RIVERSE

Standard rules

Revision 4 – Sept 2022

1.Introduction

Fight against climate change and resources depletion are highly linked. Effectively, our frenetic ressources consumption provokes GHG emissions all along the processes lifetime:

- Ressources extraction is more and more energy consuming
- Over-consumption increase the needs for heavy industrial process and complex supply chain
- Surplus of waste all over the planet contribute to massively emitting GHG, from CO2 to CH4

Besides, our current linear economic model isn't sustainable anymore for the following reasons:

- All key resources stocks are decreasing massively
- Key resources supply becomes more complex and uncertain in an unstable world.
- 91% of waste is not re-used for another production tool, creating unbelievable amount of polluting and lost waste.

In order to act on the impact of raw materials, companies must implement a circular economy approach, with 6 levers to make this transition:

1. Acting on the **sustainability of resources** by favoring bio-based materials
2. Extending **the lifespan** of products by working on their reparability
3. Selling **usages** rather than products
4. Encouraging the **reuse of products**, for example through reconditioning
5. Promoting the **reuse of raw materials** and components through recycling
6. **Optimizing** the environmental footprint through eco-conception

In short, **the linear model of "extraction, use and disposal" is one of the main drivers of natural resource depletion, waste, environmental degradation and climate change.**

If we allow ourselves to imagine a world, where we optimize the use of resources and study the circular models that are gradually emerging, we see that the circular industry allows to:

- Enable models and innovations that carry competitive offers against the cheap-at-all-cost model
- Reduce material costs and secure supplies while circulating a maximum of material

- Decouple value creation from resource consumption
- Massively reduce the environmental impact of products and services
- Create jobs (wouldn't the future industrial job be the electro-mechanical technician able to repair and put back into service all our devices?)
- Re-engage teams in search of meaning around eco-design, local sourcing of materials and suppliers and the creation of a new sustainable economic model

Riverse's mission is to enable a circular and resilient industry in Europe. We foster the deployment of circular solutions, by allowing them to issue carbon credits financed by virtuous companies.

2. Independence

The Riverse standard aims to foster the environmental transition by enabling ~~various~~ low carbon solutions to access carbon credit funds to accelerate their deployment.

Riverse has been founded by the competencies aggregation of three complementary co founders:

- Ludovic Chatoux, Chief Executive Officer, with previous experience in strategy and investments in marketplace businesses
- Clément Georget, Chief Science Officer, with previous experience in industrial transformation
- Grégoire Guirauden, Chief Customer Officer, with previous experience in digital transformation and customer experience

None of them have direct interest or participation with a specific actor of the market, ensuring a full and total independence and autonomy.

Moreover, every Riverse team member has to sign the **Riverse Conflict of Interest Policy**, to ensure any new team member respects our independence.

3. Governance

a. Riverse status

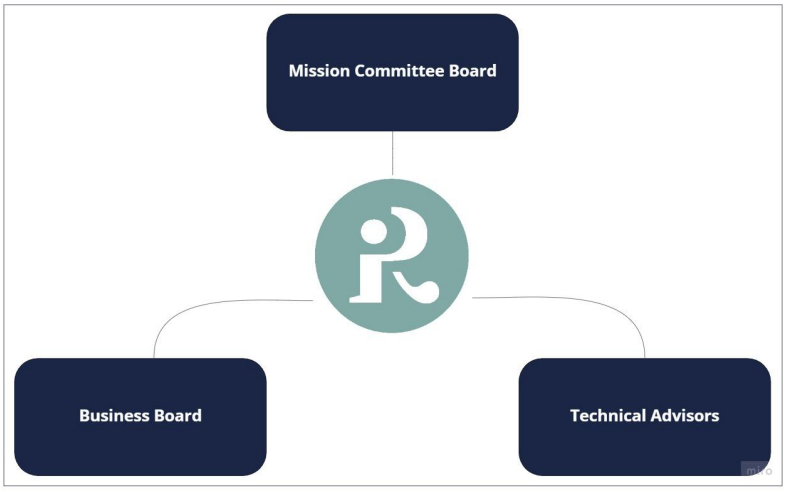
Riverse is a simplified joint-stock company ("*société par actions simplifiée*") with its registered office at 24 avenue des Pépinières, 94260 Fresnes, registered in the Créteil Companies and Trade Register under number 908 082 332.

