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Green Hydrogen in Serbian Transport: A Review of Technologies, Challenges and Prospects

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ABSTRACT

The transport sector significantly contributes to global CO_2 emissions, making a transition to sustainable, low-carbon alternatives essential. Green hydrogen, produced by water electrolysis using renewable energy, has emerged as a particularly promising solution for heavy-duty, public, and intercity transport where battery electrification faces limitations. This review systematically examines the technological, environmental, and economic aspects of hydrogen applications in transport, with a specific focus on the Republic of Serbia. The methodology follows PRISMA guidelines for systematic literature reviews of scientific publications, industry reports, and strategic documents from 2010 to 2026. Results show that hydrogen fuel cell vehicles provide high efficiency, long range, and fast refueling times, but widespread adoption is limited by high costs, insufficient infrastructure, and the need for sustainably produced hydrogen. Globally, Europe and Asia are leading in infrastructure development, while Serbia remains in the early stages, with pilot projects such as HyDSerbia and the H2V Rasina Hydrogen Valley underway. The paper concludes that Serbia has the research base and strategic interest to develop a hydrogen economy but faces significant challenges in infrastructure, financing, and regulatory alignment. Key future directions include establishing refueling stations, conducting fleet trials in public transport, and integrating into European hydrogen networks.

1. Introduction

Literature surrounding alternative fuel sources and green hydrogen is extensive and many reviews and scientific articles have been published to date in this regard. An article by Kakoulaki and others (2021) assesses the technical potential of renewable energy sources at both regional and national levels and offers water electrolysis as a viable alternative to carbon-intensive hydrogen hubs. Nikolaidis and Poullikkas (2017) assert that there are many processes for hydrogen production from both conventional and alternative energy sources, with the main challenges for water-splitting methods to compete with conventional methods being low conversion efficiencies and high investment costs (current cost of hydrogen production is at $/kg 1.34-

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2.27. In Gurz et al. (2017), a classification of the vehicles using hydrogen is presented, including internal combustion vehicles, fuel cell vehicles, and their hybrid counterparts, along with the challenges facing their use. IRENA's Patent Landscape Report (2026) highlights the critical role of buses and trucks in global energy consumption and emissions, and points to gaps in technology and the energy market.

Transport is the backbone of modern society, enabling the movement of people, goods, and services, and underpinning global economic activity (Nijkamp, 2003; Cigu et al., 2018). However, this sector is also a major source of environmental pressure, accounting for approximately 20–25 % of global CO_2 emissions, with road transport being the dominant contributor (Kalghatgi et al., 2018; Pawlak et al., 2025). In the year 2025 CO_2 emissions have risen by 0.7 % in comparison to the previous year, with total emissions reaching an astounding 37.2 Gt (Deng et al., 2025). The biggest growth in the transportation sector is expected to be in the aviation and maritime industry, along with heavy transport: Emissions in the transportation sector will grow at a rate of 60 % by 2050 if no action is taken against the formation of greenhouse gases (ITF Transport Outlook, 2023). In addition to CO_2, transport emits nitrogen oxides (NO_x), particulate matter (PM), and sulfur oxides (SO_x), which have detrimental effects on air quality and public health (Khan and Burdzik, 2023; Stojić et al., 2023).

The growing global vehicle fleet - with approximately 200 million vehicles sold in 2025 alone - continues to drive increases in energy consumption and emissions, despite technological improvements in internal combustion engines (Bernardino et al., 2015; Vorwerg et al., 2025). In response to these challenges and the need to meet climate goals, such as those set by the European Green Deal, there has been a concerted shift toward alternative propulsion systems and fuels (Wendler, 2022). A key objective of the European Green Deal is to reduce emissions by at least 50 % by 2030, with instruments such as the Emissions Trading Scheme helping its member countries achieve this target. The EU Green Deal asserts that investment in innovation, clean technology, and green infrastructure will help communities most affected by energy consumption ensure a just transition to a cleaner energy pathway (European Commission, 2020a).

