

NO DECARBONIZATION AND ENERGY TRANSITION BUT AN INTERESTING BUSINESS OPPORTUNITY: MEDIA DISCOURSE ON RENEWABLE HYDROGEN IN THE CZECH REPUBLIC

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In the EU, renewable hydrogen may seem to be experiencing a hype. However, the situation in the Czech Republic is different. Despite the acceptance of several political strategies and legislation on renewable hydrogen, as well as policymakers speaking about hydrogen technologies, the public has shown little interest in the topic. As researchers have shown, one link between policymaking and public debate is the media. We addressed two research questions: 1) What attributes and themes link media messages to renewable hydrogen, and 2) Which actors are associated with renewable hydrogen in the media, and how are these actors portrayed? To find answers, we conducted a content analysis of 78 articles from selected Czech media outlets between 2021 and 2025. Regardless of the outlet, we found that business discourse dominates, presenting renewable hydrogen as a business or investment opportunity. Media framing has made renewable hydrogen a business topic that the public acknowledges but does not feel the need to engage with. Additionally, we found that the portfolio of actors mentioned in connection with renewable hydrogen corresponds with how it is framed. Economic actors were mentioned most frequently in the corpus. Other actors play relatively insignificant roles in the renewable hydrogen segment, including the state and the EU. While SMEs and their successful projects receive the most media coverage in the renewable hydrogen field, this positive image does not bring fundamental topics to public debate. Regarding renewable hydrogen, Czech media has not built bridges between policymakers and the public nor laid the groundwork to do so.

Keywords: renewable hydrogen, the Czech Republic, media discourse

Submitted: 23. 3. 2026, Accepted 20. 9. 2026

1. Introduction

In recent years, the European Union (EU) and its member states have paid close attention to climate change and energy transition. The EU has repeatedly declared its intention to achieve carbon neutrality in the coming decades. The plans to achieve decarbonization and energy transition include the use of renewable hydrogen, which is produced by electrolysis using renewable energy sources. The use of renewable hydrogen appears in EU policy and strategy documents and plans, such as the European Green Deal, EU Hydrogen Strategy and REPowerEU. Legislative acts directly committing Member States to using renewable hydrogen and building hydrogen infrastructure have also been adopted and include RED 3 Directive, regulations AFIR, FuelEU Maritime, and ReFuelEU Aviation, and the so-called Gas Package.¹ With the European Commission's support, programs such as the European Hydrogen Bank (which supports renewable hydrogen production), the European Hydrogen Backbone (which supports the construction of trans-European hydrogen

pipelines) and the Clean Hydrogen Partnership (which supports the research and innovations in hydrogen technologies) are being implemented.

Interest in renewable hydrogen is also evident in the Czech Republic at the political, strategic, and legislative levels. The country has adopted two national hydrogen strategies (2021 and 2024), and has repeatedly expressed interest in hydrogen in National Clean Mobility Action Plans and in the National Energy and Climate Plans.² The government has issued several calls for proposals to support the implementation of hydrogen projects (known as GreenGas calls) and research projects dealing with the production or use of renewable hydrogen are supported as well. In 2024, National Center of Hydrogen Mobility (www.cistadoprava.cz/nahyc-m/) was established to streamline hydrogen research in the Czechia. The Czech Republic is diligently working to transpose EU legislation, and the use of renewable hydrogen and hydrogen technologies has become part of Czech law.³

¹ Gas package includes Regulation 2024/1789 on the internal markets for renewable gas, natural gas and hydrogen and Directive 2024/1788 on common rules for the internal markets for renewable gas, natural gas and hydrogen.

² All Czech strategic documents are available at Databáze strategií ČR (www.databaze-strategie.cz/cz/CR).

³ Semi-structured interview with Veronika Vohlídková, an executive director of HYTEP, December 4, 2025; Semi-structured interview with Petr Mervart, Plenipotentiary of the Minister of Industry and Trade for Hydrogen Technologies, November 18, 2025

Three of the fourteen regions⁴ have their own hydrogen strategy and are planning to build hydrogen valleys and implement several cross-border hydrogen projects.⁵ In this context, renewable hydrogen may seem to be experiencing a hype in the Czech Republic. However, the reality is different. There is minimal interest in hydrogen tenders, and companies are postponing or delaying the implementation of hydrogen projects, including the repurposing of the gas network.⁶ Public opinion polls show that the public knows virtually nothing about renewable hydrogen and hydrogen technologies [1, 2, 3].

The Czech case thus presents an interesting situation: the topic of 'renewable hydrogen production and use' has been present in policymaking for almost a decade, ever since work began on the first Czech National Action Plan for Clean Mobility (2015) and Hydrogen Strategy (2020). However, the public has shown little interest in hydrogen, and companies have been rather lukewarm towards it. Consequently, there is a gap between the emphasis placed on this topic by policymakers and its presence in public debate. As many studies show, one of the links between policymaking and public debate is the media particularly in case of new technologies [4]. The aim of this text is to examine how Czech media cover the renewable hydrogen and what picture of renewable hydrogen the Czech media has created. In other words, how does the media frame renewable hydrogen, and what is the media discourse on hydrogen in the Czech Republic? Media are mediating force between powerful interests, policy makers and the public and media coverage, especially for novel technologies on which the public does not yet have fixed attitudes, can influence public perception as well as individuals' attitudes [4, 5]. The Czech media's stance on renewable hydrogen and new hydrogen technologies could help to explain the Czech public's low awareness of hydrogen and hydrogen technologies, the weak or non-existent public debate on renewable hydrogen and companies' low interest in hydrogen projects.

Based on the argument above, we pose the following two research questions:

RQ1: What attributes and themes link media messages to renewable hydrogen?