Riverse is also a "Société à Mission" whose "raison d'être", within the meaning of Article 1835 of the French Civil Code, is as follows:

- The purpose of the Company is, as far as possible, to have a positive and significant environmental or social impact in the context of its commercial and operational activities, to carry out its activity with exemplarity and professionalism, in the collective interest.
- It is not a matter of being a communicator but of being in action: an activism of solidarity. The principles that guide the Company's raison d'être, insofar as the competitive and economic environment allows, are therefore the following
    - Helping to develop solutions that have a net environmental or social impact that benefits the community and the planet;
    - Working with partners and customers who share the Company's values and mission;
    - Providing real value and impact to partners and clients;
    - Respect for people and work/life balance.

b. Riverse organization, roles and responsibilities

Riverse organization is set up in the following ways.



Role and responsibilities are detailed below:

Governance group	Function
Business board	Makes decisions on the strategic direction that Riverse should follow. Membership is comprised of a representation of Riverse's stakeholders.
Mission Committee	Ensures Riverse's activity is still in line with its overall mission as defined in its status.
Technical advisors	An expert panel, external to Riverse, that provides advice to the Riverse Team on technical matters such as around climate benefit estimation, new solutions evaluations, peer-review methodology

c. Safeguards and grievance mechanisms

All Riverse ecosystem stakeholders are contractually linked with Riverse. The full list of contracts template between projects, Riverse, VVB and buyers will be displayed soon.

Moreover, any stakeholder of Riverse ecosystem is under **Riverse Complaints and Appeals Policy**.

d. Methodologies development and stakeholder consultation

i. Methodology development

Riverse's methodology framework is based on lifecycle analysis and the Core Carbon Principles of the Taskforce on Scaling Voluntary Carbon Markets. Thus, Riverse has developed one generic methodology, aiming to be adapted for several solutions type.

Actual methodology framework is available here. This methodology is under validation by a renowned actor of carbon credit standard validation and verification.

Based on current team and board members competencies, Riverse accepts solutions in the following sectors:

- Circular Economy solutions
    - Reconditioning: Input similar to output, but went through a technical process of assembly and quality assessment
    - Recycling: From product (or waste) to raw materiel, process that transforms waste into reusable compounds
- Biosourced solutions
    - Bioenergies: From biowaste to energy: process that produces energy (or fuel) in an efficient manner
    - Bio-based materials: Mechanical process to transform bio-based raw-material into products that have equivalent functionalities
    - Biochemistry: Heavy industrial process to transform bio-sourced raw-materials into chemical compound
- Earth carbon restitution: carbon-containing substance that can be reintroduced into the ground

Technical documentations per sector are going to be published to provide specification and orientations to use the generic framework more easily.

ii. Stakeholder consultation

All methodologies and technical documentations latest versions are published on Riverse website. Every document is open to comment from anyone, and comments are reviewed on

a quarterly basis in collaboration with technical advisors, and mission committee members if required.

Each contributor or commentator to methodology or technical documentations receives an update once its remark has been treated by Riverse and the relevant governance entities.

Feedbacks are collected with this form here and reviewed on a quarterly basis.

4. Governance

Riverse registry will be openly accessible through our website riverse.io, and will display all the relevant information to ensure transparency and traceability for carbon credits:

- Project/program information, including program documentation, detailed calculations, audit/verification/monitoring statements and reports and legal representations
- Transparently tracks issuance, transfer and retirement / cancellation of units
- Individually identify units through unique serial numbers that contain sufficient information to avoid double counting (type, geography, vintage)
- Unit status (issued, transferred, retired/canceled), with full traceability of the chain of custody

Regarding Riverse registry legal frameworks, all relevant documents are accessible below:

- Know your customer Policy
- Registry Terms of Use
- Riverse conflicts of interest policy
- Project developers, carbon credit buyers, board members and accredited VVB contracts

5. Validation, Certification and Verification

a. Overall validation and verification process

Overall certification process is split in the following steps:

