

Project Financing for SAF: Challenges for Bankability and Potential Solutions

How to become SAF ready? How to make SAF happen?

SAF Training for ACI Africa & AFRAA

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Topic

Project Financing for SAF: Challenges for Bankability and Potential Solutions



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CBR Sustainability Partners



Project Manager

Raphaela Spielberg has over 7 years professional experience in the financial field, and 5 years of experience in strategy development and implementation of impact projects and climate technologies and with experience in thematic investment consulting and climate risk management of ESG compliant projects. She is experienced in assessing and developing business cases in the PtX field, analysing global challenges and opportunities, executing the financial modelling and conducting deep-dive research of risk and sensitivity.

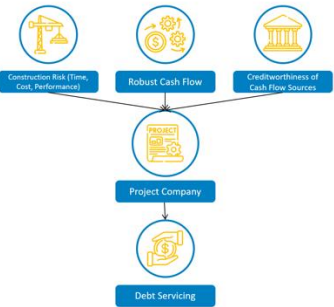
Consulting Focus @ CBR Sustainability Partners

- Project management and business planning, e.g., application support for EU funding programs for the demonstration of innovative low-carbon technologies (EU Innovation Fund)
- Sustainability (CSR) and ESG concept development and implementation (strategy, roadmaps, reporting, labels)

Education

- Sustainability & Climate Risk Professional, GARP
- Master in Sustainable Finance, NOVA SBE, Lisbon

Guiding questions



Which key drivers, vehicle structures and stakeholders are needed to develop FOAK projects?

	Merchant	Volume Support Model	Volume & Price Support Model	Tolling Model
Risk Allocation	Fully exposed to market fluctuations in feedstock costs, SAF/naptha prices, and volume uncertainties	Only volume is secured, but price fluctuations still impact profitability	Long-term contracts pass both volume and price risks to offtakers or suppliers	The toller (customer) takes feedstock and price risks, while the project only ensures availability
Bankability	Unpredictable cash flow makes financing difficult without strong sponsor backing	Lenders require proof that price fluctuations can be managed	Secured supply and pricing reduce risks	Long-term revenue certainty attracts lenders
Revenue & Pricing Structure	Earns revenue by selling SAF/naptha at market rates, making it vulnerable to price swings	Earns revenue through contracted sales volumes but remains exposed to market-driven pricing	Earns revenue through pre-agreed price formulas with offtakers, ensuring stable returns	Earns a fixed processing fee and a variable fee for throughput; does not own the feedstock or SAF

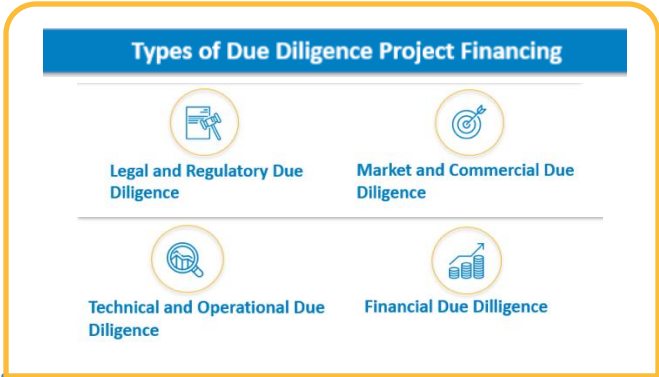
How do the commercial models differ from each other?



Which commercial model faces higher bankability risk?

