

Digital Twin Opportunity Programming - an Exemplar in Progress

July 2021

Chair: Bruce McLelland, Urban Systems - KTN

+44 (0) 7712 305470

| @Bruce_McLelland

| Bruce.mclelland@ktn-uk.org



www.ktn-uk.org



Attendees

British Chamber of Commerce, Indonesia Chris Wren - Executive Director
Angelina Widyanastiti, Events Coordinator

Data Performance Consultancy Limited
Brian Bishop CEO
Dr Ed Conley
Chris Bates-Keegan, CTO

University of Oxford – Big Data Institute
Prof Jim Davies, Professor Software Engineering
Dr James Welch

BODVOC
Hugh Boyes, CEO

University of Lancaster – Data Science Institute
Dr Simon Tomlinson, DSI Engagement Manager.
Dr Nick King



Attendees

Liverpool John Moores University.
Dr Anthony Walker
Julie Wang, Head of International Relations

Information Junction/UK Digital Twin Programme
Dr Matthew West, Technical Lead

KTN
Bruce McLelland, Urban Systems Lead



About KTN

KTN exists to connect **innovators** with new **partners** and new **opportunities** beyond their existing thinking – accelerating ambitious ideas into real-world **solutions**.

Positive Change

We create diverse connections
to drive positive change

Deep Expertise

We have wide-ranging
expertise and convene
the expertise of others

Powerful Connections

We drive powerful
connections with business
at the heart of what we do

Future Shaping

We shape the
innovation communities
of the future

Our People

We provide an exceptional place of
work for our exceptional people

KTN's Network



46,229

Unique
Organisations



72%

Small

15%

Medium

13%

Large



234,478

innovators



Every
university in
the UK

KTN Priorities 2021/22



Net Zero



**Equality,
Diversity
and
Inclusion**



**Global
Innovation**



Place



**Innovation
Adoption
and
Diffusion**

Find out more at ktn-uk.org



£1bn Net Zero Innovation Portfolio

BEIS's £1bn Net Zero Innovation Portfolio will accelerate the commercialisation of low-carbon technologies, systems and business models in power, buildings, and industry. The Portfolio will decrease the costs of decarbonisation and set the UK on the path to a low carbon future.

The four year programme will provide funding for 10 priority areas.

- **floating offshore wind**
- nuclear advanced modular reactors (supported through the aligned Advanced Nuclear Fund)
- **energy storage and flexibility**
- **bioenergy**
- hydrogen
- homes (building efficiency and low carbon heating)
- **direct air capture and greenhouse gas removal (GGR)**
- advanced CCUS
- industrial fuel switching
- disruptive technologies

<https://www.gov.uk/government/collections/net-zero-innovation-portfolio>



KTN SMART URBAN PROGRAMMES

1. Addressing the Innovation Gap around Net Zero Urban environments.
2. Harnessing the impact of effective Digital Twin methodologies.



Targeting:

- SME & R&D centre solution developers (Smart Digital Urban Planning toolkits) vs Local and Regional Authority Requirements (procurement)
- Broad challenges places face in getting to net zero
- Disaggregated issues beneath those challenges that they might want/need to address to get there
- Barriers on both the local authority and business sides to getting better net zero business uptake
- Types of interventions that exist – and how mature or otherwise they are
- Start of a framework of identified businesses that we can engage with in the various sub-sector verticals different areas

Emerging Programmes:

North and South Wales & NI City Deals (Welsh Government)

- Phase 1 – Local Authority zero carbon fleet adoption (KTNiX™ challenge suite)
- Phase 2 – Greener performing economy underpinned by AI (KTN Workshops)

This is Gravity (Bristol City & Bristol City Airport) | Derby City

- Net Zero Logistics demonstrator
- Optimised in-city transport systems coupled with net zero Commercial Innovation park demonstrator

Fawley Waterside – Net Zero new town incubator.

- A COP26 programme to build a new town showcasing community scale solutions and net-zero performance (energy, water, waste, transport, food, maritime merchant city)
- KTN orchestrating the incubator strategy via a KTNiX™ competitive process.

Recent KTN Smart Urban impact programmes

Current KTN international interests for deployment of Digital Twin demonstrators:



South Africa

- Johannesburg
- Cape Town

Smart agenda: Smart waste recovery Energy Systems – Public Space Management



South Korea

- Seoul
- Busan

Smart agenda: Transport Systems | Optimised Port Systems | Disaster recovery | Government Building Asset Optimisation | Safer public space systems | Earth Observation Data | E Health



India

- Mumbai
- Delhi

Smart agenda: Optimised waste recovery & management | Safer public space systems | Earth Observation Data | Air Quality



Columbia

- Bogata

Smart agenda: Transport Systems | NZ Food Systems



10:20 Observations on the technology

Chris Bates-Keegan, DPC

**10:30 Open
Discussion**

