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CRISIS MANAGEMENT OF DECARBONIZATION PROCESSES IN INTERNATIONAL OPERATIONS: INTEGRATION OF CHANGE MANAGEMENT AND FINANCIAL INSTRUMENTS

This article analyzes the development of the global electric power industry. It shows that by 2025, solar energy will become the primary driver of global electricity generation, significantly outpacing wind power, which ranks second. Gas was the only fossil fuel to grow. Coal-fired power generation declined. It is noted that China leads in electricity demand growth, significantly outpacing the United States and other countries. China also has the highest electricity generation in the world, the largest solar, wind, and hydroelectric output, and ranks second globally in nuclear power generation. An analysis of the consequences of the 2026 global oil and gas crisis and its potential impact on the global economy is provided. It is also noted that the crisis could serve as an impetus to activate decarbonization processes on a global scale, adopt radical solutions, and implement them. A model for overcoming the crisis and developing climate-neutral production is developed. It was noted that effective management, innovation, and large-scale investments are key to the successful

implementation of the decarbonization process. The article emphasizes anti-crisis management of decarbonization processes in the context of international activity, as well as the integration of change management and financial instruments. The article substantiates the conceptual role of crisis management as a proactive tool for ensuring the economic security of enterprises in a multi-crisis environment. It is demonstrated that integrating the principles of the circular economy into strategic management fosters systemic resilience in supply chains, reduces dependence on volatile raw material markets, and lays the groundwork for meeting sustainable development requirements.

Key words: strategic management, energy resources, critical raw materials, technologies, strategy, crisis, competitiveness, international marketing activities, international credit and settlement and currency transactions, risks, sustainable development.

Table 1, Fig. 4, Ref. 16.

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АНТИКРИЗОВЕ УПРАВЛІННЯ ПРОЦЕСАМИ ДЕКАРБОНІЗАЦІЇ В УМОВАХ МІЖНАРОДНОЇ ДІЯЛЬНОСТІ: ІНТЕГРАЦІЯ CHANGE-МЕНЕДЖМЕНТУ ТА ФІНАНСОВИХ ІНСТРУМЕНТІВ

У статті виконано аналіз розвитку світової електроенергетики. Показано, що попит на електроенергію у 2025 році помітно зріс, але дещо повільніше, ніж роком раніше. Прогнозується подальше збільшення попиту, пов'язане з розвитком технологій, де активно споживається електрика, таких як транспорт та використання електромобілів, випуск яких постійно зростає. Разом з тим, зростання попиту на електроенергію певною мірою стримується підвищенням ефективності використання

енергії, особливо у найбільш економічно розвинених країнах. Вказано, що сонячна енергія стала головним джерелом приросту виробітку електроенергії у світі, помітно випереджаючи приріст енергії вітру, що знаходиться на другому місці. Дещо зросло вироблення атомної енергії, головним чином за рахунок Китаю, який також найактивніше у світі будує атомні реактори. Газ у 2025 році був єдиним викопним джерелом енергії, яке відрізнялося зростанням виробництва. Вироблення електроенергії з вугілля зменшилося. За темпами зростання попиту електроенергію домінує Китай, значно випереджаючи інші країни. Китай також є країною з найвищим рівнем вироблення електроенергії у світі, найбільшим виробленням енергії сонця та вітру, гідроенергії, займає друге місце у світі з вироблення енергії на атомних електростанціях. Як негативний фактор слід вказати на все ще дуже значну роль в енергетиці Китаю вугілля, від якого країна дуже активно та послідовно намагається відмовитися. Виконано аналіз наслідків світової кризи нафти і газу 2026 року, що вже наочно позначилися, і можливого впливу її на світову економіку в перспективі. Показано негативні прояви кризи. Відзначено також, що криза може стати дуже потужним імпульсом для активізації процесів декарбонізації у глобальному масштабі, прийняття радикальних рішень та їх реалізації. Показано модель подолання кризи та розвитку кліматично нейтральних видів енергетики, електромобільності, випуску акумуляторів, виробництва критичних матеріалів для розвитку глобальної економіки та енергетичного переходу. Важливою умовою успішного здійснення процесу декарбонізації є ефективний менеджмент, інновації та масштабні інвестиції. У статті наголошується на антикризовому управлінні процесами декарбонізації в умовах міжнародної діяльності, інтеграції change-менеджменту та фінансових інструментів.

