Achieving Net Zero – What Does It Mean?

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Carbon Descent & Bishop's Stortford Climate Group

What I'll talk about

- Which emissions are we reducing to zero?
- What would net zero 2030 look like for Herts?

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What are Hertfordshire's Carbon Emissions?

Let's take a step back and ask..

What are the UK's Carbon Emissions?

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Remember this disagreement?

The government said: 42% carbon reduction since 1990

Greta Thunberg said: only 10%

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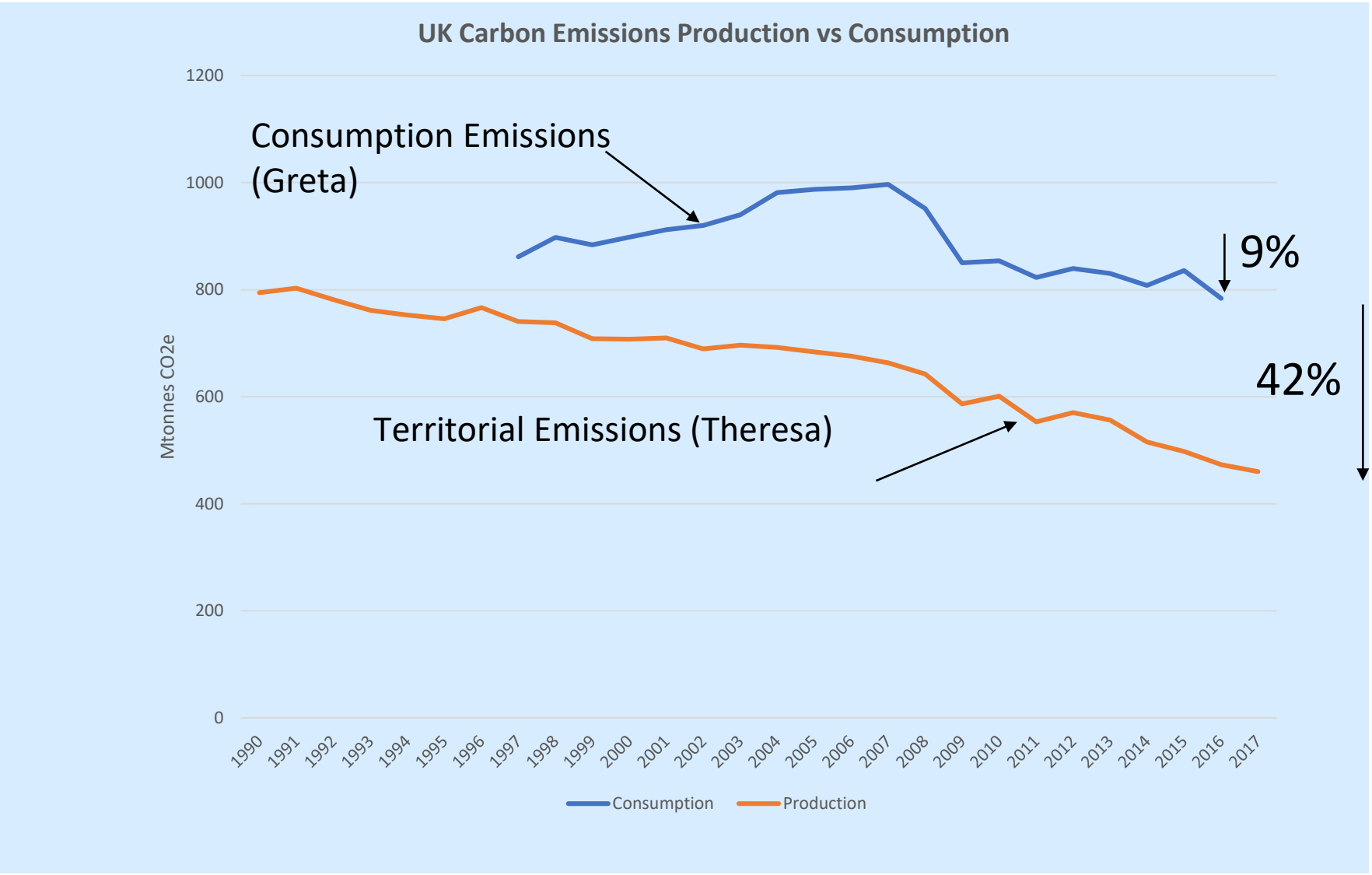
It depends how you measure it



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What's the difference?

