Petersfield Climate Action Network

EHDC Local Plan
22 June 2022

Greg Ford and Danny Lee, PeCAN Trustees

What is PeCAN?

- Environmental charity formed in Dec 2020 with the aim of protecting the local environment and lowering our carbon emissions
- Set up by local-residents in and around the Petersfield area
- Network of people who would like to help protect the local environment
- Made up of 10 trustees, 4 part time staff, volunteers and over >500 supporters
- Receive funding from the National Energy Foundation and South Downs National Park Authority for specific projects

PeCAN

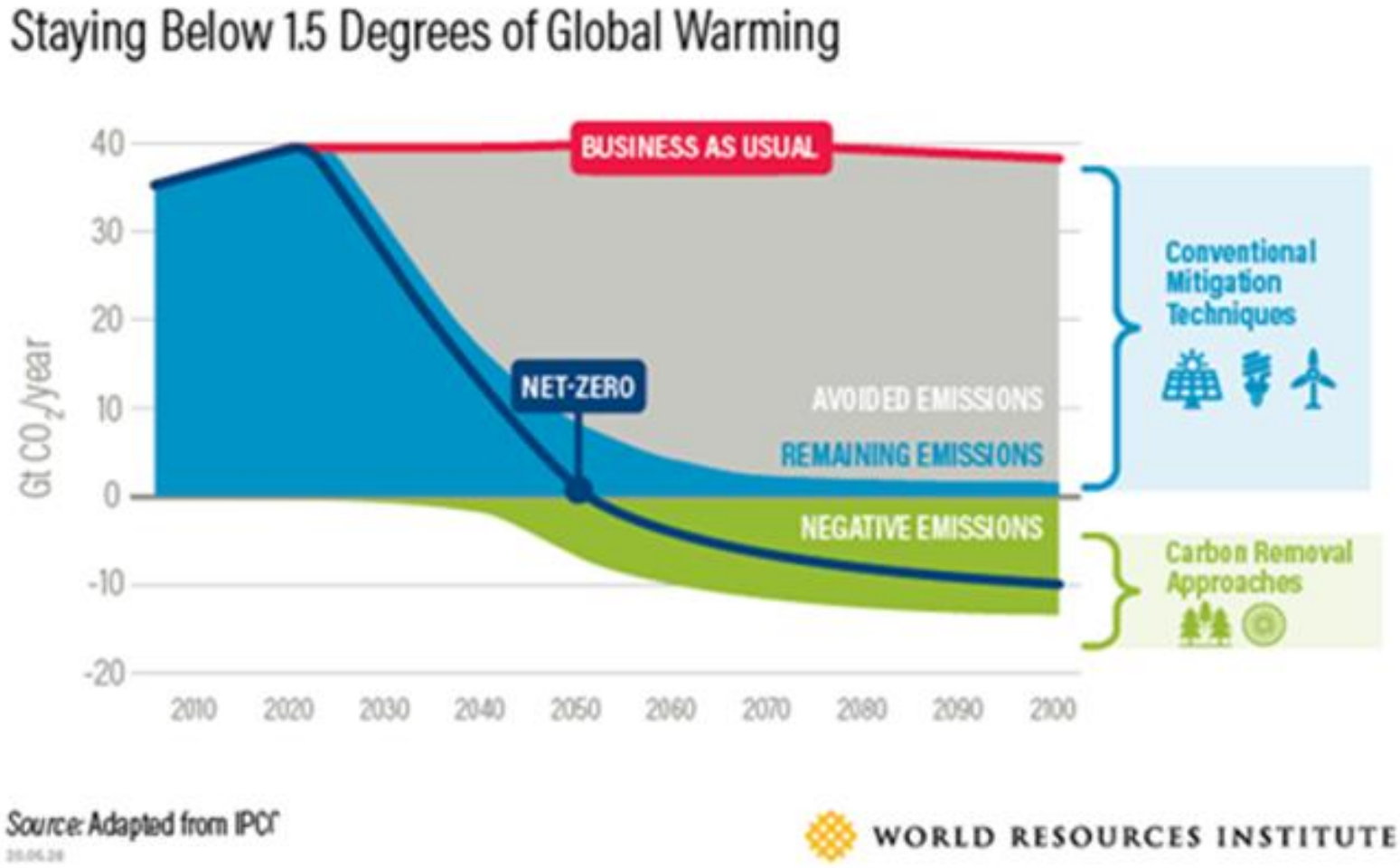
Sign up for our monthly newsletter at www.petersfieldcan.org