Ключові слова: стратегічний менеджмент**,** енергетичні ресурси, критична сировина, технології, стратегія, криза, конкурентоспроможність, міжнародна маркетингова діяльність, міжнародні кредитно-розрахункові та валютні операції, ризики, сталий розвиток.

Introduction. The conditions of global economic instability call for a rethinking of approaches to sustainable development management, particularly decarbonization processes. In this context, crisis management must integrate strategic management with flexible adaptation mechanisms, as the transition to a climate-neutral economy involves the adoption of cutting-edge technologies, the restructuring of supply chains, and a shift toward alternative energy sources and critical raw materials. Change management plays a decisive role in this, ensuring systematic staff training, minimizing resistance to innovation, and fostering a flexible organizational culture that responds rapidly to external shocks. It is precisely through change management that companies ensure competitiveness even during periods of deep crisis, transforming risks into drivers of strategic development.

The international aspect of decarbonization cannot be realized without effective cross-cultural marketing and global sales management. Operating in foreign markets requires accounting for each country's regulatory specifics, infrastructure constraints, and consumer preferences, which is particularly relevant for the electric vehicle sector, renewable energy production, and the processing of critical minerals. Aligning international marketing activities with local strategies facilitates the rapid scaling of green technologies and the formation of sustainable value chains.

The financial aspect of the decarbonization process is closely linked to international credit, settlement, and foreign exchange transactions. Payment optimization, currency risk hedging, and the use of multi-currency instruments and trade finance mechanisms ensure the continuity of logistics flows, timely financing of infrastructure projects, and protection of

capital against macroeconomic volatility. Integrating these financial instruments with substantive aspects of change management and international marketing creates a unified architecture of resilience that not only helps overcome the consequences of energy crises but also accelerates the transition to sustainable development on a global scale.

Stable and dynamic development of the global economy is the goal of modern civilization and underpins the activities of states, various organizations, numerous firms, and millions of individuals representing all sectors of the global economy. The modern economy reflects the increasingly innovative nature of production, applied technologies, materials, energy, human knowledge, and experience, which gives it constant vitality. However, the modern economy still bears many characteristics of the past, including outdated production processes, imbalances, and structural backwardness. Along with vital and highly promising energy sources, the global economy still relies heavily on coal, oil, and natural gas, which not only pollute the planet's atmosphere but also experience significant fluctuations in supply, volumes, costs, and logistical challenges, which has an extremely adverse impact on the global market. The task of management is to ensure an efficient economic structure, effective governance, and high rates of decarbonization, which would ensure sustainable development and reduced vulnerability to crises.

Literature review. The active transition to climate-neutral energy and other sectors of the economy, as well as the implementation of sustainable development goals, is accompanied by a complex body of research conducted by scientists from various countries, which is reflected in numerous publication – Smerichevska S. *et al.* (2024), Yakushev O. *et al.* (2023), Remyha Yu. *et al.* (2023). O. Riabchyn (2026) aims to generalize approaches to the formation of climate indicators used by international organizations to assess progress in climate change mitigation and adaptation. L. Gorbach *et al.* (2024) in their work examine the issues of the development of a green economy and sustainable development, noting that the concept of a "green economy" must be understood as an innovative and strategic path of development of the global, national, and regional economy, where the main priorities are the achievement of environmental and social effects aimed at ensuring sustainable economic growth. The issues of European integration, within the framework of which various aspects of innovation management and the quality of business processes in the field of green economy and entrepreneurship are studied, are considered by O. Shpykulyak *et al.* (2025). T. M. Sohns *et al.* (2023) analyze the issues of economic development in Germany, in particular various aspects of sustainable development and effective management, which are of great importance for economic growth. V. Stasyuk & L. Artemenko (2025) pay attention to important issues related to the implementation of the European Green Deal and the dissemination of the principles of the circular economy in the context of the transition to sustainable development; in particular, the authors examine various aspects of the formation of an enterprise's environmental strategy as a factor in increasing competitiveness. Numerous problems arising during the implementation of the globalization process, however, have not yet been sufficiently studied and require ongoing analysis.

