Clean Energy Venture Capital Criteria
The design of an evaluation tool for venture capital investment decisions on the energy cleantech domain

Wiebe Mulder
May 2009

Summary

Background and problem situation

Due to the high risk associated with start-ups, the decision process of a venture capitalist is very important. Out of the investments made by VC firms, only 10 to 15 percent is highly profitable and the other investments are either total failures or just staying alive. This shows that there is plenty of room for improvements of the VC decision process.

Since the 1980s VC firms started to specialize their funds. The last few years VC firms have been increasingly aiming their funds at the cleantech sector and the cleantech energy sector in specific. This is also the case for Start Green Venture Capital (SG), which manages two cleantech funds. The majority of venture proposals that are dealt with at SG are concerned with cleantech energy. Up to date a lot of research has been conducted to identify the decision criteria that VC firms apply. The current trend towards more specialized funds that focus on clean energy technology start-ups raise the question if additional criteria specifically focused on this domain can improve the decision process of VC firms. In scientific literature there is little information in that regard and also SG is interested in possible improvements of the decision process. The downsides of only applying general criteria and no specific criteria is that the decision process is not as efficient as it could be because certain repeating clean energy issues have to be evaluated from scratch every time and furthermore there is a risk that certain aspects, which are more detailed will be forgotten during the evaluation. This results in the following research question:

"How can the evaluation list of Start Green Venture Capital be improved to better evaluate venture proposals from clean energy technology start-ups in the Netherlands?"

Methods and procedures

To get a clear understanding of the criteria that are applied without specifying at a certain technology or market, first a literature study was performed to compose a list of VC criteria that are generally applicable. A second literature study was performed to derive the relevant issues that clean energy technology start-ups come across when establishing and managing their products. The clean energy technologies that were included in this research are wind, solar thermal, solar PV and biomass. The results of that literature study were verified by interviewing eight clean energy experts in the field. This resulted in a final list of clean energy issues that was transformed in a list of clean energy criteria. Together with the criteria that were already applied by SG, these lists were the input of the design phase.

To derive the relevant requirements regarding the evaluation tool, the managing partner of SG was interviewed, their fund descriptions were studied, literature was reviewed and a use case diagram was constructed based on my experience as a business analyst during a four month internship. By applying these requirements the number of criteria in the general VC criteria list was lowered by joining similar criteria and removing criteria that were found of very low importance in literature. Furthermore a tool was developed with Excel software that contains the final list of general and clean energy VC criteria. Due to certain automated processes the tool is capable of providing a clear overview of the greatest risks regarding the venture proposal that is being evaluated.

Finally the tool and the relevance of the added clean energy criteria were validated. This was done in two ways. First of all the investment manager of SG was interviewed. He confirmed that clean energy criteria can identify relevant insights in addition to the insights that were derived from the general criteria. Furthermore he was of

the opinion that the tool was a big improvement over the old screening model and that especially the overview with the greatest risk is a valuable addition. Also the business analyst was interviewed to get an impression of how the usability of the tool was rated. The second method involved the assessment of three evaluation reports of real venture proposals that were filled in by the BA for the purpose of this assessment. By evaluating each clean energy criterion it was possible to verify whether they resulted in an additional relevant insight.

Conclusions

Based on the findings of the methods described above it can be concluded that there is a strong indication that the addition of clean energy criteria can improve the decision process of SG. That is not the only reason that the developed evaluation tool is an improvement over the old evaluation list; the automated aspects of the tool create a very clear overview on which the greatest risks are mentioned. This is a great help for the investment manager who has to manage the decision process as he or she can now directly see on what aspects should be focused. As the usage of the tool will be executed at predefined moments in the decision process it will most likely result in a more efficient and structured decision process. Because the clean energy criteria are more detailed than the general criteria they will be applied later in the process, as this will increase the efficiency.

Based on the discussion and reflection also some recommendations were made. For SG the most important recommendation is to keep the tool and especially the clean energy criteria up to date because as they are more specialized they can become outdated faster. Furthermore the filled in evaluation reports in the tool can very well function as a "scorecard". Comparing the scorecards of successful and failed ventures is potentially a great learning tool.

Finally there are some recommendations that could be used in future research on this topic. First of all, the method that has been used to identify risk for clean energy start-ups could be complemented by other methods, thereby strengthening the developed evaluation tool. Secondly, now that this exploratory research has indicated that clean energy issues exist and that issues can result in relevant VC criteria, a new study with sufficient data to be able to draw statistical grounded conclusions is recommended. Regarding the validation of clean energy criteria the outcome would be more solid if it was not based "paper tests" but on the evaluation reports of actual investment decisions. This could be made possible by letting the VC firm use the evaluation for a longer period of time, thereby creating the possibility of assessing "real world" evaluation reports.