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Article

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DIW Weekly Report

Provided in Cooperation with:

German Institute for Economic Research (DIW Berlin)

Suggested Citation: Schütze, Franziska; Stede, Jan; Blauert, Marc; Erdmann, Katharina (2020) : EU taxonomy increasing transparency of sustainable investments, DIW Weekly Report, ISSN 2568-7697, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 10, Iss. 51, pp. 485-492,
http://dx.doi.org/10.18723/diw_dwr:2020-51-1

This Version is available at:

<http://hdl.handle.net/10419/229644>

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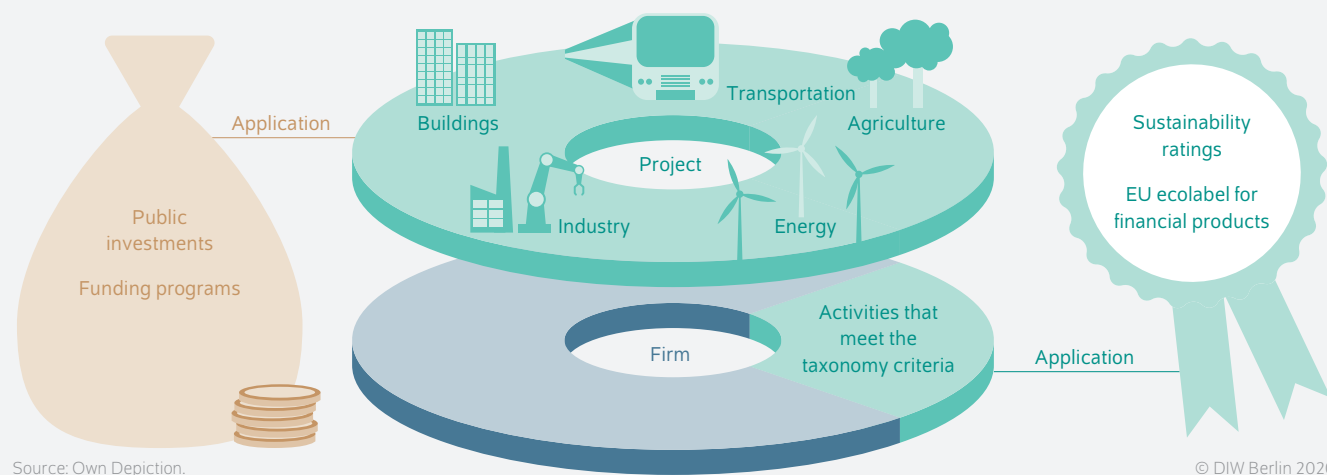
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EU taxonomy increasing transparency of sustainable investments

By Franziska Schütze, Jan Stede, Marc Blauert, and Katharina Erdmann

- With the taxonomy, the EU has created a standardized and transparent system for classifying sustainable economic activities
- However, an analysis of selected emission-intensive sectors shows that thresholds are not compatible with climate neutrality in all areas
- Thresholds should differentiate between new investments and existing facilities to avoid carbon lock-in effects
- Applying the taxonomy to private and public investments can support green investments
- With its ambitious objectives, the EU taxonomy can serve as a blueprint for a global standard for sustainable economic activities

EU taxonomy creates basis for public investment programs and ecolabels through sustainability criteria at firm and project level



FROM THE AUTHORS

“The EU taxonomy creates the necessary transparency for the sustainability assessment of different economic sectors. This helps to avoid greenwashing in private as well as public investments.

— Franziska Schütze —

MEDIA



Audio Interview with F. Schütze (in German)
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EU taxonomy increasing transparency of sustainable investments

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ABSTRACT

By developing a taxonomy for sustainable investments, the EU Commission has created the first standardized criteria for climate-friendly economic activities. To achieve the goal of climate neutrality by 2050, firms and investors must be well informed of which investments avoid greenhouse gas emissions and can thus be categorized as sustainable. The present report investigates to what extent the EU taxonomy achieves this goal. The study reaches the conclusion that the criteria are compatible with a path to climate neutrality in some economic sectors, such as the automotive sector. However, in others, such as the emission-intensive basic materials sector, the criteria are insufficient. Thresholds that are too low carry the risk of a carbon lock-in, the entrenchment of emission-intensive technologies and structures. Instead, the EU taxonomy should offer incentives for innovations in decarbonizing the economy. This can be achieved by setting different thresholds for new investments and existing assets, as the EU taxonomy already does in the buildings sector.

In December 2019, the EU Commission introduced the European Green Deal, which aims to make the EU climate neutral by 2050.¹ To achieve the recently adopted tougher climate goals by 2030, additional investments of 350 billion euros per year until 2030 must be mobilized according to the Commission's estimates.² An important cornerstone of the Green Deal is the EU's Action Plan for Financing Sustainable Growth and its EU taxonomy, a classification system for sustainable activities. The taxonomy establishes criteria for around 80 economic activities, which an activity must fulfill to be classified as sustainable. The Commission recently presented a draft of the screening criteria for the Taxonomy Regulation, which can be publicly commented on until December 18, 2020, and will become law in 2021.³

Private investors' interest in sustainable investment funds is increasing. For example, in 2019 demand for such funds increased by 96 percent in Germany compared to 2018.⁴ However, until today it remained difficult for private and state actors to compare green investments, as various definitions for sustainability and different sustainability ratings were in use. Against this backdrop, the EU taxonomy creates standardized criteria for sustainable investments, thus increasing transparency and comparability.