The global oil crisis, which began in the spring of 2026 and continues to linger, is already significantly affecting both individual sectors of the global economy and the global economy as a whole. The development of electricity generation from various sources, particularly climate-neutral energy sources in the context of decarbonization, is highly variable and complex and requires further study. Analyzing these processes is particularly important in the context of a large-scale energy crisis, the effects of which are still very difficult to assess. This necessitates further analysis and the development of optimal management solutions tailored to current economic conditions.

The aim of the article is to analyze the dominant trends in global energy, taking into

account structural features and assessing compliance with sustainable development goals, and to formulate a comprehensive model for overcoming the energy crisis and further developing decarbonization processes.

Materials and Methods. This study employs a mixed-methods research design that synthesizes quantitative energy statistics with qualitative strategic analysis to construct an integrated framework for crisis-responsive decarbonization management. Empirical data on electricity generation, consumption patterns, and energy mix dynamics (2015–2025) were sourced from the Ember Global Electricity Review, supplemented by macroeconomic indicators from Trading Economics, nuclear capacity reports from the International Atomic Energy Agency, and real-time crisis developments documented by authoritative media outlets. A comparative longitudinal analysis was conducted across three benchmark economies – China, the United States, and Germany—to isolate divergent decarbonization trajectories under shared global pressures. Methodologically, the research integrates change management theory (Kotter's 8-step model adapted for sustainability transitions) with international marketing frameworks (standardization vs. adaptation strategies) and financial risk mitigation instruments (currency hedging, trade finance mechanisms) to model adaptive governance pathways. Statistical trend extrapolation, scenario modeling, and critical discourse analysis of policy documents were applied to evaluate the resilience of decarbonization strategies amid the 2026 oil and gas crisis. The originality of the approach lies in triangulating technological, managerial, and financial dimensions within a single analytical architecture, enabling the identification of leverage points where change management interventions can amplify the effectiveness of international marketing and financial tools to accelerate the low-carbon transition under volatile geopolitical and economic conditions.

Results and discussion. A review paper from the Ember think tank provides data on the state of the global energy market and, noting the dynamics for 2025, highlights the significant impact of electric vehicles on the growth of electricity demand (Ember, 2026): “Global electricity demand increased by 2.8% (+849 TWh) in 2025, to a new record high of 31,779 TWh. This marked a notable slowdown from the 4.3% (+1,265 TWh) surge in 2024 but aligns closely with the ten-year average annual demand increase of 2.7% from 2015 to 2024. Electricity demand is expected to accelerate in the coming years with increasing electrification of sectors like transport. However, the relative efficiency of electrified technologies means even major shifts only have a moderate impact on electricity demand. In 2025, record growth in electric vehicle sales and usage contributed roughly 8% (+66 TWh) of the global increase in demand – up from 46 TWh in 2024.”

An analysis of the global energy situation based on information from the Ember Center review (Ember, 2026) showed the following: 2025 confirmed China's long-standing dominance in terms of electricity generation growth rates (Fig. 1), increasing its production by 503 TWh (+5.0%), which accounted for 59% of the total global growth (+849 TWh). The growth in electricity generation in China was almost four times higher than in the United States (+131 TWh, +3.0%), and ten times higher than in India (+49 TWh, +2.4%).

According to Ember (2026), (Fig. 2): China is the country with the highest level of electricity consumption in the world, 10,573 TWh in 2025, significantly surpassing all other countries in this indicator. Taking into account the highest dynamics, it can be predicted that this position of China will only strengthen in the future; the United States ranks second in the world, consuming 4,536 TWh of electricity.