Step 1 - Eligibility check

- Project Application (PA) form by project developer
- PA validation by Riverse Team

Step 2 - Project pre-certification

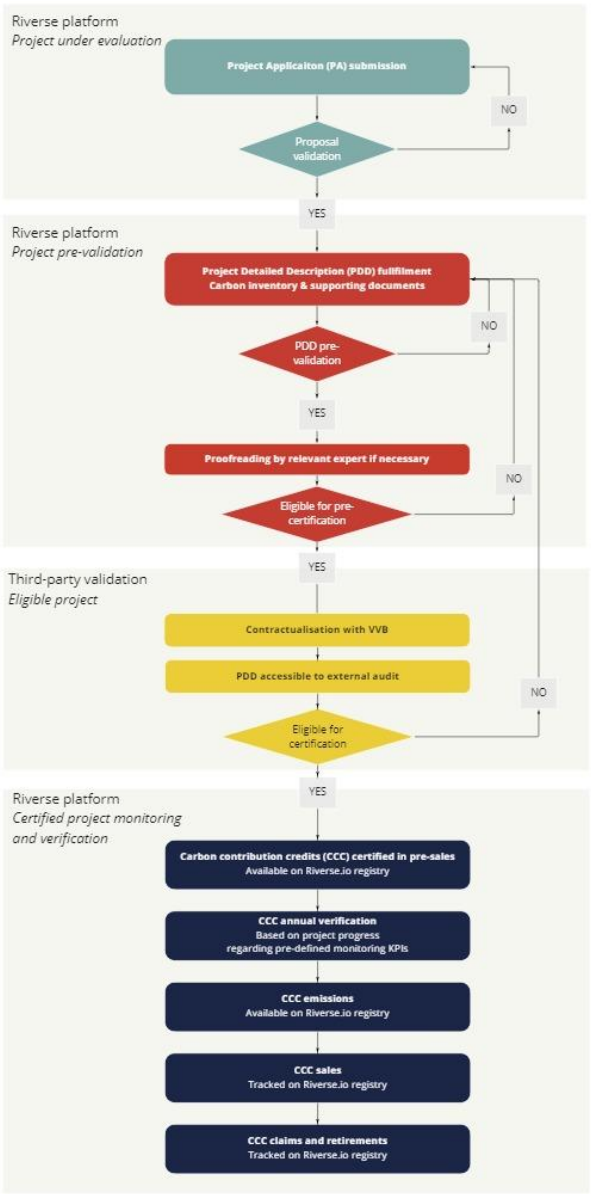
- Project Detailed Description (PDD) fulfillment on Riverse'platform
- PDD pre-validation by Riverse Team
- PDD proofreading by relevant expert if necessary
- Project pre-certification & pre-credits issuances

Step 3 - Project third-party validation

- Contractualization between 3rd party verifier and project developer
- PDD accessible by 3rd party on Riverse platform
- PDD validated by 3rd party
- Project validated and eligible for certification

Step 4 - Certified project monitoring and verification

- Carbon Contribution Credits (CCC) certification
- CCC annual verification based on defined KII



- CCC sales, claims and retirement

b. Validation process

i. Project under evaluation

Project developer has to submit a Project Application (PA) proposal in order to start the certification process.

The PA form is available online here. It contains the following information:

- Company name
- Contact details
- Project scope / Product definition
- Mechanism
- Technology type
- Applied sector
- Answers to criteria: additionality, co-benefits, TRL, rebound effect, substitution
- Env. impact assessment or evaluation VS baseline scenario

PA proposal validation is realized by the Riverse team and enables them to continue the process.

In case of negative answer, a refusal report is sent by Riverse team to project developer to justify the decision. There is no limit of time before sending another submission.

This part is free of charge for project developers.

ii. Project pre-validation

Project developer has to fulfill a Project Detailed Description (PDD) on Riverse platform. This PDD is the final document to be sent to third-party verifier.

A PDD example is available here. It contains the following information:

- Full LCA baseline / project
- Verification KPIs definition
- Project presentation
- Production / Set up roadmap

- Co Benefits justification
- Financial additionality background checks
- Visual reports from onsite

Riverse team realized a pre-validation to ensure documents respect methodology criterias and required supporting documents to ensure chosen VVB has the best level of information to audit final version of PDD.

