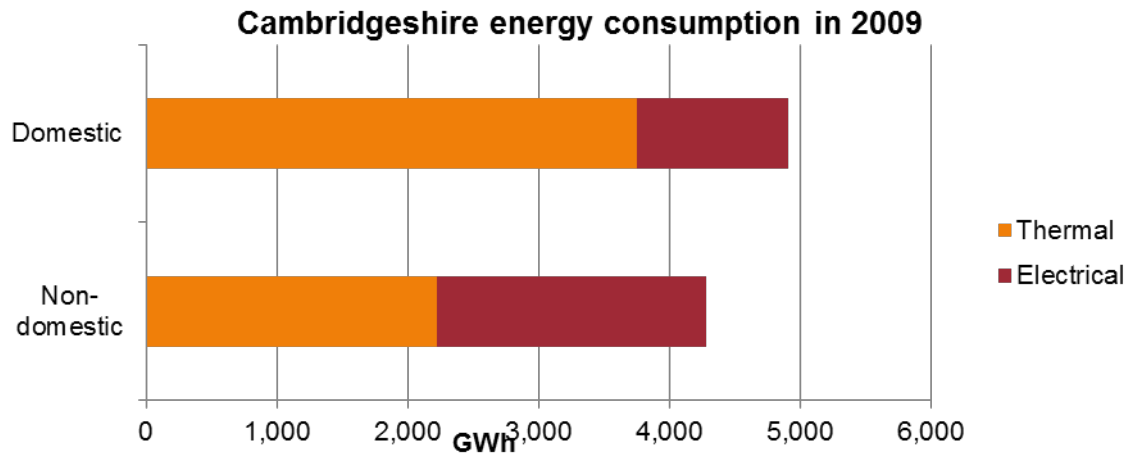
Cambridge sub-region 2030 visioning - energy