Alternative fuels, including biofuels, synthetic fuels, electricity, and hydrogen, offer pathways to reduce the carbon footprint of transport (Pustějovská et al., 2023). Among these, green hydrogen- produced by water electrolysis using renewable energy- has received particular attention for its potential to achieve deep decarbonization in hard-to-electrify sectors (Chen et al., 2021; Angelico et al., 2025). Global consumption of hydrogen is estimated to be at 100 Mt/yr, with 90 % derived from carbon rich sources and less than 1 % produced by water electrolysis (IEA, 2025). Hydrogen fuel cell vehicles (FCVs) offer advantages such as high energy efficiency, long driving range, and fast refueling times, making them suitable for heavy-duty trucks, buses, trains, and even maritime and aviation applications (Hosseini and Butler, 2020; Dash et al., 2022; Fakhreddine et al., 2023).

The number of fuel cell vehicles is estimated at 18,000 globally, with only 7,500 vehicles produced in the EU, mainly in Germany, France, and the Nordic countries (EAFO, 2025). Recent research highlights that integrating renewable energy technologies not only reduces environmental impacts but also strengthens energy security, which is essential for supporting emerging solutions such as hydrogen in sustainable transport systems (Jovanović et al., 2025).

The Republic of Serbia, as a candidate for European Union membership, has begun developing its strategic approach to hydrogen technologies. Initiatives such as the HyDSerbia pilot project, the planned H2V Rasina Hydrogen Valley, and ongoing feasibility studies by Elektroprivreda Srbije (EPS) indicate growing national interest in leveraging hydrogen for energy transition and decarbonization (Backović et al., 2024; Trivić et al., 2025). However, the country currently lacks the infrastructure, regulatory framework, and commercial deployment needed for a hydrogen economy.This review aims to: (1) provide a systematic overview of the technological and environmental aspects of hydrogen use in transport; (2) analyze the global and European landscape of hydrogen production and infrastructure; (3) critically assess the current state, ongoing projects, and future prospects for hydrogen in Serbia's transport sector; and (4) identify key barriers and enablers for adopting hydrogen technologies in the Serbian context.

2. Materials and methods

This study is a systematic literature review conducted according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework (Page et al., 2021). The review process aimed to identify, select, and synthesize relevant scientific and grey literature on the application of hydrogen, particularly green hydrogen, in the transport sector, with a specific focus on Serbia.

2.1. Search Strategy

The literature search was conducted in March 2026 across three major databases: Scopus, ScienceDirect, and Google Scholar. The search strategy combined keywords related to hydrogen, transport, and Serbia. The search string was: ("green hydrogen" OR "hydrogen fuel cell" OR "hydrogen transport") AND ("Serbia" OR "Balkans"). A broader search was also conducted for global and European contexts using terms such as "hydrogen infrastructure," "fuel cell vehicles," and "hydrogen production methods." The search was supplemented by a manual review of reference lists from key articles and by searching institutional websites (e.g., IEA, European Commission, Serbian Ministry of Environmental Protection, etc.) for policy documents and reports.

2.2. Inclusion and Exclusion Criteria

Articles were included if they met the following criteria: (i) published between January 2010 and March 2026; (ii) written in English or Serbian; (iii) focused on hydrogen production, storage, distribution, or application in transport; and (iv) contained original research, systematic reviews, case studies, or policy analysis. Exclusion criteria were: (i) articles not directly related to transport applications of hydrogen; (ii) conference abstracts without full text; (iii) non-peer-reviewed sources (except for official policy documents and industry reports from reputable organizations); and (iv) duplicate publications.

2.3. Study Selection and Data Extraction

The selection process followed the PRISMA flow diagram (Figure 1). The initial search across databases and other sources yielded 1,847 records. After removing duplicates (n = 389), 1,458 records were screened by titles and abstracts. Of these, 1,124 were excluded for not meeting the thematic focus. The remaining 334 full-text articles were assessed for eligibility. After full-text review, 127 articles were excluded for reasons such as lack of relevance to transport (n=78), absence of data on hydrogen (n=32), or being outdated (n=17). Finally, 207 sources were included in the qualitative synthesis, comprising 162 peer-reviewed articles, 30 industry or government reports, and 15 other relevant documents. Data extracted from each source included: publication details, hydrogen production method, application (transport mode), key technological characteristics, infrastructure aspects, economic and environmental data, and geographic focus (global, Europe, or Serbia). For Serbia-specific sources, additional data on project timelines, capacities, and institutional actors were recorded.

