

**GLOBAL WARMING IS BECOMING OVERWHELMING  
– BETWEEN CLIMATE CRISES, ECONOMIC CRISES AND  
ENERGY CRISES –**

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***Abstract:** The COP 26 climate change conference in Glasgow ended with one major hope: it managed to keep alive the six-year-old goal of limiting global warming to 1.5°C above pre-industrial levels. Firm commitments are missing, and major powers such as the US, China, India and Australia rejected most of the pledges. The conference was postponed by a day, only for everyone to agree on the wording in the final agreement to “phase down coal production” to replace the wording “phase out coal”. Alongside the shocking vision of the Trump administration – global warming is not a US problem – even since the Glasgow meeting, the illusion has been maintained, supported by the highly industrialized countries, that global warming can be controlled through insignificant adjustments to the lifestyle of all the planet’s inhabitants, as well as through economic measures that further involve poor countries. Rich countries applaud any measure that punishes countries that own forests if they cut down trees, but they oppose any measures that would force them to respect the emissions targets they have committed to. The climate crisis is the result of excessive, irresponsible and insensitive exploitation of nature by man, and now nature is demanding its rights back. Humanity’s economic greed is beginning to be punished by nature, and the punishment comes through dramatic complications that accompany the numerous economic crises that humanity has to face. Economic crises and returns to certain stages of behavioral equilibrium usually require several years, but those related to specific natural events are becoming increasingly complex and repeated at shorter intervals of years. Strategies to address climate change that emphasize only the management of carbon dioxide emissions and not its absorption are considered immoral and unfair, especially by poor or developing countries, which have large areas of forests. Rich countries increasingly support that these poor and developing countries become responsible for reducing the areas registered with forests, but to postpone any transfer of their own wealth to these countries through financial subsidies for carbon absorption. Beyond the imperfections found in the*

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*global plans to reduce carbon emissions, the transition from energy systems based on hydrocarbons to systems based on green energy, it is certain that the prices of energy resources will continue to be volatile, which is predictable to be reflected in new and new economic crises especially for poor countries or in the development race. For them, the energy factor will constitute, in the short and medium term, the major component in triggering increasingly acute economic crises. In the European effort to achieve a transition to an economy with a reasonable carbon content, there will be many losers in Romania: households and companies. Because low-income families are the most vulnerable, the Romanian state has decided to draw up a list of vulnerable consumers to whom it will open a line of subsidizing limited consumption. Consumers currently considered invulnerable will have to adapt to the new living conditions, reduce consumption, make energy improvements to their homes, or pay more, until they too will have to resort to public mercy.*

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**The climate crisis and the measures that are still awaited.** Six years after the Paris Agreement, after the Trump administration completely boycotted it and after the new American administration declared that "America is back", during the period 1-13 November humanity had its eyes fixed on Glasgow, where the UN Climate Change of the Parties - COP 26 took place, in the hope that it would end with reasonable results. Unfortunately, with great indulgence, it can be said that the success of the Conference of the Parties, COP 26, in Glasgow, on combating climate change, ended with only one major hope: it managed to keep alive the objective of six years ago aimed at capping global warming at 1.5°C compared to pre-industrial levels. Firm commitments are completely lacking, and the major powers, namely the USA, China, India and Australia, rejected most of the commitments. The conference was postponed for a day, just so that everyone could agree on the wording in the final agreement "phase-down coal production" to replace the wording "phase-out coal".

The main considerations of this conference<sup>1</sup>:

\*The clearest commitment of the parties – over 190 participating countries – aims to stop deforestation by 2030;

\*Only 40 countries have committed to giving up coal, but these do not include the USA, China, Russia, etc.;

\*Some countries, cities and large companies have committed to giving up fossil fuel cars by 2040. Paradoxically, Ford and Daimler have

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<sup>1</sup> Adrian N. Ionescu, Glasgow 2021. *Revoluția climatică se amână*, article, Cronicile, no. 88/2021, p.2 and pp. 26-27.

committed to this, but the USA and Germany were not among the countries that assumed such responsibilities.