RQ2: Which political, social, academic/scientific and economic actors are associated with renewable hydrogen in

the media, and what is the relationship of these actors to renewable hydrogen according to media messages?

This text is divided into four sections. The first part presents the theoretical foundations of the research and the research design. In particular, it familiarizes the reader with the process of creating and analyzing a corpus of media messages. The second section analyzes the corpus of texts and seeks answers to the first research question. Specifically, it deals with the framing of renewable hydrogen in selected Czech media. The third section analyzes the actors appearing in the media messages and examines their relationship to renewable hydrogen according to the messages. Finally, we summarize and discuss the results in the context of the Czech Republic and Czech hydrogen policy. As we will explain, renewable hydrogen is framed as a business opportunity in the Czech case. This discourse clearly dominates the corpus under study; no other discursive strand is present. Our findings suggest that the Czech case could be of interest to scholars of transitions studying media exposure to new technologies and the influence of media coverage on technology trends, as well as to communication scholars studying media effects. This is because the Czech case demonstrates how a topic present in policymaking has been ignored by public debate.

2. Theory and research design

As the research questions suggest, the main goal of this text is to explore how renewable hydrogen is framed in the Czech media and to identify the discursive strands within the hydrogen discourse in the Czech media. Research formulated in this way is aimed primarily at obtaining data and answers that would strengthen public policy-making. The media plays an integral role in shaping public discourse, influencing policymaking, and determining which issues receive public and governmental attention. Social scientists did not have devoted considerable attention to discourse on energy and climate change in the Czech Republic. To date, attention has been focused only on certain topics: the discourse on fossil fuels [28], the discourse and public policies related to nuclear energy [7], and, more generally, the discourse on climate change [8, 16, 27]. The field of renewable hydrogen has largely remained outside their scope.⁷ This is most likely due to the novelty

⁴ Ústecký kraj (region), Moravsko-slezský kraj and Karlovarský kraj.

⁵ Semi-structured interview with Karel Tichý, a hydrogen representative from Ústí and Labem region, November 25, 2025; Semi-structured interview with Rut Bízková, a representative of hydrogen group of former coal regions, October 10, 2025

⁶ Semi-structured interview with Ivo Marcin, a head of strategy section, State Environmental Fund, October 13, 2025; Semi-structured interview with Petr Mervart, November 18, 2025

⁷ The only country where authors has been until now conducting research into media discourse on renewable hydrogen is Germany: see joint research by the University of

Münster and Bremen H2Media or: D. Arlt, M. Becker, J. Wolling, Stability, change, formation: insights into the media's role in shaping attitudes toward green hydrogen in Germany, *Int. J. Hydrogen Energy* 97 (2025) 328 – 337. <https://doi.org/10.1016/j.ijhydene.2024.11.380>. A. Belova, C. Quittkat, L. Lehotský, M. Knodt, J. Osička, J. Kemmerzell, The more the merrier? Actors and ideas in the evolution of German hydrogen policy discourse, *Energy Research & Social Science* 97 (2023) 102965. <https://doi.org/10.1016/j.erss.2023.102965>. N. Ohlendorf, M. Löhr, J. Markard, Actors in multi-sector transitions – discourse analysis on hydrogen in Germany, *Environmental Innovation and Societal Transitions* 47 (2023) 100692. <https://doi.org/10.1016/j.eist.2023.100692>.

of hydrogen technologies and considerations regarding their potential use in the energy transition and achieving climate neutrality. It is, however, a missed opportunity, as renewable hydrogen has become one of the key issues in Czech public policy; it is worth noting, for example, that the Czech Republic has already adopted its second National Hydrogen Strategy (2021, 2024) and that government agencies have issued yet another call for grant applications for hydrogen projects (see above).

The present research is based on theory of framing. In democratic political environments, framing links politicians and other opinion leaders to the public, primarily through the media. Framing refers to the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue [9]. A frame in a communication organizes everyday reality by providing meaning to an unfolding strip of events and promoting particular definitions and interpretations of political issues [9].

We will proceed in two steps here. First, we will examine how renewable hydrogen is framed in the Czech media. Second, using this information, we will analyze the discursive strands on renewable hydrogen within the Czech media. Discourses are “an ensemble of ideas, concepts, and categories through which meaning is given to social and political phenomena, and which are produced and reproduced through identifiable practices” [10]. They determine which material realities are considered and define what constitutes relevant material reality for a specific policy [7]. How renewable hydrogen is framed and the discursive strands will be analyzed with qualitative content analysis of selected Czech media. The procedure used to create the corpus of articles for the content analysis is described below. To identify the primary frames and discursive strands, the articles were read repeatedly and coded. In the initial phase of the analysis, we created codes for specific aspects of renewable hydrogen (see Table 1), based on our knowledge of academic literature on hydrogen, as well as the of hydrogen context in the EU and the Czech Republic. The analysis itself has been a combination of deductive and inductive coding processes, and an abductive movement between theory and research questions [11]. Then the aspects, dimensions and frames were examined in comparison across analyzed media and with larger social context and events outside the selected corpus. Consequently, discursive strands were identified.

2.1. Corpus: the media landscape and data creation

Every content analysis requires a solid corpus of data. For this analysis, the corpus consists of articles from three most trustworthy written Czech media:

Hospodářské noviny, Mladá Fronta DNES (MF Dnes), and Seznam Zprávy. 55 per cent of people believes Hospodářské noviny, to Seznam Zprávy believes 54 percent of people and MF Dnes believes 45 percent of people.