Come to Petersfield's first Eco-Fair on 17 July, organized by PeCAN and PTC

1) Climate context

2) Policy focus

The Overall Challenge & Approach



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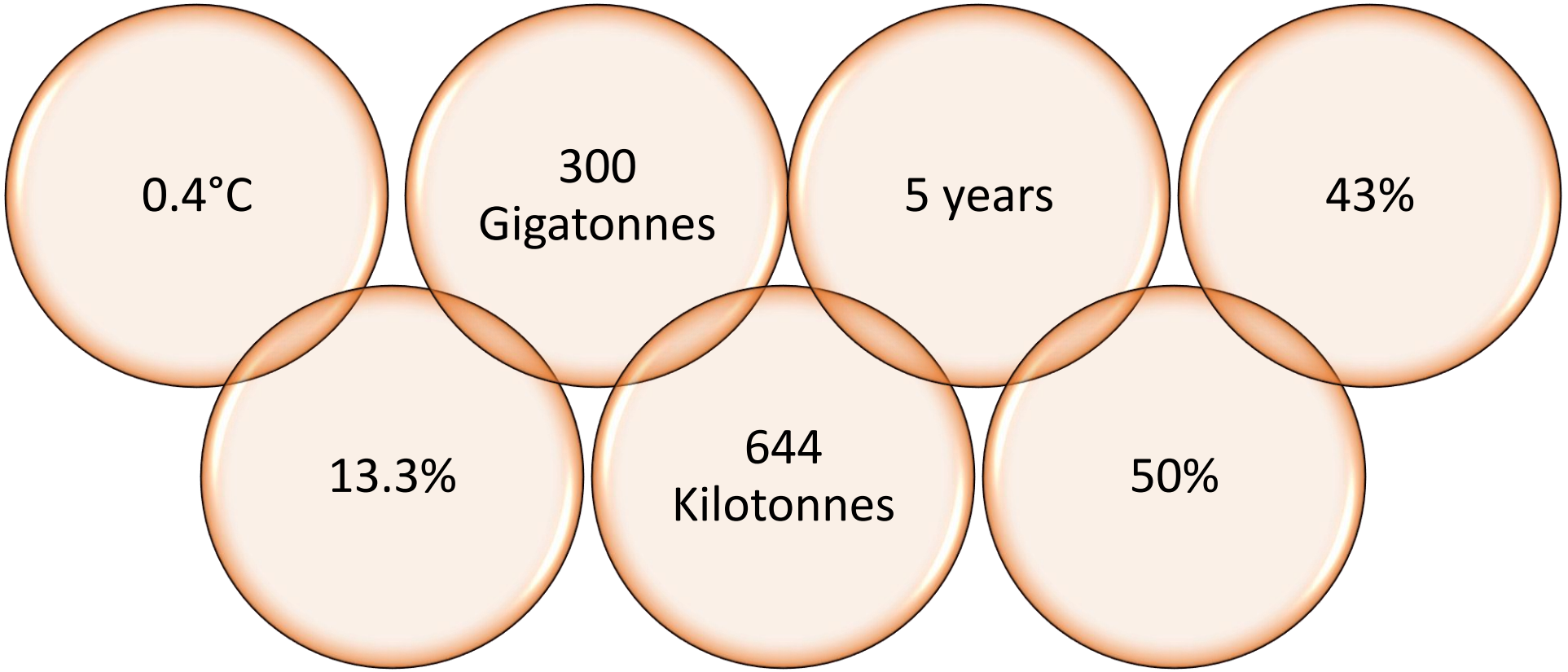
Seven numbers



0.4°C – the increase in the average global temperature consistent with not breaching the 2015 Paris climate change accord. The accord aims to limit the increase in global temperatures since the start of the industrial era to 1.5° C. Average temperatures have risen by about 1.1° C in the last 150 years so the world is now just 0.4°C below the 1.5°C Paris threshold. The *cumulative* concentration of carbon in the atmosphere in 420 million parts per million, a record level and more than double levels in the early eighteenth century. To bring it down to 350 ppm (safe level) we must turn net emissions into net drawdown

300 gigatonnes – the amount of CO2 emissions that would raise global temperatures by 0.4°C to the 1.5°C level. The Mercator Research Institute estimates if the current rate of emissions remains unchanged this limit will be breached in less than eight years. Time is very short. Previous Intergovernmental Panel on Climate Change reports have warned that even in the best-case scenario of immediate and deep cuts to carbon emissions the world is likely to reach 1.5°C warming within 20 years.

5 years - The probability of the planet surpassing 1.5 degrees Celsius of warming in one of the next five years is now 50 percent according to scientists led by the UK Met Office.

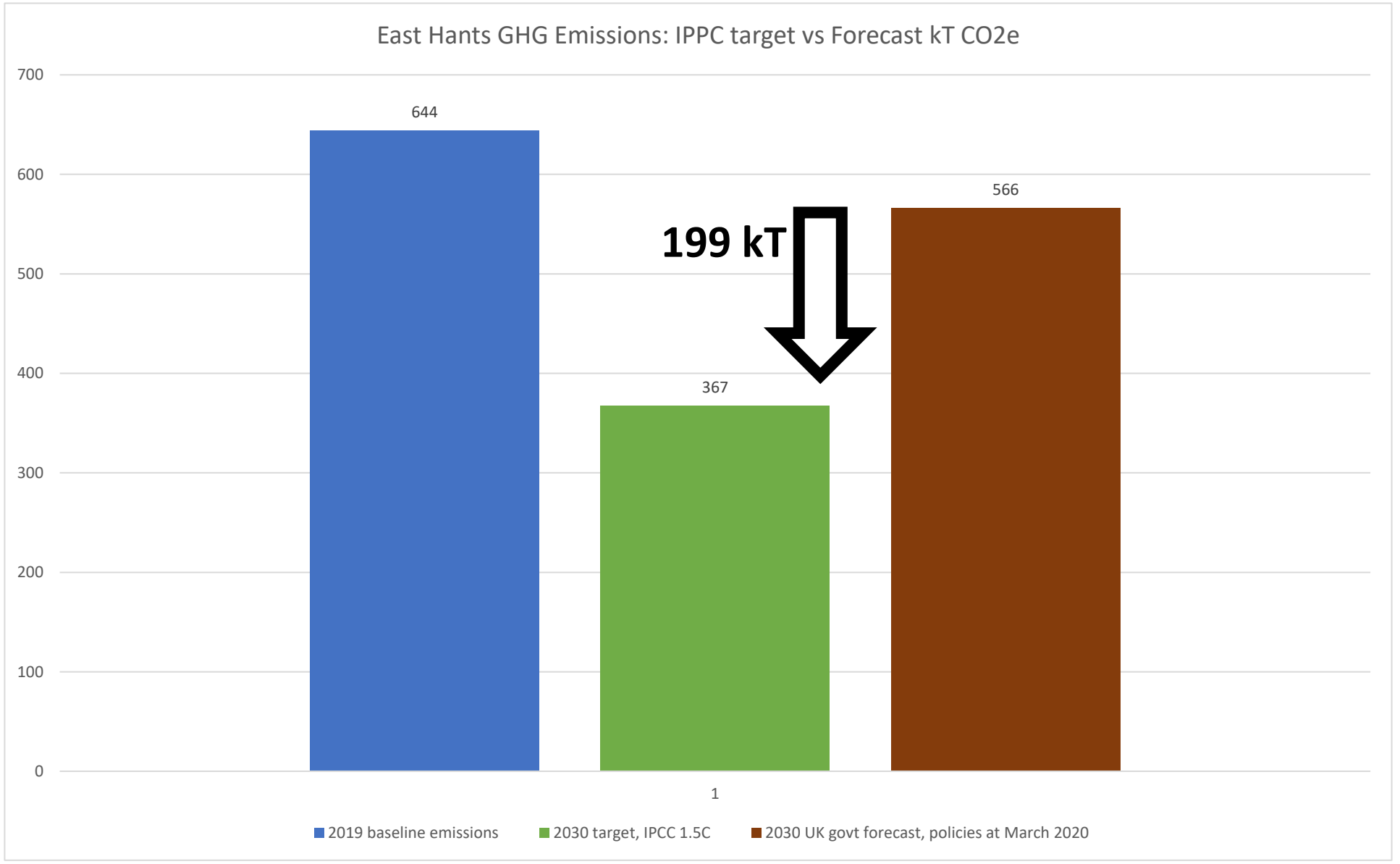
43% - the decrease in global GHG emissions needed by 2030 from a 2019 baseline to limit warming to around 1.5°C (IPCC, April 2022). The usual headline is that emissions must half by 2030