Of interest is the analysis of the energy production sources most important for the decarbonization of the global economy and their role in the leading economies. According to [6], the following took place in 2025. Solar energy became the main source of growth in electricity generation worldwide, increasing by 636 TWh, which is 18 times more than the

growth in electricity generation from gas (+36 TWh), with gas being the only fossil energy source that showed growth in production. Electricity generation from coal and other fossil fuels decreased.

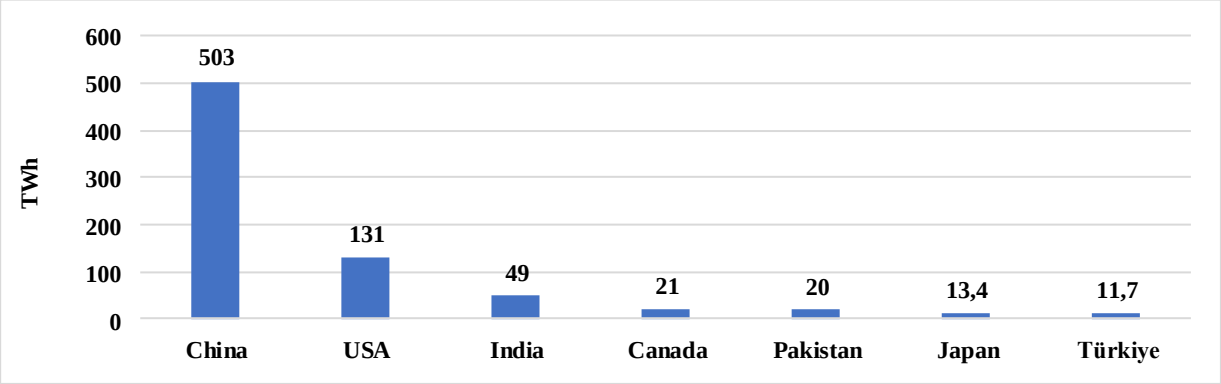

Fig. 1. Growth in electricity demand in 2025
Source: (Ember, 2026)

The increase in solar energy was 33% higher than in 2024 (+479 TWh) and almost twice as high as in 2023 (+331 TWh), which is quite significant. The increase in electricity production from solar energy was more than three times higher than the increase from wind energy, the second largest in the year under review, amounting to 205 TWh.

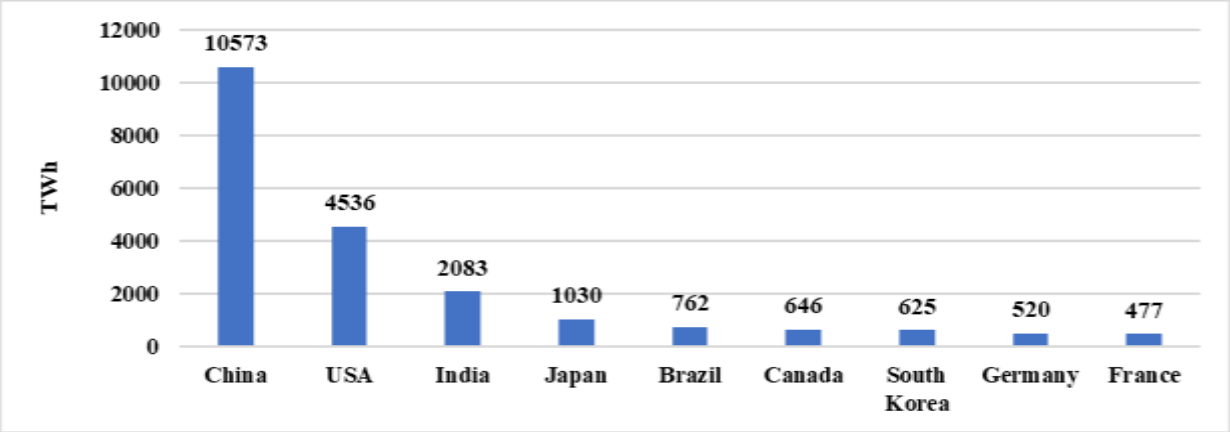

Fig. 2. Total electricity demand in 2025
Source: (Ember, 2026)

Global solar energy production in 2025 surpassed wind energy production for the first time in history, reaching 2,778 TWh. Solar energy production in 2025 was almost 11 times higher than in 2015 (256 TWh), defining the overall pattern of global energy development.

