Environmental *Change* Institute

Low-energy lights will keep the lights on

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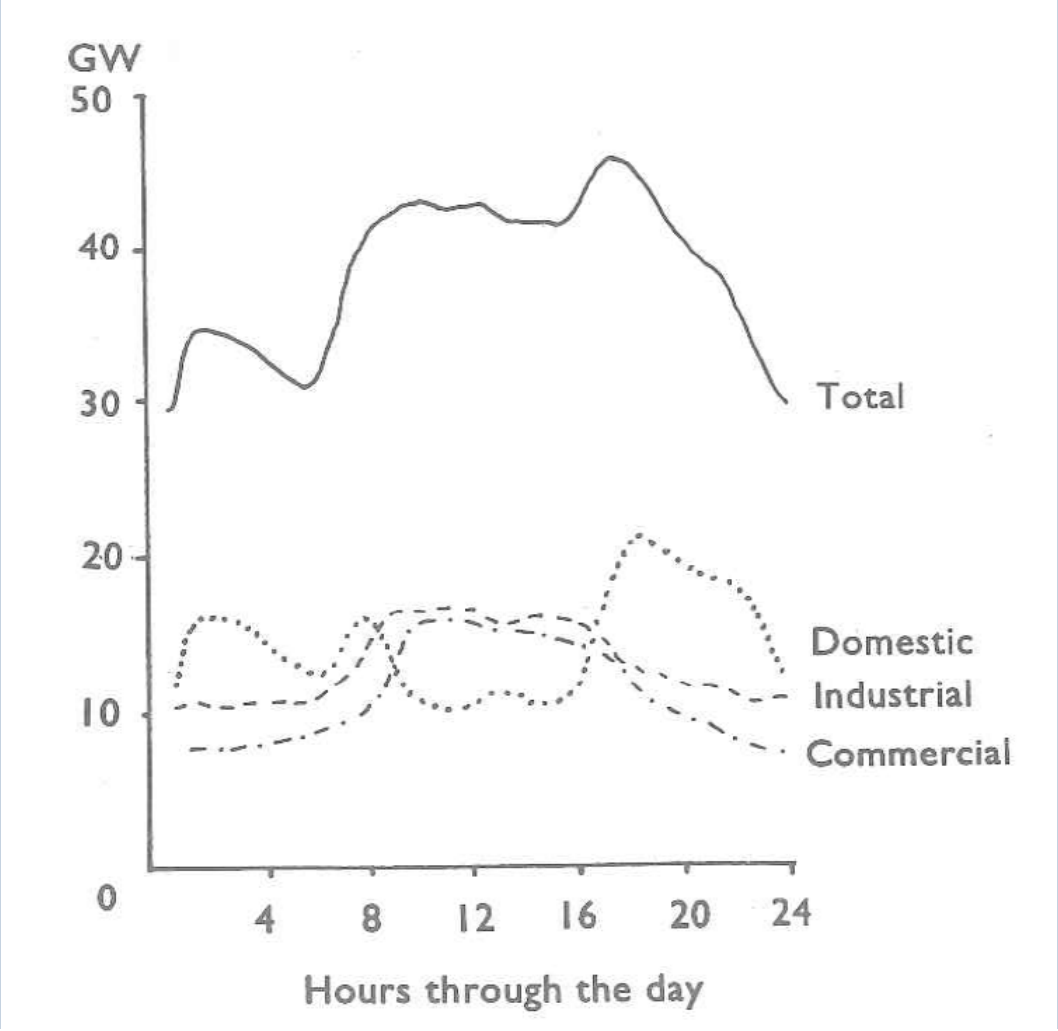
Thesis

- Peak electricity demand determines size of supply system
- Any ‘gap’ occurs at peak
- Lighting is a large part of peak
- Peak electricity demand is dropping, largely because of lighting

