Cleantech for Europe

Cleantech Group

Public Guarantees for Cleantech Manufacturing

How to free up working capital for the industrialisation of EU clean technologies

With the support of

Breakthrough Energy

Executive Summary

While the EU is vying to become a global leader in cleantech manufacturing, its most promising cleantech companies are facing a capital crunch as they scale and industrialise. The challenge ahead is massive: replicating the cost declines in solar power across other key industries – such as renewable hydrogen, green steel, energy storage among many others – in 5-10 years, while keeping these nascent industries in Europe.

At the same time, Europe's fiscal, financial, and economic context has changed for the worse since Russia's invasion of Ukraine: The energy crisis is far from over, high energy prices are hurting EU manufacturing, and political resistance to the Green Deal is on the rise. **In this challenging context, the EU needs to look for fiscally efficient solutions and mobilizing private capital, instead of pouring hundreds of billions into subsidies.** Public counter-guarantees offer a promising solution to unleash working capital at a minimal cost to the taxpayer.

When selling innovative equipment, cleantech manufacturers are asked for a series of bank guarantees to mitigate the buyer's risks in purchasing this equipment. **Because of their lower bankability compared to large industrials, banks ask for 100% cash collateral for the guarantees, tying up precious capital that should go to building up their manufacturing capacity.**

An EU public counter-guarantee instrument could step in to take some of the counterparty risk from banks, allowing scale-ups to respond to high traction and build more plants and equipment faster, creating jobs and meeting the EU's climate and industrial ambitions. **The latest announcements from the European Commission to offer this type of counter-guarantee instrument**

to the wind industry is promising – but now needs to be widened to other strategic clean technologies. The International Chamber of Commerce estimates the average ultimate loss rate for performance and financial guarantees is currently between 0.2% and 1.7%[1]. While the loss rate would likely increase in the case of earlier-stage companies, this would still represent a significant leverage effect. This means for every euro of public money spent, tens to hundreds of euros of working capital could be invested in cleantech manufacturing.

In this paper, we propose to set up an EU-wide scheme managed by a leading EU institution such as the European Investment Bank, which would provide counter-guarantees for cleantech equipment, starting with advance payments. The scheme should focus on the scale-up of cleantech manufacturing, and cover at least 80% of the risk. An initial scheme should cover at least €5 billion of cleantech counter-guarantees, and if successful expand to €20 billion by 2027. The next Multiannual Financial Framework (starting in 2028) would be an opportunity to scale by another order of magnitude.

1 https://iccwbo.org/wp-content/uploads/sites/3/2022/04/icc-document-icc-gcd-performance-guarantees-study.pdf

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CREDIT

The cover image shows an alkaline electrolyser from Sunfire

This report was produced as part of the Cleantech for Europe Scale-up Coalition, representing the next generation of European industry. The companies in the coalition are scaling and industrialising technologies helping Europe become climate neutral, energy independent and competitive: working across value chains and sectors, from decarbonising industry and energy with renewable hydrogen to producing scalable low-carbon cement, from electrifying transport to recycling materials and batteries.

Introduction: Public Guarantees for Cleantech Manufacturing

Over the last decade, the EU has become a cleantech innovation powerhouse, developing most of the technologies we need to decarbonise, become energy resilient and build industrial leadership. EU-based companies are ready to manufacture world-leading batteries, electrolysers, supercapacitors, electric trucks and near-zero carbon steel and cement. This new generation of industrial leaders could underpin Europe's global competitiveness for decades to come, at a time when peers in North America and Asia are investing significantly to take the lead in these new industries.

However, we still struggle to scale and industrialise these technologies in Europe, especially when they are developed by newcomers. At this critical "scale-up" stage, cleantech companies typically need to shift from raising tens of millions of euros in venture capital to validate their technology, which is relatively costly and limited in volumes, to hundreds of millions of euros in debt instruments to build large-scale plants. In previous research, we have pointed to why this scale-up is so difficult in Europe: the unlevel playing field between newcomers and existing large industrials, lack of public and private funding, insufficient demand signals, fragmented markets and lagging regulation, among other factors.

