

Green Data

Innovation and a green economic recovery

14 January 2021

We'll be starting shortly!



Natural
Environment
Research Council

Agenda

Introduction by **Matthew Farrow**, Director of Policy, ACE/EIC

Presentations by:

- **Chris Fry** of Accelar Ltd
- **Jennifer Jennings** of NERC
- **Mark Penny** of Energy Solutions UK
- **Katie Mills** of Schneider Electric

Q&A

Housekeeping

- This webinar is best experienced through headphones which will cut out the background noise.
- To ask questions please use the **chat** function in your control panel.
- Ask your questions throughout the webinar, you don't have to wait until the end.
- Don't worry if you miss anything we will be uploading this to our website in the next few days, so if you want to listen again to us you can!



Chris Fry
Managing Director
Accelar Limited

INNOVATION AND A GREEN ECONOMIC RECOVERY

CHRIS FRY, CO-FOUNDER &
MANAGING DIRECTOR

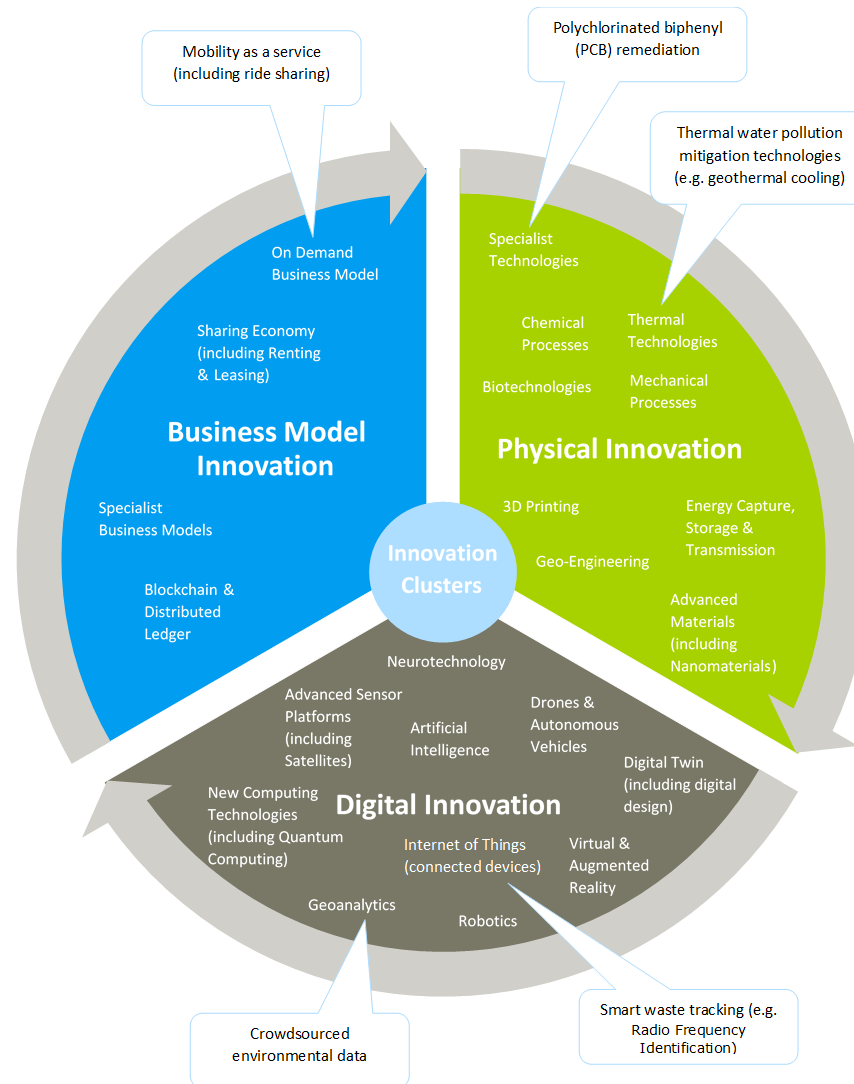


25 YEP INNOVATION AUDIT, TAKE AWAY 1: URGENCY

- **“There is real urgency to act if additional innovative technologies and services are to be unlocked in time to make a contribution to meeting the 25 YEP targets.**
- This is due to three factors:
 - i) the **pathways** involved in achieving the ultimate environmental (and health) outcomes associated with the 25 YEP goals and targets
 - ii) the need for **transformational system change** in some domains
 - iii) the timeframes involved in **taking innovations from research/development/deployment** into formation of and diffusion across markets.”



