June 2018

Financing the Transition

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UK100 is a highly ambitious network of local government leaders, which seeks to devise and implement plans for the transition to clean energy that are ambitious, cost effective and take the public and business with them.


It supports decision-makers in UK towns and cities in their transition to 100% clean energy by 2050. It is the only network for UK cities focused solely on climate and clean energy policy.

UK100

90 leaders have so far pledged, from Edinburgh, Leeds, Liverpool Manchester, Newcastle Nottingham, Southampton & Swansea to Leicester, Milton Keynes, Norwich, Plymouth & Peterborough.

The Project

Councillor Judith Blake

Leader, Leeds City Council

UK100 Co-Chair

Councillor John Holdich

Leader, Peterborough City Council

UK100 Co-Chair

“We have commissioned research to identify potential interventions, support and policies that should enable more of us to make the transition faster, creating jobs, promoting better public health, generating income and helping our residents save money.”

The Project

Cities are transforming their energy supply. They want to go further, faster. So what needs to change?

THE PROBLEM:

Cities are ambitious but struggle to get their projects investor-ready

THE EVIDENCE:

THE SOLUTION:

An integrated place-based approach will meet national and local ambition

There is a growing consensus ...

- **Clean energy is not only compatible with economic growth but a driver of it.** “Green industries” growth 5% and expected to continue
- The **investment potential is enormous**. £30 billion in existing technologies
- And investing in the right way can **reduce costs to consumers**. Smart Power could save consumers up to £8bn p.a. by 2050

EXPORT POTENTIAL:

Global Market Leader

Investing in innovation enables us to be a global market leader in new technologies. Cities globally are seizing this opportunity. UK cities want to play a leading role.

POTENTIAL INVESTMENT:

Around £30 billion

Existing technologies and new infrastructure create a multiplier effect for the automotive industries and others.

THE BENEFITS

Productivity and Growth UK

From lower costs to more growth and jobs, improved productivity, rebalanced economy, focused on place, invest-to-save.

ENERGY SYSTEM OVERHAUL

We need to change to a more flexible and responsive energy system that can manage new energy generation and demand. By being clever we can keep costs down too.

And there are wider benefits ...

Why Cities?

Place-based transformation is required for national clean energy policy to be realised.
"Distributed leadership" is well-placed to deliver.

THEIR ROLE:

Globally cities are playing a major role in helping to bring about this change

In the UK ambitious cities have recognised how moving to clean energy can help meet other goals

THEY'RE UNIQUE:

Think across the whole economy

Engage with population

Can establish political consensus

Close to voters

Close to business

Identify ways to solve more than one problem at a time

THEIR POTENTIAL:

Growth centres: account for 58% of England's population & 61% of its employment

Industrial Strategy & **Exports**

Cutting costs

Keep value local

New opportunities in devolution
Significant scope to influence reduction of 60% of UK emissions.

THEIR ALLIES:

Alliances: We Mean Business, RE100, Aldersgate Group, UK Green Buildings Council keen to support and work closely with local leaders.

Shared objectives:
Planning standards for developers, Energy generation, Access to the grid

Smart Power requires integrated thinking

REQUIREMENTS

- Local Generation
- Storage
- Demand Flexibility

A CLEAN ENERGY SYSTEM

Diverse sources of generation and storage will need to be joined to consumers

Demand will need to be smoothed so we don't oversize the system to unnecessary peaks of demand

Cities can optimise the relationship between generation and demand.

The Challenge ...

There is no shortage of private finance for investable clean energy projects, but local authorities need technical development and commercial support to bring forward investor-ready projects

- With costs of many forms of renewable energy tumbling, **opportunities are growing for local authorities** that want to develop clean energy projects.
- The transformation of the energy system **needs local leadership**.
- Often the projects are too small scale to **attract private investment.**
- There is no process for projects to be **scaled and replicated**
- There is a role for a government committed to **an active industrial strategy** to bridge this gap.
- This will **enable local leadership** to meet some of the biggest challenges of the transition.

