



NORTH LINCOLNSHIRE GREEN ENERGY PARK



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Public Consultation Information

The proposed North Lincolnshire Green Energy Park
at the Flixborough Industrial Estate

26 May 2020 – 14 July 2020

Introduction

This booklet outlines our development proposals for the North Lincolnshire Green Energy Park, to be located at the site of the Flixborough Industrial Estate.

At this stage, we are introducing our vision for the scheme, the way we will develop our proposals in more detail, and the processes we will be following to seek development consent. We are also asking for your initial feedback on the project.

We are consulting at a time when the need to protect everyone's health means we cannot hold face to face meetings. This means we are asking for your views in ways which may be different to other consultations you may have attended previously.

We have thought carefully about ways to ensure that everyone across the community can respond to the consultation in these uncertain times, caused by the impact of COVID-19. We explain how to find out more about the scheme and respond to the consultation later in this booklet.

Who is Solar 21?

Solar 21 is promoting the North Lincolnshire Green Energy Park.

Solar 21 sources, develops, and manages renewable energy projects across a range of technologies including solar, biomass, biogas and energy recovery facilities.

Locally, Solar 21 built an award winning 23-megawatt biomass plant at Tansterne that ensures 150,000 tonnes of waste wood no longer goes to landfill. Solar 21 also built a 2-megawatt biogas plant at Plaxton which processes 80,000 tonnes of potato pulp each year. A new 26-megawatt Energy Recovery Facility, located at Melton, near Hull, is under construction and will turn 250,000 tonnes of refuse derived fuel, that would normally go to landfill or export, into useable energy. Construction will soon begin on another biogas plant co-located on the same site.

These projects help to deliver the UK Government's Clean Energy Strategy, which aims to boost renewable energy technology usage in the UK. In the East Midlands and South Yorkshire alone, Solar 21 has provided inward investment of £260m, into assets valued at £750m that will employ 150 local staff.



ENERGY RECOVERY



BIOGAS

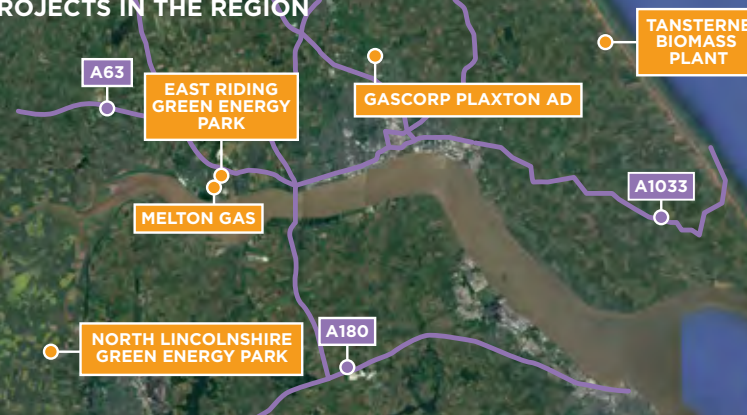


SOLAR



BIOMASS

PLAN OF OTHER SOLAR 21 PROJECTS IN THE REGION



Our vision for the North Lincolnshire Green Energy Park

The North Lincolnshire Green Energy Park is an innovative proposal utilising a combination of technologies, to ensure that as much energy as possible is recovered from waste that cannot be recycled.

THE CORE INFRASTRUCTURE: GREEN ENERGY

At its core will sit an Energy Recovery Facility, generating up to 95-megawatts of electricity from 380-megawatts of thermal energy. To ensure the greatest possible efficiency, this will sit alongside 10-megawatts of hydrogen storage, 30-megawatts of battery storage, 120 tonnes of steam storage, and an ash treatment facility. The Energy Recovery Facility and associated energy developments are the focus of this consultation.

The Energy Recovery Facility will make a major contribution to waste management across the region, using up to 650,000 tonnes of residual waste, that might otherwise go to landfill or export every year. In doing so it will generate enough energy to meet the needs of up to 193,000 homes. It could also provide power, heat and cooling to the proposed new hospital in Scunthorpe.