Riverse's verification framework is included in the subscription of the project to the platform.

For certain solutions, Riverse team can advise a proofreading of certain part of the submission by a relevant domain experts. Riverse provides a list of experts per project types.

This proofreading is optional, fees depend on expert pricing, and are charged to project developers.

Once Riverse's team provides its pre-validation, and the project developer has chosen to activate the proofreading option or not, PDD is considered as eligible regarding methodology, and access to third-party validation phases.

iii. Project third-party validation

To complete the validation phase, project developer has to submit its pre-validated PDD to an Riverse accredited third-party validator.

This part is charged to the project developer directly by the VVB. VVB audit process and fees are defined by third-party validators and available on VVB offer on Riverse platform.

Once chosen VVB gives final validation, PDD is accepted and the project is considered as certified.

c. Verification process

i. Key Impact Indicators & oracles

One of the main parts of process certification is to define which KIIs are defined to monitor and verify carbon credits emissions over time. The aim is to facilitate an annual verification process to ensure data quality in project monitoring.

The key impact indicators are physical parameters that can be controlled and measure (automatically preferably).

To determine whether one should consider using a key impact indicator, it should be :

- changing (over time or depending on process)
- measurable on the ground
- responsible for 10% of project's overall impact

Of course KII that are directly linked to project's impact and output (such as ha in forestation, kWh in biogaz production) must be accounted for.

For one given project, there number goes from 3 to 5

These KIIs are chosen to follow all the key factors of project life cycle analysis. For each KII, a proof of verification and a frequency is defined.

Oracles are the *keys* that enable the reporting of the key impact indicators.

They must be:

- auditable and documented: it exists a process (human or preferably digital) that lead to this results
- objective: is not subject to interpretation, anyone reads the same results
- digitalized: oracles will be associated to carbon credits in the end, they must be at least digitalized if not already digital

ii. Verification process

Riverse verification is part of the verification process set up by Riverse. On a regular basis (every 3, 6 or 12 months) the projects upload the oracles for audit and verification of its impact.

Riverse's verification framework is included in the subscription of the project to the platform. In case of using a VVB offer, all fees and process are detailed by each VVB on Riverse platform.

In case of a process change, the project developer has to notify Riverse's team, who decides if the process change is validated or needs further audit. If the process change is important, the validation will need to be done again.

In case of a lack of proof of verification for a KPI, carbon credit emission is stopped until further notice.

6. Core Principles

a. Independently Verified

First of all, each Riverse methodology is being validated by a relevant carbon credit experts, on the following elements:

- Compliance of the methodology with ICVCM recommendation to certify highest quality carbon credit
- Quality of measurement guidelines to ensure LCA rigourness and conservativeness
- Robustness of verification process over time

Besides, during validation phase, each PDD is audited by a accredited, independent and competent third-party verifier (validation & verification body - VVB), on the following elements:

- Robustness of carbon gain measurement
- Compliance with Riverse methodology specifications
- Validity of verification KPIs, supporting document proofs and check frequences

VVB needs to be compliant with Riverse accreditation rules, which main principles are the following

- Prove a sufficient knowledge in carbon measurement
- Prove a sufficient knowledge in carbon credit system
- Sign Riverse VVB Agreement

- Sign Riverse Conflicts of Interest Policy

Finally, to finalize carbon credit emission over time, each project developer has to use Riverse decentralized verification framework, necessitating disclosure of supporting documents for each verification KPIs, or to support an accredited VVB audit for each carbon credit emission.

b. Unique

The carbon credits are only counted once and are not double issued or sold.

Uniqueness refers to the unique sale of carbon credits. Ensuring the uniqueness of credits is one of the fundamental criteria for the environmental integrity of the carbon contribution.

Any project wishing to have its GHG emission gains certified using Riverse methodology must contractually commit to not using another certification body or label for the project in question.

Riverse Project contract template is available here.

In order to ensure transparency on our uniqueness process, all CCCs are visible on the Riverse registry, which is accessible online along with all project information and the associated CCC lifecycle.

