ENERGY STRATEGY WORKSHOP

30 November 2018

WELCOME

Mark Whitworth Sheffield City Council

09/02/2021

OUR AIMS TODAY

- To engage local, regional and national stakeholders in the next stages of the SCR Energy Strategy
- To discuss emerging local, national and international energy issues
- To present the draft SCR Energy Strategy and seek feedback on progress to date
- To develop and refine a Delivery Plan for the SCR Energy Strategy

10:10	Energy and climate change: from global issues to local action	Andy Sheppard and Jennifer Kelly Arup	
10:25	The role of city regions to deliver local energy and clean growth	Patrick Alcorn BEIS	
10:50	The emerging SCR Energy Strategy	Garreth Bruff, Sheffield City Region Emma Ashcroft , Carbon Trust	
11:10	Panel session: Q and A discussions		
11:35	Refreshments / tea and coffee		
11:55	Putting people at the heart of the energy system	Emma Bridge Community Energy England	
12:10	Towards a Delivery Plan – Emerging opportunities	Emma Ashcroft Carbon Trust	
12:30	Lunch and networking		
13:15	Developing our Delivery Plan	Workshops - round table discussions	
14:30	Plenary session Summaries and next steps	Emma Ashcroft Carbon Trust	
14:45	Event close		



ENERGY AND CLIMATE CHANGE: FROM GLOBAL ISSUES TO LOCAL ACTION

Andy Sheppard & Jennifer Kelly Arup

THE ROLE OF CITY REGIONS TO DELIVER LOCAL ENERGY AND CLEAN GROWTH

Patrick Allcorn BEIS

THE EMERGING ENERGY STRATEGY

Garreth Bruff, SCR Emma Ashcroft, Carbon Trust

TIMELINE TO NOW

- 2015 Strategic Economic Plan
 - 70k more jobs, 6k additional businesses, 30k higher skills jobs
 - Increase in GVA of £3bn
 - Low carbon economy and energy security
- 2016 Integrated Infrastructure Plan
 - Spatial packages of investment in major growth areas
 - Quality of place
 - Identified the need for an Energy Strategy
- 2017 work started on SCR wide Energy Strategy
 - SCR project with BEIS support



FACTORS SHAPING OUR WORK

- Combining different technologies
 - primary generation and secondary utilisation
 - demand reduction
- Focusing on the existing building stock and infra
 - domestic and commercial buildings
 - opportunities to work together
- Allowing for change
 - technology develops and may become dated e.g. gas CHP
 - some things have still to be decided e.g. Hydrogen grid conversion
- Sticking to areas where we can add value
 - somethings will happen anyway
 - somethings are better done locally or nationally



WHAT MAKES A STRATEGY EFFECTIVE?

- Shaped by evidence
 - we have some but will need more
 - we need to become an energy informed city region
- Centred around our assets
 - businesses, universities and communities
 - physical geography and infrastructure
- Broadly based
 - no single technology or solution
 - future proofing, keeping options open
- Clear and widely agreed
 - make some decisions and stick with them!
 - may mean leaving other areas to lead on some issues





1

2

Stakeholder engagement: crucial thread that runs through the project, aiming to ensure the greatest possible local input and support for the Strategy and Delivery Plan Phase 1: Develop vision, research and baseline analysis

Including:

Baseline analysis of heat, power and transport

Energy technology options appraisal

Mapping of Energy Opportunity Areas

Develop strategic vision

Develop of Action Plan

Including:

Identify short, medium and long term priorities

Phase 2:

Identify pipeline of opportunities

Assess and evaluate opportunities

Outline delivery mechanisms and routes to implementation



31%

reduction in carbon emissions between 2005 and 2015, despite a period of growth Our **Transport** emissions have only fallen by

9%

Significant **potential for new energy technologies** (e.g. energy efficiency, solar PV, heat networks, mine water heat, EVs, storage)



of the electricity we consume is generated within the SCR, making us a **net importer**

Our **Domestic** emissions have decreased by

21%

Manufacturing

is the is the largest emitting subsector within Industrial & Commercial emissions 19%

of electricity generated in the SCR is from renewable sources (mainly biomass, solar and onshore wind) The greatest decline in emissions seen in the Industry & Commercial sector, reducing by

43%



We need to **reduce carbon emissions** to limit global warming to 1.5°C and meet national and international targets

We need to find solutions to decarbonise heat and transport

We need to **keep** energy costs manageable for businesses and households

7%

increase in energy demand estimated by 2035

We want our energy intensive industries to remain productive and globally competitive

12%

of households in the City Region are in fuel poverty There is a continued **reliance on fossil fuels** (primarily natural gas)

Increasing the share of **locally owned generation**, will create jobs and skills



For the Sheffield City Region to become a leader in clean growth and low carbon innovation and a net contributor to the national energy grid, to deliver a stronger economy, significantly reduce carbon emissions, provide a better quality of life, and lead the way towards the UK's 2050 target.

