

Summary:

We are losing the battle in the rate of reducing global CO² emissions due to the short time frame to make these changes, especially with the increasing likelihood that the Copenhagen summit will not lead to a global agreement.

It should be recognised that SMEs throughout Europe could be an influence in making the required changes quickly, if they had a source of raising cash flow.

The innovative SME sector for Sustainable/Environmental Products and Services have difficulty in accessing Financial Guarantees, sponsored by the European Investment Bank, due to their size (measured in cash flow and Asset valuation).

One of the main obstacles to accessing the financial instruments, via the domestic banks, is the lack of technical understanding of the technology being offered. This obstruction can be overcome by introducing a 'validation process' that can assess the technology, which takes into consideration the reduction of CO² emitted by the usage of the technology.

The validation process would be able to place an added valuation on the SME's project, giving more likelihood of gaining funds when applying for Bank Guaranteed finance.

Any validation process has to be light weight in structure and administration, otherwise it will fail.

Existing funding instruments are not taken up by SMEs mainly due to the amount of resources required to engage with them, with uncertainty of gaining access to them.

One further important advantage of introducing the 'validation process' would be the additional incentive to outside Investment, once the technology has been validated.

Introduction:

SMEs involved in providing Sustainable/Environmental services and products can be separated into two groups; Technology Developers and Project Developers.

- **Technology Developers** are organisations that create a service/product from R&D, with the concept of commercialising it. Usually these organisations require funding, to continue R&D before and after commercialisation, for resources, materials and machinery. Also additional cash flow will be required to cover the organisation's fixed costs.
- **Project Developers** are innovative organisations that promote and commercialise systems provided by the Technology Developers, to third parties (commercial or domestic). Usually these organisations require funding to design and add innovation to generate an application or process, using materials or Licences from different sources. Also additional cash flow will be required to cover the organisation's fixed costs.

This proposal document is broken down into three sections:

- **Statements to consider** – relevant statements that illustrate the shortfalls in the existing system of distributing EU funds.
- **Examples of two SME's defined above** – to illustrate two recent situations that is typical of 'Catch 22' situation that effects innovative SMEs.
- **Proposal** – A breakdown of the concept of how the validation process could function.

Statements to consider:

EXISTING EU FUNDING INSTRUMENTS

- Funding under the Framework instruments are slow processes that can take up to 5 years to complete, the Global Warming 'point of no return' has been estimated to be only 10 years. Therefore importance should be placed on installing existing technologies.
- Institutions are the main beneficiaries of EU funding with limited benefit to SMEs.
- Information on the results of EU funded projects that maybe of some benefit to SMEs in terms of guidance i.e. 'best practise', are usually not published transparently.
- EU Commission bureaucracy prevents SME involvement due to the resources required for the application process and the period of time required to reach a conclusion.

EXISTING FINANCIAL GARANTEES

- Domestic Bankers are limited to supporting and understanding simple and well publicised technology, such as Photovoltaic and Wind turbines. These systems are easily quantified in terms of components and returns.
- Domestic Banks do not understand technical issues or terminology that makeup most of the innovative sustainable technologies. A few examples of existing technologies that could provide large reductions in energy consumption in buildings - Liquid Desiccant, Phase Change materials, Absorption Heat Pumps, Open protocol integrated BMS etc. etc.
- Prototypes or systems in development do not have any resell value in terms of valuation for Domestic Banks. This is a short sighted view considering the substantial resources have been used to develop them.
- Many examples of companies with the technology and potential of contracts of installation but cannot raise a guarantee from a Domestic Bank.

EXISTING INVESTMENT INSTRUMENTS

- The Financial Crisis is having detrimental effect on investment in Sustainable technology.

Proposal: Financial valuation of SME development projects that reduces CO² emissions.

- Seed Capital scarce due to the Financial Crisis. Typical VC investment usually concentrates on large capital funding opportunities, outside the scale of SME requirements.
- Vicious circle to raise money for SME – cannot raise capital to complete initial development if criteria are based solely on finance, therefore preventing the commercialisation process to take place.

SUSTAINABLE TECHNOLOGY

- Sustainable Technology requires design and a certain amount of development to function correctly.
- Sustainability solutions should not be understood as a one system solution but more a combination of systems, which require a design process.