	Risk Criteria	Mitigation Strategy
Technical & Commercial	Maturity of SAF production technology (e.g., Fischer-Tropsch, Alcohol-to-jet, HEFA) Scalability and efficiency of production processes Uncertainty in performance & reliability of new technologies	Use proven, ASTM-certified production pathways Conduct pilot projects and phased implementation Engage technology providers with a track record in SAF
Feedstock Supply	Availability & sustainability of feedstocks Supply chain disruptions Price volatility in feedstocks impacting production costs	Secure long-term contracts with multiple feedstock suppliers Develop feedstock diversification strategies Implement sustainability certification and traceability systems Invest in localized feedstock collection infrastructure
Financial & Revenue	High capital costs for SAF facilities Uncertainty in securing long-term financing Bankability concerns from lenders due to perceived risks	Use public-private partnerships (PPP) and blended finance models Secure long-term offtake agreements with airlines Explore Export Credit Agency (ECA)-backed financing
Project Execution & Construction	Construction delays and cost overruns Contractor and supplier risks Complexity of integrating multiple construction	Use Engineering, Procurement, and Construction contracts with strict penalty clauses Secure performance guarantees and insurance Conduct third-party technical audits and risk assessments

How can completion risk be reduced?



How can due diligence strategies help to manage risk and ensure the bankability of SAF projects?

Agenda



Reshaping the Path to Sustainable Investments: Understanding Project Finance

Sustainability investing is the explicit recognition that **social, economic, environmental, and ethical** factors directly affect **business strategy**—for example, how companies attract and retain employees, how they manage the risks and create opportunities from climate change, a company’s culture, corporate- governance standards, stakeholder-engagement strategies, philanthropy, reputation, and brand management. These factors are particularly important today given the widening of **societal expectations** of corporate **responsibility**.

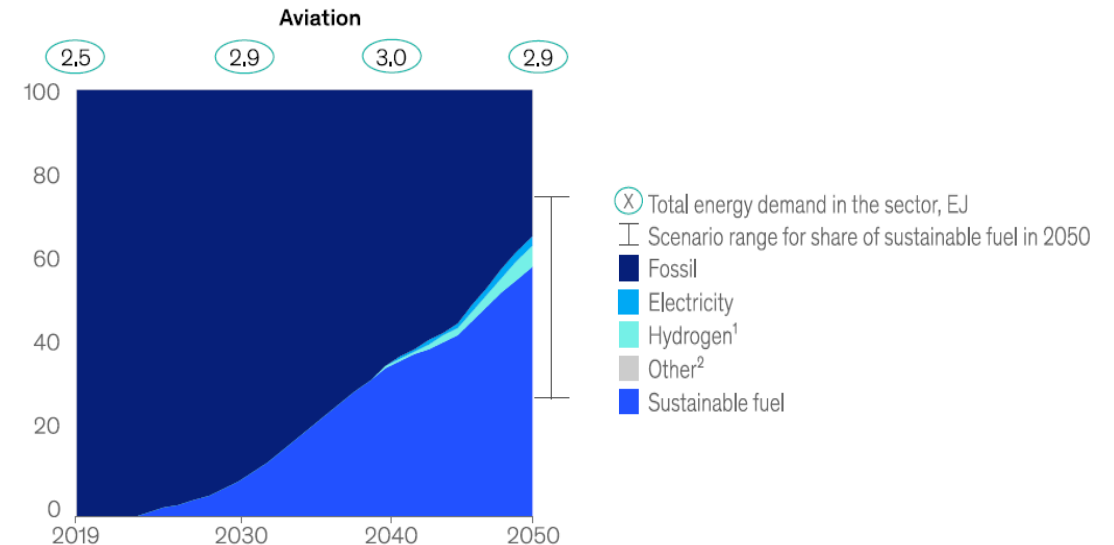
— **David Blood**, AI Gore partner and Co-Founder of *Generation Investment Management* (GIM), which was one of the first investment firms to integrate Environmental, Social, and Governance (ESG) criteria into their investment strategie

A financing of a **particular economic unit in** which a lender is sastified to look initially to **cash flows and earnings of that economic unit as a source of funds from which a loan will be repaid** and to the **assets of that economic unit as collateral** for the loan.

— **Peter K. Nevitt**, author of *Project Financing* (1983) and a pioneer in introducing project financing for infrastructure projects, which revolutionized the way large-scale developments such as power plants and transportation systems were funded.

