

Due Diligence for CCTUS and CDR Technologies and Projects

EUROPEAN CO2 SUMMIT

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There are many types of due diligence.



Today, we will focus on the area in orange:

Focus areas

- Financial
- Legal
- Property
- HR / Pensions
- Commercial
- Management team
- IP
- Technical
- Operational
- Environmental

Vendor (sell-side) due diligence

- Commissioned and paid for by the target
- Executed by an independent third party
- Duty of care to the investor

Buy-side due diligence

- Commissioned and paid for by the buyer
- Executed by an independent third party
- Duty of care to the investor

Due Diligence is...



CCTUS and CDR due diligence check list (1/2)

Feedstock availability and cost

CO2
MSW / Biomass
Hydrogen
Others?
Maturity of contract negotiations

Offtakers and pricing

Market / product requirements
CO2 intensity / certification
Willingness to pay green premium
Maturity of contracts

Process and system

Power and water utility requirements
Process integration and energy efficiency
Cost competitiveness
Timeline

Technologies and operation

Maturity of unit operations
System maturity level
Total capex
Maintenance and labour costs
Emissions to air, land and water

Location and regulation

Regulatory, permitting and community support
Subsidies
Local environmental factors
Feedstock and product logistics

CCTUS and CDR due diligence check list (2/2)

Financials

Return on capital invested
Profit margins and cash flow
Cost pass through
Amount of capital to be raised
Timeline to COD

Execution and team

Skills, expertise and teamwork
Track record
Bandwidth and objectivity
EPC partners and equipment vendors
Project / R&D timeline

Geopolitical and security

Taxation
Repatriation of cash and capital
Local security issues
Security of trade corridors

Market

Belief in CO2 value chain
Credit worthiness of offtakers
Diversity of offtakers

Legal and IP

What are we investing in?
Legal structure
Freedom to operate
Rights to use technology
Regulatory shift

Due Diligence is a search for...



Due Diligence is an input to...



Due Diligence is not...



Due Diligence is not...



Due diligence is, and is not...

Is...

- A reality check
- A search for the truth
- An independent, third-party review
- Useful preparation for term sheet negotiations
- Required due to the principle of “caveat emptor”
- Avoidance of negligence on the part of the investor
- Testing and validation of claims made by the target
- An evaluation and analysis of the presented information
- Assessment of the overall business case and concept viability
- A “second opinion” and avoid “group-think” and internal biases
- An opportunity for the target to learn how others see their business
- Testing the alignment of the target’s proposition with the investment criteria
- An obligation or legal requirement for internal / external compliance purposes

Is not...

- An audit
- A commitment to invest / sell
- Investment term sheet negotiations
- About using unqualified labels such as “good” and “bad”

The role of the target team.



Hard sell, soft sell or right sell?



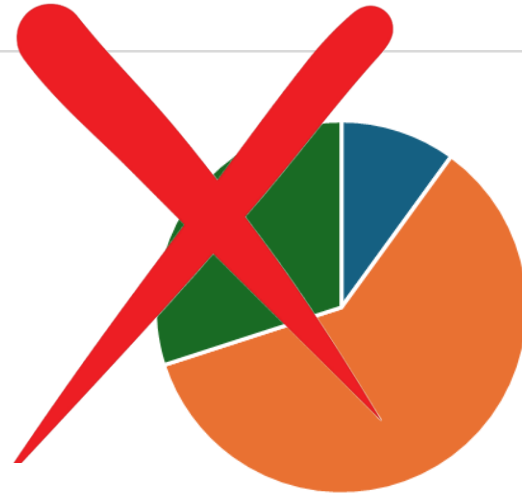
Be realistic when communicating...



Prepare your pitch for due diligence.



- Specifics of your proposition
- A realistic market assessment
- Position relative to competitors



- Specifics of your proposition
- How wonderful the market is
- Competitor weaknesses

Tell them enough to evaluate, not replicate.



The role of a due diligence advisor.



Be curious, be open minded, ask questions.



Check everything, assume nothing.



Keep looking until a clear picture forms.

