Sustainable finance: the European Union's approach to increasing sustainable investments and growth – opportunities and challenges

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Summary: The article provides an overview of the most important current EU initiatives contributing to sustainable finance. After an introduction on how the concept of sustainability entered the domain of European policy, the definition of sustainable finance from the EU perspective is discussed, as well as its relationship to the concept of green finance. After outlining the need for sustainable finance to achieve EU and international policy goals, the article provides a discussion of sustainable finance from a theoretical perspective, taking into account already existing perspectives from literature. A brief overview is given of what the EU could theoretically do to foster sustainable finance. The article then proceeds with an overview of the most important existing EU initiatives to foster sustainable finance: the Action Plan on financing sustainable growth adopted in March 2018, the EU Emissions Trading System and EU financial support contributing to sustainable finance. Finally, the article provides a discussion of the challenges and political implications of current sustainable finance policies for the EU, followed by conclusions.

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* The views expressed in this document do not necessarily represent the official views of the European Commission.

Zusammenfassung: Der Artikel gibt einen Überblick über die wichtigsten aktuellen EU-Initiativen, die zu einer nachhaltigen Finanzierung beitragen. Nach einer Einführung in der Frage, wie das Konzept der Nachhaltigkeit in die europäische Politik aufgenommen wurde, wird die Definition des Begriffs „nachhaltige Finanzierung" aus der EU-Perspektive sowie dessen Zusammenhang mit dem Konzept der „grünen Finanzierung" erörtert. Weiterhin wird dargelegt, warum ein nachhaltiges Finanzwesens notwendig ist, um die klima- und umweltpolitischen Ziele der EU und der internationalen Gemeinschaft zu erreichen. Der Artikel beinhaltet eine Debatte über nachhaltige Finanzierung aus theoretischer Sicht, wobei bereits bestehende Sichtweisen aus der Literatur berücksichtigt werden. Es wird ein kurzer Überblick darüber gegeben, was die EU theoretisch tun könnte, um nachhaltige Finanzierung zu fördern. Anschließend wird ein Überblick über die wichtigsten bestehenden EU-Initiativen zur Förderung eines nachhaltigen Finanzwesens gegeben: der im März 2018 angenommene Aktionsplan zur Finanzierung nachhaltigen Wachstums, das EU-Emissionshandelssystem und die finanzielle Unterstützung durch die EU, die zu einer nachhaltigen Finanzierung beitragen. Schließlich beinhaltet der Artikel eine Diskussion über die Herausforderungen und die politischen Auswirkungen der derzeitigen Politik für nachhaltige Finanzierung in der EU, gefolgt von Schlussfolgerungen.

Prelude

This paper provides an overview of the most important EU initiatives contributing to sustainable finance. Its goal is to stimulate policy debate on sustainable finance and to give practitioners that share the EU's objectives a better insight of the EU's work in this field. The paper offers an appreciation of the practical challenges encountered by the EU and the political implications of its policies, where possible illustrated by examples from practice and relevant data.

1 Introduction: how sustainability entered European policy

The birth of EU environmental policy is often linked to a meeting of European Economic Community (EEC) Heads of State and Government in Paris in October 1972. Here a declaration was adopted: "the Heads of State or of Government emphasized the importance of a Community environmental policy ... they invited the Community Institutions to establish ... a programme of action ...".[1] The resulting 1973 Environmental Action Programme[2] outlined the EEC's first environmental policy, which did not yet refer to 'sustainability'.

In the following years, there was a global realisation that environmental challenges were not being addressed. The resulting Brundtland report, published in October 1987, popularised (and defined) the term 'sustainable development'.

Against this background, the 1987 Environmental Action Programme[3] used for the first time the word 'sustainable', thereby enshrining the concept in European policy. This was rapidly followed by the Single European Act, which had come into effect in July 1987, and introduced environment into European legislation.

1 Special issue of Bulletin of the European Communities 10–1972, p. 10.

2 OJ C 112, 20.12.1973.

3 OJ C 328, 07.12.1987.

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In June 1992, the United Nations called a meeting of the United Nations Conference on Environment and Development in Rio de Janeiro. This conference established the Rio declaration on Environment and Development; principle 8 states:

"To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies."

The 1993 Maastricht Treaty called for "a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment, a high degree of convergence of economic performance, a high level of employment and of social protection, the raising of the standard of living and quality of life, and economic and social cohesion and solidarity among Member States." This brought sustainable growth, linked to economic activity, clearly into European legislation. At the same time, the 1993 Environmental Action Plan was entitled a 'Community programme of policy and action in relation to the environment and sustainable development' demonstrating that sustainable development had become mainstream.