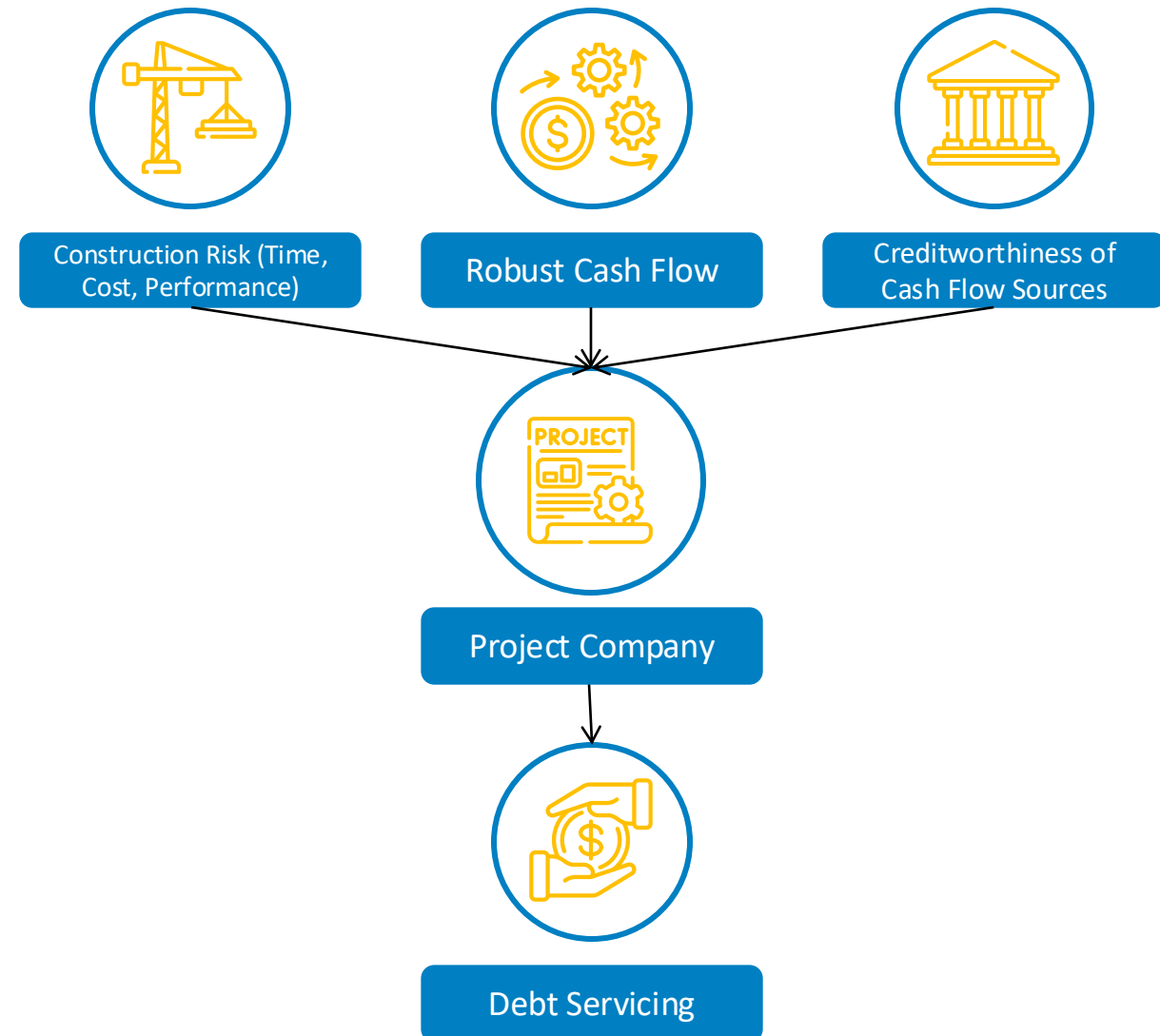
Project Finance and SAF: Aligning for the Energy Transition

