financial institutions.

To achieve these objectives, the EC has proposed a series of actions, the mainstay of which is establishing a common classification of environmentally sustainable economic activities. Indeed, this classification should remedy existing information asymmetries on sustainability, by creating a real system for greening the financial sector. More broadly, the EC aims to instill greater confidence in the financial system through greater transparency, clarity and standardization of financing criteria.

On this basis, a series of actions – mainly regulatory – has been established by the EC following an ambitious timetable, specifically:

- The development of a sustainable “label” for financial products for retail investors (Ecolabel) – currently under negotiation with the vote on its criteria scheduled for the end of 2020.
- The development of a European green bond standard – which would act as a catalyst on the growing green bonds market and provide it with the necessary credibility, particularly through accreditation by external auditors from the European Securities and Markets Authority. Published in June 2019 by a group of dedicated experts, this voluntary standard should be enacted into European law in 2020.
- The disclosure of transparent information on investment strategy, asset allocation and risk management by institutional investors, asset managers and insurers – via the publication in December 2019 of the so-called Disclosure Regulation, which implements the requirements of Article 173 of the French Green Growth Energy Transition Act on a

37. K. Hamilton, “Unlocking Finance for Clean Energy: The Need for ‘Investment Grade’ Policy”, Chatham House, December 2009, available at: www.chathamhouse.org.

Europe-wide basis. Indeed, this regulation requires the publication of the impact of investment policy on ESG factors by the relevant market actors and vice versa. France also incorporated this regulation into its national law via Article 29 of the Energy-Climate Law, enacted in autumn 2019, which nevertheless retains the specific features of Article 173³⁸ – with, among other major components, a policy for contributing to ecological transition and the publication of investment targets aligned with the French National Low-Carbon Strategy – and establishes a requirement to disclose information related to biodiversity conservation.

- Clarification of banking and investment advisors' duties in terms of integrating ESG criteria into the offering of financial products tailored to clients' preferences – via the (ongoing) amendment of the MiFID 2, UCITS and AIFM directives.
- The requirement for credit rating agencies to explicitly integrate the sustainability of investments into market research and credit ratings of financial institutions when ESG factors are considered “tangible” – guidelines were issued to this effect by the European Securities and Market Authority in July 2019.
- Incorporating sustainability into banks and insurers' prudential requirements, through the integration of climate risks in risk management policies and the calibration of capital requirements applicable to banks, is reflected in the introduction of a ‘green supporting factor’, consistent with the European taxonomy and justified from a risk perspective – a report will be submitted by the EC in 2020, particularly following research by the three European supervisory authorities on market short-termism that was published in December 2019. It should be noted that as part of the review of the European supervisory authorities in 2019, the EC extended their mandate to monitor environmental and social risks, specifically including the monitoring of “shifts in horizons” and “short-termism” in the financial sector.
- Revision of the EC's non-binding guidelines for non-financial corporate reporting with the publication – in June 2019 – of an annex dedicated to climate reporting, in accordance with the TCFD's recommendations.
- Furthermore, the EC is considering a policy aimed at promoting corporate governance that conveys all the standards and values required to develop a more sustainable financial system, i.e. the role of

38. Responsible Investment Forum, “Article 173-VI: Understanding the French Regulation on Investor Climate Reporting”, October 2016, available at: www.frenchsif.org.

the board of directors and managers of financial institutions. The EC is also working on the impact of the International Financial Reporting Standards (IFRS) on short-termism.

Despite an ambitious timetable, the majority of the actions planned by the EC in March 2018 led to key reforms, such as the publication of the above-mentioned Disclosure Regulation, the regulation on green indices published in December 2019, and the work of the European supervisory authorities, which is an essential complement to such legislative measures.

Although the Green Deal, published in December 2019, puts significantly less emphasis on the role of the financial system in achieving the EU's sustainability objectives, the EC reiterates the need to finalize the actions begun under the Action Plan, before revising the EU sustainable finance strategy in the third quarter of 2020, in accordance with several key aspects, i.e. revising the Non-Financial Reporting Directive – particularly in line with the recommendations of P. Cambourg's report³⁹ to the Minister of Economy and Finance in June 2019; integrating ESG factors into financial actors' risk management policies.

