



INTERNATIONAL CLEANTECH NETWORK

2022 ANNUAL BOOKLET

DEC 2022 // PREPARED BY ICN SECRETARIAT

The last few years have brought with them tough times. The years ahead promise to bring increasingly frequent and severe climate events, with the weight of the burden on vulnerable communities and people. The international trust that is being built, and the SMEs that are supported through the ICN, give us the platforms to turn these tough times into opportunities, and turn opportunities into success, creating an eco-system of action in the midst of challenging realities.

The ICN annual meeting was fittingly held in the EU Green Capital, Grenoble. This set the scene for need and ambition that translated into the ICN secretariat targets for growth and impact. The impacts speak for themselves. The ICN has grown geographically, in impact, in number and scale of projects, and ultimately in value to the members' members.

With the year in review, the ICN has systematically built trust and global cooperation in GreenTech at a time when building trust, building trade relationships and holding a global citizenship view have been deeply challenged.

Institutional and bilateral trust between the members at the ICN has led to unique partnerships. In particular, there are North-South partnerships that live through shared staff, shared vision and shared development of clusters. There are South-South partnerships focussed on the value of clusters, institutional form and knowledge sharing. There are EU-Americas partnerships that have focussed on trade and direct SME opportunities. Each of these partnerships build on a reinforcing foundation of trust.

The ICN has delivered opportunities to internationalise, to share knowledge and experience to drive and enhance the competitiveness of SMEs. It has driven and enhanced the visibility of these SMEs through high profile, shared platforms where the global community is looking for solutions. The partnership with the Solar Impulse foundation at COP27, is a great example of this. Looking to the future, we have a unique opportunity to further scale the projects and platforms, increasing the value to ICN members to strengthen our collective influence.

The value of the ICN network and the trust that has been built in this network is remarkable. The ICN speaks over a dozen home languages, but share a common vision, mission and objective to build toward a green future. This common vision has been built on an independent foundation of trust, effort and collaboration to support the shared ambition of a thriving global Green Economy.

December 2022



MIKE MULCAHY





01. WHO IS ICN?



The International Cleantech Network (ICN) is an independent **non-profit organisation** for the world's leading cleantech cluster organisations, consisting of **20 regional clusters** from around the world.

ICN clusters are typically based on a **triple-helix structure**, meaning that their membership consists of companies (primarily SMEs), public authorities, and research institutions.

The SMEs of the ICN clusters are at the **international forefront** of sustainable energy and environmental industries and collectively provide innovative technologies to meet the growing global demand for green technologies and sustainable solutions.

As members of ICN, clusters can provide **opportunities** for their members to expand their international networks and associate with project owners outside of their region.