Accounting Method	Definition	Pros/Cons
Production/ Territorial 	Any emissions that occur *within UK boundaries*	We have more control over them How to allocate international aviation/shipping?
Consumption 	What we are *responsible for as consumers* including imports but excluding exports	More reflective of our real carbon impact Difficult to measure Less easy to impact.

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Some examples

Territorial✓
Consumption✓

Territorial ✓
Consumption ✓✘

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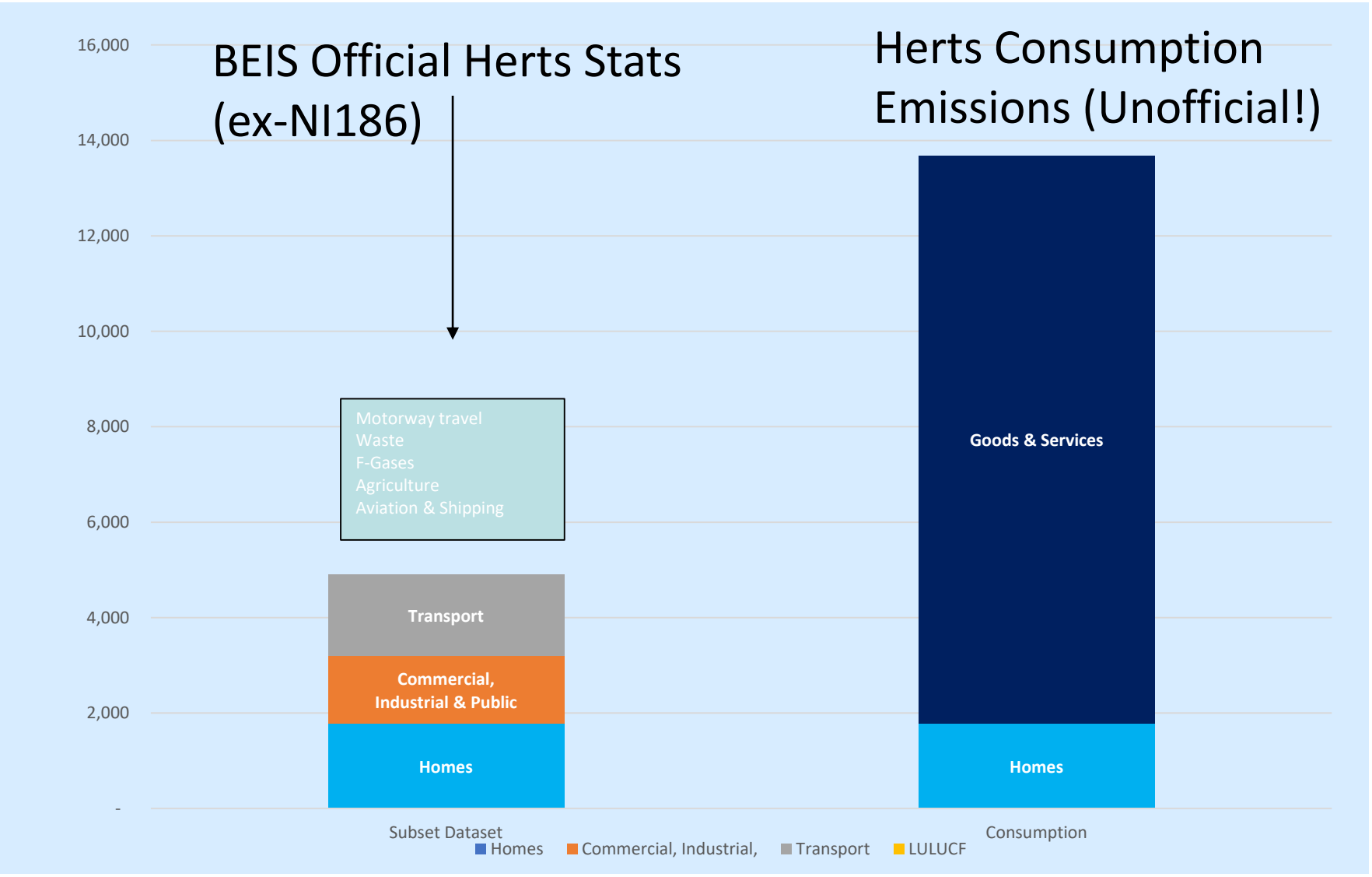
Herts Emissions 2016/2017