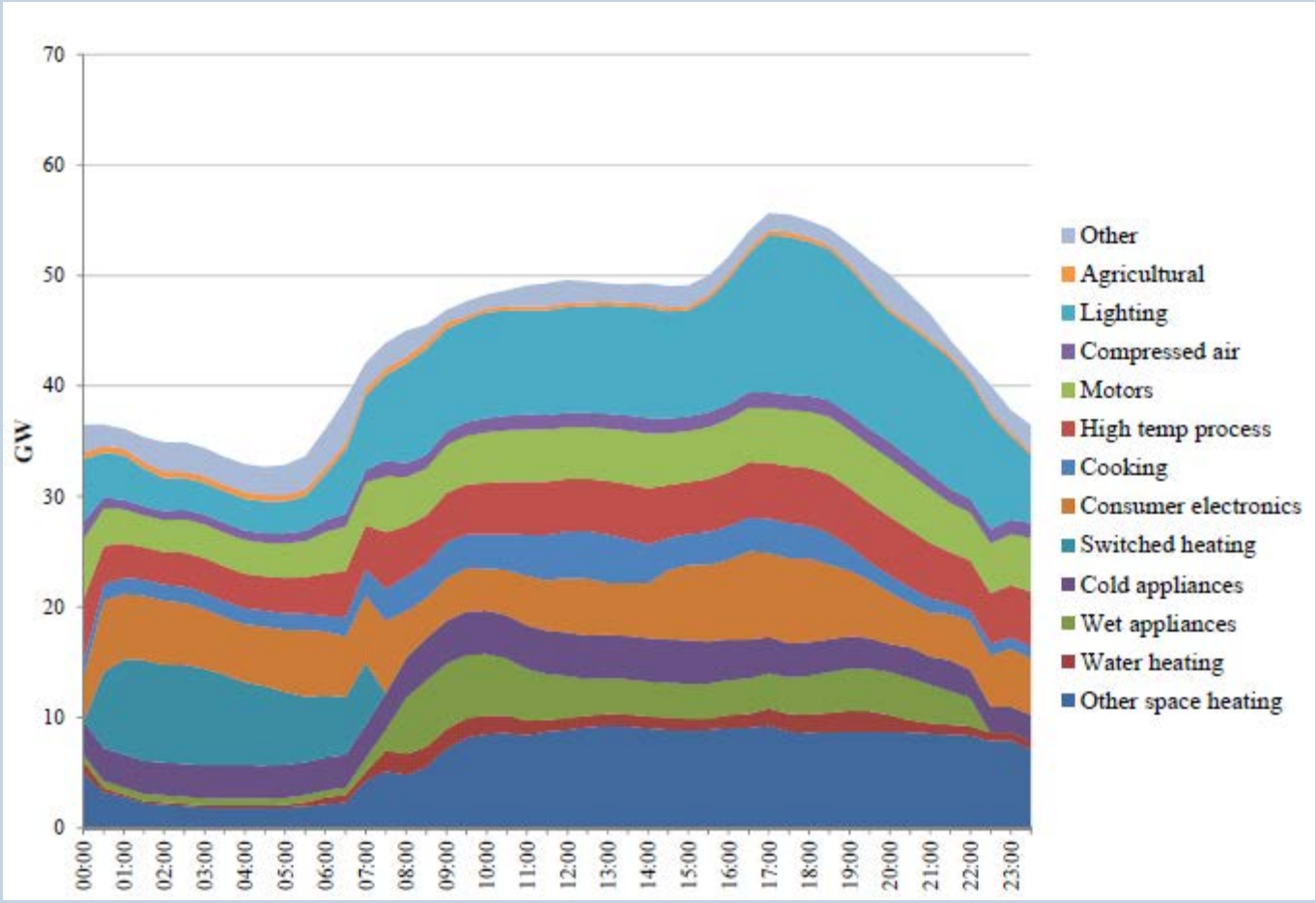
- Lighting is becoming more energy efficient
- Electricity use for lighting is dropping
- Lighting will become more energy efficient (EU policy)
- UK policy could enhance this process

- Hence, as more low-energy lights are installed, there is less need for new capacity, less risk of a ‘gap’
- So, low-energy lights will keep the lights on

Peak electricity demand and sectors



January electricity demand, GB 2010



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Peak electricity demand, UK, 2007 & 2012

	Peak demand (GW)	% of all capacity
2007	61.5	81.8
2012	57.5	70.3

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Annual household electricity consumption in lighting, UK