4
CONTINENTS

20
CLUSTERS

Triple
HELIX FRAMEWORK

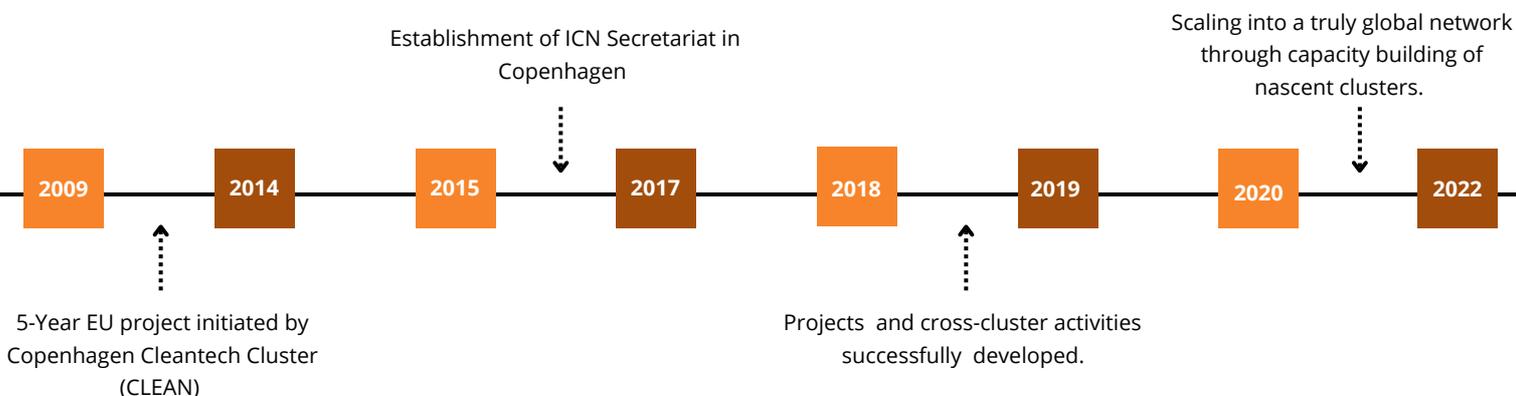


OUR MEMBERS

Our members are characterised by a cross-sector framework which involves SMEs and other stakeholders from within ICN's three core thematic focus areas (Water, Energy and Circular Economy).

ICN connects more than 7000 SMEs, 100 public authorities, and 90 research institutions. Each cluster represents businesses and knowledge institutions that are leading within their field of cleantech, providing the ICN network with valuable expertise.

OUR HISTORY



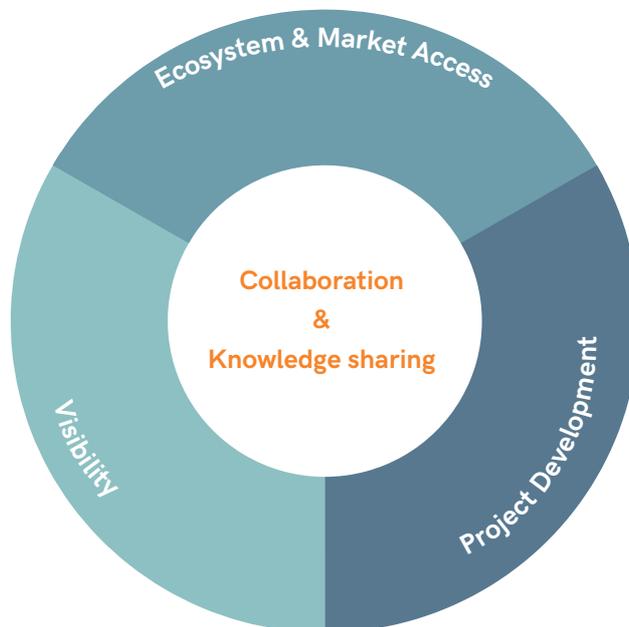
MISSION

To be the **bridge** between the different world-leading cleantech cluster ecosystems.

We **collectively develop** and **implement sustainable solutions** to tackle the world's environmental problems.

VISION

To **unleash** green innovation across borders for a **thriving environment and economy**, as well as **flourishing communities**.



OUR KEY PILLARS

COLLABORATION & KNOWLEDGE SHARING

Everything that we do at ICN is about this. Collaboration is an integral aspect of any network and at ICN our members engage with each other on a regular basis.

ECOSYSTEM & MARKET ACCESS

ICN members also have access to ecosystems with intergovernmental organisations, investors, and corporations. We also provide access to business opportunities through the ICN Solutions Platform and the ICN Passport service.

PROJECT DEVELOPMENT

To be an ICN member also means to be involved in the most exciting projects, such as: the City Solutions Platform, the EU Techbridge and the BRINC project.

VISIBILITY

ICN promotes the network and its members at a number of events in the calendar each year. ICN's clusters can usually bring a number of its members to the events to showcase their clean technology solutions.

02. BREAKDOWN

2022



2022 ICN SOLUTIONS

ICN CHALLENGES

One of the advantages of being a member of ICN is to be able to access several business opportunities from our ICN partners all over the world. Just during this year more than **55** challenges and opportunities were posted on the **ICN Solutions Platform**.