In 2025, global wind power generation reached 2715 TWh, 205 TWh (or 8.2%) more than in 2024, with capacity growth amounting to 167 GW. The share of wind energy in the global energy balance continued to grow in 2025, reaching a historical maximum of 8.5% (Ember, 2026).

Nuclear energy occupies a special place in the global economy. We will analyze global nuclear energy for 2025 using data from (Ember, 2026). As with solar and wind energy, China demonstrated the largest growth globally – 37 TWh – thanks to an

unprecedented surge in the commissioning of new reactors.

Document Ember (2026) also indicates the following. In 2025, the United States continued, as it has throughout history, to be the leading producer of nuclear energy on the planet, producing 785 TWh – (an increase of only 0.4%) compared to 782 TWh in the previous year. China produced 488 TWh of nuclear energy in 2025, further strengthening its second position in the world. China is unique, one of the few countries on the planet where new reactors are being built, and in the largest number in the world, which in the long term, with a high probability, will lead to this country's dominance both in the capacity of nuclear power plants and in the electricity generated by them.

Japan is regaining some of its position, moving up to sixth place among the world's largest nuclear energy producers. In 2010, before the accident at the Fukushima Daiichi Nuclear Power Plant, Japan ranked third in the world for nuclear energy production. Nuclear power remained an important source of electricity in the EU in 2025, accounting for 23% of total electricity generation (Ember, 2026).

In 2025, France produced 69% (in 2005 – 78.5%) of its electricity from nuclear energy, which is the highest share in the world; the country has traditionally also shown the highest level of electricity production per capita (in that year it was 5882 kW h), while 14 reactors in the country are currently not in operation and not a single new reactor is being built (Ember, 2026; International Atomic Energy Agency, 2026).

We will analyze the development of the global electric power industry and its dynamics in the three leading countries in terms of GDP, taking into account energy sources, using statistical data from the Ember analytical center (Table 1) (Ember, 2026). The use of solar energy, a highly important and promising source of energy for decarbonization, has enabled global electricity generation to increase from 256 TWh to 2,779 TWh between 2015 and 2025, a 10.85-fold increase, or 2,523 TWh, clearly reflecting a progressive global trend. Moreover, over these years, solar energy generation in China increased significantly more than the global average, from 39.5 TWh to 1,175 TWh, an increase of almost 30-fold. Growth rates for the United States and Germany (Table 1) were 10- and 2.4-fold, respectively, significantly lower than China's level.

Another key source of climate-neutral energy, wind, allowed global electricity production to increase from 830 TWh to 2,713 TWh, a 3.3-fold increase, or 1,883 TWh. China's growth rate was also higher than the global average: 186 TWh in 2015 and 1,135 TWh in 2016, a six-fold increase. The growth rates for the United States and Germany (Table 1) were 2.4 and 1.7 times, respectively, which is also significantly lower than China's.

Global electricity generation from other sources also grew, but not as rapidly. Among the most progressive sources are hydropower, bioenergy, and nuclear energy. Global growth in these areas owes much to China. It is particularly important to highlight the exceptionally large increase in nuclear power generation in this country, from 171 TWh in 2015 to 488 TWh in 2025 (Table 1), which is unique. China is currently implementing a massive nuclear power construction program, surpassing all other countries in this area. A negative factor is the still significant role of coal in China's energy sector, but in the future, it will be largely replaced by solar, wind, hydropower, nuclear, and bioenergy. China is also a clear world leader in the production of electric vehicles, batteries, solar panels, and wind turbines. China's position in the production of most critical minerals, particularly those related to the energy transition, is extremely important. It is clear that China is the consistently dominant global leader in all areas of decarbonization and is reaping exceptional economic benefits from it.