- 1997 720kWh
- 2009 600kWh
- 2010 537kWh
- 2012 508kWh

- ie 30% reduction in 15 years

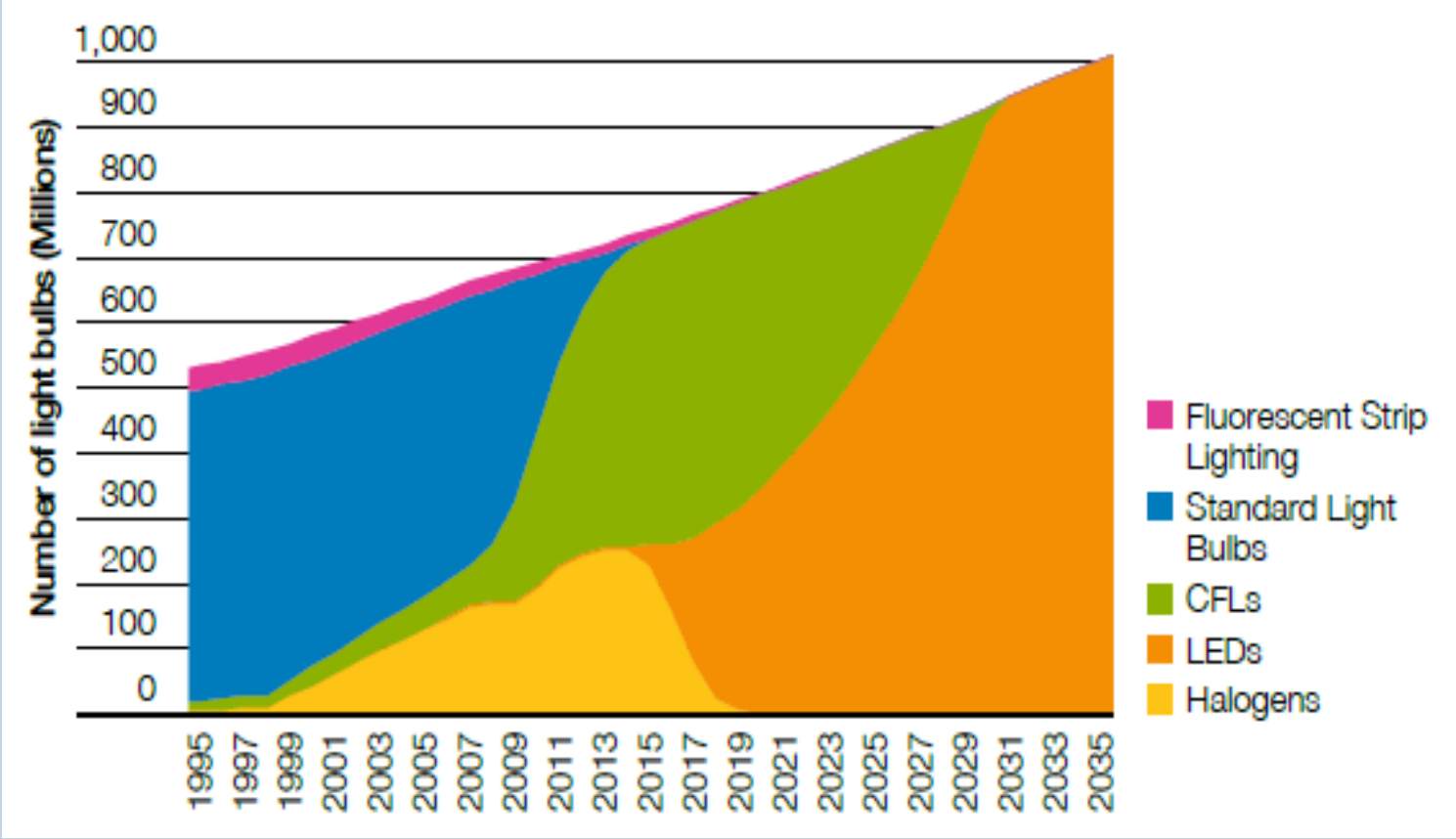
Total residential lighting (1998:2012)

- 24% in 14 years

Bulb phase-out

UK		EU
Jan 2008	incandescents ≥100W	Sept 2009
Jan 2009	incandescents ≥ 60W	Sept 2011
Jan 2010	incandescents ≥ 40W	Sept 2012
Jan 2012	all incandescents (C min)	Sept 2013
	B or better	Sept 2016