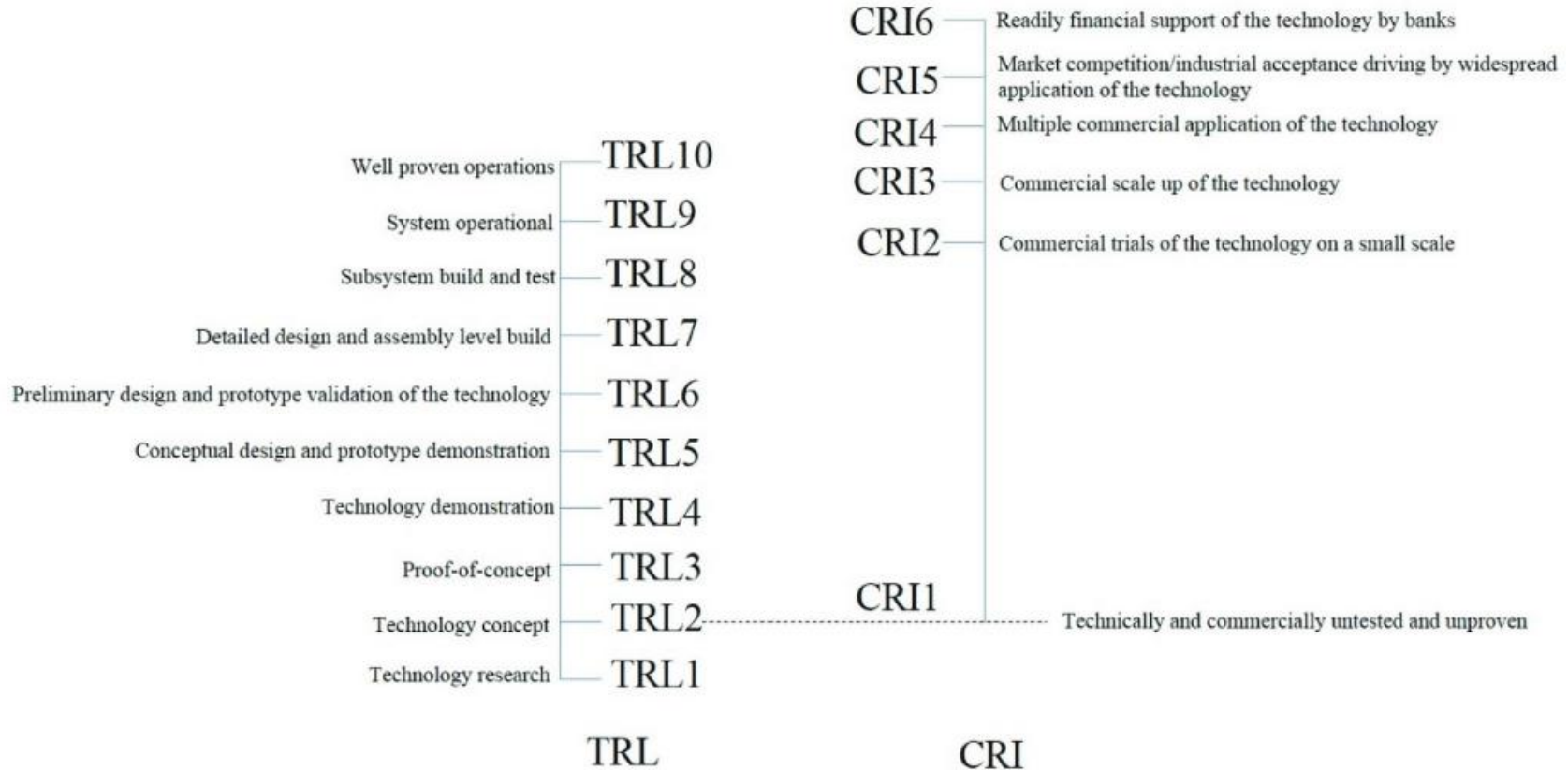


Tools can characterise the target.

TRL 9	Actual system “flight proven” through successful mission operations
TRL 8	Actual system completed and “flight qualified” through test and demonstration (ground or space)
TRL 7	System prototype demonstration in a space environment
TRL 6	System/subsystem model or prototype demonstration in a relevant environment (ground or space)
TRL 5	Component and/or breadboard validation in relevant environment
TRL 4	Component and/or breadboard validation in laboratory environment
TRL 3	Analytical and experimental critical function and/or characteristic proof-of-concept
TRL 2	Technology concept and/or application formulated
TRL 1	Basic principles observed and reported