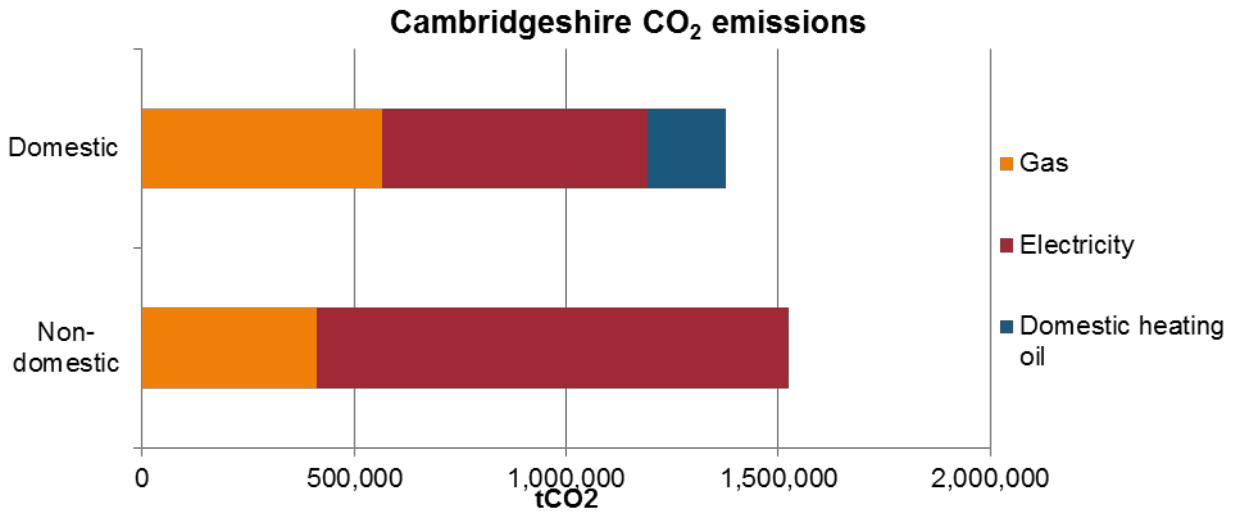
Presenter's name: Daniel Archard

Presented to: Cambridge sub-region 2030 vision

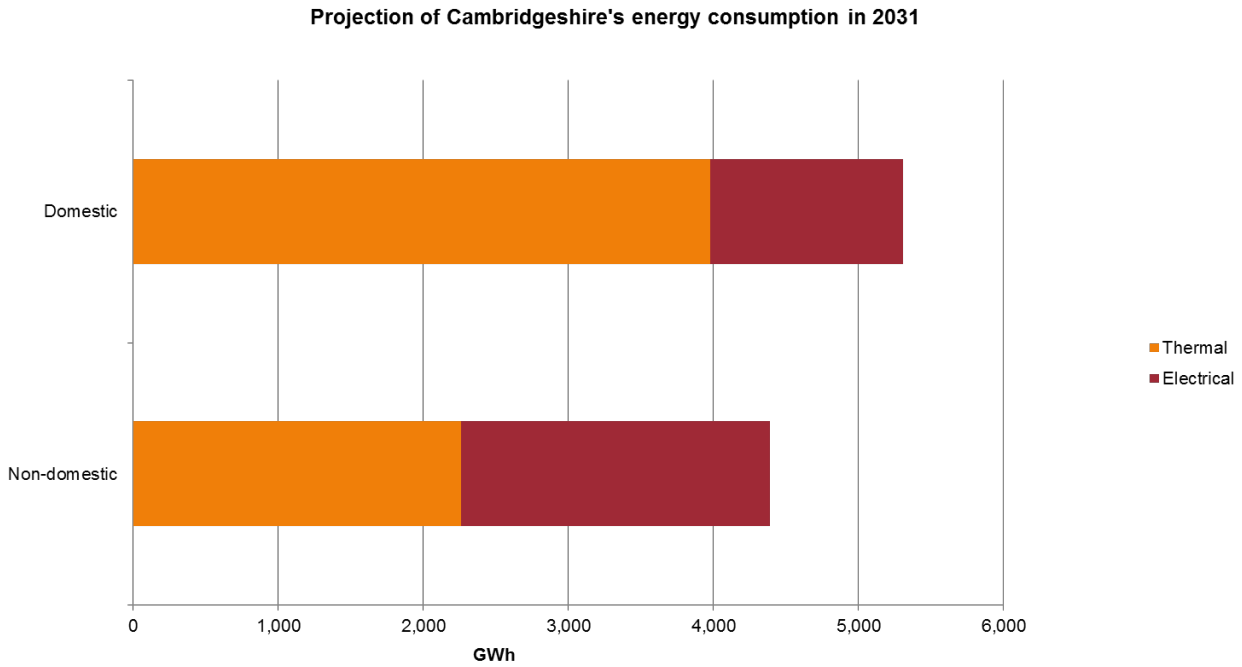
Date: 05/12/2012

Current energy consumption in Cambridgeshire



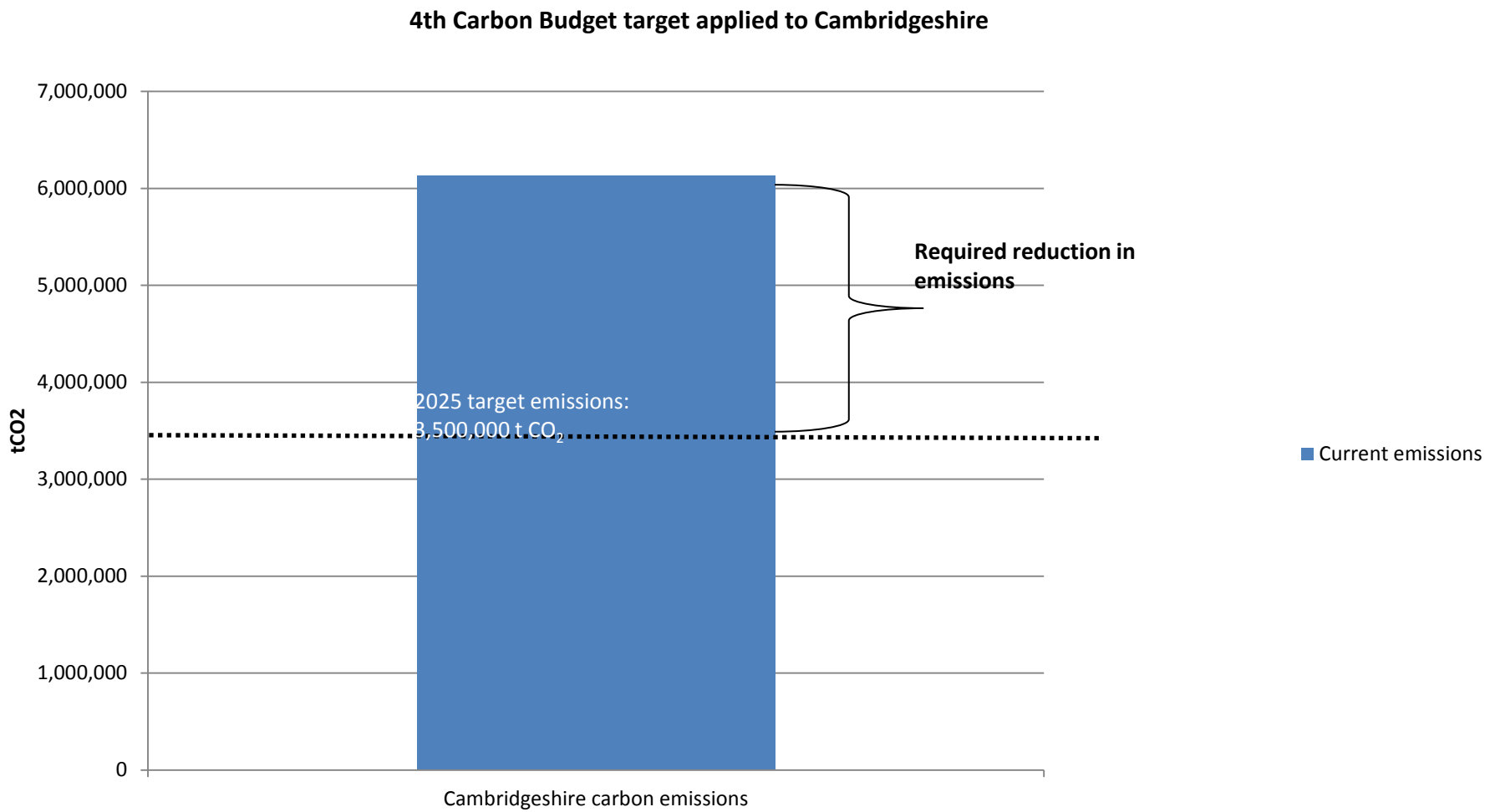


Projection of 2030 energy demand

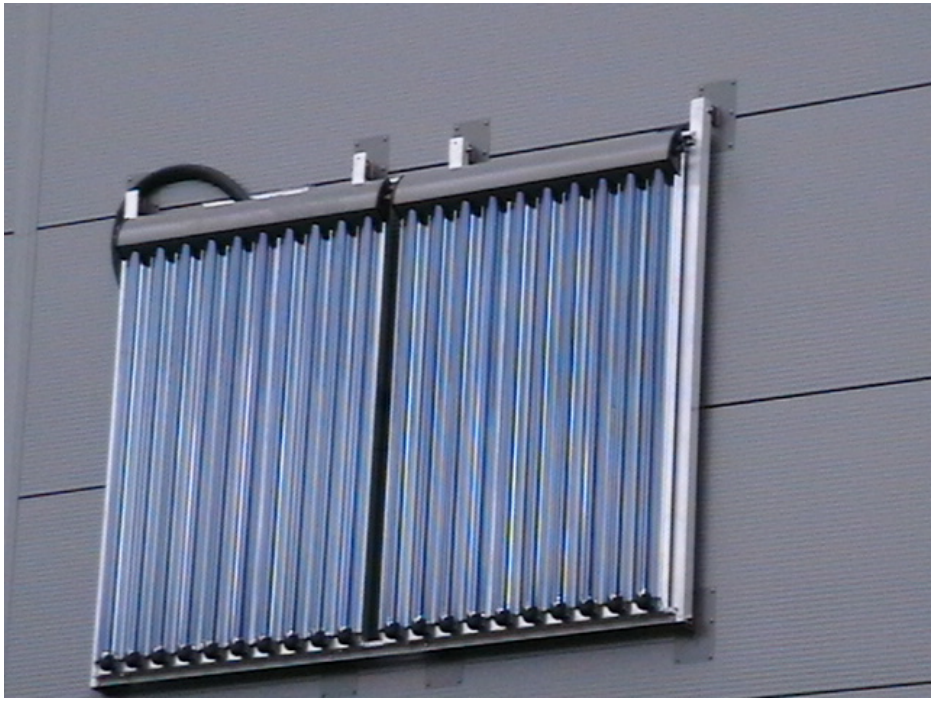


- Based on projections of housing growth and commercial sector growth (58,500 new homes; 750,000m_2 employment land)
- Relatively small increases due to assumption of ‘zero carbon’ requirements for new development

Cambridgeshire's carbon target for 2030



Solutions for meeting this 2030 carbon target



- Energy demand reduction through efficiency improvements
- National (electricity) grid decarbonisation
- Local generation (electricity and/ or heat)
- Far less focus these days on fuel cells & hydrogen economy solution (although this is an energy vector and not an energy source solution)