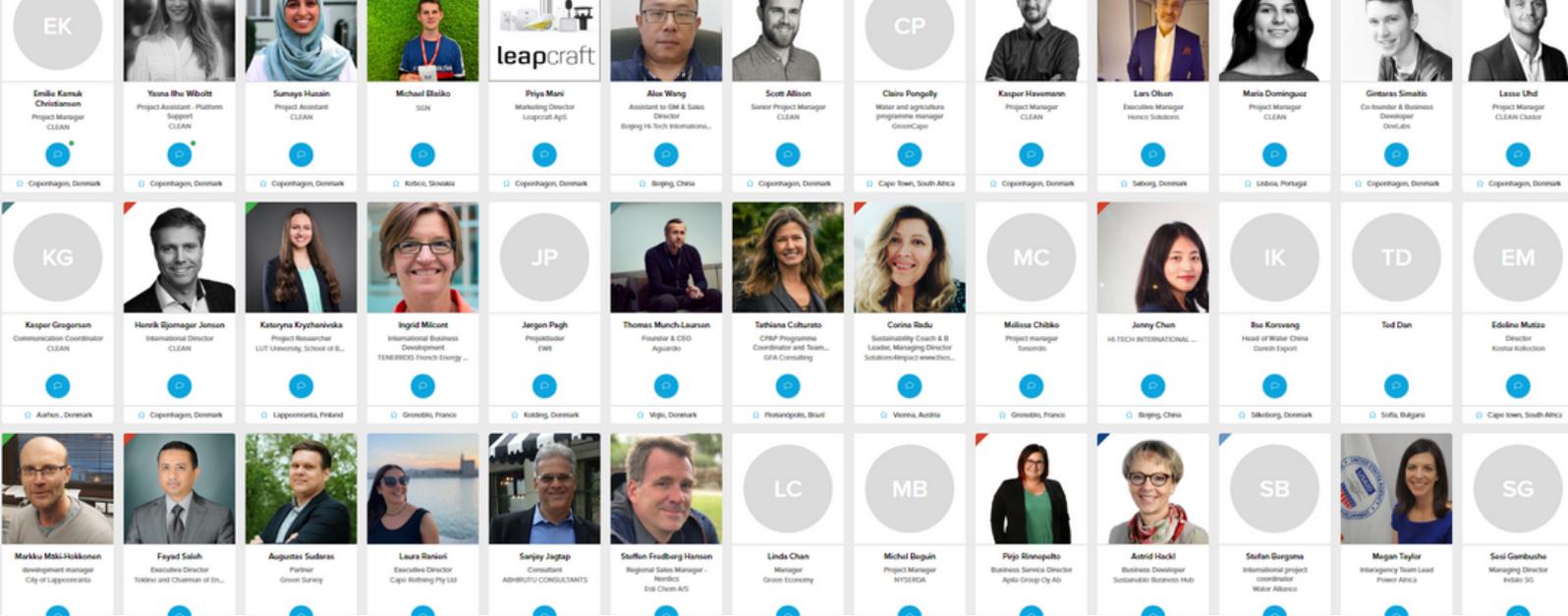
But ... What is the ICN Solutions Platform exactly?

A platform where cleantech businesses can find and engage in business opportunities from our ICN partners all over the world.

ICN Solutions users become part of an **ever-growing ecosystem** of innovative cleantech stakeholders driving the global green transition!



SIGN UP HERE!



2022 ICN SOLUTIONS

ICN PLATFORM GROWTH

This year, ICN achieved its key performance indicator (KPI) of onboarding **300 users** to the ICN Solutions Platform.

During 2022, we welcomed around **105** new members, achieving a total of **351** users onboarded to the ICN solutions Platform.



There are **37 countries** represented in the platform, with **South Africa, Denmark, Canada, and Great Britain** being the countries with the biggest representation.