The link between the financial system and sustainability grew over the following decades, culminating in the 2011 'Roadmap for moving to a competitive low-carbon economy in 2050'[4]. This set out how the EU could prepare for an 80% reduction in domestic emissions by 2050 compared to 1990. The Roadmap also identified the investment needs for this transition and recognised that financial "markets tend to discount future benefits, and disregard long-term risks" and therefore that "limited public finance can leverage a multitude of private sector investments". In parallel, the 2011 'Energy Roadmap 2050'[5] recognised the massive investment requirements and the role of the private sector, and of carbon pricing, in fulfilling this demand.

As we have seen, sustainability is a concept from the 1980s that was subsequently enshrined in EU law. The emergence of the concept of sustainable growth and the envisaged shift to a low-carbon resilient society has clearly demonstrated the need for large volumes of funding that far outweigh public budgets. Public budgets can facilitate this shift and be used to mitigate risks but never finance the totality of what is needed for a transition to a low-carbon, sustainable and resilient economy. At the same time policy makers can create an environment to stimulate sustainable financing. Legislation can provide short to medium-term certainty as well as the longer-term direction of travel to mitigate the risks associated with the transition to a sustainable economy. These and other elements will be addressed in the following sections, after discussing the EU definition of sustainable finance.

2 Definition and necessity of sustainable finance

In the past 3–4 years, 'green finance' and 'sustainable finance' have become increasingly important topics on national, European and international policy agendas. The reasons for this are that on the one hand, there have been and increasingly are measurable negative effects of climate change

4 COM(2011) 112 of 8 March 2011.

5 COM(2011) 885 of 15 December 2011.

calling for action. On the other hand, policy approaches have developed at national and international level to address climate change, environmental and broader sustainability issues. So far however, there is no common definition of green or sustainable finance. Especially policy makers and investors who are prepared to invest in green assets regard this as a key obstacle to mobilising and scaling-up finance for climate-related, environmental or (more) sustainable investments.

2.1 Green finance and sustainable finance

At the international level, an important step in connecting climate and environmental issues closer with finance was taken with the Paris Agreement on Climate Change, adopted at the COP 21 climate conference in December 2015. The Paris Agreement's key goal is to hold the increase in global average temperature to well below 2 degree Celsius, and to pursue efforts to limit it to 1.5 degree Celsius, above pre-industrial levels. Article 2.1.c of the Paris Agreement set out to make "finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development". With this formulation, the Paris Agreement calls for mobilising finance for investments to help mitigate climate change while supporting more climate resilient and sustainable economic development. This means embedding 'green finance' into a wider sustainable development approach.

In 2016, the G20 Green Finance Study Group (GSFG) was set up to support the G20's strategic goal of strong, sustainable and balanced growth. The identified challenge, as outlined in the G20 Green Finance Synthesis Report[6] was to massively scale up green finance. Green finance was understood as the "financing of investments which provide environmental benefits in the broader context of environmentally sustainable development". This definition included the aspect of potential financial risks stemming from climate change and environmental degradation.[7]

The European Commission started developing the EU's overarching and comprehensive strategy on sustainable finance in 2016[8], with the help of the High-Level Expert Group (HLEG) on Sustainable Finance. The HLEG's mandate already reflected key elements of a broader concept of sustainable finance, going beyond the environmental focus of green finance. In the HLEG's mandate, the European Commission explained the need to reform the current financial system in a way that is "better aligned with EU policies in support of the low-carbon, climate-resilient, more resource-efficient and circular economy, sustainable growth and investments".

Sustainable finance is understood by the European Commission as finance having a strong green, environmental and social component, to support economic growth while reducing pressures on the environment, addressing greenhouse gas emissions and tackling pollution, minimising waste and improving efficiency in the use of natural resources. Sustainable finance also encompasses increasing awareness of and transparency on risks which may impact on the sustainability of the

6 G20 Green Finance Study Group (2016b).

7 G20 Green Finance Study Group (2016b).

8 COM(2016) 601 of 14 September 2016, p. 5.

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financial system and the management of such risks by financial and corporate actors through appropriate governance.[9]

This conceptual approach of sustainable finance has been further specified by the European Commission in setting out its Action Plan on financing sustainable growth of March 2018.[10] This approach is based on the understanding that climate change, environmental and social issues are often closely intertwined and can have spill-over effects.

Sustainable finance includes three main components when used in the current EU policy context, which are (1) mobilising finance for investments which help address climate change, or have a positive environmental impact or support sustainable development (2) taking into account environmental and social aspects and potential risks when making investment and finance decisions and (3) reflecting on longer-term time horizons and impact of economic and financial market activities.