Cities and their innovations

Peterborough

Oxford

Swindon

Plymouth

Nottingham

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Bristol

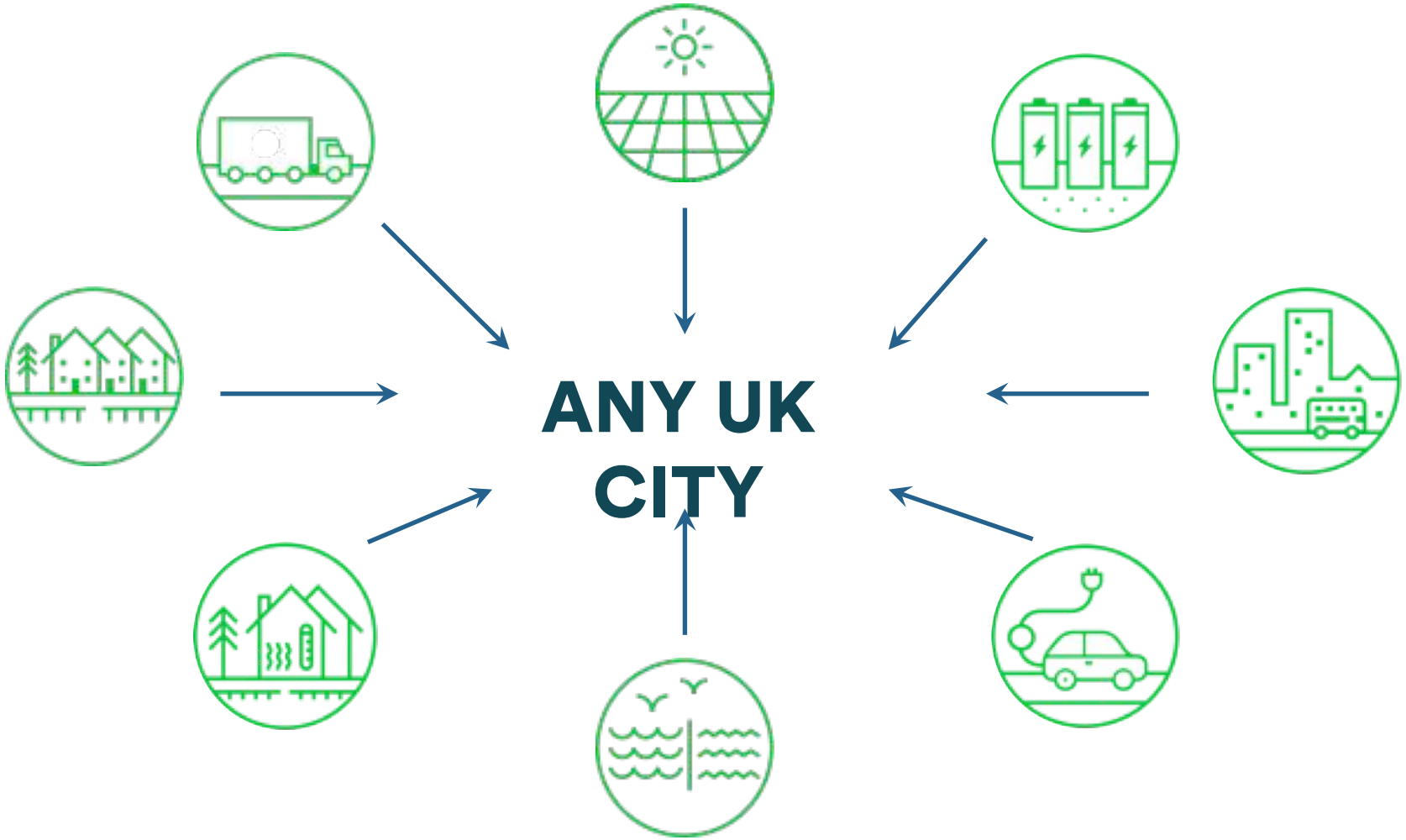
Leeds

Cornwall

Swansea

Edinburgh

Cities can make sense of investment opportunities in an integrated manner



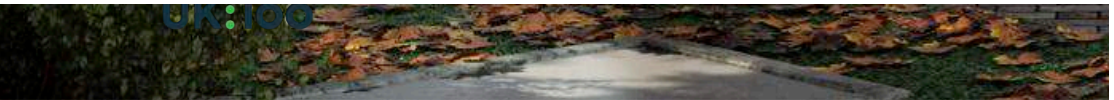
A GLIMPSE OF THE FUTURE (AND A PATHWAY TO IT)