644 kT – East Hants CO2 emissions in the baseline year 2019 (CO2 makes up most of GHG). The 2030 target is 367 kT. We need to cut 277 kT

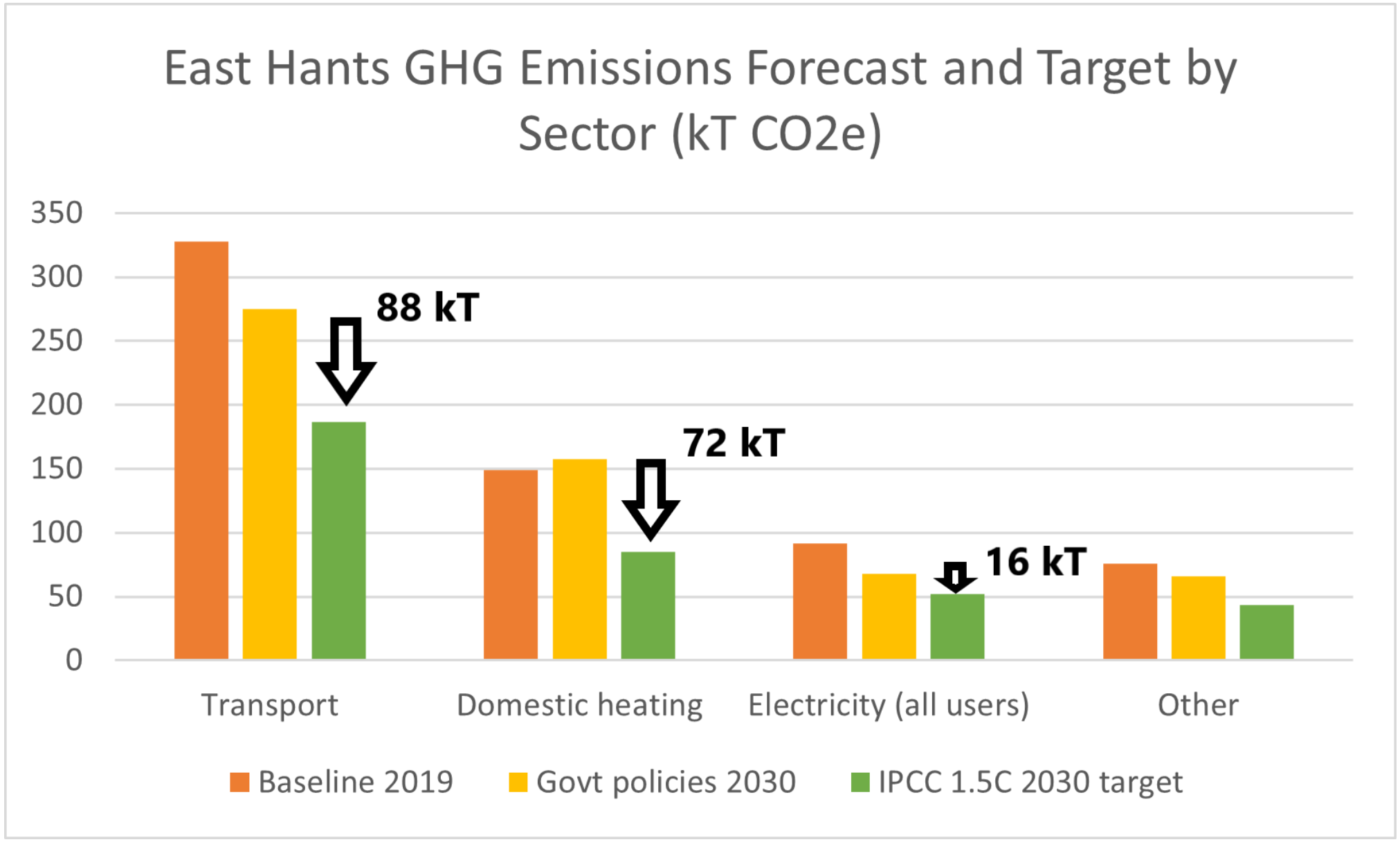
13.3% - the reduction in UK national emissions forecast by 2030, based on current and planned government policies in 2019, based on BEIS data. Cutting by 13% leaves us with a 30% shortfall to hit the IPCC target. Applying only govt policies and forecasts, East Hants will miss the IPCC target by 199 Kt

