

Greening Newark and Sherwood – Action Plan

The Greening Newark and Sherwood action plan is presented in parts. The first part demonstrates the broad ways in which Newark and Sherwood District Council will work towards its environmental ambitions, as set out in the Community Plan.

The second part is those specific and quantifiable actions that will help the Council’s operations to become carbon neutral by 2035 – the carbon emissions action plan. We have worked with the Carbon Trust to define these carbon reduction actions and will focus on council buildings and the fleet of vehicles. All suggested actions are subject to detailed feasibility studies and approval processes – and further supporting assumptions are given in the appendix. The action to “implement a defined process for energy management and utility data collection” may offer additional opportunities in the future.

A final part examines housing. While housing is not quantified in the Council’s carbon reduction target, Newark and Sherwood District Council will explore options for reducing carbon emissions from existing council housing that also provide benefits to tenants. The Carbon Trust have suggested a series of potential projects for housing that could be prioritised, subject to suitable funding becoming available.

	Project	Descriptor	Estimated implementation year	Owner
01	Business travel	Review options for reducing business journeys. Refine data collection relating to business travel – to better understand vehicle types and emissions, to inform recommendations.	Annually	Transformation & Administrative Services
02	Staff Commuting	Collect and refine data regarding staff commuting via the staff survey. Use this information to inform future recommendations.	Annually	Transformation & HR
03	Contracts	Work with suppliers to establish a data collection programme to improve understanding of emissions associated with different contract activities	To be ongoing	Transformation
04	Procurement	Review processes to embed carbon emission intensity into contract decisions where possible	To be ongoing	Transformation

05	Government Policy	Monitor emerging policy, particularly that relates to the Environment Bill, raise awareness of legally binding environmental targets (four priority areas identified as: air quality; resource efficiency and waste reduction; biodiversity; water)	Ongoing	Transformation
06	Green Energy Tariffs	Explore green energy tariffs – in line with procurement requirements	To be confirmed	Transformation & Asset Management
07	EV Chargepoints	Explore the expansion of the EV network such as via BP Chargemaster	To be confirmed	Asset Management
08	Supplementary Planning Documents	Prepare a Supplementary Planning Document for sustainable design and development, and for potential other themes. Subject to the proposals in the Planning White Paper becoming law, look to introduce local design code/s to secure development that address the Climate Emergency. Residential Cycle & Car Parking Standards SPD currently being prepared to require the provision of cycle parking and electric vehicle charging points in new residential development.	2022 2020	Planning Policy & Infrastructure
09	Planning Policy	Understand any implications of the Government’s Planning White Paper (published July 2020), or associated policy, for the environment.	Ongoing	Planning Policy & Infrastructure
10	Infrastructure	Working with Nottinghamshire County Council promote opportunities for green and sustainable infrastructure and associated travel, through securing improved cycle ways, a Brompton Bike scheme, and improved bus and train services.	Ongoing	Planning Policy & Infrastructure
11	Biodiversity	Promote opportunities for biodiversity net gains where appropriate within the planning system and process	Ongoing	Planning Policy
12	Energy Efficiency in the PRS	Raise awareness of energy efficiency standards in the Private Rented Sector	Ongoing	Public Protection – Environmental Health
13	Air Quality	Work with neighbouring local authorities regarding the Nottinghamshire air quality strategy.	Ongoing	Public Protection – Environmental Health
14	Licensing	Contribute to accelerating the shift to low carbon transport by investigating the potential for minimum vehicle emission requirements (eg. related to age of vehicle)	2021	Public Protection - Licensing
15	Waste and Recycling	Reference separate strategies regarding: <ul style="list-style-type: none"> - Waste - Recycling - Future national policy 	Ongoing	Environmental Services
16	Tree Planting and Urban Greening	Referencing schemes such as the Woodland Trust’s Emergency Tree Plan, explore the potential for increased tree planting in Newark and Sherwood	To be confirmed	Environmental Services

