

Stories of Success

Imperial Business Partners Impact Report

Imperial College
London

Enterprise

Introduction

The world today is complex and uncertain. Large companies are being transformed by societal shifts, from evolving sustainability expectations, to changing health demands of an ageing population, to the need to thrive in an increasingly connected, digital world. They must continually evolve to embrace new and emerging technologies – from AI to quantum computing, from green propulsion to bio-based materials – to stay relevant and keep up with nimbler startups.

To stay ahead of the game, large companies must navigate these trends. They'll need to discover and access cutting-edge innovations before their competitors do; explore how research across disciplines can improve their products, processes, and operations; and understand how innovations, trends, policy, regulations and standards will reshape their market. Wide-ranging expertise will be paramount, so they can direct R&D effectively, shape their future market through influencing customers and policymakers, and develop resilient long-term strategies.

Navigating this complex change is hard and time-consuming – especially as it becomes a routine part of doing business.

Imperial Business Partners (IBP) has been set up to solve this. Our team curates the brightest minds – from our world-leading researchers, cutting-edge startups and our connections to the wider world of academia, innovation, and policy – to deliver ongoing packages of activities that inform challenges and solutions.

How this plays out varies enormously between partners. Each partner gets assigned a single, account manager who is there to listen to their goals and challenges, identify whom they should speak to, and propose ideas for deploying Imperial expertise to help them in new and creative ways.

There is no one story of how we've helped 40 large international companies, in five years, from across multiple sectors, to consistently generate deep value from 4,000 Imperial experts. Instead, in this report we have brought together summaries of a wide range of IBP projects, services and outcomes to illustrate the breadth and depth of IBP engagements and their benefits.

If you're inspired by these stories and outcomes and you'd like to learn how IBP can help your organisation, get in touch with us [HERE](#)



For me, the power of IBP lies in the meaningful interactions we offer members with world-expert scientists, engineers and medics. As a trusted partner, we create safe spaces for you to ask whatever you want, and to discuss openly the status quo as well as where we might be in 20 years' time. It's these honest, two-way conversations that take you, our members, beyond everyday action and help you deliver greater value in the long term.

Dr Simon Hepworth, Director of Enterprise, Imperial College London



Imperial Metrics

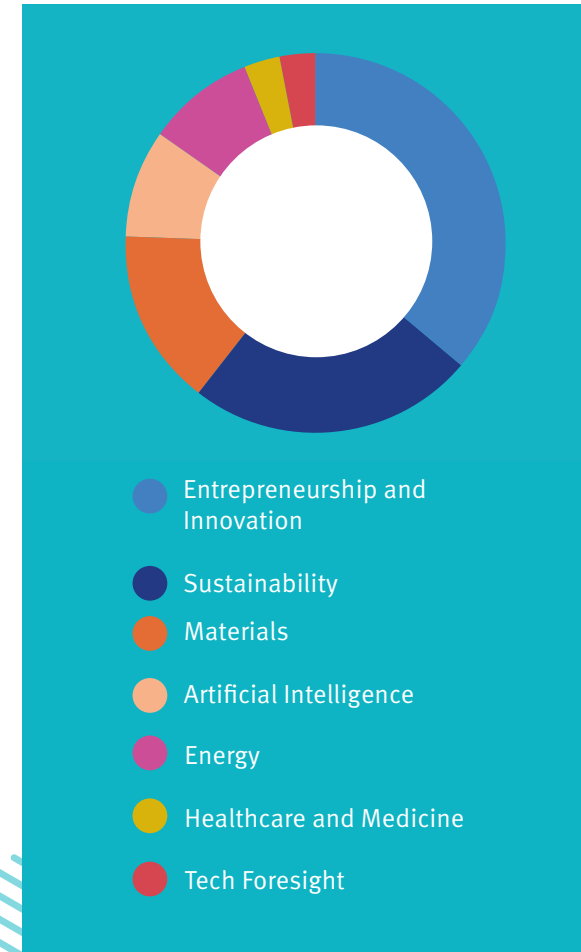
IBP

- ▶ 20 live partnerships
- ▶ 50 academics in data science, AI, privacy, materials, energy futures and sustainability involved in IBP projects 2022-23
- ▶ 40 projects delivered for our IBP members during 2022-23