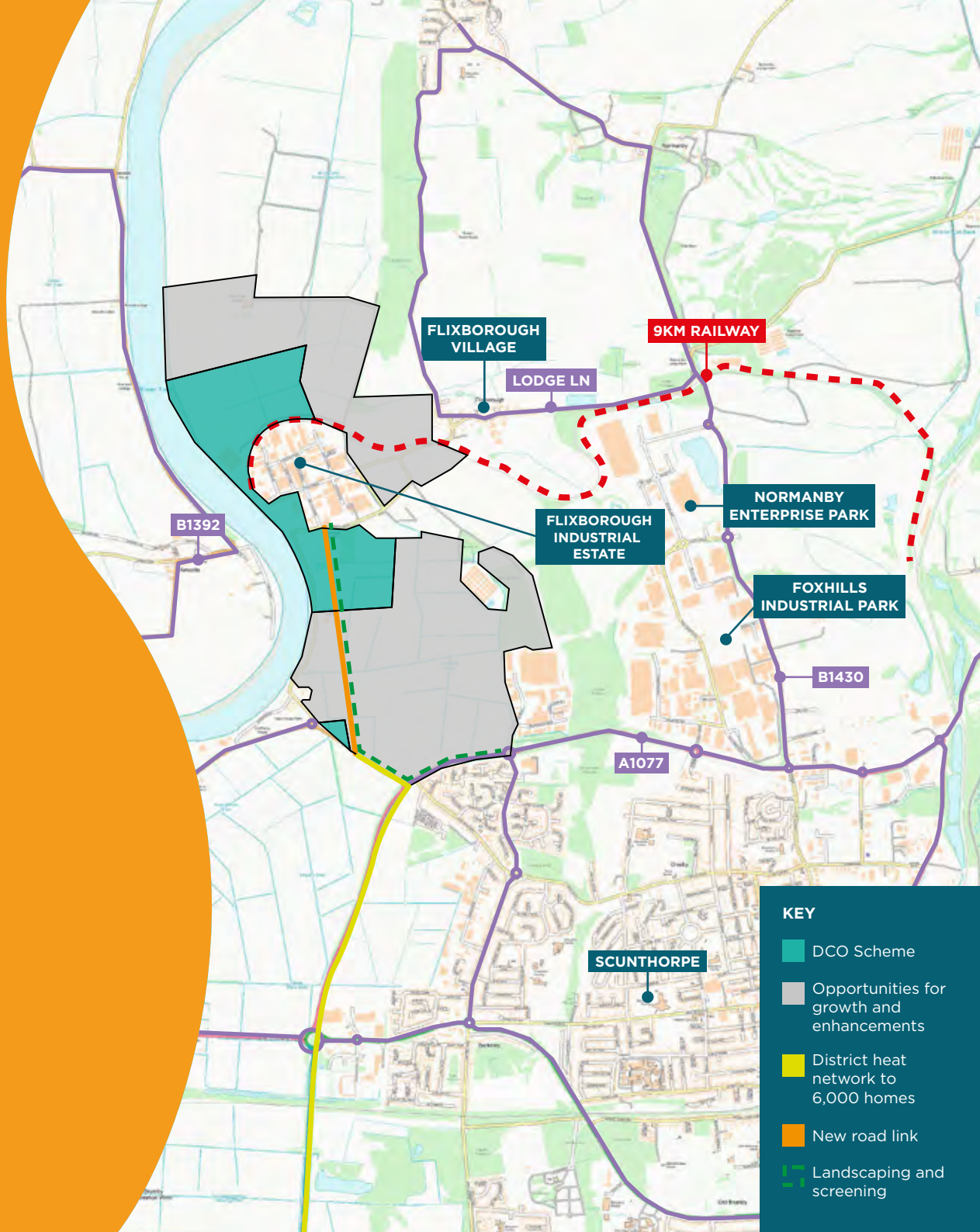
Due to the size of the energy output, the scheme is classified as a Nationally Significant Infrastructure Project. This means we need to apply to the relevant Secretary of State for development consent to build this part of the scheme, rather than the local council. As it will require a Development Consent Order (or DCO), we refer to this as the DCO Scheme.

The DCO Scheme is expected to generate up to **300** new jobs.

GROWTH OPPORTUNITIES

Local businesses will be able to use the heat generated by the Energy Recovery Facility, cutting their operating costs whilst making a sustainable use of a by-product. This will help attract businesses to the area such as manufacturing and chilled storage, and 'glasshouse' agriculture. We have estimated that this may create around 1,000 jobs.