17	Energy and Home Support	While progressing existing projects and schemes to alleviate fuel poverty, link with climate/environmental initiatives where possible	Ongoing	Energy and Home Support
18	Green Champions	Explore the appetite for a network of Green champions in the community.	To be confirmed	Community Relations & Transformation
19	Leadership and Advocacy - Communications	Work with residents, businesses and the community to raise awareness of existing practice, and to share learning and experiences. Advocate at national levels, as appropriate, regarding local priorities.	Ongoing	Transformation & Environmental Services & Communications
20	Collaborative Local Authority Working	Work with other local authorities in Nottinghamshire, especially via the Environmental Strategy Working Group and in conjunction with the LEP's D2N2 Energy Strategy, to maximise potential.	Ongoing	Communities and Environment Directorate & Transformation
21	Staff and Member Engagement	Work with staff and Members to embed good practices – building on Green@Work. Raise awareness to reduce paper usage, to reduce plastic, to reuse resources and more.	Ongoing	Transformation & Green@Work
22	Green Recovery	Explore the potential for green recovery to strengthen the local economy such as via schemes highlighted in HM Treasury's A Plan for Jobs (2020).	To be confirmed	Economic Development & Transformation
23	Funding	Explore opportunities for green funding	To be confirmed	Finance & Transformation
24	Offsetting	Develop a strategy for offsetting any residual emissions in 2035. Following the principle of reduction first, and as defined in the climate strategy, explore opportunities to offset any residual operational emissions that remain in 2035.	2035	Finance & Transformation

Newark and Sherwood District Council – Emissions Reduction Action Plan

Building	Project descriptor	kWh saving (per annum)	Annual CO2 reduction potential (tCO2e in 2020)	Cost saving (estimated annual following installation)	Lifetime CO2 reduction potential over lifespan of technology (tCO2e)	Simple payback (years)	Estimated implementation year	Owner
Council owned Buildings								
Brunel Drive Depot	Supply & installation of 19.2kW PV array	16,613	3.9	£2,128	22.6	8.8	2025	Asset Management & Environmental Services
	Supply & installation of air source heat pump to replace existing heating system	163,288	26.4	0	562.3	n/a	2027	Asset Management & Environmental Services
Castle House	Supply & installation of 25.4kW PV array	22,925	5.3	£2,937	31.1	8.6	2025	Asset Management
Lorry park Service Area	Supply & installation of LED lighting	2,482	0.6	£318	3.2	6.8	2023	Asset Management
	Supply & installation of air source heat pump to replace existing heating system	41,577	6.7	0	142.7	n/a	2023	Asset Management
National Civil War Centre	Supply & installation of LED lighting	20,487	4.8	£2,625	27.8	7.6	2023	Asset Management
	Supply & installation of 5.4 kW PV array	4,820	1.1	£617	27.8	8.5	2025	Asset Management
	Supply & installation of air source heat pump to replace existing heating system	154,852	25	0	535	n/a	2029	Asset Management
Newark Beacon	Supply & installation of air source heat pump to replace existing heating system	70,744	11.4	0	243.6	n/a	2021	Asset Management
	Supply & installation of 65.4 kW PV array	51,359	12	£6,580	69.8	9.2	2025	Asset Management
Palace Theatre	Supply & installation of LED lighting	32,720	7.6	£4,192	33.2	4.4	2023	Asset Management

	Supply & installation of 37.8 kW PV array	34906	8.1	£4,472	47.4		8.1	2025	Asset Management
	Supply & installation of air source heat pump to replace existing heating system	151,012	24.4	0	520.9		n/a	2030	Asset Management
Vicar Water Visitor House	Supply & installation of LED lighting	3,682	0.9	£472	5		7.6	2023	Asset Management
	Supply & installation of 7.8 kW PV array	6,662	1.6	£853	9.1		8.9	2025	Asset Management
All sites	Implement a defined process for energy management and utility data collection								Asset Management & Transformation