\*It has not been possible for all countries to commit, through ambitious measures or through reasonable but transparent measures, to combat global warming;

\*The final document includes financial and other commitments from rich countries to support poor countries that are extremely brief and general, which do not imply the assumption of clear commitments;

\*Theoretically, global warming was perceived as such, it was outlined with more clarity, but quantitative and qualitative commitments were not reached by all states;

\*The final declaration of Cop 26, with the value of an agreement of awareness, but lacking firm commitments, states that the world, in general, must reduce, by 2030, greenhouse gas emissions by 4.5% compared to 2010 levels and reach net zero emissions by 2050, so that global warming is limited to 1.5°C;

\*It was recommended that all states establish concrete strategies and plans with measures that lead to this goal, generically called NDCs – nationally determined contributions;

\*According to a UN report, 6 years after the Paris Agreement, the ambitious green targets assumed by states turned out to be 7 times higher than what was actually observed as an effect in 2021;

\*The Glasgow Conference ended without establishing common rules for the establishment, transparency and intervention on national targets;

\*The final document does not formulate in a clearly accepted language the perspective of the annual verification and review of the progress assumed and recorded, especially as a result of the opposition of the great powers, led by the USA;

\* Rich countries did not keep their promise made in 2009 to invest 100 billion dollars annually, by 2020, to help poor and developing countries combat the climate change to which they had committed;

\*A request for the future, of about 1.3 trillion dollars per year, until 2030, came only from African countries, but the final document does not include details regarding the crediting of these amounts;

\*Rich countries promised to fulfill old commitments covering periods until 2023 and to double their current financing by 2025, without specifying the destinations of these amounts;

\*In Glasgow, 40 countries and almost 150 organizations committed to initially giving up coal; however, the USA, China, Australia and India, joined by other countries and organizations, claimed to sign the document containing this initiative only if the wording with "renunciation" was replaced with the wording "gradual reduction".

\*On a contrasting note, China and the US, which are credited with the highest greenhouse gas emissions, announced that they had reached a surprising agreement to cooperate to limit their respective emissions and to work together to achieve the target of capping global warming at 1.5°C; this bilateral agreement, lacking details and clear commitments, was considered more of a political declaration, by which the two countries recognize the importance of measures to combat climate change, to which they do not specifically commit;

\*The US and Germany, as countries, have not signed the commitment to produce zero-emission cars in major markets by 2035 and worldwide by 2040, while their main national manufacturers, Ford, General Motors, Daimler, Jaguar Land Rover and Volvo, have signed this document;

\*And this time, Article 6 of the Paris Agreement, which allows a country to pay another country to reduce emissions, the payment counting towards achieving its own reduction targets, and the country receiving funds for the green transition through carbon permits (e.g. a country that abandons an emissions-producing industry or reforests a region with trees that absorb carbon effectively records a reduction in emissions, but can sell carbon permits to countries that have not done much in this regard, but benefit from the transfer of fresh air)<sup>2</sup>.

The Earth as a whole is experiencing a dramatic climate crisis. Scientists warn that decades of unsustainable political and economic decisions have led to the emergence of the climate crisis with a devastating impact on future human civilization, on the planet's fauna and flora. The lack of a global managerial perspective, the lack of planning for climate recovery are all responsibilities for the emergence of economic and energy crises. After many decades of awareness of degrading climate processes, the moment has come when the abandonment of coal-based energy, the migration to gas as an intermediate solution and the major involvement in renewable energy sources have taken decades to prepare, but it is still unknown how much time it will take to become an ongoing program.

Alongside the Trump administration's shocking vision that global warming is not a US problem, even since the Glasgow meeting, the illusion, supported by the highly industrialized countries, has persisted that global warming can be controlled through insignificant adjustments to the lifestyles of all the planet's inhabitants, as well as through economic measures that further involve poor countries. Rich countries applaud any measure that punishes countries that own forests if they cut down trees, but oppose any measures that would force them to respect the emission targets they have committed to.