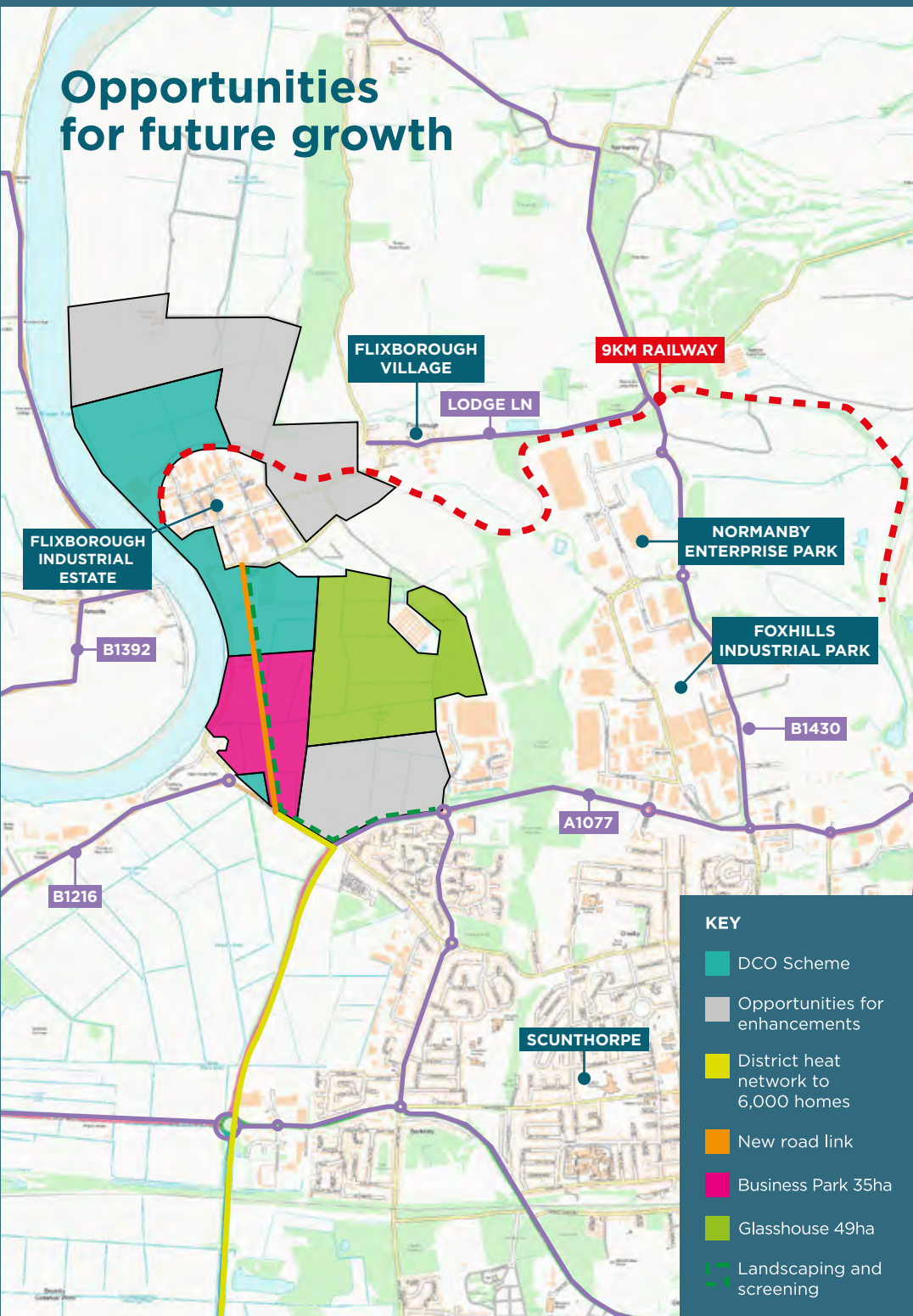
These future opportunities are not part of the Nationally Significant Infrastructure Project and are therefore not directly part of this consultation. We will be applying separately to North Lincolnshire Council for planning permission, for any wider development.



KEY

- DCO Scheme
- Opportunities for growth and enhancements
- District heat network to 6,000 homes
- New road link
- Landscaping and screening

