



CO₂ Emissions in Camden - what might be achieved by 2030

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Carbon Descent

Camden's (Territorial) Emission Sources

Homes



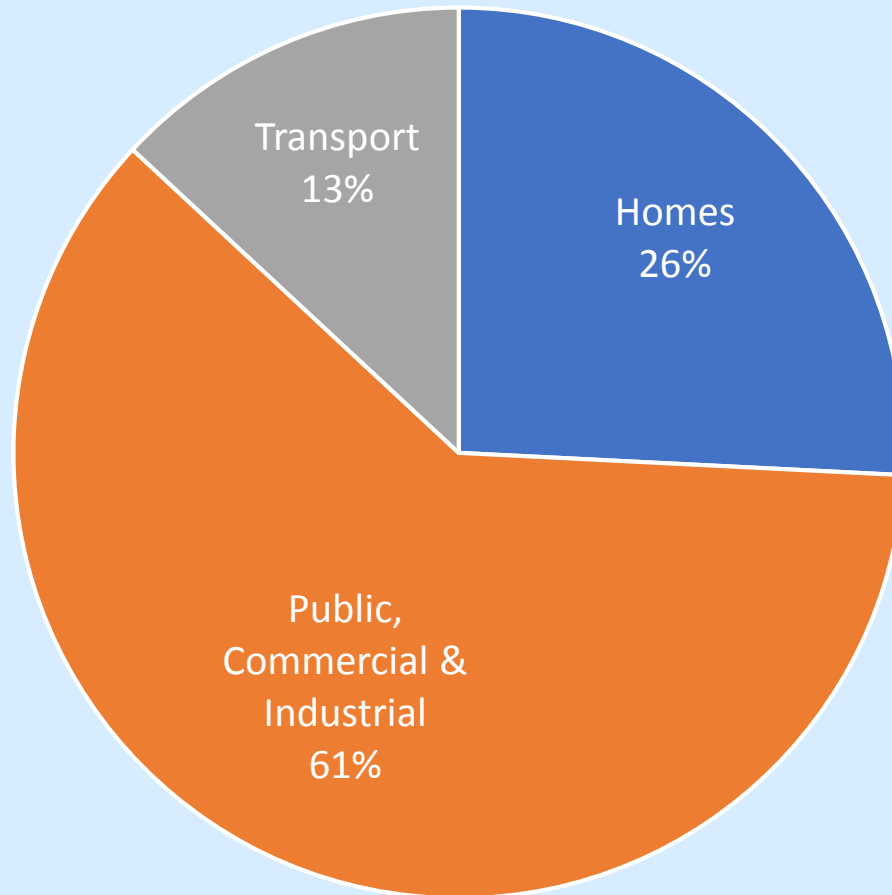
Road transport



Public, Commercial & Industrial

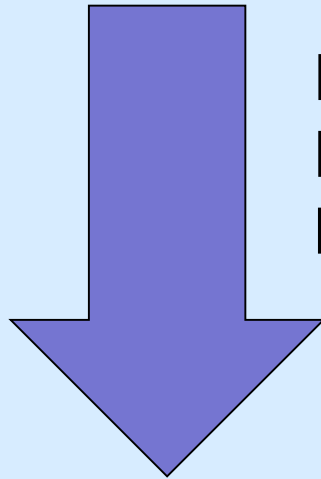


Camden CO2e by Sector (Territorial) 2016



87% of emissions arise from energy use in buildings

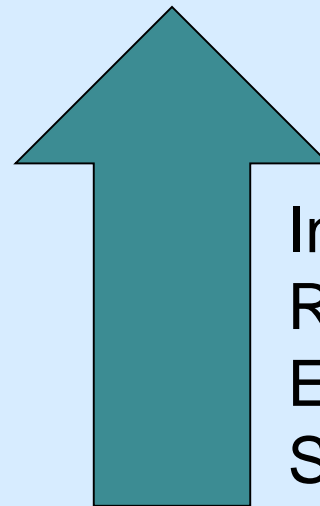
Solutions



Reduce
Energy
Demand

Does it matter which we do?

Zero Carbon



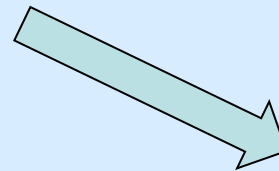
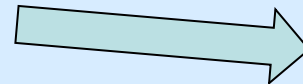
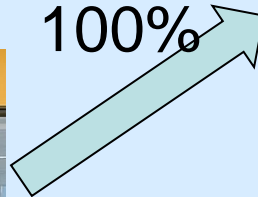
Increase
Renewable
Energy
Supply



Solutions – Road Transport



Energy Saving 100%



Energy Saving 75%



carbonDESCENT
Delivering a Sustainable Future

Solutions – Buildings - Heat



Solutions – Buildings - Heat

Most lofts, cavity walls & windows already done

Leaving the most challenging element – solid walls

Energy
Saving
57%

(weighted to
Camden stock
types)



Solutions – Homes - Heat

Gas Boilers



Energy
Saving
65%



Electric Heat Pumps



Solutions - Buildings - Heat



Replacing larger boilers
requires...
...larger heat pumps!