- Investment in energy transition technologies and renewable energy continues to accelerate:
 - **Investment Requirements:** Achieving projected growth for sustainable fuels will require substantial investment, with estimates of over \$50 billion per year after 2030, and \$0.6 to \$1.9 trillion by 2050.
 - **The Role of Sustainable Fuels in Decarbonization:** Sustainable fuels like biofuels, HVO, and synthetic fuels (e.g., e-kerosene) will play a critical role in decarbonizing hard-to-abate sectors such as aviation.
 - **The Role of Project Finance:** It is pivotal in mobilizing the necessary capital for renewable energy sectors, ensuring a steady flow of investments.
 - **SAF's Growth Potential:** The SAF industry follows a path similar to that of mature renewable energy sectors, providing an advantage in overcoming financial challenges.
 - **Synergy with Electrification:** Sustainable fuels, such as SAF, will play a crucial role in closing decarbonization gaps where electrification faces limitations, especially in sectors like aviation.
- Demand for sustainable fuels, especially in aviation, is projected to grow significantly.
 - Sustainable fuels could help decarbonize hard-to-abate sectors where electrification is limited.
 - Investment in capacity expansion will be essential, with up to \$1.9 trillion needed by 2050.
 - The development of hydrogen-based fuels and synthetic fuels will play a key role in achieving climate goals.

