EUROPEAN RESILIENCE ALLIANCE

for Clean Hydrogen & Derivatives

Clean Hydrogen Value Chain Bankability Playbook

Making Europe's clean hydrogen projects across the value chain bankable



Competitiveness. Resilience. Impact.

Prepared by

EUROPEAN RESILIENCE ALLIANCE

in cooperation with

With advisory input from
ERA Financial Advisory Council

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Disclaimer:

This Playbook presents non-binding recommendations based on public information and aggregated, non-company-specific expert input. It does not reflect or prescribe any agreement among the members of the European Resilience Alliance or of its Financial Advisory Council concerning prices, costs, margins, capacity, customers, suppliers, bids, contract terms, project pipelines, financing decisions, investments, or other commercial conduct. Each participant determines its market conduct and its commercial, financing, and investment decisions independently.

Executive Summary

Clean hydrogen is strategic for Europe. Sector's momentum is growing, but projects are still stuck at the Investment Gate

Investing in clean hydrogen is essential for Europe's energy security, industrial competitiveness, economic resilience, and decarbonization. It reduces reliance on imported fossil fuels and provides hard-to-abate sectors with a clean energy source.

~70% EU energy demand met by imports in 2023. International Energy Agency (IEA)

Since ERA's last whitepaper published, market has observed positive signals with increasing Renewable Energy Directive III (RED III) implementations across Member States, additional project final investment decisions (FIDs) such as Moeve's recent groundbreaking in Spain.

However, despite policy commitments and a substantial project pipeline, many projects still lack the revenue certainty and risk allocation needed to secure investment. This prevents economies of scale and risks competitiveness.

China and the EU are emerging as the top two clean hydrogen markets, but Europe lags on capex efficiency: per IEA, China holds ~60% share in committed global electrolysis capacity on only 25% share of investment, while Europe holds <20% on 45%, implying substantially higher capital cost per unit of capacity in the EU.

The structural bankability problem

The clean hydrogen sector requires producers, offtakers, and infrastructure operators to commit capital simultaneously. Producers need credible demand and revenue, offtakers need an affordable and reliable supply, and infrastructure investors need confidence in utilization and cost recovery. Uncertainty in any one area can propagate across the value chain, preventing otherwise viable projects from reaching final investment decision or financial close. ERA has identified three key areas of uncertainty that undermine the bankability of clean hydrogen projects: 1) demand and revenue uncertainty, 2) infrastructure and system uncertainty, and 3) technology and execution uncertainty. Regulatory uncertainty affects all three pillars.

ERA sees the role of public intervention crucial to close the financing gap. Companies across the value chain are already carrying substantial investment, construction, operational, and market risks. Public intervention should instead focus on enabling project investments by addressing the specific risks that no individual market participant can absorb alone.

ERA's answer: a structured framework to enable regulatory certainty and targeted risk sharing across the value chain

ERA proposes a bankability framework with regulatory certainty as its foundation pillar, and supporting three pillars: Demand and revenue certainty, Infrastructure and system certainty, and Technology and execution certainty.

Regulation is the foundation because, where binding obligations create demand, obligated market participants should ultimately carry the commercial risk and green premium and pass these costs through the value chain. Public support is therefore targeted and time-limited, acting as a bridge during this market ramp-up rather than becoming a permanent substitute for private-sector responsibility.

Pragmatic, stable rules and consistent implementation give investors a basis for long-term decisions.

RED III transposition is converting EU targets into bankable RFNBO demand, but only 12 of 27 Member States have legislated quotas (a year past the May 2025 deadline): binding national rules (Germany: 0.1% → 5% → 10% transport RFNBO share 2026/2035/2040 with €14/kg penalty; Netherlands: 1.8% by 2030; Spain: 0.2% → 6% → 11% transport RFNBO share 2027/2035/2040, incl. maritime) are already triggering firm refining offtake (~80% of 2025's 360 kilo tons per annum (ktpa) originated in Europe, per IEA) and could unlock up to 3.3 Mt*/yr of viable demand by 2030 (Hydrogen Council), so faster, harmonized implementation is the key lever for translating targets into investable demand.*

Within this framework, policy instruments across the three pillars must address the specific risks that prevent credible revenue commitments, coordinated infrastructure investment, and reliable project delivery.

Three prioritized instruments require urgent public intervention

Drawing on publicly available information and aggregated, non-company-specific expert input from ERA partners and the FAC, this Playbook provides a non-binding assessment of significant instruments against their potential to improve bankability, cover critical risks, and mobilize private capital, alongside implementation readiness, complexity, and budget efficiency. This assessment identifies three priority instruments for urgent public intervention and has impact across the value chain:

- **Double-sided auctions with public support:** Converts competitive price discovery on both the supply and demand sides into bankable long-term hydrogen purchase contracts, limiting public support to the minimum funding gap needed to close a transaction

- **Midstreamers supported by contracts for difference (CfDs):** A competitively auctioned CfD between the funding agency and clean hydrogen midstreamers (private intermediaries), who aggregate fragmented demand, diversify supply, and are reimbursed for the resulting funding gap

- **Intertemporal cost allocation for hydrogen transport infrastructure:** Keeps early hydrogen transport tariffs affordable and predictable while enabling anticipatory investments in regulated hydrogen transport networks and preserving long-term cost recovery by hydrogen transmission network operators (HTNOs) through an amortization account, a financing special purpose vehicle (SPV), and a government/EU guarantee

These collectively lead to significant risk reduction, especially on the market creation side, which is the prime requirement for the investors and lenders ready to provide private capital to the projects.

Call to action: Turn Europe's clean hydrogen pipeline into investment

European and national policymakers need to make the clean hydrogen value chain investable. Regulatory certainty is paramount, and the instruments proposed in this Playbook provide a practical starting point. If policy creates the right conditions, industry and finance stand ready to turn that pipeline into FIDs, infrastructure, and industrial capacity. Delayed action risks prolonging fossil fuel dependence and shifting industrial investment elsewhere.

The opportunity is there. The priority now is to unlock it.

ERA stands ready to work with policymakers and all relevant stakeholders to make the clean hydrogen value chain investible.

Introduction

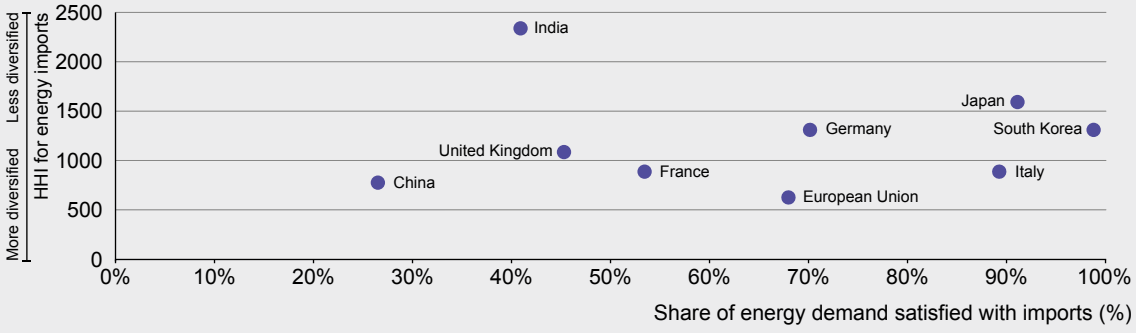
Clean hydrogen (renewable and low-carbon) is a necessary strategic investment in Europe's energy security, economic resilience, industrial competitiveness, and decarbonization. Clean hydrogen can support the transition of sectors where direct electrification alone is insufficient, including steel, fertilizers, chemicals, refining, aviation, and maritime transport, while helping preserve their industrial role in Europe.

