

Accessing Global Cleantech Opportunities in a Virtual World

Executive Summary

Clusters and export promotion agencies can overcome barriers to SME internationalisation by cultivating an international partner network sharing business opportunities based on reciprocity. Virtual platforms are essential to gathering international business opportunities and making them accessible to SMEs.

Key recommendations

COVID-19 has disrupted world trade and created new trade barriers. The Pandemic has highlighted the need to unlock opportunities to trade without travel and to develop and leverage online tools to facilitate this.

Recommendation 1: Invest in international partnerships based on reciprocity

Recommendation 2: Leverage virtual tools to reduce transaction costs for SMEs

Recommendation 3: Go beyond immediate needs and fully exploit the potential of virtual tools

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Introduction/Problem/Context

COVID-19 has disrupted the world's economy and has had a significant negative impact on economic activity and trade. Around the world efforts are being made to 'Build Back Better' and to ensure that the economic recovery is more resource efficient, low carbon and green, and trade of green SMMEs is central to the green recovery.

As an international cluster network focused on accelerating the uptake of green technologies the International Cleantech Network (ICN) has continuously worked with facilitating international trade of green SMMEs and the use of online tools for this purpose. COVID-19 has contributed to accelerating this process and highlighted the importance of being able to effectively connect with opportunities through online platforms.

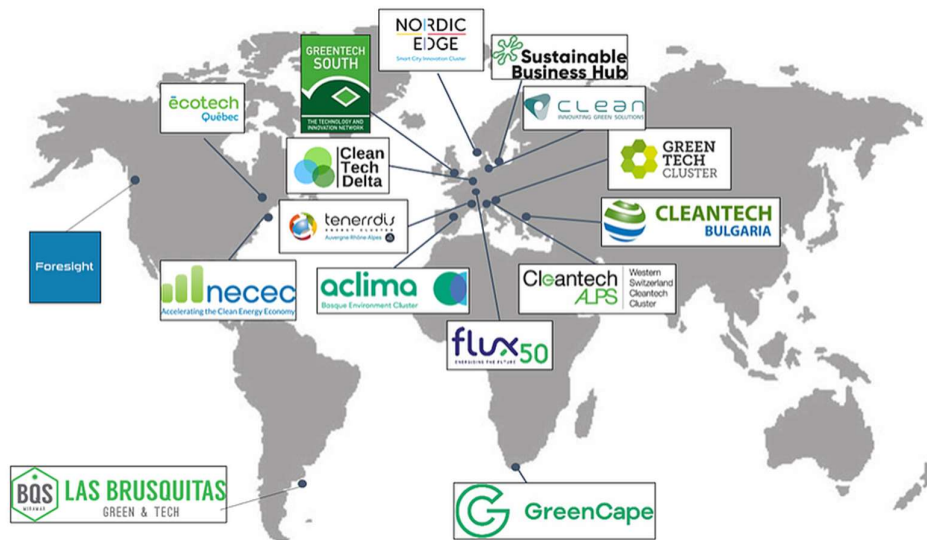
On the basis of the effects of COVID-19 on trade of Green SMMEs, this policy brief explores the potential of online platforms for accessing global cleantech opportunities in a post-covid context, and it provides valuable insights into specific methodologies developed by ICN to best leverage the potential of virtual tools.

About the Project

This policy brief is part of the project "Post COVID-19 Green Trade Competitiveness" led by ICN Member GreenCape and financed by the European Commission's Partnership Instrument and the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) in the context of the International Climate Initiative (IKI). The project aims to understand how COVID-19 has impacted green SMMEs ability to trade internationally. The project has gathered insight through a quantitative questionnaire with 42 respondents as well as 10 half hour qualitative interviews with green SMMEs. Based on these insights the study plays a role in mapping, understanding, and overcoming the 'new' barriers to trade that are a result of COVID-19, and it seeks to explore ways to overcome these barriers and create viable climate-friendly business partnerships in a post COVID-19 context.

International Cleantech Network

The International Cleantech Network is an independent non-profit organisation for the world's leading cleantech cluster organisations. The ICN works to further international cluster collaboration and to support the activities and interests of the clusters' and their members with the aim of accelerating the development and uptake of clean technologies and supporting green growth.