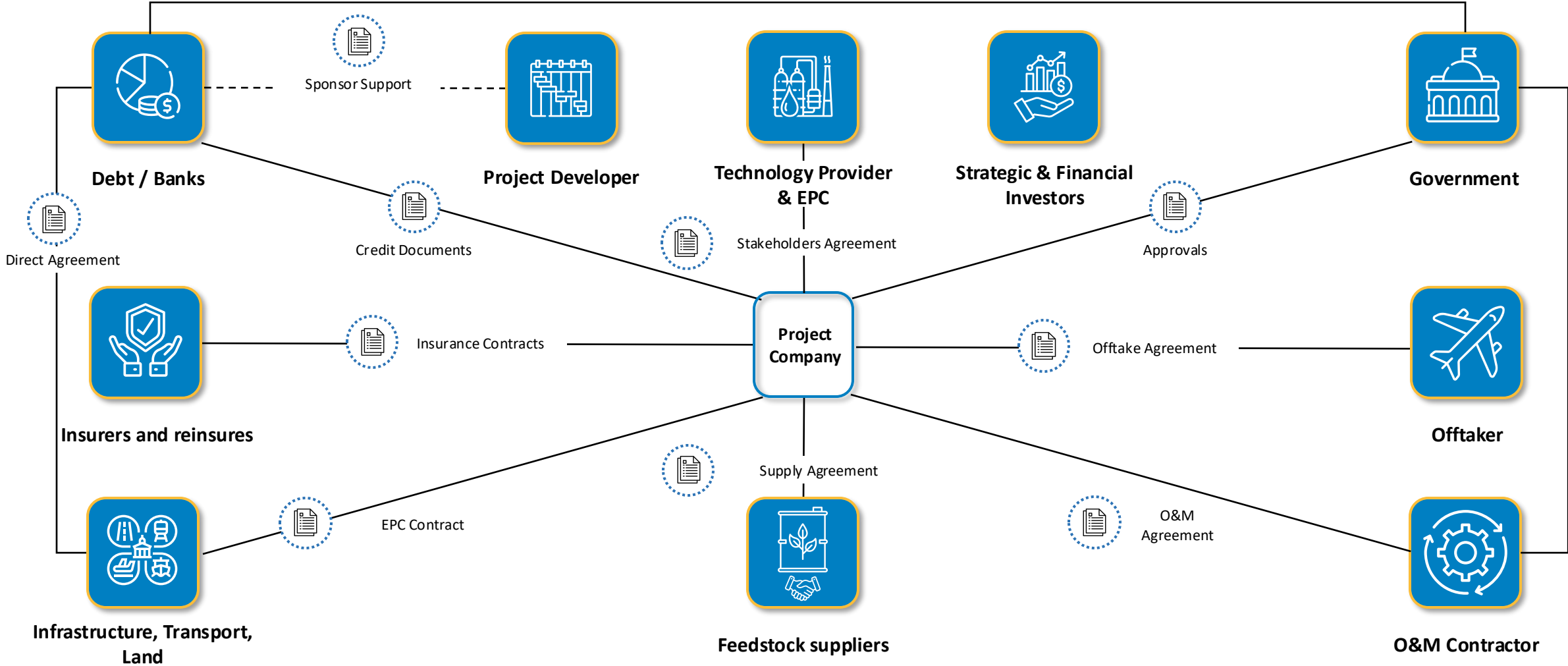


Securing Project Credit: Key Drivers for Financial Structuring

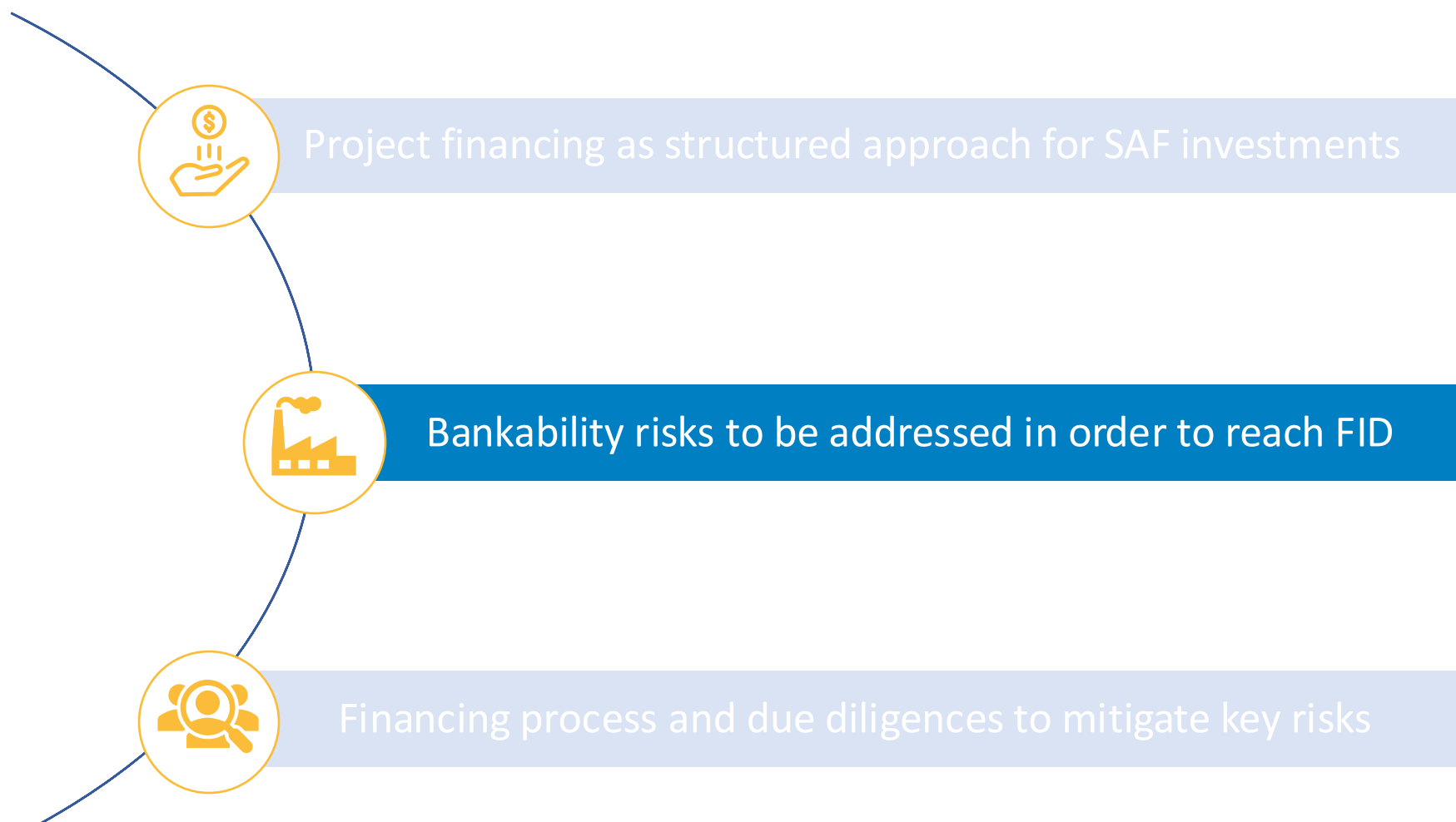
- 1. Ring-Fencing of Project:** The project is ring-fenced within a special purpose vehicle (SPV) to separate business risks and limit exposure.
- 2. Debt Servicing from Project Cash Flow:** Debt is repaid using the project's revenue streams after construction is complete, reducing reliance on external funding.
- 3. Key Credit Quality Drivers:**
 - **Allocation of Construction Risks:** Time, cost, and performance risks are well-defined and mitigated.
 - **Robustness of Cash Flows:** Project cash flow withstands sensitivities and unforeseen events.
 - **Creditworthiness:** Confidence in the **reliability of cash flow sources**.