Clean hydrogen improves energy security and economic resilience by diversifying the energy import mix and decreasing dependence on fossil fuel imports. **Figure 1** illustrates Europe's energy security challenge through two dimensions: dependence on energy imports and the concentration of those imports. In 2023, imports met roughly 70% of the European Union's energy demand. Although the EU's import portfolio was comparatively diversified, its substantial reliance on external supply remained a strategic vulnerability. National exposure also varies: Germany's imports were more concentrated than the EU aggregate, while Italy relied on imports for almost 90% of its energy demand (IEA, Global Hydrogen Review 2026).

Since the publication of ERA's white paper "Securing Europe's Energy and Industrial Future" in April 2026 (see References), important signs of market progress have emerged across both regulation and project development. The implementation of Renewable Energy Directive III (RED III) has advanced in key markets, including Germany and Spain, providing greater regulatory clarity, while projects have continued to reach final investment decision (FID) and move into execution, including ERA partner Moeve's 300-megawatt project in Huelva, Spain. Yet these advances have not translated into investment at the scale required to establish a functioning Europe-wide clean hydrogen market.

The critical challenge is to transform technically feasible projects and emerging hydrogen demand into investable projects. Clean hydrogen projects depend on multiple, interconnected investment decisions across the value chain: producers require visibility on future revenues, offtakers need affordable and reliable supply, and infrastructure investors need confidence in future utilization. When these commitments cannot be made independently, risks reinforce one another and projects struggle to reach a final investment decision or financial close.

Figure 1: Share of energy imports and degree of diversification of selected energy importers in 2023



Note: Herfindahl-Hirschman Index (HHI) measures absolute concentration. Share of energy imports is based on energy flows. Imports of clean technologies are excluded.

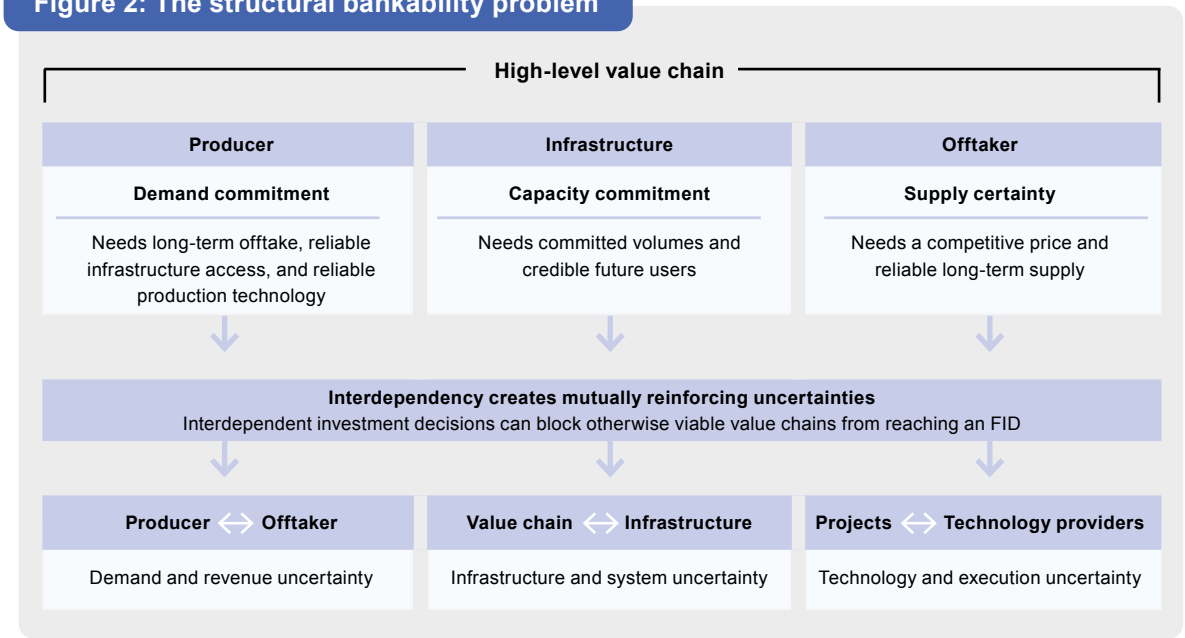
Source: IEA 2026. See References.

The structural bankability problem

Bankability determines whether a project's contracts and expected cash flows can secure investment, even in adverse scenarios. While strategic relevance and technical feasibility are prerequisites, they are not sufficient in conditions. Lenders and investors assess revenue certainty, counterparty creditworthiness, and regulatory certainty among other key conditions, and require clarity on which business partner bears which risk and whether they can fulfill that obligation. In short, bankability is the predictability of these interrelationships, not any single one.

For clean hydrogen, the challenge is structural because investment decisions are interdependent across the value chain, and the risks exceed the capacity of individual market participants. Producers, buyers, and transport operators each need commitments from the others before they can invest, which can block an otherwise viable hydrogen value chain. While private-sector participants can manage risks within their respective areas of responsibility, no individual actor can efficiently absorb the interdependent risks across the entire hydrogen value chain. Individual market participants may depend on independently negotiated commitments from their respective contractual counterparties before they can invest, creating an economic coordination problem that can prevent otherwise viable projects from reaching an FID. **Figure 2** illustrates the structural bankability problem.

Figure 2: The structural bankability problem



Note: Double-headed arrows indicate mutual dependencies between parties. Investment commitments depend on credible commitments from other participants in the value chain. The risk categories shown are illustrative and may overlap across parties and contractual relationships.

Source: ERA partner analysis with guidance from the FAC

The structural bankability problem is significantly compounded by an unusually demanding risk profile. The comparison in **Table 1** suggests that the market conditions that support financing in established energy sectors do not yet apply to clean hydrogen. Liquefied natural gas (LNG), thermal generation, and grey hydrogen benefit from greater market maturity, whereas offshore wind combines high capital intensity with a more established commercial environment. Although clean hydrogen offers the prospect of reduced capital costs as deployment increases, these potential savings do not address the current risks facing projects. Targeted risk sharing and credible long-term contracts are therefore required to encourage investment while the market matures.

Table 1: Asset risk profile comparison of clean hydrogen and other relevant sectors

Risk/ characteristic	Clean hydrogen	LNG	Thermal generation	Offshore wind	Grey hydrogen
Capital intensity	High	High	Moderate	High	Moderate
Project complexity	High	Moderate	Moderate	High	Moderate
Price risk	Yes	No	Moderate	Yes	Moderate or no
Significant capital cost reductions for new projects	Yes	No	No	Yes	No
Market maturity	Low	Advanced	Advanced	Advanced	Advanced
Profitability	Low or negative	Moderate to high	Moderate to high	Low to moderate	Moderate to high
Operational risk	High	Moderate	High	Low to moderate	Low
Revenue risk	High	Moderate	High	Moderate	Low to moderate
Supply risk	High	High	Moderate	Moderate	Low to moderate
Counterparty risk	Yes	No	No	Moderate	Low/no

Note: Supply risk refers to potential challenges or uncertainties that may disrupt the availability of essential resources, materials, or components necessary for project operations. For LNG projects, this includes natural gas availability, transportation and shipping disruptions, and problems with liquefaction plants, pipelines, or storage facilities. For renewable energy projects, this includes delays or shortages of components such as solar panels and wind turbines, as well as variability in natural resource availability.

Source: OECD/The World Bank 2024. See References.

ERA identifies three important bottlenecks to bankability across the hydrogen value chain. First, demand and revenue uncertainty undermines the dependable cash flows required to support financing. Second, infrastructure and system uncertainty limits confidence in access, cost recovery, and coordinated investment timing. Third, technology and execution uncertainty undermines confidence in counterparty delivery, co-completion, and asset performance. **Table 2** provides an overview of these bottlenecks.