Table 1 Possible frames of renewable hydrogen in the Czech media

Renewable hydrogen
Is one of pillars of energy transition and of a complete decarbonization
Is business opportunity
Is opportunity for achieving energy security
Is generally not developed, is scarce and expensive
Is a new technology with great potential
Is issue dictated from Brussel

More people believe only to Czech Television and Czech Radio [12]. MF Dnes was established in 1990 and today, it is the second largest Czech newspaper after tabloid Blesk. Since 2007 MF Dnes has printed as well as on-line free accessible version iDnes.cz. All articles published in the printed MF Dnes are also published in the news portal iDnes and both media outlets share editorial staff [13]. In the period under analysis, the number of readers of the print form of MF Dnes was around 65.8 thousands people [14]. MF Dnes is general newspaper with no specific focus. Hospodářské noviny were established in 1990. Today, the printed form has about 21.5 thousands of readers [14]. The newspaper specializes in economic and business issues and its on-line version is not free accessible. Seznam Zprávy was established in 2016 as a general, free accessible on-line news. In the period under scrutiny, about 5 million people weekly read the Seznam Zprávy [15].

For our research, we compiled a corpus of 78 articles from the print editions of MF Dnes and Hospodářské noviny, as well as electronic articles from Seznam Zprávy (Table 2, Appendix 1). We used the full-text database of Czech media texts, NewtonONE (formerly ANOPress), to create the corpus of articles. The search keywords were ‘obnoviteln* vodík*’ (renewable hydrogen) and ‘zelen* vodík*’ (green hydrogen). These terms refer to the same type of hydrogen: hydrogen produced in an electrolyser using energy from renewable sources. The corpus consists of articles published between 2021 and 2025. We started by 2021, when the first Czech Hydrogen Strategy was published. We selected two months each year. In 2021 and 2024, these were July and August. We selected these months because the government approved the National Hydrogen Strategy in July 2021 and 2024 respectively, and we expected the media to temporarily devote more attention to this event and to renewable hydrogen in general. In 2022, we selected May and June. This was because, in May 2022, EU member states adopted the REPowerEU political strategy in response to Russia's invasion of Ukraine. This strategy declares that the EU will become energy independent from Russia. One of the measures proposed is increased use of renewable energy sources, including renewable hydrogen. As a country heavily dependent on Russian oil and natural gas, the Czech Republic was significantly affected by this

decision (more see section 3). We selected March and October 2023, and April and November 2025 as control periods, during which no significant hydrogen-related events occurred in the Czech Republic or the EU. A total of 424 articles on renewable hydrogen were published between January 2021 and December 2025 in *Hospodářské noviny*, *MF Dnes*, and *Seznam Zprávy* (Figure 1).

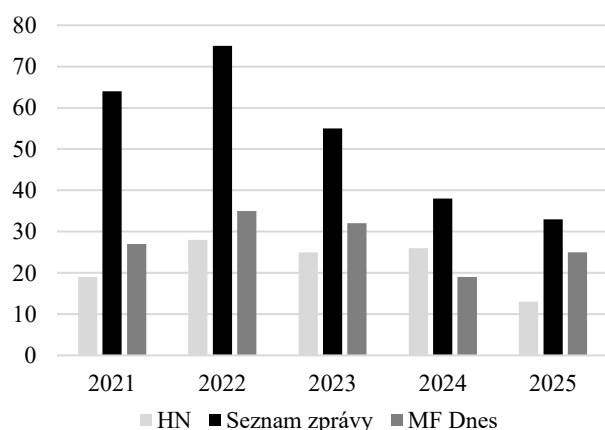


Fig. 1: Development of the number of articles on renewable hydrogen in selected media from 2021 to 2025

The corpus under scrutiny accounted for around 18 per cent of this content (Table 2).

Table 2 Number of articles under scrutiny by month from 2021 to 2025

Year	Month	HN	MF Dnes	Seznam Zprávy
2021	VII	3	1	6
	VIII	2	7	3
2022	V	3	2	2
	VI	4	1	6
2023	III	3	3	6
	X	2	2	3
2024	VII	5	0	1
	VIII	1	2	2
2025	IV	1	1	3
	XI	2	0	1
Total	----	26	19	33

Although the selection of the months analyzed may have slightly influenced the content of the texts, we analyzed two months in each year, with the months in 2023 and 2025 being selected at random (different months than in the other years). This random selection served not only as part of the corpus but also as a control sample.

3. RQ1: Attributes and themes linked to renewable hydrogen in Czech media

We pre-defined six possible frames (Table 1) for how the Czech media report on renewable hydrogen (RH), as well as the content that would fall within these frames:

- RH is one of pillars of energy transition and of a complete decarbonization: Under this frame, we have included texts that deal with the global energy sector's shift from fossil-based systems of energy production and consumption to renewable energy sources, in order to achieve zero carbon emissions. Complete decarbonization with renewable hydrogen involves producing hydrogen via electrolysis powered by RES, replacing fossil fuels in hard-to-abate sectors like heavy industry and transport, and integrating it with renewables to stabilize grids.
- RH is business opportunity: Under this frame, articles have been included that provide information about a specific renewable hydrogen business case, hydrogen investment or business intention.
- RH is opportunity for achieving energy security: Under this frame, we included articles discussing renewable hydrogen as a means of strengthening energy security, which is often disrupted by unstable energy resource supplies or fluctuating prices and hydrogen could be a domestically produced safe carbon free energy source. Here also texts were included that discuss the role of hydrogen in stabilizing the electricity grid, such as through storing electricity in hydrogen between seasons.
- RH is generally not developed, is scarce and expensive: In this category articles were included that discuss renewable hydrogen and hydrogen technologies as underdeveloped and commercially unviable respectively, speak about lack of hydrogen and no future possibility to get enough hydrogen for viable price. It also includes texts that highlight the high economic costs of certain hydrogen technologies, especially compared to existing carbon-neutral solutions.
- RH is a new technology with great potential: Under this frame, articles discussing the potential of hydrogen technologies and the opportunities they offer for various sectors of industry, transport, and energy are included. These articles provide information about technologies that are currently in use (such as fuel cells) or technologies that have potential for commercial use (such as using Liquid Organic Hydrogen Carrier for transportation of hydrogen).
- RH is issue dictated from Brussel: This category includes articles that discuss renewable hydrogen and hydrogen technologies as a topic and solution imposed on the Czech Republic by the European Union. We include texts emphasizing that hydrogen adoption is involuntary as well as articles stating that,

as an EU Member State, Czechia must respect EU legislation, including hydrogen measures.