Energy
Saving
65%

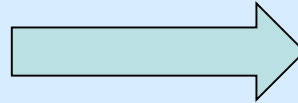


Solutions – Buildings - Lighting

Halogen Lamp



Energy saving
95%



LED Lamp



Fluorescent Lamp



Energy saving
55%



LED Lamp



Solutions – Buildings

Energy savings depend on building type



236 homes demolished per year...

...1320 homes built

101,000 m² of non-domestic
demolished per year...

...149,000m² built

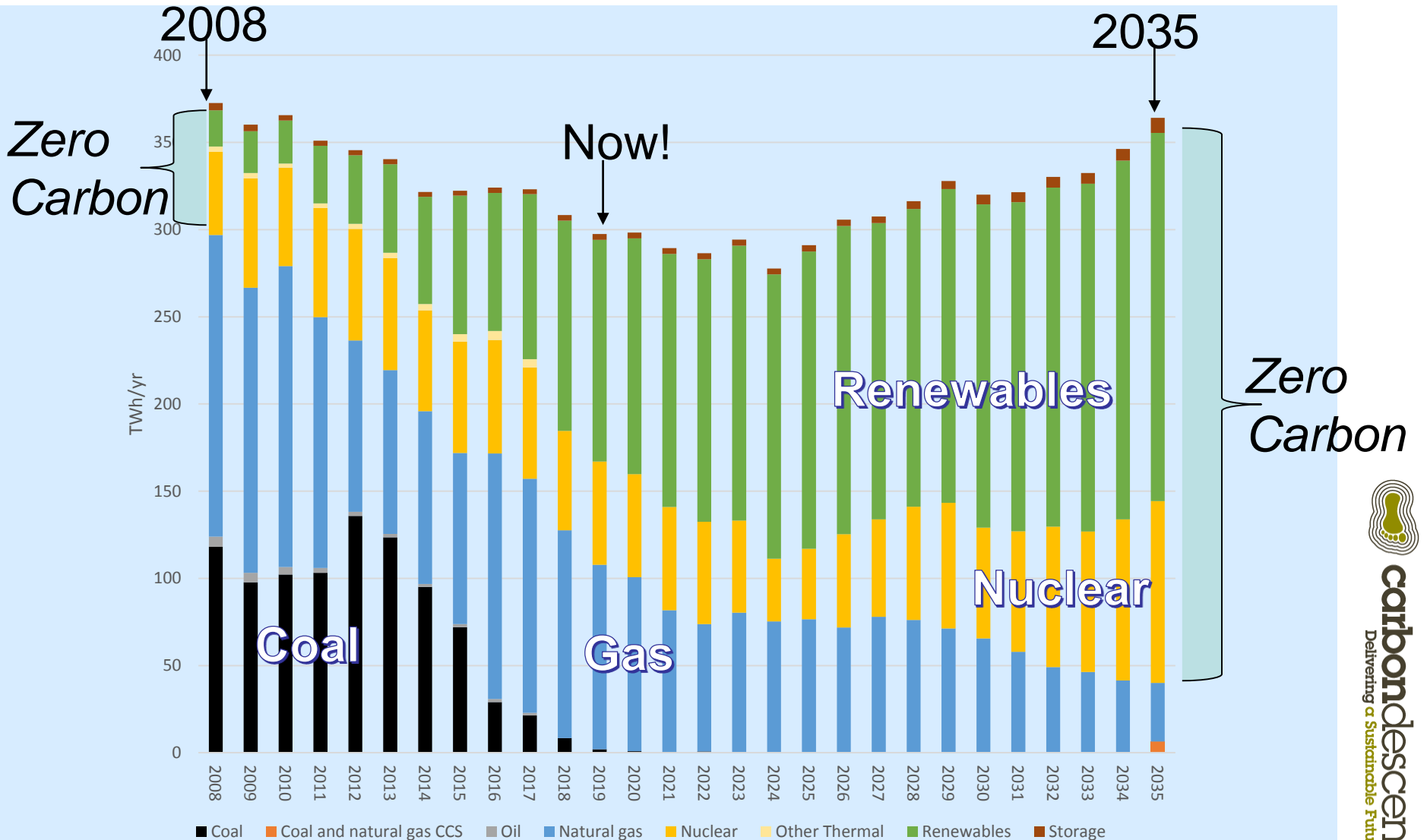
What do all these have in common?