In President Ursula von der Leyen's words, the EU is vying to become "the home of clean tech and industrial innovation" with a focus on domestic manufacturing. The European Commission recently proposed new legislation to ensure that by 2030, the

EU would develop the manufacturing capacity to supply 40% of its deployment needs in strategic net-zero technologies such as renewables, batteries, electrolysers, geothermal, grid technologies and more. In this context, it is urgent to create the conditions for the successful build-up of Europe's cleantech manufacturing capacity.

To build up manufacturing capacity, asset-heavy cleantech innovators need access to affordable debt instruments. At this critical stage, cleantech companies have typically raised tens of millions of euros of venture capital, validated their technologies, built demonstration plants, and hired the teams ready to industrialise them. They have a very different risk profile than early-stage start-ups. But they remain relatively young entities with limited track records, smaller balance sheets, and bear higher technical and counterparty risk than their significantly larger competitors. As a result, they don't have the same bankability and low cost of capital as existing large industrials.

When selling innovative equipment, cleantech manufacturers are asked for a series of bank guarantees, to mitigate the buyer's risks in purchasing this equipment. Because of their lower bankability compared to industrial incumbents, innovators are not able to access these guarantees, tying up precious working capital in collateral that could be used to ramp up manufacturing capacity.

Public guarantees offer policymakers an efficient instrument to free up scarce private capital towards cleantech manufacturing. By providing a form of "insurance protection" to private investors from the risk of default or non-performance, they encourage banks and other private investors to provide debt capital to innovative projects. They are considered among the most fiscally efficient, i.e., cheapest, policy instruments to boost industrial activity without market distortions. By reducing selected risks, guarantees support

the bankability of investment projects through private capital. Public guarantees can be deployed along the scale-up journey:

→ Loan guarantees can accelerate the funding of first-of-a-kind cleantech projects with medium technology readiness levels (TRLs).

→ Once cleantech companies are ready to sell innovative equipment such as electrolysers or long-duration energy storage systems, counter-guarantees can free up critical working capital to boost manufacturing capacity, while providing a level of assurance to customers or clients that a product or service will meet certain predefined performance standards.

This paper focuses on guarantees for innovative equipment manufacturing and industrial projects, and why the status quo prevents clean technologies from ramping up their manufacturing capacity faster. **We recommend that a portion of InvestEU guarantee funds be used to provide access to counter-guarantees for cleantech SMEs via counter-guarantee schemes for commercial banks.**

For a deeper-dive into loan guarantees for first-of-a-kind projects, read this paper from our partners at Tech for Net Zero Allianz.

