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## Battery cell start-up draws on nanotechnology and biotechnology background to create greener batteries

Global Nano Network (GNN) - a battery cell start-up drawing on its nanotechnology and biotechnology background to create greener batteries developed using sustainable and environmentally neutral materials - is set to expand its team and take the next step to scale-up its operation to bring its innovative ideas to industry.



Sindy Chaves (Chief Scientist at GNN) and Cllr Jim O'Boyle pose with tubes of microorganism solutions - one of the innovations GNN is developing to improve battery technology. From left: Ian McFarlane-Toms, Maria Morera (Research Officer at GNN), Sindy Chaves, Juan Scott Chaves (CTO at CNN), Cllr Kam Kaur, Cllr Jim O'Boyle

The company mission is to develop environmentally friendly battery components that can replace the limited raw materials contained in conventional batteries, such as nickel and cobalt, and improve the overall performance of lithium-ion batteries.

The innovations have a broad range of applications such as electric vehicles, heavy machinery, and mobile phones, and can be adapted to work in many other practical applications.

Support and advice from Business Ready, as well as Coventry City Council, has enabled GNN to reach a position where it is able to expand its team and further develop the technology, taking it a step closer to industry adoption.

### The Company

GNN, based at the University of Warwick Science Park's Venture Centre, moved to its current location in January 2021 after beginning its operation from a make-shift lab in Costa Rica in 2017.

At the time the company was developing wearable tech that consisted of a power-

bank capable of charging mobile device batteries more easily and efficiently.

The team then began researching how nanomaterials (tubes that can be up to 50,000 times thinner than a human hair) could be incorporated into their batteries to make them more efficient and easier to recycle. Inspired by its base in Costa Rica - a country that was the first to pledge to become fully carbon-neutral - Global Nano Network was formed.

CEO Ravi Daswani leads the GNN team who, between them, have expertise in multiple fields including microbiology, electronics, nanotechnology and telecommunications, which has enabled the team to draw on a wide range of science and technology disciplines to inform their thinking and give them an edge.

Through their existing networks the team was quickly able to raise significant seed investment to kick-start its R&D. Now, following on from the significant progress GNN has made, the company is beginning its first scale-up phase.

Having registered GNN in the UK, where the company's commercial Director was

already based, the company relocated the entire development team to the UK.

Ravi said: "It seemed like the perfect move considering the UK's reputation for innovation-led R&D and the country's investment into battery technology. Coventry and Warwickshire was the perfect location for us to get access to collaborative opportunities, superb connections and world class facilities such as the University of Warwick Science Park."

### The Challenge

GNN had big ideas, but needed funding to move its innovations forward. The move to the UK was also a massive step for many of the scientists on the team, who left family and friends behind to make GNN a success across the Atlantic.

The team needed guidance on how best to apply for grants and raise capital, and initial support in building a network of industry contacts to help them work with the right people to speed up their progress.

The team at Business Ready made contact with GNN even before they moved into

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UWSP, which was incredibly important to enable the team to hit the ground running.

## The Solution

Business Ready advisor Ian McFarlane-Toms worked closely with Ravi and the team providing invaluable advice on the funding landscape across the county and the country and ensuring they had a good relationship with the University of Warwick when it came to utilising its facilities for R&D. With Ian's help, the company was able to find an accounting firm from the region with the necessary start-up partnership mindset that the firm now retains.

Ian's advice on grants applications and a later introduction to Coventry City Council proved vital for GNN to grow and develop.

Ravi said: "Business Ready's early advice was so important because it reassured us that there is a network of people outside our organisation that are prepared to help us achieve our goals, and our integration with Warwick Manufacturing Group (WMG) was crucial to us and meant we were able to use the expertise and facilities to test our batteries and generate data to help us to consistently improve."

## The Results

The SME business support teams from both Coventry City Council and Warwickshire County Council helped GNN access an ERDF Innovation Grant, and an

ERDF capital asset grant allowing for the purchase of equipment for its laboratory.

The company is currently in the process of pursuing an InnovateUK grant, which if successful, could enable GNN to expand its team further and accelerate its technology readiness level (TRL) and manufacturing readiness level (MRL) – a measure of how close a technology is to being adopted by industry.

Ravi added: "I feel very fortunate to have the support of Business Ready and the public sector too."

"We've created a solid foundation on which we can build, and we are looking forward to developing our technology even further and creating valuable partnerships within the industry and academia."

"I'm excited to see what the future holds. Moving to the Science Park was a big step, and the move from Costa Rica has paid off for us. Business Ready's support has been invaluable, and we look forward to working with them further as we grow."

Ian McFarlane Toms, of Business Ready, said: "When Global Nano Network moved to the Science Park from Costa Rica, it was an ambitious start-up that just needed a bit of guidance to move it in the right direction."

"The firm has progressed rapidly in the time they have been here, and it's brilliant

that they are close to expanding thanks to the grants they have accessed, and their proximity to world class facilities such as WMG. The technology GNN is developing is revolutionary, and we will do all we can to support them on that journey."

Councillor Jim O'Boyle, cabinet member for jobs, regeneration and climate change at Coventry City Council, said: "Organisations moving to the city has a very positive impact on our local economy, creating jobs and providing opportunities for growth, and I'm always happy to hear that our support has helped a business grow and develop."

"Especially when it's an organisation like GNN that has such a strong focus on innovation and developing greener technologies which are better for the environment."

Cllr Kam Kaur, Warwickshire County Council Portfolio Holder for Economy and Place, said: "It's great news that through the Business Ready Programme that is part-funded by this council, we are able to support forward-thinking and innovative businesses such as Global Nano Network to thrive and grow."

"We are fortunate that our region is already a standard-bearer of new and emergent technology and innovation and the continued success of GNN is the very latest example of that fact."

## Business support for the next level

The Business Ready programme is managed by the business support team at the University of Warwick Science Park. The experienced Business Growth Advisers team have been delivering business growth and support services to technology based businesses for over 30 years.

In addition, the team are supported by a range of specialist mentors who have run their own businesses and have expertise and experience supporting, advising, coaching and mentoring other growth businesses.



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