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What would a Net Zero Herts look like?

Is it even possible (by 2030)?

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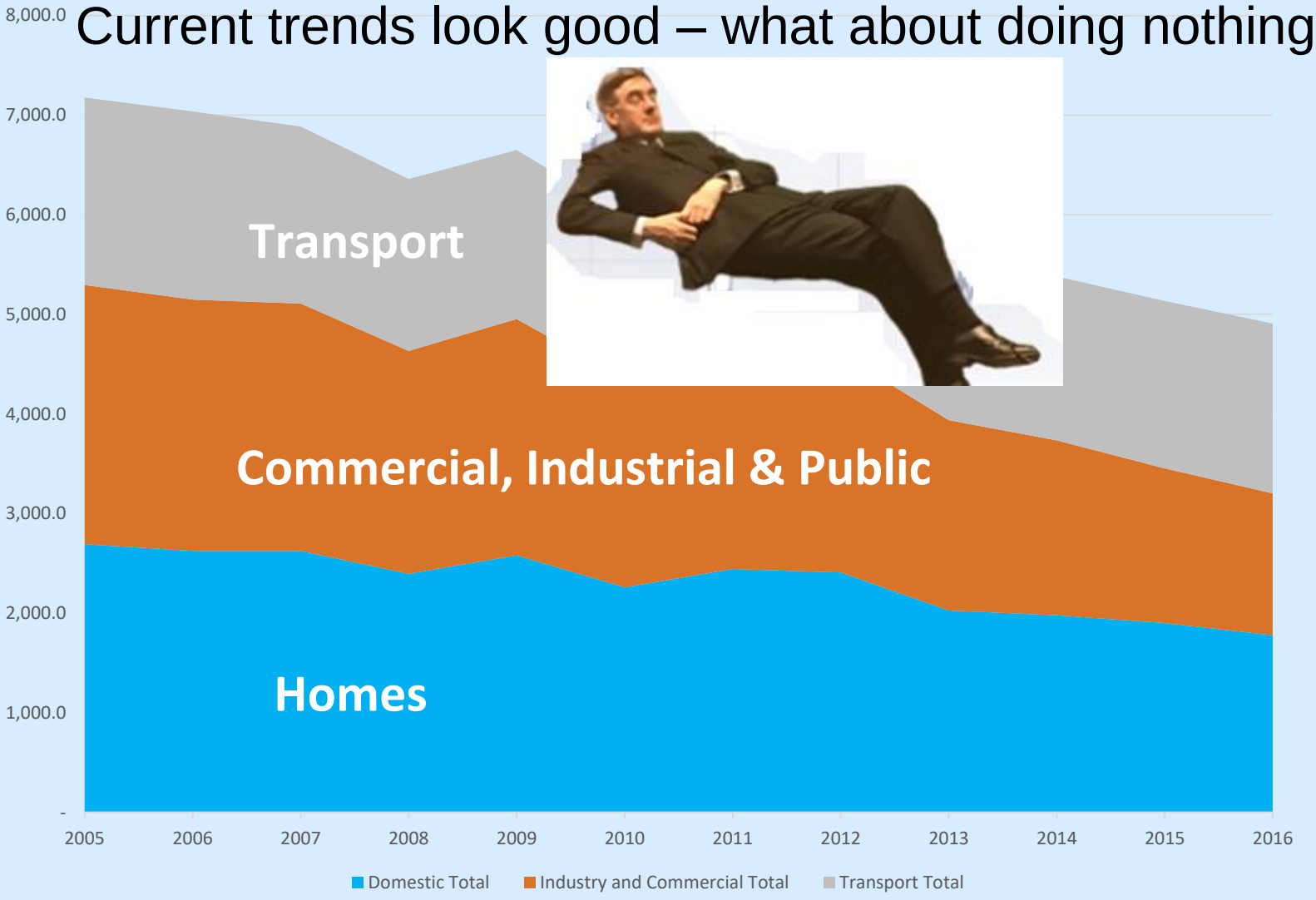
Herts Emissions (BEIS Subset)



