NORTHAMPTONSHIRE PARTNERSHIP HOMES

Energy and Carbon Report 2022/23

Introduction

If everyone on the planet lived as we do in the UK, we would need three planets to produce and absorb the natural resources consumed.

At NPH, we believe that each of our residents, employees, suppliers, and stakeholders has a crucial role in the sustainable development of West Northamptonshire.

To help us become a more sustainable organisation, we have adopted the One Planet Living framework - ten simple principles for a holistic approach to sustainability, aiming to reduce our ecological footprint to within the finite resources of our planet - it's the only one we have!

Figure 1: The ten principles of One Planet Living

The NPH Sustainability Strategy and Environmental Policy commits NPH to manage our environmental impact and reduce carbon emissions.

Our carbon reduction targets aim to achieve continual reduction of 7% per year and an overall 20% reduction in carbon emissions by 2023, compared to a 2018-19 baseline.

This report describes NPH's operational energy consumption and carbon emissions, the energy and carbon reporting methodology used and how NPH has not only achieved - but exceeded - our carbon reduction targets.

A summary of the energy and carbon data is provided, along with details of where savings have been made and progress towards net zero carbon.

This formal overview of NPH energy consumption and carbon footprint is intended to provide a basis for design and implementation of greenhouse gas emission reduction and removal initiatives. A summary is included in the annual Financial Return.

Streamlined energy and carbon reporting

The energy and carbon data in this report has been collated following the UK Government Environmental Reporting Guidance 2019 for Streamlined Energy and Carbon Reporting (SECR).

The most recent UK Government Conversion Factors for Company Reporting have been used. Energy and carbon data is quantified and reported annually by the NPH Sustainability Manager, with support from relevant departments within NPH.

A table of data is provided in figure 2, illustrating energy and carbon performance for the reporting period 2022-23, against previous reporting periods and a base year of 2018-19.

Methodology

The international standard 'ISO 14064-1:2019 Greenhouse Gases Part 1' provides the formal methodology for quantification and reporting of NPH greenhouse gas emissions.

A systematic approach has been applied with consideration for environmental aspects and impacts in terms of cause and effect.

Environmental aspects summarised in table 1: 'Greenhouse Gas Inventory' are converted into tonnes of carbon dioxide equivalent (tCO2e), as a common and consistent indicator of environmental impact. Carbon dioxide-equivalent is a recognised metric to include other greenhouse gases e.g. methane, relevant to an environmental aspect being reported.

Table 1: NPH Greenhouse Gas Inventory

Environmental Aspect	Description	Scope
Gas	Gas consumption in kWh in relation to all energy supply contracts	Scope 1
Diesel	Fleet fuel consumption, measured in litres of diesel, converted into kWh	Scope 1
Electricity	Electricity consumption in kWh in relation to all energy supply contracts	Scope 2
Grey Miles	Business mileage from employee vehicles (grey miles)	Scope 3
Water	Water supply and treatment in m^3 in relation to all water supply contracts	Scope 3
Waste	Disposal of various waste streams in tonnes including from fly tipping and estate services, building waste and minor voids, and office waste.	Scope 3

Verification and validation of the data and statements included in this report has been conducted by the WNC Sustainability Team.

"As a key partner of the Council, it is important that emissions reporting by NPH is both robust and credible - this report achieves both, having been produced using recognised and established methodologies.

"The report provides clear evidence of emissions reductions and makes a valuable contribution towards the Councils Net Zero targets."
Martin Wilson, WNC Sustainability Manager

Boundaries

The organisational boundary for NPH energy and carbon reporting follows a financial control approach, consolidating facility level greenhouse gas emissions from multiple sources, reporting all significant energy consumption and carbon emissions from activities and operations NPH have financial control over.

The Reporting boundaries applied follow the Greenhouse Gas Protocol definitions of:

- Direct greenhouse gas emissions from sources under NPH control
- Indirect greenhouse gas emissions because of NPH actions that occur at a source out of NPH control

Following the Greenhouse Gas Protocol, three broad scopes are applied:

- **Scope 1**: All direct greenhouse gas emissions including gas and diesel
- **Scope 2**: Indirect greenhouse gas emissions from purchased electricity
- **Scope 3**: Other indirect emissions including grey miles, electricity transmission and distribution, and outsourced activities such as water supply and treatment, and waste disposal

Energy and carbon data summary

NPH carbon performance from a 2018-19 baseline to the financial year of 2022-23 is summarised in figure 2. The latest NPH carbon footprint is 1,734 tCO2e. This equates to an intensity ratio of 0.140 tCO2e per home (including leasehold).