Nottingham Trent Basin:

- Subsidy free commercial model for community energy.
- Community energy demonstrator on **400 homes**
- Community scale **battery technology**
- On-site solar PV
- Innovative energy efficiency including smart power
- Charging structure for EVs planned
- 100 such projects in a city could support **full transformation** - including retrofit

SENSIBLE

Storage-Enabled Sustainable Energy for Buildings and Communities



Nottingham – The Meadows: Nottingham's first low carbon neighbourhood

- Social housing. High deprivation levels.
- Energy storage reduces consumers' energy costs.
- Control of energy storage for a community increases PV generation.
- Energy storage improves the quality of the electrical power within an area;
- Demonstrates need to change restrictive policy and attitudes towards the use of energy storage at distribution level.

Nottingham Remourban: the potential of the urban regeneration model

New business model: affordable retrofit which can be financed out of energy savings without need for subsidy

- Retrofitting 450 houses in 3 different ways
- Bronze standard: LED and other easy to do EE investment
- Silver Standard: 4 low rise blocks of flats - insulation, battery storage, LED low temp DH, developing an ESCO model
- Gold standard: zero carbon by 2050, ambition to deal with 200-300 houses of same type. £60k budget per house with target of net zero carbon, £200 pa energy bill per house, few weeks for fit out, contractor to provide 30 year guarantee
- Includes transport: electric buses city car club,

What did we learn from these projects?

A SANDBOX

To encourage R&D & innovation

To **commercialise**

To demonstrate

To **scale** and replicate.

