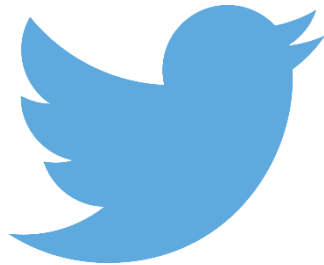


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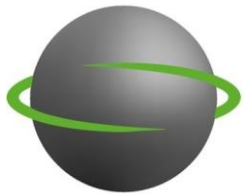


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Becoming Net Zero Carbon Across The Corporate Building Estate

By Alan Barber

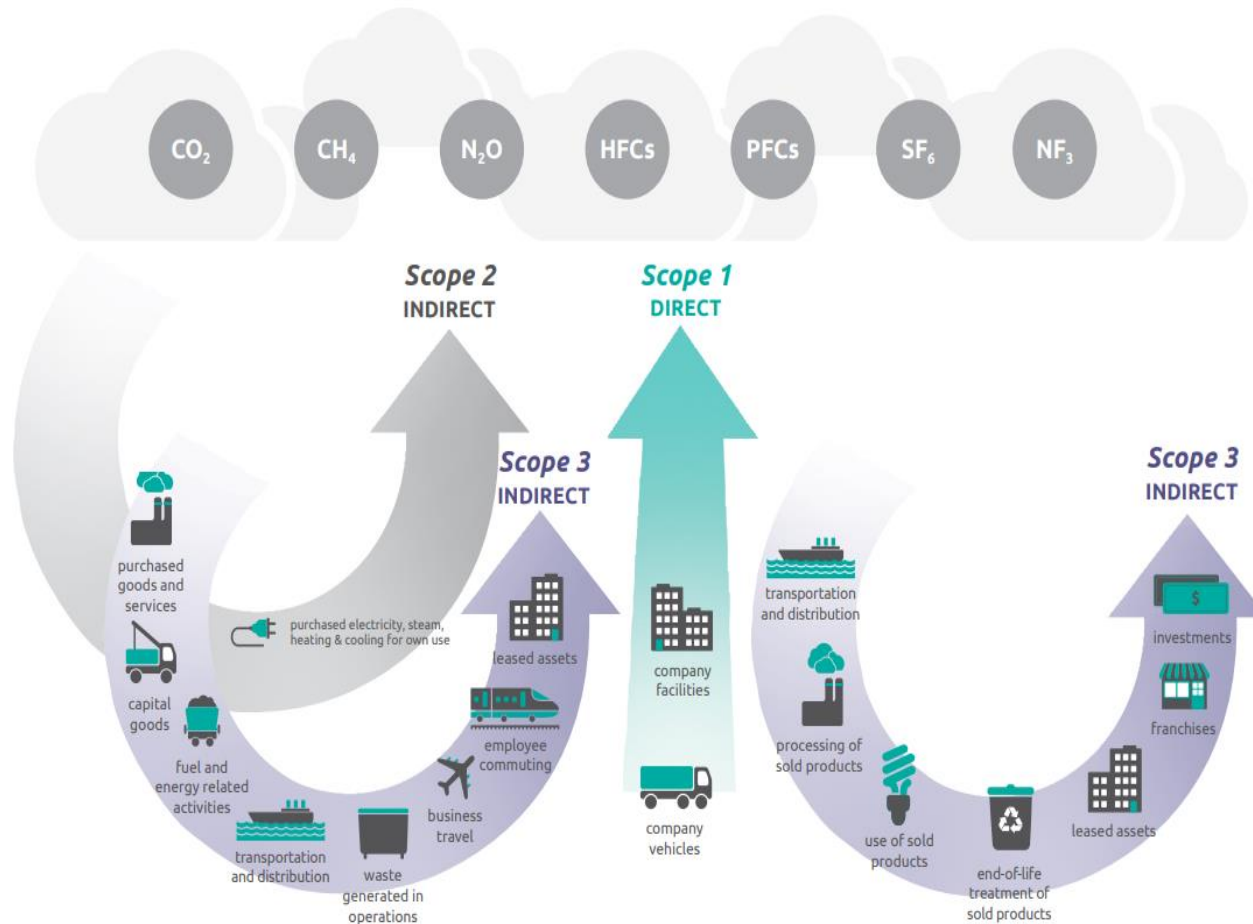
APSE Associate
& Director of Salvis



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Emissions



Scope 1 and 2 - Calculating Emissions

- Identify assets
 - kWh
 - Heat source
 - Energy expenditure
 - Floor area
- Council owned vehicles
 - Type of vehicle
 - Volume of fuel and mileage

