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**Article**

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## Gas and Nuclear Power as Transition Technologies – What does this Mean for Investments?

### INTRODUCTION

One of the three principle objectives stipulated in the U.N. Paris Agreement (United Nations 2018) is to make “finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (Paris Agreement, art. 2(1)). Such and similar statements of intent form the backdrop of many “green finance” policy initiatives around the world that seek to align the allocative function of financial markets with global climate targets. The European Union has emerged as an ambitious regulatory pioneer in this area, hoping that a “Brussels effect” (Bradford 2020) might inspire similar endeavors in other jurisdictions. The Action Plan on Financing Sustainable Growth set out a far-reaching agenda to “green” the financial system (European Commission 2018). As its primary tool, contemporary EU green finance regulation relies on an abundance of disclosure obligations. Part of this broader transparency framework is the EU Taxonomy, colloquially referred to as the bloc’s “labeling scheme for green investments.”

In 2022, the Commission designated certain activities in fossil gas and nuclear energy as eligible to qualify as “green” activities under the Taxonomy. Public outcry followed: Critical voices pointed not only to the environmental but also the geopolitical concerns that are at odds with the Commission’s decision. The classification certainly has an important symbolic dimension. Symbolism aside, however, it should not be overlooked that the Taxonomy is first and foremost an instrument of green finance policy. It does not impact climate or energy policy directly. The prospective effects of the Commission’s controversial classification thus depend on what the Taxonomy status of gas and nuclear power means for investment flows.

### KEY MESSAGES

- **So far, the applications of the Taxonomy are purely for transparency and disclosure purposes**
- **Professional investors and regulators instead rely on more advanced and context-specific metrics, such as their own ESG methodologies and cockpits**
- **Therefore, the controversial Taxonomy classification of gas and nuclear power will not have a major impact**
- **Green finance policies are no substitute for restrictive environmental regulations such as cap-and-trade schemes or outright prohibitions of certain activities**

Currently, the Taxonomy is only leveraged as a disclosure and informational tool. Its primary function is to generate one highly condensed piece of information, which should be relatively uninteresting for seasoned investors. Many of them have already established their own ESG or sustainability cockpits and methodologies to obtain custom-tailored assessment of investment opportunities. It is hard to imagine that they would ditch these resources and rely exclusively on the Taxonomy. The main audience for Taxonomy-based information is unsophisticated investors at the end of the investment chain, such as retail investors in ESG-branded mutual funds. The main reservation one may have with regard to the Commission’s classification is that Taxonomy-based disclosures targeted at unsophisticated investors lump together gas and nuclear investments with other “green” investments (e.g., renewables) – which would arguably result in more, not less greenwashing, contrary to the Taxonomy’s objectives. But a closer look



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reveals that this concern is largely a red herring: For virtually all Taxonomy applications, contentious gas and nuclear power exposures will have to be disclosed separately from other “green”-labeled activities.

So long as the Taxonomy is only about transparency, the energy transition is unlikely to hinge on or be slowed by the labeling of fossil gas and nuclear energy under this framework. This might change, of course, once the Taxonomy is used as a basis for financial policies with a more direct steering effect that go beyond mere disclosure – such as tax benefits or bank capital requirements. However, whether there will ever be such policies remains unclear at this point. For the time being, the Taxonomy treatment of gas and nuclear power is, at best, a second order concern for the reorientation of capital flows towards sustainable activities.<sup>1</sup> The critical question remains to what extent market-based green finance policies can achieve the overarching objective in the first place.

## BACKGROUND: THE SIGNIFICANCE OF THE EU TAXONOMY FOR GREEN FINANCE

### Basic Idea

At its core, the EU Taxonomy Regulation (TR) establishes criteria for “determining whether an economic activity qualifies as environmentally sustainable” by means of a three-pronged definition: An activity must make a substantial contribution to one of six environmental objectives (most prominently, climate change mitigation), it must not harm any of these objectives, and it must observe minimum human rights safeguards (TR, art. 3(a)-(c)). For the first two elements, the Regulation tasks the Commission with adopting legally binding “technical screening criteria” that an activity must observe to deserve the Taxonomy label (TR, art. 3(d), 19).

By “label,” we refer to a quality signal that compresses one or more pre-defined objective and complex indicators into a single piece of information, based on a clear, technical definition or a specific methodology. By design, labels explicitly or implicitly encode an evaluation or judgement – in the case of the Taxonomy, this judgement is binary: an activity either meets the criteria and is thus “green” (“environmentally sustainable”), or not. The counterpart to the information category of “labels” are “raw data,” i.e., uncompressed information that allow economic actors to conduct their own assessment. For example, for the activity of manufacturing passenger cars, tailpipe emissions would be a (continuous) raw data point. Under the Taxonomy, the chief requirement

for receiving the “green” label for that activity is that the tailpipe emissions be less than 50gCO<sub>2</sub>e/km, and, from 2025, zero.