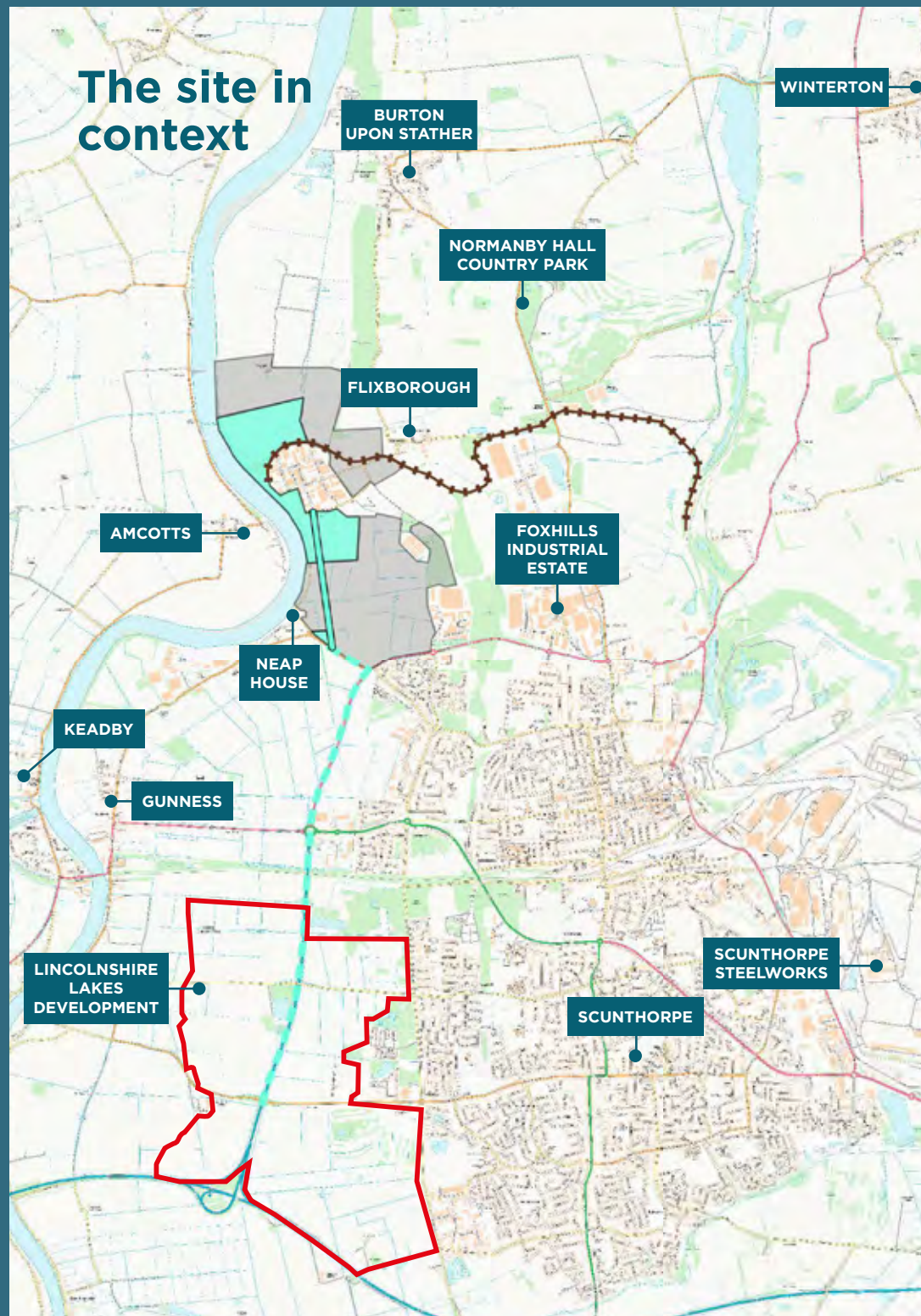
Opportunities for future growth



KEY

- DCO Scheme
- Opportunities for enhancements
- District heat network to 6,000 homes
- New road link
- Business Park 35ha
- Glasshouse 49ha
- Landscaping and screening

The site in context



Local and national benefits



650,000 TONNES OF
NON-RECYCLABLE
WASTE

=



95-MEGAWATTS
OF ENERGY
GENERATED

=



ENERGY NEEDS
OF UP TO
193,000 HOMES



UP TO 1 MILLION
TONNES BY
RAIL



IMPROVED CYCLE
AND PEDESTRIAN
CONNECTIVITY



DECARBONISATION
OF HOMES AND
TRANSPORT



380-MEGAWATTS
OF THERMAL
ENERGY

=



OPPORTUNITIES FOR
NET-ZERO CARBON
BUSINESS DEVELOPMENT

=



POTENTIAL
FOR MORE THAN
1,000 JOBS



POTENTIAL POWER,
HEAT AND COOLING
TO THE PROPOSED
NEW HOSPITAL IN
SCUNTHORPE



ASH TREATMENT
TO REMOVE
CONTAMINANTS



DIRECT CREATION
OF UP TO 300
NEW JOBS



NON FOSSIL
FUEL SOURCE
FOR VEHICLES



A HYDROGEN BUS
PILOT SCHEME FOR
SCUNTHORPE



UP TO 600,000
TONNES TO TRAVEL
BY WATER

Why is the DCO Scheme needed?

The Energy Recovery Facility will help meet two urgent national and local needs: to reduce the amount of waste going to landfill and to generate low carbon energy.

WASTE

26 million tonnes of waste left over after recycling in the UK is turned into refuse derived fuel, exported or sent to landfill every year. Refuse derived fuel is a way of recovering energy from waste that would otherwise go to landfill.

There are not enough facilities in the UK to process all the refuse derived fuel produced. 12 million tonnes a year, nearly half of the refuse derived fuel produced in the UK, is exported abroad or sent to landfill. Nearly one million tonnes of this currently travels by road to the Humber Ports and is exported.

ENERGY


At the same time, the UK's energy requirements are changing. The Government plans to close all coal-fired power stations by 2025, and to reach net-zero carbon emissions by 2050. Consequently, there is an urgent national need for new, low carbon energy generation.

The demand for energy is also becoming more complex. National Grid expects there to be up to 36 million more electric vehicles on UK roads by 2040. Our proposals can help address these changing patterns of demand by combining energy recovery with a range of energy storage technologies at the same site.

The North Lincolnshire Green Energy Park is being proposed within the North Yorkshire and Humber sub-region, where the Humber Local Enterprise Partnership has adopted an ambitious vision to see the area lead in renewable energy development and skills.

Destinations of refuse derived fuel in the East Midlands


THE GOVERNMENT PLANS TO
CLOSE ALL COAL-FIRED POWER
STATIONS BY 2025


INCREASED ENERGY
DEMAND FROM 36M
ELECTRIC CARS

INCOMING MATERIAL (TOP 6 CODES ONLY)

20 03 01

17 09 04

17 05 04

17 08 02

19 12 12

17 01 02

KEY:

Input

- 20-03-01 - Bio-degradable waste
- 17-09-04 - Mixed construction waste
- 17-05-04 - Soil and stones
- 17-08-02 - Gypsum-based materials
- 19-12-12 - Mechanically treated waste
- 17-01-02 - Brick

Output

- 19-12-12 - Mechanically treated waste
- 19-12-10 - Refuse Derived Fuel
- 19-12-07 - Non-hazardous wood
- 19-12-01 - Paper and cardboard
- 19-12-05 - Glass
- 19-12-02 - Ferrous metals

OUTGOING MATERIAL (TOP 6 CODES ONLY)

TREATMENT KEY:

- LANDFILL
- INCINERATION
- RECOVERY
- TRANSFER
- TREATMENT
- OTHER







DESTINATION:

- EAST MIDLANDS
- OUTSIDE UK
- WEST MIDLANDS
- YORKS & HUMBERS
- NORTH WEST
- SCOTLAND
- OTHER

The energy recovery process

The process used to recover energy from waste left over after recycling at the North Lincolnshire Green Energy Park will make it one of the cleanest and most efficient facilities of its type in Europe.