Multiple readings of the texts revealed that the pre-selected categories were appropriate, and no categories needed to be removed or added. The analysis (Table 3 and Fig. 2) showed that articles about “renewable hydrogen as an interesting business opportunity” dominated the corpus, making up 32% of the articles. This framing is most prevalent in *Seznam Zprávy*, a general media outlet, and *Hospodářské noviny*, a more specialized outlet. The reason for this dominant framing of renewable hydrogen is not yet clear. The author of this text attributes this dominance to the Czech public’s lack of interest in environmental issues, with which renewable hydrogen is usually associated, and to journalists’ interest in presenting positive business stories from the Czech environment.⁸ News coverage of renewable hydrogen is not associated with decarbonization, a topic in which the Czech public shows little interest (see the following paragraph), but rather with the innovation capabilities of Czech companies and their so-called “golden Czech hands.” Additionally, both small and large companies recognize the importance of reputation and often approach the media themselves to report on interesting hydrogen projects.⁹ If companies do not do so directly, they use various platforms that bring together like-minded businesses. For instance, the Czech Hydrogen Technology Platform (HYTEP) regularly shares news from its members with the media and releases press statements about their new hydrogen projects.¹⁰ Although media reports on SMEs or start-ups presenting interesting hydrogen business cases benefit the companies, newspapers, and information brokers involved, they offer the public limited insight into hydrogen policy and technologies.

As mentioned above, the Czech perspective on the relationship between renewable hydrogen and decarbonization is distinctive. While the EU acknowledges renewable hydrogen as a critical path to achieving carbon neutrality in its political, strategic, and legislative documents, this topic is rarely discussed in Czech media, accounting for only 18% of articles. Studies examining the Czech public’s lack of interest in decarbonization indicate strong climate change skepticism [16, 17], distrust in the effectiveness of climate change mitigation measures, and negative attitudes toward actively participating in climate change mitigation efforts [18]. Czechs believe that the state should adopt and finance climate measures [17, 18], do not feel responsible for climate change (56% of respondents), and do not use or plan to use renewable energy sources (59% of respondents) [19]. While the media is not required to adopt this discourse, recent

research [8] has revealed that many Czech media outlets also exhibit a similar lack of interest in decarbonization.

In addition to the low level of interest in combining renewable hydrogen and decarbonization, there is also a low number of texts presenting renewable hydrogen as a strategy for strengthening energy security (14% of articles). Czechia belongs to the eastern wing of the EU. Less than a decade ago, it was practically 100% dependent on energy imports from the Russian Federation. Although the country took steps to diversify its energy sources after 1989, Russia still supplied over 50% of its gas and oil at the time of the Russian invasion of Ukraine in February 2022 [20]. The REPowerEU plan aimed to make the EU independent of Russian energy resources, which posed a significant challenge for the Czech Republic. This was reflected in domestic politics as well, where the P. Fiala government (2022–2025) committed to eliminating the country’s reliance on Russian energy resources [21, 22]. Therefore, it is surprising that one of the options for strengthening the country’s energy security — domestic production and use of renewable hydrogen — has rarely appeared in Czech media discourse. The explanation lies in public opinion again; public opinion polls indicate that the Czech public does not want to participate in relevant measures [17, 23] and that price is the only criterion for most respondents when deciding on energy sources [19]. In such a situation, neither the media nor policymakers wishing to promote renewable hydrogen find it attractive to link hydrogen with energy security. The Czech public will not be receptive to arguments such as “renewable hydrogen is more expensive, but it will strengthen the Czech Republic’s energy independence.”

The smallest number of texts in the corpus under investigation framed RH as “generally not developed, scarce, and expensive” (8% of articles). All articles were published in *Seznam Zprávy* (see Fig. 2). However, it is worth noting that twice as many texts from the same corpus fall under the frame “RH is a new technology with great potential” (16% of articles). Some of these articles were published in *Seznam Zprávy* as well. It is surprising that there are so few articles discussing renewable hydrogen and hydrogen technologies as an expensive solution in the context of Czechia. Given its climatic and geographical conditions, Czechia has only small renewable energy sources (RES), and the domestic price of renewable hydrogen production in 2025 ranged between 8 and 14 euros per kilogram. This is one of the highest prices in the EU [24]. In 2025, hydrogen was sold at a refueling station in Prague for 499 CZK/kg (20 EUR). Although importing renewable hydrogen appears cheaper, Czechia’s landlocked location means it will have to import renewable hydrogen via third countries.

⁸ Semi-structured interview with Martin Ehl, a journalist in *Hospodářské noviny*, September 15, 2025

⁹ Semi-structured interview with Martin Ehl, September 15, 2025; Semi-structured interview with Petr Zenkner, a journalist in *Hospodářské noviny*, September 15, 2025

¹⁰ Semi-structured interview with Veronika Vohlídková, December 4, 2025

Additionally, the construction of a trans-European hydrogen transportation infrastructure is delayed. This means that the Czech Republic will not be able to import cheaper hydrogen until around 2032. Notably, the topic

of hydrogen imports or the delay in constructing the hydrogen transmission network did not appear in the examined corpus.