In the financial context, labels can be applied at different levels of aggregation (for details, see Steuer and Tröger 2022a): at the level of individual economic activities, at the level of companies (which often entertain many activities with different environmental footprints), and at the level of portfolios of financial instruments issued by those companies (for example, the investment portfolio of a mutual fund). The basic idea of the Taxonomy is to provide some definition of “greenness” already at the activity level, which can then be used to compute the degree of greenness at higher levels.

### What Taxonomy is Used for in Union Law

Currently, EU green finance regulation leverages the Taxonomy exclusively as a reference point for certain disclosures.

At the issuer level, companies subject to disclosure mandates under the Non-Financial Reporting Directive (NFRD) and its successor, the Corporate Sustainability Reporting Directive (CSRD), have to report, on an annual basis, on the Taxonomy classification of their individual activities (TR, art. 8). To use a simplified example, a car manufacturer with both a combustion engine business with high fuel use and an electric vehicle business line would have to disclose how its revenues, capital expenditures, and operating expenditures break down to these business lines and if they comply with the Taxonomies’ technical criteria – which in the example will likely be true for the electric business, but not the combustion engine business. From this activity level disclosure, investors can then obtain the taxonomy quotas at the issuer level mentioned above.

Taxonomy-based disclosure obligations also exist at the portfolio level for certain ESG-branded investment products, such as (purportedly) “green” mutual funds or ETFs tracking “green” indices. For these products, dedicated templates need to indicate ex ante what minimum Taxonomy quota the product will achieve (i.e., portfolio-weighted issuer-level quotas), and report ex post on actual Taxonomy quotas. Prudential regulation will likely impose a similar disclosure requirement on large banks for their credit portfolios, which would go beyond issuer-level Taxonomy disclosures that are required from banks under the NFRD/CSRD.

Another likely use case for the Taxonomy label will be the EU Green Bond Standard (European Commission 2021). Such bonds entertain “use of proceeds”-clauses that seek to earmark funds raised for specific (green) activities, although legally and economically the funds were sourced at the issuer level. Under the EU Green Bond Standard, bond issuances could be labeled as EU Green Bonds if the proceeds are reserved to fund Taxonomy-compliant projects.

<sup>1</sup> We do not intend to take a normative position here on which role nuclear and fossil gas should play in the as a matter of substantive environmental, energy, or foreign policy. Our point is simply that, from a law and finance perspective and under currently applicable regulations, any “misclassification” of gas and nuclear power under the Taxonomy is unlikely to hurt much.

### What the Taxonomy is not Used for

For a sober analysis, it is equally important to avoid common misperceptions and appreciate what the Taxonomy is not used for under applicable Union law.

First of all, the Taxonomy is not employed to label issuers. There is no classification system for “green” issuers under European green finance rules. The role of the Taxonomy exhausts itself in the disclosure of a Taxonomy quota without any further evaluation. Company-level ratings are issued by private ESG rating firms. Whether or not these firms rely on Taxonomy-related information in their rating methodology is governed by market forces, not Union law. The Taxonomy is also currently not used to apply blunt labels to portfolio-based investment products (mutual funds, etc.) by classifying the product itself as “green” or “not green.” Plans along those lines initially existed: The EU Ecolabel for Retail Financial Products was intended as a binary (and voluntary) label in reference to portfolio-level Taxonomy quotas (JRC 2021). However, the Commission has not followed through with these plans to date. The so-called “dark-green” and “light-green” fund categories under the Sustainable Finance Disclosure Regulation (SFDR) arguably have some labelling function as well, but this classification does not hinge on the Taxonomy (Steuer 2022). The same was true for BaFin’s proposal for a national sustainable fund labeling standard (Steuer and Tröger 2022b) and is true for current proposals for ESG-fund naming guidelines at the European level (ESMA 2022).