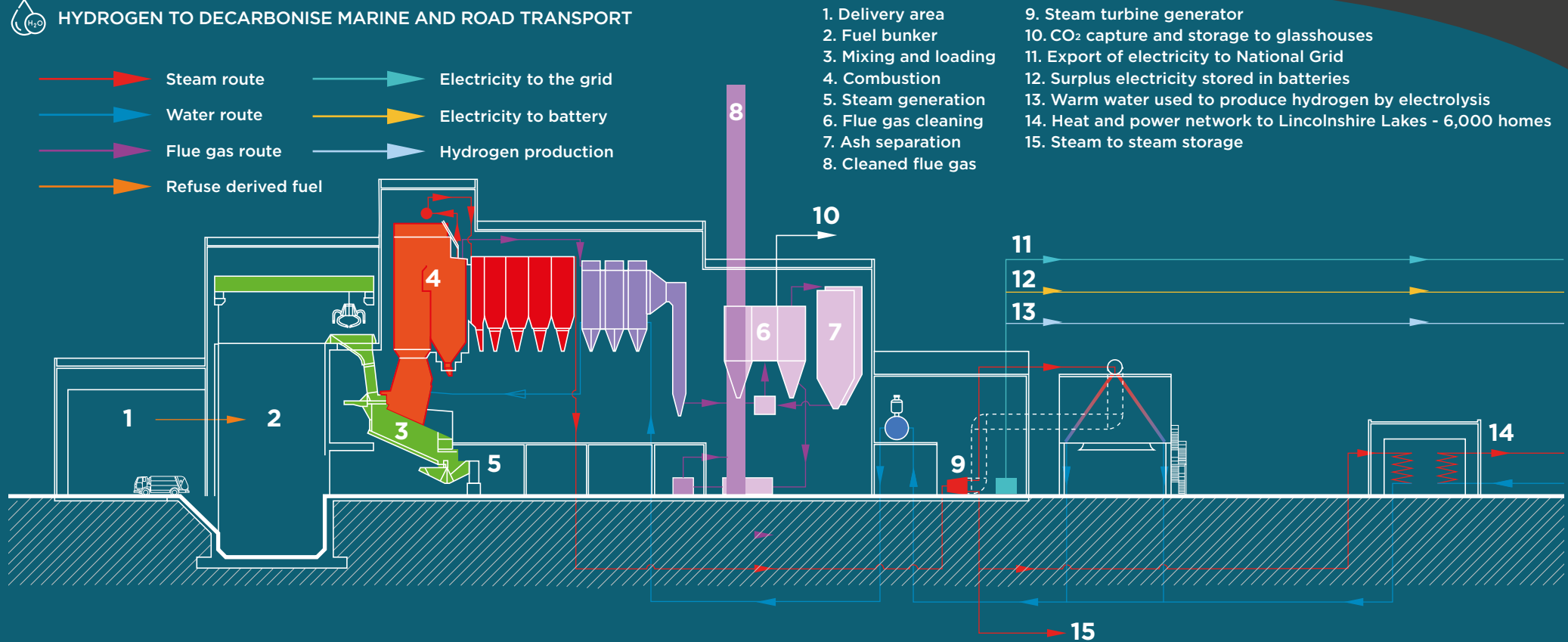
Project Aims

-  650,000 TONNES OF REFUSE DERIVED FUEL = 3.3 MILLION MWh
-  CAPTURE AND USE OF 250,000 TONNES OF CARBON DIOXIDE PER YEAR
-  HEAT TO 6,000 HOMES AT LINCOLNSHIRE LAKES
-  170,000 TONNES OF ASH TURNED INTO CONCRETE BLOCKS
-  COMMUNITY ELECTRIC VEHICLE CHARGING SCHEME
-  HYDROGEN TO DECARBONISE MARINE AND ROAD TRANSPORT

The Energy Recovery Facility will process refuse derived fuel to heat water into steam, which will turn a turbine to generate electricity. Refuse derived fuel is made from unrecyclable elements of your black bag waste and is a greener alternative to fossil fuels. Carbon dioxide, created as a result of this process, will be captured and cleaned from the exhaust gases and other emissions will be neutralised or mitigated prior to release.

There are very strict rules and regulations which set out what emissions can be released from energy recovery facilities via the chimney/stack as a result of the recovery process. We will work within these strict limits and along with the regulatory authorities may monitor what is released from the facility using an automatic system, operating 24 hours a day.

The aim is for the project to be able to capture, store and use as many of the by-products from the recovery process as possible, including carbon dioxide and ash. The ash from the energy recovery process may be treated and used on site to manufacture concrete blocks for use in construction, and the carbon dioxide will be used for glasshouse crop production.



Storing energy

Effective energy storage helps provide more energy for the nation to use as and when it is needed. Energy will be stored at the North Lincolnshire Green Energy Park using a variety of methods:



10MW OF HYDROGEN PRODUCTION AND STORAGE

Hydrogen is produced by electrolysis using hot water from the Energy Recovery Facility. Hydrogen is the most efficient method of long term energy storage.

120 TONNES OF THERMAL ENERGY (STEAM) STORAGE

We will capture and store excess heat as steam, and it will be possible to make this available for district heating in the local area to lower costs and increase energy efficiency. The ability to manage excess heat will feed the district heat system and lower domestic carbon usage.