Table 2: Key bottlenecks that undermine project bankability across the clean hydrogen value chain

Pillars	Problem	High-level risks	Possible root causes
Demand and revenue uncertainty	Offtake agreements often fail due to contractual issues arising as a result of an illiquid market.	Counterparty/credit; volume/ offtake; revenue/price; mark-to-market; contract settlement	• Regulatory uncertainty • Weak price benchmarks • Limited offtaker credit capacity and mark-to-market exposure under long-term fixed-price contracts
Infrastructure and system uncertainty	Projects depend on infrastructure that is not yet fully investable.	Revenue/volume risk; infrastructure availability/ delay; cross-border allocation; capacity/utilization; storage availability; balance-sheet/debt capacity constraints	• Lack of regulatory remuneration framework, implementation mechanisms, and anticipatory investment risk allocation for the hydrogen backbones and interconnectors in many Member States • Existing “Cross-Border Cost Allocation” or “CBCA” not apt for nascent market’s cross-border risk mitigation • Limited clarity on safeguards for clean hydrogen producers against infrastructure delays or cancellations. • Similar issues for large-scale storage
Technology and execution uncertainty	Technology and implementation risks remain difficult to underwrite for large-scale hydrogen projects.	Technology/performance; co-completion; project-on-project; counterparty	• Limited track record (e.g., electrolyzers) • Fragmented value chains and weak balance sheets of technology providers • Project-on-project dependencies and insufficient guarantees

Note: The pillars capture interrelated barriers rather than mutually exclusive risk categories. Regulatory uncertainty affects all three bottleneck pillars. Anticipatory investment refers to infrastructure built ahead of demand; replacement-cost and mark-to-market risks relate to changes in contract value and the cost of replacing a defaulting counterparty.

Source: ERA partner analysis with guidance from the FAC

Gaps in the EU policy framework leave these barriers insufficiently addressed, threatening the bankability of hydrogen projects that could become operational by 2030. Limited financial support and weak incentives for firm offtake commitments highlight the need for measures that narrow the cost gap with unabated fossil-based production and enable otherwise viable projects to reach a final investment decision (IEA, 2026).

Industry should retain the risks it already manages (e.g., development, construction, operations, sourcing, and commercial execution, among others), while targeted public risk sharing should address systemic barriers that individual companies and contracts cannot absorb, including uncertain demand, infrastructure dependencies, regulatory instability, and correlated counterparty or technology failures.

China vs. Europe case study

Europe's higher capital costs create a significant disadvantage in scaling clean hydrogen production. According to the International Energy Agency (IEA), People's Republic of China (hereafter, "China") accounts for more than 60% of committed (FID and operational) global electrolysis capacity by 2026 but only 25% of estimated investment. Europe represents less than 20% of capacity while accounting for 45% of investment. This imbalance indicates substantially higher capital expenditure per unit of capacity in Europe.

China's clean hydrogen expansion benefits from coordinated development across the value chain. Its 15th Five-Year Plan recognizes hydrogen as a source of industrial growth and energy security, supporting deployment across manufacturing, production, and downstream applications. Central and provincial support helps connect renewable electricity supply with industrial and mobility demand. Manufacturing scale and domestic competition reinforce this development, contributing to reduction of electrolyzer prices.

Europe's progress demonstrates that policy implementation can create bankable demand, but uneven delivery constrains market scale. Transposition of RED III transport targets is beginning to support hydrogen uptake in refining and mobility. However, implementation remains uneven across Member States, while industrial demand targets have yet to translate fully into enforceable national requirements. This limits the certainty needed for producers and buyers to make coordinated, long-term commitments.

ERA therefore sees coordinated EU action as essential to unlocking scale and improving competitiveness. The comparison suggests that demand creation, production investment, and infrastructure development need to progress together. Consistent implementation of existing rules to coordinate cross-border infrastructure and targeted risk sharing would help connect these elements into a larger European market. This would give projects a stronger basis for long-term contracting, repeat deployment, and cost reduction.

Sources: ERA partner analysis with guidance from the FAC; IEA 2026; Hydrogen Council and McKinsey & Company 2026. See References.

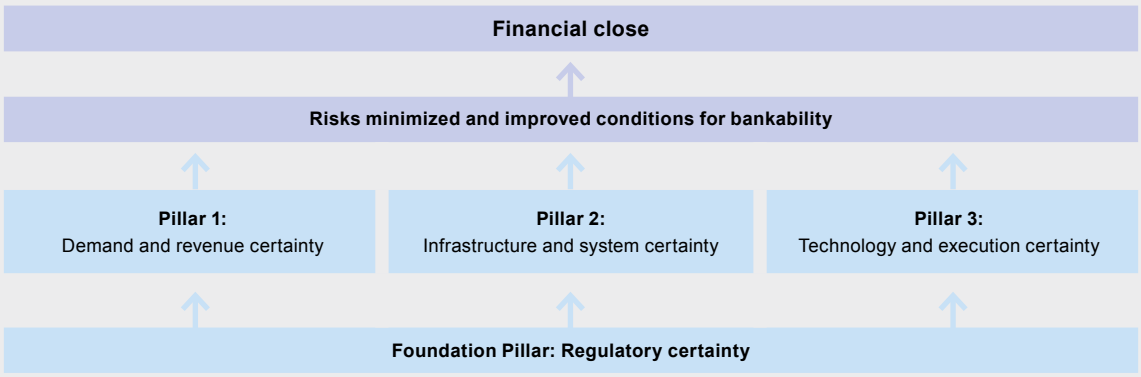
ERA proposes a structured framework to address the key risks to project bankability

Bankable projects depend critically on risks being predictable, appropriately allocated, and manageable over the investment horizon. Investors and lenders need confidence that contractual arrangements assign each risk to a party capable of bearing it, including under adverse conditions. ERA therefore proposes a structured framework to address the major sources of uncertainty that can prevent projects from reaching financial close.

Figure 3 illustrates how regulatory certainty and targeted risk reduction through public-backed instruments significantly support project bankability. Regulatory certainty is the foundation that underpins the three key dimensions of bankability: demand and revenue certainty, infrastructure and system certainty, and technology and execution certainty. Together, these strengthen contractual arrangements, improve the predictability of project cash flows and reduce the residual risks borne by investors and lenders. The framework thus shows how a stable regulatory environment and effective risk allocation can enable financial close and subsequent project delivery.

Figure 3: The ERA bankability framework

Regulatory certainty underpins three complementary areas of risk reduction, strengthening project bankability, and enabling financial close



Source: ERA partner analysis with guidance from the FAC

Regulatory certainty as the foundation

Pragmatic, stable, and enforceable regulation is fundamental to project bankability. Clear rules on eligibility, certification, and demand requirements give producers, offtakers, and investors the confidence to enter long-term agreements and commit capital. Regulatory certainty must therefore extend beyond stable legislation to credible, consistently implemented, and enforceable demand over the lifetime of investments.

Priority actions include:

- **Renewable Fuels of Non-Biological Origin (RFNBO) production rules:** Establish pragmatic and workable renewable electricity sourcing criteria through revision of the relevant Delegated Act, removing unnecessary barriers to project development.

- **EU-wide implementation and enforcement:** Strengthen Commission oversight of Member State implementation of RED III, ReFuelEU Aviation, FuelEU Maritime, and the Alternative Fuels Infrastructure Regulation (AFIR), ensuring EU targets translate into credible and enforceable demand across the Single Market.

- **Demand visibility beyond 2030:** Ensure continuity of renewable and low-carbon hydrogen obligations from RED III into the next legislative framework, including RED IV and the next Hydrogen Strategy.

- **Support mechanisms for anticipatory infrastructure investments:** Ensure adequate public support frameworks that allow early investments in key market-enabler infrastructure projects.

- **Industry:** Combine clear incentives for renewable and low-carbon hydrogen with lead-market measures and effective carbon-leakage protection, supporting market demand and the commercial viability of low-carbon products across the value chain.

- **Low-carbon steel:** Create lead markets, including Made in Europe content in automotive and construction, backed by a clear low-carbon steel definition, appropriate carbon-leakage protection, and mechanisms to reflect the green premium downstream.