Table 3: Distribution of texts on renewable hydrogen based on content analysis

Frames	Number of articles	Share of category in the corpus
Is one of pillars of energy transition and of a complete decarbonization	14	18 %
Is business opportunity	25	32 %
Is opportunity for achieving energy security	11	14 %
Is generally not developed, is scarce and expensive	6	8 %
Is a new technology with great potential	13	16 %
Is issue dictated from Brussel	9	12 %

Upon closer examination of the analyzed sample, we can see that, although all media outlets published articles on renewable hydrogen with varying intensity (MF Dnes the least and Seznam Zprávy the most), all frames can be identified in each outlet, albeit with varying frequency. The only exception is the frame “RH is generally not developed, scarce, and expensive” (see

Fig. 2) that was presented in Seznam Zprávy. The topic of price appeared in articles discussing the use of hydrogen in transportation (four articles) and, in general, the possibilities of hydrogen production in the Czech Republic (two articles). However, Seznam Zprávy also published the most frequently about “RH as a business opportunity.”

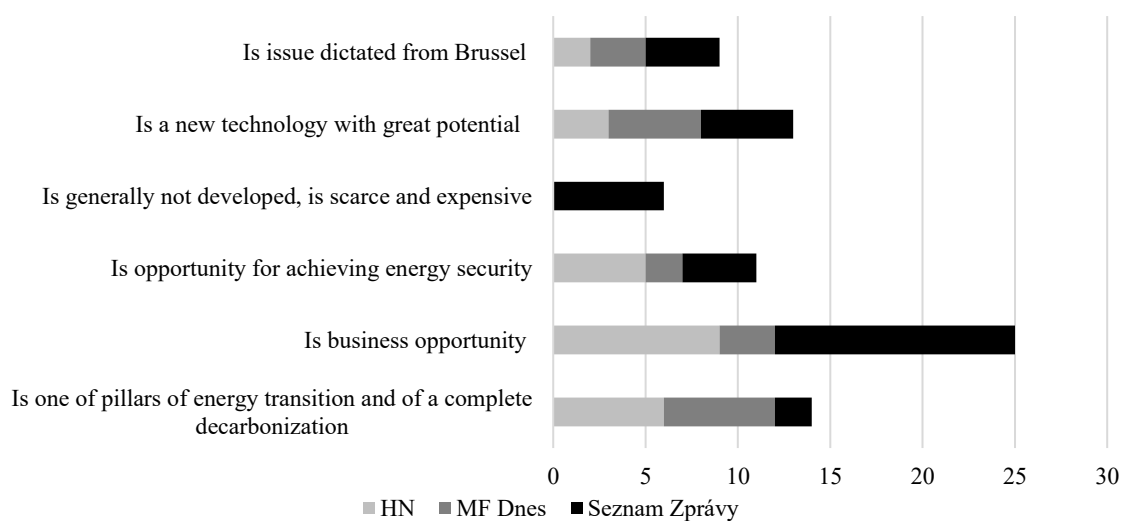


Fig. 2 Renewable hydrogen in selected Czech media from 2021 to 2025

4. RQ2: Which actors are associated with renewable hydrogen in the media, and how are these actors related to renewable hydrogen, according to media reports?

A content analysis of the corpus identified ten actors interested in renewable hydrogen or directly involved in its production or use: the state (government and ministries), regions (*kraje*),¹¹ traditional energy giants, international companies, small-to-medium-sized Czech enterprises, transport companies, start-ups, specialists, experts and scientific institutions, non-state actors, and

foreign players. Content analysis also revealed a high degree of stereotyping in media reports linking specific actors with specific topics, regardless of the outlet.

The corpus under review most frequently mentioned small and medium-sized enterprises, start-ups, and large energy companies. Mentions of small and medium-sized enterprises (SMEs) and start-ups were associated with presenting renewable hydrogen as a business opportunity and interesting new technologies that could benefit Czech companies and Czech business respectively in a variety of ways. The texts typically presented a specific project of a selected company or start-up and its role in

¹¹ There are 14 regions of the Czech Republic. Regions are higher-level territorial self-governing units.

renewable hydrogen. Articles about traditional energy giants, such as the semi-state-owned ČEZ and the privately owned Energetický a průmyslový holding (EPH), presented renewable hydrogen as a new path. However, these articles also mentioned that renewable hydrogen is expensive and that it is unclear who will pay for the transition. Additionally, they noted that hydrogen technologies are not fully commercially developed and that the hydrogen transformation will be much more difficult in reality than it appears in government and EU documents and proclamations. However, the analyzed corpus also included texts discussing specific new hydrogen projects by traditional energy giants. In such cases, the text most often stated that the company was implementing the project to avoid falling behind and to meet socio-political expectations.¹²

The foreign actors appearing in the corpus under review included the EU, Germany, the United Kingdom, and several international companies, such as Siemens, Volvo, and Lego. In the hydrogen corpus, the EU was associated with green policies. It was often portrayed as overlooking the high cost of establishing a hydrogen economy, as well as compelling Member States and other entities to adopt environmentally friendly, yet economically unfavorable, policies (12% of articles referred to a “hydrogen diktat from Brussels”). Public opinion polls can help us to understand how the EU is perceived in Czechia. They demonstrate the contradictory nature of Czech attitudes towards the EU. For example, while 66% are satisfied with EU membership, particularly with regard to the functioning of the Schengen area, only 47% believe that political integration is beneficial [25]. In Czech society, the Czech media (see Table 4) and among many Czech politicians, the EU is portrayed as a foreign entity that dictates and imposes, rather than as a group of countries that share common goals and difficulties [26]. Germany and the UK were mentioned only a few times in the surveyed sample and were portrayed as countries with mixed experiences of developing a hydrogen economy. The international companies that appeared in the corpus were associated with successful hydrogen projects or plans. While some of the difficulties the companies faced in their projects were mentioned, the tone of the articles and conclusions about the hydrogen projects were positive. Articles about international companies’ hydrogen projects were usually linked to a specific Czech project or cooperation with a Czech company.