2.2 The need for sustainable finance to achieve EU and international policy goals

In October 2014 EU leaders agreed on headline climate change policy targets for 2030. This triggered a transition to a lower-carbon, more resource-efficient, circular, more competitive and sustainable economy. This transformation process will bring changes, bear risks and provide new opportunities for the EU in areas such as energy, transport, research and innovation, agriculture and regional development. There is also a strong civil society and social component to this transformation process, as certain industrial sectors and regions might be particularly affected. Key EU policies and legislation setting the framework for more sustainable development, investment and finance include:

- The 2030 Climate and Energy Framework and the European Energy Union Strategy which set targets for more efficient and cleaner energy and lower CO2 emissions. Legislated key targets for 2030 are to increase energy efficiency by at least 32.5% and to increase renewable energy to at least 32% of the EU's final energy consumption. Together with further legislative measures to reduce CO2 emissions in the transport sector, the EU's CO2 emissions are to be reduced by at least 40% by 2030 compared to 1990. This allows the EU to deliver on its commitments made under the Paris Agreement on Climate Change.[11]
- The Circular Economy Strategy which includes an EU Circular Economy Action Plan and encompasses an EU Strategy for Plastics, reduction of waste, recycling of raw materials and reuse of water.[12]
- The EU's strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050, with seven priority areas to transform into a net-zero carbon economy over the next three decades.[13] This 2050 vision seeks to ensure that this transition

9 Call for applications for the selection of members of the High-Level Expert Group on Sustainable Finance.

10 COM(2018) 97 of 8 March 2018.

11 COM(2018) 773 of 28 November 2018, p. 5.

12 European Commission Circular Economy package 2019: http://ec.europa.eu/environment/circular-economy/.

13 COM(2018) 773 of 28 November 2018, pp. 8–15.

is socially fair – not leaving any EU citizens or regions behind – and enhances the competitiveness of EU economy and industry on global markets, securing high quality jobs and sustainable growth in Europe, while providing synergies with other environmental challenges, such as air quality or biodiversity loss.[14]

- The European Commission's Action Plan on financing sustainable growth, with ten key actions to reform the EU financial system (see section 4).

To achieve the EU's climate and energy targets by 2030, means substantially increasing investments. Around EUR 180 billion of additional investments per annum until 2030 would be needed in the EU to reach its energy and CO2 emission reduction targets.[15] These additional investments mostly concern energy efficiency measures in buildings of private households and companies (industry and service sector), cleaner transport and energy supply (grid infrastructure and power generation). The vast majority of those investments would be of private nature and would need to be undertaken by companies and citizens. Further investments, for instance in more sustainable infrastructure (water, waste management, roads or railways) or in research and development (to bring new green technologies to the market and deploy them), would need to be carried out by both the public and private sector.[16]

Due to the magnitude and nature of the investments foreseen, raising substantial private capital from institutional investors and on capital markets is required. This need to mobilise substantial financial resources for the necessary green or sustainable investments may lead to a new financial ecosystem. This could combine regulatory frameworks, standards, public procurement and research and development support with equity and loan finance from a variety of sources. The following section provides a theoretical background to the concept of sustainable finance, taking into account existing insights from the literature. It also briefly presents potential means available to the EU to foster sustainable finance, before we elaborate what the EU does in practice and what it has achieved already.

3 Sustainable finance in theory

The aim of any financial system is a transfer of savings from surplus economic actors to deficit economic actors.[17] The manner in which this transfer takes place varies, depending on the needs and objectives of those providing and receiving these savings (i.e. finance), as well as the context in which they operate. Green or sustainable investments will require different types of finance provided by the financial sector, either by banks or by capital markets. Investment size, risk profiles and the duration of finance will among other factors determine which type of finance might be available for green or sustainable investments.

14 The recent report of the Intergovernmental Panel on Climate Change (IPCC) calls for capping global warming at 1.5 °C and proposes that carbon emissions are reduced to net zero by 2050 (UN IPCC 2018). In contrast, our current economic trajectory would lead to a global temperature increase of between 3 °C and 3.5 °C. This would have drastic consequences for our way of life, for our economies, and for the ecosystems, on which our societies are built. Financial stability could also be at risk, notably due to a sudden repricing of assets.

15 COM(2018) 97, of 8 March 2018, p. 2 and footnote 10.

16 COM(2018) 773 of 28 November 2018.

17 Lobez and Vilanova (2006) as cited by Glémain (2015).

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To give some examples, the improvement of the energy-efficiency of buildings might be financed through loans by the banking sector, whereas investments in large sustainable infrastructure may require public-private partnerships. For the development of green technologies, public research and development spending, equity finance or risk-sharing instruments might be necessary. This would require innovative finance and risk-sharing models to attract institutional investors like pension funds or insurers. National and multilateral development banks could play an important role in preparing, structuring and financing green or sustainable investments in close cooperation with private capital providers.