ICN works to further the activities and interests of Members and Stakeholders, including, but not limited to, through the generation of e.g.:

- Projects between Members within selected sectors and facilitation of opportunities for their stakeholders,
- Growth for companies that are members of, associated with, or otherwise stakeholders of the members,
- Enhanced competitive advantages for the Members and Stakeholders through utilizing and optimizing value chains in cleantech sectors,
- Facilitate collaboration between the Members' private sector stakeholders and research institutions & public authorities in order to accelerate the development and uptake of innovation with the aim of helping these entities address grand challenges related to energy & environmental technology,
- Enhancement of the cross border dialogue between the Members by e.g, establishing exchange programs, knowledge and information sharing, and visiting and matchmaking tours,
- Potential development and publication of market analysis, benchmarks etc., subject to on-going decision by the board of directors with regard to relevance, costs, etc.

Survey results

The survey results coming out of the Green SMME survey showed that more than half (54.76%) of the green SMMEs found that COVID-19 and related travel restrictions led to difficulties in finding export partners. Similarly, the factor which most respondents found had a negative effect on business was not being able to participate in international events, trade missions, etc., to promote their product for exporting with 85.71% respondents indicating this factor, this factor had the greatest negative effect. COVID-19 has thus had a significant impact on the effectiveness of the way we connect with business partners globally and has sparked the need to develop new ways to facilitate global trade of green SMMEs..

The survey showed digitization as one of the main successful interventions to ease the impact of COVID-19 on business. The majority of respondents (57.14%) indicated that the most useful intervention was digital marketing and/or communication channels to promote their products for export or source their imported products. Likewise, increasing online presence through online marketing and increased digitization was the most frequently implemented successful intervention by the SMMEs (24.39%).

In this way the survey shows the significance of online platforms and digitisation in overcoming the challenges of COVID-19, and the potential of online platforms in changing the way we connect with business partners and opportunities across the world.

1. ICN's SME Internationalisation Support

In light of the crisis, the ICN Secretariat experimented with new, virtual approaches to help SMEs engage with international business opportunities. These new approaches relied on three key components. The first was a robust international network ranging from ICN's members in 18 countries, strategic partners such as C40 Cities, as well as other assets such as ICN members' national trade councils and similar internationalisation promotion agencies. This network provides diverse leads about technology needs of stakeholders such as municipalities, publicly-owned utilities, and large private enterprises. The second element was a maturing process to translate these leads into actionable opportunities for SMEs. The third and perhaps most essential element was ICN's virtual collaboration platform, which gathered business opportunities in one place, lowering the work effort required to access them. These three elements will be explored in more detail in the following three sections.