The United States and Germany are also advancing decarbonization, but their pace is far behind China's. In the United States, nuclear power generation is virtually nonexistent, and a significant number of reactors, according to the International Atomic Energy Agency

(2026), (41 as of April 2026) have been decommissioned. Germany is playing an active role in the production of electric vehicles, wind, and solar energy, but has completely shut down its nuclear power plants. This should be recognized as a major strategic mistake, the damage from which is especially severe given the global oil and gas crisis that began in the spring of 2026 and has affected the entire global economy.

The crisis in the oil market can be illustrated by the following. According to Trading Economics (2026), global oil prices were approximately $66.5 per barrel in the first half of January 2026, and approximately $72 per barrel by the end of February. On March 20, 2026, the price rose to $112 per barrel. On April 17, the price fell to $90 per barrel, but failed to return to the level seen at the beginning of the year. On April 24, prices rose significantly to $105 per barrel, and on April 30, to $110 per barrel.

Table 1. Intermediate Electricity production by energy source, TWh

Energy source	2015	2020	2021	2022	2023	2024	2025
World							
Solar	256	853	1054	1333	1664	2143	2779
Wind	830	1591	1857	2108	2319	2510	2713
Hydro	3882	4347	4289	4324	4240	4434	4435
Bioenergy	472	601	655	669	684	703	710
Nuclear	2533	2648	2762	2640	2698	2777	2812
Gas	5540	6383	6557	6628	6699	6883	6921
Coal	9284	9437	10156	10240	10396	10539	10472
China							
Solar	39.5	261	327	427	584	839	1175
Wind	186	467	656	763	886	997	1135
Hydro	1115	1322	1300	1298	1226	1354	1397
Bioenergy	54	136	166	183	198	209	213
Nuclear	171	366	408	418	435	451	488
Gas	167	253	287	276	298	321	334
Coal	4046	4922	5334	5415	5753	5828	5752
United States							
Solar	39	131	164	205	239	304	389
Wind	191	338	378	434	421	452	464
Hydro	244	280	246	249	239	237	242
Bioenergy	64	55	54	52	47	46	46
Nuclear	797	790	780	772	775	782	785
Gas	1333	1624	1579	1687	1806	1870	1807
Coal	1352	773	898	832	675	652	737
Germany							
Solar	38.1	49.5	49.3	60.3	63.9	74.1	89.6
Wind	80.6	132	114	125	141	142	136
Hydro	19	18.7	19.7	17.6	21.2	23.8	19.6
Bioenergy	50.3	50.9	49.1	48.6	51.3	51.1	50.5
Gas	61.5	95	90.3	79	76.7	78.4	82.7
Coal	272	135	165	180	125	106	103

Source: (Ember, 2026)

The sharp rise in oil and natural gas prices is already having an extremely negative impact on global economic development, resulting in a decline in economic development, a significant increase in the cost of goods and services, increased energy and transportation costs, and an increase in bankruptcies. The global economy was completely unprepared for such a crisis, but it is highly likely that countries that have demonstrated strong results in developing climate-neutral energy and electric mobility will be affected by the consequences of this ongoing crisis to a significantly lesser extent than all other countries.

The global oil and gas crisis only began in March 2026, but has already led to significant negative consequences, as reported by leading news agencies. Cable News Network (CNN, 2026) reports that major US airline Spirit Airlines will file for bankruptcy in early May 2026: "Spirit Airlines, the pioneering discount airline that shook up the budget travel business, is shutting down its operations. Spirit is the first major US airline in 25 years to go out of business because of financial problems. The decision will put 17,000 workers out of a job, including 14,000 Spirit employees and thousands of contractors and other people whose jobs depend on Spirit (Lufthansa Group, 2026).

One of the world's most important airlines, Germany's Lufthansa (Lufthansa Group, 2026) announced that it would cancel 20,000 flights from June to October 2026 to save aviation fuel amid the energy crisis caused by events in the Persian Gulf region.

The situation is also described as very complex by leading global experts. International Energy Agency head Fatih Birol reaffirms that world facing biggest energy crisis in history (Reuters, 2026).

The global crisis triggered by events around the Persian Gulf and the Strait of Hormuz, which began in March 2026 and continues to this day (Figure 3), is unfolding, demonstrating the following factors, which have already clearly demonstrated their impact.