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<sup>2</sup> *Ibidem*, pp. 26-27.

Scientific studies demonstrate that "The production of carbon dioxide is a direct consequence of the consumerist, energy-consuming behavior, which is primarily the inhabitants of developed countries. The fact that China supplies a third of carbon emissions has a very simple explanation: It is the result of consumption in developed countries that it satisfies.....A study conducted in 43 countries on five continents and published by the Norwegian University of Science and Technology shows consumers as responsible for 60% of carbon emissions and 80% of water consumption globally. The highest carbon footprint is that of the US consumer, with 18.8 tons of carbon dioxide equivalent, while the Chinese consumer has a footprint ten times smaller...the Romanian consumer has a footprint of 4.6 tons...and the global average is 3.4 tons."<sup>3</sup>

Beyond the obvious planning inaccuracies in accelerating the transition from hydrocarbons to green energy, in order to achieve decarbonization targets, price increases have started like a roller that can no longer be controlled. Bringing the Earth to a level of natural balance can be done in two ways: a governmental one, which involves conscious recovery measures, and a spontaneous one, at the disposal of nature, which has become threatening, with devastating long-term effects. The climate crisis is the result of excessive, irresponsible and unbalanced exploitation of nature by man, and now nature is demanding its rights back. Humanity's economic greed is beginning to be punished by nature.

**Economic crises - generalities.** Economic crises are mostly generated by humans, but many of them also have a natural component. Food crises and raw material crises have predominantly short- and medium-term causes related to people's political and economic behavior, but they also have long-term causes stemming from natural causes.

Economic crises are the result of social, political and economic excesses. From the famous tulip bulb crisis of the 17th century in Holland<sup>4</sup> and up to the recent subprime credit crisis in the Western world, economic crises are explained by the unregulated action of several factors, among which are: the greed of people and economic agents, keeping reference interest rates low for long periods despite the warming of the economy, supporting exchange rates that do not reflect the laws of market competitiveness, ignoring the increase in excessive debt rates that lead to situations of inability to pay and repay loans, supporting large budget deficits that can no longer be balanced by generated revenues, accepting large wage increases in both the public and private sectors outside of macroeconomic correlations, etc.

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<sup>3</sup> Radu Crăciun, Fără ipocrizie, despre incapacitatea de-a limita încălzirea globală, articole, Cronicile, no.88/2021, p. 98.

<sup>4</sup> Mike Dash, Mania lalelelor, Humanitas Publishing House, Bucharest, 2014, pp. 171-175.

In the case of responsible governments, scientific analyses of economic developments can be translated into administrative adjustments of a fiscal or regulatory nature, which ensure the slow rebalancing of the economy. When governments or international bodies ignore their role of intervention and regulation, then a spontaneous economic rebalancing is achieved, which reduces the gaps and imbalances reached, at a certain cost of unemployment, devaluation of the national currency, increased inflation, and impoverishment of the population. The spontaneous adjustment of economic gaps, through free market forces, becomes accusatory for the governments in power, which begin to be accused, as the case may be, of complicity with interested destabilizing forces, of ignorance, passivity, lack of courage, ill will, etc.

Economic crises and returns to certain stages of behavioral equilibrium usually require several years, but those related to specific natural events become increasingly complex and repeated at shorter intervals of years. Strategies to address climate change that focus only on managing carbon dioxide emissions and not on its absorption are considered immoral and unfair, especially by poor or developing countries that have large areas of forests. Rich countries are increasingly arguing that these poor and developing countries should become responsible for reducing the areas covered by forests, but to postpone any transfer of their own wealth to these countries through financial subsidies for carbon absorption.