30MW OF BATTERY STORAGE

This method will provide resilience to the National Grid. It will ensure there is a supply of stored electricity resources which can be released when local and network demands are high. It will also ensure that the electric vehicle charging station will use off-peak power to charge vehicles at peak demand.

Employment and skills

Our proposals will give a significant boost to the local economy, providing substantial investment, high quality jobs, apprenticeships and training opportunities.

THE DCO SCHEME: GREEN INFRASTRUCTURE

Figures from a recent economic report produced by consultants Mott MacDonald suggest that up to 300 jobs could be created within the DCO Scheme. These elements are the focus of this Development Consent Order submission.

We will place a major emphasis on creating training opportunities at the site, including an apprenticeship scheme with up to 100 places. We will also welcome school groups and other visitors to the site, so that we can educate the next generation about the role of the Energy Recovery Facility as part of the UK's energy supply.

GROWTH OPPORTUNITIES

Our plan is that the North Lincolnshire Green Energy Park will eventually include a glasshouse development and business park. This would consist of up to 40,000 square metres of business space.

The opportunity to co-locate a glasshouse development will utilise heat and carbon dioxide from the Energy Recovery Facility.

Mott MacDonald have suggested these additional developments could create more than 1,000 jobs and support the longer-term sustainability of the port.

These additional elements will be brought forward as separate planning applications.

FULL TIME EQUIVALENT ROLES CREATED AT THE NORTH LINCOLNSHIRE GREEN ENERGY PARK

SITE AREA	FULL TIME EMPLOYEES CREATED (estimated)	EXISTING USE FULL TIME EMPLOYEES (estimated)
CORE FACILITY		
Energy Recovery Facility/refuse derived fuel storage facility (including concrete block manufacturing unit)	100	18
SUPPORTING INFRASTRUCTURE		
Maritime development	18	18
Railway line and railhead	10	0
Electric vehicle charging and hydrogen refuelling stations	5	0
FUTURE GROWTH OPPORTUNITIES		
Commercial Glasshouse	60	0
Business Enterprise Park	986	0
TOTAL	1,179	36