50% - UK has only 50% of its biodiversity left. Biodiversity provides functioning ecosystems we depend on: O2, clean air, water, pollination, pest control

On track to miss the IPCC's 1.5C target by about 30%



30% shortfall concentrated in three areas



Climate mitigation priorities for planning

- Buildings - reduce embodied and operational emissions from new and existing buildings (72 kT)
- Transport – reduce the need for transport, support the switch to EVs (88kT)
- Renewable Energy – maximise local generation (16kT)
- Green infrastructure – maximise biodiversity and the carbon sink


1) Climate context
2) Policy focus

Policy focus – PeCAN's hopes for the Local Plan

1. More Local Plan, less SPD
2. Warning about mis-using offsets to claim "Zero Carbon"
3. Buildings - Passiv design, low carbon heating, no loopholes around viability, reduce embodied carbon in materials, reduce new homes target
4. Transport - 20 minute communities, EV support
5. Renewable and community energy, microgrids, district heating
6. Green infrastructure - green ratio, misuse of biodiversity offsets, Design and Build, biodiversity friendly location

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1. More Local Plan, less SPD

SPD consultation doc, Dec 2021

2.4 As SPD's do not form part of the development plan, they cannot introduce new planning policies into the development plan and should not add unnecessarily to the financial burdens that the Planning System places on development. The new emerging Local Plan will therefore incorporate new policies on climate change and sustainable construction which will then supersede this SPD.

Hard wire the climate ambition in LP policies

Richard Millard, Petersfield Post 29 Dec 2021

"Zero-carbon housing will more and more become the norm, and we aim to be one of the first councils to do that formally through our Local Plan."

2. Care with carbon offsets and loopholes

Some LAs require a highish (35%) uplift on Building Regs with residual carbon dealt with through payments to a carbon offset fund to pay for renewable energy and energy efficiency measures elsewhere. ***Watch out - this is not a zero-carbon home****!*

Absolute emissions matter, offsets ≠ license to emit GHGs.

Best practice is **not to count** purchased offsets towards net zero targets.

- ***Do not encourage carbon offsets in the policy wording, encourage lower emissions instead***
- ***Restrict loopholes, such as allowable solutions where developers use carbon offsets to avoid environmental obligations***

Only permanent carbon sequestration can remove GHG emissions.

Renewable energy (solar PV etc) *avoids* emissions, it cannot *remove* them

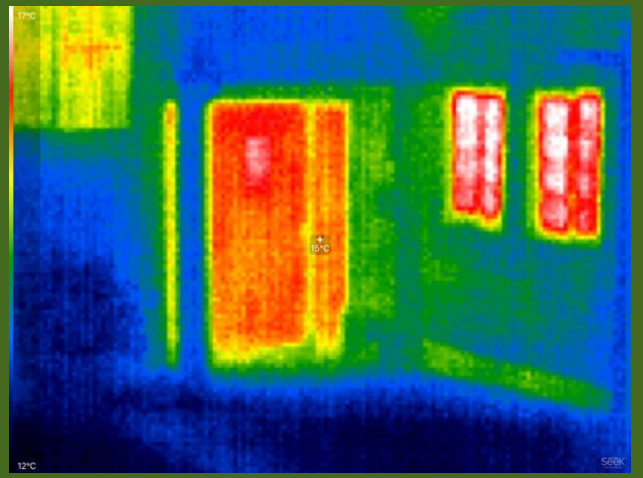
- ***To tackle residual emissions, encourage permanent sequestration***

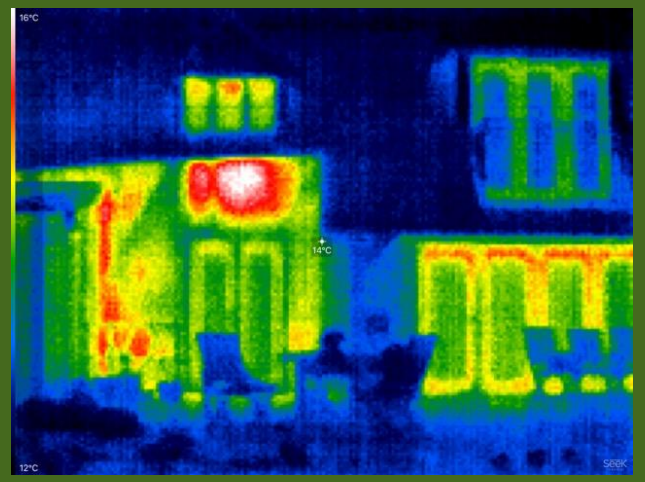
It is better to be open about the carbon impact of new homes than to use carbon offsets to make misleading claims.

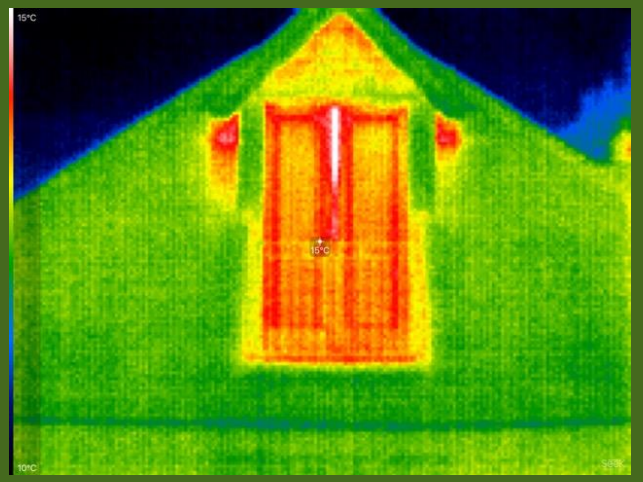
3. Buildings

- The UK has some of the most poorly insulated housing stock in Europe.
- *Almost 60% of private homes have substandard efficiency ratings (EPC of D or lower).*