- **Fertilizers and chemicals:** Strengthen renewable hydrogen demand through effective implementation of RED III Article 22a, alongside carbon-leakage protection and mechanisms to reflect the green premium downstream.

- **Aviation:** Fully implement and enforce ReFuelEU Aviation's synthetic fuel mandate, with robust compliance monitoring and penalties to create a credible e-SAF and renewable hydrogen demand signal.

- **Maritime:** Effectively enforce FuelEU Maritime requirements for renewable and low-carbon synthetic fuels, creating credible demand and investment visibility for production and bunkering infrastructure.

ERA identifies regulation as a significant FID enabler. Stable and enforceable regulation establishes the demand foundation, and the following public support instruments can then address the remaining three bottleneck pillars that prevent projects from reaching investment readiness.

Please find additional details on enablers to regulatory certainty in the ERA white paper (see References).

RED III Implementation case: EU's most important clean hydrogen demand driving regulatory vehicle

National implementation of RED III illustrates how regulatory certainty can translate policy targets into positive market activity.

As Member States translate EU targets into binding national rules, they create clearer and longer-term demand signals for RFNBOs. Germany, for example, has adopted a transport trajectory increasing the RFNBO share from 0.1% in 2026 to 5% in 2035 and 10% in 2040, supported by a €14/kg non-compliance penalty, while the Netherlands has legislated a 1.8% transport quota for 2030 and is also considering post-2030 targets. Spain is similarly translating RED III into its transport framework from 2027 onward, setting a trajectory for RFNBO in road transport that rises from 0.2% in 2027 to 2.5% in 2030 and reaches 6% by 2035 and 11% by 2040, and including additional provisions applying to domestic maritime navigation, giving fuel suppliers and maritime operators clearer regulatory parameters for future fuel choices.

In 2025, the demand side showed signs of activation: of the 360 ktpa of firm low-emissions hydrogen offtake agreements signed in 2025, almost 80% of firm refining offtake originated in Europe. The IEA links this development to progress in transposing RED transport targets into national legislation, with regulatory obligations beginning to trigger both firm offtake agreements and FIDs for refinery self-consumption projects.

The potential impact of consistent implementation across Europe is substantial: the Hydrogen Council estimates that full RED III transposition could create up to 3.3 Mt/yr of renewable hydrogen and derivatives demand with a positive business case by 2030.

Today only 12 of the 27 EU Member States have legislated RFNBO quotas, nearly a year after the May 2025 deadline. Hence, accelerating and harmonizing national implementation can help transform regulatory targets into bankable demand and coordinated investment across the hydrogen value chain.

Sources: IEA 2026; Hydrogen Council and McKinsey & Company 2026. See References.

Significant solution instruments support certainty and risk mitigation across the value chain

ERA identified important solution instruments that support certainty and risk mitigation. In developing the set of solution instruments, ERA worked with the Financial Advisory Council (FAC) through a significant three-stage process. In the first stage, all key instruments were identified. In the second stage, core enablers were identified (see **Table 3** for the list and **Annex 1** for detailed descriptions). In the third stage, the instruments were prioritized to identify three key ones, which are presented in the next chapter.

Table 3: Core enabling instruments across the bankability unlock pillars

Bankability unlock pillar	What needs to be secured	Core enabling instruments
Demand and revenue certainty	Long-term, credible revenue commitments with sufficient volume, duration, counterparty strength, and contractual protection	• Double-sided auctions with public support • Midstreamer with contracts for difference (CfD) support • First-loss portfolio guarantees for midstreamers • CfD for producers • Credit default swaps (CDS) with public support • State- or European Investment Bank (EIB)-guaranteed loans to mitigate the default and early termination risk
Infrastructure and system certainty	Affordable early access and reliable infrastructure availability, with credible recovery of anticipatory investment	• Intertemporal cost allocation (ICA) for hydrogen transport infrastructure • Infrastructure delay guarantee for system users
Technology and execution certainty	Credible performance protection covering completion, availability, efficiency, degradation, and interface risks	• Public guarantee mechanisms for tech providers • Export credit agency (ECA) buyer's credit programs

Note: This table lists the core enabling instruments identified by ERA partner analysis with FAC guidance. **Annex 1** provides a list of all identified instruments, with detailed descriptions.

Source: ERA partner analysis with guidance from the FAC

Three prioritized instruments requiring urgent public intervention

Instrument prioritization and detailed description

ERA assessed policy instruments across the three bankability pillars to identify those with the most significant potential to unlock investment and accelerate market development. The assessment drew on qualitative input from ERA industry partners and the FAC, supported by available evidence and market precedents. It considered how effectively each instrument could address financing barriers across the hydrogen value chain.

The prioritization balanced each instrument's expected impact with its ease of implementation. Impact covered improvements to bankability, risk coverage, and the mobilization of private capital. Ease covered existing precedents and readiness, implementation complexity, and budget efficiency. **Annex 2** and **Annex 3** provide further detail on the assessment criteria and the assessed scorings, respectively.

This assessment identified three priority solutions for targeted policy intervention. Double-sided auctions combined with public support and a midstream aggregator supported by CfDs emerged as priorities for addressing demand and revenue uncertainty. Intertemporal cost allocation for hydrogen transport infrastructure emerged as a priority for addressing infrastructure and system uncertainty. Together, these solutions form the focus of the following analysis.

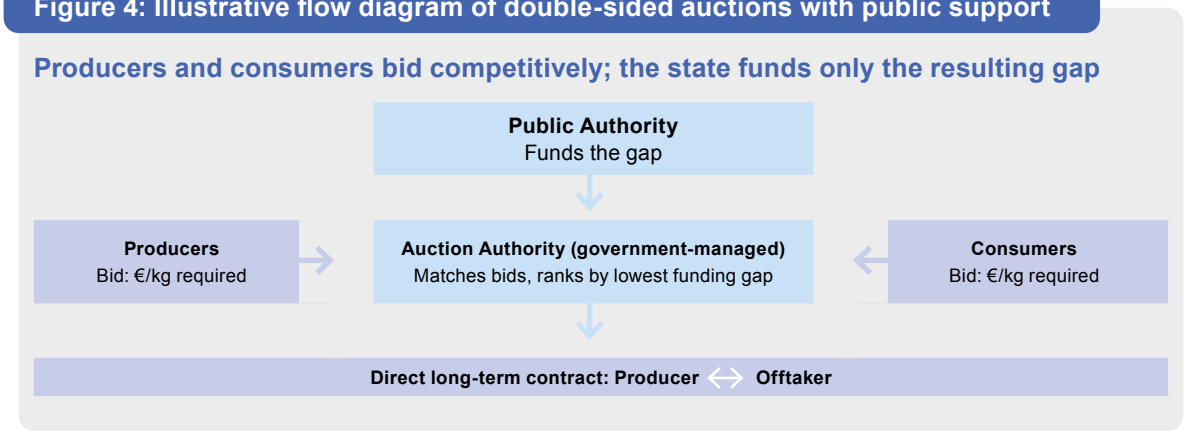
Double-sided auctions with public support

Key message: *Converts competitive price discovery on both the supply and demand sides into bankable long-term hydrogen contracts, limiting public support to the minimum funding gap needed to close a transaction.*

Major benefit: *Directly connects producers and offtakers, bridging the price gap and providing the revenue and cost certainty needed to unlock investment at both ends of the hydrogen value chain.*

Effect on public funds: *Limits public sector exposure. Unlike intermediary-based market-making models, the mechanism does not require a publicly sponsored entity to purchase and resell hydrogen products. Instead, public intervention is limited to the provision of targeted revenue support and the administration of the auction process.*