25 YEAR ENVT. PLAN INNOVATION AUDIT, TAKE AWAY 2: A MYRIAD OF POSSIBILITIES, 23 INNOVATION CLUSTERS



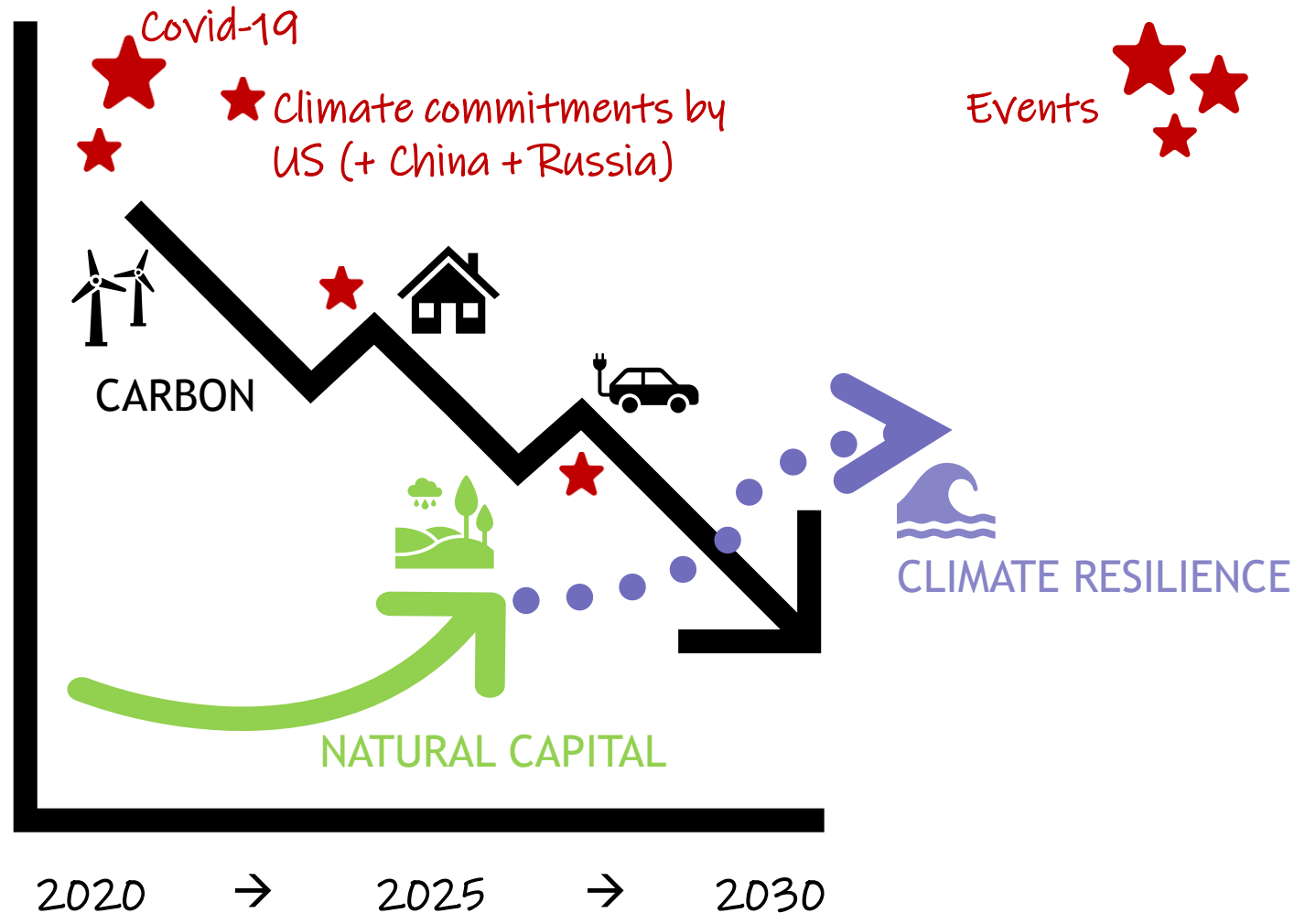
THE CRITICAL DECADE FOR A GREEN TRANSITION