Project Finance Structure: Key Stakeholder Roles and Interactions



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Collaborative approach in partner consortia to de-risk for bankability



Technology Risk: Developing technologies with unproven Technology Readiness Levels (TRL) or complex integration challenges, potentially affecting performance and reliability.



Completion Risks: Delays or cost overruns caused by project complexity, unforeseen challenges, or resource shortages, which may prevent timely or budget-compliant completion.



Feedstock Arrangements: Potential disruptions in the supply chain or availability of necessary raw materials, impacting continuous production and project viability.



Offtake Arrangements: Challenges in securing long-term buyers for the products or energy generated, affecting revenue stability.



Project-on-Project Risk: Dependencies on the success or timeline of other projects that could directly impact the progress or outcomes of the current project.



Government Support: Insufficient policy backing or financial support from government entities, which can weaken the project's financial stability and market presence.



Stability of Frameworks: Shifting regulations or market conditions that may undermine project operations or increase compliance costs.



Equity: Insufficient capital investment by sponsors, limiting the project's ability to cover initial costs and making it less attractive to financiers..



Book and Claim Models: Complexity in tracking, verifying, and documenting sustainable credits, which may affect the project's credibility or compliance with sustainability standards.



Competitive Industries: Increased competition from other projects or players within the same sector, threatening the project's market share or profitability.