Scope 3 - Calculating Emissions

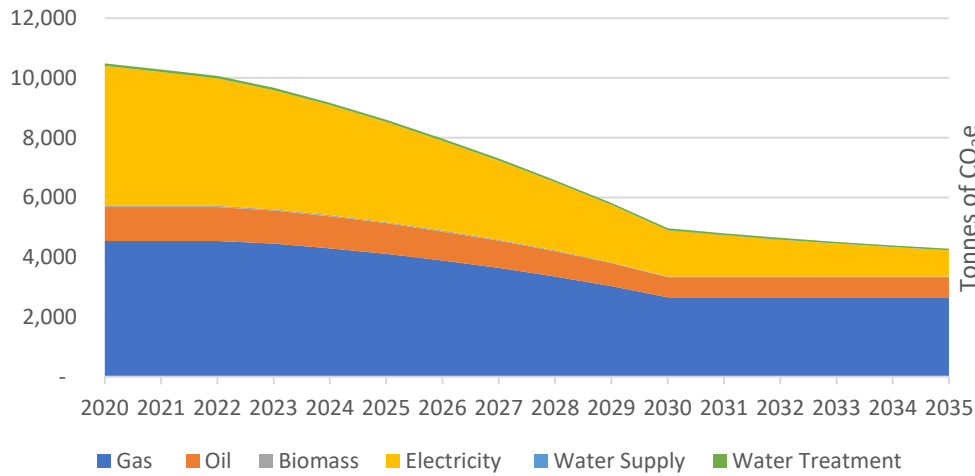
- Water supply and wastewater
- Waste
- Contractors
- Staff travel
- Leased assets
- *The supply chain*

How to get your building estate to be zero carbon

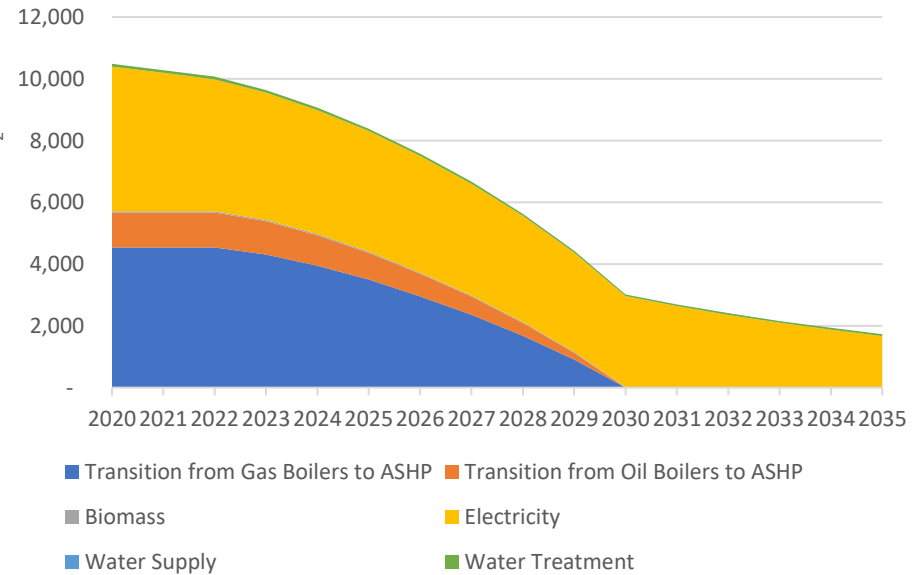
- Reduce energy usage and optimise building performance (i.e. energy efficiency)
- Generate renewable local power
- Offset