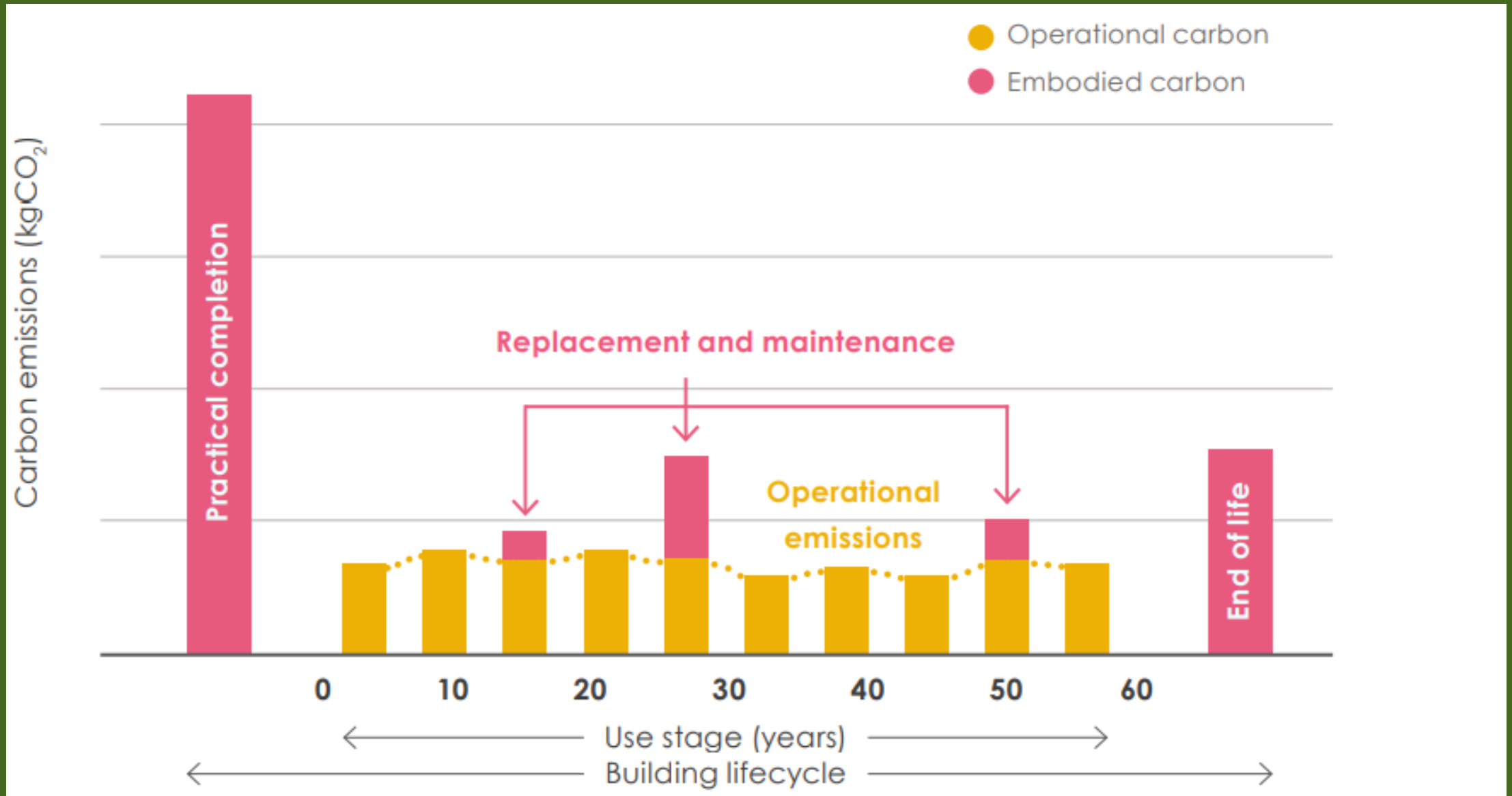
Department of Housing







Whole life carbon = Operational carbon + Embodied carbon



Emission breakdown of a building's life cycle

www.leti.london

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Reducing operational emissions from new buildings

Passivhaus standards: average cost uplift is only 4-8%

Reduce running costs for purchaser, avoid future retrofit costs

Committee for Climate Change have said new homes need a space heat demand of max. 15 kWh/m2.a by 2025

All new homes should be EPC A, no gas connections

It can be done, *ilke Homes ZERO* (zero carbon, zero energy bills, zero extra cost)

Larger developments should plan for district heating (not CHP), microgrids, maximum decentralised renewable energy e.g. solar PV generation and storage

https://www.passivhaustrust.org.uk/guidance_detail.php?gId=41

https://www.theccc.org.uk/publication/independent-assessment-the-uks-heat-and-buildings-strategy/

https://ilkehomes.co.uk/our-impact/ilke-zero-impact/

Environment Audit Select Committee (EAC) report

‘Building to net zero: costing carbon in construction’ report was published in May.

Report finds current policy inadequately addresses the need to reduce embodied carbon, develop low-carbon materials or prioritize reuse and retrofit. Report makes several recommendations - most important - “the requirement to introduce a mandatory ‘whole-life carbon assessment’ for buildings”.