Risk Mitigation Strategies for Successful SAF Project Implementation

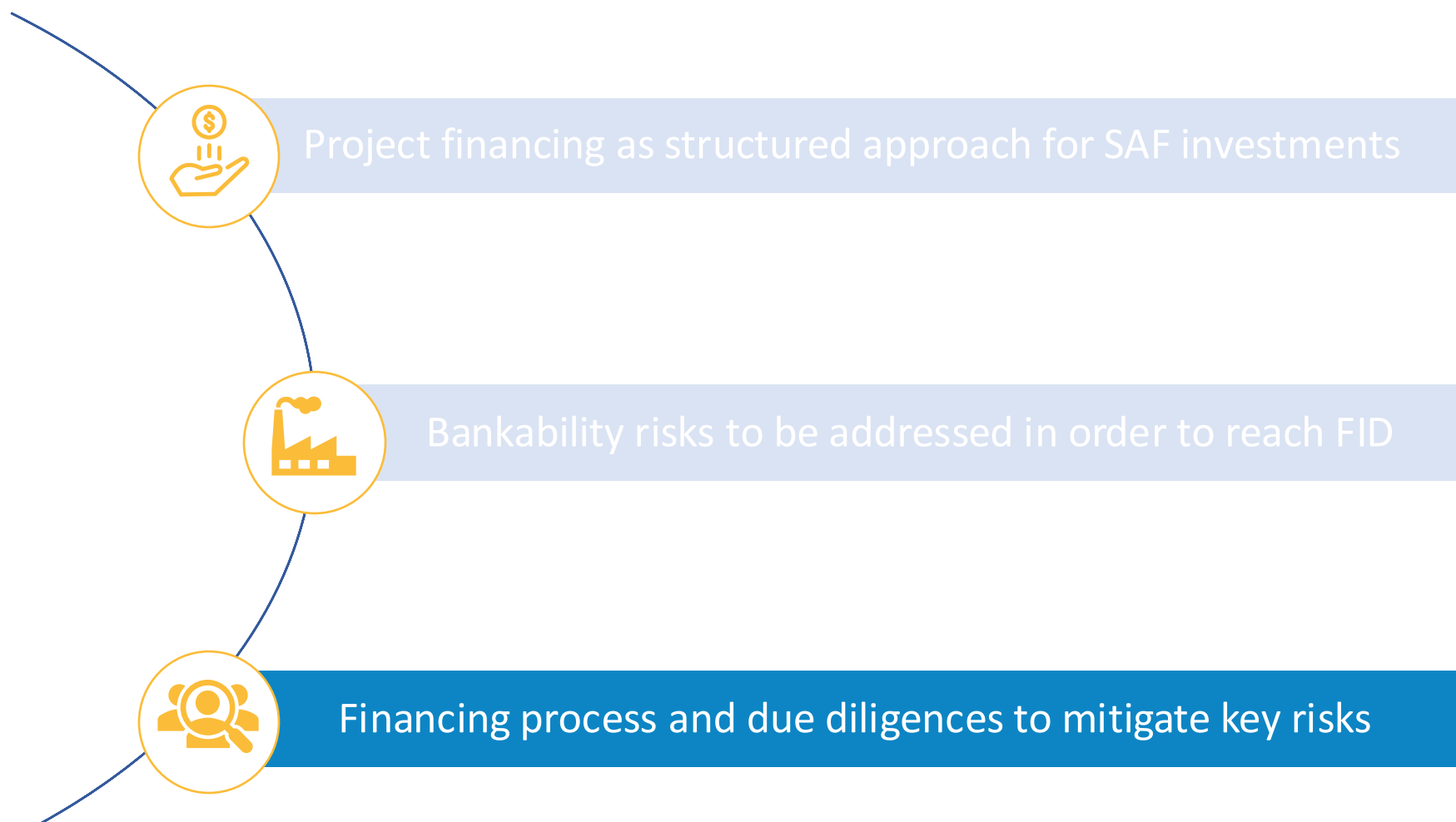
Risk Criteria		Mitigation Strategy
Technical & Technology	<ul style="list-style-type: none"> • Maturity of SAF production technology (e.g., Fischer-Tropsch, Alcohol-to-Jet, HEFA) • Scalability and efficiency of production processes • Uncertainty in performance & reliability of new technologies 	<ul style="list-style-type: none"> • Use proven, ASTM-certified production pathways • Conduct pilot projects and phased implementation • Engage technology providers with a track record in SAF
Feedstock Supply	<ul style="list-style-type: none"> • Availability & sustainability of feedstocks • Supply chain disruptions • Price volatility in feedstocks impacting production costs 	<ul style="list-style-type: none"> • Secure long-term contracts with multiple feedstock suppliers • Develop feedstock diversification strategies • Implement sustainability certification and traceability systems. • Invest in localized feedstock collection infrastructure
Financial & Investment	<ul style="list-style-type: none"> • High capital costs for SAF facilities • Uncertainty in securing long-term financing. • Bankability concerns from lenders due to perceived risks 	<ul style="list-style-type: none"> • Use public-private partnerships (PPP) and blended finance models • Secure long-term offtake agreements with airlines • Explore Export Credit Agency (ECA)-backed financing
Operational	<ul style="list-style-type: none"> • Construction delays and cost overruns • Contractor and supplier risks • Complexity of integrating multiple construction 	<ul style="list-style-type: none"> • Use Engineering, Procurement, and Construction contracts with strict penalty clauses • Secure performance guarantees and insurance • Conduct third-party technical audits and risk assessments

