
Miscellaneous

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Nuclear Energy as a Sustainable Source? Examining Media Discourses Surrounding the EU-Complementary Delegated Act

Abstract

This paper contributes to the understanding of media discourses surrounding the sustainability of nuclear energy, particularly within a crisis context. The study examines the implications of the adoption of the Complementary Delegated Act on EU taxonomy by the European Commission on July 6, 2022, which officially categorises nuclear energy as sustainable. Employing a critical discourse analysis (CDA) methodology, the research explores the discourse strategies –nomination, predication, and argumentation– utilised across 695 news articles. The findings reveal the intricate representation of nuclear energy's sustainability across the media. The Russian-Ukrainian conflict amplifies favourably the nuclear energy view as a reliable and sustainable energy source. However, the media discourse on nuclear energy's sustainability reveals a variety of viewpoints. These varying outlooks provide essential insights for shaping effective energy policies. This research contributes valuable insights into understanding how media shapes and influences public perception of sustainability energy policies, amplifying specific actors' voices and steering discourse toward distinct trajectories. Such insights are crucial in crafting energy policies.

Keywords

Sustainability, nuclear energy, energy policy, EU

taxonomy, news media, discourse analysis.

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1. Introduction

Sustainability has become an increasingly critical topic of scientific research concerning environmental issues and management policies. The progress of industrialisation has led to technological advancements that have surpassed the capacity of the earth's natural resources, creating mounting pressure on environmental resources, and resulting in the constant expansion of environmental policymaking to ensure long-term well-being for both people and the planet (Harris, 2022). While sustainability may be interpreted in various ways, it is fundamentally grounded on the principle that everything necessary for our survival and well-being is derived from the natural environment, either directly or indirectly (Salas-Zapata & Ortiz-Muñoz, 2019). As such, sustainability entails fulfilling our own needs without compromising the ability of future generations.

Energy efficiency plays a crucial role in promoting sustainable economic growth, as its limitations can have direct implications for a country's economic development (Zakari *et al.*, 2022). In the framework of the 2030 Agenda for sustainable development, all stakeholders involved bear a collective responsibility to uphold their climate commitments. To fulfil the commitments under the Paris Agreement and Sustainable Development Goals (SDGs), low-carbon energy investments are essential, including renewable electricity, nuclear power, and fossil fuels with carbon capture and storage (McCollum *et al.*, 2018). Such investments not only help mitigate climate change but also offer long-term economic benefits while ensuring energy security and affordability.

The recent geopolitical tensions resulting from Russia's military intervention in Ukraine in February 2022 have generated an energy crisis that has had a profound impact on the global supply of oil and gas (Tank, 2022). This crisis has served as a turning point that has accelerated the worldwide transition to renewable energy sources. In response to mounting concerns over climate change and energy security, countries are shifting away from highly polluting fossil fuels, which are frequently produced by only a few major producers, towards low-carbon alternatives such as renewable energy and nuclear power (Christoforidis *et al.*, 2021). Nuclear energy, particularly, can aid in decarbonising economies and mitigating climate change (Filipovic *et al.*, 2017).

The adoption of a Complementary Delegated Act on European Union (EU) taxonomy by the European Parliament on July 6, 2022, which establishes the criteria for determining taxonomy alignment of nuclear and gas activities, is a significant response to the energy crisis, and a crucial step forward for the EU's energy transition and security (European Commission, 2022). This strategy ensures that member states diversify their nuclear fuel supplies, meeting the goals of the 2030 climate and energy framework.

The use of nuclear energy is widespread across the EU, with around half of its member states relying on it for their electricity supply. Currently, the EU generates approximately 58% of its electricity from low-carbon sources, half from renewables, and half from nuclear power (Zucchetti *et al.*, 2022). Nevertheless, nuclear and gas energy activities have been the subject of controversy since their inception, with some EU countries, including Austria and Luxembourg, opposing the inclusion of radioactive waste in legislation (Spinaci, 2022). Environmental groups, such as Greenpeace, have also filed their own legal challenges, arguing that radioactive waste cannot be recycled (Adamantiades & Kessides, 2009).

Media coverage has played an influential role in shaping public attitudes toward nuclear power (Vossen, 2020). Due to frequent media coverage of nuclear hazards, people tend to overestimate their probability (Ho *et al.*, 2019). However, experts with opinions that differ from the general consensus in media stories about nuclear energy prevent the common public opinion from being displayed (Merkley, 2020). To understand how the media discourses on nuclear energy as sustainable energy are constructed, this paper examines the implications of the adoption of the Complemented Delegated Act on EU taxonomy by the European Commission on July 6, 2022, by employing a critical discourse analysis (CDA) methodology across 695 news

articles. This research contributes valuable insights into understanding how media shapes and influences public perception of sustainability energy policies, amplifying specific actors' voices and steering discourse toward distinct trajectories. Such insights are crucial in crafting energy policies.