Thresholds for emission-intensive transition sectors play a key role in the taxonomy. This report analyzes to what extent the thresholds established in the taxonomy are compatible with the goal of EU climate neutrality by 2050. To do this, three sectors that are responsible for a large part of overall EU emissions are closely investigated: the automotive industry, buildings industry, and basic materials industry. Moreover, the advantages of a standardized definition of sustainability

¹ European Commission, *Communication from the Commission: The European Green Deal* (Brussels: 2019) (available online; accessed December 2, 2020. This applies to all other online sources in this report unless stated otherwise).

² European Commission, *Communication from the Commission: Stepping up Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people* (Brussels: 2020) (available online).

³ European Commission, *Sustainable finance – EU classification system for green investments* (2020) (available online).

⁴ Forum Nachhaltige Geldanlagen e.V., *Marktbericht Nachhaltige Geldanlagen – Deutschland, Österreich und die Schweiz* (2020) (in German; available online).

is explored in more detail using a case study, the European Fund for Strategic Investments (EFSI). For the analysis, three data sources are evaluated: emissions data per economic sector,⁵ the EU Commission’s public consultation on the taxonomy,⁶ and the project descriptions for projects financed by the European Fund for Strategic Investments.

Two different use cases for the taxonomy

In general, the taxonomy can be applied on two levels: the project level and the firm level.⁷ The *project level* concerns new investments, such as the construction of a new power plant, production facility, or building. The taxonomy can be used in the context of investment programs such as the EFSI or as a screening instrument for public funding programs, for example.

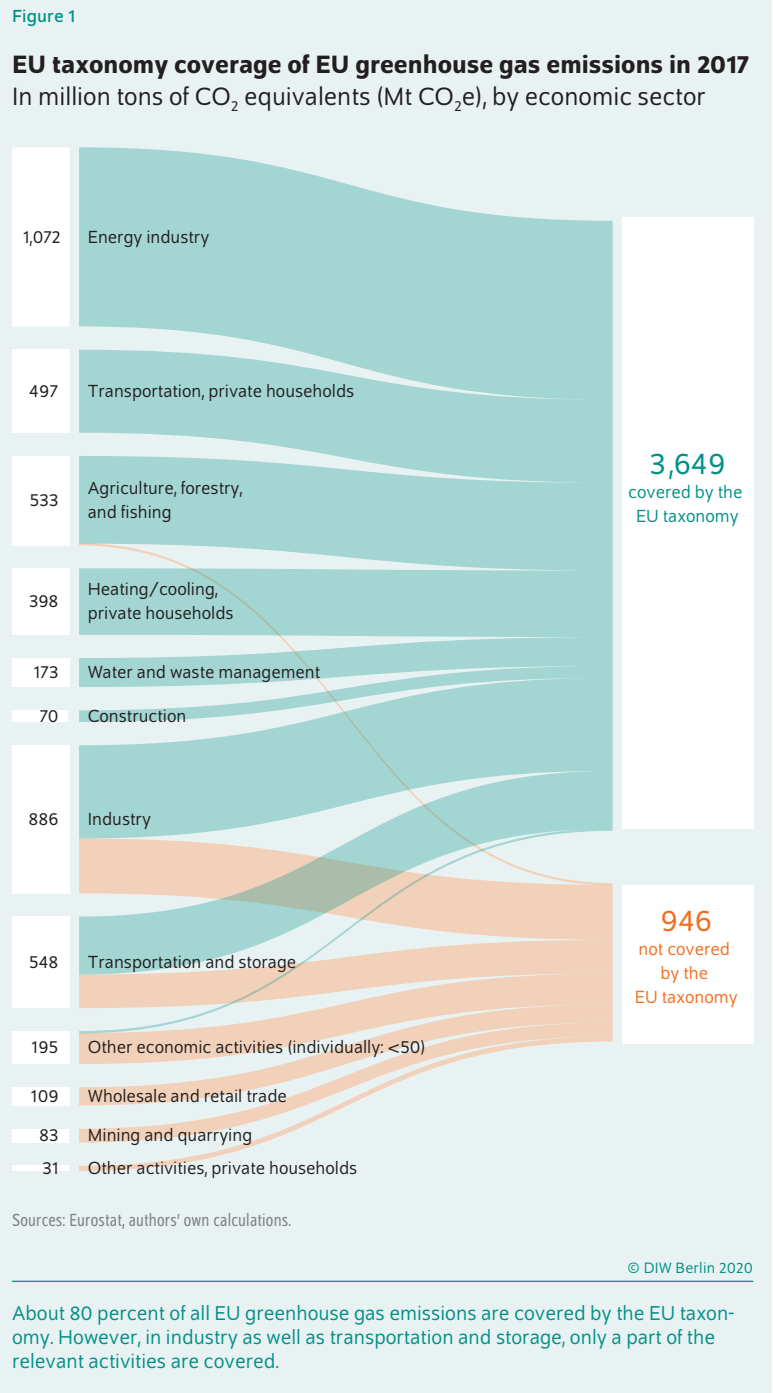
At the *firm level*, a company can be evaluated based on its sales or expenses that correspond to the taxonomy. Currently, there are different sustainability ratings at the firm level, none of which use standardized criteria for rating sustainable investments. This is important for a better comparison of sustainable investment funds.⁸