The Imperial business ecosystem (2021-22)

- ▶ 107 patents issued
- ▶ 50 startups formed
- ▶ 958 commercial consultancy and technical service deals signed
- ▶ 3,700 multi-disciplinary academic staff
- ▶ The UK's best university (QS World University Rankings 2023) and sixth in the world
- ▶ Most innovative university in the UK (Reuters) and third in the world

Breakdown of IBP Pathfinder projects



The IBP team



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IBP member engagement stories

To better understand our Partners' needs, we conducted a Member Review at the end of 2022. Through interviews, we gathered detailed feedback on what they valued and what else they wanted. In this section, we present some of the highlights.

Deep expertise

- Partners spoke about technology insights at two levels – broad, horizon-scanning awareness and narrow, highly-specific knowledge. IBP was seen to contribute to both, and in moving from broad awareness to identifying promising areas for exploration.
- One partner illustrated this point, saying that if their organisation were interested in hydrogen energy, they'd quickly learn about key applications, such as storage and delivery, then start looking for experts who could help them find or develop new technologies. IBP helps make those connections.
- Partners felt membership helped them break out of their knowledge bubble, mentioning concepts like 'not knowing what you don't know', 'exploring the art of the possible', and 'connecting the dots', and cited IBP as a way to disrupt that through accessing novel, valuable and deep streams of knowledge.

A responsive and proactive team

- Partners praised the IBP team as highly efficient, likeable and engaged. Some partners highlighted the depth and closeness of the relationship, saying that IBP felt like team members.

- Partners valued the speed and responsiveness of the IBP team and their proactivity in creating opportunities for interaction and collaboration. Several noted how quickly the team initiated projects, often providing answers over phone or email within hours and setting up meetings within a day or two.
- The tailored, 1:1 support and account-based approach – whereby every partner has a dedicated account manager working closely with them – were seen as key benefits.

A two way-street

- Partners generally saw IBP as a reciprocal relationship which required effort and input from both sides.

What partners value – selected paraphrased comments

- Responsiveness
- Accessing deep expertise
- Accessing expert advice to evaluate our priorities.
- Engaging experts around structured activity
- Proactive connection to expertise “Knowing what you know about us, who do you think we should speak to?”
- Association with a leading university
- Co-branded papers with Imperial are valuable for our brand.
- “I would recommend IBP membership to any organisation that I am not in direct competition with!” – Alessandro Garribo, Head of Universities and Research Centres, Leonardo.

IBP is a bespoke service providing access to Imperial expertise in a wide range of ways, from briefings, to engaging experts to perform data analysis, to strategic technology planning. The true value is not in any one engagement, but the on-tap access to the right expertise for different challenges at different times, and the account managers with the skills to make accessing it easy. As we say, “The most valuable insights are those that are valuable to you”. As such, the best way to illustrate this value is through short stories of the wide range of projects we deliver for our partners.

Some of these are anonymised to protect member confidentiality.