Riverse reserves the right to verify that suppliers or customers of the project do not value the same emission gains for voluntary carbon credits.

c. Real

A carbon credit is "real" if it represents an actual net reduction or sequestration in emissions. The verification process must prove that the emission reduction does not take place because of artificial, incomplete, or inaccurate emissions accounting.

i. Ex-post

All emissions reductions and removals and the project activities that generate them have genuinely taken place, they are measured, monitored and verified ex-post.

Ex-Post carbon crediting is the issuance of carbon offsets after independent verification of emission reductions.

In case of Riverse certification protocol, each ex-post carbon credit is only emitted after approval of each verification KPI supporting proof, on a regular basis.

ii. Ex-ante

Ex-ante, carbon offsets that are issued for the projected volume of reductions/removal over the project's lifetime. They are conservatively calculated. Ex-ante credits typically become ex-post credits after the credits have been monitored and verified for a specific time period.

In case of Riverse certification protocol, ex-ante carbon credits can only be emitted with the following conditions:

- Project developer has explained with ex-ante emissions is the only way to develop its project.
- Conservative buffers are taken into account in carbon gains measurement to avoid over emissions.
- Proofs of project robustness and delivery are delivered to ensure project quality

Finally, Riverse secured a 10% insurance buffer pool of effective carbon credit to counter-balance of over-emissions.

These tonnes are non-tradeable and are to be used to cover the risk of unforeseen losses in carbon stocks in the project portfolio. These tonnes will be used to replace any previously sold tonnes in the event of a reversal due to fire, pests, drought, or other events which can affect the permanence of the carbon sequestration inherent in the carbon credit sold.

d. Permanent

Non-permanence refers to a situation where the emission reductions or removals generated by the mitigation activity are later reversed, for example, due to a natural disaster (fires, drought, pests) or project mismanagement. The mitigation activity may thus only result in a temporary greenhouse gas benefit for the atmosphere.

i. Avoidance projects

The number of CCCs associated with the project must take into account the risk of non-permanence of avoided emissions by selecting funding consistent with the nature of the project and a rebate associated with the risk.

To ensure that the avoided emissions valued are real and to avoid the number of CCCs issued exceeding the reductions, Riverse incorporates two levels of precaution in its methodology:

- for all projects: **a 10% rebate is systematically applied to the evaluation of emissions avoidance,** the risk of project failure
- additionally a buffer is taken when sales are done prior the verification, 20% per year separating purchase to avoidance schedule (please refer to registry rules)

The difference between the emissions actually avoided and the emissions valued in the form of CCCs is used to fund an insurance fund set up by Riverse to compensate for the possible failure of a project despite the guarantees taken.

Verification is carried out throughout the certified years of the project based on the criteria defined at the time of certification (see Verification chapter).

ii. Capture projects

Emissions storage is the length of time during which the sequestered carbon will not be re-emitted. This factor allows us to better value projects according to the duration of capture.

We establish 3 possible levels of storage (cf Criteria 3), detailed by some non-exhaustive examples.

- Short-term storage
    - Estimated duration: less than 50 years
    - Examples: biobased construction
- Medium-term storage (more than 50 years, less than 150 years):
    - Estimated duration: between 50 and 150 years
    - Examples: biochar, bio-oils
- Long-term storage

- Estimated duration: over than 150 years
- Example: deep storage of CO2

The project leader must define the case(s) related to his project. In the case where several scenarios are included, an average pro rata of the number of tons per scenario is used to define the Final Storage Index of the project. This Final Storage Index is applied to the reference price of the Carbon Contribution Credit for capture projects to define the final price of the CCC associated with the project.

The project owner must provide all the necessary evidence to prove the duration of storage. Without relevant evidence, the values associated with short-term storage in biomass and soils will be taken by default.

iii. Insurance funds

The insurance funds relate to the carbon credits that are hold by Riverse in the issuance and certification process. It enables our standard to have a buffer in case a project meets difficulties in delivering the emission reduction.

When a buyer purchases carbon credits from our registry the emission reductions are guaranteed.