The traditional purpose of investment, especially for financial intermediaries and institutional investors, is the generation of financial returns. This is the same for sustainable finance, but not its only purpose. Although investments in green or sustainable projects by the private sector will only happen if such investments are economically viable and produce satisfactory returns on investment, investors also take into account impacts of investments that go beyond financial returns. They generally do so according to Environmental, Social and Governance (ESG) criteria. Sustainability objectives can result from a variety of preferences, which can for instance be ethical or social in nature.[18] Investors may seek to contribute to healthy communities and a cleaner environment, while aiming to deliver a competitive rate of return.[19]

Sustainable finance can indeed make sense from a business perspective, generating favourable financial returns. For instance, the economic environment may increasingly reward sustainable behaviour of firms through demand shifts to sustainable products.[20] As an example, investments in low-carbon energy sources should generate gradually higher returns given an increasing demand for energy and a decrease of oil reserves.[21] Unsustainable conduct on the other hand can be costly. Harmful effects of investments on the environment can result in expensive compensation claims and reputation costs.[22] Adverse working conditions can lead to higher production costs resulting from injuries at the workplace and strikes. A focus on sustainable value creation rather than (short-term) shareholder wealth maximization could allow for the incorporation of all relevant costs and benefits of projects, including their social and environmental costs.[23] Sustainable investments could in turn generate more long-term value for investors in terms of both profits and stock value.

Apart from specific preferences and business motivations, the attractiveness of sustainable finance strongly depends on the context in which financial decision-making takes place. Several authors for instance stress the importance of the incentives given to actors in the financial domain.[24] Managers and executives of companies and financial intermediaries often have the financial incentive to focus on short-term shareholder returns, rather than on long-term (sustainable) value for all stakeholders,

18 Mermod and Idowu (2014).

19 Petty (2003).

20 Fatemi and Fooladi (2013).

21 Robins (2012).

22 von Müller and Brieger (2016), Vlasic and Atlee (2012).

23 Fatemi and Fooladi (2013).

24 Fatemi and Fooladi (2013), Glémain (2015) and Scott (2012).

which leads to less sustainable outcomes. Regulation can change the way in which decisions are taken by adjusting such incentives, by stipulating which information has to be taken into the decision-making and by setting minimum requirements for investments. Regulation can compel economic actors to include social and environmental impacts in their decision-making. It may also require economic actors to disclose information to their stakeholders (e.g. investors, consumers) in order for them to take better-informed decisions. Sustainable finance is thus not only the result of the individual motivations of economic actors, but also of their decision-making context.

As outlined in section 1, it is in the interest of the EU to strive towards social and environmental sustainability, as agreed by its Member States and laid down in its Treaties. The objective of sustainable finance supports this interest. Theoretically, the EU has several means at its disposal to foster sustainable finance. It can 1) regulate the financial markets and banking sector 2) provide financial support for investment 3) give financial incentives to influence decisions 4) provide information/assistance to foster better decision making and 5) enhance international cooperation between the EU and third countries. The EU may use each of these options separately or a combination of these options to facilitate sustainable finance.

4 Action Plan on financing sustainable growth

The European Commission adopted its Action Plan on financing sustainable growth on 8 March 2018[25]. It aims to equip the financial sector and companies with an appropriate policy framework and tools to integrate sustainability considerations into their investment and finance decisions, identify sustainable investment opportunities and address material risks related to climate change. The Action Plan develops these tools through a mix of legislative and non-legislative measures.

Key measures include:

- establishing a classification system ('taxonomy') allowing a common understanding which economic activities can be considered as environmentally sustainable;
- developing quality standards and labels for sustainable financial products which would help develop markets for these products and avoid 'green-washing';
- clarifying asset managers' and institutional investors' duties regarding sustainability and improving disclosures towards end-investors;
- incorporating sustainability factors in prudential requirements, if justifiable from a risk perspective, in order to promote investments in sustainable assets while safeguard financial stability; and
- strengthening companies' transparency on climate-related risks through improved reporting.

The European Commission took important steps to implement its Action Plan in May 2018 by proposing three legislative measures, in the form of Regulations applicable in all EU Member States once adopted by the EU co-legislators; Council and European Parliament.

25 COM(2018) 97 of 8 March 2018.

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The three legislative proposals concern a framework for an EU taxonomy for environmentally sustainable activities to facilitate sustainable investments; disclosure requirements for investors and asset managers incorporating Environmental, Social and Governance (ESG) considerations in their decision-making process and risk management as well as the creation of dedicated low-carbon benchmarks, with minimum standards in terms of transparency and the calculation of their carbon footprint.[26] Furthermore, the European Commission specified how ESG considerations and preferences should be integrated in portfolio management and investment advice provided by investment firms and insurance distributors.[27]

Up to now, the European co-legislators and the European Commission have already reached political agreement on low-carbon benchmarks and disclosures of investors in respect to integrating ESG factors. The European Commission's proposal on a legal framework for an EU taxonomy is still under discussion with the co-legislators. From the European Commission's perspective, and echoed by Member States and investors, the proposal to establish an EU taxonomy which stipulates which economic activities are environmentally sustainable is regarded as the centrepiece for the development of sustainable finance. Such a commonly used classification system would allow identifying activities that contribute substantially to environmental sustainability and could be the reference point when developing green financial products or green labels.