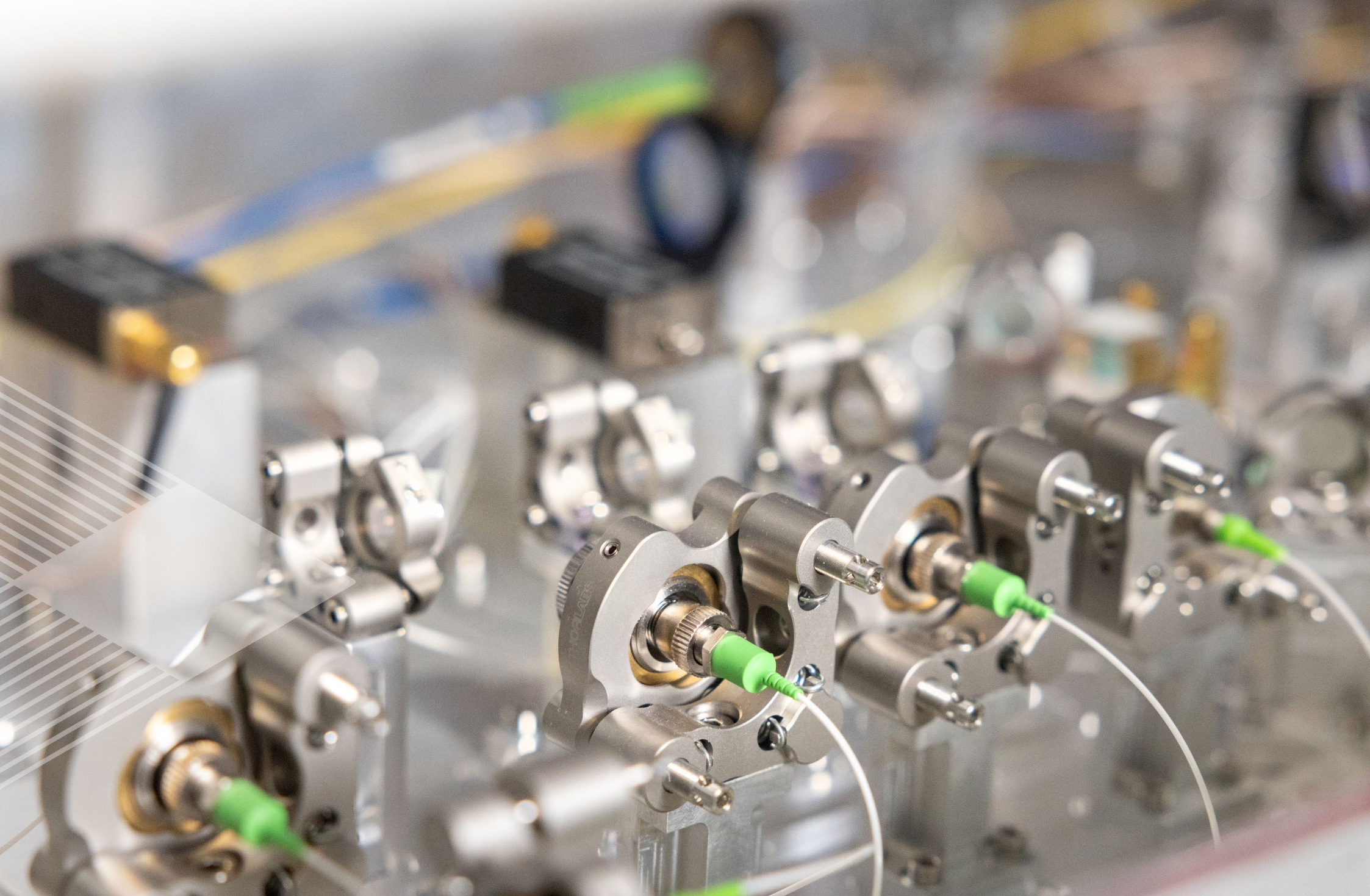
Logistics: Accessing cutting-edge thinking on decarbonisation

Partner Value: **Helping them act on environmental challenges**

A global logistics business wanted to explore ways to decarbonise hard-to-abate industries like shipping. To help, IBP facilitated meetings with experts across the decarbonisation value chain, including alternative fuels, hydrogen, ammonia, carbon capture and storage (CCS), and bioenergy with carbon capture and storage (BECCS).

Through these engagements, the company received presentations on the latest academic thinking, and had an opportunity to put their questions to the academics, helping validate their R&D strategy, challenge aspects of their operating model, and discover ideas and innovations for decarbonisation they were not aware of.