Enablers of change

 Behaviour / business models

 Green Finance

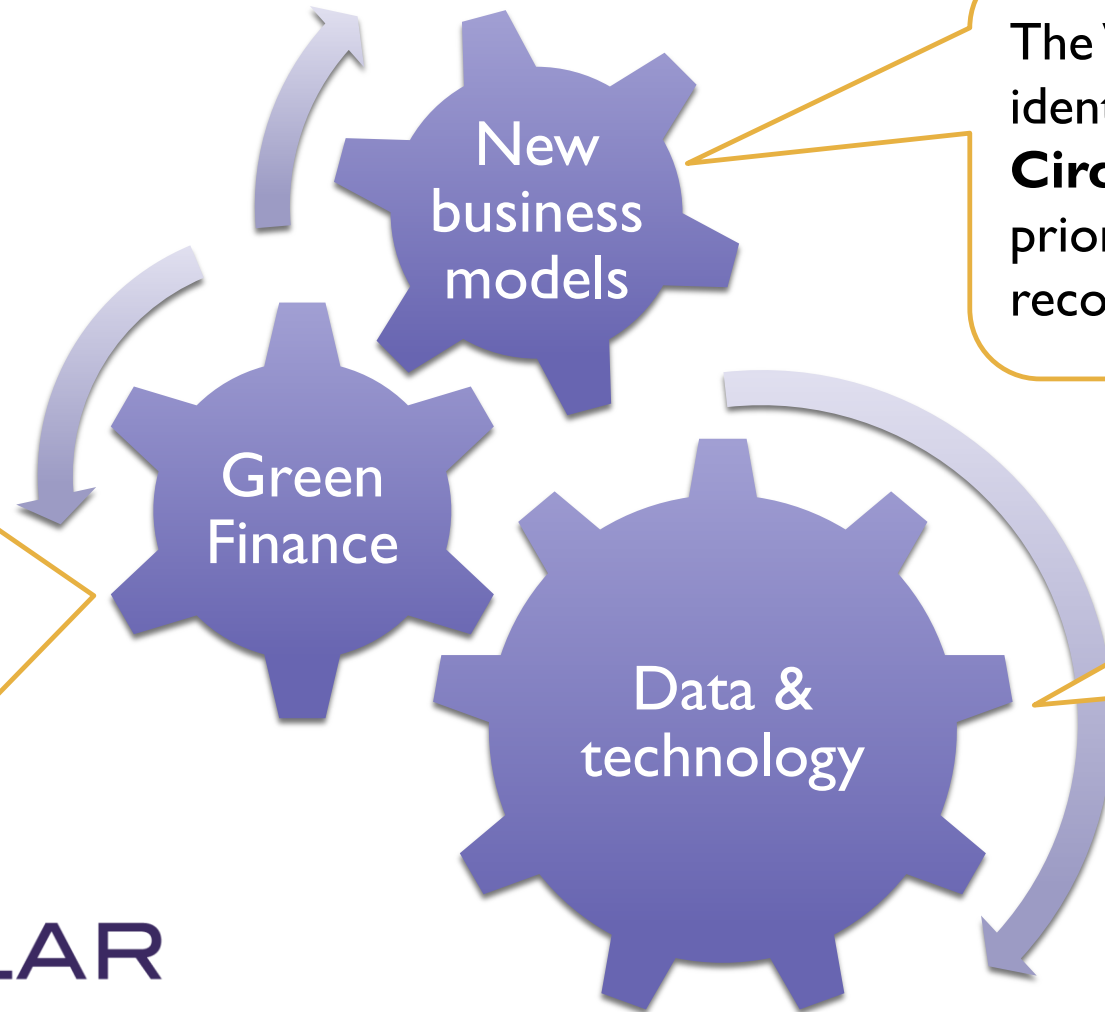
 Digitisation & Automation



EXAMPLES OF THE ENABLERS AT WORK, FROM SOME OF OUR RECENT PROJECTS

Green Finance Institute is mobilising industry-led coalitions to **unlock financial barriers:**

- Energy efficiency of buildings
- Decarbonising road transport
- Nature