Figure 4: Illustrative flow diagram of double-sided auctions with public support



Source: ERA partner analysis with guidance from the FAC

How it works

- **Objective:** Turn clean hydrogen (and derivatives) supply and demand into FID-ready contracts, which leads to revenue certainty for producers, procurement cost visibility for consumers, and limited exposure to the full green premium.
- **Mechanism:** Producers bid €/kg required, and consumers bid €/kg maximum (bids including the transport cost); the auction authority matches bids and awards support to the lowest funding gap per kg until the budget or volume is exhausted.
- **Key instrument design elements:**
  - Support is paid only on verified delivered and consumed volumes; duration of support contracts, eligibility, and State aid rules should be fixed upfront.
  - Volume corridors: Allow predefined deviations during ramp-up; corridors narrow over time, with penalties below minimum volumes and no support above awarded volumes.
  - The mechanism determines the required support directly through competitive bidding by producers and consumers, making it particularly suited to clean hydrogen markets where a liquid reference price does not yet exist, unlike conventional CfDs that rely on an established reference price.
  - The mechanism promotes hydrogen market formation while preserving direct contractual relationships between producers and consumers, unlike the midstreamer model, which performs portfolio management, duration transformation, and physical market-making functions. Risk safeguards: Public guarantees may complement the mechanism where otherwise credible participants lack sufficient credit quality.
  - The auction framework and contracts should ideally be protected by a change-in-law clause.

- **Preconditions:** Enough credible producers/offtakers for real competition, sufficient offtaker creditworthiness, and alignment of supply (15–20 years) and demand (often shorter) contract horizons. In addition, enabling infrastructure will be required to support the supply-demand match. Any contract duration would be determined independently by the relevant parties or a competent authority.

- **Implementation pathway:** An EU-level double-sided auction framework, potentially building on the European Hydrogen Bank's existing auction infrastructure, or funded by the European Competitiveness Fund and the Industrial Decarbonisation Bank.

- **Risks covered and residual risks:** Mitigates price and revenue uncertainty through long-term contracts and public support; major risks such as offtaker credit risk may require complementary mitigation measures.

- **Illustration:** Figure 4 depicts the instrument mechanism of double-sided auctions with public support.

- **Evidence base:** Table 4 summarizes the supporting precedents.

Table 4: Evidence base for double-sided auctions with public support

Precedent	Key data point	Implication for this instrument
European Hydrogen Bank (EHB)	132 bids in Round 1; Round 2 drew 61 bids requesting >€4.8B against €1.2B available Industry analysis: Experience from the EHB auctions done so far indicates that funding availability alone is insufficient: demand uncertainty remains a key barrier to projects progressing from award to implementation.	Confirms strong producer-side competition, extending price discovery to the demand side is the logical next step
UK Hydrogen Allocation Rounds (HARs)	HAR1: 11 winning projects totaling 125 MW capacity; backed by £90M in capital grants and >£2B in revenue support. HAR2: 27 projects shortlisted totaling 875 MW	Shows competitive allocation generates first-mover interest, but pragmatic and fast execution is of paramount importance
IEA, Global Hydrogen Review 2026	Mentions double-sided auctions as a possible mitigation mechanism for investment risks	Confirms advantages of promoting price discovery, cost-effectiveness (smallest public funding), demand aggregation and, like CfDs, price certainty, as well as revenue certainty through bankable long-term offtake agreements

Midstreamers supported by contracts for difference (CfDs)

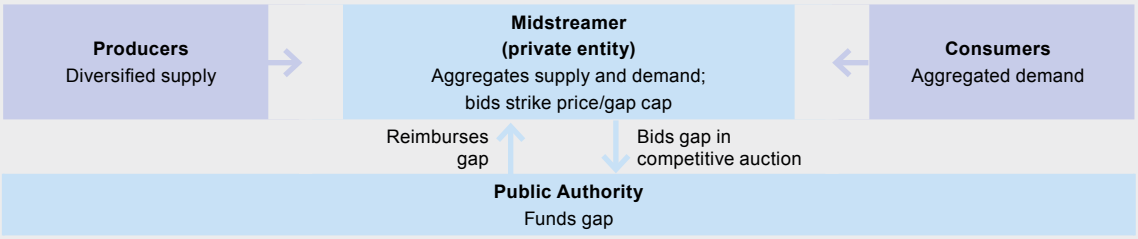
Key message: *A competitively auctioned CfD between the funding agency and clean hydrogen midstreamers, who aggregate fragmented supply and demand and are reimbursed for the resulting funding gap.*

Major benefit: *Enables the most cost-effective hydrogen projects by efficiently connecting competitive production (regions) with the most attractive demand centers, leading to aggregated flows, supporting infrastructure utilization, and strengthening supply diversification and resilience.*

Effect on public funds: *Auctioning the gap cap (not a fixed subsidy) means competition, not government, sets the support level, and Option 2's annual recalculation keeps the incentive toward the minimum support level for the life of the contract.*

Figure 5: Illustrative flow diagram of the midstreamer CfD approach

The midstreamer aggregates supply and demand; government reimburses the competitively bid gap



Source: ERA partner analysis with guidance from the FAC

How it works

- **Midstreamer as market aggregator:** Midstreamers as private entities in mature markets bridge production and consumption. They are aggregating fragmented demand, diversifying supply, and managing transport, storage, and compliance that individual counterparties cannot bear alone. In particular, this reduces exposure to individual projects/offtakers and enables smaller customers to participate.

- **Government support via competitive CfD auction:** Midstreamers compete in the ramping-up hydrogen market for support, with awards based on the lowest required public funding, rather than administratively set prices.

- **Design options** (see **Figure 6**):

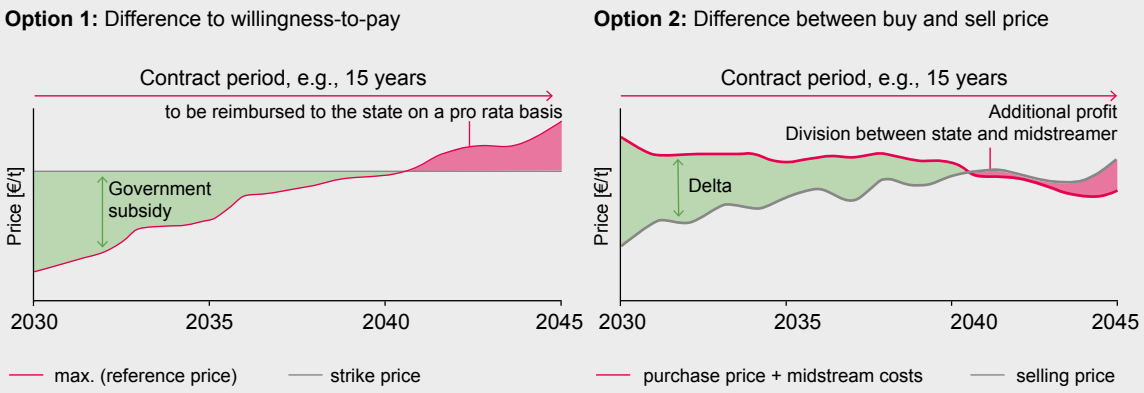
  - Option 1 – Strike price: The midstreamer bids the hydrogen price it needs to cover procurement, transport, and structuring costs, e.g., €8/t. The state then covers the difference between this strike price and a defined reference price, such as the price of natural gas plus the CO_2 price, with volume corridors allowing for demand ramp-up flexibility.

  - Option 2 – Gap cap: The midstreamer bids the maximum funding gap it requires between hydrogen procurement and sales, e.g., €4/t. The state covers the actual gap on hydrogen sold, but never more than the €4/t bid cap.

  - Both options award on the lowest bid, compressing the subsidy; under Option 2, the gap is recalculated annually, and the midstreamer keeps part of any outperformance, sustaining the incentive throughout the contract.

  - Both options can also provide for symmetric upside sharing: if market developments result in returns above the agreed support level, a defined share of the upside can flow back to the state, partially offsetting earlier subsidy payments and reducing the net public-budget impact.