2. Literature review

2.1. Sustainability and energy policy

The term sustainability can be interpreted differently depending on the specific context in which it is employed. The ambiguity and imprecision of the concept contribute to its adaptability in various contexts, catering to the diverse economic and political interests of different societies (Salas-Zapata & Ortiz-Muñoz, 2019). In some instances, governments and international agencies have invoked the concept of sustainability to legitimise their development initiatives. Similarly, the private sector has adopted this concept through "sustainable finance" by incorporating sustainable practices that could generate economic profitability (Yamada *et al.*, 2022).

The discussion on sustainability has brought energy to the forefront of sustainable development. According to the International Energy Agency, energy is at the heart of the sustainable development agenda for 2030 (IEA, 2018). Notably, energy efficiency stands as a critical pillar for sustainable economic growth, as any constraints in this aspect can exert direct repercussions on a nation's economic advancement (Zakari *et al.*, 2022). In this context, experts argue that energy must be reliable, clean and affordable to support sustainable development (Ho & Kristiansen, 2019).

A critical aspect of economic development is energy policy, a cornerstone that reverberates through economic, foreign, and both national and international security agendas (Filho & Voudouris, 2013). In this regard, investments in low-carbon energy sources, such as renewable electricity, nuclear power, and fossil fuels with carbon capture and storage, assume paramount significance for achieving sustainability goals (McCollum *et al.*, 2018).

There is debate among authors about what constitutes sustainable and environmentally friendly investments. This has led to questions on how to prevent "greenwashing" when different opinions exist on whether a particular investment or project is truly "green" (Smoleńska & van 'T Klooster, 2022). To address this issue, the EU Taxonomy Regulation requires that an economic activity fulfil specific criteria to be considered "environmentally sustainable." Nevertheless, until February 2022, natural gas and nuclear energy were excluded from the list of sustainable investments. This changed with the publication of a Complemented Delegated Act by the EU which proposed expanding the EU Taxonomy framework to include these energy sources (European Commission, 2022).

To achieve climate neutrality by 2050, the EU aims to reduce greenhouse gas emissions, improve energy efficiency, and increase the use of renewable energy sources (Zhu *et al.*, 2022). This includes investments in renewable electricity, nuclear power, and fossil fuels with carbon capture and storage (McCollum *et al.*, 2018). The EU Taxonomy's Complemented Delegated Act supports these goals (Godzinska & Pastukhova, 2022), and its positive outcome could be a significant step towards achieving the EU's goal of becoming climate neutral (Stefano, 2022).

2.2. Discourses on nuclear energy and sustainability

The term 'discourse' refers to how we speak and think about people, things, and the social structure of society, as well as the relationships among and between those things. In addition to giving structure and order to language and thought, discourse also structures and orders our lives, our relationships with others, and society in general (Fairclough, 2013). As a result, it shapes what we know and think at any given time (Mcgregor, 2003). Hence, sociologists view discourse as a productive force because it shapes our thoughts, ideas, beliefs, values, identities, and interactions with others. By doing so, it shapes people and society. Discourse is often

considered to be the language used in specific social or political contexts, in which language is used in order to achieve some form of change or to achieve some kind of goal (van Dijk, 1998).

The discourse surrounding nuclear power has been ongoing for almost a century. This discourse is understood as a complex network of representations and meanings associated with nuclear energy, which is often characterised by essential themes, metaphors, and beliefs (Kinsella, 2005). The discourse on nuclear power encompasses a range of complex and interrelated issues and can be found in scientific literature, political discussions, and even in educational and tourist locations such as museums and other tourist sites (Mažeikienė *et al.*, 2019). As a result, discussions about the relationship between nuclear energy and sustainability have often been heated and divisive.

Nuclear energy has been stigmatised for decades due to its military origins and the negative effects of radiation (Baron & Herzog, 2020; Nestle, 2012). However, some studies have emphasised the substantial contribution of nuclear energy towards the transition to sustainability (Filipovic *et al.*, 2017; McCollum *et al.*, 2018), leading to divided public opinion on the issue (Ho & Kristiansen, 2019).