Number and type of light bulbs in NG ‘gone green’ scenario



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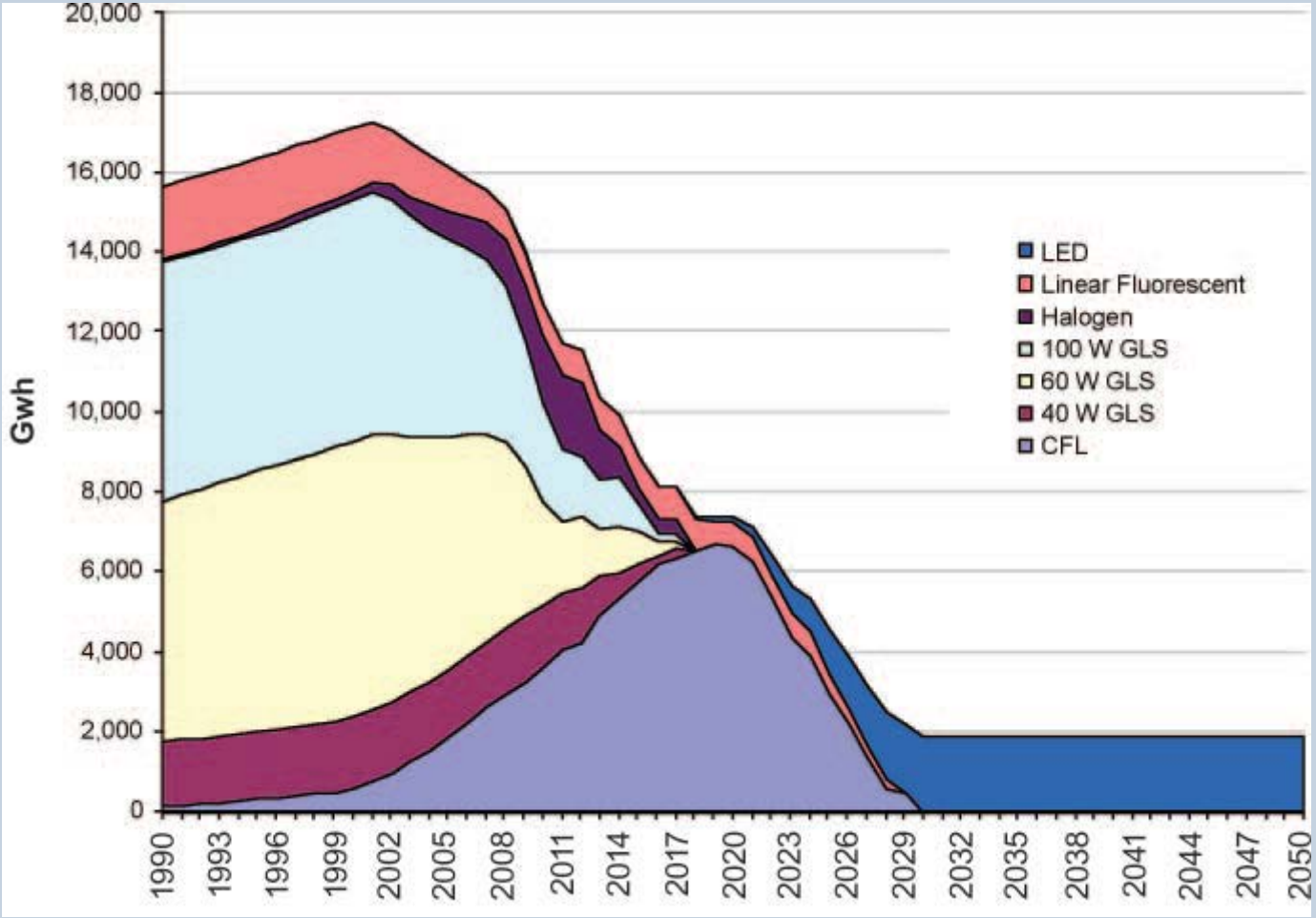
Electricity use in domestic lighting, UK 1990-2050



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Extra policy options

EU

- Improve LED test standards
- Label luminaire, where integrated light
- Phase out halogens

UK specific

- Enforce present regulations
- Extend the Building Regulations, so dedicated LEDs installed
- Controls for occupancy and daylight and timers in ND
- Mandate BS 15193: monitor and limit actual electricity used in kWh/m^2
- Educate designers and electricians re need for multiple circuits, limited lights per switch

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Thank you

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