Figure 6: Midstreamer CfD design options



Note: The figures are purely illustrative and do not reflect current or anticipated prices, costs, bids, funding requirements, or commercial positions of ERA or FAC participants.

Source: BET & SEFE 2025. See References.

- **Implementation pathway:** This instrument concept could be implemented, for example, through the European Hydrogen Bank's existing framework at the European level as well as at Member States level.
- **Risks covered and residual risks:** Mitigates price, volume, and contract-duration mismatch through portfolio aggregation and duration transformation, making it particularly relevant during market ramp-up; counterparty credit risk remains and may require complementary mitigation measures.
- **Illustration:** Figure 5 shows the midstreamer CfD approach.
- **Evidence base:** Table 5 summarizes the supporting precedents.

Table 5: Evidence base for midstreamers supported by contracts for difference (CfDs): Existing mechanisms informing instrument design

Precedent	Key data point	Implication for this instrument
H2Global	€900M of public funding, 22 bidders in the first renewable ammonia pilot	Proves a two-sided mechanism. Acts partly as a midstreamer as they buy and resell volumes, but not structuring and managing deliveries
European Hydrogen Bank	Existing EU-level auction	Could host the midstreamer CfD without standing up new institutions
Status-quo support schemes	Government mechanisms today are largely static, producer-only price-setting	Midstreamer competition introduces market-driven pricing and product innovation

Intertemporal cost allocation (ICA) for hydrogen transport infrastructure

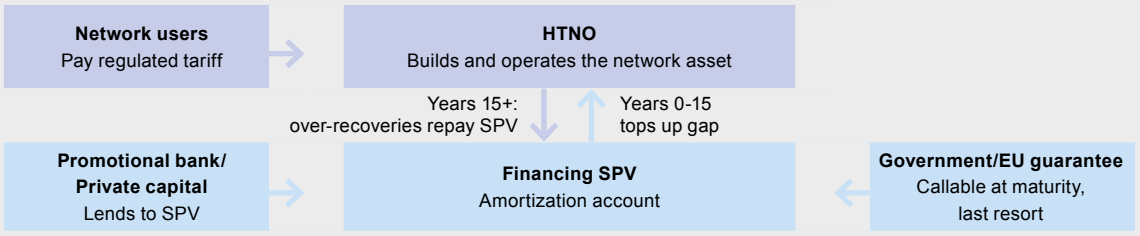
Key message: *Keeps early hydrogen transport tariffs affordable and predictable while enabling anticipatory investment in regulated hydrogen transport networks and preserving long-term cost recovery by EU hydrogen transmission network operators (HTNOs) through an amortization account, a financing SPV, and a government/EU guarantee.*

Major benefit: *Builds the hydrogen backbone ahead of long-term stabilized demand and connecting cost-competitive production regions with demand centers and enabling cross-border transport corridors, while diversifying supply/demand (market creation) and reducing stranded-asset and counterparty concentration risks for both hydrogen producers and consumers.*

Effect on public funds: *No upfront public budget funding in the base case; the guarantee absorbs only residual non-repayment risk, callable at a single future window in the long term and capped by project/corridor exposure limits. The sizing of the ICA tariff and the guarantee shall be based on reasonable demand prospects so that the SPV is able to pay all of its debt at maturity with the hydrogen system tariff over-recoveries.*

Figure 7: Illustrative flow diagram of the intertemporal cost allocation approach

The SPV bridges the early revenue gap; later tariff over-recoveries repay the debt; the guarantee is the last resort. Year 15 in the example is purely illustrative.



Source: ERA partner analysis with guidance from the FAC

How it works

- **Anticipatory investment:** Regulated hydrogen transport infrastructure must be developed by the HTNOs ahead of future demand through regulatory planning. Investment plans would be designed with regulators around future hydrogen demand prospects under reasonable assumptions, rather than being based only on initial (lower) committed demand.

- **Predictable ramp-up tariff:** Early users pay an affordable regulated tariff, avoiding high costs caused by initially lower network utilization. The relevant regulatory authority approves the methodology and initial tariff path for the long term, considering affordability, cost recovery, and demand scenarios, with flexibility to be recalibrated if market development materially diverges from assumptions.

- **Intertemporal cost allocation:** Early lower tariffs and demand result in initial revenue shortfalls, which are deferred to future users/periods, rather than borne entirely by first movers.

- **Design of the amortization account:**

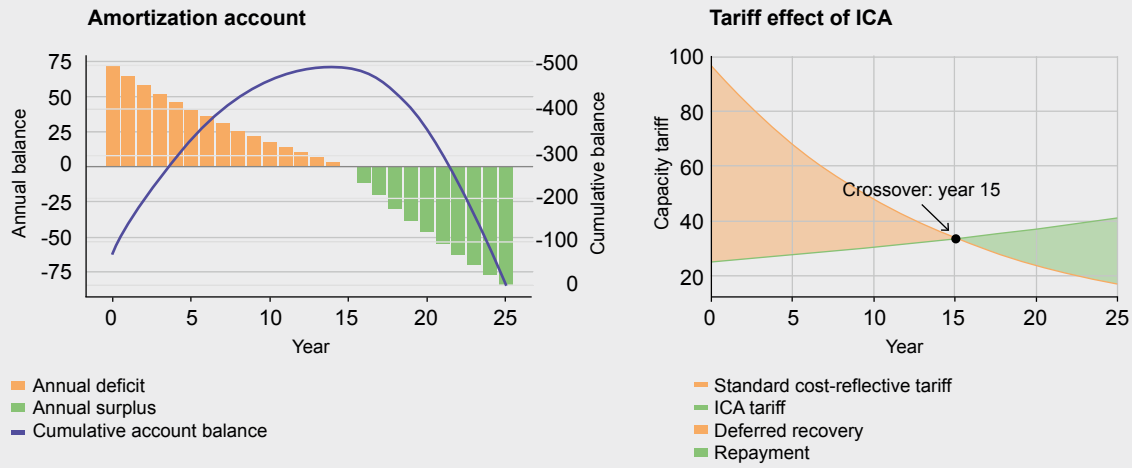
    - A financing SPV pays the HTNOs for the verified gap between their costs (the allowed regulated revenue) and the collected revenue in the early years. The instrument shall be structured so that the gap payments are considered as operating income for the HTNO.

    - To fund the gap payments, the financing SPV would raise loans from promotional banks (including the EIB), which may be particularly well placed to provide long-tenor funding. Promotional and commercial lenders and institutional investors could participate where the structure provides sufficient regulatory certainty, liquidity, credit enhancement, and protection against residual volume and refinancing risk. The instrument shall be structured so that the loans to the financing SPV are not accounted for as HTNO debt.

    - This revenue certainty for the HTNOs supports their FIDs for infrastructure projects.

    - As the market develops and transported volumes grow, there is a tariff crossover (around year 15 in the illustrative case in **Figure 8**), after which the system generates surplus/over-recoveries until the SPV debt is fully repaid.

Figure 8: Illustrative ICA tariff and amortization-account mechanics



Source: ERA partner analysis with guidance from the FAC

- Public backstop: Government/EU provides a backstop financial guarantee on the SPV debt. The guarantee would only be callable at the end of the agreed tenor of the amortization account (i.e., after 20-25 years when the debt is expected to be fully repaid). This guarantee is necessary for the EIB/other promotional banks to lend, since they will normally not take the hydrogen volume risk.

- HTNOs would retain the construction, operational, and regulatory risks they would usually retain in the context of other regulated assets (e.g., natural gas).

- Rating and accounting treatment: Validate the structure with lenders, auditors, and rating agencies, ensuring credit assessment reflects the economic substance and risk allocation.

- **Implementation pathway:** an EU-level SPV and guarantee could suit interconnectors; national structuring could suit domestic assets (e.g., Germany's Core Grid); the two can also be combined (i.e., corridor approach).