How it works: cancellation of sold credits

If a credit is both:

- “sold”: the owner is no longer the project developer
- “cancelled”: by the project developer, the VVB or Riverse

Then, the owner is proposed the exact same number of carbon credits, **regardless the initial price of the credit,** but within:

- the same region (Europe, North America, South-East Asia…)
- the same mechanism (Reduction, Avoidance, Removal)

When it doesn’t work

- The carbon credits are still owned by the project developer
- The carbon credits are not certified

e. Additional

CCCs must fund the emergence of solutions and substitution of carbon products that would not have been possible without this funding.

A project is therefore considered additional if it cannot be implemented without the carbon contribution mechanism. Additionality is a key criterion to ensure that the **financing provided has a real impact on the fight against climate change**.

To be eligible, the project must therefore prove its **financial additionality**, by demonstrating 1 of the 4 points below:

The project must demonstrate that it does not have sufficient profitability conditions to be developed in the following manner:

1. Justify a price difference between the baseline and the project scenario that prevents or significantly delays its deployment
2. Justify administrative or technological constraints that could be overcome by additional funding

The project must justify that additional funding would increase the impact of the solution in the short term:

1. Prove that the current funding of the project does not allow for its wider deployment
2. Demonstrate that the project's current funding reduces or limits its potential impact

f. Measurable

i. Measurability core principles

Carbon inventories are based on - or reduced to - the principles of life cycle assessment, following the steps :

- definition of a functional unit and the basic scenario
- definition of system boundaries
- measurement of material and energy flows
- evaluation of their environmental impact (at least the carbon weight).

The carbon inventories performed for the baseline and project scenarios will have to follow the GHG Protocol standards or equivalent. The accepted list of carbon accounting methodologies is as follows:

- Project Protocol
- Corporate Value Chain Standard
- Bilan Carbone© (carbon footprint)
- GHG inventory (as defined in ISO 14065-1)
- Life Cycle Assessment (in the sense of standard 14040)
- EHSF (according to the NF EN 15804+A1 standard)

All measurements must be verifiable and scientifically documented, i.e.: the emission factors of inputs, products, co-products and processes must be derived from reference carbon standards (e.g. ADEME's Base Carbone [4] in France).

- the quantities (volume, mass, number) of products/materials must be justified
- In the case where a carbon standard does not exist, documented scientific research can be proposed to establish a reference measurement. This measurement will then be evaluated by our experts and validated by an external third party if necessary.

Data quality requirements

Quality of the sources

It seemed essential to ensure the reliability of the data by choosing the most recognized sources. The EcoInvent database was chosen because of its reputation: it is cited in most specialized publications, and the processes studied are the most numerous among the available databases.

Obsolescence

In all cases, we will choose the most recent data available: current for that coming from the Project, at most 3 years old for those coming from world statistics (INSEE, World Bank...).

All data dated after the certification year - 3 years must be justified.

Geographic compliance

Whenever possible, the measure should opt for data that apply to geographic areas corresponding to the assumptions and locations of operation or use.

Data exclusion rules / Cut-off criteria

Environmental significance is chosen as the cut-off criterion and the exclusion rule will be defined as follows: impacts smaller than 1/100 are considered insignificant and are not included in the results.

Calculation assumptions

The calculation assumptions must be clearly defined and explained.

ii. Baseline quality safeguards

Crediting baseline scenario defines the emissions level against which emission reductions or removals of a mitigation activity are determined.

Riverse methodology specifies that in case of doubt regarding baseline and project scenario, the most conservatice scenario has to be chosen to avoid risk of over-emissions.

In case of clear baseline quality risks, Riverse team during pre-validation phasis or VVB during third-party audit can require an additionnal baseline quality buffer on the final amount of carbon credit emissions.

iii. Leakage avoidance safeguards

Leakage risk is the net change of greenhouse gas emissions or removals that happen as a result of the project activity and occur outside the boundary of that activity. These include, for example, indirect emission changes upstream or downstream of the mitigation activity or rebound effects. A project saving the land from deforestation in one area may shift deforestation to another. Some projects may need to use large amounts of fossil fuels to implement the project. Leakage is estimated and a discount against the total issuance of credits is applied for that leakage.