Interestingly, the state, government, and ministries rarely appeared in the corpus under investigation, even during the adoption of the first or updated national hydrogen strategy. When the media did mention the state, they did so neutrally, as the creator of hydrogen

legislation, or positively, as a source of funding for hydrogen projects. In several cases, ministries and state authorities appeared as defenders of Czech interests against “hydrogen enthusiasts from the EU” or the aforementioned “hydrogen diktat from Brussels,” or as mediators between Brussels’s hydrogen goals and the actual capabilities of Czech industry.

We would like to point out that, despite coal regions being the areas with the largest number of functioning and planned hydrogen projects and the highest level of EU support for RES (e.g. the Just Transition Fund), only a few media reports have been devoted to them.¹³ Articles from former coal regions most often presented ongoing or planned projects in which renewable hydrogen could replace declining coal businesses, or discussed the challenges that these projects face. The Moravian-Silesian Region was mentioned the most frequently in the corpus (ten times). From the perspective of the Czech Republic and domestic hydrogen developments, it is interesting how rarely the Ústí nad Labem Region was mentioned in the media (only twice). This region has by far the largest production and consumption of renewable hydrogen in the Czech Republic (Orlen Unipetrol is based here), as well as the largest number of hydrogen business projects, including those with neighboring Saxony.¹⁴ While hydrogen projects in the Moravian-Silesian Region have largely been put on hold, with some even being cancelled, projects in the Ústí Region are continuing and developing further. Media coverage of the regions does not accurately reflect the domestic hydrogen situation.

Experts from scientific or academic institutions were the least frequently represented in the corpus under investigation, even in articles that discussed “RH as a new technology with great potential.” They were mentioned in connection with hydrogen technologies and innovations entering the commercialization phase or to verify information about hydrogen and projects. Not a single article in the corpus reported on Czech hydrogen research or cooperation between Czech and international research teams. This can be explained quite simply: the Czech media has completely abandoned science communication, with the exception of Czech Television and Czech Radio, no Czech media outlet has a science section, and Czech universities and research institutes are still developing their science communication skills.

As mentioned above, certain communication stereotypes describing relationships between actors and renewable hydrogen were observed in the media corpus. To provide a more accurate picture, we selected examples of texts that clearly represent each communication stereotype (see Table 4).

¹² For categorization of articles according to frames see Appendix 1.

¹³ Semi-structured interview with Petr Mervart, November 18, 2025, Semi-structured interview with Rut Bízková, October 10, 2025

¹⁴ Semi-structured interview with Karel Tichý, November 25, 2025, Semi-structured interview with Rut Bízková, October 10, 2025

Table 4: communication stereotypes describing relationships between actors and renewable hydrogen

Actor	Stereotype	Article (date of publication, title in English translation, media outlet)
SME, start-ups	Successful ongoing project, sound hydrogen business plan	June 28, 2022 Czech Republic makes its mark in the hydrogen business (SZ)
		November 29, 2025 AI needs energy. And thanks to that, a Czech company is growing rapidly (SZ)
Traditional energy giant	Renewable hydrogen as a new path, but it is expensive and many hydrogen technologies are not yet commercially viable	July 20, 2021 Coal baron bets on alternative to coal. “Those who don’t jump on board now won’t get a foothold,” he says (SZ)
		August 9, 2024 Křetínský bids farewell to coal (HN)
		April 23, 2025 Gas industry launches renewable future, prepares for biomethane and hydrogen (MFD)
International company	Successful ongoing project	June 24, 2022 Volvo tests hydrogen truck with a range of up to 1,000 kilometers (HN)
		November 21, 2025 How Lego is made: from a primitive plastic press to sugar cane bricks (HN)
		July 20, 2021 I won’t sign the EU agreement without gas and nuclear power (MFD)
State	Creator of legislation, provider of finance, mediator between the EU and domestic industry	April 30, 2025 Lex OZE III will teach us how to make energy production and consumption more efficient (HN)
		April 30, 2025 Two billion instead of seven. The ministry redirected money to batteries (SZ)
EU	Pressure on member states and companies to implement green policies	July 5, 2021 Airlines decimated by COVID, now Brussels wants to stifle them (SZ)
		March 28, 2023 EU approves end of gasoline and diesel cars. But it allows synthetic fuels (SZ)
Britain, Germany	Countries developing a hydrogen economy but with mixed experiences	August 24, 2021 Britain to deploy the lightest element in the universe against carbon. Scientists are already warning (SZ)
Experts, scientists	Using expertise to confirm information from the article	July 8, 2024 E-fuels are not a dead end (HN)

Acronyms: HN – Hospodářské noviny, MFD – MF Dnes, SZ – Seznam Zprávy

5. Discussion and Conclusion

In the EU, renewable hydrogen may seem to be experiencing hype. However, the situation in the Czech Republic is different. Despite several political strategies and legislation on renewable hydrogen, as well as policymakers speaking about hydrogen mobility and hydrogen valleys, the public has shown little interest in hydrogen. As many studies show, the media is one of the links between policymaking and public debate. This text aimed to examine how the media frames renewable hydrogen and the media discourse on hydrogen in the Czech Republic. We addressed two research questions: 1) What attributes and themes link media messages to renewable hydrogen?, and 2) Which political, social, academic/scientific and economic actors are associated with renewable hydrogen in the media, and what is the relationship of these actors to renewable hydrogen according to media messages?

