

Nottingham - A Smart Energy City

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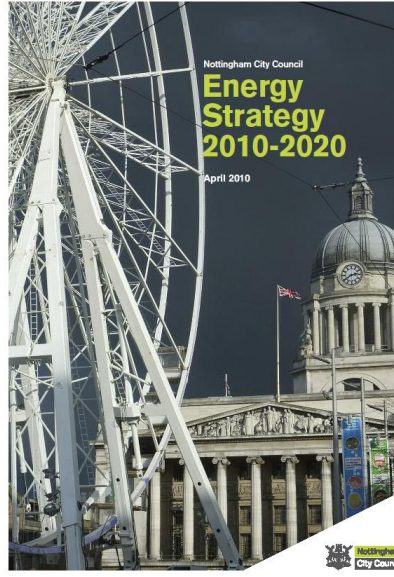
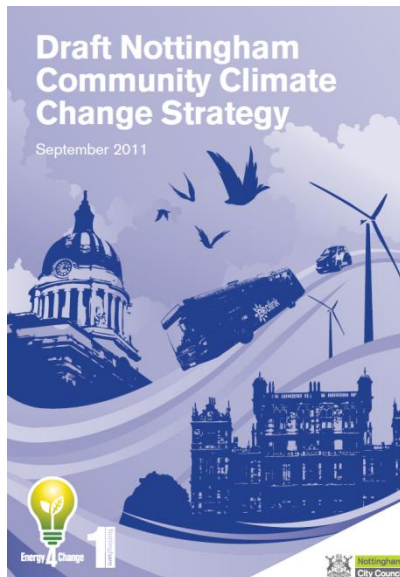
City Energy Manager

Nottingham City Council



Energy is our focus

- Manifesto commitments
- SCS and strategies
- Jobs ,prosperity, better neighbourhoods and a response to fuel poverty



Key manifesto commitments

- Create a new, cheap Energy Tariff
- Cut carbon emissions by 31% an as authority and 15% across the city
- Develop an Energy Park
- Expand Nottingham's District Heating
- Help keep your energy bills down by doubling the number of homes with loft cavity and solid wall insulation
- Install 2000 solar panels on Council houses
- Use our planning powers to ensure developers incorporate energy efficiency standards into all building developments.



Strategic targets

- Reduce the city's carbon emissions by 26% of 2005 levels by 2020
- 20% of the City's energy from renewable or low/zero carbon sources by 2020
- Eradicate fuel poverty by 2016
- Increase the recycling of waste to 50%
- Build a “green” collar economy
- Increase public transport trips by 2 million

What's been achieved so far

- Already have 11.5% of energy generated from renewable and low carbon sources
- PV panel installs 3,000+ across the city
- Waste recycling increases – 18% to 38% in 5 years
- Waste reduction – 14% reduction over 5 years
- First community, ward based climate change strategy
- PFI street lighting programme - 26% energy reduction
- Warm zone success



District heating



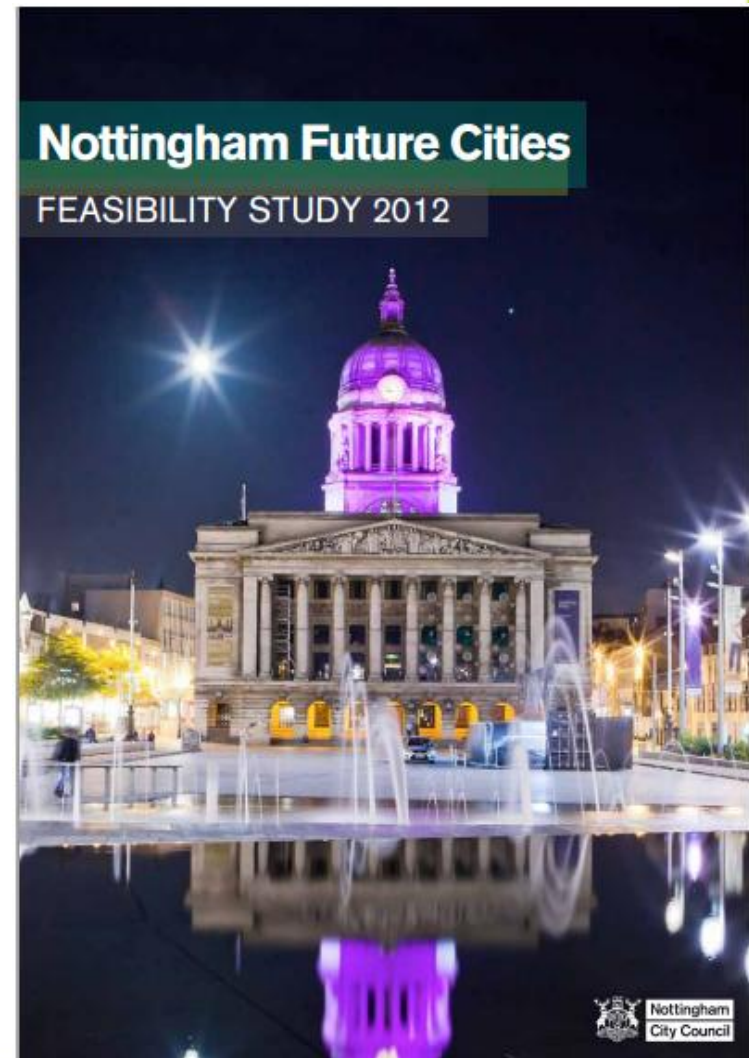
- The city's district heating scheme (the largest in the UK), uses high pressure steam from the waste incineration plant – heat is supplied to 4,500 domestic customers and 150 commercial billing points, along 65km of pipes.
- Energy security
- Offsets 27,000 tonnes CO₂