Some experts, such as Prado-Roman *et al.* (2020), argue that assessing the sustainability of nuclear fission energy production is challenging due to long-term waste management and uranium depletion. On the other hand, Duffey (2005) underscores nuclear energy's zero GHG emissions and its potential for a sustainable and secure future. Meanwhile, Adamantiades and Kessides (2009) take a more balanced view, acknowledging the benefits of nuclear energy in reducing GHG emissions but identifying "significant issues" like nuclear safety, radioactive waste, and proliferation that create public opinion and decision-maker scepticism. In contrast, certain politicians urge a nuclear phase-out due to safety concerns, particularly post the Chernobyl incident (Bizzozero *et al.*, 2004), while others highlight nuclear power's low-carbon, secure attributes akin to wind and hydropower (Sánchez Nicolás, 2022).

2.3. Shaping media discourses on nuclear energy and sustainability

The media discourses on nuclear energy and sustainability centre on how media outlets present and disseminate discussions regarding nuclear energy as a feasible and sustainable energy source (Ersoy & İşeri, 2021). These debates, also known as nuclear discourses, have a significant impact on how key issues about nuclear energy's feasibility and sustainability are framed and perceived by public opinion (Kratochvíl & Mišík, 2020; Mažeikienė *et al.*, 2019). However, the media rarely places nuclear energy in the context of climate change (Vossen, 2020).

Various scholars have analysed media discourses on nuclear energy (e.g., 25,35,36,37) and on sustainability (e.g., 38,39,40). Gamson and Modigliani (1989) pointed out an "either/or" framework in the representation of media discourse on nuclear power. Since the media discourse on nuclear energy was focused on the destructive power of the atom ever since Hiroshima and Nagasaki in 1945, during the late 1950s the movement against atmospheric testing of nuclear weapons brought the long-range dangers of radiation to the public's attention. In the 1960s, the media discourse portrayed nuclear power as progress. During the late 1960s and early 1970s, nuclear non-proliferation progressed, and setbacks occurred.

Catellani (2012), for his part, showed how a pro-nuclear discourse is constructed when nuclear power is associated with technical progress and presented as a source of human development. There are similar pro-nuclear discourse tendencies in Turkey, where nuclear energy is associated with technological advancement, productivity, competitiveness, economic growth, environmental protection, a secure energy supply, and stable energy prices (Balkan-Sahin, 2019; İşeri *et al.*, 2017).

Sustainability has gone from fringe news to key policy discourse. There's still a lot of fragmentation in the sustainability discourse, with different challenges getting different levels of attention. However, most previous studies focused on climate change coverage in the media (Barkemeyer *et al.*, 2018). Environmental sustainability is heavily featured, with an emphasis on

global warming, tightening energy, water, and food supplies, and the overarching goal of making the world more eco-friendly (Diedrich *et al.*, 2011; Patterson *et al.*, 2021).

The recent global energy crisis has led to a rethinking of nuclear energy as a sustainable source of energy. Upon reviewing the literature, it has been discovered that several studies have been conducted concerning nuclear energy, public opinion about nuclear energy, and media discourse about nuclear energy (Du & Han, 2020; Ho & Kristiansen, 2019; Mercado-Sáez *et al.*, 2019; Vossen, 2020). Some studies have also been conducted concerning sustainable energy and sustainability as a whole (Arslan *et al.*, 2021; Ji *et al.*, 2021). However, the media discussions specifically addressing nuclear energy's sustainability remain unexplored.

3. Methodology

The study uses critical discourse analysis as a methodological tool (van Dijk, 1998; Wodak, 2004). This analytical approach highlights how discourse can be shaped to legitimise the dominant narrative, exposing the ideological background of political reflection and energy policy choices (Kramer, 2007).

3.1. Data collection

The data collection process was carried out in two phases. Firstly, we searched the news items using Lexis Nexis by combining two keyword groups: "nuclear energy" and "the recent EU green energy declaration." It was spanned from June to December 2022, with June being the starting point as it provided contextual information for the Complemented Delegated Act announced by the European Parliament on July 6, 2022. The news articles were collected from newspapers and yielded a total of 7,822 items.

Secondly, we narrowed the sample to news items that strongly emphasised the concept of "sustainability." To achieve this, we entered the data into the Python programming language and searched for 10 relevant keywords regarding "sustainability" issues ('sustainability', 'sustainable', 'green', 'climate', 'planet', 'greenwashing', 'clean', 'renewable', 'transition', 'environment') within the body of the news. We found 3,804 files that have at least one keyword from the group. In order to select the most relevant articles, we reduced the sample to 797 news items that included at least 5 of the identified keywords each one. With 102 duplicate news items excluded, the final sample comprised 695 news articles. By applying a rigorous criterion, we gain a more profound understanding of how the media frames the complex relationship between nuclear energy and sustainability.