Country	Number of users
South Africa	63
Denmark	52
Canada	21
Great Britain	18
Finland	17
Switzerland	16



2022 ANNUAL MEETING

MARCH 2022, GRENOBLE

The ICN annual meeting of 2022 was hosted by our member **Tenerdis** and took place in **Grenoble** (France), from the **8th of March until the 11th of March**.

It was the first in-person meeting after a two-year period of solely online meetings. We had a full program for the week and managed to cover a lot of ground. During the 4 day event, we managed to discuss how we can enhance cluster collaboration among the members, ways in which to further develop the network's strategic direction and also how the network can grow its presence. There were also some great presentations from the Solar Impulse Foundation, DG Grow, BigBooster, and EIT InnoEnergy.





2022, ICN NEW MEMBER

GREENNOVA HUB, WELCOME TO ICN!

In 2022, ICN also welcomed a new member to the family: Greennova Hub - the Brazilian cleantech cluster. Greennova Hub is an independent non-profit association that seeks to support the green transition in the Brazilian ecosystem, promote innovation, and expand the market in the following areas: Renewable Energy, Sanitation (Wastewater & Sewage), Materials and Waste, Marine Coast, Food and Beverage.

Greennova Hub's mission is to add value by creating a connection between public authorities, research institutes, business associations, and SMEs, with the objective to promote innovation and growth inside their thematic areas. The members of Greennova Hub are at the heart of their activities and they wish to promote not just regional but also national and international collaboration.

Now, as an ICN member, Greennova Hub will be able to strengthen its mission by collaborating with other clusters in the cleantech field for the development of new projects and providing access to new business opportunities for its members.

Greennova Hub, you're warmly welcome to the ICN family!



KEY PARTNERSHIPS

ICN AND THE SOLAR IMPULSE FOUNDATION

ICN and Solar Impulse Foundation (SIF) are continuing the partnership in 2023. The first phase of the partnership was focused on identifying and labeling efficient solutions. Now the time has come to focus on implementation. The next phase of the partnership is anchored in the shared understanding of the important role of cities in the fight against climate change

ICN wants to promote the adoption of Public Procurement of Innovation (PPI) by helping public authorities to develop their competencies through capacity-building and knowledge-sharing activities (BRINC project). SIF works to show realistic and proven Solutions to decision-makers in order to inspire them in developing ambitious environmental policies and help them reach their environmental goals via cleantech adoption. To support cities going from urban vision to Solutions adoption, the Solar Impulse Foundation & the ICN are to collaborate on the following areas :

- Knowledge sharing
- Access to & mobilization of respective networks
- Communication

To find out more:

[BRINC project:](https://bit.ly/3ilZiyP) <https://bit.ly/3ilZiyP>
[Solutions Guide for Cities:](https://solarimpulse.com/city-initiative)
<https://solarimpulse.com/city-initiative>

For this purpose, SIF created a solutions guide for cities. ICN is very happy to have contributed to the guide with a section on PPI as a tool for cities to contribute to accelerating the green transition.

KEY PARTNERSHIPS

ICN AND NYSERDA: THE EMPIRE BUILDING CHALLENGE

ICN signed an MoU with NYSERDA and EU Techbridge in order to bring innovative climate solutions to New York's skyline. The challenge aims to drive high-impact solutions to decarbonise high-rise buildings and stimulate investment in clean energy.

Focusing upon the \$50 million Empire Building Challenge, the strategic partnership supports knowledge sharing, matchmaking, investment and crucially solutions from international cleantech providers to advance innovative solutions in NYS buildings.

Focus areas:

- Advanced Heat Pump Solutions for Large Buildings
- Building Energy Distribution Design Innovation
- Thermal Storage Technologies



KEY PARTNERSHIPS

EU TECHBRIDGE: SUCCESS STORIES

Through the previously described collaboration between ICN & NYSERDA, some success cases have emerged, from which NODA and InfoTiles are great examples to share.