Neither does the Taxonomy play any significant role in the current regulatory framework for prudential supervision. Taxonomy criteria are not used in the computation of bank capital requirements. To be sure, applicable regulations instruct the European Banking Authority (EBA) to furnish a report on “whether a dedicated prudential treatment of exposures related to assets or activities associated substantially with environmental and/or social objectives would be justified” (CRR, art. 501c). But this report is only due in June 2025, and even if regulators were to adopt rules on “green” capital requirements at some future date, it is very unclear whether such requirements would be based on the Taxonomy label or on other metrics (such as raw data on greenhouse gas emissions). Absent such rules, the Taxonomy might become relevant only indirectly, when bank supervisors rely on it in the course of ongoing supervision. But supervisors’ official communications often do not really consider the Taxonomy at all (see e.g., ECB 2020, 2022a), and where they do, they are relatively cryptic as to what useful role the Taxonomy might play for prudential purposes (see e.g., EBA 2021). In a recent report, the EBA conceded that the Taxonomy criteria are simply not designed as a risk indicator (EBA 2022). And in its 2022 climate risk stress test, the ECB Bank Supervision did not rely

on Taxonomy data, but on rough sector classifications and issuer-level emissions data (ECB 2022b).

### Gas and Nuclear Classification

From the beginning of the Taxonomy project, there were significant controversies as to what extent and under which conditions nuclear- and gas-related activities should be eligible for a “green” classification. The long political struggle resulted in technical screening criteria for these activities – not included in the 2021 Delegated Regulation, but tacked on to the so-called Complementary Climate Delegated Act (TR-CCDA) in 2022 – that reflect a horse trade between those Member States with heavy reliance on nuclear energy in the transition (France) and those who see a more prominent role for natural gas as a transition technology to substitute coal: both activities can be considered “green” under the Taxonomy, although this label does not apply automatically and is subject to several conditions which highlight the importance of nuclear waste disposal and the role of gas as a transition technology. Several proceedings have been brought before the European Court of Justice by NGOs, and also by Austria in its capacity as a Member State, to challenge the compliance of the classification criteria with the higher-ranking three-pronged sustainability definition of the Taxonomy Regulation.

Gas- and nuclear-related activities receive a very special treatment under the rules that govern Taxonomy use cases. At the issuer level, the TR-CCDA introduced two separate reporting templates specifically designed to disaggregate nuclear- and gas-related activities. Therefore, even unseasoned investors should be able to subtract these controversial positions from issuer-level quotas. In a similar fashion, portfolio-level disclosure rules under the SFDR will be revised to ensure that nuclear- and gas-related activities are reported separately; Figure 1 illustrates this approach. For the pending draft of an EU Green Bond Standard, the European Parliament has recently proposed the addition of specific disclosures and disclaimers in case a Green Bond funds gas or nuclear activities (Council of the European Union 2022).

### FOR WHOM DOES THE TAXONOMY MATTER?

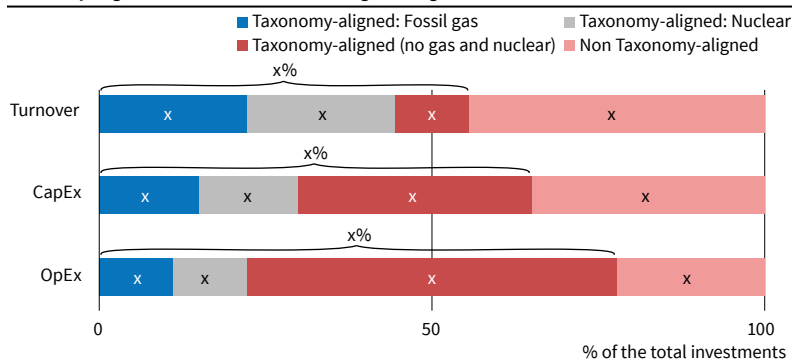
#### The Role of Mandatory Disclosure

Climate-related transparency mandates may help shift investments into “green” economic activities by lowering the cost of capital for such activities relative to “dirty” activities (e.g., Steuer and Tröger 2022a). For this mechanism to unfold, investors need to prefer investments in “green” activities. They may do so for financial reasons, if they seek to minimize transition risks (e.g., Bolton and Kacperczyk 2021), or out of moral convictions and other non-financial motivations (e.g., Pástor et al. 2021). Mandatory dis-

Figure 1

**Disaggregation of Gas and Nuclear from Taxonomy Quotas in SFDR Disclosures**

Taxonomy-alignment of investments excluding sovereign bonds



Source: JC-ESAs 2022.

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closure rules are needed if markets fail to produce high-quality, standardized information that allows investors to compare investment alternatives. Markets tend to underproduce such information because of the public good characteristics of standardization and enforcement (see e.g. Christensen, Hail and Leuz 2021). Under these circumstances, regulation can help overcome information asymmetries, and thus aid the allocation of capital in line with any “green” investor preferences. In addition to the cost-of-capital channel, transparency initiatives in the financial markets may also contribute to environmental objectives via other indirect channels, e.g., by raising public awareness of the underlying issues, easing the benchmarking of environmental performance, or triggering environmentally desirable responses from non-investor audiences such as consumers, the media, or NGOs.