Leisure and Recreation									
Newark Sports and Fitness Centre	Supply & installation of LED lighting	68,791	16	£10,310	67.4		2	2023	Active4Today / Asset Management
	Supply & installation of solar PV	102,351	23.9	£15,353	149.8		7.2	2025	Active4Today / Asset Management
	Supply & installation of ground source heat pump to replace existing heating system	1,293,672	204	0	2968		n/a	2030	Active4Today / Asset Management
Dukeries Leisure Centre	Supply & installation of solar PV	22,299	5.2	£3,345	32.6		8	2025	Active4Today / Asset Management
Blidworth Leisure Centre	Supply & installation of solar PV	8,687	2	£1,303	12.7		7.1	2025	Active4Today / Asset Management
Based on sports pavilion – for consideration in any other leisure settings	Supply & installation of LED lighting	3,131	0.7	£401	4.5		13.6	2023	Active4Today / Asset Management
	Supply & installation of air source heat pump to replace existing heating system	47,510	7.7	0	163.6		n/a	2023	Active4Today / Asset Management

Leased Buildings								
All leased buildings	NSDC to work with their leaseholders to establish a data collection programme							Asset Management & Transformation
All leased buildings	Programme of engagement around emission reduction measures (LED lighting, Solar PV, building fabric upgrades, electrification of heat, green tariffs)							Asset Management & Transformation

Fleet								
All vehicles	Detailed review of electric vehicle transition and installation of EV charging infrastructure (currently being undertaken and considering costs) Current figures provided based on high-level review of fleet decarbonisation, based on 2020 vehicle models.	<i>291,887 (estimated annual – whole fleet)</i>	<i>118 (estimated annual – whole fleet)</i>				49.9	Environmental Services
All vehicles	Continue the use of telematics systems across all vehicles							Environmental Services

Housing								
R1	Shared ambient ground loop for each block of flats. Individual heat pump within each flat. Ensure all basic energy efficiency and air tightness improvements have been made.	921,595	215	/	1,694	/	2025	Housing
R2	Shared ambient ground loop for each block of flats. Individual heat pump within each flat. Upgrade to high performance triple glazing. Air tightness measures. Improve flat roof insulation where appropriate.	437,385	102	/	804	/	2025	Housing
R3	Install individual Air Source Heat Pumps, hot water cylinders and upgraded heat emitters. Average size 5kW.	662,323	154	/	1,217	/	2025	Housing
R4	Install individual Air Source Heat Pumps, hot water cylinders and upgraded heat emitters. Average size 6kW.	933,180	218	/	1,715	/	2025	Housing
R5	Install Individual ASHP 8kW.	7,859,982	1,216	/	37,329	/	2030	Housing
R6	Install Individual ASHP Average 8kW.	14,472,413	2,238	/	68,734	/	2030	Housing
R7	Assumed package of loft insulation, floor insulation, triple glazing and air tightness and ventilation measures.	363,534	85	/	668	/	2030	Housing
R8	Whole house deep retrofit to net zero energy standard (eg Energiesprong). Including heat pump, solar PV, battery storage and space heating demand <30 kWh per m2 per pa.	379,044	88	/	697	/	2030	Housing

R9	Assumed package of loft insulation, floor insulation, triple glazing and air tightness and ventilation measures.	819,342	191	/	1,506	/	2030	Housing
R10	Shared ambient loop heat pumps.	7,773,573	1,222	/	36,176	/	2035	Housing
R11	Individual ASHP 6kW and energy efficiency.	2,329,930	378	/	10,405	/	2035	Housing
R12	Individual ASHP and energy efficiency.	5,855,879	939	/	26,564	/	2035	Housing
R13	Deep retrofit, ASHP, Solar PV and Battery storage.	5,119,672	941	/	18,774	/	2035	Housing
R14	Shared ambient loop GSHP and energy efficiency improvements.	2,958,258	480	/	13,211	/	2040	Housing