Both types of applications can affect a firm’s cost of capital. At the project level, funds from public programs can be linked to the taxonomy to provide funding advantages.⁹ At the firm level, anchoring the taxonomy in corporate reporting will lead to increased transparency that can be considered when valuating firms: Firms with high shares of taxonomy-aligned activities could profit from greater demand on the capital market and thus more favorable financing conditions as well.¹⁰

Taxonomy includes a majority of EU emissions

The taxonomy divides the economic sectors analyzed into three categories: *green activities*, which substantially contribute to climate change mitigation; *enabling activities*,¹¹ which

5 Eurostat, *Air emissions accounts by NACE Rev. 2 activity (2020)* (available online).
 6 Cf. Franziska Schütze and Jan Stede, "EU Sustainable Finance Taxonomy – what is its role on the road towards climate neutrality," *DIW Discussion Paper* no. 1923 (available online).
 7 Cf. Schütze and Stede, "EU Sustainable Finance Taxonomy."
 8 For example, only a small part of self-identified green funds are in adherence with the taxonomy thresholds Cf. Hennesius et al., *Testing draft EU ecolabel criteria on UCTIS equity funds (2020)* (available online).
 9 The German state-owned development bank KfW has already launched an initial program for project funding based on the EU Taxonomy with its *Klimaschutzoffensive für den Mittelstand* program.
 10 Carbon disclosure studies show that firms with higher carbon emissions have a higher cost of capital and that firms significantly reduce their emissions through disclosure. Cf. Stefanie Kleinmeier and Michael Viehs, *Carbon Disclosure, Emission Levels, and the Cost of Debt* (available online); Benedikt Downar, Jürgen Ernstberger, Hannes Rettenbacher, Sebastian Schwenen, and Aleksander Zaklan, "Fighting Climate Change with Disclosure? The Real Effects of Mandatory Greenhouse Gas emission Disclosure," *DIW Discussion Paper* no. 1795 (available online). A similar effect on the cost of capital could come from the Taxonomy.
 11 Here, supporting refers to the potential of the sector to enable significant emissions reductions in other sectors. Examples include investments in expanding the energy network, creating renewable energy sources (such as solar or wind power plants), or expanding infrastructure for CO₂-neutral traffic.









facilitate emissions reductions in other sectors; and *transition activities*, activities that require major efforts to become climate neutral. For the third category, the taxonomy defines additional minimum safeguards in the form of thresholds that determine if an activity can be classified as sustainable or not. All three categories include additional minimum environmental and social requirements.¹² The present analysis focuses on the first environmental objective

12 These being to do no significant harm to any of the environmental objectives and to adhere to minimum social safeguards. The six environmental objectives of the EU are: 1) climate change mitigation, 2) climate change adaptation, 3) sustainable use and protection of water and marine resources, 4) transition to a circular economy, 5) pollution prevention and control, and 6) protection and restoration of biodiversity and ecosystems.

Table

Extended classification of economic activities in the EU taxonomy

Economic activities	Included in the EU taxonomy				Not included	
	Green	Enabling	Transition		High emissions	Low emissions
Example	 Renewable energy	 Grid expansion, energy storage	 Passenger cars and light commercial vehicles	 Basic materials industry, building refurbishment	 Aviation wholesale and retail trade	 Education, health and social work
Current threshold	Yes	Yes	Yes	Yes	No threshold	No threshold needed
Future threshold with path to climate neutrality	Yes	Yes	Yes	No pathway	No threshold	No threshold needed

There is not yet a path to climate neutrality for the basic materials sector and other transformation activities. Activities not covered so far should be differentiated into climate-damaging and non-climate-damaging activities.

Source: Authors' own representation.

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(contribution to climate change mitigation) and thus how to make the thresholds compatible with the objective of climate neutrality by 2050.

At around 80 percent, the taxonomy includes a majority of the direct greenhouse gas emissions in the EU, above all from the energy, industry, buildings, transportation, and agricultural sectors (Figure 1). Some emission-intensive activities in the industrial sector (the manufacture of coke and refined petroleum, 3.2 percent of emissions), transportation sector (aviation, 3.6 percent of emissions), and wholesale and retail (2.4 percent of emissions) have not yet been addressed. This means there are no thresholds for these activities and they have not been explicitly classified as unsustainable.