The production of carbon dioxide is a proven fact that it is the direct consequence of energy-consuming behavior, which is primarily the inhabitants of developed countries. As such, reasoning related to global warming must take into account the carbon footprint that every person on the planet has well calculated. Judging from this perspective... the fact that China provides a third of carbon emissions has a very simple explanation. It is the result of consumption in developed countries that it satisfies. A study conducted in 43 countries on five continents and published by the Norwegian University of Science and Technology shows consumers to be responsible for 60% of carbon emissions and 80% of water consumption globally. The highest carbon footprint is the US consumer, with 18.8 tons of carbon dioxide equivalent, while the Chinese consumer has a footprint 10 times smaller...the Romanian consumer has a footprint of 4.6 tons of carbon equivalent...and the world average is 3.4 tons of carbon equivalent.”<sup>5</sup>

Beyond the imperfections found in global plans to reduce carbon emissions, the transition from energy systems based on hydrocarbons to systems based on green energy, it is certain that the prices of energy

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<sup>5</sup> Radu Crăciun, *Fără ipocrizie, despre incapacitatea de-a limita încălzirea globală*, article, *Cronicle*, no.88/2021, p. 98.

resources will continue to be volatile, which is predictable to be reflected in new and new economic crises especially for poor countries or in the development race. For these, the energy factor will constitute, in the short and medium term, the major component in triggering increasingly acute economic crises.

### **Energy crisis in Romania.**

**Global repercussions.** The most recent energy transition in history is attributed to the 1973 oil shock. The 1973 oil shock had as a worthy argument the increase in price and its volatility on the oil markets. The oil shock was immediately reflected in important macroeconomic phenomena, such as: the drastic slowdown in the growth rate of industrial production, the acceleration of unemployment, the amplification of the growth of government deficits and an almost uncontrollable pace of inflation. Essentially, the transition triggered by the 1973 oil crisis meant the change in the power balance between oil-producing countries and large Western oil-consuming countries under the conditions of the Cold War.

The response of Western countries to the first energy shock consisted of strategies to increase energy independence, by diversifying supply sources, achieving a balanced and complementary energy mix, exploiting oil even in areas previously considered unprofitable, launching the development of nuclear power plants, accelerating scientific research with energy objectives.

This time, the energy transition is dictated by the awareness that a dangerous discrepancy has emerged between human society, understood as a producer and consumer of energy resources, and nature, understood as an unbalanced environment as a result of irresponsible exploitation by humans. The global ecological and social problems, known through the efforts of world bodies and not only, which aim, among others: reducing global warming, reducing pollution, depletion of planetary resources, fighting poverty, fighting pandemics, etc., require joint actions for a new energy transition. The current energy transition is not dictated by geopolitical reasons, but by reasons related to the joint overcoming of the consequences arising from the increase in global warming, with its numerous consequences that are found in the numerous social and economic crises that seem to have no immediate solutions. As such, the energy transition of the coming decades refers to the transformations that must encompass specific production, consumption and distribution on a territory marked by a public administration in order to bring it to certain ecological performance indices.

The programs that have begun to be implemented by political will aim at the gradual replacement of fossil fuels, then nuclear, with an energy mix that encourages renewable energies, through complementary strategies that lead to reduced consumption, mass energy savings, increased energy

efficiency, but also to behavioral changes in relation to products and services that have certain upstream energy consumption.

The EU, through the Green Deal program, has already imposed policies to reduce coal production and energy consumption. As the pandemic crisis is coming to an end and the need for electricity is increasing, it is found that “..at the moment when great hopes are placed on the conclusions of COP 26 on the climate, fossil energy is already in force, at a time when gas and electricity prices are rising sharply. All over Europe, bills are increasing: +37% for electricity in one year in Spain; +30% for gas in the next quarter in Italy; +12.6% for regulated gas in France from October 1.”<sup>6</sup> Certainly, a major imbalance has emerged on the European energy market between the sudden demand for energy and the disruption of energy production, which maintains the volatility of electricity prices. It all started with the EU's political decision to place itself at the top of the list of supporters of COP 26, without studying the social costs.