NODA Intelligent System, a member of **Sustainable Business Hub**, is one of the companies in a consortium that has been selected for a project to rebuild a 17-story building in Hudson Square in Manhattan. They will deliver digital solutions for analysis and control. NODA work with thermal AI and their system will coordinate the use of heating and cooling in the building. Unlike traditional control systems, NODA's AI-based solution is self-learning and proactive.

The total investment for the project is 35 million dollars, of which 5 million comes from NYSERDA while the rest is private funding. The total effort to make the entire state carbon neutral is \$ 6.8 billion.



Techbridge has served as a platform for gathering information. It has been an advantage for us to be involved in the project, it meant that we were already known to NYSERDA when they got the documentation. The meetings with them have also given us a better understanding of the problem.

Christian Johansson, CEO of NODA



KEY PARTNERSHIPS

EU TECHBRIDGE: SUCCESS STORIES

Many urban areas lose about a third of drinking water due to leaking pipes, and **InfoTiles**, a member of **Nordic Edge**, aims to answer this urgent challenge.

InfoTiles provides an award-winning solution that correlates utility data (water, electricity, and heating consumptions) with public data (weather, Co2 footprint, and building information). The solution streams data across sensors, maintenance systems, and open data sources, allowing continuous real-time analysis and modeling. It enables decision-makers to act – and improve sustainability and cost-effectiveness at the same time.

EU Techbridge was key to helping InfoTiles to get closer to an agreement with the end user. By being connected with the WaterStart program, they were able to scale up and reach an agreement with a large utility such as Anglian Water.



Connection! It is hard to summarize all the benefits (of EU Techbridge) in just one word, but if pressed, it is the connection that helped us connect with other companies and partners to help take our sustainability agenda worldwide.

Adam Wood, Chief Product Officer of infoTiles



KNOWLEDGE SHARING

BEST PRACTICES FROM CLUSTERS - IMPACT ASSESSMENT

One of the primary duties which clusters are tasked with is successfully transferring knowledge into growth. Here at ICN we facilitate cooperation between all the clusters in our ecosystem. When it comes to unlocking innovation, the power lies in the clusters services and activities which they offer. Clusters offer targeted services and activities all of which have innovation, cooperation and growth as the common denominators. These core components are produced through the exchange of knowledge from the cluster members. Knowledge Sharing is an integral aspect of ICN's value proposition and ICN members meet with each other on a regular basis.

Cluster management, in particular impact assessment, is a key area which ICN has been focusing upon within 2022. Key performance indicators and data collection differ across geographies. However, through peer 2 peer knowledge exchange, clusters can share best practices and can learn from one another and ascertain new methods which can inform new practices which can improve one's own structure, processes, products and services.

Below are a few examples of methods which the ICN clusters are adopting to monitor the impact of their work and create new indicators



KNOWLEDGE SHARING

NECEC

One example of how NECEC is doing this is through the program progress indicators they have formulated. Generating tangible business outcomes (investment, partnership, or pilot) for the project beneficiaries is the core goal, and the activity to achieve this is through connecting start-ups, corporates, and customers. To make sure the activities are progressing towards this goal NECEC created an Intermediate Connection Outcome. This indicator tracks progress towards a binding and commercially meaningful transaction (e.g. investment made, strategic partner secured, customer acquired, made full-time hire, etc). "Progress" for purposes of Connection Outcome is defined as Investors, Corporates, or Customers intending to follow up with a start-up or waiting for a milestone to be achieved, or willing to recommend the start-up to another investor.

The timeframe to achieve a tangible business outcome is often long which makes it challenging to track a high volume of connections both consistently and accurately. By tracking the intermediate progress from the initial connection, it helps identify connections that will likely lead to a final successful outcome in order to monitor those connections closely and to continue to improve the overall connection strategy.