- **Risks covered and residual risks:** Mitigates early-stage volume/utilization and tariff affordability risks through intertemporal cost allocation and a public backstop, enabling anticipatory infrastructure investment; construction, operational, and regulatory risks remain with HTNOs.

- **Illustration:** Figure 7 shows the intertemporal cost allocation approach.

- **Evidence base:** Table 6 summarizes the supporting precedents.

Table 6: Intertemporal cost allocation for hydrogen transport infrastructure evidence base

Precedent	Key data point	Implication for this instrument
ENNOH and ENTSOG	Recommends a framework of at least 25-30 years to cover missing allowed revenues	Confirms the need for a long tariff/amortization horizon. This, together with the volume risk borne by the financing SPV, confirms the need to have EU/other guarantees for the SPV debt to be bankable
ACER Recommendation 02/2025	Recommends network planning, demand scenarios and sensitivity testing for anticipatory investments	Sets the methodological bar ICA should clear for regulatory approval
Germany: WANDA framework	Operational national precedent for domestic ICA structuring	Shows the mechanism already has a working implementation template
Legislative vehicles	TEN-E, Connecting Europe Facility, European Competitiveness Fund; interacts with Reg. (EU) 2024/1789 Art. 5(3)/5(6)	Identifies concrete legal pathways to launch the instrument

Call to action: Turn Europe's clean hydrogen pipeline into investment

Europe's next priority must be to turn clean hydrogen ambition into investable projects. A substantial project pipeline, technologies, and investor interest provide a basis for investment. However, committing capital requires regulatory predictability, credible long-term revenues, coordinated infrastructure development, and appropriate risk allocation.

Delays carry consequences beyond individual projects. Continued uncertainty risks prolonging Europe's dependence on imported fossil fuels, weakening its industrial base, delaying decarbonization, and redirecting investment and manufacturing capacity to other regions.

The priority now is implementation. Drawing on publicly available information and aggregated, non-company-specific expertise of ERA industry partners and the Financial Advisory Council, this Playbook identifies three priority instruments for European and national policymakers: double-sided auctions with public support, midstreamers supported by contracts for difference (CfDs), and intertemporal cost allocation for hydrogen infrastructure. Supported by a stable regulatory framework, these instruments can address critical barriers that prevent otherwise viable projects from reaching a final investment decision or financial close.

Importantly, industry stands ready to deliver if the conditions are right.

Public intervention should therefore focus on risks the market cannot efficiently absorb, while leaving industry responsible for the risks it can manage. The objective is not to eliminate commercial risk or subsidize every project, but to establish the conditions that allow private capital and industrial investment to move at scale.

Europe has built the pipeline of clean hydrogen projects. It now needs to make it investable. The instruments proposed in this Playbook provide a practical starting point. If policymakers create the right conditions, industry and finance stand ready to turn that pipeline into FIDs, infrastructure, and industrial capacity.

The opportunity is there. The priority now is to unlock it.

We do not claim to have all the answers, but we can provide policymakers with a clearer line of sight from regulation to investment decision.

The European Resilience Alliance stands ready to work together with policymakers to enhance both the availability and affordability of clean energy and chemical base materials within the European Single Market.

Key concepts

Clean hydrogen: All hydrogen made in a way that is compatible with climate neutrality, including Renewable Fuels of Non-Biological Origin (RFNBOs) and verifiable forms of low-carbon hydrogen.

Derivatives: Products made using clean hydrogen as a key input or feedstock, including ammonia, methanol, synthetic fuels, and other hydrogen-based fuels and energy carriers.

Value chain: The interconnected activities and assets required to produce, convert, transport, store, distribute, and ultimately use clean hydrogen and its derivatives.

Producer: An entity that develops, owns, or operates facilities producing clean hydrogen or its derivatives for sale or supply to downstream users.

Offtaker: An entity that purchases, or commits to purchase, clean hydrogen or its derivatives from a producer or intermediary under an agreed commercial arrangement.

Infrastructure operator: An entity responsible for developing, owning and/or operating infrastructure enabling the transport, storage, import, export, or distribution of clean hydrogen and its derivatives.

Midstreamer: A private intermediary entity aggregating fragmented clean hydrogen demand, diversifying supply, and managing transport, storage, and compliance that individual counterparties cannot bear alone.

Bankability: The condition in which a project has sufficient revenue certainty, appropriate risk allocation, and a viable financial structure to attract investment and progress toward a final investment decision (FID) and financial close.

Project investment: Capital committed to the development, construction, and commissioning of assets across the clean hydrogen value chain, including production, conversion, transport, storage, and associated infrastructure.

Final investment decision (FID): The formal decision by project sponsors to proceed with project execution and commit the required capital, following satisfaction of the project's key commercial, technical, regulatory, and financing conditions.

Financial close: The point at which financing agreements have been executed and the key conditions required for committed debt and/or other external financing to become available have been satisfied.

Risks across the clean hydrogen value chain: Commercial, financial, regulatory, infrastructure, technology, and execution risks that can constrain investment or prevent projects from reaching FID, including price, demand/volume, counterparty, contract duration, infrastructure availability, and technology/performance risks.

Instruments: Mechanisms designed to mitigate specific investment risks, bridge bankability gaps, and mobilize private capital across the clean hydrogen value chain.

Annex

Annex 1 – Definition-impact matrix:
Core instruments enabling demand and revenue certainty, infrastructure and system certainty, and technology and execution certainty

Pillar 1: Demand and revenue certainty

Solution instrument	Definition	Risk coverage	Role of public authorities	Public budget impact
First-loss portfolio guarantees for midstreamers	Public institution/ development bank absorbs first losses on a defined loan/investment portfolio up to a cap, reducing financial intermediary exposure and enabling higher-risk lending.	Covers borrower non-repayment (illiquidity or delivery failure); guarantor absorbs losses up to a predefined cap, reducing lender exposure.	Public sector takes on risk share private lenders will not bear—European Investment Bank (EIB) is a plausible vehicle.	Impact only if first losses materialize.
Contract for difference (CfD) for producers	A long-term contract under which a public entity pays the hydrogen producer the difference between a predefined strike price and the market price when the latter is lower; if the market price exceeds the strike price, the producer may pay back the difference depending on the CfD design.	Revenue and market-price risk. Hydrogen production costs remain higher than the price many customers are willing to pay, creating revenue uncertainty. A CfD addresses this by guaranteeing a minimum revenue level, helping bridge the green premium and improving the predictability of project cash flows.	Design and administer the CfD scheme, determine eligibility criteria and strike prices (or auction mechanisms), provide financial support, monitor compliance, and act as the contractual counterparty or guarantor.	Contingent on the gap between the strike price and the market price; public expenditure increases when hydrogen market prices remain below the agreed strike price. The subsidy decreases as the market matures and competitiveness improves.
Credit default swaps (CDS) with public support	Derivative protecting against counterparty default; full-cost CDS is uneconomical for producers at scale, so public support covers/ reduces the premium.	Same as for double-sided auctions: covers settlement and mark-to-market risk, enabling long-term fixed-price contracts and reducing offtaker security costs.	Government grants to cover CDS cost, with defined allocation criteria.	Depends on total CDS cost and public cost share.
State- or EIB-guaranteed loans to mitigate the default and early termination risks	Public risk-sharing instruments through which the EIB or a public authority can compensate lenders, investors, or project counterparties for specified financial losses arising from borrower default, project failure, or the premature termination of contractual arrangements. These guarantees enhance the creditworthiness and bankability of hydrogen projects by reducing risks that private financiers may be unwilling to bear independently.	For large hydrogen projects, lenders and investors are often concerned about two risks: Default exposure: • The hydrogen project company fails to meet its debt obligations. • Revenues from hydrogen sales are insufficient. • A public authority may provide a guarantee or contingent support commitment. Remarketing exposure: • If the project terminates early or a key offtaker defaults, hydrogen assets, hydrogen contracts, storage capacity, or production volumes must be resold ("remarketed"). • The resale value may be lower than expected. The public sector may agree to absorb part of the resulting loss.	"InvestEU" plays a key role in supporting clean technology and hydrogen projects by providing an EU budget guarantee to implementing partners such as the EIB, the European Investment Fund (EIF), and national promotional banks. The guarantee itself is not directly paid by InvestEU; rather, InvestEU provides an EU budget guarantee that enables implementing partners such as the EIB Group or national promotional banks to offer risk-sharing instruments. By guaranteeing coverage in case of default, this type of guaranteed loan crowds in private finance, unlocking investment.	State guarantees are an efficient use of public funding as unless called upon, the funding can be reused.