- Report points to Net Zero ‘Part Z’ for Building Regulations! Proposal — Part Z (part-z.uk)

Reducing embodied emissions in new buildings / 1

As operational emissions fall, embodied carbon will become more significant

- Embodied carbon - c80 tonnes for new 2 bed house (Mike Berners-Lee)
- Two strategies: build less, embed less

Build less: Fight hard to reduce arbitrary housing targets

- SDNPA, case to use Alternative Approach instead of Standard Method, minimize uplifts for market signals and suppressed household formation
- Demographic starting point: 2021 census results due 28 June (rounded population and household estimates at LA level), followed by data on demography, migration, housing, labour market and travel

Richard Millard, Petersfield Post 1 June 2022

"We will challenge the government on their numbers and the methodology used to get there"

Reducing embodied emissions in new buildings / 2

Embed less: Policy for large developers to disclose and reduce embodied carbon

All large developments should forecast the life cycle embodied and operational GHG emissions at the design stage, so LAs and future occupants can track performance

- Duty to disclose life-cycle carbon and environmental impacts
- Use a certification system e.g. life-cycle Environmental Product Declaration and Activity approach with Design for Deconstruction
- Promote sustainable materials: More recycled materials and timber frames. Less masonry, oil-based insulation, concrete/steel (and no gas heating)

References in PeCAN's Feb 2022 SPD consultation response, LETI – Embodied Energy Carbon Primer - App.8, CIBSE TM65: Embodied carbon in building services

Reducing operational emissions from existing buildings / 1

Planning has limited reach with existing buildings

- Use policy on renovations, create incentives

The target: 26,573 domestic and non-domestic gas meters in East Hants

- Average 2020 consumption per meter: 15,139 kWh = 3.2 tonnes CO2e pa*
- Nearly half of gas boilers will be replaced naturally by 2030 – with what?

Policy for renovations

- Install or prepare for low carbon heating, esp. larger systems.
- Target minimum EPC rating C

Policy for off gas-grid homes

- High barriers to replace heating systems with fossil fuel system

* Domestic gas consumption by Middle Layer Super Output Area (MSOA), Great Britain, 2010 – 2020. CO2e based on SAP 10.2 emissions factor for mains gas of 0.210 kg CO2e per kWh

Reducing operational emissions from existing buildings / 2

Incentives for applications with high-climate ambition

- Exempt applicants with certified Passivhaus design status from parts of the Carbon Reduction Statement, energy elements of the Sustainability Checklist, other duplicate document requirements
- Reduce CIL on homes that use heat pumps or other similar technologies.

Disincentives for low-ambition applications:

- Raise the burden on applicants seeking exemption from normal sustainability policy standards. If claiming “financially unviable or technically unfeasible”, require full evidence and professional calculations
- Require submissions to use only up-to-date prices and technologies.

4. Transport

Cars and taxis accounted for 16% of UK emissions in 2019. No new petrol / diesel cars will be sold from 2030. By 2028, the UK Gov wants 52% of car sales to be electric.

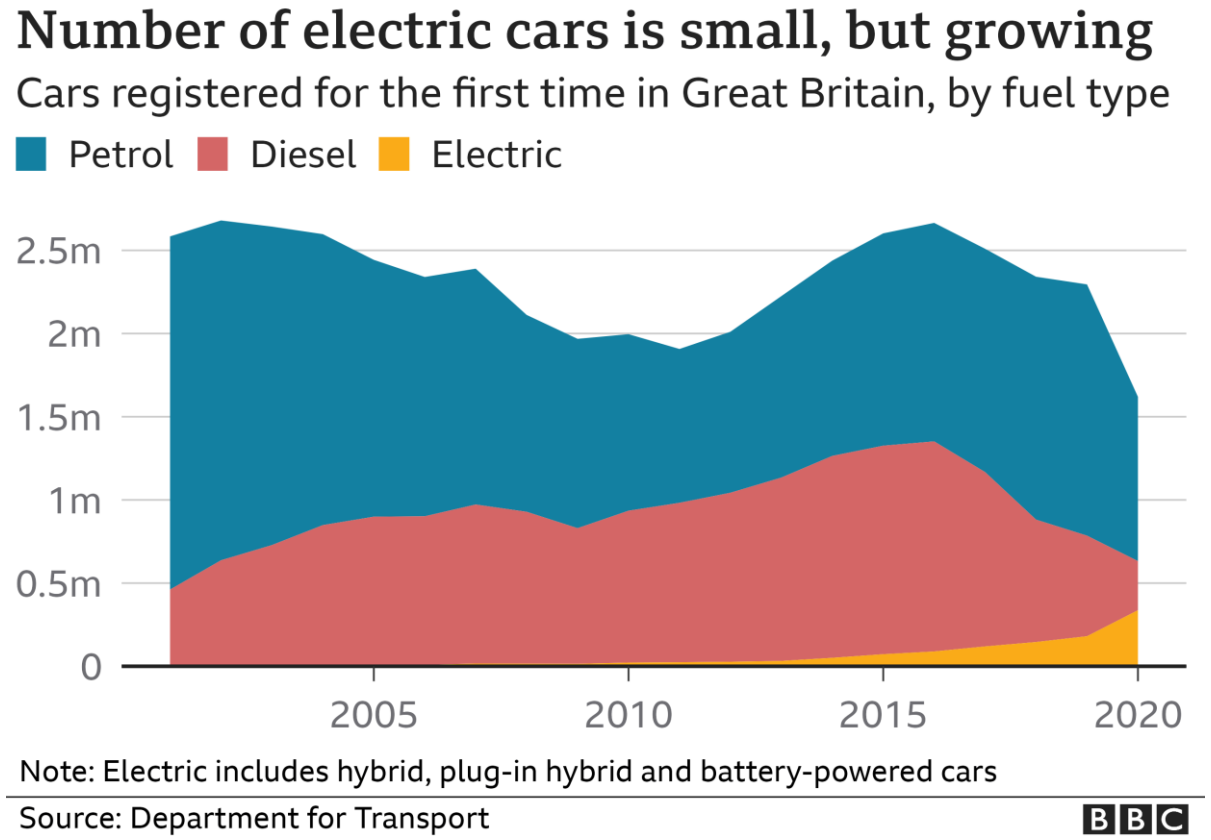
- *In 2021, 11.6% of car sales were electric.*
- *Electric cars predicted to be cheaper than ICE cars by 2027*

The move to electric will also require huge growth in publicly-accessible charging points.