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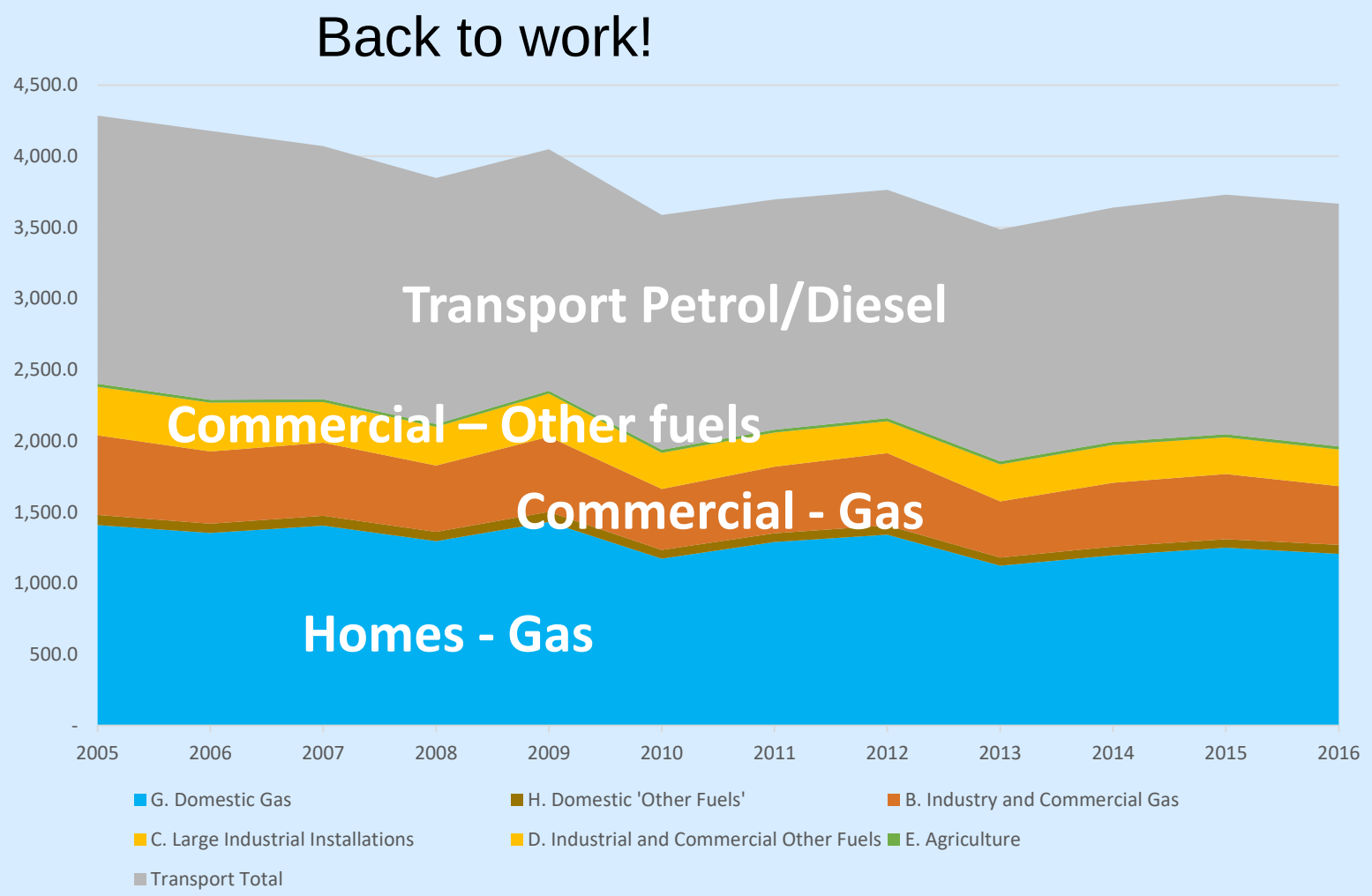
Herts Emissions (BEIS Subset) without Electricity