Greening the brown: an analysis of thresholds in important transition sectors

According to the logic of the taxonomy, both traditionally green economic activities (such as renewable energy) and activities in previously emission-intensive sectors can be labeled as sustainable. The thresholds for the transition activities are thus the key component of the taxonomy. Thresholds that are too low can lead to carbon lock-in effects, meaning that emission-intensive technologies and fossil infrastructure are entrenched for many more decades. This is especially relevant for new investments.¹³ On the other hand, thresholds that are too strict could lead to very few investments being classified as sustainable in the first place, and thus lead to a rise in financing costs for investments in the transition of emission-intensive sectors. A distinction can be made between economic activities for which only a current threshold exists and those for which a future threshold for zero emissions by 2050 has been set as well (Table). In the follow section, three transition sectors with high relevance

for emission levels are used as examples, discussed, and evaluated. An important data source for this evaluation is a comprehensive analysis of the EU public consultation on the interim report on the taxonomy (Box).

Automotive sector: the future belongs to alternative drive technologies

In accordance with the Clean Vehicles Directive,¹⁴ the taxonomy defines two thresholds for the classes of passenger cars and light commercial vehicles.¹⁵ To be classified as sustainable, newly produced passenger cars and light commercial vehicles may emit no more than 50 grams of CO₂ per kilometer driven (g CO₂/km) until 2025 according to the new EU-wide WLTP Test Procedure.¹⁶ Beginning in 2026, emissions must be reduced to zero. With these thresholds, the taxonomy can provide additional incentives for companies to produce climate-friendly vehicles beyond the currently existing EU fleet limit of 95g CO₂/km as the minimum climate policy requirement for the automotive sector.¹⁷ In practice, the WLTP threshold of 50g CO₂/km is only achieved by emission-neutral drive technologies—especially electric cars, but also hydrogen and fuel cell vehicles. Combustion engines and many modern plug-in hybrids are not compatible with the taxonomy.¹⁸

¹⁴ Cf. European Parliament and Council of the European Union, *Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles* (2020) (available online).

¹⁵ The threshold refers to tailpipe emissions, the emissions generated by fuel consumption while driving a car.

¹⁶ In 2017, the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) replaced the New European Driving Cycle (NEDC), which was previously used in the EU. The goal of this switch is to better depict actual fuel consumption through more realistic driving conditions.

¹⁷ Consumption levels were generally recorded lower than in reality, in practice by around 20 percent under the old NEDC process (available online). While the EU fleet target is still based on the NEDC, the taxonomy is already using the WLTP as a reference point. Accordingly, the actual gap between the two standards is about 20 percent larger.

¹⁸ Cf. Table 13 in the German Environment Agency (UBA), *Ermittlung der Schadstoff- und Klimagasemissionen von Pkw und leichten Nutzfahrzeugen durch WLTP und RDE unter Berücksichtigung zukünftiger Kraftstoffe und Antriebskonzepte* (2019) (in German; available online).

¹³ Cf. Gregory C. Unruh, "Understanding carbon lock-in," *Energy Policy* 28, no. 12 (2000): 817-830; Linus Mattauch, Felix Creutzig, and Ottmar Edenhofer, "Avoiding carbon lock-in: policy options for advancing structural change," *Economic Modelling* 50 (2015): 49-63

The analysis of the comments from the EU consultation on the planned taxonomy guidelines (Box) shows that answers in the automotive sector are divided into two groups. While environmental agencies and NGOs support the suggested thresholds, the automotive industry is demanding both an extension of the transition period to 2030 as well as a switch to life cycle assessments (LCAs) instead of tailpipe emissions as a measurement parameter (Figure 2). However, it should be noted that the potential of emissions reduction is higher with alternative drive systems. By simultaneously expanding renewable energy, the overall emissions of electric cars will continue to decrease in the medium term.¹⁹

Buildings: national differences, still no path to climate neutrality

The energy-efficient refurbishment of existing buildings and new construction are of particular relevance to climate policy in the buildings sector. The taxonomy defines two independent criteria that can each be used as a threshold for the energy-efficient refurbishment of existing buildings. One threshold applies if the project is a *major renovation* as defined by the EU Directive on the energy performance of buildings (EPBD).²⁰ The other applies if the renovation leads to a reduction of the primary energy requirement by at least 30 percent, proof of which is required in the form of an energy certificate and a preceding energy audit.

The second criterion (30 percent reduction) is significantly easier to achieve compared to the EPBD energy requirements.²¹ Applied to existing German buildings, this minimum target means that the temperature-adjusted annual heating energy requirement of an average apartment building would fall from around 130 kilowatt hours²² to 91 kilowatt hours per square meter per year, thus merely moving from energy efficiency class D/E to class C.²³

The responses to the building refurbishment thresholds in the EU consultation ... show a different assessment of the thresholds compared to the automotive sector (Figure 2). Half of the respondents, also from industry representatives, support increasing the planned thresholds for energy-efficiency refurbishment of buildings. Criticism centers on the relative thresholds, which do not provide a clear path to climate neutrality for existing buildings. For example, country-specific

¹⁹ Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), *Wie umweltfreundlich sind Elektroautos? Eine ganzheitliche Bilanz* (2019) (in German; available online).