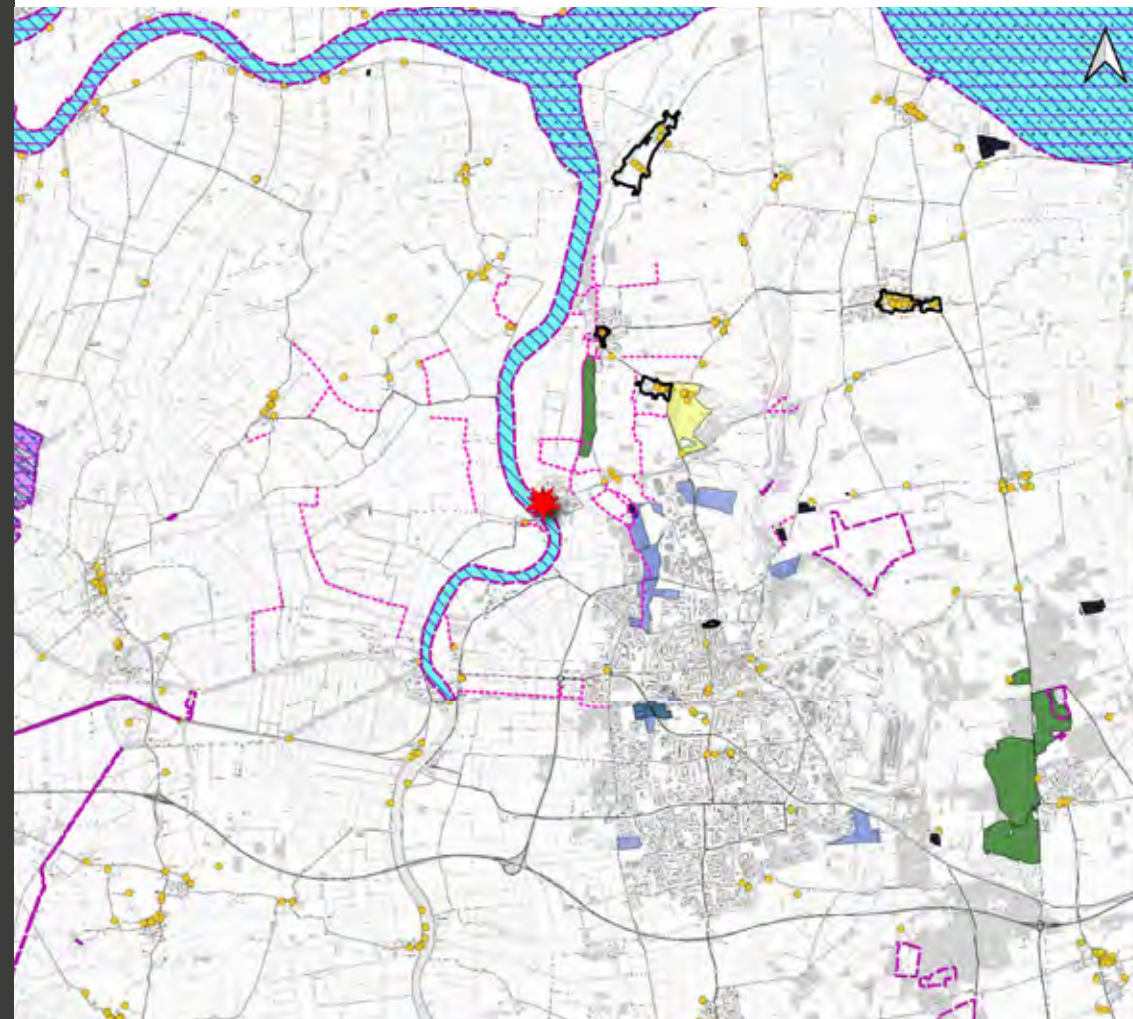
Environmental impact assessments

The North Lincolnshire Green Energy Park will be designed to be sustainable and to capture and use as many by-products of the energy recovery process as possible. However, as with any major infrastructure project, we recognise that the DCO Scheme has the potential to cause some environmental impacts, but it also offers the opportunity to create enhancements. For example, the DCO Scheme is likely to include planting as screening and for biodiversity reasons, which will also help absorb carbon dioxide. Ash treatment will remove potential contaminants and dioxins, and carbon dioxide capture will further clean flue gases.

All potential environmental impacts will be identified, minimised as much as possible and managed. To this end, habitat surveys have been undertaken over the past two years. We will produce and submit a thorough Environmental Impact Assessment with the application for consent submitted to the Secretary of State. This will be produced in line with the Planning (Environmental Impact Assessment) Regulations 2017 and will include detailed assessments of the DCO Scheme's potential impacts on matters such as: landscape and visual amenities; existing road and other transport infrastructure; noise and vibration; socioeconomics; cultural and archaeological heritage; pollution and air quality; water and ground conditions; and any cumulative effects. The Environmental Impact Assessment will identify and propose suitable mitigation.

The Environmental Impact Assessment is a long-term process, which needs to take place over time. From the start, we need to agree the types and scope of assessments we carry out with regulatory bodies such as Natural England and the Environment Agency. We are early in this process and will present further information on this at the statutory consultation.

Initial environmental constraints plan



Transport and access

The site already benefits from excellent transport links. Our aim is to maximise the use of the jetty and the rail link. Flixborough Port, which has the capacity to handle in excess of 600,000 tonnes per year of goods by sea, will remain operational, co-located with the Energy Recovery Facility.

It is proposed that the North Lincolnshire Green Energy Park will be accessed by rail, river and road. These elements will form part of the Development Consent Order application.

RAIL

The private 9km long, single track railway line that connects Flixborough Port with the steel works at Scunthorpe will be cleared and brought back into use to transport refuse derived fuel, ash, and concrete products. We will also apply as part of the Development Consent Order application to build a new railhead where the railway line joins the new extended jetty.

RIVER

We will utilise the River Trent via Flixborough Wharf. We will be applying as part of the Development Consent Order to extend the existing jetty from 180m to 380m.

ROAD

Flixborough Industrial Estate is close to the A1077 and is connected to the strategic motorway network via the M181, located approximately 5km to the south. As part of the DCO Scheme, we will build a new link road from the Flixborough Industrial Estate to the A1077 to reduce impacts on nearby homes and improve access from the south.

SUSTAINABLE TRANSPORT

We will also work to decarbonise local transport. The proposals will include electric vehicle charging and a hydrogen refuelling station. This could support a hydrogen bus pilot scheme in Scunthorpe.

Health and safety

The health and safety performance of the North Lincolnshire Green Energy Park is of utmost importance to Solar 21. Our commitment to employees and the local community is that their continued well-being and safety will always be our highest priority.

Well managed energy recovery sites are safe, and there is a long and proven track record of reliability and efficiency in this highly regulated sector.

Any emissions will be managed by state-of-the-art air pollution control and filtration systems. The Environment Agency sets and rigorously enforces the emissions limits for energy recovery facilities, which ensures every site operates within the legal parameters.