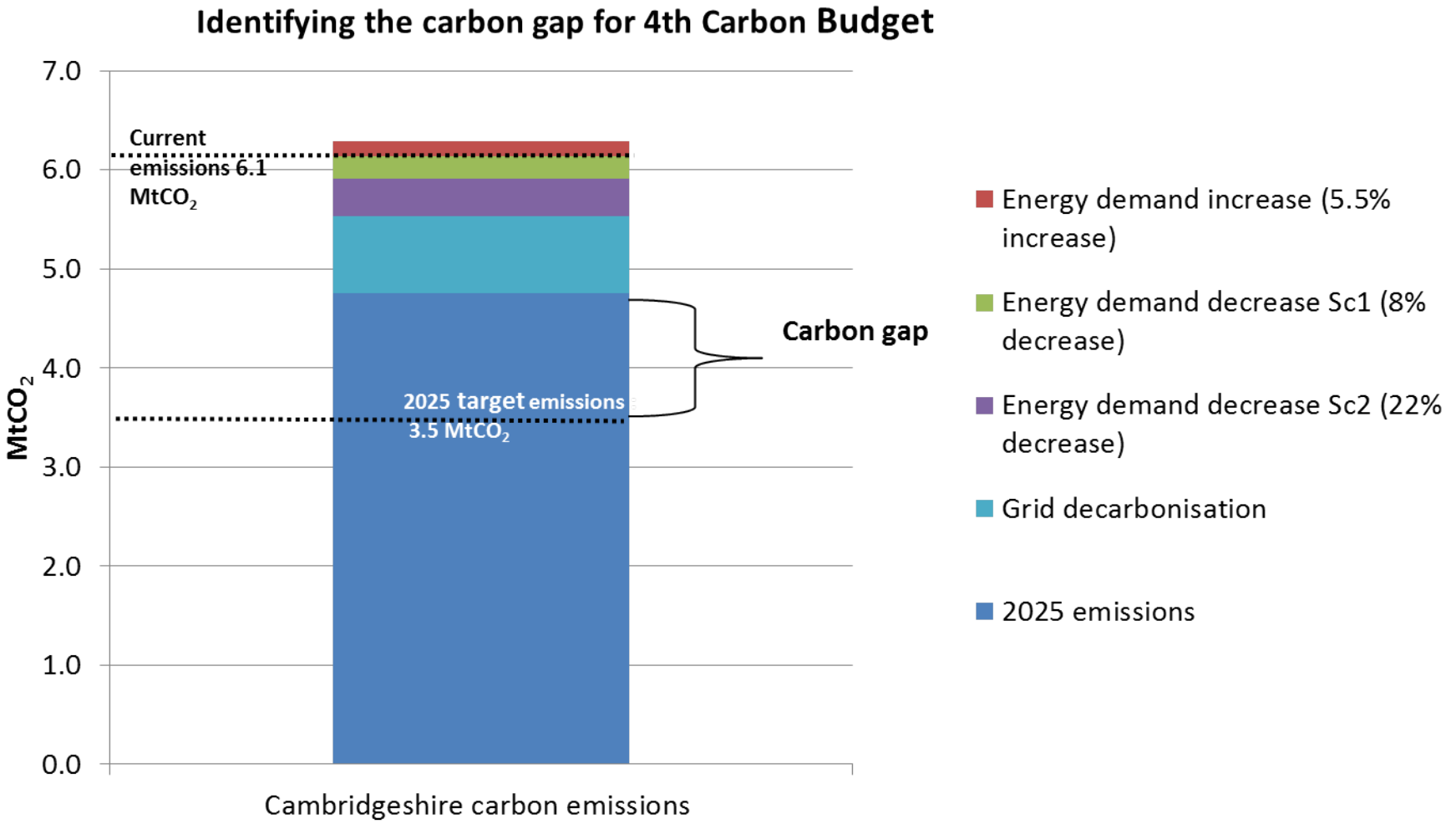
What is future energy demand?

Scenario	Description	Source
Low	**5.5% increase** in energy demand by 2030	Reference pathway (DECC 2050 Pathways Analysis)
Medium	**8% decrease** in energy demand by 2030	Alpha pathway (DECC 2050 Pathways Analysis)
High	**22% decrease** in energy demand by 2030	Epsilon pathway (DECC 2050 Pathways Analysis)

Grid decarbonisation

- Delivered at a national level
- Bullish Government targets for grid decarbonisation
- Nuclear, CCS, renewables
- Jeopardised now by new dash for gas, slow EMR process, lower Government commitment to renewables from Government, slow progress in CCS?
- Is the all-electric future still on the cards?
- Assuming no nuclear or CCS for Cambridgeshire due to lack of national generating infrastructure in the county