²⁰ European Parliament and the Council of the European Union, *Directive 2010/31/EU on the energy performance of buildings (recast)* (2010) (available online).

²¹ Depending on the building and Member State conditions, a major renovation leads to a 50 to 80 percent reduction in the primary energy requirement. Accordingly, there is a large gap between the two thresholds. Cf. with the effects of a (larger) renovation, ZEBRA2020, *Nearly Zero-Energy Building Strategy 2020 – Strategies for a nearly Zero-Energy Building market transition in the European Union* (2016) (available online).

²² Jan Stede, Franziska Schütze, Johana Wietschel, "Wärmemonitor 2019: Klimaziele bei Wohngebäuden trotz sinkender CO₂-Emissionen derzeit außer Reichweite," *DIW Wochenbericht* no. 40 (2020): 770-779 (in German; available online).

²³ Cf. Annex 10 in Deutsche Bundestag, *Gesetz zur Einsparung von Energie und zur Nutzung erneuerbarer Energien zur Wärme- und Kälteerzeugung in Gebäuden (Gebäudeenergiegesetz – GEG)* (2020) (in German).

Box

Evaluation of stakeholder consultation on the taxonomy

In June 2019, the Technical Expert Group (TEG) entrusted by the EU Commission with preparing the taxonomy published an interim report¹ that was the subject of extensive public consultation.² Taking the consultation into account, the TEG has published criteria and threshold recommendations for all sectors of the economy.³ Based on the TEG's final report and the Taxonomy Regulation published in June 2020,⁴ the EU Commission published a draft of the delegated acts in November 2020, which will make the thresholds legally binding.⁵

While a total of 642 stakeholders participated in the EU consultation, only the responses of the 355 public and private organizations were considered in the evaluation⁶ presented here and responses from private individuals were not included in the analysis. The evaluation was carried out in two steps: First, a total of 1,672 responses were coded to various metrics and thresholds of the taxonomy were analyzed graphically for a quantitative evaluation. In the second step, the answers were evaluated qualitatively by investigating the arguments independently from how often they were named.⁷ To categorize the respondents' answers and arguments and to evaluate the thresholds' compatibility with the objective of EU climate neutrality, further literature was considered.

¹ Technical Expert Group on Sustainable Finance, *Report on Benchmarks – Interim Report, June* (2019) (available online).

² Technical Expert Group on Sustainable Finance, *Responses on the June 2019 Interim Report on the EU Taxonomy* (2019) (available online).

³ Technical Expert Group on Sustainable Finance, *Technical Report, March* (2020) (available online).

⁴ European Parliament and Council of the European Union, *Regulation 2020/852 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088* (2020) (available online).

⁵ A draft of the delegated acts was published in November 2020, cf. Annex 1 of the European Commission, *Draft Delegated Regulation supplemented EU regulation 2020/852* (2020) (available online). The thresholds in the sectors analyzed have not changed fundamentally.

⁶ Cf. Schütze and Stede, "EU Sustainable Finance Taxonomy."

⁷ This counteracted the bias in the distribution of the respondents, as this is not a random sample: around 70 percent of the organizations were industry associations and firms. In contrast, NGOs only comprised 12 percent of the respondents. In the Transparency Register of the EU, 27 percent of the registered organizations are NGOs.

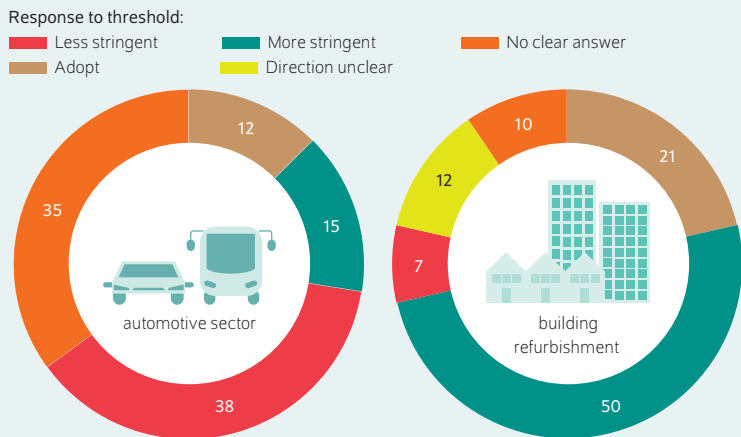
absolute thresholds have been suggested. The stronger support for more stringent thresholds contrasts with the automotive industry, which shows more players in the construction industry have an economic interest in raising the thresholds.