EXISTING TECHNOLOGY TO SLOW THE EFFECTS OF GLOBAL WARMING

- Low energy & Sustainable technology exist but have not been commercially exploited. This can be illustrated by the amount of funds the Commission has invested via the Framework instruments.
- To avert the risks of Global Warming, with a short period to the point of no return (10 years estimated), will require a greater emphasis on Installations not additional research.
- Companies involved in providing innovative technology to conserve energy are usually small therefore do not have a reliable bottom line financially or substantial assets. Their assets are usually the expertise of the leading individuals in the organisation.
- Large companies that have sufficient cash flow and assets usually are slower to innovate and have an interest of promoting 'Business as Usual' to protect their market.
- The more times a new innovative technology is used and installed the better chance it will succeed commercially.
- Opportunities are missed to use sustainable technology due to SMEs not having sufficient resources for marketing.
- A world wide system of financial trading in CO² emission certificates is presently being proposed to invigorate the investment in Sustainable technologies. Up to now only large projects have been eligible to be included inside this scheme. A structure of including small projects would be beneficial in the long term, as there will be a significant number of end users of this technology, especially in the domestic housing sector.

Example of the two types of SME Developers:

Technology Developer - L-DCS Technology GmbH (www.l-dcs.com) - Germany

An example of an innovative patented technology that reduces significantly the energy input required to air condition buildings, using Liquid Desiccant and solar or waste heated water. Has a large potential market in Europe and Overseas.

Several demonstration projects/installations have been installed world wide to prove the technology. To commercialise the system has required the need for further development of specialised production machinery (using Laser welding and CNC machinery), to mass produce components therefore reduce cost of system and increase productivity. Previous experiences of trying to raise Guarantees against potential orders but domestic banks rejected application due to risks of the low resell value of the planned purchased machinery and lack of Company assets. This therefore resulted in lost potential orders, which in turn slowed commercialisation of the system.

A good example of this was a sustainable urbanisation project (Masdar, Abu Dhabi) where the company missed an opportunity of a multi million Euro order, due to the client not feeling confident in the company having sufficient financial resources to support their project, even though their Consultants recommended the systems use on the project.

Recently the company finally secured funding for the production machinery components, after 20 months of applications, using a national supported Research Instrument.

Project Developer - Gr33n Lda – Portugal

Example of a company that promotes environmental friendly applications to an industrial process. It technically supports the introduction of the innovative technology and organises all the interested parties that is required for a project to be completed.

An example of a recent project would be use of Plasma technology to efficiently generate energy from Hazardous and General waste. Technology originated from a French technology developer, which has some demonstration installations already functioning.

After setting up of all the different interested parties, such as the site, waste heat consumer and waste source, the next stage was project development to obtain the relevant licences.

To resource this development stage Investment Funds and Guarantee Bank funding where approached. Due to the limited understanding of the innovative technology of the financial institutions the project did not find financial support.

Proposal

The aim is to aid SMEs that have a development or installation project that will contribute to reducing the risks of Global Warming, to raise cash flow through a guaranteed loan, via the sponsor European Investment Bank.

The evaluation process should not be done only on the financial history of the SME, as at present, but should include a financial benefit calculated from the amount of CO₂ emission saved from the project going ahead.

To calculate the financial value of these saved CO₂ emissions an assessment structure should be setup, to provide a method of validation of the technology.

An SME would submit a project electronically to the Eur. Commission/Eur. Inv. Bank funded Validation agency. The submitted project would include all the technical calculations of the design, the concluded potential saving of CO₂ emissions and any other characteristics, which the 'expert' would validate.

A nominal financial value should be agreed on by the Commission, of a tonne of CO₂ saved from being emitted into the environment, by using innovative technology.

This valuation of 'a tonne of CO₂' should be assessed from the Environmental long term effects but also an inclusion should be made on the effects of stimulating the local economy (increasing the size of the competitive sector of innovative technology, increased skilled employment and other long term social issues).

During the Eco-Innovation summit a valuation was mentioned of €60/tonne, which I do not think included a valuation of the short and long term social spin-offs to the local economy.

The total valuation should be included inside the financial plan of the project, valued as an asset, which the local domestic bank would take into consideration when evaluating the financial risks.

Most projects usually require two tranches of capital at different stages of the project; being the development and commercialisation stages. In these cases the validation process should be undertaken at each stage to reduce financial risk.

The official validation process would also increase the chance of the project attracting outside investment, as many investors or investment

vehicles would be reassured, due to the uncertainty of their technical knowledge.

It would be important that the validation process had a light weight structure to enable quick response and low administration costs:

- The Framework Instruments use already outside contracted experts to assess projects, this structure could be expanded on a country level, covering different technologies.
- The contracted Experts would access and validate their allocated projects via a database. Experts would be required to contact the project authors directly to request clarification on detail. Country based experts would be an advantage if witnessing of the technology is required.
- Administration based in Brussels, to also provide checks and balances to the validation process.
- Projects submitted electronically and records accessible to the Project authors and to the local domestic bank assessing the Business plan.