The overall reduction in carbon emissions from a 2018-19 baseline is 30%, exceeding the target of 20% carbon emission reduction by 2023.

NPH carbon emissions have continually reduced from the initial baseline of 2,474 tCO2e in 2018-19. Year-on-year reductions have exceeded the 7% target for three years in a row.

2022-23 data shows an almost 10% reduction of both total emissions and emissions per home, compared to the previous reporting period.

Energy & Carbon Reporting					
	Baseline 2018/19	2019/20	2020/21	2021/22	2022/23
Scope 1 emissions (tCO2e)					
Gas	1,259	1,255	1,249	1,165	1,088
Diesel	218	226	214	215	217
Scope 1 energy consumption - kWh	*7,847,925*	*7,749,812*	*7,679,142*	*7,267,832*	*6,862,726*
Scope 2 emissions (tCO2e)					
Electricity	527	579	477	432	397
Scope 2 energy consumption - kWh	*1,860,817*	*2,327,986*	*2,046,212*	*2,036,494*	*2,053,675*
Total Scope 1 & 2 emissions (tCO2e)	**2,003**	**2,059**	**1,939**	**1,812**	**1,703**
Green Tariff electricity for scope 2 (tCO2e)			100	300	357
Net Carbon outturn (tCO2e)	**2,003**	**2,059**	**1,839**	**1,512**	**1,346**
Scope 3 emissions (tCO2e)					
Travel, Waste,Water, Electrical distribution	471	424	346	407	389
Total annual net emissions tCO2e	**2,474**	**2,484**	**2,185**	**1,920**	**1,734**
Intensity ratio: tCO2e/number of properties (including leasehold)	0.200	0.201	0.177	0.155	0.140
Change in emissions from previous period		0.4%	-12.0%	-12.1%	-9.7%
Change in intensity ratio from previous period		0.6%	-12.2%	-12.1%	-9.9%
Change in emissions current period to baseline		0.4%	-11.7%	-22.4%	-29.9%

Figure 2: Energy and carbon data

Scope 1 emissions have reduced due to lower consumption of gas. The data suggests this is a result of efficiency improvements made by our compliance team to some of the larger communal heating systems.

An example of this can be seen in the gas consumption at St Stephens House, which used 250,000 kWh less gas this year, compared to the previous reporting period.

Under scope 2 emissions, kWh consumption of electricity has been very consistent year on year at roughly 2,000,000 kWh.

As the carbon intensity of UK grid electricity has improved, the location-based carbon emissions from NPH electricity consumption have reduced by 8% compared to the previous year.

The major scope 2 carbon savings can be attributed to the energy procurement risk management strategy implemented in 2020.

In the 2022-23 reporting period, 90% of NPH electricity has been procured and supplied through a Green Tariff certified under the Renewable Energy Guarantees of Origin (REGO) scheme.

Green tariff electricity is reported as zero carbon emissions using a market-based reporting approach, leaving a scope 2 net carbon outturn of just 40 tCO2e.

Scope 3 emissions have reduced by 5%, compared to the previous reporting period. The most significant saving is from a reduction in the volume of fly-tip waste collected by the estate's services team.

Compared to 285 tonnes of fly tip waste collected in the previous reporting period, a 20% reduction to 229 tonnes was collected in 2022-23.

Progress towards Net Zero

West Northamptonshire Council (WNC) have made a commitment to the UK100 Net Zero pledge to cut emissions of the local authority to net zero by 2030, and for WNC residents and businesses to be net zero carbon by 2045.

NPH has a key role to play in helping WNC meet these targets as a management agent to the local authority and a significant stakeholder in the local economy.

The chart in figure 3 (on the next page) illustrates NPH carbon emissions by environmental aspect for the reporting period 2022-23. Consumption of natural gas, primarily for communal heating systems, accounts for over 60% of the total footprint.