For the construction of new buildings, the taxonomy specifies as a threshold that the annual primary energy demand must be 20 percent below the national standard for Nearly Zero

Figure 2

Results of the public consultation on the thresholds in the automotive and building refurbishment sectors

In percent of answers (building refurbishment = 42 answers, automotive sector = 40 answers)



Sources: Public Consultation on the Interim Report on the EU Taxonomy, 2019; authors' own calculations.

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The automotive industry supports loosening thresholds. In contrast, 50 percent of the respondents in the building refurbishment sector support tightening thresholds.

Energy Buildings (NZEB).²⁴ According to the EPBD, all new buildings in the EU must adhere to the NZEB standard from 2021. However, the flaw of NZEB is that the standard is individually defined by Member States and there is no minimum requirement set at the EU-level.²⁵ In Germany, the NZEB standard was introduced together with the Building Energy Act (Gebäudeenergiegesetz, GEG) in November 2020. However, it falls short of the EU's non-binding target corridor as well as Germany's own announcements and merely continues at the level of the 2016 Energy Saving Ordinance.²⁶ Similar to the limit imposed on building refurbishment, it would therefore be important to introduce a uniform European consumption ceiling for new buildings.

Basic materials industry: no climate neutrality with historic benchmarks

In the industry sector, the taxonomy focuses on the emission-intensive basic materials industries, such as the production of cement, steel, or chemical products. For these

activities, sector-specific benchmarks from the EU-ETS are used as thresholds. The benchmarks reflect the level of emissions achieved by the ten percent of installations with the lowest greenhouse gas emissions within a specific sector.²⁷ Applied to the cement sector, this means that cement production is classified as sustainable if the applicable EU-ETS benchmark of 0.766 metric tons of CO₂-equivalent for one metric ton of cement clinker is achieved for direct emissions.²⁸

The example of the cement industry illustrates the difficulties of using only one threshold for both existing and new facilities in the basic materials sector. While the use of EU-ETS benchmarks can be useful to identify the best performing companies for existing installations, the use for new installations carries the risk of lock-in effects. This is because new industrial facilities generally have a life span of multiple decades and would therefore not be compatible with the EU target of climate neutrality by 2050.

In summary, the analysis of three transition sectors shows that the stringency of the respective threshold is an important factor determining the level of ambition to achieve climate neutrality. So far, only the automotive sector has a clear path to climate neutrality. In the buildings sector, the thresholds should be successively tightened or absolute targets introduced, especially for energy refurbishment. In the basic materials industry, evaluating companies with existing production facilities must be separated from investments in new facilities, as both objectives can hardly be achieved at the same time with a common threshold.

Case study: how sustainable is the European Fund for Strategic Investments?

To illustrate how the taxonomy is applied and the necessity of a common definition of sustainable investments, the following section takes a close look at investments made under the European Fund for Strategic Investments (EFSI). The EFSI was launched by the European Commission and the European Investment Bank (EIB).²⁹ The EFSI should enable long-term, strategic investments in risky projects with growth and labor market potential and mobilize private capital. Climate change mitigation has been an important focus of the EIB for many years: in 2018, it was decided to invest 40 percent of EFSI's investments in climate change mitigation.³⁰ In November 2020, the EIB announced to increase

²⁴ According to a draft of the delegated acts (Box), buildings larger than 5,000 square meters must prepare a life cycle analysis for the global warming potential due to the construction of the building, which must be made available to investors or clients upon request.

²⁵ Cf. Schütze and Stede, "EU Sustainable Finance Taxonomy."

²⁶ For detached houses, the EU has established a net energy requirement of between 15 to 30 kWh/m² per year as a benchmark for the national implementation of the lowest energy building standard for an oceanic climate (available online). In the past, Germany had announced that the definition of ultra-low energy buildings would be based on the KfW efficiency house standard (available online). With the introduction of the GEG, which replaces the previous Energy Saving Ordinance, all new buildings that meet the minimum energy requirements of 75 percent of a "reference building" since 2016 were defined as ultra-low energy buildings.

²⁷ European Commission, *Commission decision determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council* (2011) (available online).

²⁸ According to a draft of the delegated acts (Box), the over ten years old EU-ETS benchmarks should be replaced by new thresholds, which are currently being edited as a part of the revision of the EU-ETS directive.

²⁹ The EFSI was established for a period of three years, 2015 to 2018, and extended for a further three years. In 2021, it will be replaced by the InvestEU program.