Importantly, in practice transparency-oriented green finance policies come in various forms, which require the disclosure of various types of information relevant to different audiences at different locations in the investment chain. Besides Taxonomies and other labels, professional investors also and predominantly demand the disclosure of standardized and audited raw data, such as descriptions of climate targets, metrics of corporate emissions, or other environmental impact data at the firm-level. Therefore, the EU Taxonomy constitutes only a relatively small element of a much larger transparency framework. The actual backbone of EU green finance legislation is not the Taxonomy, but the CSRD framework, which will require companies to report a vast array of raw data points on the environmental footprint of their activities, under standards akin to those used to govern financial accounting and reporting.

**Professional Investors**

We do not expect that sophisticated, institutional investors and their information intermediaries (rating agencies) will rely heavily on a government-sponsored label like the Taxonomy classification or quota in their allocative decisions. Rather, institutional investors and

asset managers will base their capital allocation on more granular raw data and evaluate the climate-related risks they would run with an investment, the undesired climate impact, etc., themselves.

Green bonds, which are often marketed to institutional investors, are a case in point. These investors can be expected to “look through” the taxonomy label and buy nuclear/gas bonds only if they like the underlying business model, and if they do, they will buy such use-of-proceeds bonds regardless of their Taxonomy classification anyway. Even insofar as sophisticated investors may rationally consider the Taxonomy classification as an indicator for lower transition risk, they can be expected to understand not only that the underlying political compromise is inherently fragile and can be revoked at any time, but also that the green finance label does not shield “dirty” activities from regulatory restrictions imposed in the pursuit of environmental or energy policies. For instance, the price for carbon emissions in cap-and-trade schemes is set independently from the Taxonomy designation of gas power production. Once again, the pivotal risk factor that drives asset valuation and thus investment decisions will be assessed in a “look through” and not in blind reliance on the Taxonomy classification.

**Retail Investors**

An important reason why sophisticated investment intermediaries may allocate capital to assets that have high Taxonomy quotas or are designated as “green” by the EU Green Bond Standard is the marketability of such products in retail markets. Predominantly Taxonomy-aligned or Green Bond-rich portfolios allow asset managers to turn to retail investors and advertise their products as particularly sustainable. Unsophisticated retail investors will typically not possess the knowledge and resources to “look through” the government-sponsored label. Importantly, however, Taxonomy alignment needs to be broken down and reported separately for nuclear and gas power. This disaggregating reporting requirement takes much of the sting out of looming deceptive disclosures. If Taxonomy alignment and quotas could be reported without further qualification, energy companies that rely heavily on gas and nuclear power production could indeed look just as sustainable as providers of wind or other renewable energy. Yet, the regulatory framework bars exactly such undifferentiated labeling.

In fact, the separate reporting requirement may have a chilling effect on retail investments, despite transition technologies receiving a positive Taxonomy classification: Retail investors may not be in a position to replicate and question the quality signal, but they may dislike gas or nuclear energy production no matter what. Learning that certain companies or portfolio products have a relatively high proportion of such activities may prevent them from investing, even though these activities are technically Taxonomy-aligned.

## CONCLUSION

The controversial Taxonomy classification of gas and nuclear power will not have a major impact as long as the applications of the Taxonomy are purely for transparency and disclosure purposes. In the future, fiscal regulators might, of course, rely on the Taxonomy to determine eligibility for certain tax benefits or other subsidies, or financial regulators might use this Taxonomy framework as the foundation of a new regulatory framework, namely by linking regulatory capital requirements or investment restrictions directly to the Taxonomy. Should gas and nuclear energy activities receive no “special treatment” under such frameworks, there would clearly be more direct incentives for investors to tilt their investments towards those technologies. But to what extent the broader regulatory architecture will be linked to the Taxonomy remains uncertain at this point. This is especially true in light of the issues we discussed above: Like professional investors, ambitious regulators might wish to “look through” the blunt Taxonomy classification and instead rely on more advanced and context-specific metrics.

Our analysis reveals that within the current EU green finance framework, the curious status of gas and nuclear technology does not matter too much. One can reasonably dislike this decision as a matter of political symbolism and yet be in favor of the transparency-oriented green finance approach in general; one can even be skeptical of the Taxonomy approach in general and still hold a favorable view on the raw data-oriented disclosure mandates under the CSRD. Needless to say, the idea of affecting climate outcomes via financial regulation is, of course, a second-best solution in the first place: No matter how comprehensive and ambitious the disclosure mandates and risk management requirements, green finance policies are no substitute for restrictive environmental regulations such as cap-and-trade schemes or outright prohibitions of certain activities. Green finance alone will most likely not save the planet, whether or not some of the “green” money flows to gas and nuclear activities.

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