Also, the EU's sustainable finance strategy is a long-term one, aimed at taking as comprehensive a view of financial regulation as possible and therefore fully reorienting capital flows towards transition, by moving away from a “niche” approach.

The “taxonomy” of sustainable economic activities: the European classification system

Key elements of the regulation: defining the methodological framework for the transition

The taxonomy aims to ensure financing and investment is targeted towards the low-carbon transition, by establishing a common definition of sustainability for a specific sector of economic activity – which has been one of the major obstacles to the development of sustainable finance to date. Indeed, the information asymmetry relating to green investment largely stems from the lack of a definition of sustainability: in that respect,

39. P. de Cambourg, “Garantir la pertinence et la qualité de l'information extra-financière des entreprises: une ambition et un atout pour une Europe durable”, a report submitted to the Minister of Economy and Finance, May 2019, available at: www.anc.gouv.fr.

research by Della Croce⁴⁰ has highlighted existing differences in the definition of “green”.

This is why, over the years, several initiatives, both public and private, have attempted to define and classify “green” assets, as shown by the examples from the Climate Bond Initiative’s taxonomy; the Chinese taxonomy or that of the EIB.⁴¹ However, existing differences among these definitions and taxonomies show both the political and scientific complexity of the exercise and its necessity.

Therefore, the Taxonomy Regulation, which was politically agreed on by the co-legislators on December 18, 2019 under the Finnish Presidency of the Council, is the crucial stage in the effective development of sustainable finance in the European Union with a view to redirecting capital flows towards the low-carbon transition. The taxonomy aims to remove obstacles from the operation of the Single Market regarding the financing of sustainable projects, by standardizing the definition of sustainability, harmonizing the labeling criteria for financial products and providing greater clarity for investors.

The regulation sets out the methodological framework and specifically the principles for its development:

- The future classification aims to define the economic activities contributing to climate change mitigation and adaptation without affecting (“Do Not Significantly Harm” principle) the other objectives defined by the regulation – i.e., sustainable use and protection of water and fisheries resources, transition to a circular economy – waste prevention and recycling; pollution prevention and control; and protection and restoration of biodiversity and ecosystems.
- Three categories are included in the regulations for these activities according to their contribution to transition: low-carbon activities; transitional activities; and those making transition possible. This “extension” of the classification – in addition to low-carbon activities – is intended to effectively finance the transition of activities that potentially contribute to climate change mitigation, while not significantly undermining the other environmental objectives.

40. R. Della Croce, C. Kaminker and F. Stewart, “The Role of Pension Funds in Financing Green Growth Initiatives”, Organization for Economic Cooperation and Development (OECD), September 2011, available at: www.oecd.org.

41. CBI, “Comparing China’s Green Bond Endorsed Project Catalogue and the Green Industry Guiding Catalogue with the EU Sustainable Finance Taxonomy (Part 1)”, September 2019, available at: www.climatebonds.net.

- ▀ The classification criteria must be science-based and in accordance with the principle of technological neutrality.
- ▀ The future classification will be produced in the form of delegated acts by the EC based on the final recommendations prepared by the Technical Expert Group (TEG) on Sustainable Finance. It will be adopted in two stages, from the end of 2020 for the mitigation and adaptation objectives, coming into effect at the end of 2021.
- ▀ The opportunity provided by the regulation for its assessment and revision must ensure its credibility and effectiveness. Indeed, consideration of the sustainability of a given technology or energy solution for example, should be made depending on how it actively helps to reduce greenhouse gas emissions – particularly as the concept of sustainability is inherently relative. Therefore, stakeholders insist that attention must be paid to ensure the taxonomy does not lead to technological stasis or a check on innovation, with proper management of sectoral carbon budgets – and enabling the environmental benefit of investments or financing to be maximized.
- ▀ The EC will study the feasibility of a “brown” taxonomy by the end of 2021 – opening up prospects in terms of prudential impact and supervision of financial institutions (climate stress tests).
- ▀ Institutional investors and portfolio managers will need to comply with the transparency requirements regarding its use for three product types: products with ESG ratings (clear green); products with a sustainable investment objective (dark green); and so-called “mainstream” products. In particular, the regulation requires companies subject to the Non-Financial Directive to publish climate reporting aligned with the taxonomy.