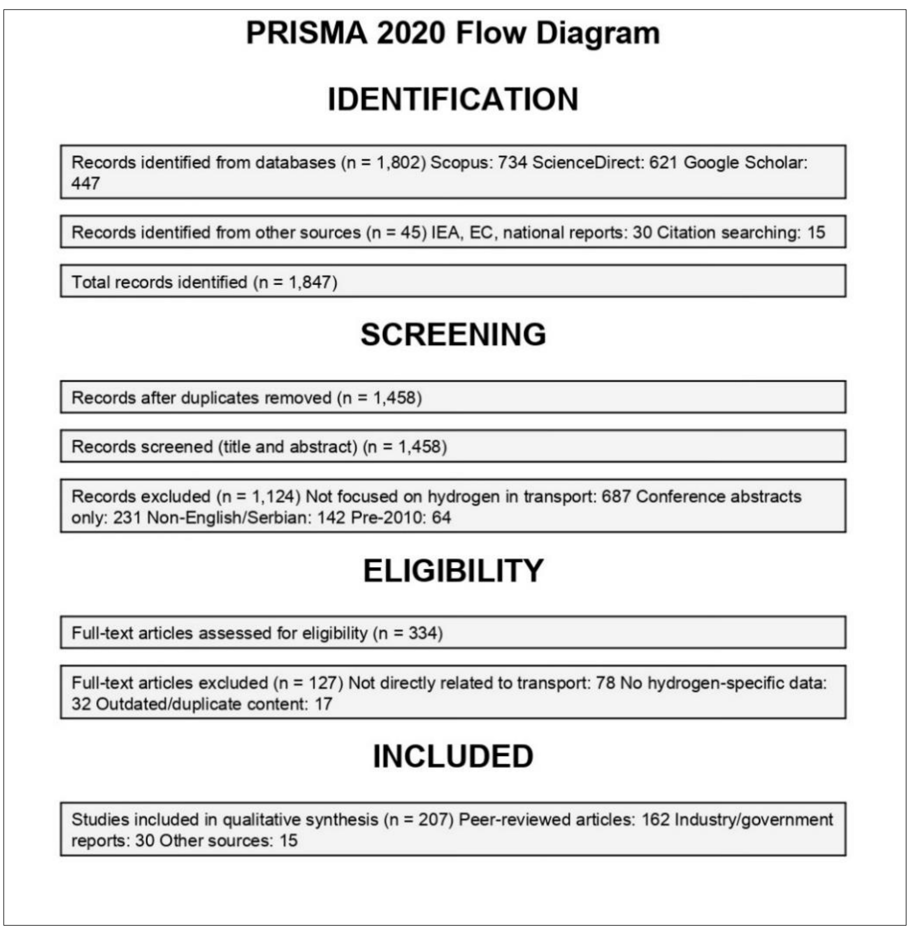

Figure 1. PRISMA 2020 flow diagram of the literature selection process

3. Result and Discussion

3.1. Hydrogen as a Transport Fuel: Technological Foundations

Hydrogen is an energy carrier rather than a primary energy source, meaning it must be produced from other resources before use. Its appeal in transport applications arises from its high gravimetric energy density (approximately 120 MJ/kg, nearly three times that of gasoline) and its potential to enable zero-emission operation at the point of use (Nicoletti et al., 2015; Mayrhofer et al., 2021). In transport systems, hydrogen is primarily used in fuel cell electric vehicles (FCEVs), where it is electrochemically oxidized to generate electrical energy, with oxygen serving as the oxidizing agent and water vapor produced as the main by-product (Gurz et al., 2017). Hydrogen can be classified by its production pathway and associated environmental impact.