We will achieve this through:

- a focus on our key sector strengths including advanced manufacturing, high performance materials (composites), digital and outdoor activites;
- the creation of new jobs, skills and enterprises in the energy and energy efficiency sectors;
- the widespread adoption of energy efficiency measures within both businesses and homes to reduce their energy consumption and bills, particularly for the most vulnerable residents;
- supporting a local energy marketplace and supply chain to increase the proportion of locally generated renewable energy; and
- considerate natural resource management

CARBON Four strategic priorities underpinning the energy strategy

1 Drive clean growth in our local businesses

Improve our homes and neighbourhoods



2

Accelerate the shift to low carbon transport



Invest in new, low carbon heat and power generation and storage

CARBON TRUST **Priority 1: Drive clean growth in our local businesses**

- Build a centre of excellence for businesses and research institutions as a contribution to the Global Innovation Corridor - delivering products and services to the low carbon sector, creating the conditions for new start-ups, innovation and highly skilled job creation
- Facilitate clean growth across major businesses within the region, implementing cluster schemes to deliver energy and cost savings and drive product innovation in our key growth areas, focussing on key sectors including advanced manufacturing, high performance materials (composites), digital and outdoor activities
- Provide support to our significant SME sector to help them invest in resource and energy efficiency measures that enhance their competitiveness and take advantage of digital solutions
- Achieve economies of scale through a one public estate strategy for decarbonisation, implementing joint solutions across energy efficiency, renewable generation and transport
- Facilitate low carbon energy, clean growth and efficiencies through public investment and commissioning programmes, and creating a Growth Hub (backed by a local growth fund) focussing on clean tech and the energy sector

CARBON TRUST Priority 2: Improve our homes and neighbourhoods

- Invest in widespread energy efficiency improvements to existing homes across the region to improve health, deliver local jobs, achieve affordable warmth and combat fuel poverty
- Become a leader in community energy and municipal-led energy supply to facilitate the deployment of microgeneration and energy efficiency measures that benefit local people and improve energy resilience
- Improve the energy efficiency and sustainability standards of new housing schemes and commercial developments (beyond Building Regulations Part L), adopting passive building design and modern construction methods to minimise energy consumption, in line with national commitments to halve building energy use by 2030
- Work with Local Planning Authorities to share evidence, knowledge and best practice that will facilitate the adoption of ambitious energy and climate change local plan policies
- Encourage energy efficient behaviour in homes through engagement via schools and workplaces as well as other Community Assembly Areas and community "institutions" like football clubs or community groups
- Invest in new, innovative technologies and measures to reduce energy consumption, such as whole house refurbishment and smart meters

CARBON TRUST Priority 3: Accelerate the shift to low carbon transport

- Deliver a clean, efficient and well integrated transport network that tackles air quality and increases the proportion of journeys on our bus, rail and tram networks
- Promote and provide the infrastructure necessary to encourage active travel across the SCR, including walking and cycling, to deliver significant health benefits
- Accelerate the deployment of ultra-low emission and autonomous vehicles, including electric and hydrogen fuel cell vehicles and supporting rollout of strategic charging/refuelling infrastructure, drawing on local university and industry expertise
- Extend the electrification of the existing rail network and maximise the benefits of high speed rail through HS2 and connection of key urban centres and employment sites to a range of sustainable transport options



- Drive investment in new heat networks and the extension of existing networks, incorporating low carbon and renewable sources of heat including waste heat, heat pumps and CHP
- Take the lead in the development and deployment of renewable energy projects that capture and store waste heat in abandoned mines across the SCR
- Develop and deploy smart grid and innovative technologies including demand side response, smart meters and energy storage, capturing the value from the existing digital strengths across the SCR
- Accelerate the deployment of distributed generation and low carbon energy projects including solar, biomass and onshore wind

PANEL SESSION

- Have we got it right so far?
- Is anything missing?
- What can you do to help deliver the strategy?