Consumer Goods: Moving to closed-loop production of products

Partner Value:

Helping them move to new business and operational paradigms

A consumer goods manufacturer wanted to improve the circularity of its products - an area of expertise at Imperial. Through an IBP engagement, it **learned about new reusable and recyclable materials that it could integrate into its products**, and new cutting-edge manufacturing techniques that could improve its ability to extract and reuse materials at a product's end of life. The engagement opened the company's eyes to specific useful innovations, and new ways of thinking about the problem.

MSD Merck: Shaping the future of healthcare

Partner Value:

Helping MSD gain insights to save and improve lives

MSD uses the power of leading-edge science to save and improve lives around the world and wants to continually improve healthcare systems. As such it spends considerable effort on medical affairs - a part of the business that engages the wider medical community to help improve public health.

The Medical Affairs team at MSD are engaging with Imperial experts to **gain new insights to help inform the medical community, break down barriers to health equity, enhance medical education and get better data on population health to tackle preventable disease.**

The partnership is broad and by no means limited to medical affairs. MSD recently contributed to an Imperial led **briefing on the use of artificial intelligence across the pharmaceutical value chain** – demonstrating leadership on the importance of cutting edge technology in pharma.

Venture Capital: Making smarter investments in startups

Partner Value: Helping them understand risk associated with new technologies

Investors can struggle to tell whether highly technical startups have a disruptive proposition, or are full of hot air. Their due diligence processes may not extend to detailed assessments of highly specialised technologies like quantum cryptography and additive manufacturing.

A global VC firm was considering investing in two high tech startups. Through IBP, **we identified academics qualified to assess the viability of the technology and the companies' prospects.** The team looked at the technology, potential applications, and the skills of the people in the company, to analyse whether the technology would work, whether it could viably scale, and whether it addressed an unmet need. A report analysing and comparing the two technologies was produced, helping the portfolio managers better understand the technologies, and de-risk any subsequent investment decisions.

Defence: Finding startups to keep the business innovative

Partner Value: Helping them act on environmental challenges

Engineering and defence companies need to be constantly innovating to meet their customers' changing demands. One way to do this is to partner with or acquire cutting-edge startups, whose technologies they can offer as part of their comprehensive portfolio.

Italian defence company, Leonardo, wanted to expand its capabilities in Simulation and Gamification and Networking & Cybersecurity. **To find innovative startups, it hosted a Business Innovation Factory Roadshow, with the UK leg held at Imperial's White City Campus Scale Space.** As well as providing a space at the heart of a thriving innovation ecosystem, and academics to speak at the event, Imperial's network, communication channels and reputation helped attract a significant number of entrepreneurs and investors.

The roadshow, alongside other activities, generated over 150 applications from around the world, of which ten will now be chosen for support and mentorship. The work of Imperial and the other international roadshow partners was said to be critical in generating 'applications of a high overall quality' and, more broadly, positioning Leonardo 'credibly in the innovation ecosystems of our home countries.'





Designing a programme of corporate R&D

Partner Value:

Helping understand which tech to investigate for product digitisation

Many companies need to transition their product portfolio towards smarter, better connected products. But knowing the right direction to take is hard when your business was not built in the digital world.

An engineering company worked with IBP to **curate a series of innovation workshops to shape a new R&D programme**. The workshops covered the latest thinking and research in AI, sensors, and materials, which was used to set an ongoing research agenda, build the structure for its development, and create the case internally for funding and support. Through this engagement, the company could gather an advanced view of what its research should look like before making any significant future funding decisions.