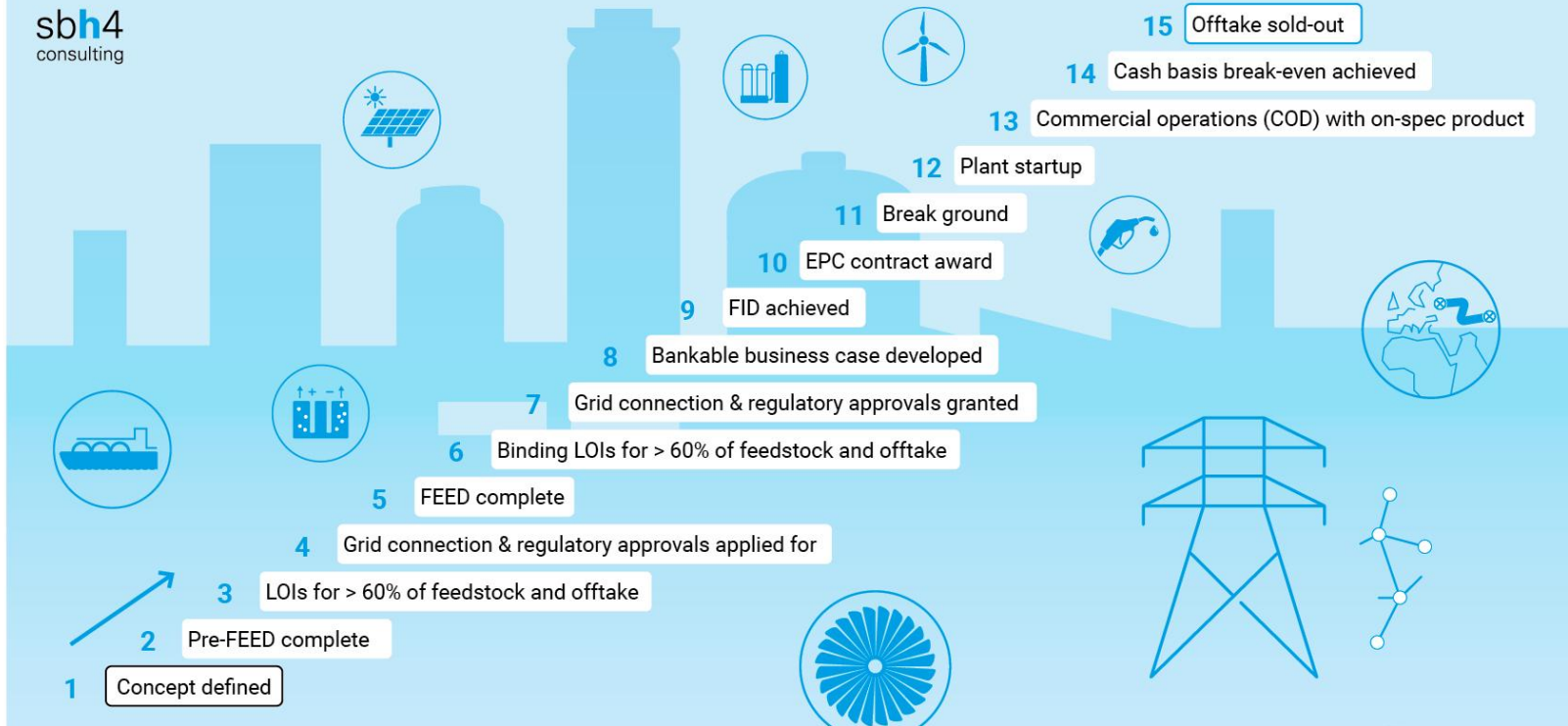
Phases	MRL	Definition
Operations and Support	10	Full Rate Production demonstrated and lean production practices in place.
Production and Deployment	9	Low Rate Production demonstrated. Capability in place to begin Full Rate Production.
Engineering and Manufacturing Development	8	Pilot line capability demonstrated. Ready to begin low rate production.
	7	Capability to produce systems, subsystems or components in a production representative environment.
Technology Development	6	Capability to produce a prototype system or subsystem in a production relevant environment.
	5	Capability to produce prototype components in a production relevant environment.
Material Solutions Analysis	4	Capability to produce the technology in a laboratory environment.
	3	Manufacturing proof of concept developed
	2	Manufacturing concepts identified
	1	Basic manufacturing implications identified

They can identify bankability and risk.