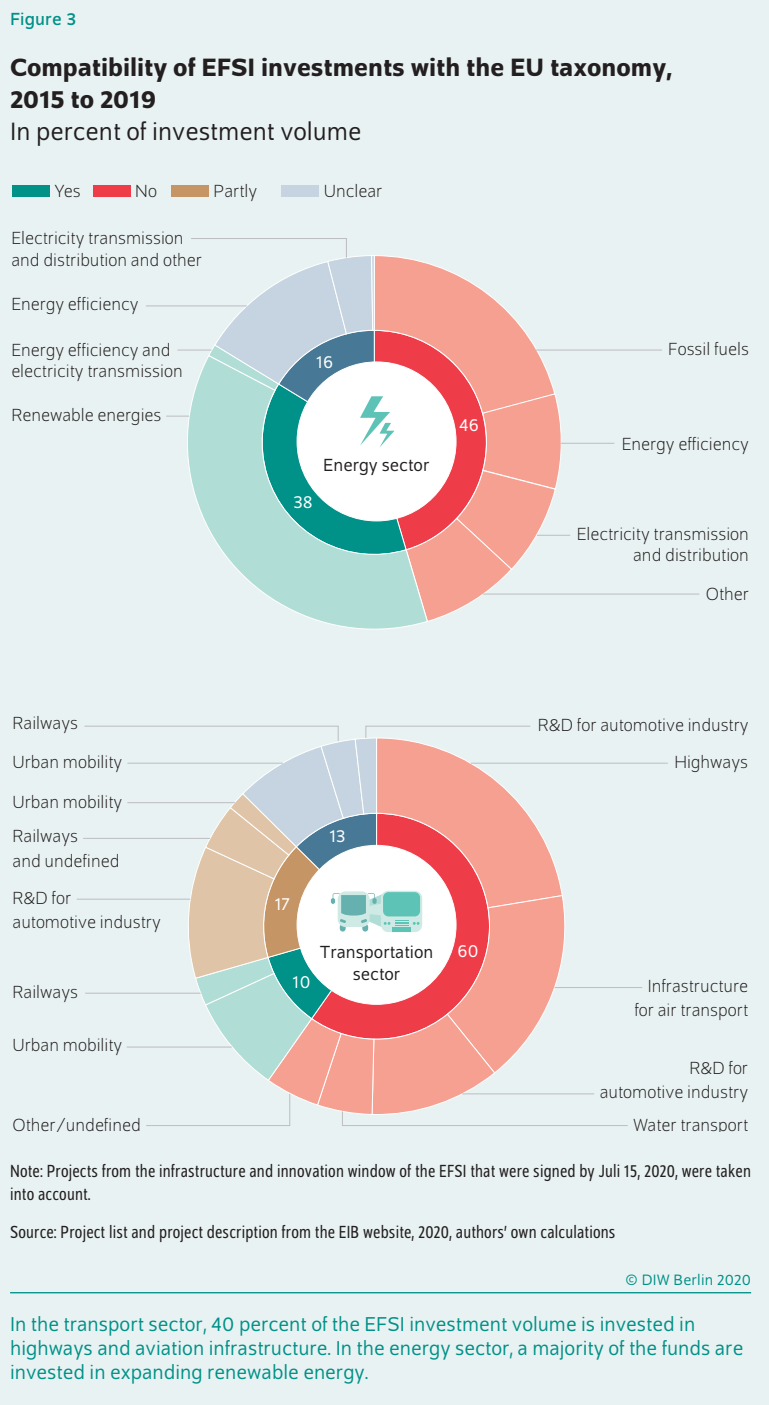
³⁰ European Investment Bank, *The EFSI Legacy: Between markets and states* (2020) (available online).

this share to 50 percent by 2025.³¹ However, the share is not the only important factor. The criteria for the projects attributed to the share are also crucial. Compared to the previously used definition, using the taxonomy would entail tightening the thresholds in some sectors.³²

The following section reviews the extent to which the projects financed are in adherence with the thresholds and how many of the projects are covered by the taxonomy. The analysis focuses on the infrastructure and innovation window,³³ in which over 500 projects with a financing volume of 45.6 billion euros³⁴ were financed between 2015 and 2019, an overall total of 213.2 billion euros in investments. Specifically, projects in the energy and transport sector are evaluated. Together, they make up almost half of the EFSI's financing volume: around 30 percent from the energy sector (including energy efficiency measures) and 18 percent from the transportation sector. Further sectors that are not included in the analysis are, for example, small and medium-sized firms (18 percent) and digitalization (eight percent).

In the energy sector, around 38 percent of the financing volume can be classified as adhering to the taxonomy (Figure 3), which is only slightly under the target of 40 percent of investments in climate change mitigation. These are mainly investments in renewable energy, which make up one third of the financing for the energy sector. Almost half of the financing volume (around 46 percent) does not adhere with the taxonomy, as investments in fossil fuels alone—especially in gas infrastructure—still comprise about 20 percent of the energy sector's financing. In the area of buildings' energy efficiency, the projects could either not be clearly categorized (12.3 percent), do not reach the threshold, or perform energy efficiency measures that are not included in the taxonomy (8.2 percent). This is due to the fact that the previously used thresholds in this area are lower than those in the taxonomy.

In the transport sector, the share of financing of projects that are compatible with the taxonomy is significantly lower than in the energy sector, thus far below the target. About ten percent of the investments are in adherence with the taxonomy, meaning they reach the thresholds. Most of these involve electric-drive trains or projects for electric cars, such as charging stations (Figure 3). A further 17 percent can only be labeled partly in adherence with the taxonomy, as parts of the projects support unsustainable drive systems.³⁵ Thirteen percent could not be clearly categorized due to a



lack of information, although the majority are in the area of urban mobility.