Connections made between April 1 - December 31, 2019	MA*	Non-MA**	Total	%	% MA	% Non-MA
Total # connections made	259	166	425	100	60.9	39.1
Total # respondents outcomes survey	103	83	186	43.8	24.2	19.5
Outcomes Tracked						
1. Positive Outcomes					30.1	28.9
>> Ultimate outcomes, eg. generated introductions to peer investors	2	1	3			
>> Followed up and contact still ongoing	11	10	21			
>> Open to future conversations (waiting for milestones to be completed)	12	8	20			
>> Follow-ups with no outcomes	6	5	11			
2. No outcomes (Note: not everyone specified if they had follow up meetings)	59	52	111		57.3	62.7
3. On hold (eg. waiting to hear from business units to give a concrete answer)	13	7	20		12.6	8.4

* These connections involve one or two organizations located in MA

** These connections involve organizations not located in MA



KNOWLEDGE SHARING

Foresight Canada

Foresight Canada measures impact by tracking both the qualitative metrics of their services (e.g. new connections, partnerships, customers, or meeting investors as a result of events and activities) and quantitative KPIs from supported companies (e.g. new venture revenue, capital raised, employees hired, technology readiness level).

To define these KPIs, Foresight Canada reaches out to all of their internal teams and departments to determine which KPIs might show value. They also reach out to their Helix 5 stakeholders (Governments, Industry, Academia, Investors, and Innovators) to understand which metrics or areas they are interested in for reporting and informational purposes. Aligning these two sources of needs provides a master list of relevant KPIs to track.

To track these KPIs, Foresight Canada executes quarterly surveys to the ventures we support related to our impact metrics, and one-time surveys that ask specific questions which are not captured in the quarterlies on an adhoc basis (eg covid support needs, export readiness, event specific follow ups).

KNOWLEDGE SHARING

Green Tech Valley Cluster

The Green Tech Valley Cluster has goals defined, resulting out the 5 year strategy 2020 - 2025. These goals are divided into operational goals and impact goals. The operative goals are broken down every year to the annual plan for each year. The aim is to achieve or exceed these indicators (operational goals). However, any partial underachievement can be compensated for by any overachievement of the targets in another area and thus still lead to 100% overall target achievement.

These indicators are also used for internal target measurement and recorded directly in the CRM (Content Management System). Furthermore, the targeted "Impact Goals 2025" (development of employment, number of researchers & initiated cooperation volumes) are measured.

In the Figure below, the internal Dashboard for the operational goals is displayed. Most of the indicators are directly measured within the CRM System, however some are added manually. This is done to get a continuous overview of the status of achievement.





PROJECT DEVELOPMENT

In 2022, ICN received its first project funding. ICN activities have until now been solely funded by the membership fees paid by member clusters. This year, ICN has built the capacity to be an official partner in projects, this means that ICN from now on will be able to secure funding for activities through the relevant projects. The first projects with ICN as an active partner, have kicked off this year, and more are due to start in 2023. ICN looks forward to the activities these projects will bring to the network.

Every1: Enable eVeryone's Engagemet in the eneRgY transitiON

In November of 2022, it was the official quick-off of the **Every1 project** – a consortium of eleven partners (including **ICN** and ICN's member **flux50**) that brings together leading experts in energy and education, and experts in ecosystems combined with social sciences to deliver an impactful concept that includes all elements needed to enable effective participation of all European stakeholders in the digital energy market.

The outreach was designed to support and empower and expand local ecosystems that include and/or reach local/regional members throughout the quadruple helix, including emerging and existing energy communities, using a diverse range of communication, engagement, training, and matchmaking activities with a lasting impact. A culture of exchange and collaboration is established to enable joining efforts on delivering and developing capacity-building material over ecosystem boundaries.

EVERY1

PROJECT DEVELOPMENT

CPAP: Circular Plastics in the Americas Program - Brazil & Colombia

One important highlight from 2022 was the ICN's further participation in the CPAP project.