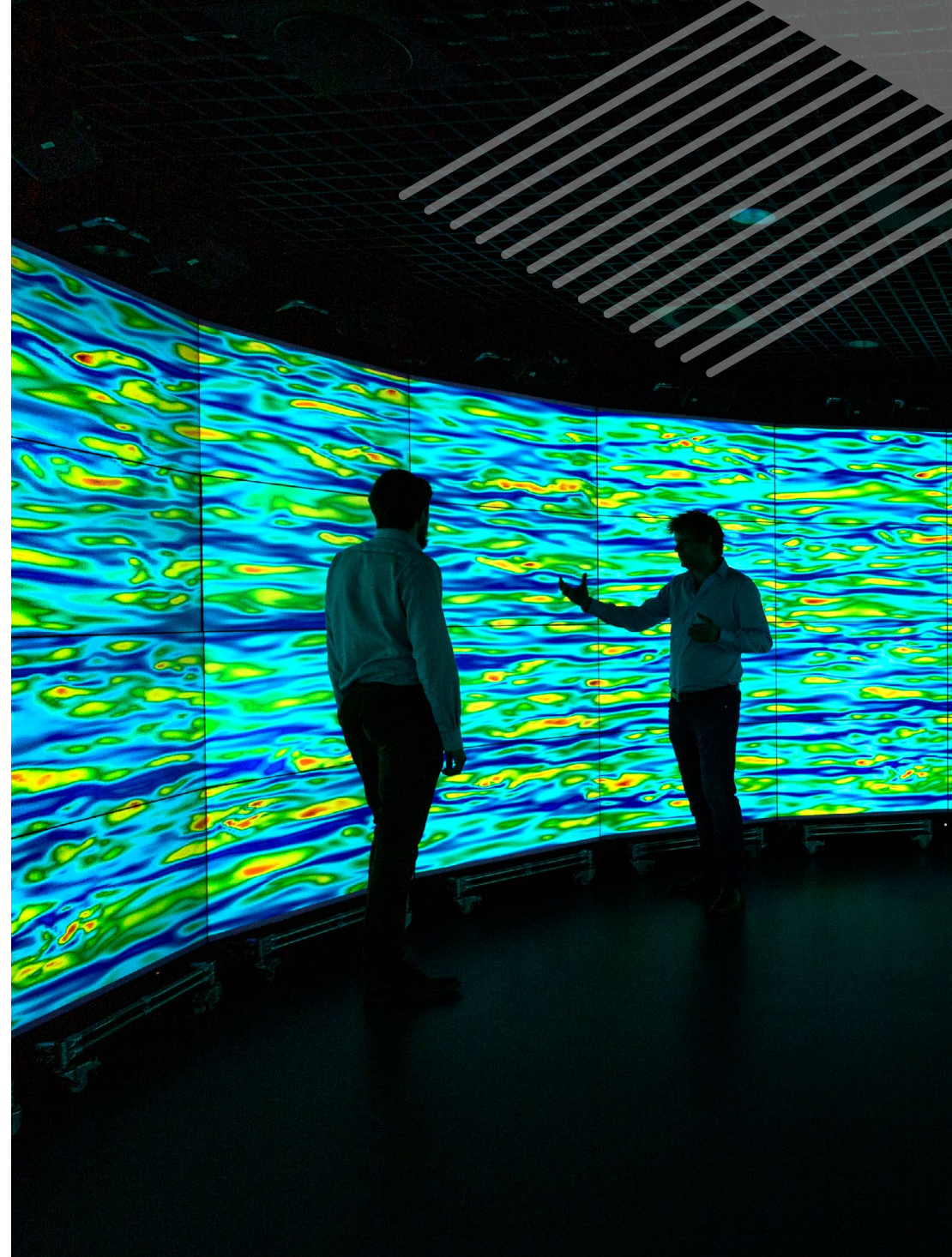
SSE: Understanding green electricity grids

Partner Value:

Helping SSE shape the future of energy systems

Today's energy companies need to make important decisions that will shape – and respond to - a future electricity market where intermittent renewable production replaces reliable coal and gas. Through IBP, SSE leveraged the expertise of Imperial's Energy Futures Lab to create a report on how electricity markets can be reimagined for a decarbonised electricity mix by 2050.

The report explored how market design will affect investment in large-scale renewable technologies and also provided a platform to engage with government; an activity that was further supported by an IBP-curated roundtable with SSE, the academic authors and the then Department for Business, Energy and Industrial Strategy (BEIS).