3.2. Data analysis

This study was focused on three discursive strategies –nomination, predication, and argumentation– originally developed by Wodak (2004). Strategies of nomination aim to identify and analyse the main actors in energy policy discussions as defined by the media discourse, including their characteristics and roles. Strategies of predication examine how different actors and policy options –such as energy sources– are described and evaluated in terms of positive or negative values. Finally, strategies of argumentation create chains of arguments that connect the actors to the policy prescriptions. Through manual coding, this study explores frames used to justify the inclusion or exclusion of specific energy sources, and how these frames form a complex discourse which leads to the desired policy outcomes. The essential stages of the CDA process undertaken are outlined in Table 1.

Table 1. Critical Discourse Analysis Process.

CDA steps	Description
Discourse Identification	Select the specific discourse to be analysed.
Contextualization	Situate the discourse within its social and political context.
Description of Nomination Strategies	Identify how key actors are named.
Description of Predication Strategies	Analyse how actions are described or attributed.
Description of Argumentation Strategies	Examine persuasive and argumentative tactics.
Analysis of Power Relations	Identify hierarchies and positions of power.
Interpretation and Conclusion	Develop a critical understanding of the discourse.

Source: Adapted by Wodak, 2014.

4. Results

Following the data analysis, strategies of nomination identify four major actors: countries, professionals, organizations, and politicians. Strategies of predication reveal that actors' opinions fall into positive, negative, and mixed. Lastly, strategies of argumentation demonstrate that the principal arguments are constructed around support for and opposition to nuclear energy as a sustainable source (Figure 1). The results obtained from the three strategies will be discussed in more detail below.

4.1. *Strategies of nomination*

In the strategies of nomination, we pinpoint key actors in media discourse, their attributes, and their stance on whether nuclear energy can be considered a sustainable source. This initial step delves into how the media portrays these actors and their characteristics (Kratochvíl & Mišk, 2020).

Countries stand as paramount actors within media discourse, with notable emphasis placed on certain countries within the EU –specifically Germany, France, and Spain– capturing significant media attention. Outside the EU, the United Kingdom (UK), the US, and Africa, alongside China, consistently feature as subjects of media scrutiny. Each country's perspective on climate change is elucidated through this media scrutiny, a lens that sharpens their positions. Particularly noteworthy is the examination of these countries' climate change responses in the pre- and post- Russia-Ukraine war. The war has also made Russia and Ukraine important actors. War is at the root of the energy crisis and energy security (Jilani & Masud, 2022), and most of the discourses are somehow related to it.

International organisations such as the EU and the European Commission –as an integral part of the EU–, the United Nations (UN), International Energy Association (IEA), as well as Greenpeace are the second most significant actors in media discourse. The analysis of the characteristics of these organisations in terms of energy and environment, we found the EU's policy aims to protect the environment and reduce risks to human health, biodiversity, and climate change. Climate change is a pressing concern for the UN, and the UN is encouraging all stakeholders to take action in order to reduce its impacts (United Nations, 2019). The IEA works with countries around the world to shape energy policies that ensure a secure and sustainable energy future (IEA, 2023). Greenpeace is an independent and global campaigning non-governmental organisation that works to change attitudes and behaviours, preserve the environment, and promote peace (Greenpeace, 2010).

The politician emerges as the third prominent actor. Within the realms of sustainability and nuclear energy, diverse political figures and heads of state espouse different opinions. For instance, a politician aligned with Spain's Environmentalist Party, Alianza Verde, and affiliated

with eco-socialist ideologies, vehemently criticizes the European Commission's verdict on nuclear energy and gas (*CE Noticias Financieras*, 2022b). Conversely, Philippine President Ferdinand 'Bongbong' R. Marcos Jr. voices his endorsement of nuclear energy (Mayuga, 2022). Distinct stances often separate government parties from opposition parties in numerous instances. Notably, while Australia's governmental policy historically opposed nuclear energy, the opposition party's leader initiated a formal evaluation process to explore the potential of advanced and next-generation nuclear technologies in enhancing national energy security and curbing power prices (Crowe, 2022).

Other significant actors are variety of professionals, for instance investors (corporations and financial institutions), economists, corporate professionals (CEO, Executive Director), climate expert (scientist, environmentologist, oceanologist), and energy experts (nuclear scientist, engineer, experts on renewable energy), are also active participants in the discourse. Eventually, these professionals help formulate policy by putting their valuable opinions in.

4.2. *Strategies of predication*

In the strategies of predication, we assessed the actors identified and assigned them (positive or negative) values, which facilitates the next step of argumentation strategies (Kratochvíl & Mišík, 2020).