It should be noted that in parallel to the discussions between the co-legislators, the TEG, set up by the EC, has been working on drawing up an initial list of sustainable activities. The initial list was published on June 18, 2019 and will be used as a basis for the final taxonomy to be drafted by the Platform through delegated acts. A revised and finalized version of the report was published on March 9.

Therefore, 2020 is decisive in the drafting of the classification, with key debates on some objectives (reducing emissions as quickly as possible to address the emergency with all the solutions or rather from a maximum decarbonization approach) and especially in particular sectors:

- ▀ Gas in electricity and heat generation: both thresholds applicable to CO₂ emissions and the principle of life-cycle analysis have the main effect of excluding activities using fossil fuels, including natural gas from the classification. But, people are against excluding natural gas, as this – in the case of combustion in modern combined-cycle power plants – can play the role of catalyst for the use of renewable energy, especially as it occurs at a time when the phase-out of coal is being introduced in many European countries (and of nuclear power in Germany at the end of 2022). Furthermore, the financing criteria for gas infrastructure, restricted by the TEG to the refurbishment of networks converted to hydrogen, are critical about the feasibility of financing the connection of renewable gas facilities. There are also debates about the feasibility of building natural gas transport and distribution networks – in the event of replacing more polluting sources of energy – or extending networks to integrate biomethane. More generally, the question of whether or not to accept the benefits of technological substitutions will be a key element in the development of the classification.
- ▀ Nuclear energy has sparked considerable debate in negotiations as to whether or not it is appropriate for the ecological transition. Although it is free of CO₂ emissions, its critics consider that its impact is potentially considerable, particularly on the circular economy objective, because of the waste issue. Its inclusion in the future classification – at least as a transitional activity – will therefore be one of the key discussion points in 2020.

The TEG's final report on the European Green Taxonomy, and particularly on the technical criteria for selecting activities, has partially settled the matter.

The methodology used by the TEG to define the economic activities covered and their technical criteria includes two main requirements: “the activity contributes substantially to at least one of the six environmental objectives”⁴² and “the activity does not cause significant harm to any of the other environmental objectives”.

Therefore, although the TEG emphasizes the decarbonized nature of nuclear-based electricity generation, it could not conclude whether the second requirement was met. Indeed, the working group stipulates that the

42. Climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; protection and restoration of biodiversity and ecosystems.

lack of data on the potential harm of the activity on a number of environmental objectives (including the circular economy and waste management) does not allow it to include nuclear energy in the activities covered by the Taxonomy. It particularly raises the issue of high-level waste management that there is currently no long-term solution for. Therefore, the TEG recommends that more extensive technical research is undertaken.

With regard to gas-based electricity generation, facilities emitting less than 100 gCO₂e/kWh (grams of CO₂ equivalent per kilowatt/hour) will be eligible with a reduction every five years to achieve 0 gCO₂e/kWh in 2050. Facilities, including green gas-based electricity generation, will also have to comply with the environmental indicators (water, waste and recycling, impacts on ecosystems, SO₂, NO_x emissions, etc.). The TEG considers that natural gas-based electricity generation will only be eligible if it is combined with carbon capture and storage facilities.

Finally, among the activities that the TEG has identified as relevant, and requiring more investigation, “other gas infrastructure, except pipelines, which are relevant to the switch to hydrogen and other zero-carbon gases and the recycling of existing gas infrastructure”.⁴³

What will the role be of the future classification in the greening of the financial sector?

