



ECN

Your energy. Our passion.

Technology due diligence

De-risking clean tech

Professional investors have a robust process to assess investment opportunities, and to select a number of potential winners in the clean tech landscape. While investment managers have the skill set to analyze a broad array of ventures in the clean tech field, a more in depth perspective on the quality of the technology of a venture is often required. The renowned global clean tech institute ECN, in co-operation with venture capital advisor Road to Value, now offers investors concise technology due diligence in a select number of areas in clean tech.

Systematic assessment of a potential technology is a vital part of a comprehensive due diligence activity. However, rapidly emerging technologies are typically challenging to evaluate. Sourcing the right expertise can be difficult and knowing how to upscale the technology can also be complex. ECN now offers investors a systematic technology assessment to fulfil this demand.

Due diligence scope: getting to grips with technology

ECN's tech due diligence offering is based on its own experience in devising, scaling up and commercialising proprietary (renewable) energy technology. Furthermore this experience has been broadened by working with technology companies across the world in our chosen areas.

1. Design

- Feature assessment and evaluation of technology benefits
- Identification of additional benefits
- Evaluation and background check of scientific claims
- Fit with market standards and common practices
- Ease of implementation in operating environment

2. Freedom to operate

- Evaluation of patent claims and conflicts in conjunction with IP lawyer
- Evaluation of potential barriers due to joint IP or foreground knowledge in conjunction with IP lawyer
- Backup for patent assessment with technological expertise
- Comparison with competing technologies

3. Application

- Assessment of features in specific applications and markets
- Evaluation of assumptions behind market potential estimates
- Identification of additional opportunities and markets
- Flexibility and robustness of technology, sensitivity to unforeseen changes in the operating environment

4. Demonstration

- Assessment of demonstration effort at various stages (lab scale, pilot scale, demo scale)
- Comparison of demonstration outcome with application scope: have the application-relevant parameters been shown to be under control?
- General assessment of energy payback time and environmental life-cycle performance
- Comparison of demonstration features with business model requirements

5. Operations

- Evaluation of assumptions regarding capex, opex, maintenance
- Risk assessment regarding scale-up of technology, identification of mitigants
- Feasibility of large-scale production
- Lab assessment of critical materials or components where relevant (e.g. biomass feedstock characterisation, photovoltaic cell testing, etc.)

ECN
P.O. Box 1, 1755 ZG Petten
The Netherlands

Contact:
Business Development
T: +31 88 515 4729
E: techduedil@ecn.nl

ecn.nl/techduedil





6. Innovation

- Assessment of potential growth of primary and auxiliary markets
- Evaluation of proposed R&D program

Content & format: cut to the chase

Due diligence findings are presented in electronic format. Every due diligence chapter is concluded with an overview of key risks and opportunities and potential mitigation options (or strategies), where possible expressed in financial terms.

The format contains all relevant information (including documents, interviews, benchmark data, etc.) backing up the assessments in the relevant section.

Process: technology due diligence aligned with overall due diligence

ECN does not regard technology due diligence to be a standalone assessment, but embedded in the overall due diligence based on the investment thesis. We take the time to understand the investment thesis and its implication for due diligence. The focus of the technology due diligence is determined in two stages: first, by tailoring the scope to the investment thesis and the specific technology. First results are discussed with the investment manager, discussing the risks and opportunities of the technology and its impact on the investment thesis. Next, a second assessment will take place in combination with other due diligence findings, for an in-depth investigation of key priorities for the investment manager.

The ECN due diligence team will be assembled to suit your needs. Typically, the team will be led by a technical generalist, supported by an experienced venture advisor of Road to Value, and one or two seasoned experts and analysts. Due diligence will be based on the tailored due diligence check lists, assessing key documents, performing site visits, and hosting a range of interviews. If required, due diligence analysis can be broadened to include lab assessments.

Typical due diligence assignments last for 1-2 weeks in total. Depending on where the investment manager stands in assessing the investment proposal, a “light” assessment version can be offered by ECN, in which a quick assessment of key areas is performed in order to help the investment manager filter his propositions.

Problem Solving

In addition, ECN offers investors the ability for rapid assessment and problem solving in technology development and up scale of existing clean tech investments. ECN's team is multidisciplinary, consisting of pragmatic problem solvers, experienced operators, technology experts and conceptual thinkers that enable a fresh perspective on problems, and the translation into swift improvement actions. Secondly, ECN offers investors a technology strategy review for portfolio companies.

Our technology due diligence is tailored to the specific investment thesis and requirements of the investor.

About us

ECN develops renewable energy technology with and for the market, contributing to a future sustainable energy system. ECN plays a leading role in R&D and has gained a strong reputation worldwide. 550 employees passionately work on renewable energy at ECN every day. With our state-of-the-art knowledge and expertise, we offer clean tech investors high-level due diligence services. Venture capital advisor Road to Value has in-depth expertise in the venture development process, lowering the threshold to bringing ECN's services and the specific investor needs together.