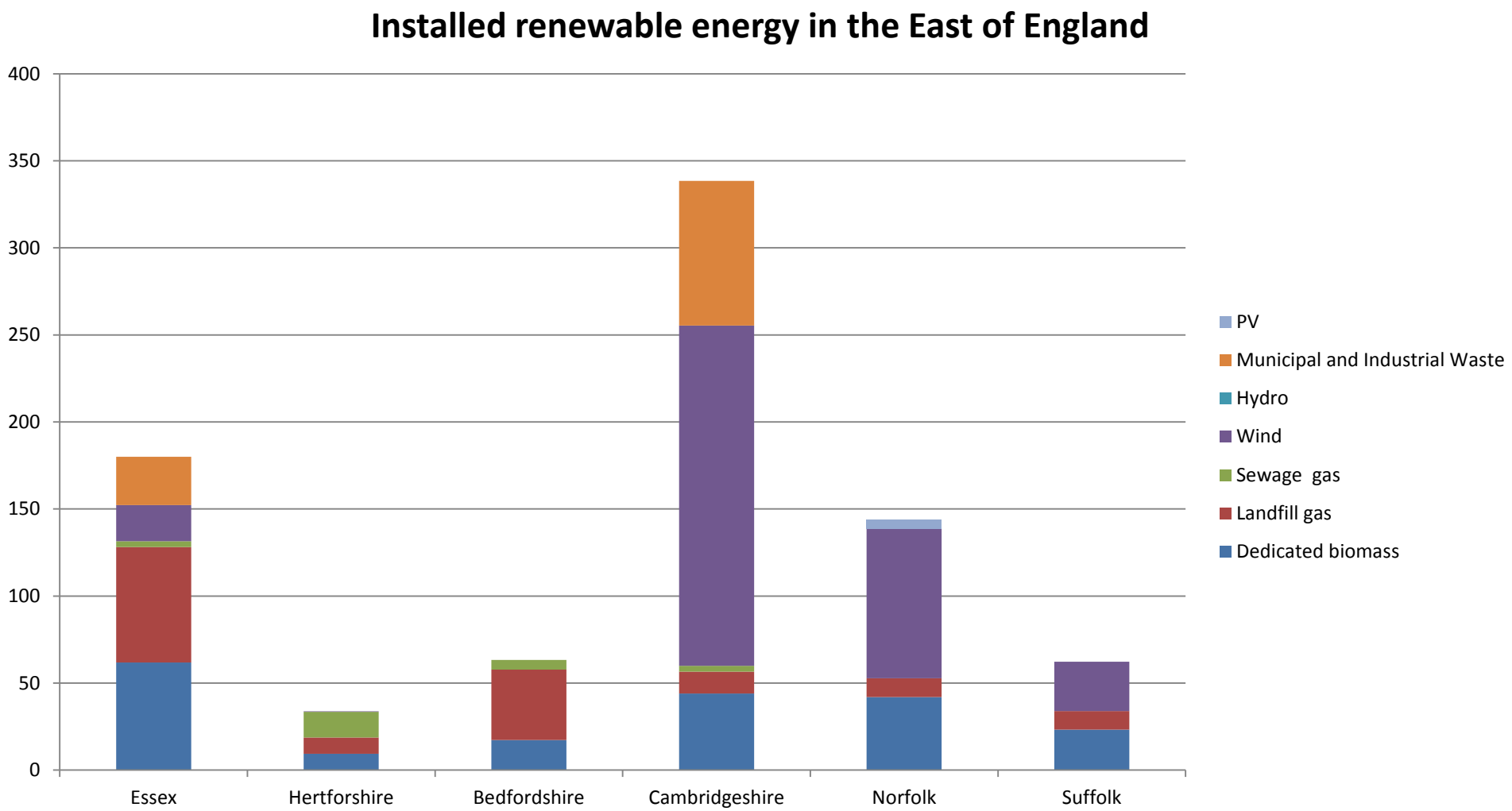
How far will energy efficiency and grid carbonisation take us?



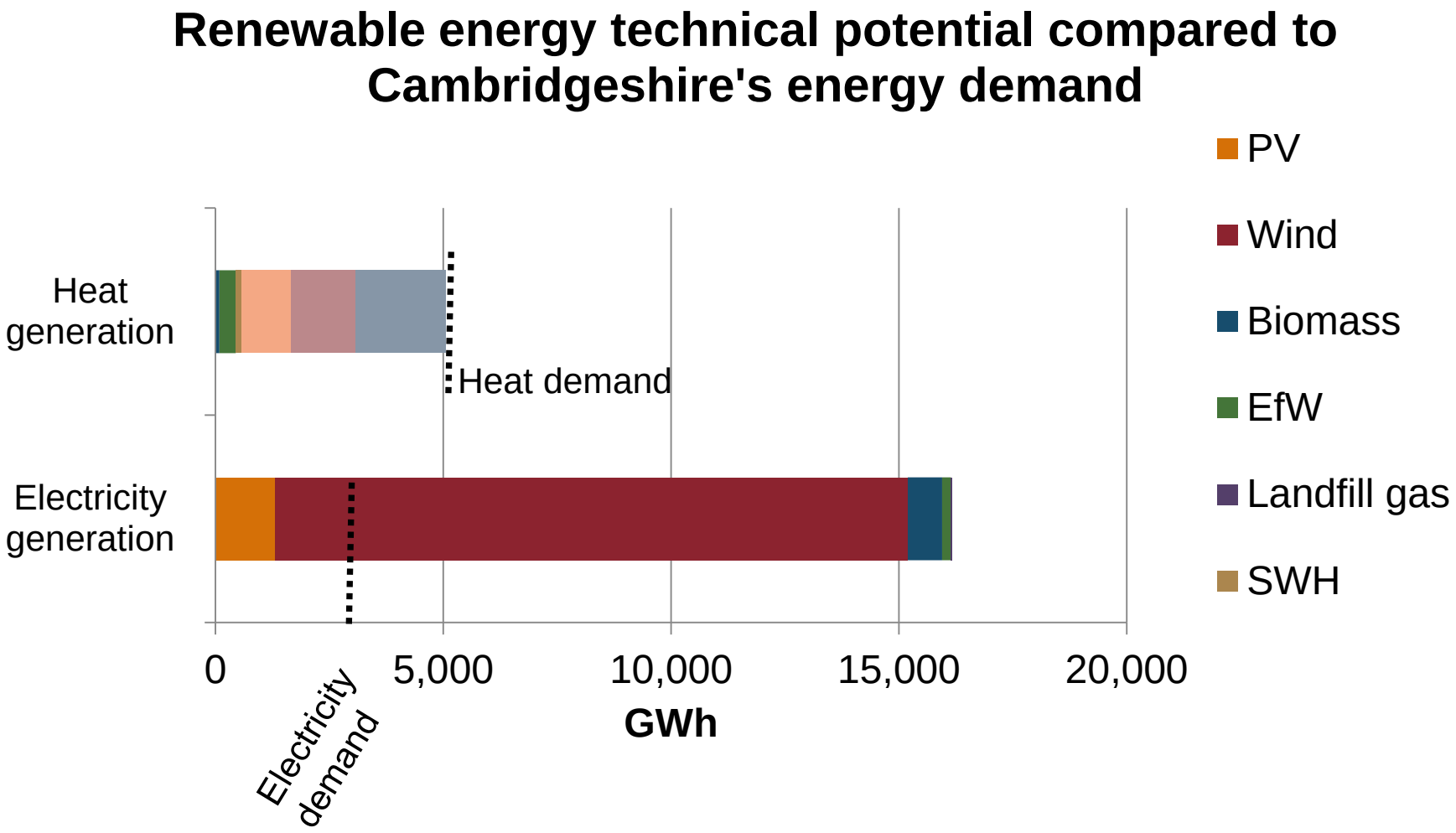
What are the prospects for local energy generation?