**The EU and its boomerang measures.** The current energy crisis is a lesson that European leaders will not soon forget. The lack of rigorous planning for the energy transition demonstrates why energy prices for household consumers are increasing to unbearable levels. It has come to this point, due to insufficient supply in the short term and the hope of a complementary energy transition in the medium term. In 2021, the Nordic countries failed to replenish their natural gas stocks. Most European countries hoped and preferred to wait for a possible price reduction. The major European gas producers continued to reduce or even stop their extracted production. Romania aligned itself with this policy and postponed the legislation of offshore exploitation to compensate for the reduction in production in traditional fields. Forced by circumstances, the EU reoriented towards imports from Norway and Russia for methane gas, and the USA and the Middle East for LPG. The giant Gazprom did not agree to the short-term requests, being a supporter of medium and long-term conventions, as such it reduced production to the level of 2019. The competition for LPG was won by Asian players willing to pay high prices for short-term contracts. Relations with Russia are also stagnating due to the problems attached to the Nord Stream 2 pipeline. Suddenly, it is found that the blame for the explosion in gas prices belongs to the EU, which hoped for technologies specific to the energy transition and gave up on long-term contracts and gas delivery price conventions in correlation with the price of crude oil. In 2018 and 2019, this tactic worked and lower gas prices were paid. At the same time, the EU ordered the reduction of investments in the exploitation of methane gas, hoping for lower import prices than the prices

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<sup>6</sup> Shalanda Baker: „Revolutionary Power“, Island Press, 2021.



resulting from its own production. With small stocks, European countries find themselves in a position to pay much higher prices for the purchase of the necessary methane gas.

As such, Europeans find that the current energy crisis was generated by the chain of mistakes of European planners. The energy transition is a multi-stage process, and the measures that have been taken will find the EU in a position to no longer control energy prices for the coming decades. Perhaps for these reasons, the Recovery and Resilience Facility (RRF) has allocated about 40% of the green transition funds to reduce the costs borne by the population and companies.

The current energy crisis that mainly affects the EU seems like a short-term shock, but experts warn that on the contrary it will have long-term repercussions and will materialize in numerous economic crises, especially in a major social crisis. Many companies are forced to close their doors due to energy prices, unemployment will increase and thousands of households will be put in a situation where they will no longer have access to gas and electricity. The Great Deal boomerang was thrown without lucidity and is now hitting the economic and social base of the component countries. As such, the critical points of view on EU policies in the field, for example: "The contradictory manner and slow pace with which the energy transition process is currently evolving (clearly signaled at Cop 26 Glasgow) are also explained by the fact that the EU has engaged in the transition activity without regulating energy prices, which evolve according to supply and demand. Without a safety net, an unforeseen cyclical event like the one we are experiencing today risks having a disastrous effect on the climate, with a retreat to more affordable but highly polluting energies such as coal. As such, the energy crisis we are experiencing reflects the lack of foresight and irresponsibility of political leaders on energy and climate."<sup>7</sup>

By imposing renewable energy at the community level, the EU is on the verge of losing its international competitiveness, producing more expensive products with green energy compared to third countries, which offer cheaper products obtained with cheaper energy. The European Commission has already proposed establishing a carbon tax on the entry of products from third countries, which would compensate for any losses of competitiveness caused by more expensive energy. This measure will also spread within the community, emphasizing intra-community competitiveness.

**Romania and the energy crisis.** Romania, in the name of joining the EU, was obedient and took the measures foreseen by the Green Deal in advance. This is how the current energy crisis finds Romania with the coal-

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<sup>7</sup> Michael Gay, Samuele Furfari, *UE ne respecte pas ses propres traites*, European Scientist, 08/2021.

fired energy industry completely dismantled, with the postponement of gas extraction from the Black Sea and with minimal investments in other energy production and distribution systems.

Even now, Romania has a valued energy mix, with 36% of energy coming from hydrocarbons, about 20% from nuclear power plants and 16% from renewable sources (wind, solar, geothermal, etc.). However, "On September 21, electricity prices had increased by 24.7 compared to the level in September 2020, and gas prices had increased, in the same interval, by 20.6%. To a large extent, these developments were the result of the doubling, to the level of 63 euros/ton, of the price of European carbon certificates, which oblige carbon dioxide emitters to pay for these emissions, in an effort to reduce net greenhouse gas emissions, by 2030, by 55% compared to the level of 2019".<sup>8</sup> Unfortunately, the increase in the price of European certificates is not the only one responsible for the increase in energy and natural gas prices. To this increase must be added the consequences of domestic political decisions, which have materialized in: the untimely liberalization of the energy market, the drastic reduction of investments in complementary or adjacent energy capacities after 2015, a modest level of management of state reserves through contracting policies through a competitive combination of short-term with medium and long-term ones, the unjustified approval of very short-term commitments to the detriment of others, etc.