Green hydrogen, produced via water electrolysis powered by renewable energy sources, is the most sustainable option and is central to long-term decarbonization strategies. According to the IEA (2025), the cost of green hydrogen production is estimated at approximately € 4-6 /kg. In contrast, grey hydrogen (€ 1-2 /kg), derived from fossil fuels without carbon capture, remains dominant today, while blue hydrogen (€ 1.6-3.3 /kg) offers an intermediate solution through the use of carbon capture and storage technologies (Newborough and Cooley, 2020; Howarth and Jacobson, 2021). Despite its advantages, the deployment of hydrogen in transport faces several technological challenges. One of the main constraints is hydrogen storage, due to its low volumetric energy density. For practical application, hydrogen must be stored under high pressure (350-700 bar), in liquefied form at cryogenic temperatures (−253 °C), or through alternative carriers such as liquid organic hydrogen carriers (LOHC) or ammonia (Eriksson and Gray, 2017; Al Zohbi et al., 2023). Each options involves trade-offs in energy efficiency, cost, safety, and infrastructure requirements. The average payback period for hydrogen energy projects is estimated at 7-12 years, with subsidies and regulations potentially reducing this period by 20-30 % (Baral and Šebo, 2024).

Table 1 Comparison of CO_2 emissions between diesel, fuel cell electric vehicles and electric vehicles (in t over average life-cycle). Furthermore, fuel cell systems require advanced thermal management, durable materials resistant to hydrogen embrittlement, and complex auxiliary components, which increase system complexity and cost (Das et al., 2021). These challenges highlight the importance of integrating systematic approaches to technology assessment and reliability analysis in developing hydrogen systems. In this context, risk assessment and environmental management tools - such as Failure Mode and Effects Analysis (FMEA), widely applied in renewable energy technologies - play a crucial role in identifying potential system failures, minimizing environmental impacts, and improving the overall sustainability and safety of hydrogen production and utilization systems (Staletović et al., 2024). Table 2 Comparison between fuel cell vehicles and battery electric vehicles.

Table 1

Comparison of CO_2 emissions between diesel, fuel cell electric vehicles and electric vehicles (in t over average life-cycle)

Vehicle type	CO_2 emissions	Further notes
Diesel	54 t CO_2	Main emitter of CO_2, emissions relative to fuel consumption
Fuel cell electric vehicle (FCEV)	30-40 t CO_2	Green hydrogen has considerably lower emissions (<20 t), grey and blue hydrogen emissions similar to diesel
Electric vehicle (EV)	25 t CO_2	Lowest emissions, also dependent on energy source

Table 2

Comparison between fuel cell vehicles and battery electric vehicles

Key parameter	Battery EV	Fuel Cell EV
Efficiency		
Energy use	70-80 % efficient	25-35 % efficient
Fuel source	Electric grid	Hydrogen fuel
Charging/Refueling		
Charge time	30-60 min (fast charge)	3-5 min refuel
Infrastructure	Widely available	Limited stations
Production		
Manufacturing cost	Lower (mature tech)	Higher (complex fuel cell)
Materials	Lithium-ion batteries	Platinum catalysts
Performance		
Driving range	300-400 km typical	500-600 km typical
Vehicle cost	$ 35,000-$ 50,000	$ 60,000–$ 80,000+

Table 3

Key technological characteristics of hydrogen propulsion in different transport modes

Transport mode	Storage method	Fuel cell type	Key advantages	Key challenges
Passenger cars	700 bar compressed H_2	PEMFC	Long range, fast refueling, zero tailpipe emissions	High vehicle cost, limited refueling stations
Buses / trucks	350–700 bar compressed H_2	PEMFC	Suited for long-haul and high utilization, quiet operation	Infrastructure cost, total cost of ownership (TCO)
Trains (non-electrified)	350 bar compressed H_2	PEMFC	Replaces diesel on regional lines, zero emissions at point of use	Higher upfront cost than overhead electrification
Maritime	Liquid H_2, ammonia, LOHC	PEMFC / internal combustion	Potential for deep decarbonization of shipping	Immature technology, bunkering infrastructure, fuel cost
Aviation	Liquid H_2	Fuel cell / direct combustion	High specific energy, zero CO_2 emissions	Cryogenic storage, aircraft redesign, safety certification

PEMFC – Proton Exchange Membrane Fuel Cell; LOHC – Liquid Organic Hydrogen Carrier; TCO – Total Cost of Ownership

3.2. Global and European Hydrogen Landscape

The global hydrogen market is undergoing rapid expansion, driven by climate policies, declining renewable energy costs, and technological advancements (Paraschiv et al., 2025). According to the IEA (2025), global hydrogen demand reached approximately 95 million tons in 2025, with most demand still coming from refining and industrial applications. However, the share of low-carbon hydrogen (green and blue) is increasing, particularly in the transport sector.