Thanks to its full comparative carbon lifetime cycle analysis, Riverse measurement part of its protocol reduces massively leakage risks. However, in case of clear leakage risks, Riverse team during pre-validation phase or VVB during third-party audit can require an additional leakage buffer on the final amount of carbon credit emissions.

7. Detailed list of eligibility criteria

All certified projects are challenged according the criteria defined in our methodology.

The criteria set by Riverse ensure our standard respects the best practice of the market, respect carbon credit core principles:

- Measurability
- Additionality
- Non-permanence risks

In parallel our process ensures Unicity and Third-Party Verification.

We have chosen and designed these criteria to provide qualitative carbon credits to the market. In the list below the other criteria are detailed.

Additionally, we have limited the number of technologies that are eligible for our standard. With time, we will work in assessing and allowing more technologies to get certified.

1. Clarity & methodologies

When LCA does not provide a sufficient precision level, project impact measurement can be supported by a specific methodology. In this case, scientific reviews will be added to the project's case.

Clarity assesses if the asset's promise of benefit match with the probably outcomes based on scientific research. Broad claims that are not possibly met by a defined asset are of low quality and erode trust. And the methodology of the volume of carbon sequestered should be supported by a comprehensive, peer-reviewed literature review in the relevant scientific field.

Inputs from project developer

- Review the methodologies and scientific documents provided by the project. Review the asset definition and expected outcomes.
- Review the data on whether those outcomes were met or show progress towards being met.

2. Permanence

Projects emissions capture will be classified in following categories:

1. Under 50y sequestration / avoidance
2. Between 50 to 150y
3. Over 150y

Permanence assesses whether a project will have a lasting impact on the environment during and beyond the project period. Higher quality carbon credits will have a longer lasting beneficial impact to a defined boundary and adjacent ecosystem.

Inputs from project developer

Review of scientific technology backgroung and studies or associated LCA. Review of capture/sequestration means and carbon-containing substance. Nb of year "guaranteed" for sequestration.

3. Non-delivery risks

Additionally to measurement or process faults, the registry mechanisms covers also delivery risks:

- For all projects: a 10% of the credits amount are systematically send the insurance funds in provision to cover the risks of project failure.

- For projects whose CCCs are sold prior to their verification, a mechanism known as "ex-ante": an additional discount R is applied, depending on the number of years separating the date of purchase and the date of the estimated verification, this discount allows to cover the risk that the project stops before the planned end or does not reach the planned objectives. The further out the sequestration, the larger the discount. (cf our registry mechanism).

Precautions taken to prevent risks not to deliver the expected positive impact (ie the emission reduction or capture).

Inputs from project developer

Review of the Life Cycle Assessment of both baseline and project (hypothesis, error margins taken) Review of the production targets and project development perspective.

4. Do not harm

The project must be assessed against all SDGs. If the assessors or Riverse have doubts in the verification and certification process, additional proof should be asked.

The process/project must not significantly impair any of the Sustainable Development Goals.

Inputs from project developer

Review documentation on how the project developer perceive risks associated with the project. Review of production process and project description

5. Leakage

Carbon leakage may occur for a number of reasons:

- If the emissions policy of a country raises local costs, then another country with a more relaxed policy may have a trading advantage. If demand for these goods remains the same, production may move offshore to the cheaper country with lower standards, and global emissions will not be reduced.

- If environmental policies in one country add a premium to certain fuels or commodities, then the demand may decline and their price may fall. Countries that do not place a premium on those items may then take up the demand and use the same supply, negating any benefit.

There is no consensus over the magnitude of long-term leakage effects. This is important for the problem of climate change.

Inputs from project developer

Carbon leakage occurs when there is an increase in greenhouse gas emissions in one country as a result of an emissions reduction by a second country with a strict climate policy.

6. Rebound effects

The rebound effect is a concept in economic vocabulary that designates an increase in consumption caused by the reduction of the limits that were previously set on the use of a good, a service or a technology. The extra resources released are then used for overconsumption of the same product, or for the consumption of other products.

