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Cryptocurrencies: the energy and security nexus

In March, the European Commission, through the digital Economy and Society Commissioner Mariya Gabriel, argued that the high level of energy consumption in the mining process of cryptocurrencies is not an impediment to this activity and that the process has no limitations even from a legal standpoint. That said Mr Gabriel added that it is an economic activity that consumes a significant amount of electricity and therefore remains subject to EU's energy efficiency standards and policies , energy sector and greenhouse gas emissions.

The activity of cryptocurrencies' extraction (Bitcoin is the most famous, but next to it there are numerous others, like Ethereum, Ripple, Stellar), is an activity that consists in processing a chain of controlled distribution (called blockchain), whose output can be cryptocurrencies.

This procedure that was initially possible to play with a normal home PC, then as the chains of controlled connections increased, while keeping stable the number of operations, the activity has become increasingly complex and onerous, to the point that today are powerful machines are indispensable and more often than not pooled among different users (creating mining pools).

Very quickly these groups have developed into vast storages full of servers, equipped with very powerful ventilation systems to prevent overheating, whose sole purpose is the extraction of cryptocurrencies. Most of these mining farms are located in developing countries or in emerging economies like China (apparently the preferred location by 2/3 of these farms).

At this stage there are two problems emerging: ecological and energetic ones. Most of the producing countries use highly polluting sources, opening a question on when these firms will migrate to countries with cleaner energy generation

The economist Alex de Vries calculated that the energy consumed to produce bitcoins equals the daily consumption of a medium sized nation [Nathaniel Popper *There Is Nothing Virtual About Bitcoin's Energy*

Appetite, in The New York Jan. 21, 2018]. The same scientist calculates that for each Bitcoin transaction the energy costs equal 80.000 those of a normal credit card..

In this context, the issue of energy consumption is part of the broader discussion on energy supply security, introduced in 2006 the Secretary General, Jaap de Hoop Scheffer was officially assigned to the NATO summit in Bucharest in 2008 and systematically developed, also in the Emerging Challenges Division at NATO HQ.

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