Europe has established itself as a leader in hydrogen infrastructure development. The European Hydrogen Strategy (European Commission, 2020b) set a target of installing 40 GW of electrolyzers by 2030. As of 2025, the EU has more than 250 operational hydrogen refueling stations (HRS), with Germany, France, and the Netherlands accounting for most of them (Fuel Cells Works, 2025). Major pipeline projects, such as the European Hydrogen Backbone, aim to connect industrial clusters and import corridors by converting thousands of kilometers of natural gas pipelines for hydrogen transport (EHB, 2025).

In production, China remains the world's largest hydrogen producer (approximately 9,000 m^3 H_2/h), followed by the United States (approximately 5,547 m^3 H_2/h) and Germany (approximately 1,608 m^3 H_2/h) (Paraschiv et al., 2025). Asia leads in electrolyzer manufacturing, while Europe leads in project announcements and policy frameworks.

3.3. Hydrogen in Serbian Transport: Current State and Projects

Serbia's engagement with hydrogen technologies is in an early but promising phase. Transport in Serbia relies entirely on fossil fuels, with electric vehicles and fuel cell vehicles representing only a minimal share of both heavy and light transport (RZS, 2026). The country has no operational hydrogen refueling stations and no commercially deployed FCEVs as of 2026 (Kostić, 2025). However, several strategic and pilot initiatives are underway, such as the electrification of railroad transport, laying the groundwork for future development.

3.3.1. Strategic Framework

Hydrogen is recognized in Serbia's Energy Development Strategy (Ministry of Mining and Energy, 2025) as a potential energy carrier for future decarbonization. The strategy highlights the need for regulatory alignment with EU frameworks and identifies hydrogen as a means to increase renewable energy integration and reduce dependence on fossil fuels (Trivić et al., 2025). The importance of regulatory and legislative frameworks is also emphasized in recent studies assessing Serbia's climate policy and its role in supporting long-term sustainability and energy transition pathways (Presburger Ulniković et al., 2025). A dedicated Hydrogen Strategy is currently in draft and is expected to be adopted in 2026 (H2 Cluster Srbija, 2025).

3.3.2. Key Pilot Projects

The most significant project is HyDSerbia, a pilot for green hydrogen production in collaboration with the German company Leipziger Energiegesellschaft, supported by the German government. With a budget of approximately € 3.5 million (2022–2026), the project aims to develop technological and economic models for green hydrogen production that could be scaled up (Backović et al., 2024).

Another notable initiative is the H2V Rasina Hydrogen Valley, which plans to construct a 500 ton-per-year renewable hydrogen production facility in western Serbia.

The project aims to supply hydrogen to the transportation and industrial sectors, creating a regional hub for hydrogen applications (Energetika.news, 2025). Preliminary investment estimates for this project range from € 50 to € 70 million, with funding expected from EU pre-accession funds and private investors.

3.3.3. Research and Infrastructure Development

The Vinča Institute of Nuclear Sciences, in collaboration with the Faculty of Mechanical Engineering in Belgrade, has developed a prototype for solid-state hydrogen storage (metal hydrides) and is leading efforts to build a pilot station for green hydrogen production using solar and wind energy (Backović et al., 2024). These research activities provide a domestic knowledge base crucial for future scale-up.

Two larger industrial installations are planned in Bački Petrovac and Kostolac, which could initiate commercial green hydrogen production in the coming years (EUpravo zato, 2024). The projected timeline, according to current plans, is presented in Table 4.

3.4. Regional Comparison and Benchmarking

To contextualize Serbia's position, it is useful to compare it with neighboring countries. Slovenia has operated hydrogen buses since 2020 and currently has two public hydrogen refueling stations (HRS). Croatia launched its first HRS in 2024 as part of the EU-supported H2River project. Hungary, through its national hydrogen strategy, aims to have five HRS and 1,000 fuel cell electric vehicles (FCEVs) by 2030. In this regional context, Serbia is at a comparable starting point to its neighbors but lags in operational infrastructure, primarily due to later policy initiation and slower project implementation.