- CRIF project assessed the renewable energy resource with Cambridgeshire
- Technical potential, economic potential & deployment potential
- Heat and electricity
- And scope for district heating

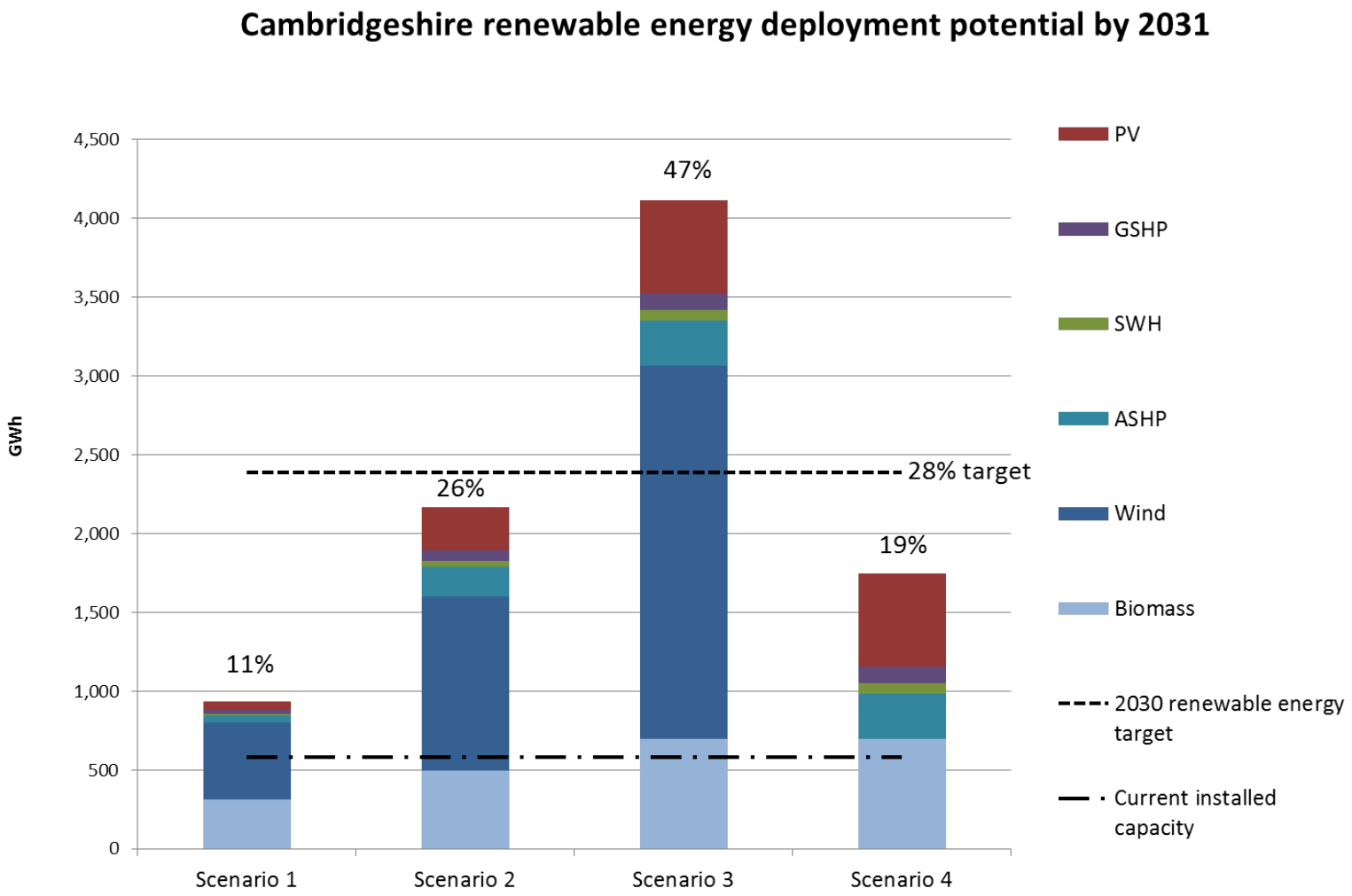
Installed renewable energy in East of England