PUTTING PEOPLE AT THE HEART OF THE ENERGY SYSTEM

Emma Bridge Community Energy Trust

09/02/2021

TOWARDS A DELIVERY PLAN – PROJECT OPPORTUNITIES

Emma Ashcroft Carbon Trust

09/02/2021 21



Purpose of the delivery plan: To consider all the information and data that has been collated as part of this strategy, to feed into the development of scenarios, projects and actions which will allow the SCR to meet its energy ambitions.

Identify projects and programmes

Evaluate and prioritise

Outline the key delivery mechanisms

- Drawing on baseline analysis
- What improvements are needed?
- What is already being done across the SCR?
- Creation of a project pipeline

- How does the proposal support the SCR vision?
- What benefits does the proposal deliver?
- Does the delivery plan achieve the overall aims?

- What delivery mechanisms are needed to meet energy ambitions?
- Considering the key organisational roles and resource needs/opportunities
- What business models and sources of finance will be needed?



Categories covered in our pipeline:	 Project pipeline forr 	Project pipeline formulated based on a variety of sources				
Electric Vehicles	Projects have been	Projects have been categorised by strategic priorities of the SCR				
- Solar PV - Geothermal	Emphasis on identif	Emphasis on identifying SCR-wide projects				
Energy Storage	Projects to be asses	Projects to be assessed against evaluation framework				
- Demand Side Response						
Domestic EE	Drive clean growth in	Improve our homes and	Accelerate the shift to	Invest in new, low carbon		
Non-domestic EE	our local businesses	neighbourhoods	low carbon transport	heat and power generation and storage		
Community energy				80		
Heat networks	7 projects	10 projects	11 projects	9 projects		



Each table has a nominated facilitator to guide the discussion and answer questions

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Prioritisation criteria Understand the proposed prioritisation criteria **Project identification**

Identify additional projects, capturing available detail to enable further development 5

Strategic fit	The extent to which the project aligns to strategic priorities identified within the Sheffield City Region ESDP, SEP, and emerging Local Industrial Strategy	 How well aligned is the project to local strategic documents? Does the project contribute towards improving energy infrastructure across the region? Does the project deliver social benefit? E.g. alleviating fuel poverty
Deliverability	The ability to demonstrate that the project is deliverable, including the complexity, risks, planning permission and consents and adequacy of funding package	 Is the project realistic and deliverable within the timeframes? Have the risks been identified and mitigated? Has the project secured, or identified a reliable route to secure a sufficient funding package to enable it to reach financial close? Has the project secured, or identified a reliable route to secure the necessary planning permission and consents?
Economic outcomes	The economic impact, including the value and number of jobs created, the ability to drive economic growth and raise productivity, and the delivery of skills outcomes	 Will the project improve job opportunities and drive economic growth? Will the project deliver positive skills outcomes? Does the project improve productivity levels? Does the project drive sectoral or technology innovation?
Environmental benefits	The ability of the project to deliver environmental benefits, including in GHG emissions reduction, climate change mitigation air quality improvement	 Does the project deliver climate change mitigation through absolute carbon reduction or the reduction of emissions intensity to facilitate sustainable growth? Does the project help to deliver improvements to air quality levels? Does the project have potential to deliver scalable environmental benefits?
Value for money	The ability of the project to provide a competitive levelised cost of energy (LCOE), payback period and cost per tonne of carbon mitigated	 Does the project achieve a competitive LCOE? Does the project achieve a low cost per tonne of carbon mitigated? Is the project cost effective?



This session should focus on projects which align to the four priority areas

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Notes on your table:

- Briefing note including a summary of the baseline and strategic priority areas
- Current pipeline of opportunities
- Copy of the PowerPoint slides

In your group:

- Provide feedback on existing identified projects, including more information where available
- Identify any major gaps and/or propose project ideas and provide supplementary information – using the project information template
- Consider stakeholder roles, finance and risk mitigation



Facilitator to summarise discussion

Any particular topics or themes raised?

What are the key opportunities and challenges?

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- How we take this forward
 - First draft December 2018
 - Testing and getting feedback Jan Feb 2019
 - Finalising March 2019
- Adoption and implementing
 - Supporting project delivery
 - Managing a live pipeline
- Thank you
 - but we need to stay in contact