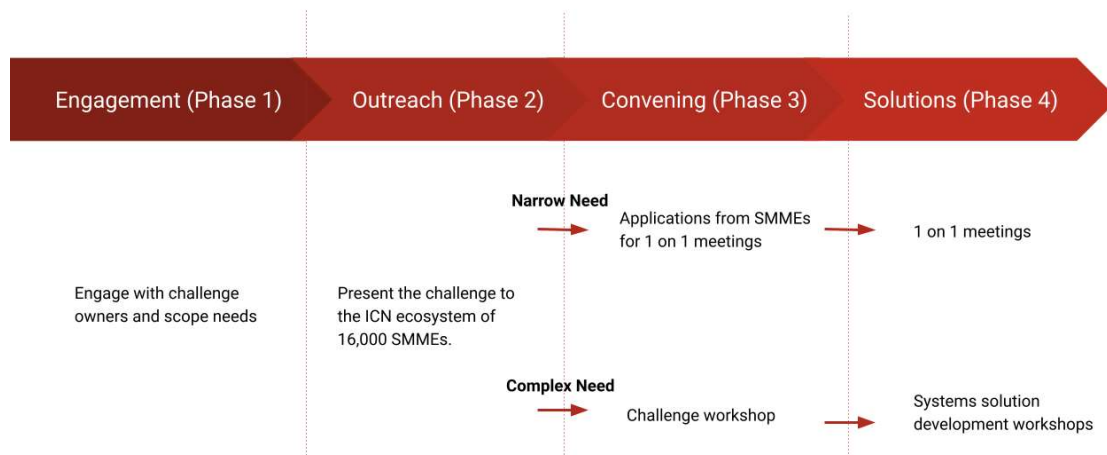
1. International Network

ICN has a membership network of 18 clusters in as many countries. Each member works to identify and share challenges and technology needs of stakeholders within their ecosystem with other ICN partners. Although each cluster has a clear mandate to promote the internationalization of their own SMEs, all recognize that reciprocal sharing of opportunities generates greater benefits than restricting access to their own members. A side benefit is that challenge owners in each clusters' ecosystem gain access to novel cleantech solutions from around the globe, facilitating progress towards sustainability targets. When relevant, ICN also collaborates with national trade councils and export promotion agencies to source challenges.

ICN also collaborates with C40 Cities in operating the C40 City Solutions Platform. By providing cities and solution providers a program for working together on specific climate challenges at an earlier stage than usual, the **City Solutions Platform (CSP)** ensures that the actors reach a common understanding of the challenges in order to co-create tangible solutions. The CSP works with cities to engage them in peer-to-peer activity with the private sector, academia and civil society. This enables solution providers to co-create innovative methodologies, technologies, and new business methods to solve cities' priority climate challenges.

2. Maturing Process

The ICN Secretariat has developed a roadmap for maturing leads gathered through ICN's members, strategic partners such as C40 Cities, as well as national trade promotion bodies.



The process begins with a scoping exercise conducted in collaboration with the challenge owner. The purpose of this phase is to translate a general need into actionable information in the form of a needs statement. The nature of the challenge also determines the methodology that will be used later on in the challenge process. After scoping the challenge in terms that are relevant for SMEs, ICN engages in a communications campaign to engage the network's SMEs in the challenge process. This is kicked off by a webinar providing SMEs with the

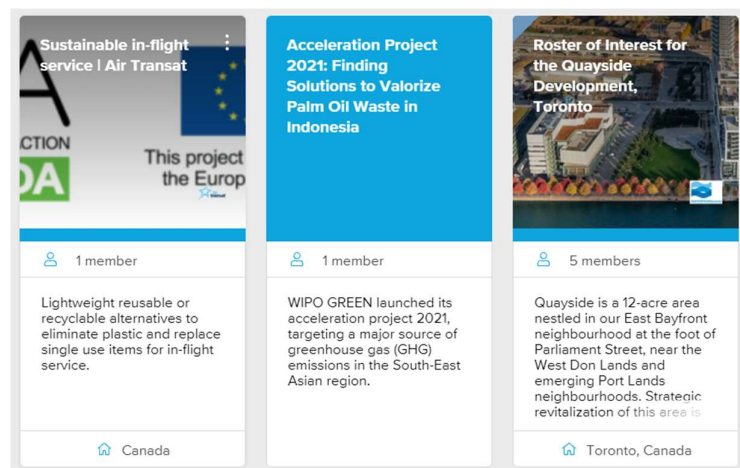
opportunity to engage directly with the challenge owner and seek additional clarification before engaging further.

At this stage, one of two methodologies is used depending on the nature of the challenge. If the challenge is a relatively narrowly-scoped need, the Secretariat simply organizes an application and selection process in coordination with the challenge owner. Relevant SMEs have the opportunity to engage in further dialogue with the challenge owner and explore the potential for business collaboration.

If the challenge is complex, a more open-ended and collaborative process is implemented. SMEs and other stakeholders such as public officials and researchers are invited to participate in a workshop process aiming to define the challenge. Once the boundaries have been scoped, stakeholders collaborate on co-creating solutions in further workshops. Finally, each group of partners presents their solution to the challenge owner, who decides which solution to move forward with.

