SDG 7, Affordable and Clean Energy: Financing the Energy Transition: How Sustainable Finance, Project Credibility and Strong-Sustainability Tools Shape SDG 7

1. Why Money Alone Cannot Deliver SDG 7

The promise of SDG 7 – affordable, reliable and sustainable energy for all – rests on a deceptively simple assumption: if the world pours enough capital into clean energy, the transition will accelerate automatically. Yet evidence shows this is not how sustainability works in practice. Clean energy is capital-intensive, technologically complex, politically exposed, and socially sensitive. Large-scale power generation and system infrastructure require enormous upfront financing, but the conditions under which this financing is mobilised matter just as much as the amounts involved.

Recent analyses of the global and European energy landscape make this clear. Even advanced economies face structural challenges: rising interest rates have increased the cost of capital for wind and solar projects, in some cases from as little as 1.3% to over 6% in the EU, weakening investment appetite and slowing project deployment. Meanwhile, despite the rapid expansion of renewables, only a portion of the technologies required for full decarbonisation are mature; the rest remain at prototype or demonstration stage, elevating risk and deterring financiers.

In this environment, sustainable finance is meant to serve as the engine of transformation. Yet the financial sector still allocates most global bank capital towards fossil fuels, particularly outside Europe, even as international frameworks push for increased investment in low-carbon technologies. Corporate sustainability reports – intended to inform investors and build trust – often fall short: SDG disclosures are inconsistent, incomplete, and frequently symbolic, with many companies declaring alignment to SDGs while providing little measurable evidence. This phenomenon, sometimes called ‘SDG-washing’, obscures risks and undermines market credibility.

These dynamics demonstrate a critical insight: capital does not flow efficiently towards clean energy unless credible projects, transparent reporting, and reliable sustainability metrics are in place. Sustainable finance is not just about issuing green-labelled instruments –

it depends on trust, verification, and project quality. This is where the intersection of project evaluation tools and financial market behaviour becomes central to SDG 7.

2. When Markets React to Sustainability: The Limits and Lessons of Green Bonds

Green bonds have become one of the flagship instruments of sustainable finance. Since 2007, they have funded renewable energy, clean transportation, energy efficiency, and climate resilience across the world. In the EU alone, more than 1,400 green bonds have been issued across 26 countries, amounting to over $440 billion. Policymakers frequently view them as win–win: companies lower their financing costs while signalling commitment to climate goals, and investors receive stable returns with an environmental benefit.

However, real market behaviour is more nuanced. A large event study analysis of 383 EU green bond issuances shows that capital markets do **not** reward firms uniformly for issuing green debt. Across a 20-day window, average cumulative abnormal returns are slightly negative (around −1%), suggesting that investors respond cautiously rather than enthusiastically to sustainability announcements. The green label alone does not guarantee a premium.

Yet several important patterns emerge.

First, credibility matters. Companies with higher ESG scores and larger market capitalisation experience more favourable returns, indicating that investors value transparency, governance, and proven track records.

Second, signalling effects exist, but are subtle. First-time issuers show slightly more positive reactions than repeat issuers – suggesting that when a company enters the green bond market for the first time, investors interpret this as a meaningful shift in strategy.

Third, reporting quality is foundational. Insights from SDG disclosure studies confirm that many firms – especially in energy-intensive sectors – provide sustainability statements that are broad, selective, or superficial, limiting the ability of investors to distinguish substantive action from symbolic compliance.

The implication is clear: sustainable finance succeeds only when the projects financed are demonstrably sustainable and when companies provide trustworthy, data-rich reporting. Without this, markets cannot accurately price risk, and green bonds become vulnerable to doubts about legitimacy – particularly when broader financial systems still favour fossil-based investments.

SDG 7 depends on solving precisely this tension. Clean energy needs investment at scale, but investment at scale requires confidence – confidence that green-labelled projects are real, impactful, and resilient. This is where strong-sustainability methodologies enter the story.

3. Choosing What to Finance: Why Strong Sustainability Tools Like STOPSIS Are Game Changers

Even when money is available, the allocation of capital depends on how projects are evaluated. Traditional multi-criteria decision-making tools such as TOPSIS[1] allow strong performance in one criterion to compensate for weak performance in another. In conventional decision theory, this is acceptable; in sustainability, it is dangerous. A wind farm with excellent energy output but significant ecological harm should not rank as a 'top' project simply because numerical compensation is permitted. SDG 7 is not just about producing more energy – it is about producing better energy.

The STOPSIS[2] method offers a compelling solution. By integrating a sustainability coefficient and a spike-suppression matrix, STOPSIS actively reduces the influence of extreme values in any single criterion. In a real-world application to seven offshore wind farm projects in the Baltic Sea, STOPSIS fundamentally changed the rankings: projects that looked optimal under traditional TOPSIS fell dramatically once strong sustainability constraints were applied, while balanced and environmentally responsible projects rose to the top.

This methodological shift has direct implications for sustainable finance. When companies seek capital through green bonds, the market assumes that funded projects genuinely support climate and energy goals. But the earlier evidence shows that investors respond sceptically unless they trust the underlying evaluation. Strong sustainability methods like STOPSIS do not just support better decision-making – they create bankable credibility. They act as a pre-financing filter, ensuring that only high-quality, sustainability-coherent projects enter the green finance pipeline.

Combined with robust SDG reporting and the global push for clean energy access and efficiency improvements under SDG 7, STOPSIS helps align technological, ecological, and financial realities. It bridges the gap between technical project excellence and investor confidence, addressing the dual barriers that currently slow the transition: poor sustainability metrics on one side and hesitant capital markets on the other.

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[1] Technique for Order Preference by Similarity to Ideal Solution
[2] Sustainable Technique for Order Preference by Similarity to Ideal Solution

The lesson is straightforward but powerful: SDG 7 is achieved not by financing more energy projects, but by financing the right energy projects and showing convincingly why they are right. Strong-sustainability tools create this clarity. Sustainable finance amplifies it. Together, they form the backbone of a credible and effective clean-energy transformation.

Questions

1. Why do financial markets respond only modestly to green bond issuances, and what does this imply for companies seeking to finance clean energy projects?
2. How does the STOPSIS method address weaknesses in traditional project evaluation when selecting renewable energy infrastructure?
3. In what ways does transparency in SDG reporting influence investor confidence in sustainable finance instruments?
4. How do macroeconomic factors (such as rising interest rates or immature technologies) affect the feasibility of achieving SDG 7?
5. Why is the alignment between project quality tools (like STOPSIS) and financial instruments (like green bonds) essential for accelerating the global energy transition?

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