Key recommendations

- **Identify and mitigate risks early** to enhance SAF project outcomes
- **Improve bankability, scalability, and sustainability** of the project
- **Integrate financial, technical, regulatory, and operational risk strategies**
- **Create a robust project structure** that attracts investor, secures reliable feedstock supply, ensures long-term success

Source: CBR, 2025

Agenda



When looking to invest in a SAF Project, due diligence is a critical process for assessing risks, technical, operational and financial feasibility

Types of Due Diligence Project Financing



Technical and Operational Due Diligence

Evaluate the of the infrastructure and **viability, effectiveness, and scalability** technology used in SAF production, including:

- Maturity and readiness of technology
- Feedstock availability and sustainability
- Lifecycle emissions and carbon reduction potential
- Infrastructure and logistics



Financial Due Diligence

Evaluate the **financial viability and investment potential** of the SAF project:

- Capital expenditure (CapEx) and operational expenditure (OpEx) Analysis
- Revenue and profitability forecasts
- Debt and equity structuring



Legal and Regulatory Due Diligence

Verify the **compliance with national and international regulations** governing SAF production:

- Regulatory / policy compliance
- Intellectual property (IP) considerations
- Contractual due diligence (offtake and feedstock)



Market and Commercial Due Diligence

Analyze **market potential, industry positioning**, and **business risks**. Explore key commercial factors influencing SAF deployment, including:

- Market demand analysis
- Competitive landscape
- Policy drivers and available incentives

Project finance due diligence varies for sellers seeking funding and buyers investing in SAF projects, requiring tailored risk allocation

Sell-Side Due Diligence (Developers & SAF Producers)



Maximize project attractiveness to investors and secure financing

- **Robust feasibility studies** to present a bankable project
- **Securing offtake agreements** with airlines to ensure revenue predictability
- **Compliance with sustainability frameworks** (RSB, ISCC or CORSIA eligibility)
- **Feedstock procurement strategy** and long-term availability
- **Clear financial projections** with stress testing for key variables (e.g. feedstock cost and policy shifts)

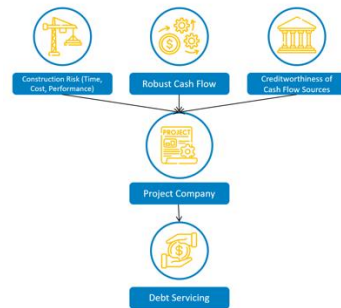
Buy-Side Due Diligence (Investors & Lenders)



Mitigate risks and ensure project returns align with investment criteria

- **Assessing the developers technical and operational expertise**
- **Verifying offtake agreements and counterparty risk** (e.g., airline financial stability)
- **Evaluating regulatory risks** (SAF blending mandates, carbon credit programs)
- **Project finance structure analysis** (equity vs. debt financing, expected IRR)
- **Exit strategy considerations** (secondary market for SAF assets, potential M&A activity)

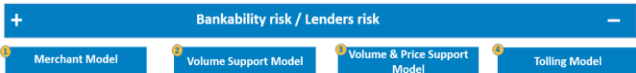
Key takeaways



Ring-Fencing of project, debt servicing from project cash flow and key credit quality drivers

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Each model presents a trade-off between risk, financing feasibility, and revenue stability



Tolling model faces less lenders risk while the Merchant Model faces high lenders risk

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Different mitigation strategies depending on the criteria risk



Identifying risks, validating project feasibility and ensure SAF projects are bankable

Thank you for your attention!

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