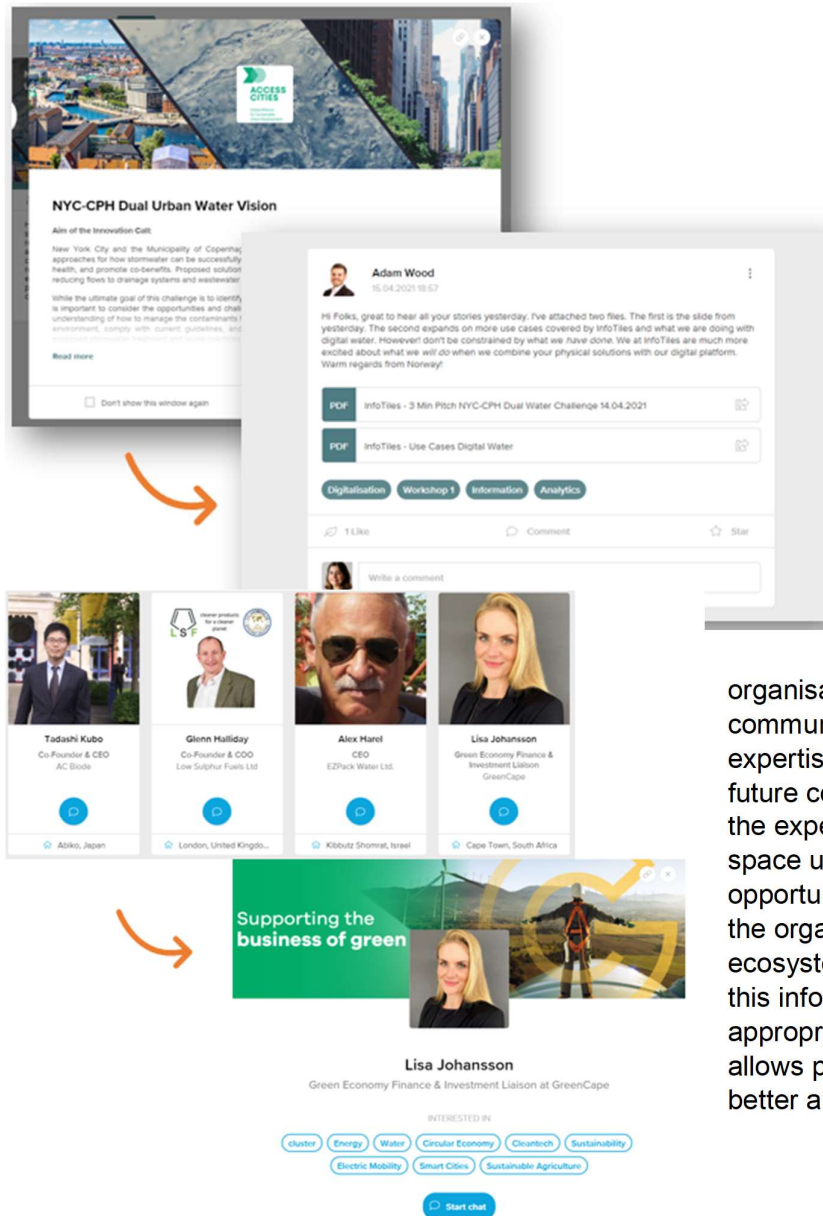
3. Virtual Collaboration Platform

The Solved virtual collaboration platform is the cornerstone of ICN's SME engagement strategy. When registering for the Solved platform, stakeholders develop detailed profiles describing whether they are an SME, a researcher, etc. as well as their specific capabilities and collaboration interests. This allows stakeholders to easily identify potential collaboration partners. This platform has been used extensively by ICN and its members to catalyze international innovation and market dialogue collaborations.



It is an essential tool insofar as it:

- 1) Operates as an ecosystem building tool allowing challenge owners to scout for solutions and SMEs to find potential business opportunities. Project opportunities can be sourced via the categories section on the top left of the screen and users can request to join project spaces they have an interest in.
- 2) Allows communities to interact, share knowledge and inputs and work together on future business opportunities. By interacting with a specific opportunity/community users are able to get further information on a given project and initiate dialog with project partners.



3) Showcase experts within the community, their focus areas, capabilities and sectoral interests. Once users become members of a community they can then get further detail about the experts within their community to better utilise their global network.