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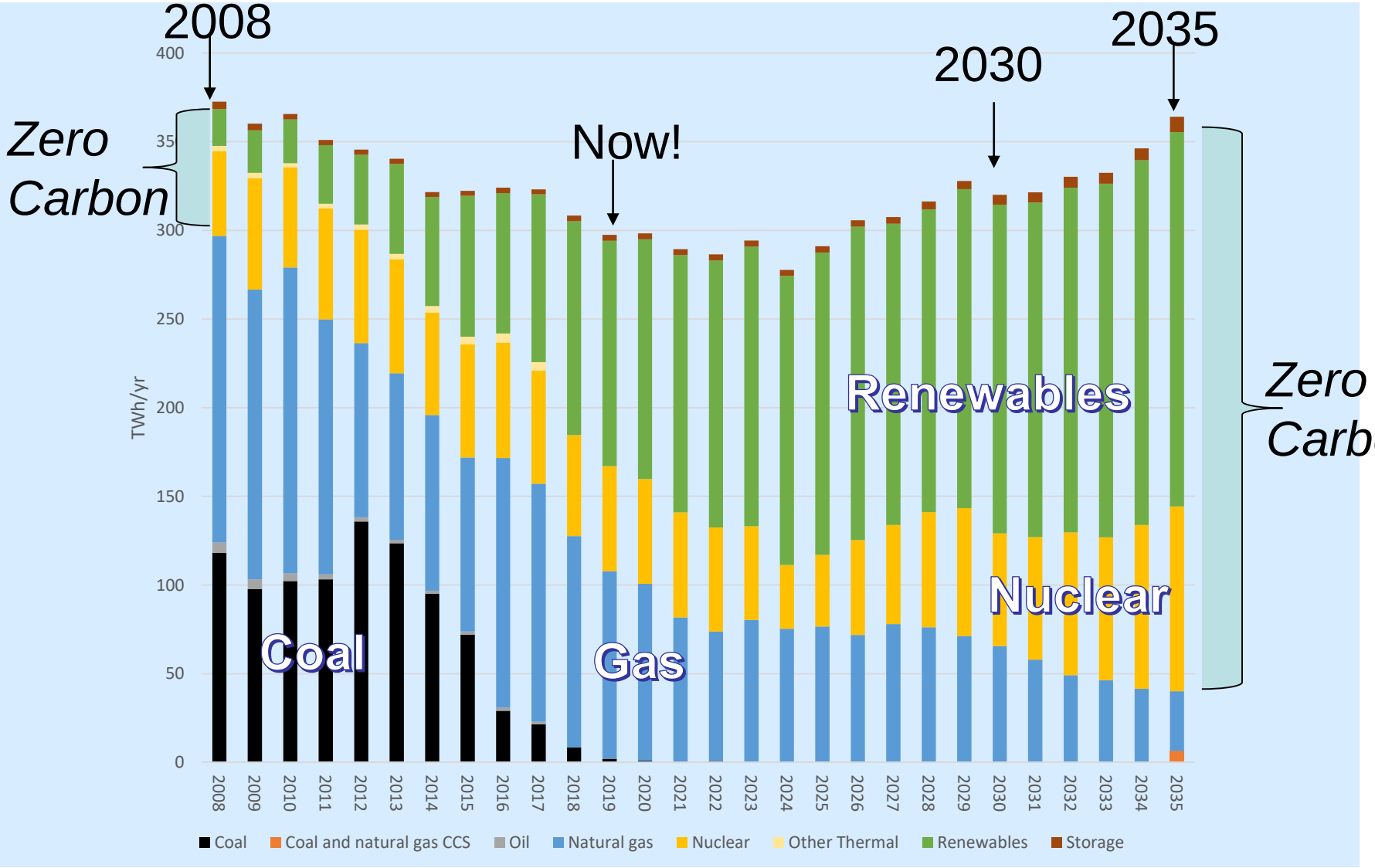
UK's electricity generation – past & future