“

Dr Marco Aurisicchio conducts research into the circular economy in Fast Moving Consumer Goods companies. His team have developed methodologies to model systems that produce closed loop resource flows and consequently enable companies to form a holistic view of systems and make informed decisions to support the design of products that are reusable or recyclable.

“I am often contacted to be involved in IBP projects, because circularity is so important to so many companies.

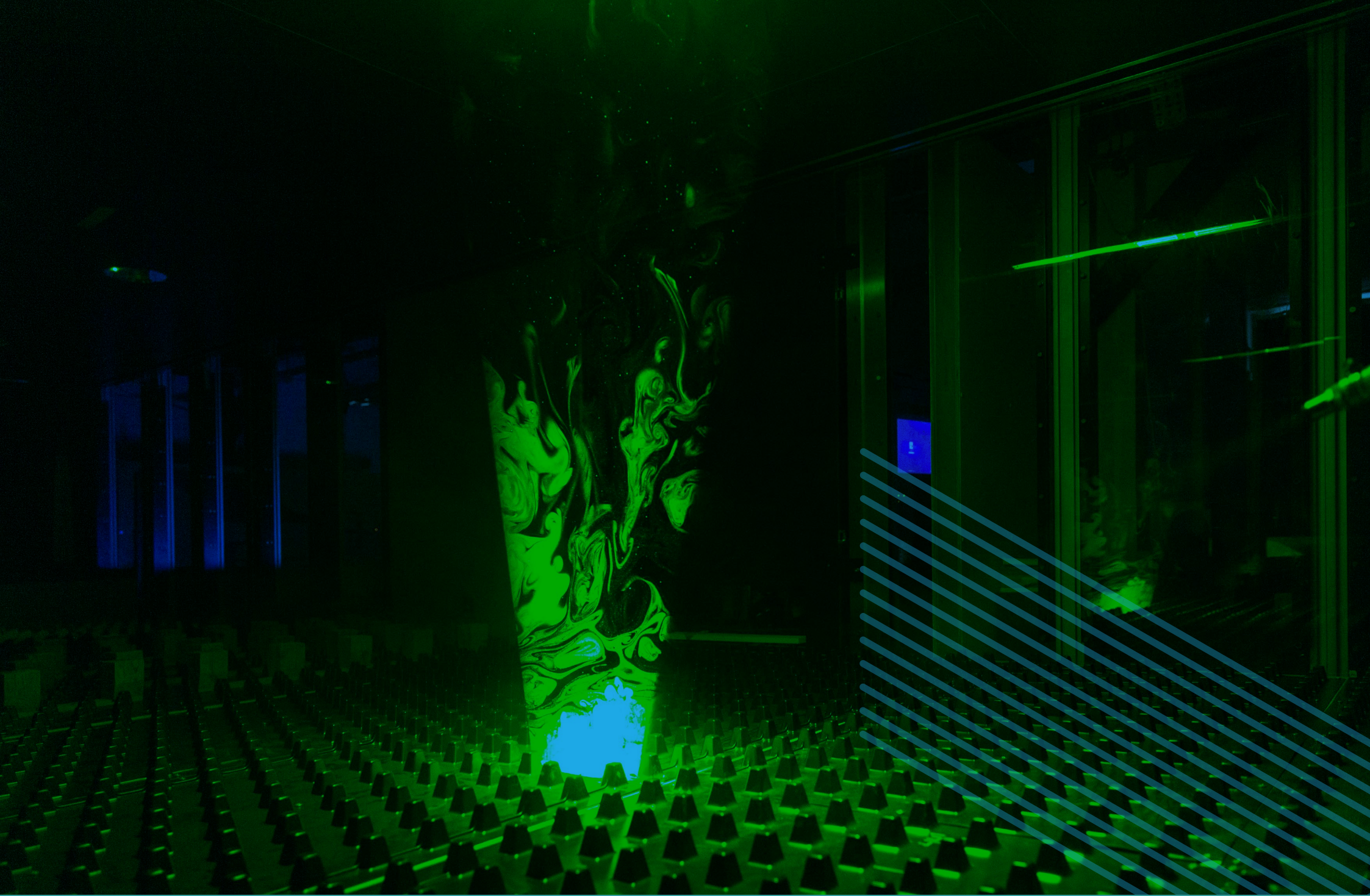
Usually that will start with a meeting or presentation of my team’s research to key people at the Partner company – often senior people in the Design or Sustainability teams – followed by a Q&A or roundtable discussion. These can be focussed on specific circularity opportunities, or combined with other topics and experts to give a breadth of insight into a broader issue such as sustainability trends or the evolution of R&D.