Furthermore, an EU taxonomy could be used to underpin financial institutions' and companies' disclosure and reporting obligations on climate and environmental activities and risks, and help companies raise private capital to finance their environmental ('green') activities. The EU taxonomy under development focuses on six environmental objectives[28] for which appropriate activities would be selected which contribute substantially to achieving those objectives. Further conditions have to be met by activities in order to be included in the EU taxonomy (do no significant harm; technical criteria; compliance with social and labour standards).[29] The EU taxonomy is being built stepwise for those six environmental objectives until 2022 through delegated legal acts adopted by the European Commission, starting with the most urgent and elaborated areas of climate change mitigation and climate change adaptation.

As EU climate and environmental policy objectives may change over time and new green technologies might be developed that would help further economic activities to substantially contribute to those objectives, an EU taxonomy cannot be static and would need to reflect such developments. For this reason, the European Commission proposed a longer-term mechanism ('Platform' on sustainable finance) to cater for timely adjustments of the EU taxonomy.

26 COM(2018) 353 of 24 May 2019.

27 Amendment of Delegated Acts under Market in Financial Instruments Directive (MIFID) II and Insurance Distribution Directive (IDD); draft rules published by the EC on 4 January 2019; still to be adopted.

28 The six environmental objectives defined in the Regulation are: Climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy, waste prevention and recycling; pollution prevention and control; protection of healthy ecosystems.

29 'Do no significant harm' means that an economic activity which contributes substantially to one of the six environmental objectives shall also not significantly harm any of the other five environmental objectives. Technical criteria would stipulate quantitative or qualitative thresholds for each activity included in the EU taxonomy. Entities investing in activities included in the EU taxonomy would need to respect defined social and labour standards.

It is important to note that the EU taxonomy for environmentally sustainable activities would not be a list of exclusive activities for investors or financial market actors obliging them to only invest in such activities when launching green financial products. Investment decisions remain with investors and it is entirely the choice of financial market actors to launch green financial products or not, and to determine the level of environmental ambition of such products. However, once in place, the EU taxonomy would have to be used as a reference point by financial market actors for disclosure purposes, allowing measuring the degree of 'greenness' of those financial products which are explicitly marketed as green or climate-friendly.[30]

To develop the EU taxonomy, the European Commission is drawing on expertise of technical experts from a variety of industries and sectors as well as academia and civil society organisations. In June 2018, the European Commission set up a dedicated Technical Expert Group (TEG) on sustainable finance for this purpose. The TEG has already delivered in June 2019 a first list of economic activities contributing substantially to climate change mitigation and adaptation objectives (while not significantly harming any of the other environmental objectives). The European Commission will consider this technical advice when preparing its legal acts on the EU taxonomy to be adopted, once it has obtained the empowerment from the European co-legislators; Council and European Parliament.

The TEG is also helping the European Commission to develop other actions of the Action Plan on financing sustainable growth, for instance an EU Green Bond Standard, benchmarks for low-carbon investment strategies and climate-related reporting. Several reports have already been published for wider stakeholder feedback to allow the TEG to arrive at its final conclusions and recommendations to the European Commission.[31]

The European Commission is also exploring whether climate and environment-related risks could be reflected in the prudential framework. More specifically, it is assessing the possible merits of recalibrating capital requirements based on two principles: (1) reflecting the higher risks associated with climate change that might create long-term risks for financial stability; or (2) reflecting possibly lower risks of sustainable assets and investments, which might encourage banks and insurance companies to invest in sustainable assets. It must be underlined that any change to the risk-based prudential framework would have to be justified from this risk perspective, so as not to undermine the effectiveness of the EU prudential rules and the overall financial stability.

5 Fighting climate change by pricing emissions: the EU Emissions Trading System

In the fight against climate change, significant revenues for low-carbon investment are generated by the EU Emissions Trading System (EU ETS). Set up in 2005, the EU ETS was the first trading system of its kind in the world. It limits the emissions from approximately 11,000 energy-intensive

30 The EU taxonomy would also be used by the EU or by Member States when adopting measures setting out any requirements on market actors concerning financial products or corporate bonds which are marketed as 'environmentally sustainable'.

31 TEG consultation document on a first set of activities in the area of climate change mitigation (7 December 2018); TEG report on climate-related reporting (10 January 2019); TEG interim report on an EU Green Bond Standard (7 March 2019); TEG reports on an EU taxonomy and an EU Green Bond Standard (18 June 2018); TEG final report on EU Climate Benchmarks (30 September 2019).

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installations (power stations and industrial plants) and airlines operating flights between the countries participating in the EU ETS. It covers around 40% of the EU's greenhouse gas emissions and inspired the development of other national or regional systems.

In the system a cap is set on the overall volume of greenhouse gases that installations covered may emit and this cap is reduced over time. The installations are obliged to 'pay' for their emissions by surrendering allowances. Allowances are issued corresponding to the decreasing cap. A share of the allowances is allocated for free to industrial installations in order to address the risk of carbon leakage, but the general rule is that allowances are auctioned.