The Circular Plastics in the Americas Program (CPAP) is led by the European Union and supports a transition to a Circular Plastics Economy by enhancing the dialogue and cooperation on circular plastic solutions. The project was launched in September 2021 and will last until January 2024. It is contributing to the EU reaching its global climate commitments and industrial policy objectives by supporting the international aspects of the EU Plastic Strategy in the Americas Region.

This year was marked by two important **Matchmaking and Co-creation Workshops** held in November, in Bogotá and Rio de Janeiro. The workshops targeted small/medium-sized companies (SMEs) and research institutes from Brazil, Colombia, and the European Union with the objective to promote innovative and business-oriented cooperation agreements in circular plastics technologies. ICN played a crucial role in this process, by facilitating the matchmaking between the challenge owners and the relevant solutions providers.





PROJECT DEVELOPMENT

ACELERA: Accelerating Circular Economy in Argentinian SMEs

Another great news of 2022, was that the proposal of the [ACELERA project](#) (of which ICN, CLEAN, and Las Brusquitas are part), has been selected for the AL-INVEST Verde program.

ACELERA aims to match Argentinian cooperation opportunities to European solution providers within cleantech to support Argentinian SMEs transitioning towards a low-carbon, resource-efficient, and circular business model in design, production, logistics, and distribution phases, and consumption and end-of-life management.

The International Cleantech Network (ICN) will be a key player to secure the leading European SMEs and universities acting under the cleantech umbrella will join the project activities, and engage in collaboration with Argentina SMEs. To secure an efficient match between challenge owners and solution providers, the challenges will be framed around the fields of water, energy, and circular economy under the cleantech umbrella, as the consortium has an outreach of over 2,000 European SMEs, and 80 universities in these fields.





EVENTS OF THE YEAR



A crucial aspect of internationalisation is participation in international events. Participation allows clusters and their members to expand their international networks and associate with potential project partners and challenge owners. Over the past few years as a result of the pandemic taking part in such events has been challenging, however in 2022 the clusters of ICN have made the most of the increased opportunity to take part in international events.

Enlit Africa 2022

Between June 7 and June 9, Africa's premier power and energy event took place - Enlit Africa 2022 (formerly African Utility Week & POWERGEN Africa).

Here, our member GreenCape had the chance to hold a presentation on the opportunities for green SMMEs through ICN and the Solar Impulse Foundation.

As a leading platform, in this event, Africa's energy community gathered for three days to meet and inspire each other in Cape Town.



IWA World Water Congress & Exhibition 2022

ICN was also represented by its members CLEAN, Water Alliance and GreenCape at the IWA World Water Congress & Exhibition - The world's largest water event for water professionals covering the full water cycle.

The 2022 congress took place in Copenhagen and counted with the participation of more than 8,000 participants, companies, actors and authorities from all over the world. The key focus was the digital economy, smart and liveable cities, entrepreneurship and diffusion of innovation, climate change adaptation, community and customer engagement, and sustainability.





EVENTS OF THE YEAR

COP 27 - The 2022 United Nations Climate Change Conference

2022 was also marked by the participation of ICN at COP27 - the largest global event where international leaders come together to take action towards achieving the world's collective climate goals as agreed under the Paris Agreement and the Convention. The Conference took place from 6 November until 18 November 2022 in Sharm El Sheikh, Egypt.



European Water Technology Week 2022

Between the 19th and 22nd of November, ICN and some of its members were also represented at the European Water Technology Week 2022 (EWTW 2022) in Leeuwarden, the Capital of Water Technology.

The global water technology sector came together, with more than 500 participants (from 31 countries) on each congress day. During the event, it was reinforced the idea that International collaboration is key to successfully tackling the world's environmental problems - and that is why it is one of the key pillars of ICN work.



CONTACT US

**For more information,
you can contact:**

Info@internationalcleantechnetwork.com

or visit

internationalcleantechnetwork.com