The West Midlands has identified kickstarting the **Circular Economy** as a priority in its green recovery plan

Improving infrastructure:

- Digital twins
- Whole life carbon & cost assessment (PAS 2080)
- Modern Methods of Construction

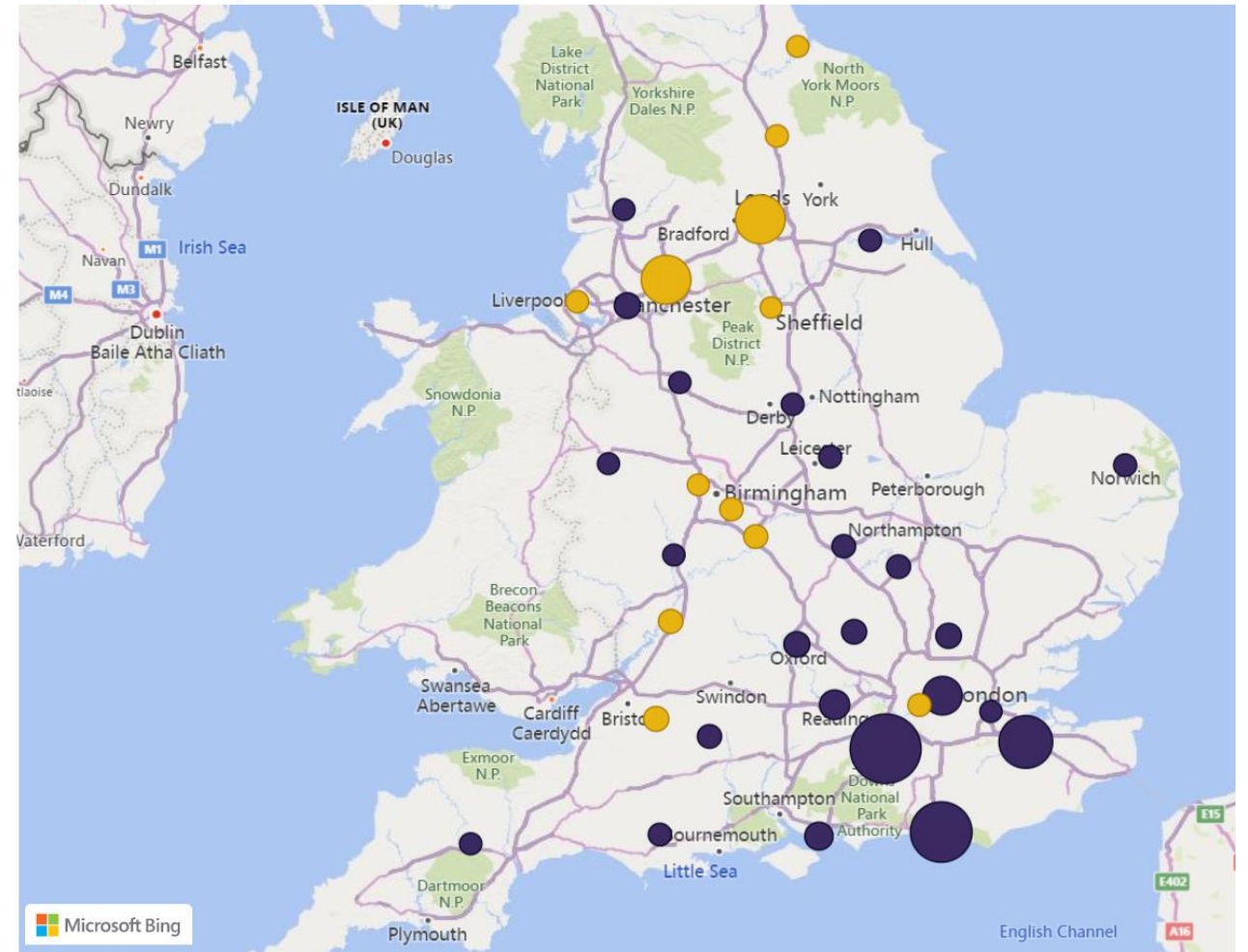
BENCHMARKING THE PRE COVID-19 GREEN ECONOMY: HIDDEN DEPTHS BUT ALSO LARGE DISPARITIES