To find answers, we conducted a content analysis of 78 articles from selected Czech media outlets between 2021 and 2025. Regardless of the outlet, we found that business discourse dominates in the examined media outlets. In the examined corpus, this discourse can be

classified as “renewable hydrogen is a business opportunity” or “renewable hydrogen is a new technology with great potential.” The potential attributed to hydrogen technologies was mostly described as economic rather than scientific. Articles from these two categories together make up 48% of all texts. No other discourse appeared significantly in the examined corpus. Our content analysis revealed a complete lack of debate during the examined period on the use of renewable hydrogen in Czechia, whether it should be used at all, its role in decarbonization, the cost of transitioning to a hydrogen ecosystem, and a comparison of the advantages and disadvantages of electric cars versus hydrogen vehicles. There is also no clear position of the state on building a hydrogen ecosystem in media communications. The predominance of business-oriented discourse helps explain why there is virtually no public debate on renewable hydrogen in the Czech Republic. Content analysis suggests that businesspeople, especially those representing SMEs and start-ups, are changing their minds and want to redirect their investments to renewable projects. This is similar to large international companies, such as Siemens and Volvo, which already have hydrogen projects. Large and medium-sized traditional

energy companies in the Czech Republic (ČEZ, EPH, NET4GAS, and GasNet) are considering hydrogen projects as well, but most are doing so to comply with political demands rather than for investment reasons. Only certain business sectors are interested in renewable hydrogen, which remains an uninteresting and distant topic for the general public.

We also found that the portfolio of actors mentioned in connection with renewable hydrogen aligns with how it is framed. The corpus most frequently mentioned economic actors, such as SMEs, start-ups, and traditional energy giants. Companies were most often presented in connection with a specific successful hydrogen project. Large energy companies, on the other hand, were more often mentioned in connection with the energy transition, decarbonization, and the possible future role of renewable hydrogen in a given energy company's portfolio. According to the examined media reports, other actors in the Czech Republic play a relatively insignificant role in the renewable hydrogen segment, including the state and the EU. The Czech government and its ministries are portrayed as the creators of hydrogen legislation, providers of financing for developing the hydrogen economy, and mediators between the EU's demands and the willingness of the domestic industry and society to accept hydrogen. The EU is often portrayed as an uncompromising agenda-setter in relation to renewable hydrogen. The media coverage of SMEs and their successful projects in the field of renewable hydrogen creates a positive image of renewable hydrogen. However, this framing does not spark fundamental public debates or provide sufficient information about the potential and costs of renewable hydrogen development. Regarding renewable hydrogen, Czech media has not established connections between policymakers and the public nor laid the groundwork for public discussion. However, why and how this came about is a research topic that goes beyond the scope of this study.

Appendix: List of media articles on renewable hydrogen in the corpus and their categorization

Frames	Acronym of the frame
Is one of pillars of energy transition and of a complete decarbonization	PET
Is business opportunity	BO
Is opportunity for achieving energy security	ES
Is generally not developed, is scarce and expensive	NDSE
Is a new technology with great potential	TECH
Is issue dictated from Brussel	BRUS

Hospodářské noviny

31. 8. 2021 EU podceňuje roli plynu při odchodu od uhlí. Ohroženo je vytápění pro miliony lidí (PET)

25. 8. 2021 ČEZ počítá v roce 2035 se spalováním vodíku v plynových elektrárnách (PET)

15. 7. 2021 Zelená smršť z Bruselu dělá těžkou hlavu českému průmyslu (BRUS)

7. 7. 2021 Pokud chtějí firmy přežít, musí být zelené. Žádají to zákazníci, investoři i banky (BO)

2. 7. 2021 Jak nahradit uhlí? Možností má česká energetika dost (PET)

24. 6. 2022 Volvo testuje kamion na vodík, dojet má až tisíc kilometrů (TECH)

22. 6. 2022 Hrozí Česku nedostatek elektřiny? (ES)

22. 6. 2022 Energetické Česko 2030 (BRUS)

1. 6. 2022 Cestování po kolejích zrychluje a bude i ekologičtější. Česko ovšem za Evropou poněkud zaostává (PET)

26. 5. 2022 Plynářská Hutíra předsedala na biometan a očekává růst (ES)

19. 5. 2022 Evropa má plán, jak se zbavit plynu a ropy z Ruska (ES)

11. 5. 2022 Každé euro, které vynaložíme na čistou energii, posiluje naši svobodu (ES)

29. 3. 2023 Auta se spalovacími motory koupíte i po roce 2035. Na benzin ale zapomeňte (PET)

17. 3. 2023 Návrat těžby a kývnutí na jádro. Brusel představil plán na podporu zelených technologií (BO)

10. 3. 2023 Česko do roku 2040: jaderná velmoc a dovoz desetin spotřeby elektřiny (ES)

24. 10. 2023 Umím si vybrat kvalitní lidi a motivovat je, říká manažer roku Převrátil z Chart Ferox (BO)

10. 10. 2023 Co je „titanová ekonomika“ a jak by na ní Česko mohlo vydělat? Inspirujte se v USA (BO)

9. 8. 2024 Křetinského loučení s uhlím (PET)

22. 7. 2024 Místo rypadel soláry. Šéf Křetinského německých dolů změní fosilní firmu (BO)

18. 7. 2024 Vláda schválila změny ve vodíkové strategii (PET)

11. 7. 2024 Počet podniků s vlastní fotovoltaikou roste. Jednu z největších si u ČEZ pořídilo liberecké Denso (BO)

11. 7. 2024 U Mělníka je největší baterka v Česku. Spolu s plynovými turbínami nahradí 300megawattový uhelný zdroj (BO)

8. 7. 2024 E-paliva nejsou slepá ulička (TECH)

30. 4. 2025 Lex OZE III nás naučí zefektivnit výrobu i spotřebu energií, říká šéf Komory OZE (TECH)

21. 11. 2025 Jak vzniká Lego: od primitivního lisu na plasty až po kostky z cukrové třtiny (BO)

4. 11. 2025 Sázíme na firmy, jež jsme nazvali „lopaty a krumpáče energetické transformace“ (BO)