01

Guarantees: a common instrument in manufacturing and industrial projects

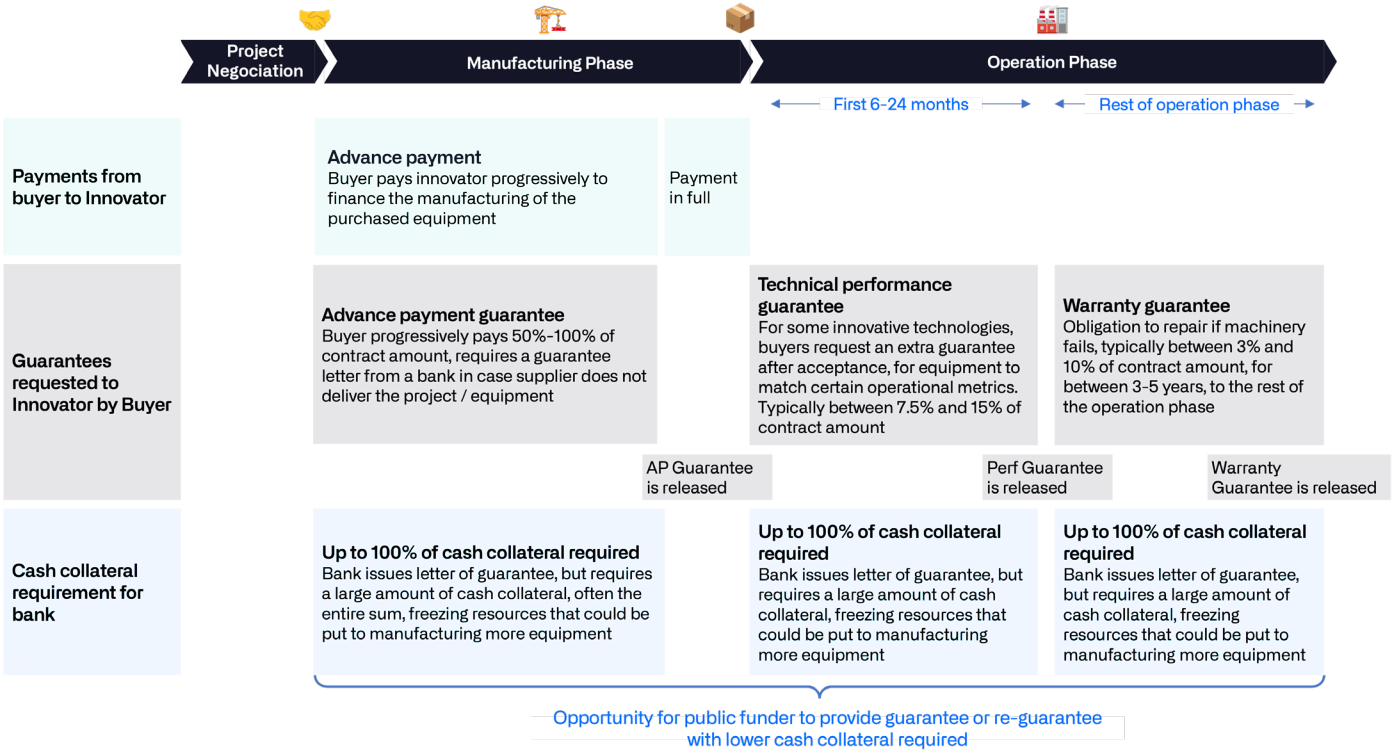
There are three main forms of guarantees that buyers of clean technologies require of scale-ups selling them innovative equipment such as electrolysers or long-duration energy storage systems:

1. **Advance payment guarantees:** Customer provides advanced payment to the equipment supplier, and requires a guarantee in case the supplier is unable to fulfill its contractual obligations. The guarantee lasts until the customer has received the equipment, and performs a positive acceptance test, and can lock up to 100% of the advance payments as cash collateral. The value of this guarantee accumulates in line with the payments made by the customer to the vendor and specified contractual delivery milestones and is released after advance payments have been fully accounted for.

2. **Technical performance guarantees:** Once the equipment is manufactured and delivered, the customer requests an additional guarantee that the innovative equipment will perform as contractually guaranteed. For mature technologies, these performance guarantees are typically lifted at the acceptance stage. For innovative technologies, customers can require a technical performance guarantee lasting between 6 months and two years (and beyond) after the equipment's acceptance test, and lock up to 10-15% of the contract value in an escrow account. Some companies have even reported requirements of up to 30% by potential customers.

3. **Warranty guarantee:** Once the equipment has been proven to work as intended, customers typically require an extended warranty in case of equipment failure. The guarantee can last several years, and lock up to 10% of contract value in an escrow account.

Figure 1: Guarantees for clean technologies in industrial projects (schematic, depending on customer requirements and project specifics)



In industrial projects, guarantees are a way for buyers and operators to mitigate the risk that the equipment they commission is not delivered to specification, does not function correctly, or needs significant maintenance.

While some guarantees are commonly requested in all industrial projects, others are specific to projects using innovative technologies. In the normal course of business, such guarantees are rarely drawn on.