Building Estate Net Zero Trajectory

Building Energy and Water with Gas Boiler

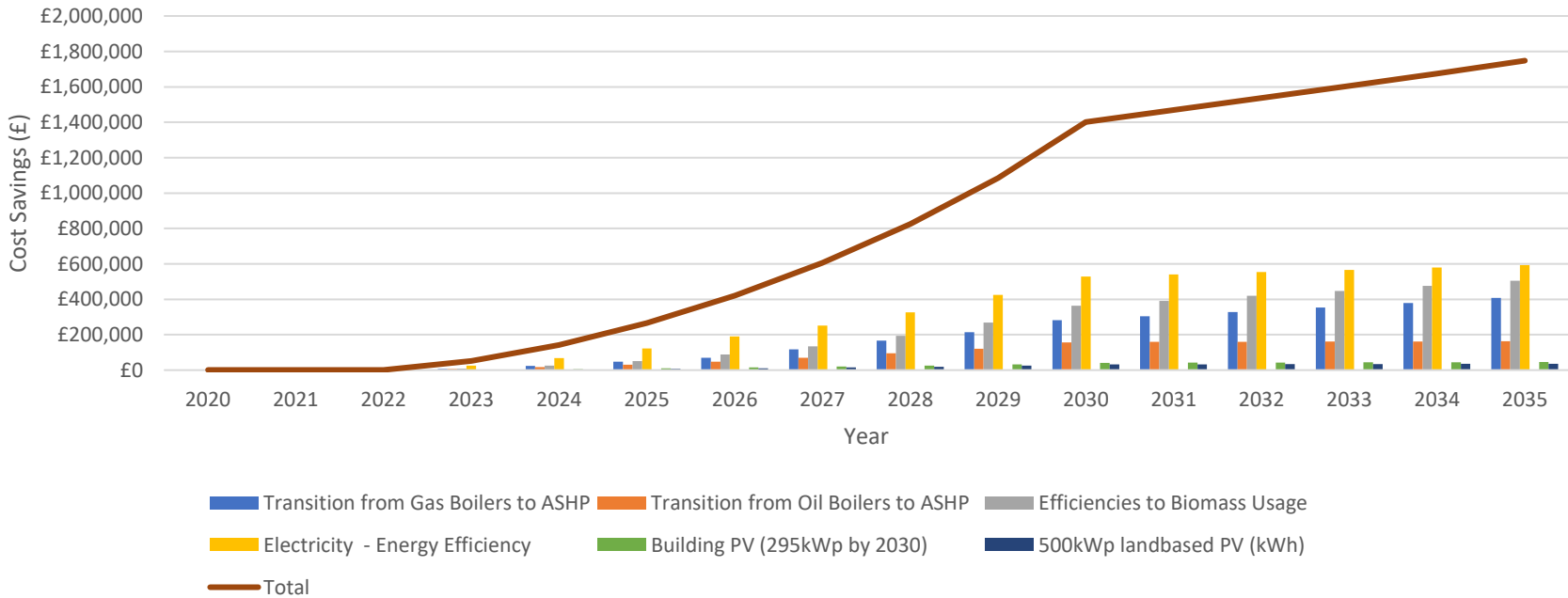


Building Energy & Water with ASHP



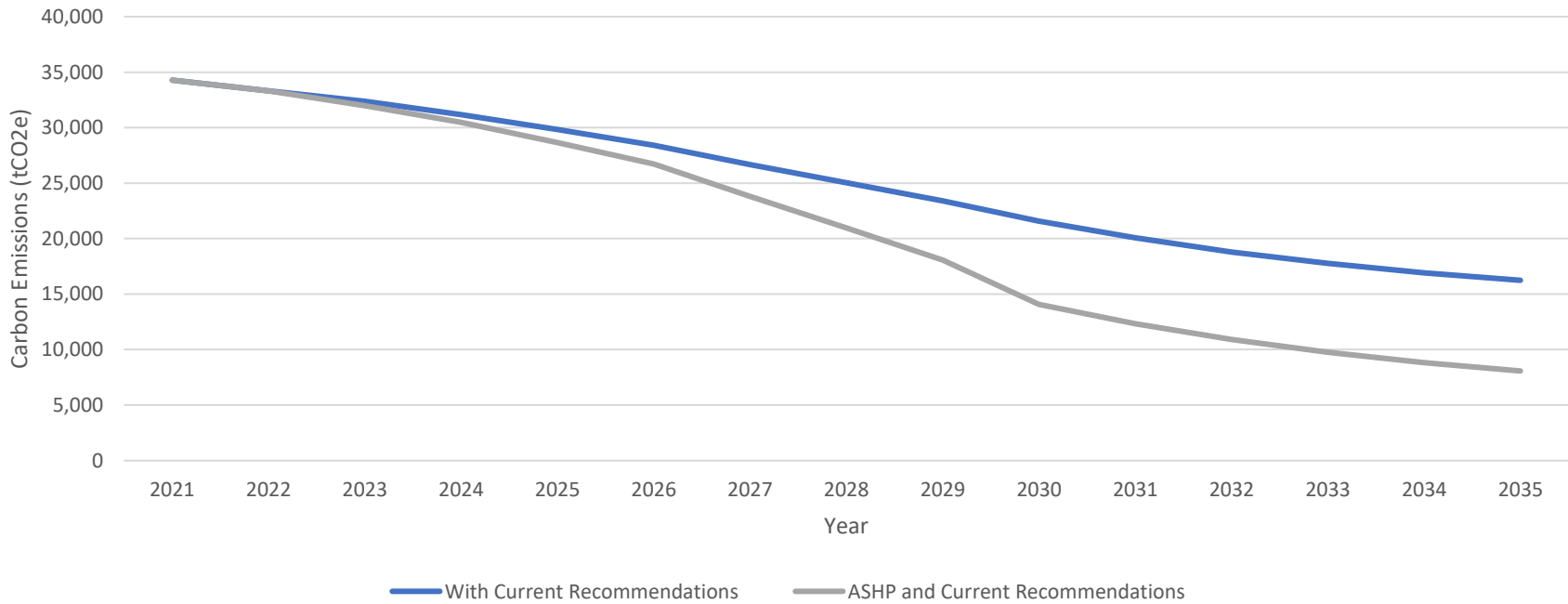
Building Estate Net Zero Trajectory

Cost Savings From Interventions

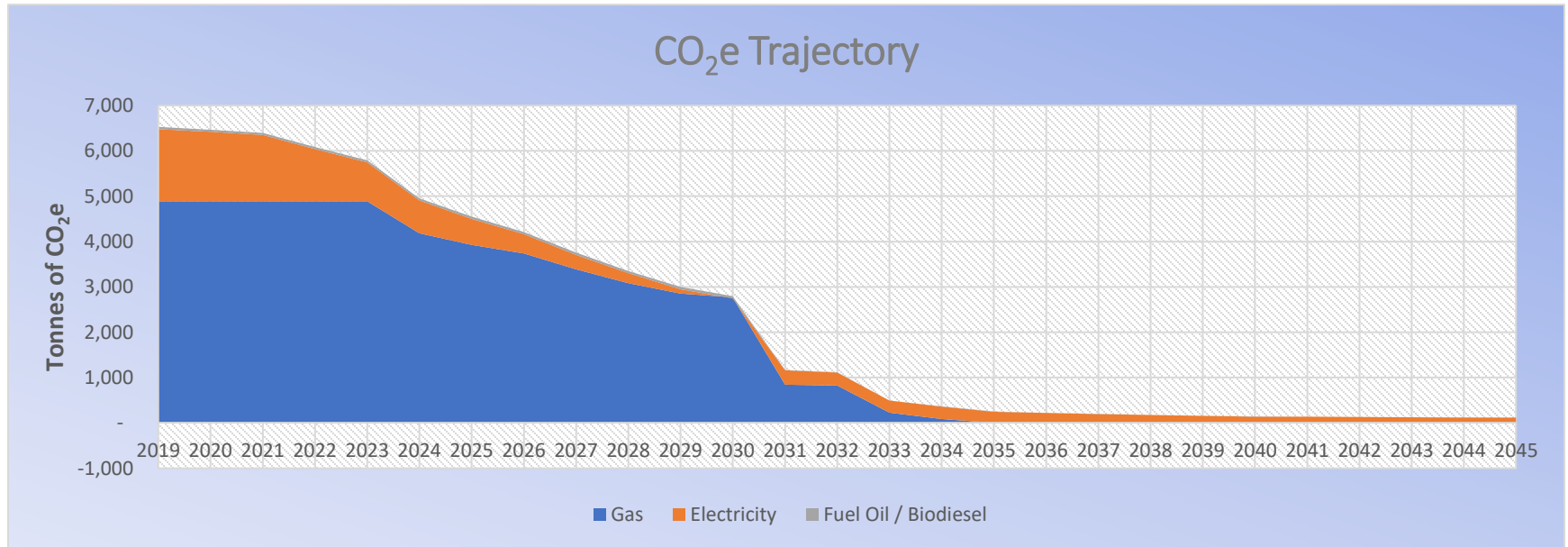


Housing Carbon Emissions

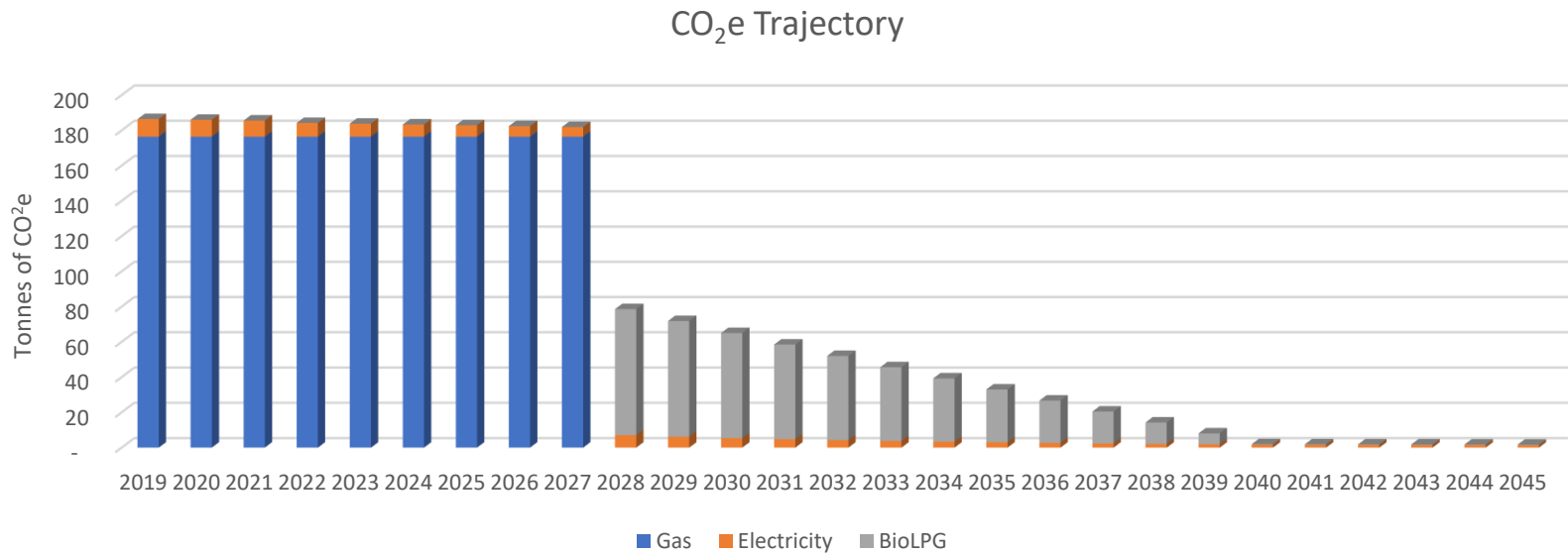
Total Carbon Emissions



Heat Decarbonisation Plan – Hospital Estate



Heat Decarbonisation Plan – Crematorium



Carrying Out Energy Audits

- Prepare a report that can be submitted with funding applications (Scotland's Public Sector Heat Decarbonisation Fund)
- Include energy saving calculations
- Include a breakdown of capital cost

Prioritising projects and feasibility studies

- Analysing existing and proposed building loads
- Comparing technologies
- Maintenance requirements and cost
- Carbon savings
- Cost savings
- Funding opportunities
- Payback and ROI

Scotland's Public Sector Heat Decarbonisation Fund

- Technical application
- Pre and post peak heat loss and system sizing
- Like for like costs
- Age of plant
- Detailed cost breakdown
- Electrical capacity
- £325 tCO₂eLT???

Challenges

- Corporate challenges
- Zero carbon heating
- Grid capacity

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