Neighbourhood Projects



Energy Strategy – Next Phase

Nottingham Future
Cities Study – opportunity
to develop new ideas
around integration of energy
Infrastructure =
Nottingham Smart Energy
City Concept



Nottingham Smart Energy City Network ?

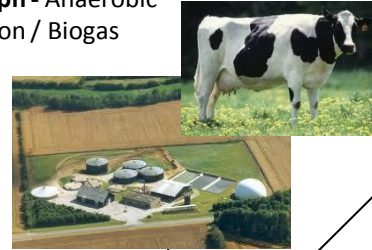


Nottingham Energy Park



Energy efficient Highways / Street Lighting

Severn Trent –Stoke Bardolph - Anaerobic Digestion / Biogas



Primary Generation



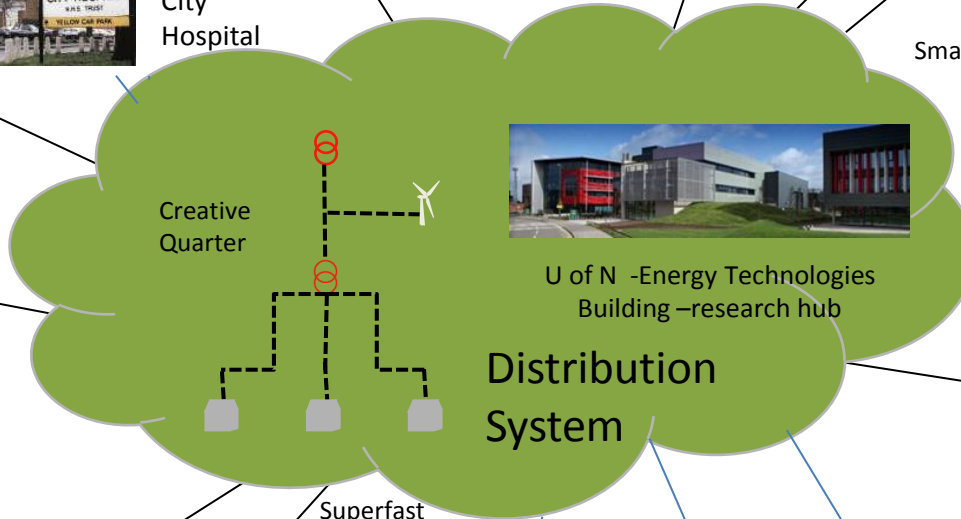
Aspley –Community "Energy Power Plant"



City Hospital



Smart metering



Enviroenergy District Heating plant

Residential Domestic Generation

- PV
- Microgen
- Fuel Cells

Electrification

- Heat Pumps
- In Home Energy Management
- Energy Storage



Emobility

- Home Charging
- Vehicle 2 Grid



Public Charging Infrastructure

Superfast broadband – dark fibre network via tram ducts



Tram -13 substations



Energy Storage

Smarter journey planning and Advanced traffic control



Electric Buses



Enterprise Zone

- Large power consumer
- On-Site CHP Generation

Energy Park



- **Flagship Energy Park** - low carbon renewable energy created on site to supply power and heat to co-located business units.
- 6.75ha site in City Council Ownership
- £50 million investment
- 280 jobs
- Links to Rolls Royce on adjacent site

Green Jobs

- Development of a local cleantech sector is a priority
- GreenTech Business Network - over 370 different businesses have attended events
- Supply chain and meet-the-buyer workshops
- Nottingham Cleantech Centre – business incubation
- Enviro Entrepreneur's course



Nottingham No 1 Science Park



Low Carbon Companies establishing at Science Park

- Chinook Sciences (USA)
- 4Energy (UK)
- Changan (China)

Nottingham – Future Energy Plans

- Future Cities feasibility study – integrated infrastructure vision
- Heat network master planning – 4 area focus
- District heating expansion plans, building on district heating as a first platform for Smart City approach.
- Enterprise zone redevelopment
- CHP consortia led by Boots
- Energy Mapping
- FP7 energy modelling project

Nottingham – Future Energy Plans (2)

- Western Power Distribution project
- City Hospital coal fired boiler replacement
- City Street lighting – low energy lighting replacement
- Eco – estate wide energy insulation programmes
- Green Deal – Clifton pilot

Conclusions

- Key Council strategy
- Ambition and excitement of the agenda
- Nottingham is in a strong position
- Many funding opportunities starting to emerge – ETI Smart Heat Programme
- Keen to build collaborative partnerships to take forward this agenda