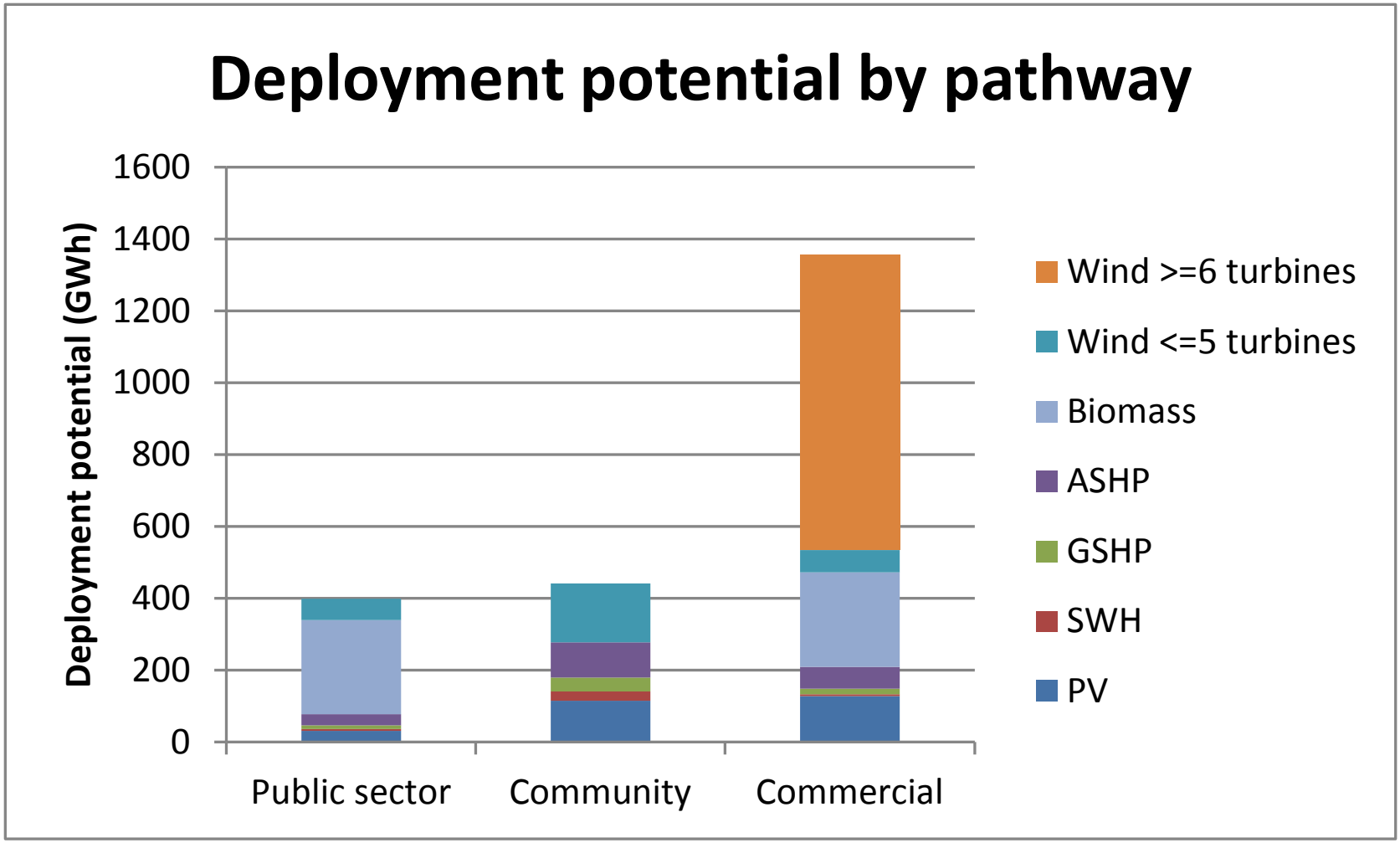
Estimate of technical potential across all technologies