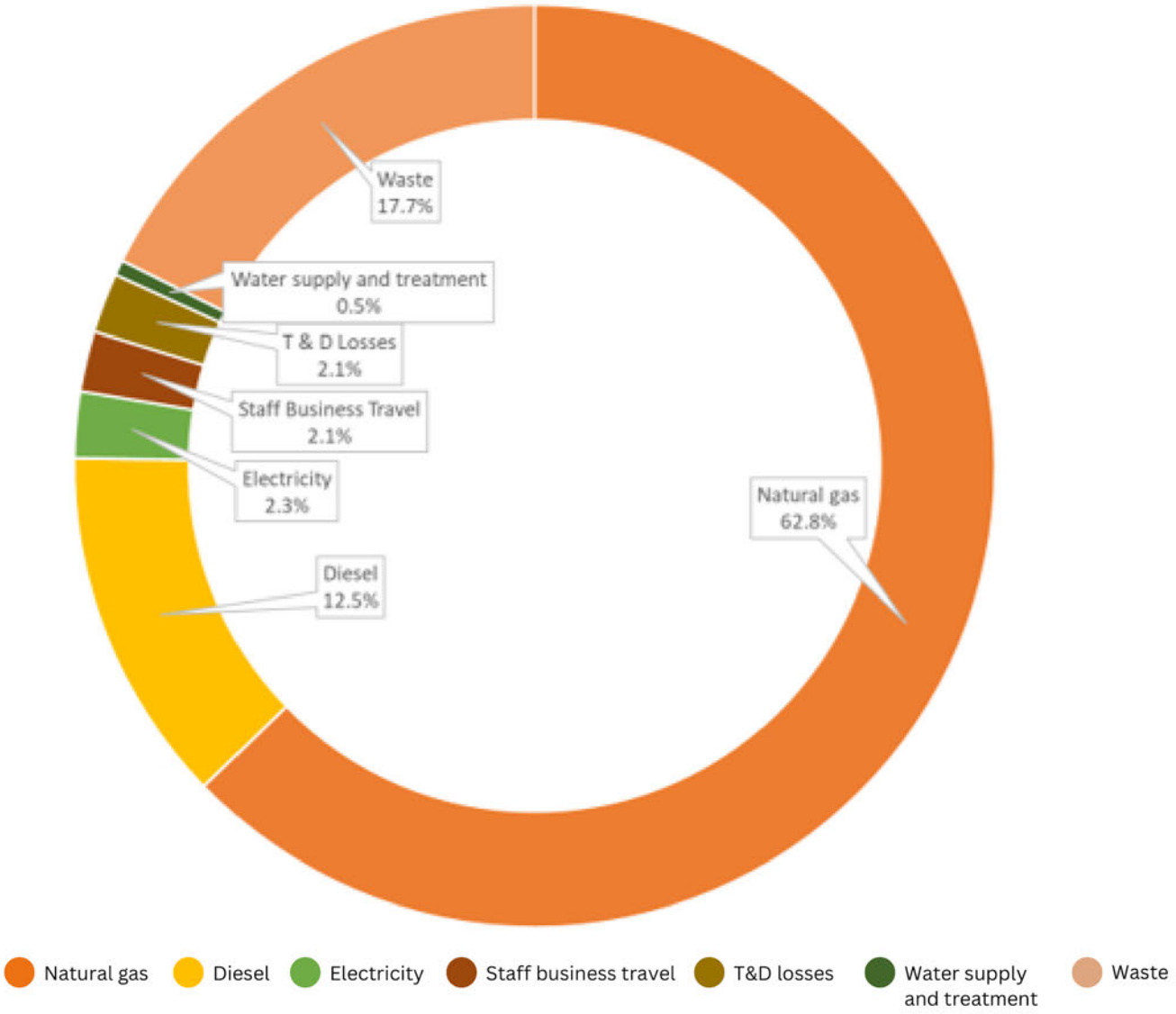
Reducing our reliance on gas whilst continuing to deliver a best value service will be a significant challenge.