- *The government wants 300,000 by 2030 - a tenfold increase.*

The government has promised to double cycling rates from 2013 levels by 2025 and build a "world class" cycling network by 2040.

- *It has spent £338m on walking and cycling infrastructure in England*



Buses and Trains?

Reducing transport emissions in the Local Plan

New developments designed to reduce traffic movements

- 20-minute town concept with good sustainable public transport
- Active travel options through major investment in cycling lanes
- Car Share Club parking spaces

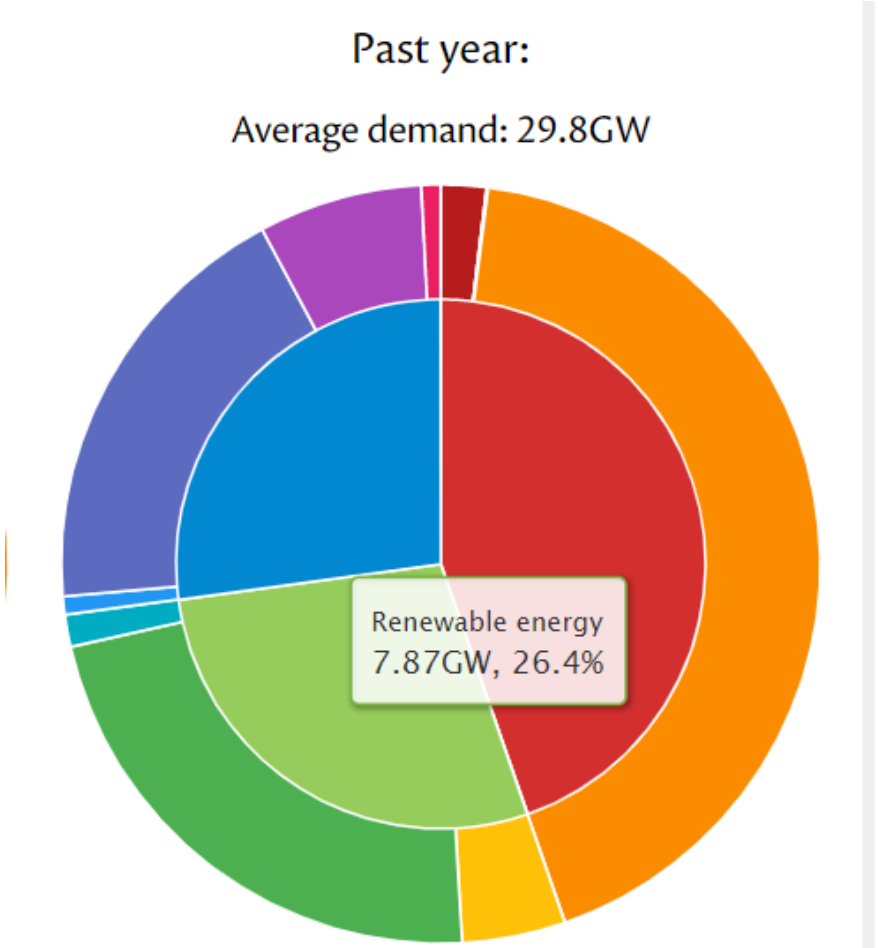
Accelerate adoption of EVs and electric bikes

- Chargers for on-street parking – lamp post and ground induction
  - ✓ Caters for no off-street parking and flats
- Secure bike parking/e-bike charging
- Increase local renewable energy supply – local Community Energy Schemes – generation and storage
  - ✓ Lower tariffs frequent user schemes
- All developments meet at least the Whitehill & Bordon requirements (CSWB18) and include support for visitor charge points, universal sockets, public charge points and car clubs.

5. Renewable energy

The demand for electricity will need to increase dramatically to:

1. Replace gas in grid generation
2. Meet demand for electrified heating
3. Meet demand for EVs
4. Provide a surplus for intra-seasonal storage
6. Supply clean fuels and feedstocks (green hydrogen, green ammonia…)



Supporting renewable energy in the Local Plan

Require new builds to *maximise* onsite renewable generation (not to achieve a minimum)

Policy to support solar farms, especially through Community Energy, plus wind farms, energy storage facilities, anaerobic digestors

If onsite renewable generation is insufficient, link to Community Energy

Technical Advice, similar to SDNP's Small Scale Renewable Energy Technical Advice Note

Publish simplified planning guidance on rooftop solar for permitted development, listed homes, conservation areas

6. Green infrastructure

Climate (drawing down and storing carbon) ↔ Biodiversity (protecting nature)

Legal duty for LAs to “have regard to” conserving biodiversity when exercising their functions (Natural Environment and Rural Communities Act 2006, section 40)

Policy to maintain and enhance green spaces - protect existing ecosystems, restore and connect previously degraded ecosystems

- Green ratio / Green plot ratio
- Corridors for wildlife

Restrict the use of offsets to achieve the ‘net’ in biodiversity net gain obligations

Policy on planting, hedgerows and trees to increase carbon sequestration, improve air quality and climate cooling

Encourage use of Nature-based Solutions (next slide)

- SuDS, street trees, green roofs, green walls spaces etc.

Nature based Solutions

IGNITION project

Headline findings

The following illustrations provide a summary and comparison of the headline findings* for each of the NBS researched.