Scope 3 emissions			
Waste	Set a waste reduction target that contributes to emission reduction pathway		See above
Contracts	NSDC to work with suppliers to establish a data collection programme to improve understanding of emissions associated with different contract activities		See above
Procurement	Review of procurement processes to embed carbon emission intensity into contract decisions		See above
Business travel & commuting	Review options for reducing business journeys and collect data through next staff travel survey		See above

Other			
Offsetting strategy	NSDC will develop a strategy for offsetting any residual emissions in 2035	2035	See above

Appendix – supporting assumptions (Corporate and Leisure)

- All opportunities included have each been assessed independently in terms of their potential for saving energy and payback. The overall savings figures shown may not fully be achievable due to interactions between measures. All costs and savings in this report are indicative only and subject to further technical and financial feasibility study.
- Maintenance savings are not included at this stage.
- Costs provided are indicative figures for supply and install only. No cost allowance is included for measurement and verification (M&V) and other potential costs such as contingency, asbestos removal, design & feasibility studies (allow at least 10% for solar and heating studies), project management, VAT, business rates etc.
- Capital cost estimates (supply and install):

Technology	Cost Estimates	Source
Solar PV	£900 per kW installed	Carbon Trust
LED Lighting	£14 per m ²	CIBSE, Carbon Trust
Air Source Heat Pump	17kW £991 per kW installed 24kW £826 per kW installed 32kW £651 per kW installed 64kW £575 per kW installed	SPONS 2020
Ground Source Heat Pump	Heat pump cost £500 per kW installed Borehole cost £800 per kW installed Heat exchanger cost £150 per kW installed	SPONS 2020, Carbon Trust, GSHP Industry Standard

- Lifetime carbon savings based on 'Future Energy Scenarios' 2019 published by the National Grid for decarbonisation of the grid and CIBSE Guide M guidance on the lifetimes of key technologies. All lifetime savings have been calculated from 2020.
 - Solar PV – 25 Years
 - Ground Source Heat Pump – 20 years
 - Air Source Heat Pump – 15 years
 - LED lighting – 50,000 burn hours (years dependent on occupancy hours of building)
- Annual carbon saving based on 2019 'Greenhouse gas reporting: conversion factors' published by Department for Business, Energy & Industrial Strategy (BEIS).
- No inflation has been applied at this point, savings are calculated from 2020 utility tariffs + Climate Change Levy (CCL).
- Implementation years:
 - Heat pumps – based on 'end of life' for current boilers. Boilers economic lifespans are estimated at 15 years, from the data provided we have estimated the replacement cycles for heat pumps.
 - LED & Solar PV – Considered 'quick wins'; a 2-3 year mobilisation period has been allowed.
- Heat pumps have been provided as the replacement for boilers due to the unparalleled carbon savings that can be achieved compared to a direct gas boiler replacement. Condensing gas boilers are a mature technology and it is unlikely that new models will be able to improve efficiency ratings any further, all boilers in the estate appear to be condensing already and a direct replacement would yield minimal savings (~0-5%). The decarbonisation of the electrical grid further emphasises the savings that can be achieved moving forward with a heat pump installation.
- It should be noted that heat pumps are a juvenile technology; capital costs are high and while gas remains relatively cheap compared to electricity the financial case is not strong (this is the reason for 'n/a' paybacks). However, the carbon case is already obvious and therefore consideration needs to be applied now before it is too late. The heat pump market is expected to develop rapidly in the coming years and this should drive costs down. Strong government intervention will be required to assist in the disparity between gas and electricity costs.



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- Please note; the Renewable Heat Incentive (RHI) is currently available for heat pump projects, providing a financial incentive per kWh generated. However, the future of this is uncertain and when Newark come to install heat pumps it is likely there would be a new mechanism in place.

<https://www.ofgem.gov.uk/environmental-programmes/non-domestic-rhi>