3.5. Barriers and Enablers for Hydrogen Adoption in Serbia

3.5.1. Barriers

1. Infrastructure deficit: The absence of hydrogen refueling stations creates a classic chicken-and-egg problem, deterring both vehicle adoption and further investment (Dash et al., 2022). Even the planned three pilot stations by 2030 are insufficient for significant market penetration.
2. High costs: Both FCEVs and green hydrogen are currently more expensive than their fossil or battery-electric counterparts. The levelized cost of hydrogen (LCOH) in Serbia is estimated at € 6–8/kg, compared to € 1–2/kg for gray hydrogen, and is not yet competitive without subsidies (Vorwerg et al., 2025).
3. Regulatory and policy gaps: Serbia lacks a comprehensive legal framework for hydrogen, including standards for production, storage, transport, and safety, as well as clear market incentives such as purchase subsidies or carbon pricing.
4. Limited domestic equipment manufacturing: There is no domestic production of electrolyzers, fuel cells, or high-pressure tanks, creating import dependency and increasing costs.
5. Workforce and skills gap: The transition to a hydrogen economy requires new skills in hydrogen handling, fuel cell maintenance, and safety protocols, which are not yet systematically integrated into education and vocational training.

3.5.2. Enablers

1. Strong research base: Institutions such as the Vinča Institute provide technical expertise and have already developed prototype components, offering a foundation for innovation and localization (Backović et al., 2024). This aligns with broader findings that highlight the role of renewable energy technologies in enchancing environmental sustainability and supporting the transition to low-carbon energy systems (Jovanović et al., 2025).
2. Geostrategic position: Serbia's location in the Balkans positions it as a potential transit corridor for hydrogen flows between the Middle East/Asia and Europe, especially with planned pipeline interconnections under the European Hydrogen Backbone initiative.
3. EU alignment and funding access: As an EU candidate, Serbia is incentivized to align its energy and climate policies with European frameworks, which increasingly prioritize hydrogen. This provides access to EU funding mechanisms such as the Clean Hydrogen Partnership, IPA III, and the Western Balkans Investment Framework.

Table 4

Current status and planned development of alternative fuel vehicles in Serbia

Element	Status 2025	Projection 2030	Projection 2035
Number of electric/hybrid vehicles	~8,000	~50,000	>80,000
Number of hydrogen vehicles	0	800–1,200	2,000–4,000
Hydrogen refueling stations	0	3 pilot stations	10 stations
Green hydrogen production capacity	1 pilot plant	10 MW total	20–30 MW
Planned hydrogen buses	0	~20	50–100
Share of alternative powertrains	0.5 %	3–5 %	8–12 %

1. Industrial anchor demand: Beyond transport, Serbia's industry, particularly petrochemicals (HIP Petrohemija), fertilizers (MSK), and steel (HBIS), could serve as initial anchor demand for green hydrogen, helping to de-risk early investments (Backović et al., 2024).
2. Abundant renewable potential: Serbia has significant untapped potential for solar and wind energy, which could be used to produce green hydrogen at competitive costs over the long term.

4. Conclusion and implications

This review systematically assesses the potential of green hydrogen in transport, with a particular focus on Serbia. The analysis confirms that hydrogen, especially when produced from renewable sources, offers significant promise for decarbonizing hard-to-electrify transport segments. Globally, technology is advancing and infrastructure is expanding, particularly in Europe and Asia.

In Serbia, the transition to a hydrogen economy is in its early stages but is gaining momentum. Strategic documents recognize hydrogen's role, pilot projects are underway, and research institutions are building domestic capacity. However, significant barriers remain, including a lack of refueling infrastructure, high costs, incomplete regulatory frameworks, and a skills gap.