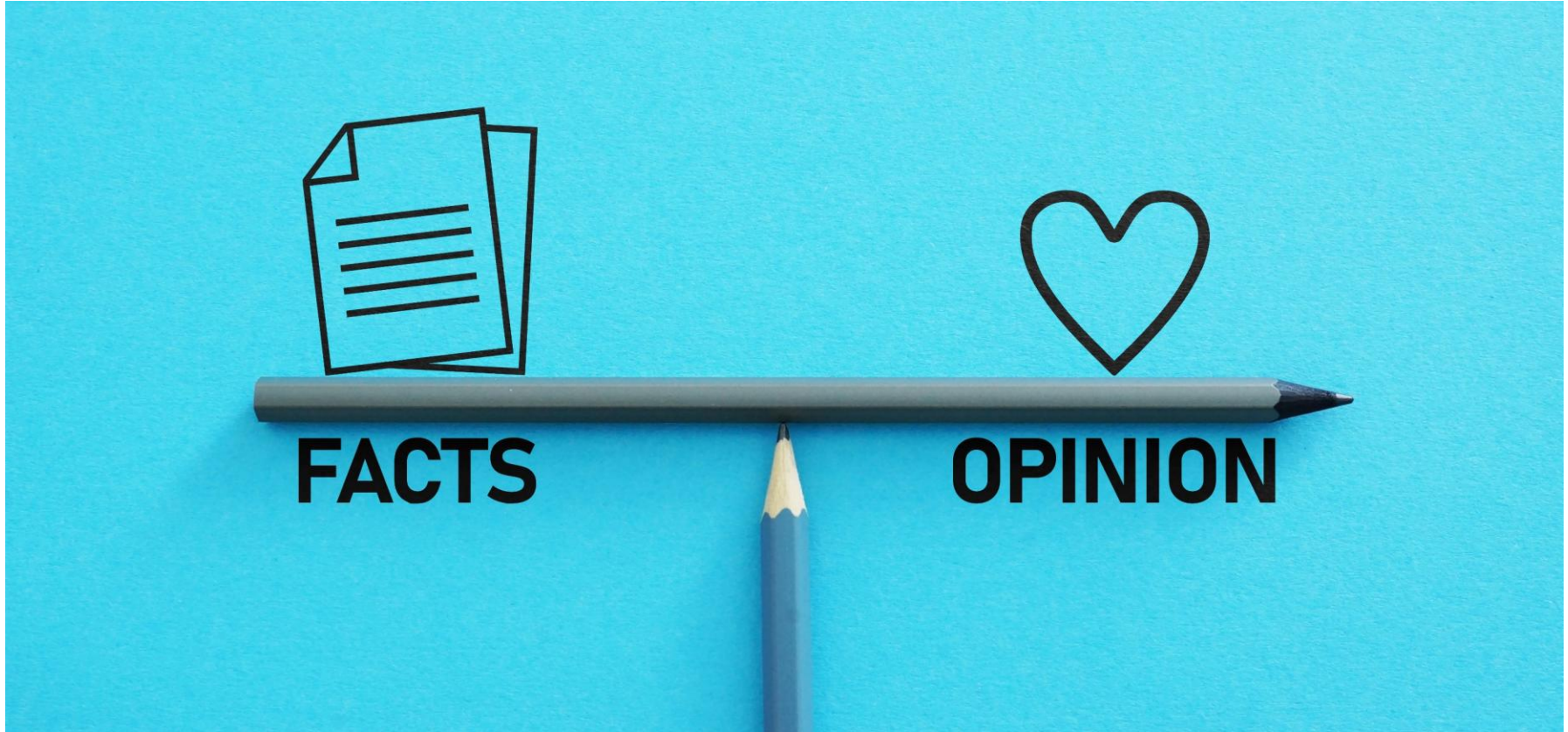


And can be used to gauge project maturity.