The full article and interactive charts are
available via:

[www.accelar.co.uk/insights/green-recovery-
foundations](http://www.accelar.co.uk/insights/green-recovery-foundations)



Sales per Capita (£) by LEP



THANK YOU

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Jennifer Jennings

Associate Director, Strategic
Programme Generation
NERC



Natural
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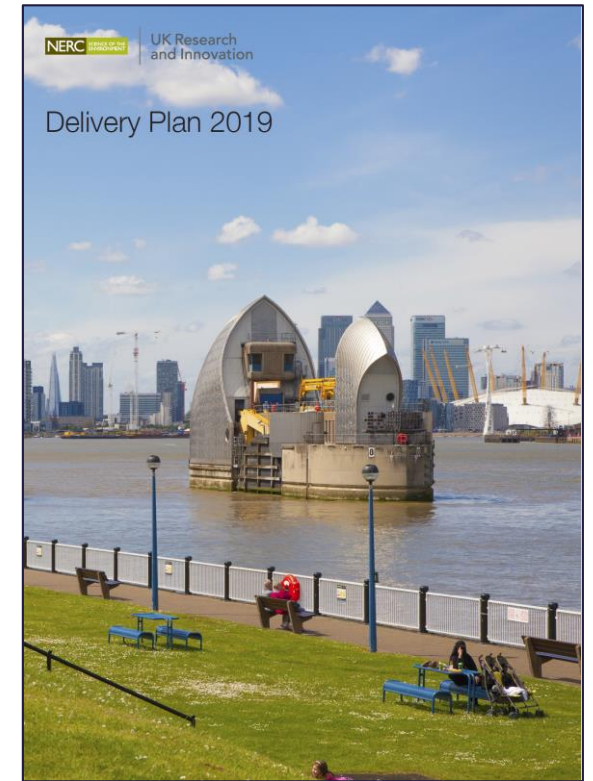
Update || NERC

EIC 'Green Data webinar series: Innovation and a green economic recovery

Dr Jen Jennings, Associate Director, Strategic Programme Generation, NERC

Natural Environment Research Council

- NERC is the UK's leading public funder of environmental science.
- We invest £330M each year.
- Full range of atmospheric, Earth, biological, terrestrial and aquatic science, from the deep oceans to the upper atmosphere and from the poles to the equator.
- 1000 research projects and 60+ UK or international programmes.
- UK national capability: 4 ships 7 aircraft, 6 polar bases, the NERC Data Service and 11 community research facilities. We own BGS and BAS.



