



CAPEX PROCUREMENT AS A STRATEGIC LEVER IN SUSTAINABLE INFRASTRUCTURE



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Why CAPEX is the most underestimated value lever

CAPEX vs. OPEX vs. M&A

Capital expenditure (CAPEX) has spent years at the margins of the executive agenda. It often sits behind cost reduction programs, revenue initiatives and M&A activity, and is too frequently treated as an engineering decision rather than a strategic one. This framing prevents many companies from using one of the strongest levers they have to shape their long-term competitive position. Global gross fixed capital formation reached around 27.7 trillion US dollars in 2023, exceeding the combined GDP of several leading industrial nations. Yet a significant share of that capital still passes through processes designed primarily for compliance and approval, rather than value creation.

The contrast with OPEX and M&A is worth highlighting. OPEX Optimization programs typically deliver incremental savings that are often short-lived. M&A creates value only when integration and synergies are executed well and rarely changes the underlying cost base of the existing portfolio. Disciplined CAPEX works differently. There are multiple variables that can deliver value and can reduce invested capital, accelerate time-to-production and improve cash flow across the entire asset lifecycle at the same time. The objective is not simply to cut costs. It is to challenge project scope, accelerate execution and design assets for efficiency and reliability, rather than for compliance with the original specification. Based on experience, value can typically increase by 15 to 40%.

“Most companies approve CAPEX for compliance. Leaders use it for competitive advantage.”

ROIC impact of disciplined investment management

What is striking here is not the headline number, but what it indicates. Studies of asset-intensive industries suggest that roughly half of the improvement in return on invested capital (ROIC) over recent decades can be traced back to better investment management and stronger capital-project discipline. This is not a cosmetic finding. CAPEX is not simply a necessary expense. It is a structural driver of where ROIC settles over a full economic cycle.

What makes this lever so easy to underestimate is its timing. An estimated 60 to 95% of an asset's lifecycle costs are locked in during the planning phase, long



before any equipment reaches the site. Once financing is committed and specifications are frozen, the ability to improve cost, schedule or performance declines sharply. Management often treats capital projects as engineering exercises rather than strategic business initiatives, systematically leaving value on the table. Companies that consistently outperform tend to apply the same discipline to CAPEX governance, stage-gate reviews and design-to-value that they apply to their corporate strategy.

Why sustainable infrastructure projects demand strong CAPEX risk management

High technical complexity

Sustainable infrastructure projects show how strategic the CAPEX question really becomes. These assets concentrate almost every category of capital risk in a single project. The technical complexity is not incremental, but structural. Sustainable infrastructure projects, such as modern waste-to-energy plants, which are cited as an illustrative example in the following, combine combustion, advanced flue-gas cleaning, energy recovery and, increasingly, carbon capture. In the most challenging cases, these systems must be integrated on a brownfield site with limited space and tight connections to existing infrastructure. Each system has its own performance envelope, vendor landscape, maturity stage and failure modes, yet all must work together reliably for decades. The result is a level of interface density that few other industrial projects face.

“In sustainable infrastructure, execution risk begins long before construction.”

Regulatory pressure

Regulatory pressure adds a second layer, and the ground continues to shift. WtE plants, for example, sit at the intersection of waste, energy and climate policy, where the rules are still evolving. Tightened emission limits under the updated “Best Available Techniques” conclusions, the gradual inclusion of waste incineration in carbon pricing schemes, the EU waste hierarchy pushing volumes towards recycling, and evolving rules on residue handling all reshape the economics of any new investment. Decisions made today on capacity, technology and contractual structure must remain defensible against frameworks that have not yet settled.



This is not a contingency issue. It makes future-proofing the design and the contract a core CAPEX challenge, rather than an afterthought.

Public scrutiny and political risk

On top of this comes public pressure and political risk. WtE plants are usually highly visible local infrastructure assets that are often publicly owned or closely tied to municipal waste contracts. They are also routinely challenged by communities, NGOs, and local politicians. Permitting timelines can be extended, conditions may be added late in the process and projects can be reshaped or even cancelled due to political shifts. For investments that typically run into hundreds of millions of euros and depend on long-term gate fees, energy offtake and carbon revenues for success, this combination of technical, regulatory and political exposure materially increases execution and investment risk. Therefore, managing CAPEX risk in WtE and sustainable infrastructure more broadly is less about contingency percentages and more about how the investment is structured, governed and procured from the initial concept design phase.