Historically, Germany has held an anti-nuclear position in the nuclear debate after the Fukushima disaster (Nestle, 2012). This is more of a political debate because the issue is addressed by the politicians. However, because of the Russian-Ukraine conflict, Germany has been forced to keep its remaining nuclear plants operational beyond their scheduled end-of-year shutdown. During the pick point of energy crisis, Germany seemed to be changing its mind, but the most recent decision by the German government demonstrates that their stance remains anti-nuclear (Eddy & Solomon, 2023). Spain faces the same situation as Germany. Spain intends to shutter all seven nuclear power plants between 2025 and 2035 as a component of its strategy to achieve 100% renewable electricity generation by 2050 (Reuters, 2019). The Spanish government dismissed the EU's proposition to incorporate nuclear energy and natural gas within the EU taxonomy, reflecting a negative disposition towards nuclear energy's sustainability (Rauhala & Ariès, 2022). This shared aversion toward nuclear energy seems to be roots in both countries' steadfast commitment to environmental preservation and their apprehensions surrounding nuclear energy's associated risks.

Conversely, France is committed to developing peaceful uses of nuclear energy as a sustainable and carbon-free energy source. Ahead of the energy crisis, France is accelerating its move away from fossil fuels, and President Macron wants to streamline rules to build new reactors faster (Hook, 2022). The UK pursue a similar policy, with an emphasis on developing homegrown energy and small modular reactors in order to achieve net zero emissions (Rees-Mogg, 2022). The US is demonstrating its support for nuclear energy by passing the Inflation Reduction Act (IRA). Several key provisions of the IRA strengthen new and existing nuclear industry (Sharma, 2022). Additionally, China joined a nuclear energy cooperation with the UK and France that reflects its positive attitude towards nuclear energy. Despite being the world's largest energy consumer, China has made significant progress in reducing carbon emissions, including the development of nuclear energy in an orderly and systematic manner (Hook, 2022).

A comprehensive examination of the stances held by the US, the UK, France, and China toward nuclear energy uncovers a prominent motivation driving their endorsement: their aspiration to attain carbon neutrality by 2050, given their status as leading carbon emitters (Joselow *et al.*, 2022). Following the Russia-Ukraine conflict, these nations recognized the significance of energy security. Investing in nuclear energy emerges as a substitute for reliance on Russian fossil fuels. Ultimately, geopolitical control stands out as the primary impetus behind supporting nuclear power.

The Russia-Ukraine war makes Africa's gas more valuable than ever. As Europe seeks to decrease its dependence on Russian gas, African producers have new opportunities. Africa can take advantage of the war by investing more in oil and gas infrastructure. In this regard, African nations' attitudes toward nuclear energy are questionable (Lewis, 2022).

In terms of organisations, the European Commission (as the executive body of the EU) views nuclear energy as a solution to the continent's energy crisis and a means of achieving the EU's 2030 climate and energy targets (Stevens-Gridneff & Sengupta, 2022). When the European Union takes a decision, it represents the unity and interests of the region. The media discourse did not exhibit a cohesive perspective concerning the interrelation of nuclear energy and sustainability. Even though most states favour nuclear energy, some powerful states oppose it. This division is alarming for the unity of that region and may affect the implementation of future EU policies.

Most of regulatory agencies around the world show a positive attitude towards nuclear energy's sustainability. The International Atomic Energy Agency (IAEA) is part of the UN system. In addition to supporting current and upcoming nuclear programs around the world, the IAEA catalyses innovation and builds capacity in energy planning, analysis, and nuclear information and knowledge management. The IEA (International Energy Agency), another major regulatory agency, asserts that a green energy transition is impossible without nuclear energy (Jolly, 2022). The media discourse clearly illustrates that these entities share a common view of nuclear energy as a reliable and sustainable source of power.

The media portrays leading environmental organizations, such as Greenpeace, as staunch opponents of nuclear energy. In Greenpeace view, it was "greenwashing" (Smith, 2022). Upon conducting a comprehensive analysis of Greenpeace's stance in the discourse, it is apparent that they consider nuclear energy a risky and dangerous source of radioactive waste. Furthermore, it was evident from the media discourse that Greenpeace does not accept the long-term and economic benefits of nuclear energy. Interestingly, they consider renewable energy to be beneficial to the environment and the economy but refuse to acknowledge nuclear energy as a renewable resource.

In the media discourse, a high level of political participation was observed. However, politicians' opinions diverged significantly: they either ardently endorse nuclear energy as a sustainable power source or steadfastly oppose it. For example, while French President Emmanuel Macron advocates substantial nuclear investment (Chrisafis, 2022), Austrian Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology, Leonore Gewessler, characterises this move as a form of greenwashing, contending that it falls short of the ambitions outlined in the Green Deal. Concurrently, Luxembourgish Energy Minister Claude Turmes pledges backing for Austria's stance (Heindrichs, 2022).