* Average cost data taken from IGNITION project cost collation database, containing technical reports and supplier information

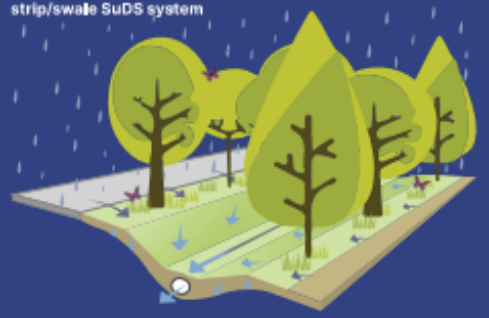
Sustainable drainage system (SuDS)

The management of surface water runoff within the urban environment to mimic the natural drainage processes, while supporting broader biodiversity and amenity aims

60–72% Rainwater runoff retained

60–80% Similarity in species richness to a natural pond

79% Total suspended solids removed in filter strip/swale SuDS system



Common alternative terms: Drainage systems, natural drainage systems, Water Sensitive Urban Design (WSuDS)

Average CAPEX installation cost (£ per m²)

£30 Detention ponds/basin	£26 Retention ponds/basin
£366 Soakaway	£23 Swale
£336 Raingarden	

Average OPEX maintenance cost (£ per m²yr)

£0.33 Detention ponds/basin	£1.10 Retention ponds/basin
£0.12 Soakaway	£0.10 Swale

Street trees

Trees located next to or within a public road

SuDS-enabled street trees

Street trees combined with a sustainable drainage system

30–50% Increased restaurant patronage

3°C Air temperature reduction

5.5kg Carbon sequestered per tree annually

Average CAPEX installation cost (£ per m²)

£248 per tree	£7,477 SuDS-enabled street trees

Average OPEX maintenance cost (£ per m²yr)

£0.12 per tree

Green roof

Vegetation growing on any structure's horizontal surface

6.7% Total energy savings for the space directly below the green roof

6.9% Uplift to property value by an accessible green roof

11db Noise reduction by an extensive green roof

Common alternative terms: Living Roof, eco-roof, roof garden, brown roofs, green-blue roofs, biodiverse roofs

Average CAPEX installation cost (£ per m²)

£126 Extensive green roof	£176 Intensive green roof

Average OPEX maintenance cost (£ per m²yr)

£6 Extensive green roof	£11 Intensive green roof

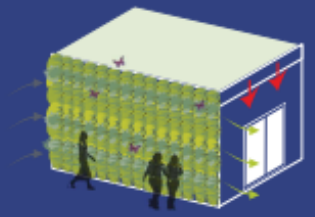
Green wall

Vegetation growing on or against a vertical surface

8% Total energy saving for adjacent space

2.7°C Reduction in indoor temperature from green façade

18–35% NO_2 removed in street canyons



Common alternative terms: Green facades, bio-responsive/bio reactor façade, living walls, vertical greening system, green screen, hedges

Average CAPEX installation cost (£ per m²)

£282 Green façade	£702 Living wall

Average OPEX maintenance cost (£ per m²yr)

£38 Living wall

Urban parks and green space

Areas that are naturally or artificially covered with vegetation (e.g. grass, bushes or trees). Can range from playing fields and highly maintained environments to relatively natural landscapes

10% Increase in willingness to pay for products associated with green cover

9.5% Increase in property value in direct or close proximity to a park

84.2% Rainwater runoff retention

Common alternative terms: Urban parks, urban green cover, amenity grassland and sports pitches

Average OPEX maintenance cost (£ per m²yr)

£0.71 Urban parks and green space

IGNITION - Greater Manchester Combined Authority (greatermanchester-ca.gov.uk)

Local Plans worth looking at

- Leeds https://www.leeds.gov.uk/planning/planning-policy/local-plan-update/introduction-and-summary
- Reading https://takeclimateaction.uk/climate-action/how-reading-uses-planning-deliver-new-zero-carbon-homes
- Merton https://www.merton.gov.uk/system/files?file=0220climate20change20merton20local20plan20reg1920july21.pdf
- Stroud https://www.stroud.gov.uk/info/Pre_sub.pdf

Summary of ideas from PeCAN in the SPD consultation / 1

1. Increase contributions to address climate and biodiversity crises by future proofing future homes
    - Avoid retrofitting new homes in the future.
2. Reduce annual house building target by up to 200 a year. Use Nov 2021 govn. permission for Alternative Approach to Standard Method with 2021 Census new data (Note: 2014 HEDNA data suggests actual need is 400 homes a year versus 608 after Standard Method number uplift.
    - Every 100 fewer houses a year can avoid EIGHT THOUSAND tonnes of embodied CO2 a year)
3. All new build
    - energy efficient, following Passivhaus principles, resulting in EPC A
    - have low carbon heating, no new gas grid connections
4. All renovations and retrofits to existing buildings include a statement of alignment with a future move to low carbon heating to achieve at least EPC C
6. Proposals consider Nature-based Solutions: SuDS, street trees, green roofs, green spaces
7. Close ‘viability and feasibility’ loopholes inc. allowable solutions
8. Create administrative and financial incentives for proposals that maximise sustainability
9. Larger developments should include low carbon district heating (not CHP) or explain why not

Summary of ideas from PeCAN in the SPD consultation / 2

10. Larger developments should include microgrids and maximum decentralised energy generation and storage
11. Planning should promote local energy schemes –' big solar' and community energy
12. Planning applications should stipulate the use of sustainable building materials to reduce life-cycle embodied carbon and end-of-life impacts inc. other pollutant emissions
13. Site plans promote active travel and reduce reliance on car transport
14. EV charge points for all homes including on-street parking and visitor spaces
15. New developments should calculate and disclose the estimated embodied and operational GHGs so that future occupants can track performance and Local Authorities can monitor the GHG impacts of new development
16. Trees and biodiversity to be retained following hierarchy, offsets to follow best practise
17. Ratio of built environment to green environment

Feb 2022. Full document available on the Resources page of PeCAN website

See also PeCAN's submission to the Community COP "Decarbonising Buildings - PeCAN inputs"


Thank you