Maturity levels for sustainable infrastructure project development



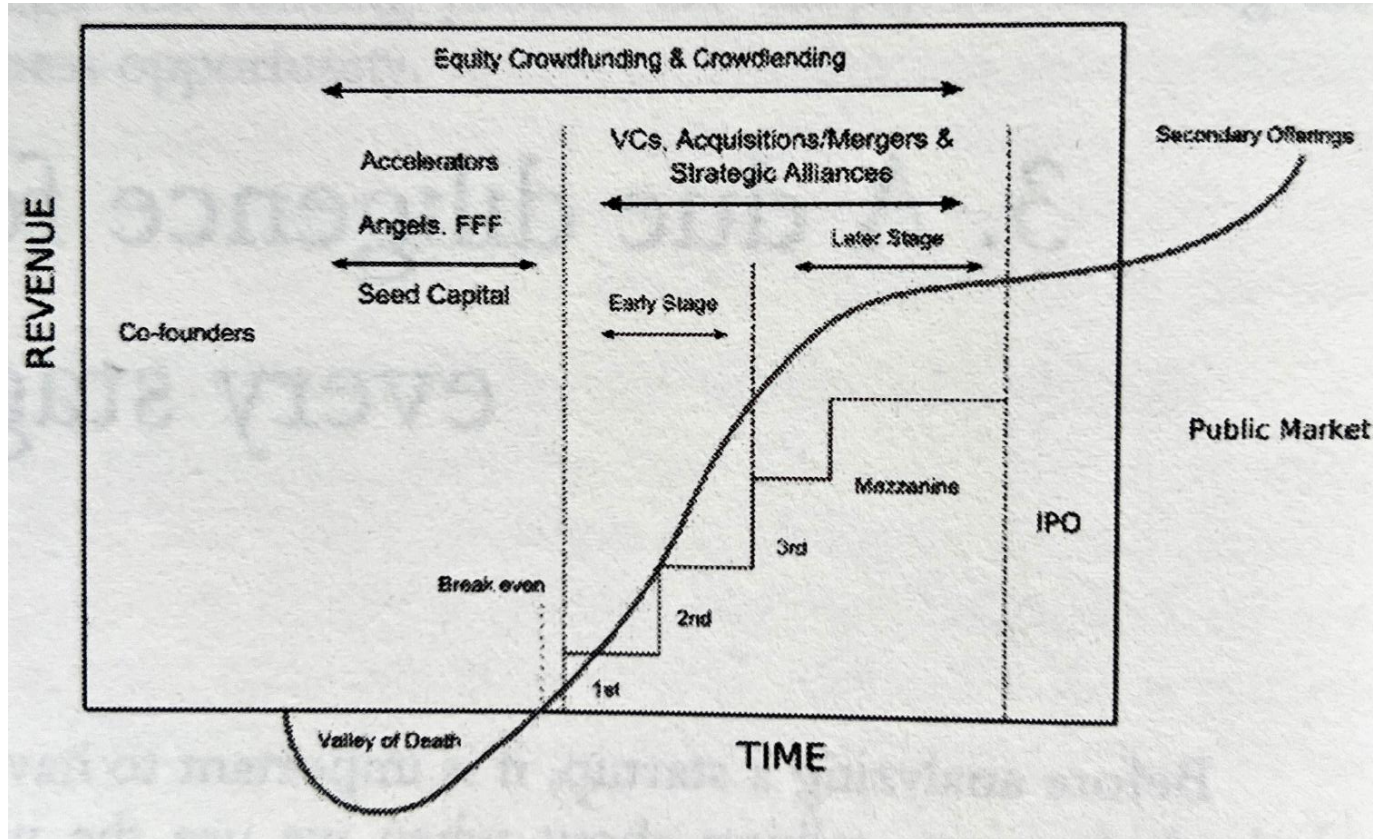
An expert can add value with insightful opinions.



Picking the right horse for the race.



Investors are looking for different things.



Not good, not bad, just the right fit.



In essence, due diligence enables a fair process.



And helps to avoid this...



sbh4
consulting

Introduction to Stephen B. Harrison and sbh4 consulting

Stephen B. Harrison is the founder and managing director at sbh4 GmbH in Germany. His work focuses on decarbonisation and GHG emissions reduction. E-fuels, hydrogen, ammonia and CCTUS are fundamental pillars of his consulting practice.

Stephen has extensive M&A and investment due diligence advisory experience in the energy and clean-tech sectors. Private Equity firms, investment fund managers and green-tech start-ups are regular clients. He also supports operating companies in their mission to decarbonise their scope 1, 2 and 3 GHG emissions.

In 2023, Stephen evaluated seven CCTUS, hydrogen and e-fuels submissions to the European Commission's Third Innovation Fund. The fund allocated €2 billion to large-scale decarbonisation projects in Europe. In 2024 he supported the European Commission with venture capital investment due diligence and assessed eight Horizon grant applications.

Stephen has served as the international expert and team leader for three ADB projects related to CCTUS and renewable hydrogen deployment in Pakistan, Palau and Viet Nam. He has also supported the IFC and world bank on e-fuels and green hydrogen strategy development projects in Namibia and Pakistan.

With a background in industrial and specialty gases, including 27 years at BOC Gases, The BOC Group and Linde Gas, Stephen has intimate knowledge of e-fuels, hydrogen, ammonia and carbon dioxide from commercial, technical and operational perspectives. For 14 years, he was a global business leader in these FTSE100 and DAX30 companies.

As a member of the H2 View and **gasworld** editorial advisory boards, Stephen advises the direction for the leading hydrogen-focused international publications. Through H2 VIEW, World Hydrogen Leaders and Sustainable Aviation Futures, he has led Masterclasses covering many hydrogen, SAF and hydrogen derivatives themes in virtual and live sessions.

Stephen was session chair for the e-fuels and hydrogen propulsion track at the Bremen Hydrogen Technology Exhibition in September 2023 and chaired the same stream at that conference in Hamburg in 2024. He was also conference chair for the CO2 utilisation Summit in Hamburg in 2023 and the same event in Berlin in 2024.