In terms of nuclear energy's sustainability, different professional groups participated in the discourse. It seems from the discourse of economic experts that nuclear energy cannot yet support full industrial operations with fossil fuels. As a result, economic experts are not in favour of nuclear energy (*The Economist*, 2022). Their possible assumption is that nuclear energy will slow down economic growth. Nevertheless, the potential of nuclear energy is recognized by energy experts, climate experts, and corporate professionals. In the long run, they found this energy transition feasible to protect the climate and ensure energy security (*The Star*, 2022). In general, investors are confused because there is no specific guideline describing what constitutes a sustainable investment (Lim, 2022).

In shaping public attitudes toward nuclear power, news coverage has played an influential role (Vossen, 2020). Past research has shown that around 70% of newspaper headlines depict nuclear energy or responses to nuclear incidents in an unfavourable light (Koerner, 2014). However, recent developments like the energy crisis and the Russia-Ukraine war (Tank, 2022), have shifted the way nuclear energy is portrayed in the media.

The Russia-Ukraine conflict has exacerbated calls for an accelerated energy transition. This would result in countries moving away from highly polluting fuels in favour of renewable energy sources. Nuclear energy is now considered a viable alternative by major industrial nations, such as the United States, the United Kingdom, France, and China. Eventually, many countries could follow their example. There is also a scientific consensus in support of nuclear energy. Nuclear energy has been acknowledged as safe and efficient by many scientific discourses (Tonkin, 2022). The views of global leaders and politicians were on the extreme side. Clearly, their viewpoints reflect their political ideology rather than being influenced by reality.

4.3. Strategies of argumentation

In the strategies of argumentation, we looked at how arguments developed regarding nuclear energy's sustainability which is surrounded by four major themes: climate change, energy crisis, energy transition and energy security.

Germany has been a leader in reducing greenhouse gas emissions to fight climate change. Due to the closure of its nuclear plants, which didn't emit greenhouse gases or air pollution, Germany increased its coal use to make electricity, the most carbon-intensive fossil fuel, including lignite, or brown coal, which is dirty. It's argued by the media that Germany is compromising its climate change priority to ensure energy security (Goldstein, 2022). Austria's Minister, Leonore Gewessler assured that neither gas nor nuclear power meet the criteria for being considered sustainable: "the inclusion of nuclear and gas in the taxonomy increases the risk of greenwashing and of an uptick in investments into projects that do not help us reach our climate ambition" (par. 4) (Hodgson, 2022). This argument is constructed to discredit nuclear energy as a source of sustainable energy, which risks being associated with greenwashing.

Meanwhile, France is using nuclear energy to assure its sovereignty and energy security (WNN, 2022). In alignment with this perspective, full control over the energy sector is deemed indispensable. Consequently, France is undertaking the nationalization of EDF to oversee the shift away from fossil fuels amid the ongoing energy crisis. French Prime Minister, Elisabeth Borne, conveyed that the government's ownership of EDF would be raised from 84% to 100%.

The US president Biden's team has recommended that nuclear power be preserved and expanded to reach the administration's goal of 100% clean electricity production by 2035. The administration also plans to keep reactors online while ramping up renewable energy generation. The US Secretary of Energy, Jennifer Granholm, says that nuclear power is necessary for the nation to meet its clean energy goals, and the Biden administration has pledged another \$1.2 billion for the cause (Canon, 2022). This argument underscores the crucial role of electricity generation, unsurprising given the US' historical emphasis on economic growth, inseparable from reliable power.

The UK and China also have similar pro-nuclear stances. The UK Prime Minister, Boris Johnson, pledged massive expansion of nuclear power in final act as Prime Minister. He planned to build eight reactors in the UK at a pace of one a year and buy stake in new nuclear power station. Johnson stated that "the British energy security strategy is not just about meeting demand today, but many years hence" (par. 11) (Martin, 2022).

As China goes through a green energy transition, the country will have to rely primarily on non-fossil energy to reach its carbon peak goal by 2030. "China will accelerate the expansion of the installed capacity and maintain the approved start-up rhythm of 6-8 nuclear power units per year between 2022 and 2025" (par. 10), Wang Shoujun, chairperson of the Chinese Nuclear Society, said at a recent seminar (Patranobis, 2022). These arguments are built upon the assumption that nuclear energy is an efficient, cost-effective, and sustainable source of energy.