Fig. 3. Model of the development of the oil and gas crisis in 2026
Source: developed by the authors

This also allows us to predict the possible course of events if the global community, and particularly European countries, take appropriate, consistent, large-scale, energetic, and decisive action in the context of effective crisis management to overcome the consequences of the crisis. This action will become the basis for preventing such acute crises related to energy resources in the future. Within two months of its onset, the crisis has already led to very noticeable consequences for the global economy. Global economic dynamics continue to deteriorate, and forecast expectations remain pessimistic. At the same time, leading experts

and research centers in various countries are conducting intensive research, developing recommendations, and developing programs for emergency and more long-term systemic actions. What's needed is not only programs, but, above all, their implementation, their implementation, to the extent that this is clearly happening in China and, conversely, is not happening in Europe.

Despite many notable successes in decarbonization, the European Union, for many reasons, suffers from political decidophobia, a fear of making crucial decisions, their belated and partial nature, and often a situation in which correct and well-founded decisions are only partially implemented and with delays. The oil and gas crisis of 2026 should radically and systemically change the situation. The crisis development model, with the right and systemic decisions based on innovation and effective management, can be transformed into a model for the successful production of climate-neutral energy sources and the decarbonization of the global economy (Figs. 3, 4).

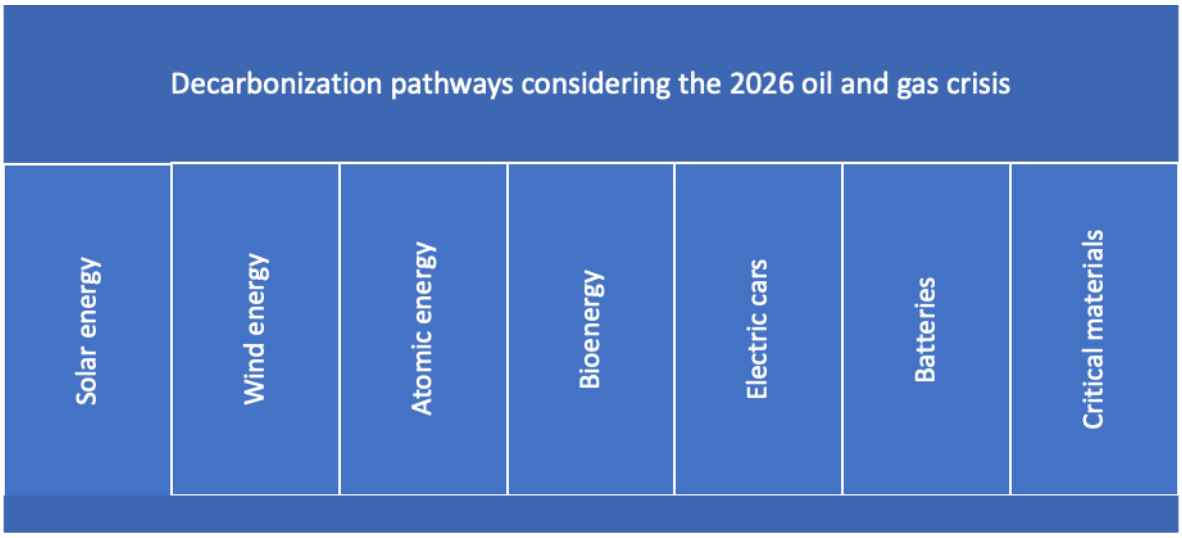

Fig. 4. Decarbonization directions taking into account the 2026 oil and gas crisis
Source: developed by the authors

It appears that the following areas of decarbonization could be important for the global economy, and especially for the European economy, given the 2026 oil and gas crisis.

1. Developing solar power generation. This dominant source of energy globally in terms of generation growth should be further developed at the highest possible pace due to the widespread use of solar panels. It is particularly promising for desert regions of the planet (Sahara, Gobi, Arabian Desert, Kalahari), with high solar activity, where agricultural activity is extremely difficult. Also of interest are many regions in Africa and Asia, Australia, Southern Europe, particularly Spain, Portugal, Greece, and other regions of the planet.