Evolving Research & Innovation Landscape



NERC Delivery Plan



Environmental Solutions



Pushing the Frontiers of Understanding



Productive Environment



Healthy Environment



Resilient Environment



Digital Environment



Global Environment



Best Environment for Research and Innovation



Environmental Solutions

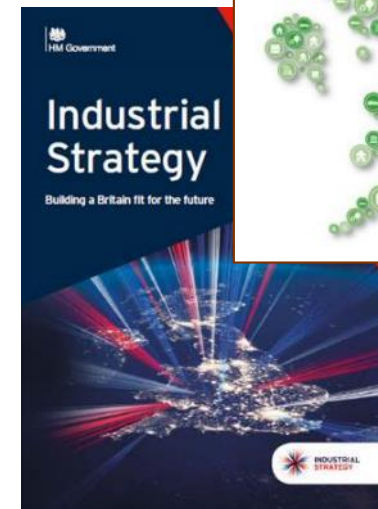
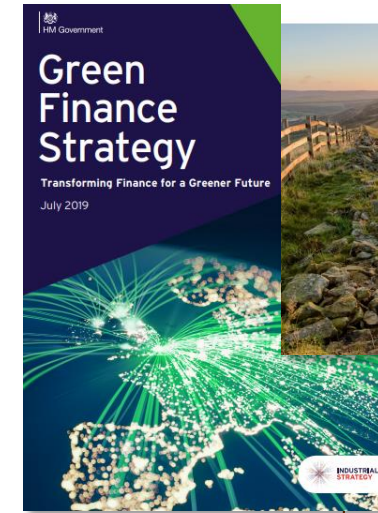
NERC Strategic ambition

Build research and innovation communities that:

- Take a whole-system approach
- Encompass whole supply chains
- Include all relevant disciplines

Supporting Innovation

- ISCF programmes e.g. Smart Sustainable Plastics (£60m), Transforming Food Production (90m), Industrial Decarbonisation (170m)
- SPF programmes e.g. Clean Air, Landscape Decisions
- Research and Innovation as part of our Strategic Programme portfolio
- RISE (Regional Impact from Science of the Environment)
- Cross-Council programmes e.g. Climate and Environmental Risk Analytics for Resilient Finance (CERAF) (with InnovateUK)
- CDTs and DTPs
- Knowledge Exchange fellowships



NERC COVID 19 Ideas Series session overview



Golden threads: Multi-discipline, business, policy, innovation, local, national, international

5) Conclusion: drawing together and summarising threads and promising ideas for environmental solutions (16th July 2020)

2) Managing pathogens in the environment (30th June & 7th July 2020)

- Environmental solutions to reduce the potential for emergence and spread of pathogens.

3) Greening the 'build back' (1st & 8th July 2020)

- Putting sustainability at the core of rebuilding and reshaping to a Net Zero economy

4) Healthy places: healthy people (2nd & 9th July 2020)

- Environmental solutions to increase the health of places to support the mental and physical health of people.

1) Current frontiers (24th June 2020)

- Summarise and reflect upon research and innovation since the outbreak first emerged.
- Explore current thinking and action on environmental solutions in response to COVID-19
- What (non-COVID) cutting edge R&I could be applied to environmental solutions for COVID-19.

Translation and commercialisation, UKRI

Commercialisation is the process by which new or improved technologies, products, processes and services are brought to market

Areas of focus

1. **A continuum of funding** for end to end translation and commercialisation from research to market
2. **Access to finance for innovative businesses** to bring new innovations to market and grow
3. **Underpinning support for the ecosystem** that enables commercialisation
 - a. Skills
 - b. ED&I, and links to research culture
 - c. UKRI-funded universities, institutes and infrastructure
 - d. UKRI-owned institutes, centres and campuses and rewards to innovators
 - e. UKRI Ts and Cs including IP Other research funders and Devolved Administrations
 - f. Levelling up across the UK
4. **Monitoring & Evaluation – how do we know how UKRI is performing?**

Working with EIC and its membership

- To facilitate and convene – help you to access the science in NERC and across UKRI
- To listen – what solutions can science help you deliver?
- To respond – help inform future R&I programmes
- Other? Your ideas welcome.....