Africa's position in terms of nuclear energy's sustainability is mixed. The roll-out of nuclear power plants is in various stages in seven African countries, with the majority targeting 2030 as a start date. These countries are buying vendors, mapping appropriate sites, and commissioning reactors. On the other hand, as Europe moves to ban Russian oil, it has searched the world for

alternative energy sources, including Africa. A potential alternative energy source for Europe could be African oil and gas. Many African nations see this as an opportunity for economic development as Africa's natural resources are vast and untapped. Therefore, they plan to export fossil fuels, and nuclear energy is a last resort (East Africa, 2022).

Different groups and organizations are pushing distinct strands toward nuclear energy's sustainability. The first group supports the intensive deployment of nuclear power plants, positing that COP26 climate goals cannot be achieved without nuclear power. Some of the more credible voices on this issue are the United Nations Economic Commission for Europe (UNECE) and the International Atomic Energy Agency (IAEA). The IAEA director general, Rafael Grossi, has gone so far as to explicitly state: "Nuclear energy is part of the solution to global warming, no way around it." According to the IEA, nuclear power can play an important role in enabling secure transitions to low-emission energy systems (*CE Noticias Financieras*, 2022a). The European Commission stated it has decided that nuclear and gas, both types of energy, can be classified as "sustainable investments" if they meet certain targets (Rauhala & Ariès, 2022). Nuclear energy was emphasised as a possible solution in these arguments.

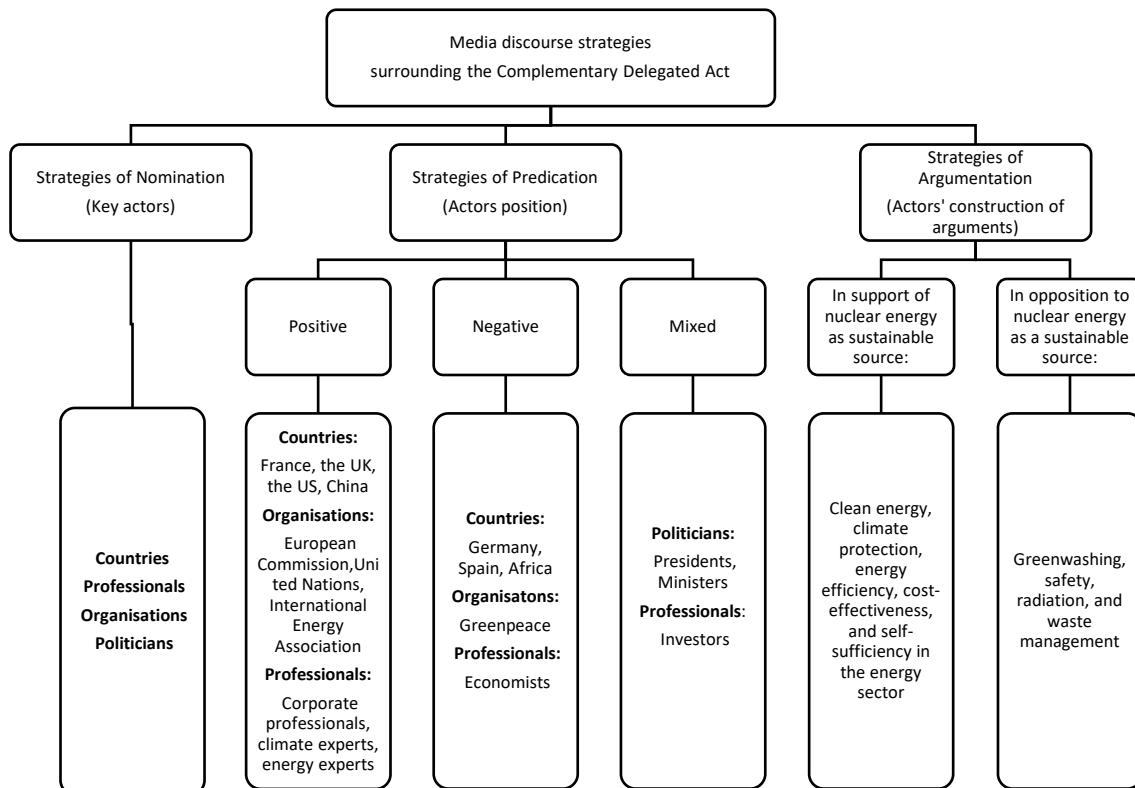
Nuclear power is explicitly rejected by the second group. Greenpeace, for example, opposes the European Commission's declaration that nuclear energy is a sustainable energy source. Moreover, they also criticised Emmanuel Macron's announcement of building new nuclear reactors to meet carbon emission targets and control energy prices. They claimed that the plan was "disconnected from reality" and that "no nuclear power is needed to combat climate change" (Gilmour, 2022). These arguments challenge the validity of the concept of sustainable nuclear energy, as the risks associated with nuclear energy exceed the benefits. Consequently, these arguments question the validity its potential for long-term sustainability.