Firstly, it should be noted that in addition to the regulatory requirements placed on these actors, the taxonomy will form the common language for greening the financial sector by applying, at least on a voluntary basis, to a wider range of actors and activities than those covered by the regulation – such as private equity, passive management (ESG indices), banking institutions in their lending, issuing and origination operations, or even public or parastatal actors (i.e. EIB).

The taxonomy must be more broadly understood, as specified below, such as the metrics for sustainability. In this respect, the regulations under development in the EU – and the upcoming revision (in autumn 2020) of the Non-Financial Reporting Directive – must fully integrate the future classification. To ensure its effectiveness, the quality of non-financial reporting must improve considerably, in accordance with the recommendations submitted by the President of the Autorité des normes

43. Technical Appendix of the Taxonomy Report: “Other gas infrastructure, except pipelines, which are relevant to the switch to hydrogen and zero-carbon gases and the recycling of existing gas infrastructure”, published in March 2020.

comptables (French Accounting Standards Authority), P. de Cambourg, to the Minister of Economy and Finance in June 2019. Also, the principle of double materiality of information – financial and non-financial – must be reflected in the transparency of companies in environmental and social matters; the auditing of information must be made mandatory; and non-financial information must be brought to the highest level of corporate governance. By seeking to give non-financial information a similar status to financial information, the objective is to ensure an effective transition of economic activities, via a significantly greater degree of internal and external transparency, accountability, and therefore of controlling their transition.

Building a global discourse on sustainable finance through a holistic overview of the financial system

Countering a niche approach

“Finance will be green or it won’t”, the Minister of Economy and Finance, Bruno Le Maire, stated at the Climate Finance Day in Paris in December 2017. Therefore, the entire financial system must make the transition, and a niche approach should be avoided, as this will not allow us to understand all the challenges facing economies in what is perceived as an increasingly short timescale. As a source of systemic risk⁴⁴ to the financial system, but also with regard to the challenges of financing the transition, the goal is to ensure that the concept of sustainable finance finds meaning through the integration of ESG filters into the overall operation of the markets. As identified by the EC in the Green Deal in December 2019, this will be a key discussion point among Member States when the EU’s sustainable finance strategy is reviewed in the coming months.

The European taxonomy has major global potential. This is why discussions as part of the EC’s International Platform on Sustainable Finance – which work started on in autumn 2019 – will be key, particularly with Canada and China, which have already developed – or are in the process of developing – their own classifications.

Indeed, developing a sustainable financial system covers a range of key challenges that go beyond simply greening it, such as pursuing

44. M. Aglietta and S. Rigot, “Investisseurs à long terme, régulation financière et croissance soutenable”, *op. cit.*; E. Espagne, “Climate Finance at COP21 and After: Lessons Learnt”, Centre d’études prospectives et d’informations internationales, *CEPII Policy Brief*, September 2016, available at: www.cepii.fr.

sustainable economic growth, taking systemic climate risk into account, and ensuring competitiveness of financial markets in this field. Consequently, several issues arise:

- ▀ The management of financial flows facilitating transition to lend credibility to it, through the future taxonomy, labeling of financial products, as well as the auditing and supervision of dedicated financial mechanisms, and security with a revised supervisory approach. In this respect, the transparency efforts made in France (via Article 173) and in the EU (through the coming into effect of the Disclosure Regulation in 2020) aim to facilitate effective supervision of the respective regulators – until now hardly or not at all affected by environmental issues. This is why cooperation remains essential, justifying the initiatives of recent years, such as:
 - the Network for Greening the Financial Sector, as described above, and chaired by the Dutch Central Bank which now brings dozens of regulators together;
 - the EC’s International Platform (mentioned above), which work started on in autumn 2019, brings non-EU countries together to share key information and work on common best practices in sustainable finance;
 - the Coalition of Finance Ministers for Climate Action, established in 2019, which – according to its “Principle No.5” – brings Ministries of Finance together around greening of private finance; and
 - working groups from the International Organization of Securities Commissions (IOSCO), the international market regulator, which are working towards developing common standards for sustainable finance in financial markets.