Mark Penny
Commercial Director
Energy Solutions (UK) Ltd



ENERGY SOLUTIONS

Hybrid Power Systems

Offgrid

Permanent and Temporary Installations

Construction Sites UK - Sitegrid



Range of different size generators running 24/7

Powering portacabins and tower cranes

Average 50% saving in generator run time

Added benefit of no noise pollution when running on Hybrid



Remote Telecom Sites - UK



20 kVa generator running 24/7

68% saving on run time

Saving

10,000 kg of CO2

£30,000 on TCO



UN Camp in Sudan

Previously 100kVa diesel generator running 24/7.

Fuel usage 7 litres per hour 168 litre per day

CO2 emissions 450 kg per day & NOX

New system combines energy storage and solar

Fuel usage 57 litre per day 66% saving

Saving

480 kg CO2 per day

175,200 kg CO2 per year



Innovation

Hybrid Energy Management System (HEMS)



Sophisticated control of power being used

Reduces wasted power

Remote monitoring and control

Daylight sensing

SME challenges of Innovation funding and support

Time and resource

Attracting the right talent





Katie Mills
Head of Innovation
Schneider Electric

A nighttime photograph of a city skyline, likely Hong Kong, featuring a prominent skyscraper (the Bank of China Tower) in the center. The city lights are visible against a dark blue sky. The word "INNOVATION" is overlaid in large, bold, green capital letters across the middle of the image.

INNOVATION

Innovation at the Edge:
Now Is the Time to Build Back Greener

Katie Mills, Schneider Electric

The energy future is here

The global pandemic has increased the pace of the energy transition

Electrification

x3

Electricity consumption between 2020-2035 from pervasive adoption of Information & communications technology (ICT)

Schneider Electric estimate

Decentralization

50/50

Wind, solar, and storage will generate 50% of global electricity by 2050

Decarbonization

95%

of 2-degree carbon budget would be consumed come 2040 by existing infrastructures

Digitization

30%

energy cost savings on average, up to 85% cost saving potential from customer digital transformation projects

Decentralized, decarbonized, and digitized solutions

We are building easy to install solutions for the new energy future



Microgrids

Decarbonized,
reliable energy supply
Energy as-a-service



EV charging

Fleet electrification
Electric vehicle charging
Load management



Home energy management

Solar and storage
EV charging
Move from consumer to prosumer
Active home energy management

We are investing now

Renewable energy and EVs will reach an inflection point in 2024/2025

GreenStruxure

New business model with private equity partners to deliver **energy as a service** to small and medium commercial buildings

We build these solutions at the edge

Transform bold ideas into customer solutions at the “edge” by partnering externally



**Ideas to solve
customer problems**

200 startup partnerships

13 investments

15 incubations

2 new businesses

Innovation does not slow down in a crisis

Changing customer needs create innovation opportunities



Remote work
and digital
acceleration



Regional
manufacturing



Social
distancing



Supply chain
resiliency

Our customers need

- Resilient IT systems
- Reliable energy supply
- Remote access
- New business models

Partnering externally to address customer needs

Resilient IT systems



Reliable energy supply



Remote access



New business models



Innovation at the Edge

Partnering with our
innovation ecosystem
to lead the **new energy
future.**

[se.com/ventures](https://www.se.com/ventures)

Life Is On



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Questions?

Upcoming webinars

<p>20 JAN 2021</p> <p>WHY IS INFRASTRUCTURE IGNORING TECH?</p> <p>Book now →</p>	<p>24 FEB 2021</p> <p>GREEN DATA WEBINARS</p> <p>Read more →</p>	<p>24 SEP 2021</p> <p>COMBATING CLIMATE CHANGE INTERNATIONALLY</p> <p>Read more →</p>
<p>27 JAN 2021</p> <p>HYNET NORTH WEST - UNLOCKING A LOW CARBON HYDROGEN ECONOMY</p> <p>Read more →</p>	<p>11 FEB 2021</p> <p>GREATER MANCHESTER'S CLEAN AIR PLAN</p> <p>Read more →</p>	<p>26 NOV 2021</p> <p>MAKING THE MOST OF COP26</p> <p>Read more →</p>

Find out more and [register here](#).

Thank you!