Take the example of an electrolyser manufacturer selling into a large industrial project to produce ammonia or green steel. During the manufacturing and operation phase of the project, **the buyer will ask for a series of guarantees from the electrolyser manufacturer, typically issued by the bank of the cleantech company**. In return, the guarantee-issuing bank will require collateral, usually holding large portions of the amount of the guarantee in escrow accounts until those guarantees are lifted, which can be between 6 months and several years, depending on the type of guarantee.

02

Guarantee requirements hamper the scale-up of cleantech manufacturing

Bank guarantees are standard products in in industrial projects and equipment sales. They cover “contingent risk”, meaning that the bank replaces the credit risk of the manufacturer with their own credit risk, and money only flows if the buyer draws on the guarantee, which is rarely the case. However, while guarantees are a common tool, they can disadvantage innovative solutions developers or equipment manufacturers.

For novel technologies, commercial banks’ credit committees struggle to evaluate technology risk, so they demand a prohibitively high risk premium. Ultimately, commercial banks which improve their capacity to evaluate technical risk will reap the benefits of supporting the industrial leaders of tomorrow.

However, while the novelty of a technology is a factor in the bank’s decision, ultimately the credit quality of the company is what the bank must book exposure against. A new company which is not publicly rated, with limited track record, often negative free cash flow and limited cash at hand, becomes challenging for commercial banks from a credit perspective.

Commercial banks’ primary concern is counterparty risk. Because cleantech companies are relatively young, loss-making entities, they have very high counterparty risk. When providing guarantees, banks step in with their own counterparty risk. If they can’t re-guarantee it to a public entity, they will typically require 100% cash

collateral. Banks are also subject to stringent risk assessment controls and regulations and are strongly discouraged from taking on such counterparty risk. This is especially true for banks considered of systemic importance.

Large, established industrials can access these guarantees relatively easily, and get them cheaply issued by banks based on their creditworthiness, freeing up the cash to invest in their manufacturing capacity, working capital and customer projects. **Established, investment grade suppliers typically do not need to provide any cash collateral**, and simply pay the bank a 0.1-0.5% per annum guarantee issuance fee for a euro-denominated guarantee for well-established technologies (depending on several factors). Moreover, these incumbent clients of commercial banks have large guarantee issuance credit limits. This fee is usually cheaper than a direct loan because the bank does not bear the funding cost.

But in the case of innovative technologies developed by newcomers, banks are not ready to provide the same guarantees, pointing to two additional risks:

→ Remaining technical risk: even when scale-ups have demonstrated and validated their technology, these new technologies have less track record of operation at scale, and are considered riskier than mature technologies such as wind or solar power equipment.

→ Counterparty risk: as younger companies with smaller balance sheets than their competitors, cleantech scale-ups bear more counterparty risk.

As a result, the cost of financing such guarantees with commercial banks is prohibitive for cleantech companies, because banks ask for a significant share of the guarantee

to be held as cash collateral to cover the counterparty risk of relatively young companies, and the technology risk of innovative equipment. In practice, this means that for a project to take place, cleantech scale-ups selling equipment must commit to parking up to the full amounts of these guarantees in a bank, instead of using the cash to finance the build-up of their manufacturing capacity.

In addition, because the guarantee issuance fees asked by banks depend on the company and level of counterparty risk, they **can be substantially higher for newcomers than for incumbents, in some cases more than 1% per annum of the guarantee amount.** And since the guarantee issuance fee is on a per annum basis, it accumulates for the extent that the guarantee is outstanding – greatly compounding the cost of capital newcomers face compared to incumbents. Large industrials also benefit from indirect guarantees (in the form of Export Credit Guarantees, Investment Guarantees and Untied Loan Guarantees) from their long-standing relations with Export Credit Agency (ECA) networks such as Euler Hermes / Allianz Trade (Germany), SACE (Italy), ICEX (Spain), etc.