- ▀ Taking climate change risks into account, according to Mark Carney’s now famous classification: physical risk, transition risk, litigation risks. The latter will be reflected in a range of market risks – liquidity, credit, counterparty and operational – on a potentially significant scale. In addition to the physical risks, the transitional risks – namely the uncertain financial impacts occurring as a result of the sudden re-evaluation of some assets, or even their collapse (the “Minsky moment”) stemming from the effects of introducing a low-carbon economic model for economic actors – may be systemic challenges for markets. However, these risks are mainly borne by sectors that are overexposed to global warming or are unprofitable in the context of its mitigation, namely “stranded assets”, i.e. investments or assets whose value is depreciating due to market trends, particularly in the fossil fuel sector. In this respect, the establishment of taxonomies – particularly “brown ones” – or at least, common principles to identify climate risk internationally, is a key point. Furthermore, the uncertain and non-linear nature of climate change and its effects on the

financial system makes international cooperation even more essential. The Financial Stability Board must therefore play a key role in coming years.

- Such factors demonstrate that firstly the major public financial institutions (EIB; EBRD; Caisse des dépôts [French public sector investment institution]), the UNEP Finance Initiative, and then the financial institutions themselves, in the form of coalitions of actors, have taken control of this topic since COP21. This movement is concomitant with the growth of the green bond market, the divestment trend from certain fossil fuels, the establishment of green investment funds, and the spread of socially responsible investment in the Paris financial markets, etc. Finally, international cooperation in this area must be reflected by support for emerging and developing economies, both with regard to green bond guarantee mechanisms and the necessary capacity-building of regulatory and supervisory authorities in these countries. This is the aim of the International Network of Financial Centers for Sustainability, as well as international working groups from IOSCO and the Basel Committee.

Only a harmonized approach with a “common denominator” of regulation and supervision will ensure the credibility, effectiveness and implementation of these sustainability challenges in how markets operate. It is a role that the EU – and particularly France because of its pioneering and forward-thinking approach in this area – can therefore play to the full.

Many opportunities at stake

The development of sustainable finance can provide a fantastic opportunity for market actors. The burgeoning green bond market is a clear illustration of this, but more generally, entire product ranges are appearing at regular intervals, such as social bonds, SDG bonds, ESG-linked loans, etc. The development and sale of these products are an important growth driver for all actors in a wide variety of fields.

New demands from savers, as well as legislation, also require a change in the relationships that intermediaries have with them and with all stakeholders. For example, the increased transparency resulting from these changes is leading to the rapid development of the non-financial rating sector, and will require training for advisors to enable them to meet the new demands.

The volatility caused by ESG factors will also create volatility on the markets and create new opportunities for hedge fund investors who use systematic strategies that exploit rapid price fluctuations.

Nevertheless, these new opportunities go hand in hand with clear risks that will need to be monitored and controlled by regulators and supervisors. Sudden price fluctuations pose significant risks to financial stability, just like the emergence of stranded assets, particularly in the oil and gas sector.

The emergence of new products combined with the difficulty in defining standards also raises concerns about widespread greenwashing, as green bonds are now issued to finance “slightly less polluting”⁴⁵ tankers. In addition to misleading advertising, greenwashing will become a financial stability risk when the degree of greening of assets is taken into account in supervisory mechanisms such as stress tests.

Finally, it will be a question of policymakers not giving in to the temptation of decoupling by immediately seeing the development of green finance as the solution for maintaining economic growth in the medium and long term. Focusing on green investments, risks neglecting the equally important aspect of divestment of carbon-intensive assets, specifically in infrastructure with a very high carbon lock-in given the lifecycle of the underlying projects.

45. B. Nauman, ‘Investors Balk at Green Bond From Group Specialising in Oil Tankers’, *Financial Times*, October 18, 2019, available at: www.ft.com.

Conclusion

Although the development of sustainable finance is now growing, particularly within the EU, several challenges remain in order to expand the effective integration of ESG factors in the coming years.

