

Reply to comment and referee report on

Elena Verdolini, Céline Bak, Joël Ruet, and Anbumozhi Venkatachalam (2018). Innovative green-technology SMEs as an opportunity to promote financial de-risking. Economics Discussion Papers, No 2018-8, Kiel Institute for the World Economy. <http://www.economics-ejournal.org/economics/discussionpapers/2018-8>

We would like to thank those people who took the time to comment and helped us improve on our paper. Below, we respond to both the comment and the referee report we received.

COMMENT:

The respective paper is written understandably for a broad spectrum of readers. It makes very clear, what the challenges to promote innovative green-technology SMEs as an opportunity for financial de-risking are and why this is important. It clearly addresses what the role of the G20 is. However, the definition of low-carbon SMEs is a bit vague. The relevance of SMEs to address major global problems is given.

REPLY TO COMMENT:

The comment is indeed correct. The definition of low-carbon SMEs is a bit vague. This is due to the fact that clearly identifying SMEs is not an easy task. This issue is widely acknowledged both in the literature and in policy reports and discussions. To address this comment, we propose to modify the paper as follows (on page 2 where low-carbon and green-technology SMEs are defined):

“Within this type of firms, green-technology (or low-carbon technology) SMEs can be defined as those SMEs whose business model includes: (1) “any product, process or service designed with the primary purpose of contributing to remediating or preventing any type of environmental damage”; and (2) any “product, process or service that is less polluting or more resource-efficient than equivalent normal products that furnish a similar utility.” Conversely, an eco-efficient SME is an SME that has reduced its environmental footprint and has made its operations climate resilient. Eco-efficiency entails delivering competitively-priced goods and services which satisfy human needs and bring quality of life, while reducing ecological impacts and resource intensity (Lehni et al. 2000). Low carbon SMEs thus entails using less energy and improving the efficiency with which resources are used (ADB 2013). This is particularly important from the perspective of emerging economies, where implementing policies and incentives that discourage carbon intensive practices is seen as a unique opportunity for SMEs to invest in competitiveness e.

Arguably, these definitions are somewhat vague, and hard to operationalize to identify which SMEs can be characterized as low-carbon and/or eco-efficient. This reflects the general difficulty in drawing the boundaries of low carbon and environmental manufacturing and activities, as also pointed out in (Shapira et al., 2014). Indeed, several definitions have been proposed in the literature. For instance, the OECD and Eurostat define low carbon and environmental sectors are those “contributing to prevent, measure, limit, minimize or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems” (OECD and Eurostat, 1999). These include services and products which reduce environmental risk, cleaner production technologies, and all those technologies and processes that lower pollution and resource use. Along similar lines, a study

commissioned by BIS to Innovas Solutions Ltd considers three broad categories as “low carbon and environmental goods and services”. These relate to the environment (e.g. recycling, pollution control, environmental consultancy); renewable and carbon free energy (such as wind, solar, hydro, geothermal, wave energy and nuclear); and, more generally, low carbon products, processes and technologies (e.g. those goods and services which reduce emissions in several polluting sectors, such as transport, construction, metals. Interestingly, this study also includes carbon finance within the set of low carbon and environmental goods (BIS 2013).

Clearly, a first important challenge that needs to be resolved is the creation of an appropriate and clear cut definition of low-carbon and environmental SMEs. This would be instrumental in helping identify and support these firms, as discussed later in this paper, but is far from being an easy task due to significant differences in the size of SMEs and projects around the world.

For instance, this is of special relevance for a continent such as Africa where, since the German presidency, the G20 worked to develop a partnership. There, as the International Finance Corporation (IFC) of the Africa50 initiative from the African Development Bank argues, size is a critical challenge for energy projects: compared to other projects in similar geography (Mexico, Africa, Arabia, India) the kWh cost ratio is 1:2 to 1:3 on recent projects. This arguably depends on scale - 150 GW for the whole of Africa, which results in lower average size and higher interest rates, both of which add to governance issues.

REFERENCES TO BE ADDED TO THE PAPER

ADB (2013). Low Carbon Green Growth in Asia: Policies and Practices. Asian Development Bank Institute, Tokyo.

BIS, 2010. Low carbon and environmental goods and services: an industry analysis. Update for 2008-09. Department for Business, Innovation and Skills London, (Available from: <http://www.bis.gov.uk/assets/biscore/business-sectors/docs/10-795-low-carbon-environmental-goods-analysis-update-08-09.pdf>).