Drawing on smaller balance sheets, and locking away scarce liquidity: this competitive disadvantage for scale-ups exacerbates what is already an unlevel-playing field. While large industrials typically have large balance sheets and access to cheap, uncollateralized credit lines, scale-ups are already struggling to raise capital to build up their manufacturing and working capital. Tying up cash in escrow accounts further hampers the growth of these companies. Additionally, the size of the requested guarantees means the equivalent of 50+% of sales volumes could be locked away for years. This increased cost of capital puts innovative companies at a competitive disadvantage to established companies. Even if these scale-ups are able to secure venture debt or attractively priced debt options, this does not ease

the balance sheet burden that guarantees cause, where in the prevailing model founders are often compelled to raise significant amounts of dilutive equity capital in order to post cash collateral for the guarantees.

Innovators are also asked for extra guarantees, such as the "technical performance" guarantee. This type of guarantee is especially requested by buyers of innovative equipment (such as electrolysers) as an additional backing of the technical performance of this equipment beyond the initial acceptance test.

The problem of money from sales being locked in escrow tying up precious working capital in collateral that could be used to ramp up manufacturing capacity is compounded with every new sale, forcing companies to respond to high traction slower than they could. Scale-ups are left having to collateralize guarantees with equity, which is unsustainable because just a few – or less – of these often highly capital-intensive projects can eat up all their equity firepower. Finally, since one guarantee flows to the next, and each new project adds guarantee requirements, **cleantech companies cannot deliver on order books, as they do not have enough cash to set aside for collateral.** This can also lead to lost sales, slowing Europe's green industrial transformation in the early stages of a global Clean Industrial Revolution in which first-mover advantage is critical.

03

An opportunity for public funders to de-risk clean technologies at a low cost

This lack of guarantees is a significant barrier to achieving Europe's cleantech manufacturing ambitions. The European Commission has recognized this need by introducing a new instrument as part of the Wind Power Package[2], to be developed by the EIB in the next six months, and signaling it may be extended to grid technologies as well. This is a good start, but this instrument should urgently be expanded to strategic cleantech equipment, for instance for electrolysis and LDES systems.

The good news is that guarantees are designed not to be drawn and a natural risk mitigant is that they only get issued when a project is sold, meaning there is no offtake risk. In a public counter-guarantee setting, no money is flowing from the taxpayer unless the customer draws on the guarantee, which is very rarely the case. The International Chamber of Commerce estimates the average ultimate loss rate for performance and financial guarantees is currently between 0.2% and 1.7%[3]. While the loss rate would likely increase in the case of earlier-stage companies, this would still represent a significant leverage effect. This means **for every euro of public money spent, tens to hundreds of euros of working capital could be invested in cleantech manufacturing.**

Public guarantees offer policymakers an efficient instrument to mobilise more private capital towards cleantech manufacturing. By providing a form of "insurance protection" to private investors from the risk of default, they encourage banks and other private

2 https://ec.europa.eu/commission/presscorner/detail/en/speech_23_5267
3 https://iccwbo.org/wp-content/uploads/sites/3/2022/04/icc-document-icc-gcd-performance-guarantees-study.pdf

investors to provide debt capital to innovative projects. They are considered among the most fiscally efficient, i.e., cheapest, policy instruments to boost industrial activity without market distortions. By reducing selected risks, such as technological or counterparty risks, public guarantees support the bankability of investment projects through private capital.

In the case of guarantees for manufacturing and equipment, the lack of access to bank guarantees by cleantech companies is a **significant opportunity for public funders to boost the manufacturing capacity of innovative clean technologies at a relatively low cost**, helping Europe deploy innovative cleantech solutions much faster, meet the objectives of the Green Deal Industrial Plan, and remain competitive on the global stage.

The EU already has a significant budget guarantee to encourage private investors to fund innovative technologies. Launched in 2021, InvestEU is a EUR 26.2 billion budget guarantee aiming to mobilise more than EUR 372 billion of public and private funding. A key goal for the Fund is to help in "scaling up larger innovative companies", and facilitate access to finance for small and medium-sized companies (SMEs). Its implementing partners include the European Investment Fund (EIF), the European Investment Bank (EIB), and national banks. But no counter-guarantee instrument currently exists to facilitate access to bank guarantees for cleantech manufacturing or equipment sales:

→ EIF already provides loan guarantees to SMEs, but not yet manufacturing guarantees. Its loan guarantees are deployed via partner banks and in most cases capped at €7.5 million per recipient, with up to 80% guarantee rates. This would not be enough to cover deployments of electrolysers or LDES systems, where a unit typically costs €50-100 million. EIF provides a set of eligibility criteria, and it is up to the bank to perform the technical assessment and credit analysis of companies.