What they have in common...



How is the UK's electricity generated?



Source: BEIS Energy & Emission Projections

Renewable electricity generation in Camden?

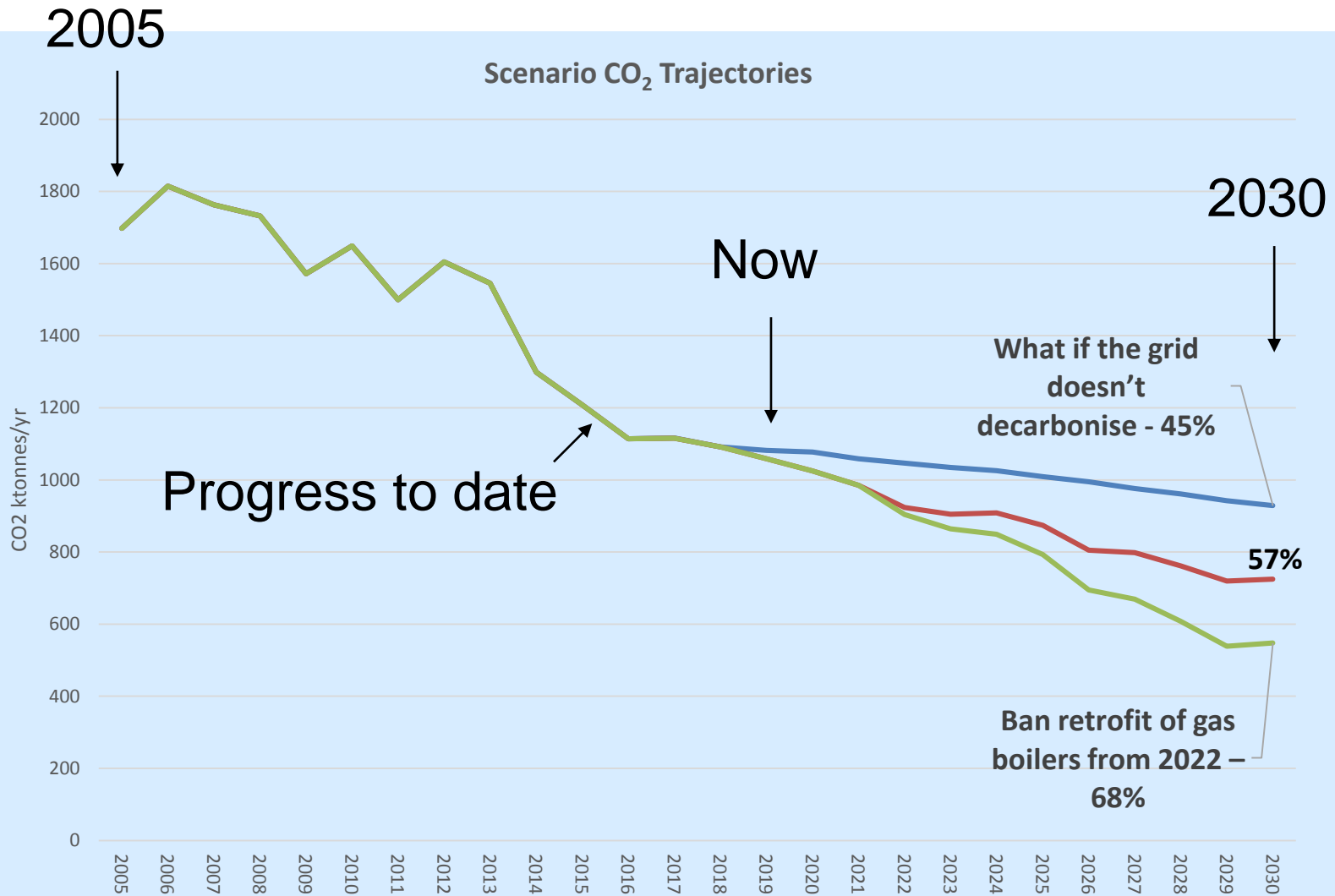
Most suitable to Camden: Solar PV



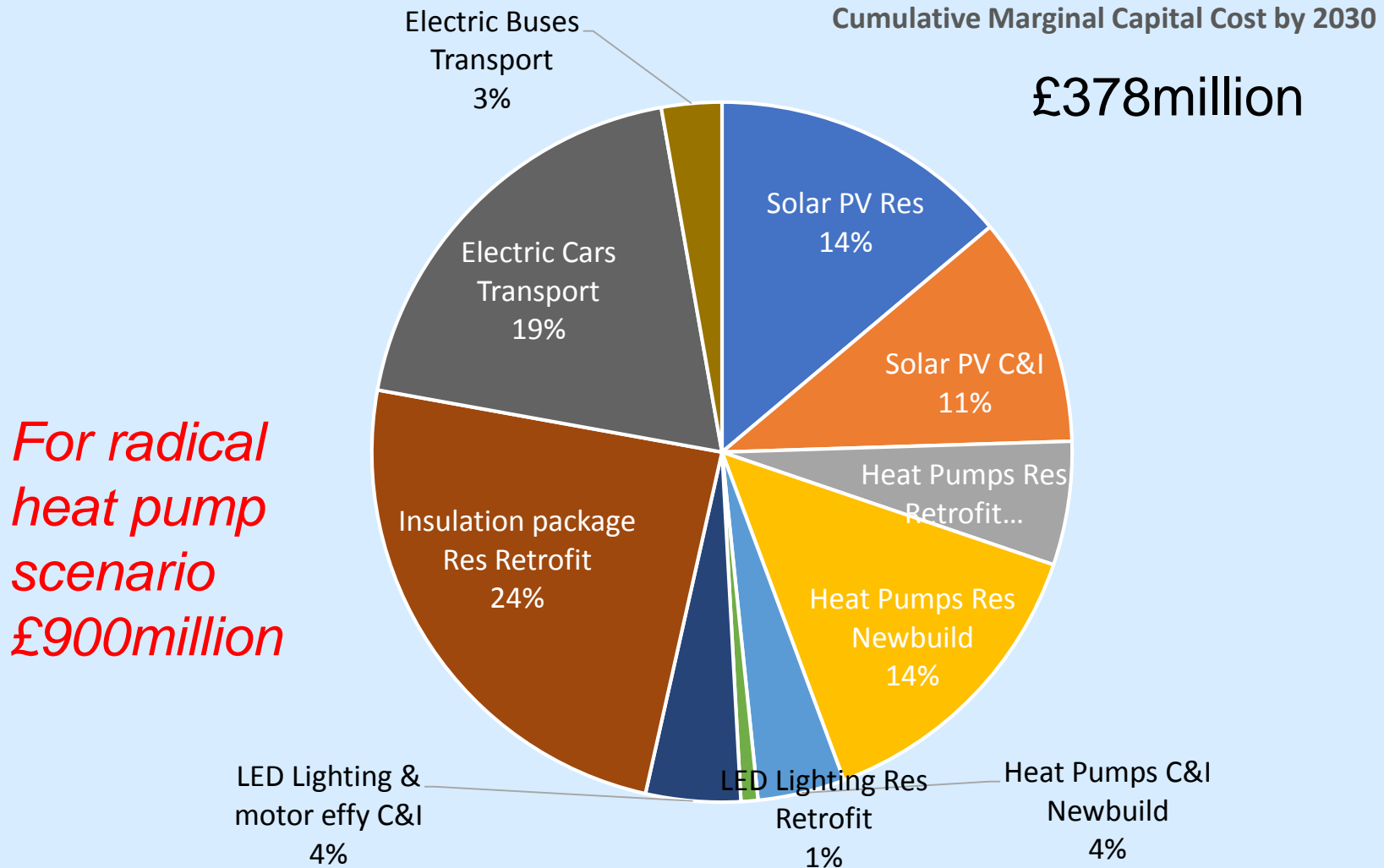
What we modelled – by 2030

Measure	Cumulative Numbers	Units
Heat pumps	All	Newbuild from 2022
Heat pumps	4,800	Existing homes
Insulation package	9,950	Existing homes
LEDs	All	Lamps in homes
Domestic Appliances	Continuation of current trends	All homes
LEDs & Motor efficiency	Continuation of current trends	All existing non-domestic buildings
Demolition & Newbuild	236/1320	Homes
Solar PV	64	MW
Reduce vehicle km	15%	Vehicle km
Electric cars & buses	40%	Vehicle km
Grid Decarbonisation	60%	Reduction from 2016

Study Results - % Reductions on 2005



Study Results – What Will it Cost?



Camden Net Zero Carbon Challenges

- > Zero emission zone – outlawing non electric vehicles
- > Camden's limited powers – no power to ban fitting of gas boilers in existing buildings – only newbuild
- > Even if could ban retrofit gas boilers lifespan 15years.
- > Cost – Heat pumps are approx £4k more per home than a gas boiler – Govt subsidy uncertain after 2021
- > Grid electricity decarbonising fast but won't decarbonise completely by 2030
- > Only feasible local renewable electricity generator is solar PV – not enough roof area to supply Camden's needs
- > Very limited land area to plant trees



Other emission sources exist...



Conclusions

- > Technical solutions exist to achieve a Zero Carbon Camden
- > Main issues are:
 - » Cost
 - » Camden's limited powers (and budget)
 - » Reliance on Grid decarbonising completely

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