Auctioning of ETS allowances generates important revenues for EU climate action: the total revenues raised from selling ETS allowances from 2012 until the end of 2017 exceeded EUR 21 billion – on average EUR 3.5 billion per year. In 2018 revenues amounted to some EUR 14 billion. Given that auctioning will remain the default method for allocating allowances and considering the recent increase of the carbon prices due to the strengthening of the EU ETS in the last reform of the system, auctioning will continue to generate considerable revenues for EU climate action in the coming years.

The biggest part of the auction revenues goes to the Member States, which have an obligation to use at least 50% thereof to support the achievement of specific climate and energy activities. In 2017, EU Member States on average spent or planned to spend 80% of auction revenues on advancing climate and energy objectives – well above the 50% rule set under the EU ETS Directive.

From 2021 onwards, revenues from auctioning ETS allowances are also used for two important low-carbon funding mechanisms to help industrial sectors and the power sector meet the innovation and investment challenges of the transition to a low-carbon economy, namely the Innovation Fund and the Modernisation Fund.

The Innovation Fund will support, on a competitive basis, the demonstration of innovative technologies and breakthrough innovation in sectors covered by the EU ETS, including innovative renewables, carbon capture and utilisation (CCU) and energy storage. It will be endowed with revenues generated from at least 450 million ETS allowances from 2020 to 2030, as well as with any unspent funds from the NER300 programme. Projects in all Member States, including small-scale projects, will be eligible for support and will be selected through calls for proposals as early as 2020, followed by regular calls until 2030.

The Modernisation Fund will support investments in modernising the power sector and wider energy systems, boosting energy efficiency and renewable energy, and facilitating a just transition in carbon-dependent regions in 10 lower-income Member States. Energy generation facilities using solid fossil fuels will, however, not be eligible for support. The Modernisation Fund will be sourced with revenues from the auctioning of a number of ETS allowances corresponding to at least 2% of the total quantity auctioned from 2021 to 2030.

After a period during which a marked surplus of allowances on the EU carbon market considerably depressed the carbon price signal, the recent review of the EU ETS for the period from 2021 to 2030 has strengthened that signal again. A strong carbon price signal makes it indispensable that corporate boards, when setting the overall business strategy, reflect on the company's emissions, on the financial cost resulting from that and on a reduction strategy. It encourages companies to adopt

a longer-term perspective, to think about ways to limit greenhouse gas emissions and devise a corresponding investment strategy. By deploying low-carbon investments, they can avoid carbon costs, or even reap financial gains, for example through selling unused allowances.

6 Financial support at the EU level

As discussed before, the EU can among other things provide financial support for investment and can give financial incentives to influence financial decision making. The EU in practice does so through the provision of grants, budgetary guarantees and the creation of financial instruments, such as (quasi) equity investments, loans and other risk-sharing instruments. The EU Emission Trading System creates a financial incentive by putting a price on greenhouse gas emissions. The advantage of these means of finance is that the EU can make its financial support conditional on the compliance with policy objectives. When these policy objectives pertain to climate, environmental and social dimensions, the EU effectively engages in sustainable finance.

EU investment support instruments (financial instruments and budgetary guarantees) make it possible to leverage private investments by putting up additional finance and covering part of the investment risk. These mechanisms can be used to maximise private investments in general, but can also direct private investments specifically towards sustainable projects, which is recognised in the private sector as well.[32] The European Commission has for many years recognised the importance of 'blending', i.e. combining EU financial support with public and private finance. Blending reduces risk to the private sector and permits financing to proceed where it would not otherwise take place, both within the EU and partner countries. Since the end of the 1990s, the EU budget has been used for financial instruments supporting SMEs, innovation and infrastructure, as well as micro-finance institutions and cities. The transition to a green economy poses challenges that grants and traditional forms of development assistance cannot meet alone and investment support instruments provide a key contribution to achieving sustainability targets.

The European Fund for Strategic Investments (EFSI), the EU's investment programme, is expected to mobilise around EUR 500 billion of investments by 2020. Since the signing of the Paris Agreement, the programme included a provision stating that at least 40% of EFSI supported infrastructure and innovation investments should contribute to climate action. As of end 2018, around EUR 77 billion of approved EFSI mobilised investments are expected to contribute to climate action objectives. In addition, approximately EUR 16 billion of financing will be mobilised for environmental and resource efficiency projects and EUR 15 billion for social infrastructure projects. Supported infrastructure finance contributes towards climate action focused on renewable energy, like solar photovoltaic and onshore wind power plants, as well as energy efficiency in industry and housing. Providing a budgetary guarantee allows implementing partners to take on riskier projects, for instance by investing in sustainable technologies that need support for widespread deployment. As the EU bank, the European Investment Bank (EIB) contributes considerably to sustainable finance. All its financed operations are subject to thorough environmental and social impact assessments, over EUR 90 billion of its lending between 2011 and 2015 supported climate

32 Robins (2012).

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action[33] and the EIB is the largest issuer of Green Bonds (EUR 23.5 billion raised as of 31 December 2018).