Most participants seem to find these engaging, and they often lead to deeper conversations, or workshops to explore how our work could be applied to specific products. Sometimes it will even set the foundations for a proposal for an ongoing collaborative programme of work.

From my own point of view, I’m always excited to be involved in these projects as it’s a chance to learn about industry challenges, and often a way to kick start activities where our work can deliver real-world impact in making products more sustainable.”

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Spotlight on... Tech Foresight

A deeper dive into a service that IBP Partners have privileged access to

A key part of any long-term business plan – whether developing a major new product line or choosing a site for a factory that will stand for 30 years – is understanding what the future might bring. In today’s world where technology advances rapidly, and geopolitical uncertainty seems to shift daily, understanding the long-term outlook can be a significant advantage.

In Imperial Tech Foresight, IBP partners have access to a consulting service that helps them structure and understand the future, so they can plan for it more effectively. These are usually strategic planning activities and can range from briefings on the likely long-term impact of emerging technologies, through to scenario planning of multiple possible futures on 5-10-20 year timescales, and beyond. They draw on Imperial expertise on the science and technologies of the future to develop plausible future scenarios.

Examples of Foresight projects

Understanding new technologies

Advantage Austria provides intelligence and support for Austrian companies around the world to boost their competitive advantage. In one project, it had produced a visual technology trends map for its members, to support them to make investments or long-term business decisions.

To ensure it was highly robust, they worked with world-leading academic institutions including Imperial and MIT to validate the technologies and suggest new candidates.

We have also delivered a variety of Foresight workshops for Advantage Austria’s technologists. These have covered topics from technology change impulse talks, emerging skills needed in R&D, and the impact of automation and AI.

Planning for multiple future scenarios

Other projects involve deep scenario planning, looking at possible impacts on a particular sector ten years into the future.

An unnamed IBP member wants to retain its position as a leader in its sector. But in a volatile world, it needs to challenge assumptions and test the resilience of its current ways of working.

Our experts conducted a research project looking at how different facets of the partner's industry will be disrupted by new technologies and changing attitudes – describing what several possible future scenarios will look like if predicted changes come to pass. The resulting scenarios will be used in a strategy workshop to assess resilience to different futures.

Sharing best practices on looking at the future

Finally, we also often collaborate with in-house foresight teams. Companies in sectors like energy need to plan decades ahead and so have their own foresight teams. These companies value workshops to share insights and best practices to improve their own forecasting approaches and outcomes.

Chance favours the prepared mind

Whilst understanding possible futures is helpful, predictions have their limits, with greater uncertainty the further out you go. However, the biggest value is often intangible. By forcing people to work together to plan for future scenarios – including those they may not predict themselves – we help nurture an open and resilient mindset that makes companies better prepared for challenges and change when it does come, even if it is not exactly as predicted.

Conducting a foresight project

Foresight is professional practice that follows a structure. Any project will start by identifying a methodology for delivery against member needs, and identifying relevant experts to support it. Below are a sample of approaches used.

***Scenario planning:** Using experts to build future scenarios based on expected progress of emerging technologies and predicting their implications for the Partner's business.

***Windtunnelling:** Assessing current business strategies in the face of possible future scenarios to see how they hold up against these new environmental conditions, then identifying changes needed to improve resilience.

***Technology Death:** Strategic Conversations about deep technology change and the opportunity spaces therein. A corporate leadership level service for strategic planning.