FINANCE

Create new business models

Access **private finance**

New partnerships

POWERS

Use of **planning powers**

Freedom to capitalise on **devolution**

Carbon reduction **metric**

FREEDOMS

Higher building standards

Procurement innovation

Ofgem **permissions**

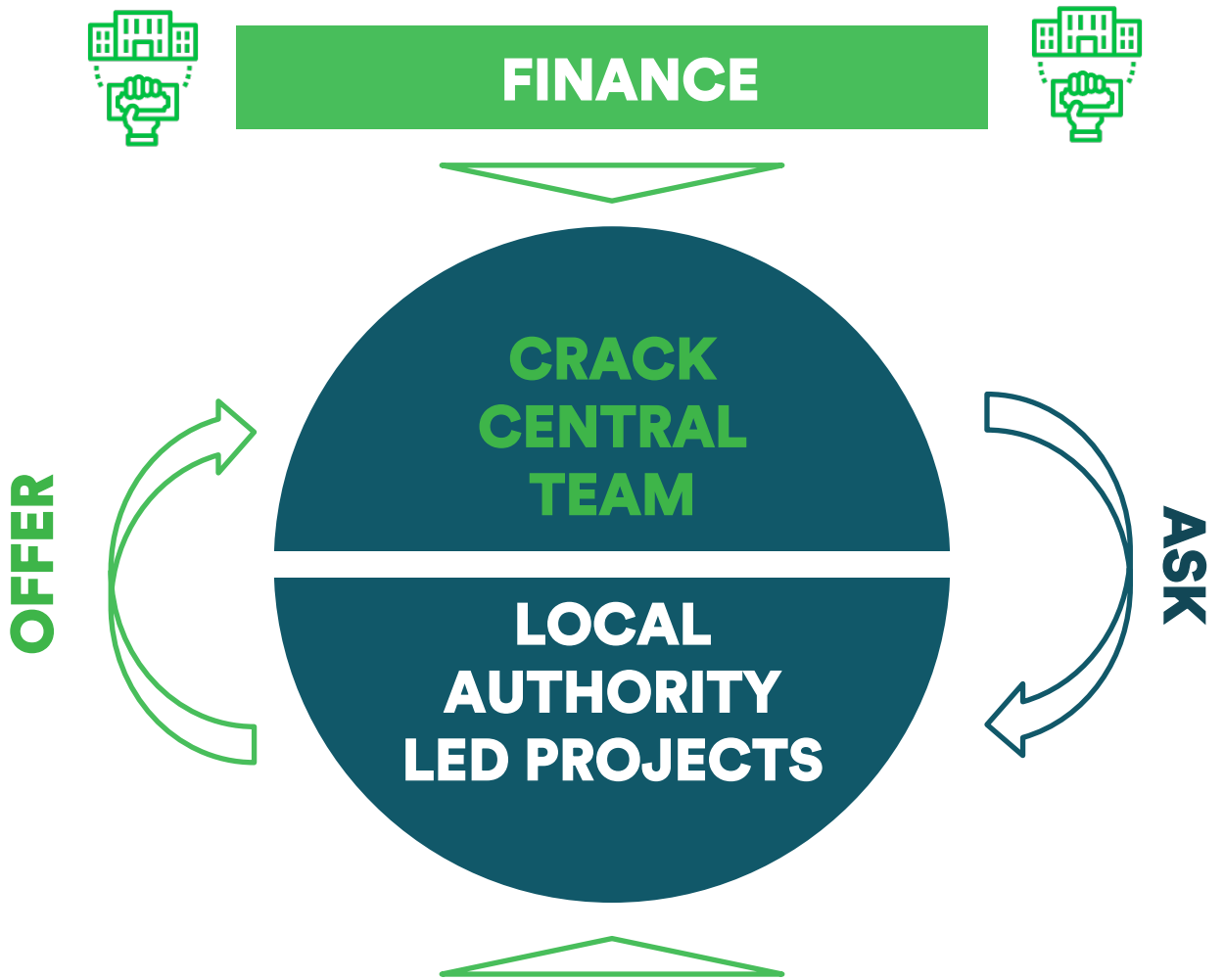
Dealing with the finance gap

Technical and finance assistance doesn't come for free
European funding won't always be available, but there are government funds

- **SCIENCE, INNOVATION DIGITAL TECH & SMART** funds that could be deployed for clean energy transformation
- **NATIONAL PRODUCTIVITY INVESTMENT FUND** £23bn for housing, R&D and economic infrastructure
- **SECTOR SPECIFIC POTS** OLEV, Salix, HNDU, Ofgem's LCNF/ENIC
- **BUSINESS RATES** An opportunity for revenue generation

These can leverage more public and private capital

Clean Energy Action Partnerships



CITIES: EXPRESS INTEREST → IDENTIFY POTENTIAL → BUILD PROJECT → EXECUTE ROLL OUT

Clean Energy Action Partnerships

OFGEM	HNDU	HCA	SALIX	Research programmes	OLEV	National Productivity Investment Fund
• Grid capacity	• District Heating	• Domestic retrofit	• Building retrofit		• Electric vehicles	• £23bn

CRACK CENTRAL TEAM + REGIONAL OUTREACH

Expertise

- Development
- Commercial
- Financing
- Energy networks
- Technical
- Regulation

Role

- Critical friend support
- Manage funding support
- Liaison with financing community
- Remove centrally driven barriers (e.g. regulatory changes)
- Policy development from experience

OFFER

Integrated projects

Scaleable Replicable Delivery

Feedback

LOCAL AUTHORITY LED PROJECTS

Integrated Projects that can be scaled for national impact | Credible plan for gaining public consent & support | Local delivery team with necessary expertise

Potential Partners

- Land developers
- Local Enterprise Partnerships
- DNOs
- House builders
- Industry
- {Systems integrators}
- Academic/research institutions/catapults
- Energy Companies

Potential Outcomes

- Local energy resilience
- Robust income streams
- Affordable energy supply
- Local grid rebalancing
- New industries and global exports
- Renewable energy deployment
- City-scale transformation
- Clean transport
- Demand reduction

ASK

Technical & Commercial Support

Access to finance

CITIES:

1. EXPRESS INTEREST

Expression of interest from cities (EoIs)

2. IDENTIFY POTENTIAL

EoIs selected that offer the greatest potential to accelerate Clean transition

3. BUILD PROJECT

Clean Energy Action Cities supported by a crack team of experts develop and deliver integrated projects

4. EXECUTE ROLL OUT

National roll out: successful approaches are applied at the national scale & supported into applicable export markets

Points for Discussion

- **Place-based solutions** –to meet local AND national needs
- **Integrated thinking** – and trying to meet every challenge
- **Rapid technology advances** changes financial risks.
- **Development capital** – is there sufficient available?
- Feedback to inform **replication and national roll-out**
- Exploring **effective scale**: beyond pilots.
- Overcoming **different attitudes to risk**


UK:
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