Electricity not totally zero carbon in 2030



Source: BEIS Energy & Emission Projections

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What about Offsetting?

- "Net" Zero or Carbon "Neutral" implies emissions may be offset by some removals
- Tree planting/Reforestation sounds cheap and easy… But how much land?

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Area of Forest Required Herts 2017 CO2 (BEIS Subset)

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Area of Forest Required Herts 2017 CO2 (DEFRA Consumption 2016)

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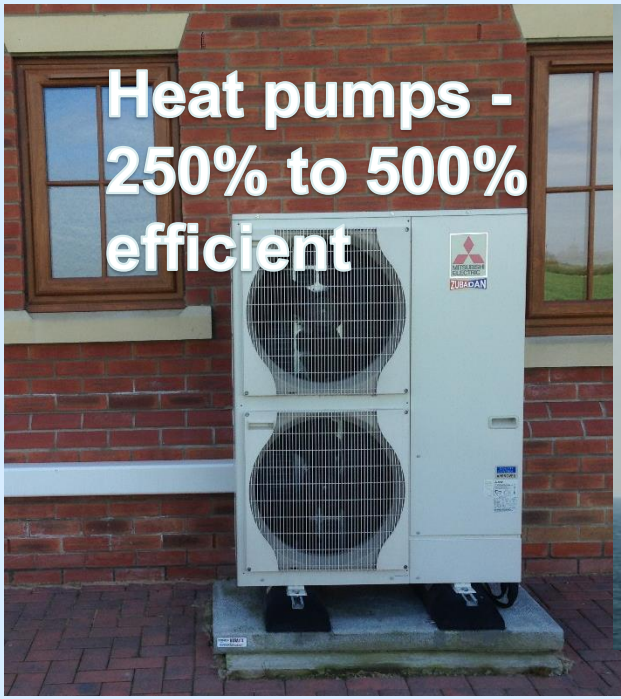
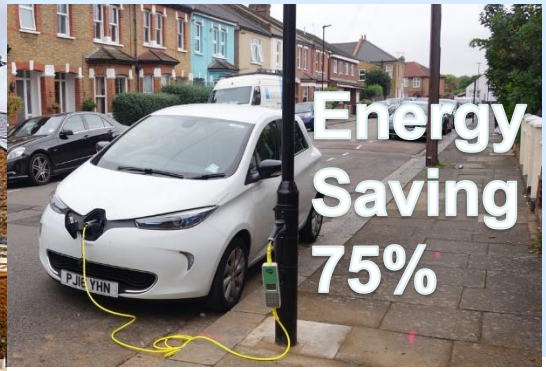
Key technologies





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Close to Zero Scenario

Measure	Cumulative Numbers	Units
Heat pumps (individual or DH)	All	Newbuild (50,000 homes)
Heat pumps (individual or DH)	All	Existing homes & Businesses
Insulation package	All	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
Induction hobs and electric ovens	All	Existing & newbuild homes & businesses
Solar PV	?	MW
Reduce vehicle km	10%	Vehicle km
Electric cars & buses	100%	Vehicle km
Grid Decarbonisation	60%	Reduction

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Scenario Results

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Other emission sources exist…

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Conclusions

- It's challenging but not impossible!
- Technical solutions exist to achieve a Net Zero Herts
- Main issues are:
  - Lifespan of existing boilers and cars
  - Cost
  - Hert's CC and DCs limited powers (and budgets)
  - Reliance on Grid decarbonising completely
- Offsetting is not a workable substitute for real carbon reduction measures
- A short period of careful planning is required – followed by the an intense period of implementation!

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