Spotlight on... Undaunted

Accelerating your journey to Net Zero. A look at one of the additional paid-for tracks that Partners can access.

Sustainability is a major issue for most businesses, whether it is tracking emissions, embracing sustainable materials, or adopting cleaner manufacturing and end-of-life processes. But for many this is not their core business, and so they often look to others for help.

One source of such help is startups – the cutting-edge companies who have made scientific breakthroughs with sustainability applications and are now commercialising them. Imperial is **one of the world's best universities for innovation**, and a hotbed of such entrepreneurial talent.

Undaunted, a partnership between Imperial College London and the Royal Institution, is our community of climate innovation. It brings together startups, investors, climate science researchers, policymakers and businesses, pooling valuable expertise to create a flourishing innovation ecosystem. Over the past 12 years we've developed and refined a model for accelerating applicable, practical and adaptable solutions that make a difference on a global scale. Through the IBP Undaunted Track, IBP partners become part of a community where they get a deep level of access to academics and startups in the climate science space.

The Greenhouse, a flagship Undaunted activity, is one of the most established specialist climate accelerators in the world. Our unique 12-month programme supports early-stage entrepreneurs, nurturing innovation until it is ready to be scaled up. We also run the Climate

Undaunted in numbers

135
startup graduates

30
startups training at the Royal Institution

1,500
jobs created by Undaunted startups
in 30 countries

\$1 billion+
investment raised

£5m
raised by new 2021 startups



Launchpad competition, which supports cleantech businesses at an earlier stage. Both programmes attract startups from across the UK.

Startups to emerge from Undaunted include Notpla, a sustainable packaging company which won Prince William's Earthshot Prize; Naked Energy, a high-performance solar power company that now supplies to landmark public buildings; Seratech, a zero-emission cement company; and Upside Energy, an energy software company which was bought by Octopus Energy.

Participating in the Undaunted IBP track helps partners stay at the cutting-edge of climate innovation knowledge, thanks to expert workshops with selected academics, bespoke networking events, and science and tech updates from across the community, as well as discounts on short courses on climate change and sustainable business. Partners also have the opportunity to shape the direction of Undaunted activities to their emerging needs, by setting student projects, convening peer group organisations to tackle shared problems, and proposing startup competitions.

Member quotes

“

Through IBP, Imperial offers a good process for working with industry. IBP's professional management staff and their understanding of industry needs makes the whole relationship easier.”

Alistair McGirr -
Group Head of Policy and
Advocacy, SSE

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“

We benefit from having a single point of contact who responds quickly and has developed a good understanding of what we're looking for

A global energy company

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IBP offers us tangible value for money by helping us avoid lengthy explorations of opportunities that end up coming to nothing.

IBP is an open door to what is going on at Imperial College London. The intelligence we receive through IBP is more effective, quicker to receive, and is well-piloted. It's the right professional method to understand what Imperial does, what it is able to do, and how we can interact for further research advances.

Alessandro Garibbo,
Leonardo

”

“

While in theory we could approach these activities ourselves, IBP provides value in the organisation and facilitation of activities that would otherwise be very difficult or impossible to put together.

AdvantageAustria UK

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Member list

- Advantage Austria
- AWE
- BP
- CSL Seqirus
- DFS
- EY
- Flawless AI
- Fluid Technologies
- Jameel Investment Management Company (JIMCO)
- Leonardo
- Merck Sharpe Dohme (MSD UK)
- Moderna
- NEC Corporation
- PepsiCo
- Schneider Electric
- SSE
- Tata Consultancy services
- Trafigura



Contact Imperial Business Partners

If you think membership of the Imperial Business Partners programme is right for your organisation, we'd love to hear from you.

Get in touch with us to write your own story of success with Imperial.

enterprise@imperial.ac.uk | imperial.ac.uk/ibp



A woman with her hair in a ponytail, wearing a dark sweater, is working on a stage set. She is holding a tool and looking upwards. The background is filled with blue stage lights and rigging.

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