



Editorial – Issue 36 – April 2022

The world energy sector has been heavily impacted by recent global events, notably the conflict between European countries, which has brought turmoil in various sectors of the economy and, consequently, has caused socioeconomic difficulties in several countries. However, the adverse situation we are experiencing today could have been significantly mitigated if it were not for the negligence of world leaders, especially European leaders, regarding energy security strategies. The diversification of resources, in this specific case, of energy sources, is a strategy that is known to provide security, since, with a balanced matrix, the scarcity of supply of an energy source, or even its complete withdrawal, is easily compensated by the remainder sources. Using economic jargon, hedging is very important.

Diversification also plays an important role in environmental sustainability. The recent report by the Intergovernmental Panel on Climate Change (IPCC) shows that the emission of greenhouse gases continues to increase, which demands emergency and urgent actions in a global context, under the leadership of the countries that consume most of the energy. Therefore, in recent years, despite the warnings of several international organizations, world leaders have not done enough to neutralize the progression of environmental deterioration. We all know that there is no completely neutral way of generating energy safely, but the need to expand efforts to diversify the world energy matrix is evident, privileging sources that have less negative impact on the environment.

The lack of governmental strategy in the energy sector today in Brazil is noticeable. We have watched with great concern the attempts at political interference in state-owned companies, especially in the oil sector, due to the turmoil caused by the conflict in Europe. The current situation highlights the lack of energy security policies, among others related to the adequate supply of energy to the industrial sectors in the country. Unfortunately, the natural path of government leaders is political interference rather than the development of policies that will mitigate the effects of global crises.

Brazil, until recently a respected leader in issues of energy generation using adequate sources, today is on the sidelines of the process of modernization of energy matrices. The country's geopolitical strategy for the composition of a cleaner and cheaper energy matrix, although it could be the target of occasional criticism, was perceived worldwide as something to be recognized. Obvious issues can be cited, such as the predominant use of energy from water sources, from wind sources, both with Marginal Operating Cost equal to zero, extensive interconnection between electrical subsystems and respect for environmental issues. Among the specific objections, we can mention the detachment between the physical production of the generators and their revenue. These aspects, which make an industry economically viable, cannot be addressed by anachronistic models.

In times of crisis, it is tantalizing to withdraw resources from initiatives aimed at the evolution of society, those that add future value to the nation, since their results are not visible to the general public in the short term. This was exactly the case of the R&D Programme of the regulatory agency for electrical energy, ANEEL (*Agência Nacional de Energia Elétrica*), whose resources which had not yet been invested were redirected to urgent issues caused by the pandemic. It is natural that resources are redirected when there is a strong contingency, but the map established by government bodies regarding the contribution of each sector of the economy speaks for itself. If the country wants to stand out technologically and promote the evolution of society, providing an increasingly higher quality of life, it cannot afford to withdraw resources almost exclusively from actions aimed at the future. This demonstrates a lack of public policies and security strategies in all sectors, including energy.

Strategies related to the country's energy sector should not only guarantee the continuity of initiatives that bring value in the medium and long term, but also develop energy diversification strategies that guarantee security for society, mitigating the effects of crises and protecting both the industrial sector and the society of economic turmoil and commercial fluctuations caused by resource contingencies. If energy diversification strategies are insufficient and investments in technological innovation are redirected to the point of interrupting ongoing initiatives, the attitude that the country demonstrates is not one of thinking about its own future, but of coming



to terms with its underprivileged situation vis-à-vis the more developed nations, perpetuating its stigma of, despite having the resources to evolve, not being able to take off.

The 36th issue of Espaço Energia features only two articles, due to the rigour of the evaluation process of manuscripts submitted to the journal. The first addresses the impacts of flow batteries on transmission lines, with the objective of analysing the possibility of circumventing congestion problems. The work concludes that the relocation of stored energy from batteries can redistribute the flows through the transmission lines, allow for a better use of the hydraulic generation capacity and, thus, avoid dispatch of thermal generation. The second paper evaluates the potential for generating energy from biogas derived from urban solid waste, based on experiments carried out in a sanitary landfill in the southern region of the country. In the specific case, it was concluded that the use of biogas as energy would meet the demand of approximately four thousand homes and avoid the emission of more than two thousand tons of carbon dioxide equivalent in a period of forty years, which shows the potential of such facilities in the country.

Finally, the body of editors of Espaço Energia would like to thank everyone involved in the publication of this issue, starting with the authors and their interest in publishing their results here, for the impeccable work of the referees belonging to the journal's editorial board, for all the collaborators, responsible for activities behind the scenes and, finally, for the constant interest of our assiduous readers. We wish you all a good reading.

Klaus de Geus and Marcelo Rodrigues Bessa
Members of the board of editors