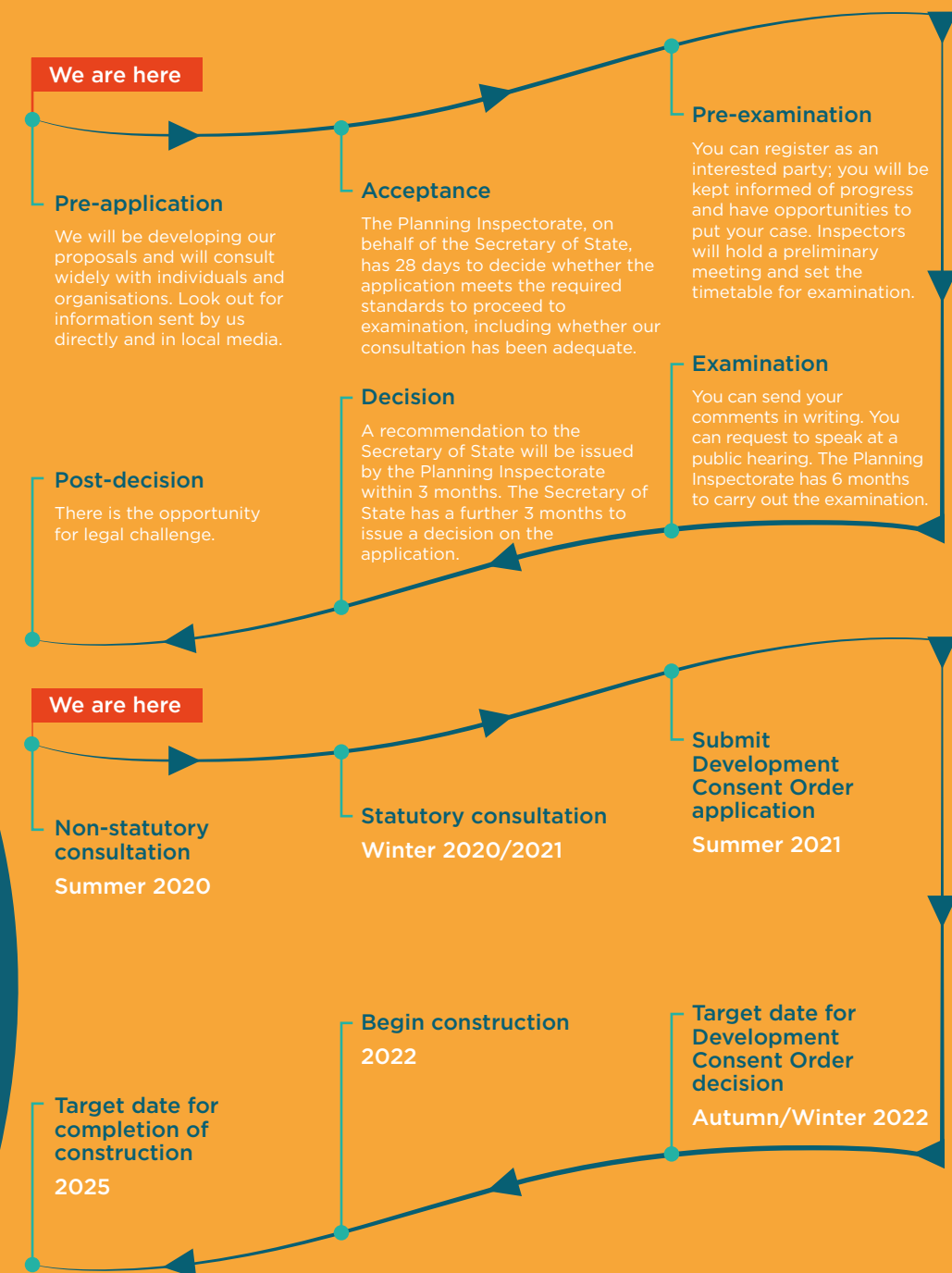
The National Infrastructure Planning Process

The DCO Scheme is classified as a Nationally Significant Infrastructure Project. This is because the Energy Recovery Facility will have the capacity to generate more than 50-megawatts of electricity. This means consent must be granted by the Secretary of State for Business, Energy and Industrial Strategy through a Development Consent Order. The consent process for Nationally Significant Infrastructure Projects is set out in the Planning Act 2008.

Unlike local planning permissions, which are considered by local planning authorities, Development Consent Order applications are assessed by the Planning Inspectorate. This government agency manages the application process on behalf of the Secretary of State.

Development Consent Order applications follow a fixed, statutory process which requires the applicant to consult with the local community and key stakeholders before the application is submitted. These stakeholders include: North Lincolnshire Council, Natural England and local parish councils among others.

We intend to carry out two rounds of consultation before submitting the Development Consent Order application. This first round is a voluntary (non-statutory) high-level informal consultation to introduce the DCO Scheme to local people. We will use what we learn from this first stage of consultation to help inform a more detailed proposal. The second (statutory) round of consultation, planned for later this year, will contain further detail about the proposals and a preliminary assessment of environmental impacts.



Your views

We want to understand the issues that are important to you, as well as any suggestions you may have.

The consultation is taking place at a time when it is not possible to meet in person, due to the COVID-19 pandemic. We are continuing with the consultation given the wider context of the urgent national energy need that the DCO Scheme will help meet.

It is very important to make sure that anyone in the community who wants to find out more or share their views on the proposals, is able to do so. We are providing a range of ways to do this.



How to find out more

- 1 **Visit our website:** www.northlincolnshiregreenenergypark.co.uk
- 2 **View a presentation** we will give about the proposals online through a webinar. This will also offer the opportunity to ask questions about the proposals. You can register for the webinar on our website, or by using the contact details below.
- 3 **Book an appointment** to speak with us individually by telephone using the contact details below. This will offer an opportunity to speak with the project team directly and ask any questions you may have.
- 4 **Contact us on:**
0800 130 3353
info@northlincolnshiregreenenergypark.co.uk
FREEPOST RTXY-USYY-HAXE, c/o Newgate Communications, Sevendale House, 5-7 Dale Street, Manchester, M1 1JA

Consultation

We are consulting between **26 May 2020 and 14 July 2020**. We would be very grateful if you could share your response by the closing date of the consultation.

Following this consultation, we will consider all the comments we receive, continue our technical and environmental assessments, and prepare our design. We will present more information on this at the statutory consultation stage later this year.

HOW TO RESPOND

Complete a questionnaire online at
www.northlincolnshiregreenenergypark.co.uk

Email us at
info@northlincolnshiregreenenergypark.co.uk

Write to us at
FREEPOST RTXY-USYY-HAXE, c/o Newgate Communications, Sevendale House, 5-7 Dale Street, Manchester, M1 1JA



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