However, over half (60 percent) of the financing volume of the transportation sector is not in adherence with taxonomy criteria. These are largely investments in infrastructure designed for emission-intensive transport. Funding for highways and airport infrastructure alone accounts for around 40 percent of total funding while less than ten percent goes to rail transport.³⁶ Thus, the funded projects risk

³¹ European Investment Bank, *EIB Group Climate Bank Roadmap 2021-25 (2020)* (available online).

³² The definition previously used by the EIB for climate change mitigation projects are based on the Multilateral Development Banks Joint Methodology for Tracking Climate Finance (available online).

³³ There are two investment windows: 1) infrastructure and innovation and 2) small and medium-sized firms. This report only investigates the first area.

³⁴ Authors' own calculations based on the EIB's project list (available online). The analysis includes projects authorized by the EIB up until July 15, 2020. Accepted but not yet authorized projects are not included in the analysis.

³⁵ Due to the insufficiently detailed project descriptions, the exact share of subprojects that are in adherence with the taxonomy could not be determined.

³⁶ It must be noted that aviation is not yet included in the taxonomy and thus, no thresholds have been defined for it.

entrenching forms of transportation that are not environmentally-friendly.

The analysis shows that the level of the thresholds has a decisive influence on the share of investments in climate change mitigation. The taxonomy thresholds are stricter than the thresholds previously used. To reach the more stringent thresholds in the taxonomy, investment criteria must be realigned and readjusted. The requirements for projects must be significantly increased, especially in the area of energy efficiency and transportation. This is particularly important for publicly-funded infrastructure investments, as these have a decisive influence on the emission intensity of transportation and energy demand in the future.

Conclusion: taxonomy creates reference points for a path to climate neutrality

The taxonomy creates a standardized definition of sustainable investments and supports the transition to a climate-neutral economy in multiple ways. Due to improved transparency on the climate impact of investments in the real economy, the taxonomy can help prevent “greenwashing.” For companies that already disclose sustainability reports, the taxonomy’s standardized reporting process might even reduce the burden, as different data no longer needs to be sent to different data providers. For financial institutes, this can markedly improve the comparability of firms. Building on this, the taxonomy is intended to serve as a standard for sustainability labels in the market for private investors and to create more transparency and comparability for end customers. Additionally, it can be used as a standardized definition for public funding and investment programs.

Covering around 80 percent of European emissions, the taxonomy already includes a large share of the emission-intensive economic sectors. However, it is important to distinguish the climate-damaging sectors from the less climate-damaging

sectors among those that are not included. Exclusion lists should be created for activities that can be substituted given available technological alternatives. For other sectors that are climate-damaging but not yet included (such as aviation), future thresholds should be defined.

Most sectors in the taxonomy are transition sectors. In these sectors, only companies and facilities that reach sector-specific thresholds are categorized as sustainable. In some sectors, these thresholds are already in accordance with the objective of a climate-neutral EU by 2050, such as those for passenger cars and light commercial vehicles. In other sectors, primarily in the basic materials industry, such as steel or cement production, the criteria are based on the EU-ETS thresholds and do not present a path to climate neutrality. These sectors in particular are very capital-intensive and have long-term investment cycles. Therefore, new investments run the risk of a lock-in of emission-intensive technologies, which can lead to stranded assets for investors.

A second, stricter threshold for new investments may be helpful. This principle is already present in the buildings sector, where new buildings are subject to stricter regulations than existing buildings that are being refurbished. A further possibility is that companies in emission-intensive sectors must prove a climate-neutral strategy that shows how the company will become climate neutral.

With the European Green Deal and climate change advancing, there is a need for a significant increase in investments in climate change mitigation and sustainability. Consistently applying the taxonomy can give businesses, building owners, investors, and lending institutions better insight into the climate impact of their investments and financing. Moreover, through its comprehensive approach, the EU taxonomy has the potential to serve as a blueprint for a global standard defining sustainable economic activities.

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JEL: G00, G14, G18, G38, Q01, Q54, Q56

Keywords: EU taxonomy, sustainable finance, green finance, green investment, energy transition, financial decarbonization, financial markets

LEGAL AND EDITORIAL DETAILS



DIW Berlin — Deutsches Institut für Wirtschaftsforschung e.V.

Mohrenstraße 58, 10117 Berlin

www.diw.de

Phone: +49 30 897 89-0 Fax: -200

Volume 10 December 17, 2020

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Sale and distribution

DIW Berlin Leserservice, Postfach 74, 77649 Offenburg

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Phone: +49 1806 14 00 50 25 (20 cents per phone call)

Layout

Roman Wilhelm, DIW Berlin

Cover design

© imageBROKER / Steffen Diemer

Composition

Satz-Rechen-Zentrum Hartmann + Heenemann GmbH & Co. KG, Berlin

ISSN 2568-7697

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