The future InvestEU Programme will provide an EU budgetary guarantee that backs investments made by its implementing partners (investment/development banks) between 2021 and 2027. Actions under the InvestEU Programme are expected to contribute at least 30% to climate objectives. This is expected to result in up to EUR 160 billion of climate action related investment mobilised. Furthermore, support under the InvestEU Sustainable Infrastructure Window[34] shall target that at least 55% of the investments meet Union objectives on climate and environment. Moreover, the InvestEU programme contains a provision that makes investments subject to climate, environmental and social sustainability proofing. Appropriate financial incentives and technical assistance support will be put in place to facilitate meeting sustainability objectives. This should align the short-term financial incentives of managers and executives of implementing entities directly with long-term sustainability objectives.

In addition to already tabled proposals for the next Multi-Annual Financial Framework, the President Elect of the European Commission, in her Political Guidelines for the next European Commission, committed to propose A European Green Deal as one of her top priorities. This would include in particular a strategy for green financing and a Sustainable Europe Investment Plan that would support €1 trillion of investment over the next decade. In addition, in order to support the people and regions most affected by the transition to a green economy, a Just Transition Fund would be set up. These new initiatives set even higher ambitions and demonstrate the importance of the sustainable EU investment support in the next decade.

The EU has also been active in supporting sustainable investments in third countries. The use of EU blending facilities and the Global Energy Efficiency and Renewable Energy Fund, has allowed the EU to scale up its climate finance. About €1 billion in EU grants has been committed to green projects with an estimated overall volume of €25 billion, also attracting financing from private investors.

In terms of sustainable finance, where the EU plays a direct role as an investor or as a guarantor, an important question is which effects EU investment support actions can have on the wider financial system, i.e. on the behaviour of actors that are not directly affected by EU policies. One way in which the EU would be able to make a long-term impact on the financial system is by standardising the sustainability proofing of investments, which is currently proposed for investments under the InvestEU Programme. As a start, rather than negative screening alone, which has been widely practiced by sustainable investment funds for many years already, the EU could standardize the practice of including positive impacts of investments in its future sustainability proofing procedures. With the current proposal for InvestEU, the European Commission plans to include additional implementing partners, financial intermediaries and commercial banks in its investment support. This will introduce a wider range of actors to the practice of sustainability proofing of investments.

33 European Investment Bank (2019).

34 The InvestEU Fund is composed of 4 priority areas called Windows: 1) sustainable infrastructure, 2) research, innovation and digitisation, 3) SME and 4) social investment and skills.

What should be noted is that going beyond negative screening can be a time and resource intensive process, as sustainability is not a metric that is as easily provided and interpreted as traditional indicators of financial performance. Determining the social and environmental impacts of investments can place an administrative burden on project promotors. For projects that do not have a clear sustainability objective, the burden imposed may be a deterring factor. It is a challenge for the EU to strike a balance between attracting new projects on the one hand and performing a thorough social and environmental impact assessment on the other hand. Sustainability proofing planned for InvestEU supported operations will bring valuable experience in this respect and could provide a positive signalling effect to the market. Any lessons learned could have an important effect on future policy formulation in terms of sustainable finance.

Finally, the EU's role in providing financial support to sustainable projects should not be overstated. Although an important one, it is certainly not the only actor in the field of sustainable finance and much is already done at the level of its Member States, by third countries, international organisations and private actors. Nonetheless, the EU has the political and economic clout to improve the standards when it comes to the sustainability proofing of investments.

7 Challenges and political implications of sustainable finance for the EU

The European Commission has proposed a systematic approach to sustainable finance based on the EU's climate, environmental and broader sustainability goals. This approach includes, as important building blocks, a reform of the EU financial system, a strong orientation of the EU budget for the period 2021–2027 on sustainable investments across policy areas and a revised EU Emissions Trading System to price greenhouse gas emissions. However, challenges to promoting sustainable finance and turning proposed actions into tangible results remain and need to be addressed at international, European, national and, perhaps more importantly, regional and local level.

7.1 Challenge 1: the global dimension of sustainable finance

Although the EU politically is a global leader in the transition towards a net-zero greenhouse gas emissions economy, the EU is responsible for (only) around 9,1 %[35] of global greenhouse gas emissions. Even if the EU achieved its goal to reduce its greenhouse gas emissions substantially by 2030 and become a net-zero emissions economy by 2050, the overall impact globally would be insufficient to mitigate adverse climate change. Therefore, the EU is seeking strong international cooperation with other countries and jurisdictions sharing the EU's approach to mitigate climate change and environmental degradation.[36]

Developing countries in particular face difficulties in accessing adequate financing for their sustainable infrastructure and energy efficiency needs. Due to their global nature, financial markets do have the potential to support all countries in their transition to a sustainable economy by bridging

35 Joint Research Centre (2019).

36 In its recently adopted Reflection Paper Towards a 'Sustainable Europe by 2030', the Commission stressed that international coordination is essential to make markets for sustainable assets compatible, set incentives for private investors and to scale up sustainable finance globally. Aligning sustainable finance initiatives and tools, such as taxonomy, standards, labels and benchmarks across jurisdictions would ensure compatible markets for sustainable financial assets across borders.