To help on this journey, air source heat pump domestic heating technologies are being explored, with a particular focus on the tenant experience, and NPH is supporting WNC on a feasibility study looking into potential development of a Northampton low carbon heat network.

NPH carbon emissions from electricity are low due to REGO electricity supply.

To improve on our current position and to develop a more robust net zero carbon energy system, we will continually seek to minimise energy consumption and increase the proportion of onsite renewable energy generation.

Figure 3: NPH carbon emissions by environmental aspect



As an example of this, an extensive project to upgrade communal lighting systems is underway, aiming to improve lighting standards and reduce energy consumption.

Approximately 1,350 outdated lamps in multiple apartment blocks have been replaced with low energy LEDs and motion sensors. This is modelled to reduce energy consumption by 300,000 kWh per year, saving almost £100,000 annually.

NPH manage almost every type of waste stream imaginable, including building waste, office waste, hazardous waste and much more. Coupled with the high volumes collected, this makes waste a complex and challenging environmental aspect.

Waste has the second highest environmental impact, accounting for almost a fifth of the total carbon footprint. Diesel used in the fleet of NPH vans accounts for 12.5% of total carbon emissions.

The transformation to a zero carbon fleet is anticipated to see the uptake of electric vehicles being gradually blended in over the coming years. Consideration has been made for how this will impact NPH operations, and our expectation is for the NPH fleet to be diesel-free and zero carbon before 2030.

The housing portfolio

The portfolio of 12,404 homes managed by NPH has a modelled carbon footprint of 22,039 tCO2e. Our aim is to transform to a net zero carbon housing portfolio by reducing energy consumption and increasing the provision of renewable energy.

More than 1,600 homes in the portfolio currently have solar PV, providing more than 3MW of renewable power. For the period 2022-23, this generated 2.8 million kWh of renewable electricity, saving 550 tCO2e.

Our Social Housing Decarbonisation Fund (SHDF) demonstrator scheme completed in December 2022.

The project completed Whole House Retrofit to 149 solid wall homes in Kingsley and Kingsthorpe, installing high performance energy efficiency measures such as external wall insulation, new windows and doors, and 70 new solar PV systems.

This has significantly reduced the energy consumption of the retrofitted homes, saving tenants hundreds of pounds on energy bills, and offering some protection from the energy price rises seen over the past 18 months.

Reduced energy consumption has also resulted in significant reductions in carbon emissions. SAP modelling estimates 400 tCO2e will be saved. An SHDF Wave 1 scheme is currently underway and Wave 2 funding has been secured, creating an SHDF retrofit programme aiming to treat 679 homes by the end of 2024.

At 5.5% of the housing stock, this represents a positive first step towards a net zero carbon housing portfolio. We are committed to achieving a net zero carbon transformation in support of the WNC UK100 pledge.

Exceptions and exclusions

- **Greenhouse gas removals are not included in this energy and carbon data**
  Net zero carbon transformation will require a balance of inputs and outputs: carbon emissions against carbon sinks and removals. Sufficiently robust data for NPH greenhouse gas removals are not currently available. Development of NPH energy and carbon reporting, working towards a net zero carbon transformation, will seek to include elements of greenhouse gas sinks and removals into the greenhouse gas inventory. For example, biogenic removals and storage e.g. afforestation, reforestation, forest restoration, urban tree planting, agroforestry etc

- **Energy and water consumption from NPHs main office at Westbridge Depot is excluded from this data collection**
  Westbridge Depot is leased to NPH from WNC. Provision of energy and water is provided as part of the landlord services and therefore accounted in WNCs own energy and carbon reporting. To avoid double counting, and in respect of the organisational boundary described above, energy and water supplied to the Westbridge Depot office is excluded from NPHs energy and carbon data

- **Housing stock energy and carbon emissions are excluded from the reporting methodology**
  The housing stock managed by NPH has a carbon footprint far greater than the operational carbon emissions declared in this report. Those emissions are summarised in this report but deemed out of scope. The purpose of this energy and carbon reporting system is to provide a basis for design and implementation of greenhouse gas emission reduction and removal initiatives in relation to NPH operations

The described exceptions and exclusions are reviewed annually. Agreed changes following review will be documented and highlighted in future energy and carbon reports.

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