MF Dnes

31. 8. 2021 Opatovice mají výjimku, ekologové si cení ústupků (PET)

30. 8. 2021 Jak se postavíte k zakazu aut na spalovací motory? (PET)

25. 8. 2021 Z kuchyně do autobusu (PET)

17. 8. 2021 Uhlí se tady spalovat nebude (BO)

10. 8. 2021 Diesely v roli pojistky (ES)

7. 8. 2021 Až Čína předhoní Ameriku (BO)
 4. 8. 2021 Jedno z pódíí bude pohánět vodíkový generátor (TECH)
 20. 7. 2021 Bez plynu a jádra to EU nepodepíšu (TECH)
 22. 6. 2022 GasNet je připraven zvedat podíl biometanu i vodíku v síti (ES)
 30. 5. 2022 Naftu zastoupí vodík (PET)
 10. 5. 2022 Zelená proměna Evropy potřebuje vrátit do reality (BRUS)
 29. 3. 2023 Spalovací motory končí, umělý benzin je výjimka (NDSE)
 25. 3. 2023 Jak spor o spalovací motory bourá německou politiku (NDSE)
 6. 3. 2023 Česko dumá, kam dát elektřinu (TECH)
 31. 10. 2023 Elektrolyzátor umí vyrábět zelený vodík (TECH)
 25. 10. 2023 Vodík a cesty k jeho využití v kraji (BO)
 13. 8. 2024 Praha spouští projekt na výrobu a využití vodíku (PET)
 6. 8. 2024 Kraj zavede autobusy na dražší vodík (TECH)
 23. 4. 2025 Plynárenství startuje obnovitelnou budoucnost, připravuje se na biometan a vodík (PET)

Seznam Zprávy

24. 8. 2021 Británie nasadí proti uhlíku nejlehčí prvek vesmíru. Vědci už varují (NDSE)
 23. 8. 2021 Merkelová: Když Rusko využije Nord Stream jako zbraň, přijdou sankce (ES)
 18. 8. 2021 Británie vsadí na vodík. Chce jím snížit emise nejen u aut, ale i u topení (PET)
 27. 7. 2021 U hranic s ČR má vzniknout jedno z nejvýkonnějších bateriových úložišť v Evropě (BO)
 23. 7. 2021 Komentář: Zastavte šílenství s elektroauty na baterky, dokud je čas! (PET)
 20. 7. 2021 Uhlobaron sází na alternativu za uhlí. „Kdo nenaskočí teď, neuchytí se,“ říká (BO)
 6. 7. 2021 Zapomeňte na soběstačnost, Dukovany jsou nesmysl, říká teplotník Nejdř (BO)
 5. 7. 2021 Aerolinky zdecimoval covid, teď je chce podusit Brusel (BRUS)
 2. 7. 2021 Jak vydělat na vodíku. Výbušná technologie těží z ozeleňování ekonomiky (BO)
 28. 6. 2022 Český zářez ve vodíkovém byznysu (BO)
 24. 6. 2022 Výbušná i nadějná technologie. Šance, jak v Česku investovat do vodíku (BO)
 14. 6. 2022 Festival Rock for People bude pohánět elektřina ze zeleného vodíku (TECH)
 14. 6. 2022 Plány na odstřižení Putinova plynu jsou naprosto přemrštěné (NDSE)
 11. 6. 2022 Uhlobaron: Rusko na válce nekřesťanský vydělává (NDSE)
 6. 6. 2022 Středočeský kraj plánuje provoz autobusů, které bude pohánět tzv. zelený vodík (TECH)
 18. 5. 2022 Plán EU na odstřižení Ruska. Na zelenou energii a úspory dá 300 miliard eur (ES)
 18. 5. 2022 Žádný plyn a ropa z Ruska, elektrárnou Evropy se má stát Severní moře (ES)

28. 3. 2023 Odborník: Zda jsou spalovací motory zachráněny, to se ještě uvidí (TECH)
 28. 3. 2023 EU schválila konec aut na benzin a naftu. Dovolila ale syntetická paliva (BRUS)
 27. 3. 2023 Hledání „zlatého“ vodíku: Stačí ještě jeden objev a změní se svět (TECH)
 25. 3. 2023 Obrat ve sporu o konec spalovacích motorů. Němci přetlačili Brusel (BRUS)
 21. 3. 2023 Český úspěch? EK zřejmě i po roce 2035 dovolí prodej aut na syntetická paliva (BRUS)
 11. 3. 2023 Palivo budoucnosti. Lodní společnosti prahnou po zeleném metanolu (BO)
 27. 10. 2023 Zelený vodík na startu. V Napajedlech se rozjel první komerční elektrolyzátor (BO)
 11. 10. 2023 Křetínský převádí „špinavý“ majetek. EPH vidí budoucnost ve vodíku (BO)
 8. 10. 2023 Cash Only: Atom už není tabu. V Evropě sílí boj o jaderné subvence (BO)
 25. 8. 2024 Cash Only: Druhý český solární boom po 14 letech opět hrozí dotační blamáží (NDSE)
 22. 8. 2024 Solární paradox: Nový boom Čechům elektřinu spíš zdraží (NDSE)
 26. 7. 2024 Zdražení benzínu o dvě koruny není nic šokujícího, říká europoslanec (ES)
 30. 4. 2025 Místo sedmi miliard dvě. Ministerstvo přeměrovalo peníze na baterie (BO)
 10. 4. 2025 EU a Spojené arabské emiráty zahájí jednání o dohodě o volném obchodu (BO)
 4. 4. 2025 „Chaotický Trump, uzavírání trhů a zelené omyly.“ Tři rizika pro český byznys (NDSE)
 29. 11. 2025 AI potřebuje energii. A česká firma díky tomu raketově roste (BO)

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