4) Highlighting the organisations part of the community and what their expertise are in order for scoping future collaborators. Much like the experts in the community space users also have the opportunity to investigate further the organisations within their ecosystem. Having access to this information informs the appropriate next actions and allows project participants to better allocate duties and roles.

Case Study: Helsinki Energy Challenge

The Solved platform was utilised to a great degree for the 'Helsinki Energy Challenge'. This initiative by the City of Helsinki strived to generate innovative new solutions to replace coal as a heat production source. The city sought the following question to be answered: How can coal be replaced as a source of heat production in Helsinki with as much carbon-neutrality and as little biomass as possible? Multiple partners were involved in the process of developing solutions to the Helsinki Energy Challenge and Solved proved essential within the ideation and co-creation phase of the challenge.

The co-creation phase was based upon a workshop in the city. During the workshop, solution providers were to engage directly with decision makers and representatives for the

city, thereby creating a common understanding of the challenge, an understanding of the barriers to implementation, and what needs to be done in order for successful solutions to be developed. This co-creation phase expected result was the formation of groups to then come up with more elaborate solutions within the context of Helsinki. Unfortunately, due to 2020's COVID-19 situation, the co-creation workshop was not possible.

However, due to the success of the first webinar, the project partners hosted an online pitching session for Nordic companies to pitch their idea or solution and seek partners to begin teaming up with to finalize a proposal for the Helsinki Energy Challenge. This pitching session gave possible participants the opportunity to give a 3 minute pitch about an idea or solution and seek partners to begin teaming up with to finalize a proposal for the Helsinki Energy Challenge. During the pitching session, 5 participants showcased their solutions. This endeavour was made possible and more effective through the use of Solved

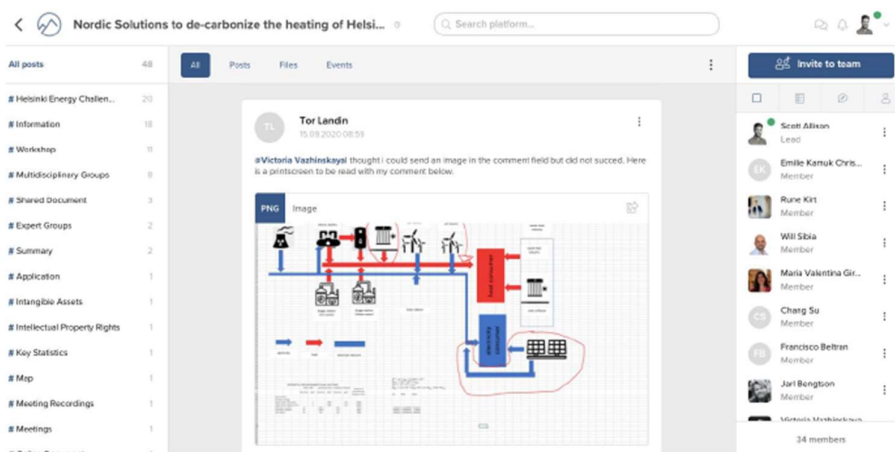
Together with Urban Tech Sweden, The Swedish Agency for Economic and Regional Growth and ElectriCity, the partners developed a Solved platform for the Helsinki Energy Challenge. Relevant solution providers were identified and put on the platform to stimulate them to discuss, matchmake and co-create together.



The platform allowed the challenge participants to communicate ideas and solutions for partners and to share information such as files, documents and links through posts and messages. The online platform hosted 3 workshops and enabled participants to collaborate, introduce their respective

ideas/solutions for the challenge and divide participants into appropriate teams.

Further workshops followed and teams developed, presented and subsequently created a selection of solutions. The idea was for the partners to determine a path to potential procurement and implementation of a solution(s) to participate and be successful in the Helsinki Energy challenge. The final workshop focused upon collectively developing a common solution for the challenge.



An implementation pathway was subsequently developed, and the Energy Cascade Scheme was created as a solution to the Helsinki Energy challenge. The Solved platform was essential in making this happen and was crucial in allowing participants to overcome barriers to physical participation (E.g. Covid-19) and continue their endeavours to create innovative solutions to the challenge presented.