2. Wind power is a source of electrical energy. It could potentially be the most important, given offshore wind energy, whose resources are theoretically capable of meeting all human needs many times over. A radical scaling of efforts and investments in wind energy development is needed, including the production of wind turbines, the construction of power grids, and the manufacture of various equipment. Northern Europe needs a radical acceleration of international offshore wind energy projects in the North and Baltic Seas and a sharp increase in the share of wind in the energy mix, as is happening, for example, in Denmark.

3. Nuclear energy represents a colossal opportunity that could protect Europe from the

global oil and gas crises. The leadership of the EU and many European countries has recognized the abandonment of nuclear energy development as a strategic mistake. Europe is significantly committed to reconsidering this position. A key element in the accelerated development and future efficiency of nuclear energy is the large-scale construction of small modular reactors.

4. Bioenergy already plays a significant role in many countries and has the potential to develop rapidly. The importance of this energy source will increase, but it will likely always remain of a supporting nature.

5. The 2026 oil crisis clearly demonstrated the full benefits of electric vehicles. The time has come for Europe to radically transition to electric vehicles and for them to completely and rapidly replace internal combustion engine vehicles.

6. China and some Asian countries occupy key positions globally in the development and production of batteries. Europe needs collective efforts through international projects to overcome its gap in this area, which can build on its continued high innovative potential.

7. As in the vast majority of key areas of modern development, China dominates the global production of critical materials and energy transition materials. Joint European projects are needed to provide critical raw materials for the development of climate-neutral energy and electric mobility in the context of decarbonization, including the development of mineral deposits outside the continent, the supply of raw materials, their processing and the production of finished goods.

Decarbonization measures must be considered comprehensively and interrelatedly; only then can the success of consistent action be ensured. The technical aspects of decarbonization, in their main components, have been largely resolved by the innovative achievements of modern civilization. The main problem lies not in this, but in the lack of the necessary decisiveness, consistency, and, perhaps even more importantly, the scale of action by the entire global community. Joint efforts, effective management, innovation, and investment – these are the tools capable of ensuring climate neutrality and economic prosperity.

To effectively manage a complex set of decarbonization projects on a global scale, it is highly advisable to utilize all the advantages offered by change management.

Decarbonization processes often involve new elements that require specific and often complex adaptation: modern innovative technologies, processes, and strategies. Change management will ensure more active and successful employee engagement in decarbonization, especially during crises, enabling effective and timely responses while maintaining high competitiveness.

International management and marketing are crucial for decarbonization, as this global process requires operations in many countries, including the effective management of production and sales activities abroad, taking into account the specifics of each individual country. This is particularly true for the production and sale of electric vehicles, but also affects many other areas of decarbonization. It's also important to emphasize the importance of effective international credit, settlement, and foreign exchange transactions, which will also facilitate logistics and the success of numerous components of the decarbonization process.

Conclusion. Thus, an analysis of global energy developments revealed the following. Global electricity demand in 2025 increased significantly, but somewhat more slowly than the previous year. Solar energy became the primary source of growth in global electricity generation, significantly outpacing wind power, which ranks second. Nuclear power generation increased slightly, primarily due to China, which is also the world's most active builder of nuclear reactors. Gas was the only fossil energy source to show growth in 2025. Electricity generation from coal and other fossil fuels decreased. China dominates in terms of

electricity demand growth, significantly outpacing the United States and other countries. China also has the highest electricity generation rate in the world, with the largest solar, wind, and hydroelectric output, and ranks second in the world in nuclear power generation. The global oil and gas crisis of 2026 is already having a noticeable and very negative impact on the global economy, and the situation will worsen further in the future. At the same time, the crisis could serve as an impetus for accelerating decarbonization processes globally, adopting radical solutions, and implementing them. A model for overcoming the crisis and developing climate-neutral energy sources, electric mobility, battery production, and critical materials manufacturing has been proposed. Effective management, innovation, and large-scale investment are key to successful decarbonization.

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