OECD, Eurostat, 1999. The Environmental Goods and Services Industry Manual for Data Collection and Analysis: Manual for Data Collection and Analysis. OECD Publishing.

Shapira, P., et al., 2014. Probing ‘green’ industry enterprises in the UK: a new identification approach. Technol. Forecast. Soc. Chang. 85, 93–104.

REFEREE REPORT

Overview

This paper describes the importance of SMEs and low-carbon SMEs in particular and identifies their challenges. These are barriers to access capital/finance, talent and the market. In order to target these challenges, the authors advise to follow their three major recommendations. First, the establishment of a reporting system to ...[more]

... help monitor the scale-up of green-technology SMEs could lower financial asymmetries and signal green, innovative SMEs to domestic and international investors. Second, they propose to include green-technology firms in green finance platforms and third, they emphasize the role of governments and intergovernmental bodies which can signal innovative green-technology SMEs to private investors.

General comments

The respective paper is written understandably for a broad spectrum of readers. It makes very clear, what the challenges to promote innovative green-technology SMEs as an opportunity for financial de-risking are and why this is important. It clearly addresses what the role of the G20 is. The relevance of SMEs to address major global problems is given.

Specific comments

1) In the challenge section, the definition of low-carbon SMEs is a bit vague. They are merely described as SMEs “whose business model includes: (1) “any product, process or service designed with the primary purpose of contributing to remediating or preventing any type of environmental damage”; and (2) any “product, process or service that is less polluting or more resource-efficient than equivalent normal products that furnish a similar utility””. This definition leaves a very broad scope and there is no threshold from where a SME counts as a low-carbon SME.

2) The map in Figure 1 shows no data for North America and Australia although they are also part of the G20.

REPLY TO SPECIFIC COMMENTS:

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is particularly important from the perspective of emerging economies, where implementing policies and incentives that discourage carbon intensive practices is seen as a unique opportunity for SMEs to invest in competitiveness e.

Arguably, these definitions are somewhat vague, and hard to operationalize to identify which SMEs can be characterized as low-carbon and/or eco-efficient. This reflects the general difficulty in drawing the boundaries of low carbon and environmental manufacturing and activities, as also pointed out in (Shapira et al., 2014). Indeed, several definitions have been proposed in the literature. For instance, the OECD and Eurostat define low carbon and environmental sectors are those “contributing to prevent, measure, limit, minimize or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems” (OECD and Eurostat, 1999). These include services and products which reduce environmental risk, cleaner production technologies, and all those technologies and processes that lower pollution and resource use. Along similar lines, a study commissioned by BIS to Innovas Solutions Ltd considers three broad categories as “low carbon and environmental goods and services”. These relate to the environment (e.g. recycling, pollution control, environmental consultancy); renewable and carbon free energy (such as wind, solar, hydro, geothermal, wave energy and nuclear); and, more generally, low carbon products, processes and technologies (e.g. those goods and services which reduce emissions in several polluting sectors, such as transport, construction, metals. Interestingly, this study also includes carbon finance within the set of low carbon and environmental goods (BIS 2013).

Clearly, a first important challenge that needs to be resolved is the creation of an appropriate and clear cut definition of low-carbon and environmental SMEs. This would be instrumental in helping identify and support these firms, as discussed later in this paper, but is far from being an easy task due to significant differences in the size of SMEs and projects around the world.

For instance, this is of special relevance for a continent such as Africa where, since the German presidency, the G20 worked to develop a partnership. There, as the International Finance Corporation (IFC) of the Africa50 initiative from the African Development Bank argues, size is a critical challenge for energy projects: compared to other projects in similar geography (Mexico, Africa, Arabia, India) the kWh cost ratio is 1:2 to 1:3 on recent projects. This arguably depends on scale - 150 GW for the whole of Africa, which results in lower average size and higher interest rates, both of which add to governance issues.

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2. Indeed, Figure 1 does not include data for the US and Canada, even though they are part of the G20. This is due to the fact that the Figure is sourced from an article (cited at the bottom of the Figure) which did not consider USA and Canada. This is presumably due to lack of data or inability to access it for those two countries.

While we unfortunately cannot solve this problem, we believe we should acknowledge this clearly by adding the following note below the Figure:

“Source: Stein et al. (2013) based on data from IFS Enterprise Financing Gap Database 2011. Please note that this graph does not include data for USA and Canada, although they are part of the G20.”