Case Study: NYSERDA Challenge

The New York State Energy Research and Development Authority (NYSERDA) and the International Cleantech Network (ICN), signed a Memorandum of Understanding (MOU) designed to enhance collaboration on decarbonizing high-rise buildings in New York State through engaging ICN members companies to provide potential solutions for the Empire Building Challenge.

The **Empire Building Challenge (EBC)** aims to attract best-in-class manufacturers, solution providers, and entrepreneurs from around the world to help transform New York's existing building stock into the buildings of the future. Investing in the most promising novel approaches to retrofitting our tallest buildings will transform the high-rise building market and position the State as an epicentre of the low carbon retrofit industry.

The EBC represents a \$50 million NYSERDA investment to:

- Accelerate private sector commitment and investment in carbon reduction, working with large portfolio owners.
- Enable replication and scale across NY's existing large commercial/multifamily building stock.
- Make NY a global hub for retrofits.
- Drive innovation to meet the needs of NY's large commercial/multifamily building stock.

The 10 participating real estate partners are committed to carbon neutrality by 2035, and represent 20 properties comprising 131 buildings, and 30.9 million sq.ft. EBC partners will invest \$250 million into participating buildings in the next few years.

The EBC represents an incredible opportunity for cleantech SMEs with solutions for the built environment, but would be difficult for SMEs to access without support in the best of times,

let alone during COVID. ICN used its maturing methodology to work with the property owners.

The Secretariat worked with the property owners to define their technology needs in a way that was comprehensible and actionable for SMEs, and then engaged with member clusters to identify and invite relevant SMEs to participate in the challenge process. These SMEs had the opportunity to interact directly with the property owners and get any necessary clarifications about their needs before engaging further in the process. The Secretariat then opened applications for further 1:1 meetings with the property owners to explore piloting opportunities.

New Applications:

The experiences gained through the Helsinki and NYSERDA challenges demonstrated the value and flexibility of the virtual collaboration platform, and led Secretariat staff to explore further applications.

1. Thematic Communities

The Helsinki Challenge in particular showed that there was great value in providing SMEs with less structured opportunities for collaboration. This led to the piloting of thematic spaces on the virtual platform, starting with one for water-focused SMEs. It is hoped that this will allow SMEs to identify and engage with potential partners beyond any of the time-limited opportunities that are available on the platform.

2. Innovation Collaboration

The Secretariat has also experimented with creating a space showcasing research projects from universities and research institutes. Experience has shown that SMEs often have difficulties navigating the academic world and gaining insight into relevant academic research. It is therefore hoped that this new function on the virtual platform will help SMEs identify relevant research and lower barriers to R&D collaborations. A pilot is underway with one university to explore the viability of this model.

3. Funding Opportunities

ICN's experience with supporting SME internationalization shows that SMEs are often unaware of the many funding opportunities that exist to support them, from R&D and commercialisation support to export development supports. The Secretariat has therefore piloted a simple navigator to help SMEs understand the various funding opportunities that are available and what they can be used for. It is hoped that combining this with access to business opportunities and innovation collaboration partners will increase uptake of support mechanisms.

Conclusions and Recommendations

SMEs face many barriers to internationalisation. The ongoing crisis has also revealed opportunities for the digital transformation of SME internationalisation support. Taking advantage of these opportunities have the potential to help SMEs bounce back in the coming years.

Recommendation 1: Invest in international partnerships based on reciprocity

Developing a strong partnership network can help generate leads for business opportunities even in challenging economic conditions.

Recommendation 2: Leverage virtual tools to reduce transaction costs for SMEs

Developing virtual collaboration platforms to act as a portal to diverse business opportunities helps SMEs identify and engage with international market demand without travelling abroad.

Recommendation 3: Go beyond immediate needs and fully exploit the potential of virtual tools

Although SMEs have an immediate need to tap into market demand to bounce back from the crisis, there are many opportunities to leverage virtual platforms to support the long-term innovative capacity of SMEs.