Romania fully agreed with the final goal pursued by the EU, that of changing economies, using price elements, so as to make any investment in new hydrocarbon-based production capacities uneconomical and to support investments in specific renewable energy capacities, in order to limit global warming. European energy measures have led to European energy price increases, which affect more or less all European countries. At the European level, various formulas are being discussed to defend the situation of households and companies that cannot afford their electricity and gas bills. Among these, the most vocal ones refer to: renegotiating, at European level, the targets for reducing greenhouse gas emissions and the price of carbon certificates; concentrating all domestic producers in a single energy producing entity; reducing or waiving the state's collection of excise duties, value added tax and other taxes currently related to the energy sector; capping the price of energy products for a considerable period of time. Any of these steps is being fought economically and politically at the EU level. In the European effort to achieve a transition to an economy with a reasonable carbon content, Romania will have many losers: households and companies. Because low-income families are the most vulnerable, the Romanian state has decided to draw up a list of vulnerable consumers to

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<sup>8</sup> Valentin Lazea, Cum asimilăm schimbarea?, article, Cronicile, no. 88/2021, p. 94.

whom it will open a subsidy line for limited consumption. Consumers considered invulnerable for the moment will have to adapt to the new living conditions, reduce consumption, make energy improvements to their homes or pay more, until they too will have to resort to public mercy.

At the company level, state intervention in subsidizing is limited by community regulations. The sectors most affected by the energy crisis are those in the field of chemical fertilizer production, steel and metal processing, construction materials, glassware, etc., but the increase in production prices in these sectors will spread devastatingly to the construction industry, machine building, pharmaceutical manufacturing, etc., all of which will mark people's living standards.

Many of the factories will have to close their doors or reduce their activity. Alro Slatina has already publicly started this process, with important social repercussions.

For Romania, the PNRR offers the possibility of reducing dependence on fossil energy, but requires great efforts to reach the levels required by the financing commitment. Romanian companies are forced to re-technologize to face, first of all, intra-community competition in terms of the carbon footprint of national product.

### **Conclusions**

Atmospheric warming has become a constant of life on Earth, for which not all countries are equally guilty. When implementing measures to reduce carbon in the atmosphere, within the world community, it seems that some countries are more equal than others, and establish measures that must be respected by other countries first. The current energy crisis on community land constitutes a temporary shock that announces long-term problems, which will be found in dramatic economic crises and great human tragedies. The beginning is given by the unprecedented increase in the price of electricity and gas, an increase for which neither the business environment nor the majority of household consumers are prepared. For the coming years, the transition to new energy sources will lead to chain bankruptcies in the economic environment and to mass impoverishment of many categories of households. Romania seems to already be at the forefront of countries that are suffering from rising energy prices, the impoverishment of the population, and the bankruptcy of a large part of the business environment, but it hopes to responsibly contribute to reducing carbon emissions into the atmosphere.



## BIBLIOGRAPHY

- BAKER S. „Revolutionary Power“, Issland Press, 2021;  
CRĂCIUN R., *Fără ipocrizie, despre incapacitatea de-a limita încălzirea globală*, article, Cronicile, no.88/ 2021;  
DASH M., „Mania lalelelor”, Humanitas Publishing House, Bucharest, 2014;  
GAY M., FURFARI S., *UE ne respecte pas ses propres traites*, European Scientist, 08/2022;  
IONESCU A., *Revoluția climatică se amână*, article, Cronicile, no.88/2021;  
LAZEA V., *Cum asimilăm schimbarea?*, article, Cronicile, no. 88/2021.