→ EIB offers direct debt finance to cleantech scale-ups through its Venture Debt and other debt facilities, but does not yet have a product targeted at manufacturing guarantees. It will be building one in the context of the Wind Power Package and Grid Action Plan. It is critical that this instrument be expanded to other strategic cleantech equipment.

→ Some national banks already offer guarantees, such as BPIFrance with its “Strategic Guarantees Program”, but these mainly target exports and often focus on loan guarantees and not yet manufacturing guarantees.

CASE STUDY

Export Development Canada

Export Development Canada (EDC), Canada's state-owned export credit agency, illustrates how public funders can be leveraged to address the commercial project financing gap in cleantech. EDC offers an instrument called Account Performance Security Guarantee (APSG), which has been in place for more than 12 years, and allows cleantech innovators to issue letters of guarantee with their bank without putting any cash collateral in escrow. EDC is able to cover 100% of the collateral for all types of guarantees, including advance payment, performance guarantees and warranty. This allows cleantech innovators to sell more equipment, determine profit margins and improve working capital.

EDC understands that cleantech scaleups represent higher risk, and therefore enables commercial banks to issue re-guarantees. Under APSG, EDC performs due diligence on individual cleantech companies, then authorizes the commercial bank to draw on a counter-guarantee. The company fills out a form, it goes through the bank which then sends it over to the EDC. EDC's credit risk evaluation got much better with time, as the team learnt about risks in the cleantech manufacturing world. They use providers of research and analysis into the space such as Cleantech Group.

The European equivalent should cover projects and equipment sales taking place both in the company's home Member State and in export situations, be that to another Member State or outside of the EU.

We propose to set up an EU-wide guarantee scheme managed by a leading EU institution such as the European Investment Bank with the following characteristics:

- → Focus on the manufacturing of cleantech equipment, such as electrolysers, LDES systems or innovative renewables.
- → Focus on cleantech scale-ups instead of large industrials, as these are the entities that don't have easy access to bank guarantees.
- → Allow the counter-guarantees to be offered in conjunction with existing funding instruments, such as EIB's Venture Debt product, for maximal impact.
- → Public guarantees should only be used as a bridge to bankability. For instance, cap the number of similar projects that a company can have guaranteed to 2, or progressively reduce the share of collateral counter-guaranteed. However, there shouldn't be a cap on the size of each transaction as companies grow and credit metrics improve.
- → Focus on manufacturing guarantees, starting with advance payments. This is the lowest-risk guarantee, as there is already a client order pre-validating the scale-up.
- → Cover at least 80% of the risk on an unsecured basis.
- → Make sure the guarantee is Basel-eligible under both US and EU Basel rules to incentivize banks to take the exposure.
- → An initial scheme should cover at least €5 billion euros of cleantech manufacturing guarantees (for instance up to 200 million for 25 companies), and if successful expand to 20 billion euros (for instance up to 200 million for 100 companies) by 2027. The next Multiannual Financial Framework (starting in 2028) would be an opportunity to scale by another order of magnitude.

→ The pilot scheme could function with the European institution performing due diligence on individual companies. Larger schemes should set clear criteria and let commercial banks perform due diligence and draw on the counter-guarantees directly.

Time is of the essence. As a number of cleantech scale-ups reach the industrialization stage, they are being requested more and more for bank guarantees in order to sell their products. Their access to such re-guarantee schemes will determine their ability to scale up manufacturing over the next 2-3 years, a key moment to enable our 2030 climate and industry targets.

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THANK YOU

Feel free to contact us with any questions you have.

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