Addressing these challenges requires not only technological advancements but also the use of structured risk assessment and environmental management approaches. Tools such as Failure Mode and Effects Analysis (FMEA) can support more reliable and sustainable implementation of hydrogen technologies by systematically identifying potential failures and environmental risks. Furthermore, the transition to hydrogen-based systems should be considered within the broader context of renewable energy integration and energy security, both of which are critical for achieving long-term sustainability goals.

The main contribution of this paper is the synthesis of dispersed information on hydrogen developments in Serbia, providing a structured baseline for researchers and policymakers. The review also highlights critical gaps: there is no comprehensive techno-economic assessment of hydrogen pathways tailored to the Serbian context, nor a detailed analysis of the socio-economic impacts of a hydrogen transition, both of which are essential for evidence-based policy design.

Limitations: This study is based on a review of existing literature and does not include primary data collection or quantitative modeling. The dynamic nature of the field means that some project details may change rapidly after the search period.

Recommendations for policymakers: To accelerate adoption, policymakers should: (i) adopt the draft Hydrogen Strategy with binding targets and a clear implementation roadmap; (ii) establish a regulatory framework for hydrogen quality, safety, and certification; (iii) introduce demand-side incentives such as purchase subsidies for FCEVs and operational support for refueling stations; (iv) leverage EU funding mechanisms for pilot projects and infrastructure; and (v) integrate hydrogen technologies into vocational education and university curricula to build the necessary workforce.

Future research directions: (1) Develop a detailed techno-economic model for hydrogen production, distribution, and utilization in Serbia, incorporating local renewable resource data; (2) Conduct a life-cycle assessment (LCA) of hydrogen pathways (imported vs. domestic production) for Serbia; (3) Analyze the socio-economic impacts of a hydrogen transition, including job creation and industrial restructuring; (4) Assess the potential for regional hydrogen cooperation in the Western Balkans, including cross-border infrastructure; (5) Implement studies within existing curricula and academic programs at technical universities in Europe and Asia related to hydrogen technologies, fuel-cell systems, hydrogen production, storage, and other relevant energy-transition topics.

If the planned projects are realized, Serbia could become a regional frontrunner in hydrogen applications within the next decade. However, achieving this outcome will require coordinated action among government, industry, and academia to overcome existing barriers and fully leverage the identified strategic opportunities

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Zeleni vodonik u transportu Srbije: pregled tehnologija, izazova i perspektiva

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I Z V O D

Sektor transporta značajno doprinosi globalnim emisijama CO_2, zbog čega je prelazak na održive alternative sa niskim ugljeničnim otiskom od suštinskog značaja. Zeleni vodonik, proizveden elektrolizom vode uz korišćenje energije iz obnovljivih izvora, izdvojio se kao naročito perspektivno rešenje za transport teškim vozilima, javni i međugradski transport, gde elektrifikacija zasnovana na baterijama pokazuje određena ograničenja. Ovaj pregledni rad sistematski analizira tehnološke, ekološke i ekonomske aspekte primene vodonika u transportu, sa posebnim osvrtom na Republiku Srbiju. Metodologija istraživanja zasnovana je na PRISMA smernicama za sistematske preglede naučne literature, industrijskih izveštaja i strateških dokumenata iz perioda od 2010. do 2026. godine. Rezultati pokazuju da vozila sa gorivnim ćelijama na vodonik obezbeđuju visoku energetsku efikasnost, veliki domet i kratko vreme dopune goriva, ali da je njihova šira primena ograničena visokim troškovima, nedovoljno razvijenom infrastrukturom i potrebom za održivom proizvodnjom vodonika. Na globalnom nivou, Evropa i Azija prednjače u razvoju infrastrukture, dok se Srbija još uvek nalazi u početnoj fazi razvoja, uz realizaciju pilot-projekata kao što su HyDSerbia i H2V Rasina Hydrogen Valley. Zaključuje se da Srbija poseduje istraživačku osnovu i strateški interes za razvoj ekonomije zasnovane na vodoniku, ali se suočava sa značajnim izazovima u pogledu infrastrukture, finansiranja i usklađivanja regulatornog okvira. Ključni pravci budućeg razvoja uključuju uspostavljanje mreže stanica za snabdevanje vodonikom, sprovođenje probnih projekata u javnom prevozu i integraciju u evropske vodonične mreže.