Procurement's Strategic Role Across the CAPEX Lifecycle

Early Procurement Involvement during Concept & (FEED) Phase

There is no single blueprint for CAPEX excellence across these challenges. Some organisations focus on design-to-value. Others place more weight on contracting models, contractor involvement or governance maturity. What links the strongest performers is their view of procurement. They do not position it at the end of the process as a contracting activity but embed it strategically across the CAPEX lifecycle. Procurement is involved from the first day of project planning, with buyers and engineers working together to define requirements, balance performance specifications with cost-effective design, and test scope choices against what the supplier market can realistically support. When suppliers are engaged during concept development through early consultations or co-design sessions, budgets and schedules become more accurate, and the risk of over-engineering or late-stage surprises is reduced before execution begins.

“Procurement should shape the project, not just negotiate the contract.”



Market Intelligence and Procurement Strategy

A second dimension is market intelligence and procurement strategy. The need for sharper sourcing discipline is often recognised, but responses often remain too general. Procurement strategies are launched without sufficient clarity on the problem they are meant to solve. CAPEX procurement teams that understand the competitive landscape, technology providers, lead times and cost drivers can shape the procurement strategy long before a tender is issued. They prequalify credible bidders, design parallel FEED competitions where appropriate, and structure contracts so that the right risks sit with the parties best placed to manage them. They also bring a total-cost-of-ownership (TCO) perspective into investment decisions, weighing operating costs, maintenance, energy use and end-of-life impacts alongside the headline price. In environments where carbon increasingly carries an economic value, procurement is also the function best placed to translate sustainability ambitions into measurable specifications, supplier criteria and contractual obligations.

Risk and compliance ownership

The third dimension is risk and compliance ownership. Large capital projects sit on top of a dense web of environmental permits, safety standards, localisation rules and sector-specific regulations, and procurement plays a critical role in ensuring that these requirements are reflected in supplier selection and contract terms. This is not only about assets. It is about governance, capability and decision-making. By vetting suppliers for compliance, embedding the right clauses in contracts, and factoring in local content, emissions and quality requirements from the start, procurement becomes the guardian of both cost-efficiency and the project's licence to operate. This is also where the gap is most visible in many organisations. Because mega-projects are infrequent, in-house CAPEX procurement expertise rarely deepens systematically, and ad hoc practices often replace a repeatable playbook. Closing this gap through capability building and assigning specialized buyers to CAPEX categories transforms capital investments from a one-time effort into a core competency. Most organizations cannot afford to establish such a CAPEX procurement organization permanently.

“Strong procurement governance lowers the risk premium built into every major project.”



Quantified value creation through CAPEX procurement excellence

Approximately 8 to 30% CAPEX reduction

The case for treating procurement as a strategic CAPEX lever is stronger when we consider its impact. Experience and external studies indicate CAPEX cost reductions of between 8 and 30% when procurement is fully embedded in the investment process. Furthermore, decisions based on total cost of ownership (TCO) rather than purchase price can result in additional lifecycle cost savings of between 10 and 30%. These results are not achieved through tougher negotiation alone. They stem from clearer scope definition, smarter technology choices, more rigorous supplier selection, more disciplined contracting, and closer management of changes during execution.

Schedule acceleration

Schedule acceleration is the second source of value and arguably the more strategic one. Projects that involve procurement early benefit from realistic lead-time planning, earlier ordering of critical long-lead items, and a sourcing strategy aligned with what the supplier market can actually deliver. This leads to fewer change orders and claims, smoother commissioning, and earlier first revenues. Given the scale of CAPEX investments in WtE and similar infrastructure, even a few months of acceleration in time-to-production can translate into a material uplift in net present value, while reducing the financing carry that weighs on the project during construction.

Risk premium reduction

The third source of value is less visible, but equally important: reducing the risk premium that suppliers, lenders and insurers build into the project. Strong procurement governance, credible performance guarantees, balanced risk allocation and well-managed compliance all signal to the market that the project will be executed in a controlled manner. This supports more competitive bids, better contractual terms, and easier access to financing and public support mechanisms. Three effects reinforce each other: lower CAPEX, faster execution and a reduced risk premium. Procurement excellence does not simply lower the cost of an asset. It increases the likelihood that the asset is delivered on time, performs as promised



and continues to create value across its full lifecycle, while building a sustainable competitive advantage for companies that treat CAPEX procurement as a strategic discipline rather than an administrative function.

Conclusion

- Disciplined CAPEX procurement creates value beyond cost reduction by improving capital efficiency, shortening time-to-production, and strengthening asset performance throughout its lifecycle.
- Sustainable infrastructure projects, such as waste-to-energy plants, involve technical, regulatory, political and economic risks. This makes the early involvement of procurement and clear governance essential.
- CAPEX Procurement excellence has a measurable impact when procurement is involved from the conceptual design phase onwards, ensuring that the scope, suppliers, contracts and compliance are aligned with the project's commercial and operational objectives.

Get in touch



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