Different professional groups have differing opinions. Some economic experts prefer fossil fuels over nuclear energy because they believe that the energy transition is necessary, but that it will be time- and cost-consuming (*The Economist*, 2022). Therefore, there may be a long-term impact on the economy. The concept of sustainable nuclear energy is well received by energy experts (Tonkin, 2022). There is a lack of confidence among investors regarding the sustainability of nuclear energy. The lack of a proper guideline makes it difficult for them to support one side over another (Klasa, 2022).

The main topic of the media discourse was seeking a feasible energy solution that could solve all the problems. A major focus was the European Commission's positive decision regarding nuclear energy, which was declared to be a green and sustainable source of energy. As a matter of fact, it is the recent event that has drawn the attention of the media. However, on the climate issue, it was the need for an alternative energy source that was of critical importance.

Scholars indicate that sustainability holds varying meanings to different individuals (Fien & Tilbury, 2003). This observation resonates with our analysis, highlighting that disparities exist among actors regarding sustainable energy. Within the discourse, diverse viewpoints have been articulated by different actors in relation to this subject. We found that media promotes sustainability from different actors' perspectives rather than taking a side.

Figure 1. Media discourse strategies surrounding the Complementary Delegated Act.



Source: Own elaboration.

5. Discussion and conclusions

Against the backdrop of an energy crisis prompted by the Russian-Ukrainian war and the EU-Delegated Complemented Act adopted, this study delves into the media's discourse strategies in promoting sustainable policies, with particular emphasis on nuclear energy.

The media play a vital role in promoting nuclear energy as a sustainable energy option. This study shows that the media's perspective has undergone a transformation over time. During the Russia-Ukraine conflict's progression, media coverage encompassed a spectrum of war-related matters, including the energy crisis itself. However, when the energy crisis was in peak, the European Commission declared that nuclear energy is a sustainable option and could be an effective solution to the current energy crisis caused by this conflict (European Commission, 2022). This event generated extensive media coverage throughout the world.

Nuclear energy is currently gaining significant acceptance as a sustainable energy source and its inclusion in the EU taxonomy is a significant milestone in this process. The media are now treating nuclear energy with a more welcoming attitude, despite the fact that nuclear power was portrayed negatively even in the past decade (Baron & Herzog, 2020). The discourse surrounding 'sustainable nuclear energy' highlights the substantial interaction between political decisions on sustainable energy and the considerable economic impact they exert. Nuclear energy has the potential to stabilize local and national economies, reduce electricity price fluctuations, and decrease reliance on oil and gas. Thus, it is essential that the media convey this intricate relationship to the public in a responsible and accurate manner.

This study highlights the key role of the media in the communication of energy policies. Effective media coverage not only contributes to public acceptance of the European Commission's energy decisions but also shapes public discourse on the sustainability of nuclear energy. Moreover, a media narrative in favour of nuclear power plays a crucial role in persuading

investors to view nuclear energy as a green and viable source. With the aim of transforming the EU into a modern, resource-efficient, and competitive economy by 2050, the significance of the Taxonomy Regulation has become more pronounced, with the recent addition of the Complementary Delegated Act in EU taxonomy.

Given this context, it becomes evident that media coverage holds substantial weight in guiding investors towards projects promoting cleaner and greener energies. This, in turn, aligns with the overarching goal of making Europe the world's first carbon-neutral continent. Anticipating the continued evolution of regulations in the coming years, it is imperative to develop a comprehensive media strategy that accentuates sustainable energy policies. Such a strategy can have the potential to deliver a clear and positive message, supporting the pursuit of a more prosperous and sustainable future.

This study has certain limitations. Firstly, the choice of countries and newspapers was limited by the coders' language proficiency and access to specific newspapers contained in the LexisNexis database. Secondly, the analysis was conducted during a specific period time and context. Thirdly, the media coverage of regional newspapers is influenced by the political views of the nation (Martin, 2022; Rees-Mogg, 2022). Therefore, it is difficult to draw general conclusions from the sample.

Thus, future research might examine whether media coverage places equal importance on topics across regions. An alternative research approach would be to analyse specific actors' perspectives on this issue. Analysing the community's perception and reaction to the European Commission's decision on nuclear energy and sustainability could be an interesting area to explore. In addition, it would be useful to perform the analysis over a future period to determine whether the trend will continue. Furthermore, delving into the influence of culture on energy consumption decisions during times of crisis presents another promising avenue. This inquiry would shed light on how varying cultures navigate crisis situations while upholding their daily operations.

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