Renewable energy deployment potential for Cambridgeshire



CRIF delivery pathways

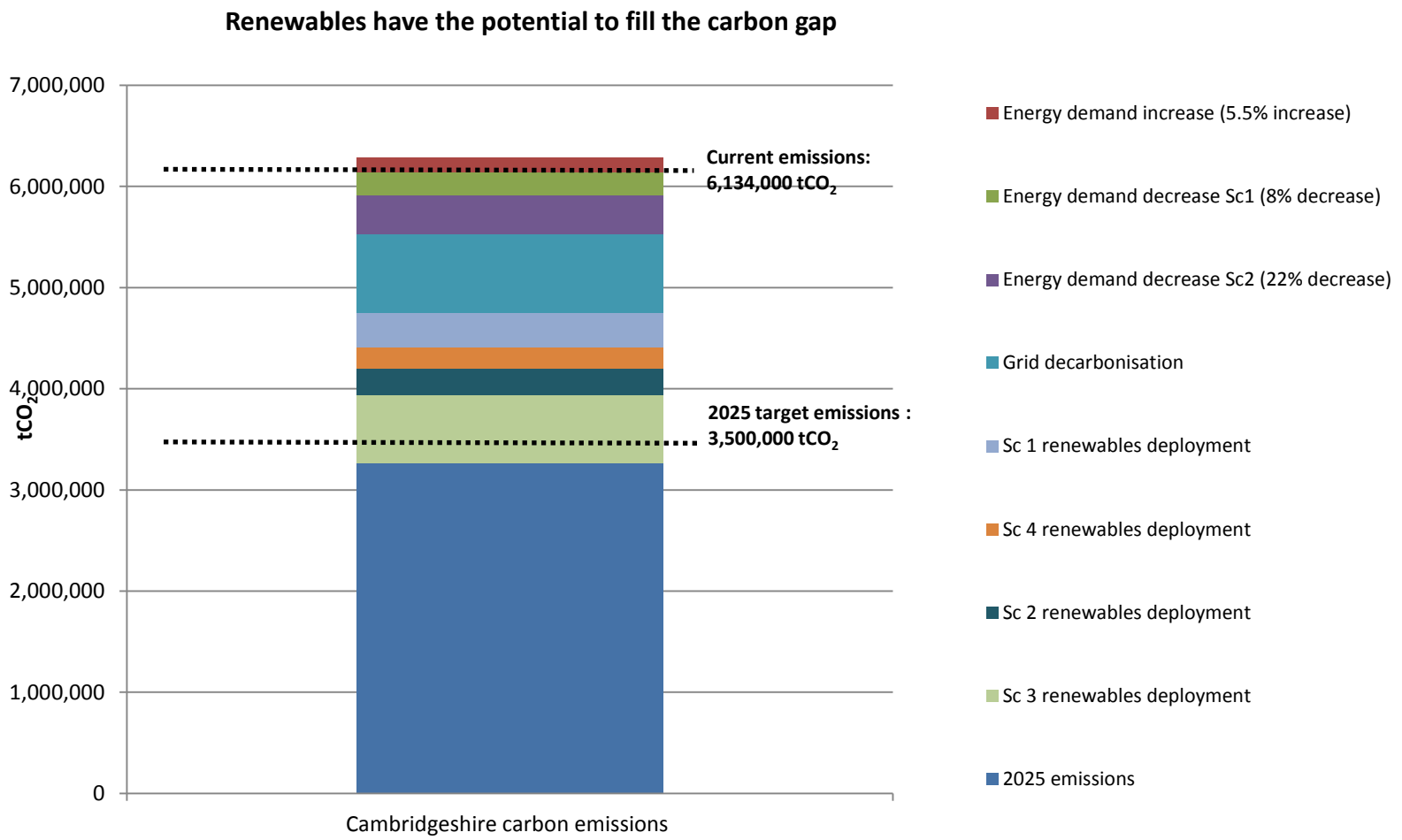


Infrastructure associated with these scenarios

Number of installations associated with delivery of each scenario

Technology	Scenario 1	Scenario 2	Scenario 3	Scenario 4
PV (2.5 kW)	28,140	134,234	288,634	288,634
SWH	7,970	21,045	40,437	40,437
GSHP (5kW)	3,404	10,728	17,359	17,359
ASHP (5kW)	7,269	31,484	47,908	47,908
Wind (2.5 MW)	94	212	455	0
Biomass (1.5 MW)	18	27	30	30
Total	**46,895**	**197,730**	**394,824**	**394,368**

Potential contribution of renewable energy to the carbon gap



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