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# Guarantees of Origin: Market Tool or Missed Opportunity?

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## Guarantees of Origin can provide an additional revenue stream for RES producers

Romania is in process of designing its Guarantee of Origin (GO) scheme with the intention of transparently communicating where consumer energy comes from. However, the scheme can target multiple aims at once, if designed carefully. European businesses are under pressure to deliver their products and services with a green mandate. Romania has leverage here; selling its renewable energy to companies can ensure their ESG targets are met and, in turn, shift financing for renewable energy development from the public sector onto the private sector. However, current GO schemes squander this opportunity through oversupply yielding ESG gains for private companies at prices too low to incentivise new development.

While limited in their ability to incentivise electricity development, GOs may be able to play a bigger role in the development of renewable heat and fuel. There are a significant number of customers who struggle to electrify but would like to reduce their emissions intensity. The low availability of renewable heat and fuel could yield a higher GO price.

## Increasing transparency in renewable energy consumption

The revised Renewable Energy Directive mandates that all Member States GOs to promote informed renewable energy consumption and encourage uptake. A GO certifies that 1 MWh of energy was generated from a renewable source. Much like a product label, it tells the consumer the source, date and place of production. In turn, companies purchase GOs to fulfil their Environmental Social Governance targets while also creating a new revenue stream for producers.

Each MWh of generation is tracked within the electricity system, and consumers claim renewable energy use by cancelling certificates. Once cancelled, that energy is removed from the remaining mix to prevent double counting – what's left is called the residual mix. This untracked electricity (excluding that sold through GOs) is used by electricity suppliers, system

operators, regulators and consumers to understand the carbon intensity of their electricity usage. GOs are purely an accounting scheme and remains separate from all physical electricity purchase, and are not counted towards any national targets.

The Association of Issuing Bodies acts as a central point for transferring GOs and ensures standardisation across national systems. Countries are required to observe the scheme and its regulations before becoming full members.

# The Romanian context

GOs can provide a market-based mechanism to boost revenue from renewables, supporting the national target of 38.3% renewable energy by 2030. Romania is in the process of transposing the renewable energy directive, which is undergoing the interministerial approvement process. The transposition is meant to strengthen the existing Guarantee of Origin scheme which currently has no monetary value and is typically used to prove consumption from a private purchase. The National Energy Regulatory Authority (ANRE), who oversees the scheme, is currently in the process of applying to become an observing member of AIB before transitioning into full membership. The updated Romanian scheme will begin issuing GOs from January 2027 and will include thermal generation and some renewable fuels, such as biomethane.

Romania's 2023 electricity generation included 18% renewable energy from wind and solar. Both experienced a short-lived investment boom in Romania from 2011-2015 during the 'green certificate' support scheme though development stagnated following the scheme's closure. However, recent years have seen an uptick in installations with a 4% growth rate between 2023 and 2024. Despite these recent gains, new forms of support are still required to develop the target 10 GW minimum of solar and wind by 2030. Romania is offering several opportunities to support renewable energy production, financed mainly through EU-backed funds, such as the Modernisation Fund, the National Recovery and Resilience Plan and the Contracts for Difference scheme.

# Restricting GOs to new projects raises market value but reduces overall supply and creates create market distortions

In theory, the regulator can issue GOs to any asset and they are sold at market value. Issuing GOs to all low carbon assets (for example, Norway issuing GOs for hydropower plants built in the mid 1900's) has resulted in a market flooding. Consequentially, GO prices are relatively low – too low to incentivise new RES development. In the 2010s, prices remained between 0.5-1.5 EUR/MWh due to oversupply. Recent temporary market spikes saw prices as high as 7-10 EUR/MWh in 2023 before falling to below 1 EUR/MWh in 2024, indicative of a volatile market. Even at their highest price points, they are still a far cry from the 15-25 EUR price tag which would be steadily required to create a meaningful investment signal. Oversupply may be exacerbated if GOs are also issued to sources which contribute to Romania's baseload

energy (such as hydropower or nuclear). Reaching higher GO prices requires scarcity in the market, which may mean limiting which assets qualify for GOs. For example, limiting issuance to new assets and / or assets which don't already benefit from state support. However, reducing the types of assets which qualify for GOs may not result in a measurable price increase as long as the market for GOs are still flooded by existing assets in Nordic countries.

# Timestamping GOs increases legitimacy but risks market fragmentation

GOs allow for the consumption of 'green' electricity (such as from wind or solar) during hours when the sun isn't shining and the wind isn't blowing. As GOs are separate from the physical flow of electricity, renewables can be consumed while avoiding investment into grid energy storage and, to a lesser extent, infrastructure which would be required to transport and store that electricity during peak performance hours and shift demand. As a result, the transmission system operator bears the sole burden of these developments.

An alternate option would be to include a time specific requirement alongside GOs (also known as 'hourly GOs') which require the GO purchase to somewhat match the timeframe of production. This would avoid allowing companies to benefit from the marketing of using intermittent renewable energy during times of low generation, and increase the price during hours of peak consumption. This practice is already encouraged in the updated Renewable Energy Directive.

These temporal limitations have already been exercised in an experiment in the Netherlands where blockchain-based tags, known as Granular Certificates, act as a timestamp and were pegged to specific GOs. Microsoft, the consumer, was able to purchase GOs with an attached timestamp from a wind farm operated by Eneco. However, this study incurred some limitations as GO purchase followed the physical transfer and the offtaker made their live consumption data available.

Introducing timestamping alongside GOs would increase the transparency in renewable energy claims made by consumers, but would result in a trade-off of limiting GO fungibility as they would become more difficult to trade. Furthermore, GOs unaccompanied with timestamping would likely decrease in value as they would no longer be accepted as an accurate measure of emissions reduction.

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# A carefully designed GO scheme can deliver more than just consumer information

Careful policy design can help Romania maximise the value derived from GOs. Firstly, Romania should limit issuing GOs to new generation which don't already benefit from state support to maximise the investment incentive from GOs. This measure may reduce the number of producers who can benefit from GO-based revenue; however, it will increase the value of revenue for producers who receive them. In turn, this may help contribute to an investment case for new renewable energy. Secondly, Romania should begin examining how to timestamp GOs in the future. While this may reduce the fungibility of GOs, it will strengthen the sustainability claims of consumers who purchase them. While the purpose of GOs is to provide information for consumers and their impact on incentivising investment and transparency may be limited, Romania should design the scheme to maximise this potential.