Applied to ecology, and in particular to energy consumption, the rebound effect characterizes a perverse and paradoxical effect of progress in energy efficiency: the savings achieved are not synonymous with lower consumption, but on the contrary lead to an increase in the consumption of the equipment concerned or of other equipment, and therefore of the energy needed to manufacture and operate it.

This paradoxical rebound effect comes into play in a broad way for all areas of resource use and their environmental impact.

The **rebound effect**, or rebound phenomenon, is the emergence or re-emergence of symptoms (pollution, overconsumption...) that were either absent or controlled before the project took place.

Inputs from project developer

The potential rebound effects of the solution are explicitly listed and an action plan is proposed to control these effects. Review documentation on how the project developer perceive risks associated with the project.

7. TRL

Technology Readiness Levels (TRLs) are a method for understanding the technical maturity of a technology during its acquisition phase. TRLs allow engineers to have a consistent datum of reference for understanding technology evolution, regardless of their technical background. The project must prove at minimum, they reached TRL 6.

Here are the list of all levels:

1 - Basic principles observed
2 - Technology concept formulated
3 - Experimental proof of concept
4 - Technology validated in lab
5 - Technology validated in relevant environment
6 - Technology demonstrated in relevant environment
7 - System model or prototype demonstration in operational environment
8 - System complete and qualified
9 - Actual system proven in operational environment

Inputs from project developer

Review of proof of technological progress and/or production capacities either in an operational environment or lab.

8. Targets alignment

The carbon inventory of the project scenario must induce emission reductions that exceed the global reduction targets of the project sector during the life of the project.

To simplify the impact evaluation, the criterion is set at a minimum of 4.5%/year (i.e. 20% over 5 years).

Inputs from project developer

Review of the baseline and project's life cycle assessment.

9. Minimum impact

The total lifetime of a project is limited to 5 years.
The project will have to justify a minimum reduction/sequestration of 1000tC02eq over the total life of the project.

Inputs from project developer

Review of the Life Cycle Assessment of both baseline and project.

10. Substitution

The products or services generated must comply with the intended use, and must effectively allow for an efficient substitution with the products of the basic scenario, or with the performance presented upstream in the case of a new product.

A product (or service) performance must be defined by quantified metrics (such as thermic resistance of 5m²K/W). Quantified metrics can then be compared to the chosen baseline scenario.

Inputs from project developer

Review of product/service's technical specifications in comparison of baseline functional scope.

11. Coproducts & waste management

The outcome of co-products and waste from the project scenario must be manageable in a sustainable manner under current conditions; a specific treatment plan must be provided for the use or co-production of harmful materials.

Inputs from project developer

Review of the list of co-products and main wastes of the process, a specific treatment plan must be provided for the use or co-production of harmful materials.

8. Environmental and Social Impacts

a. Co-benefits valorization

All Riverse certified projects must have a positive systemic impact to ensure that they are part of a sustainable world by having two quantifiable and verifiable co-benefits.

In order to be consistent with international standard, the project is asked **to prove and quantify at least 2 co-benefits** in accordance to the United Nations Sustainable Development Goals (cf Criteria 5). The project must not harm any of them (cf Criteria 6).

As a reminder, the co-benefits will be categorized according to the Sustainable Development Goals:

- 1 - No poverty
- 2 - Zero Hunger
- 3 - Good health and well-being
- 4 - Quality Education
- 5 - Gender Equality
- 6 - Clean water and sanitation
- 7 - Clean and affordable energy
- 8 - Decent Work and Economic Growth
- 9 - Industry, innovation and infrastructure
- 10 - Reduced Inequality
- 11 - Sustainable Cities and Communities
- 12 - Responsible consumption and production
- 13 - Fight against climate change
- 14 - Aquatic life
- 15 - Life on earth
- 16 - Peace, justice and effective institutions

- 17 - Global partnership

For quantification of these benefits, he project can use either its Life Cycle Assessment (LCA) and/or additional document.

b. Environmental and Social Do No Harm Safeguards

PDD has to provide enough details to validate that project deployment do not harm any of the 17 UN SDG.

In case of UN SDG harm risks, Riverse team during pre-validation phase or VVB during third-party audit can require additional proofs to avoid these risks. Note than non-compliance with Environmental and Social Do No Harm requirements can impeach project certification.