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local needs with global sources of funding. An international network of jurisdictions from developed, emerging and developing countries that are committed to advancing sustainable finance would best serve this purpose. A coherent international strategy and architecture, leveraging the efforts of member countries as well as the European and international institutions, organisations and networks, could contribute to scaling up sustainable finance and mobilising international investors towards sustainable investments across the globe.

7.2 Challenge 2: fostering sustainable finance at the national, regional and local level

As outlined in the European Commission's Action Plan on financing sustainable growth, turning sustainable finance into practice requires close cooperation among the European, national, regional and local levels of decision-making. For instance, energy efficiency in private households depends on a number of factors, bearing in mind that the decision to invest in the energy efficiency (or not) of buildings is made by individuals. Such investments can be incentivized by supporting national frameworks and financial incentives (for instance, tax rebates or grants) or promotional loan schemes with lower interest rates involving national or regional promotional banks as well as local commercial banks. Cleaner transport, for instance through a higher share of e-mobility, would require public and private investments in e-infrastructure, research and development investments by industry and different transport concepts embedded in broader sustainable development strategies at regional or locals level.[37] This requires close coordination between policy makers at different levels of decision-making, industry and citizens.

7.3 Challenge 3: the social dimension

Last but not least, sustainable finance – understood as supporting the necessary investments to make an orderly, successful transformation to a more sustainable economy while preserving the stability of the financial system – has a social dimension. The transition to a lower-carbon and more sustainable economy has the potential to create new 'green jobs' in a number of areas, such as energy transformation, clean mobility, green infrastructure or the bio-economy. However, certain sectors and industries involved in 'brown economic activities' such as coal mining and power generation or steel manufacturing, and regions in which such industries are located, would have to undergo changes and adapt to conditions set for a more sustainable development. This transformation and adaptation process may take different forms and materialize over a longer time horizon (one or two decades) but negative implications, at least temporarily, on jobs and growth prospects cannot be ruled out.[38] Both the EU and Member States will have to organise an orderly transition process and deploy all relevant policies and necessary resources to mitigate social implications.[39]

37 Examples for cities which have developed sustainable development and infrastructure concepts are, for instance, northern European capitals; see White paper on 'Nordic Sustainable Cities' by Nordregio, 2017; 'What makes a sustainable city?', Nordic Innovation, 2018: http://www.nordicinnovation.org/Documents/Programmes/Nordic%20Sustainable%20Cities/What%20Makes%20a%20Sustainable%20City_small.pdf.

38 A recent example for a structured and inclusive approach to steer the transformation process in coal mining regions in Germany until 2038 is the "Kommission Wachstum, Strukturwandel und Beschaeftigung" which presented its Final Report on 25 January 2019: https://www.bmwi.de/Redaktion/DE/Downloads/A/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?__blob=publicationFile. Also, the European Commission set up a Platform for Coal Regions in Transition in December 2017, to elaborate economic strategies for regions in 12 EU countries in which coal mining or coal power plants are located.

39 'A clean planet for all', COM (2018) 773 final, pages 19/20.

8 Summary and conclusions

Green finance and (when taking a broader perspective) sustainable finance is now in the mainstream policy domain and the EU takes a leadership position in fostering it. In this article, we have outlined how the term sustainability first entered the domain of European policy during the past 50 years, from declaration to action plan. We have given an EU definition of sustainable finance (and its relation to the term green finance) followed by the setting out of key EU policies pertaining to sustainable finance. We have made clear that there is a large investment need in order to achieve the objectives that the EU has set itself. In theory, sustainable finance results from both the preferences of individual actors and the financial decision making context. The EU has several means at its disposal to influence both factors and thereby stimulate sustainable finance. We have given an overview of the most important work the EU currently does in this respect: developing a classification system for environmentally sustainable economic activities, the EU Emissions Trading System and the provision of financial support to projects that are in line with sustainability objectives. The EU has the power to set standards, but cannot do so without the input and simultaneous actions of a large range of other (private) actors at all decision-making levels. Several challenges for the EU can be identified in fostering sustainable finance, which are increasing the cooperation towards sustainable finance at a global level, but also the implementation of higher-level policy goals at national, regional and local levels. Another challenge is to properly deal with potential adverse social outcomes resulting from a shift towards sustainable investments and the EU's competitiveness at the global level in general. An important consideration is that sustainable finance will not take off if it does not generate sufficient financial returns. However, several examples can be given to illustrate that there is a business case for sustainable finance. It is up to the EU to further develop sustainable finance in cooperation with like-minded actors, by providing supportive frameworks and conditions for decision-making on sustainable finance and investments.

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