Pillar 2: Infrastructure and system certainty

Solution instrument	Definition	Risk coverage	Role of public authorities	Public budget impact
Infrastructure delay guarantee for system users	A state- or EU-backed guarantee instrument designed to compensate system users that have committed to, and booked capacity on, regulated transport infrastructure under development against losses arising from delays in commissioning or, where relevant, the cancellation of such infrastructure projects.	Under applicable unbundling regimes, system users—including hydrogen producers and suppliers—have no control over the development, construction or commissioning of regulated transport infrastructure. They are therefore unable to influence the timeline or delivery of the infrastructure on which their investments depend. At the same time, the successful market ramp-up of hydrogen requires production capacity and transport infrastructure to be developed in parallel. Producers must therefore make investment decisions and commit capital before the relevant pipeline infrastructure is operational. Where transport infrastructure is delayed, hydrogen producers may face significant financial and operational losses, including stranded or underutilized production assets and costs associated with alternative transport or storage solutions. These risks are largely outside the control of system users and cannot be effectively mitigated by them. An infrastructure delay guarantee would address this market failure by protecting system users against the consequences of delays for which they bear no responsibility and over which they have no control.	A state- or EU-backed guarantee scheme should be established to compensate eligible system users that have booked capacity on regulated national backbone infrastructure and cross-border hydrogen infrastructure projects. The scheme would provide protection against delays in the commissioning of infrastructure that prevent system users from accessing the transport capacity on which their investment decisions were based. By reducing infrastructure-related timing risks, the instrument would facilitate the synchronized development of hydrogen production, demand, and transport infrastructure and support investment during the market ramp-up phase.	The instrument would have limited budgetary implications where infrastructure projects are delivered according to their planned commissioning schedules. Public expenditure will arise only if covered delays materialize. The financial exposure could be clearly defined and capped, for example by limiting compensation to: • debt servicing and equity-related costs associated with affected production assets during the period of delay; and • a predefined and capped level of operational cost compensation per megawatt of booked capacity. The guarantee could therefore provide meaningful protection against a critical investment risk while limiting and making public-sector exposure predictable.

Pillar 3: Technology and execution certainty

Solution instrument	Definition	Risk coverage	Role of public authorities	Public budget impact
Public guarantee mechanisms for technology providers	A public guarantee that covers technology-related losses where neither the engineering, procurement, and construction (EPC) contractor nor the technology original equipment manufacturer (OEM) can provide sufficient protection. In the clean hydrogen sector, EPCs typically avoid long-term technology performance risk, while many OEMs are young and lack the balance sheet and track record to provide bankable guarantees. The government therefore backstops residual technology risk between the EPC and OEM.	Addresses technology/ performance risk such as electrolyzer underperformance, degradation, availability, efficiency, or failure to meet guaranteed output. By taking a defined share of this risk, the guarantee can make lenders more comfortable providing debt, reduce financing costs, and improve the bankability of first-of-a-kind and early commercial-scale hydrogen projects.	The Government/ European Commission provides the guarantee directly or through a public financial institution such as a national promotional bank or the EIB Group, under a dedicated guarantee framework (e.g., InvestEU). The public institution establishes eligibility criteria, maximum coverage, and risk-sharing requirements.	Contingent public liability rather than an upfront grant. The government incurs a cost only if a covered technology failure occurs. Fiscal exposure can be limited through guarantee fees, coverage caps, deductibles, lender risk-sharing, and technology eligibility criteria.
Export credit agency (ECA) buyer´s credit programs	A government-backed financial structure in which a commercial bank (or sometimes the ECA itself) provides long-term lending facilities to a foreign project company purchasing goods and services from exporters of the ECA's home country. The ECA is the entity that guarantees or insures most of the long-term loan (lender risk). In the hydrogen sector, electrolyzers are typically financed under ECA financing schemes.	The main value of ECA buyer's credit programs is the transfer of risk from private lenders to government-backed institutions. ECAs can cover commercial, political, and governmental risk, among others. The main positive impact of these programs is the liquidity increase, as the commercial banks are incentivized in financing deals that it is likely they would not participate without the backing of highly rated sovereign-backed institutions. In addition, the terms and conditions of these financings are enhanced both in tenor and in cost. In first-of-a-kind hydrogen projects, ECA shall improve the weighted average cost of debt of the projects and allow small and medium companies to develop hydrogen projects.	Governments sponsor the project by providing sovereign-backed guarantees or insurance policies to facilitate the financing of the project, by reducing the upfront equity to be invested by the sponsor. The public institution establishes eligibility criteria, maximum coverage, and risk-sharing requirements.	ECA buyer's credit programs can be very efficient, as they would not have any impact on the public budget, if the project performs accurately and the financial loan is repaid by the sponsor. The short-term impact is limited, as the guarantees are contingent liabilities, and only if the project defaults and the debt service cannot be repaid, this liability will become an immediate expenditure, therefore impacting the public budget.

Note: This table presents details of instruments identified, excluding the three prioritized, in the analysis for the Playbook. The table is characterized according to the three pillars: demand and revenue certainty, infrastructure and system certainty, and technology and execution certainty. Each instrument presents a possible enabler to unlock bankability.

Source: ERA partner analysis with guidance from the FAC

Annex 2: Assessment dimensions and criteria

Dimension	Criterion	Assessment focus
Impact: Does it materially remove a barrier to FID/financial close?	Bankability impact	Ability to address critical financing constraints
	Risk coverage	Coverage of major risks that private participants cannot adequately absorb
	Capital mobilization	Potential to unlock investment, especially private finance
Ease: Can it be deployed quickly without disproportionate complexity or fiscal burden?	Existing precedent/readiness	Availability of relevant precedents, institutions, and delivery infrastructure
	Implementation ease	Legal, contractual, and institutional effort required
	Budget efficiency	Upfront expenditure and contingent public exposure relative to the support provided

Note: This table presents the assessment dimensions and criteria. Each criterion can be scored on a categorical scale of 1 (low), 3 (medium), or 5 (high).

Source: ERA partner analysis with guidance from the FAC

Annex 3: Proposed prioritization of the principal instruments

Instrument	Impact	Ease
Double-sided auctions with public support	4.5	3.5
Midstreamers supported by contracts for difference (CfDs)	4.5	3.5
First-loss portfolio guarantees for midstreamers	4.0	3.5
CfDs for producers	4.0	3.5
Credit default swaps (CDS) with public support	3.0	4.0
State- or EIB-guaranteed loans to mitigate default and early termination risks	4.0	4.0
Intertemporal cost allocation (ICA) for hydrogen transport infrastructure	4.5	3.5
Infrastructure delay guarantee for system users	2.5	2.0
Public guarantee mechanisms for technology providers	3.5	4.5
ECA buyer's credit programs	3.5	4.5

Note: This table shows average scores for the identified instruments based on the criteria in **Annex 2**. The assessment reflects a non-binding, high-level evaluation based on public information and aggregated expert input. It does not represent an agreement or recommendation concerning the commercial conduct, investment decisions, bidding behavior, or financing decisions of any ERA or FAC participant.

Source: ERA partner analysis with guidance from the FAC

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