From financial institutions to regulators, central banks and multilateral organizations – a wide range of actors are committed to contributing to green finance. This competition is not without risk of fragmentation and dilution of the expected impact. Therefore, a coherent, unified and ambitious discourse is required. The EU is showing leadership on green and sustainable finance with its March 2018 Action Plan and, more recently, the Green Deal. However, many challenges remain to not only turn this ambition into effective change by private and public actors, but also to champion this project beyond European borders.

The lack of an international classification system for the “sustainability” of an investment hinders the allocation of capital for the low-carbon transition, due to no common energy and environmental policy, both within the EU and globally. At the very least, in view of the regional differences in terms of on-going progress, it is important to develop common principles and a lowest common denominator for sustainable (low-carbon and transitional) economic sectors. The G20 could be such a place to take this leading role.

Achieving carbon neutrality objectives is based on two cornerstones: reducing greenhouse gas emissions and conserving and boosting carbon sinks (i.e. oceans and land). Furthermore, the link between climate and the loss of the natural world reminds us that climate change is not the only natural regulation system damaged by human activity. Consideration of the nine planetary boundaries⁴⁶ must also be reflected in any investment decision-making. Common principles at the international level and an assessment of the quality of investment decisions with regard to planetary boundaries should be key guiding rules for the financial system. Given its leadership on this matter, the EU could foster new initiatives and inspire others as part of the Green Deal and in the International Platform on Sustainable Finance.

46. J. Rockström, W. Steffen, K. Noone *et al.*, “A Safe Operating Space for Humanity”, *Nature*, Vol. 461, September 2009, pp. 472-475, available at: <https://doi.org>.

Achieving a level of and sufficient quality of transparency by financial and non-financial companies is a *sine qua non* condition for greening the financial sector. Although the EU is taking the lead with the Green Deal, and in view of the revision of the applicable legislative framework by the end of 2020, greater transparency for all companies in the G20 countries, or at least listed ones, should be a key objective in the coming years.

It is important that actions on sustainable finance take a comprehensive view of how the financial system operates. This is based on the twofold role of sustainable finance: integrating ESG factors to ensure the financial system's resilience to climate change risks; and supporting the reorientation of capital flows towards financing the low-carbon transition. Also, practices fully integrating ESG factors into the whole sector and its operation need to be introduced in order to move away from a niche approach or to focus on a bank's equity. This conversion is reflected both on the markets – through updated trading, securitization and passive management practices, a revised role for market infrastructure – and within companies, with appropriate governance models and practices and an appropriate role for financial and accounting standards.

The collapse in biodiversity and climate change “threatens economies, livelihoods, food security and the quality of life of people all around the world”⁴⁷, including with documented consequences for the spread of infectious diseases⁴⁸. The health and economic crisis at the beginning of 2020 makes it even more essential than ever to implement investments aligned with the objectives of the Paris Climate Agreement. At European level, the Green Deal is the necessary response to long-term social and environmental changes that economies and the financial sector in particular need to effect. Therefore, as Bruno Le Maire, the Minister of Economy and Finance stated on March 24, 2020, “green finance must now become a reality as quickly as possible”. It is therefore essential that “the discussion about the resilience of our societies in the face of such events”⁴⁹ undertaken by the EU, not only integrates the ecological transition into its coordinated exit strategy for EU Member States, namely with an ambitious recovery plan, but also accelerates the financing of the energy and ecological transition.

47. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), “The Global Assessment Report on Biodiversity and Ecosystem Services”, 2019, available at: www.ipbes.net.

48. R. Cavicchioli, W. J. Ripple, K. N. Timmis *et al.*, “Scientists’ Warning to Humanity: Microorganisms and Climate Change”, *Nature Reviews Microbiology*, Vol. 17, June 2019, pp. 569-586, available at: <https://doi.org>; “The 2018 Report on the Lancet Countdown on Health and Climate Change: Shaping the Health of Nations for Centuries to Come”, *The Lancet*, Vol. 392, No. 10163, December 2018, pp. 2479-2514, available at: www.thelancet.com.

49. “Joint Statement of the Members of the European Council”, March 26, 2020, available at: www.consilium.europa.eu.



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