DEMAND
DYNAMICS OF ENERGY, MOBILITY AND DEMAND

Research Councils UK
Energy
For a Low Carbon Future

The DEMAND centre's agenda is founded on three propositions:

- Energy is consumed not for its own sake but as part of accomplishing social practices at home, at work and in moving around.
- Energy demand is shaped by material infrastructures and institutional arrangements.
- These systems reproduce interpretations of normal and acceptable ways of life: they reflect assumptions about need and entitlement to energy and mobility.

DEMAND is one of 5 new End Use Energy Demand research centres in the UK.

DEMAND starts work in May 2013, has £5 million funding from ESRC/EPSRC and partners, and lasts for 5 years.

Using the example of energy and behaviour

- Societal synchronisation: peak load and timing
- Dynamics of practice: why is the indoor climate now set at 22°C?
- Systems of provision: freezers and food

Introducing the problem

There are two main problems

1. It is not a problem of energy
2. It is not a problem of behaviour, choices, decisions or lifestyles

To show how research and intervention could be reframed.

Example 1: Societal synchronisation

Normally… The problem of managing peak energy demand depends on changing behaviour: e.g. using 'smart' grids, to intervene in terms of information, price, persuasion.

BUT…. Energy consumption occurs not for its own sake but in the course of accomplishing social practices.

What practices constitute peak load, and why do they happen when they do?

Implication

Peak load is not about energy.

Peak load is about lunch and dinner and daylight.

Peak load is about societal synchronisation.

Peak moments in UK are about how tea drinking and football go together.

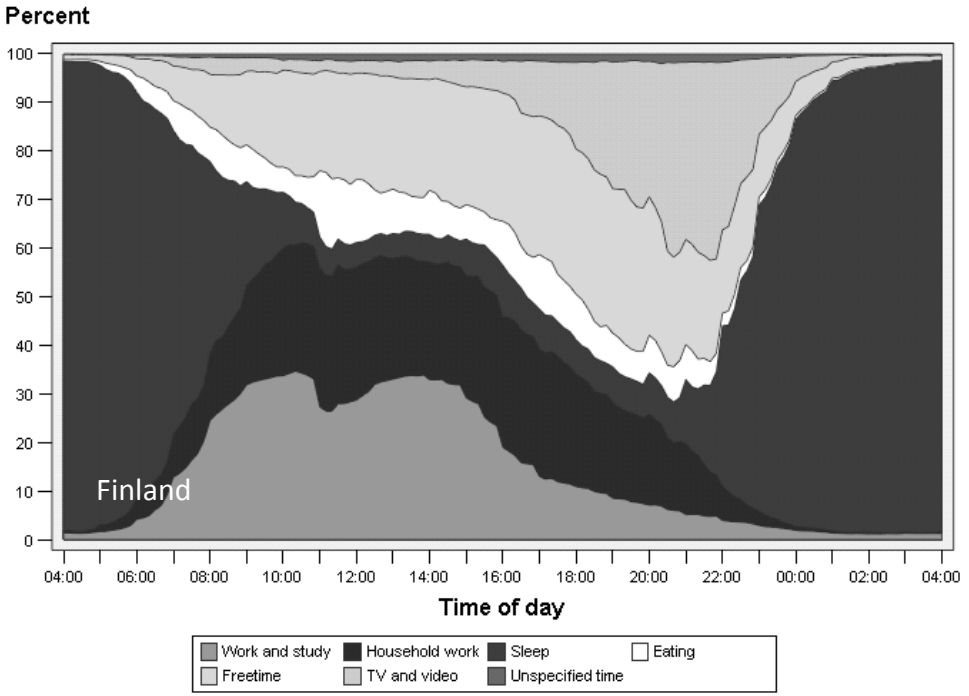
Multiple responses: *changing technology* - new 'cup-kettles'; *changing meanings*: away from tea; *changing systems*: rearrange TV schedules; the idea of live games, real time viewing

Example 1: Societal synchronisation

These graphs show what people are doing at different times of day.

They show that France is more 'synchronised' than Finland. Especially at lunchtime.

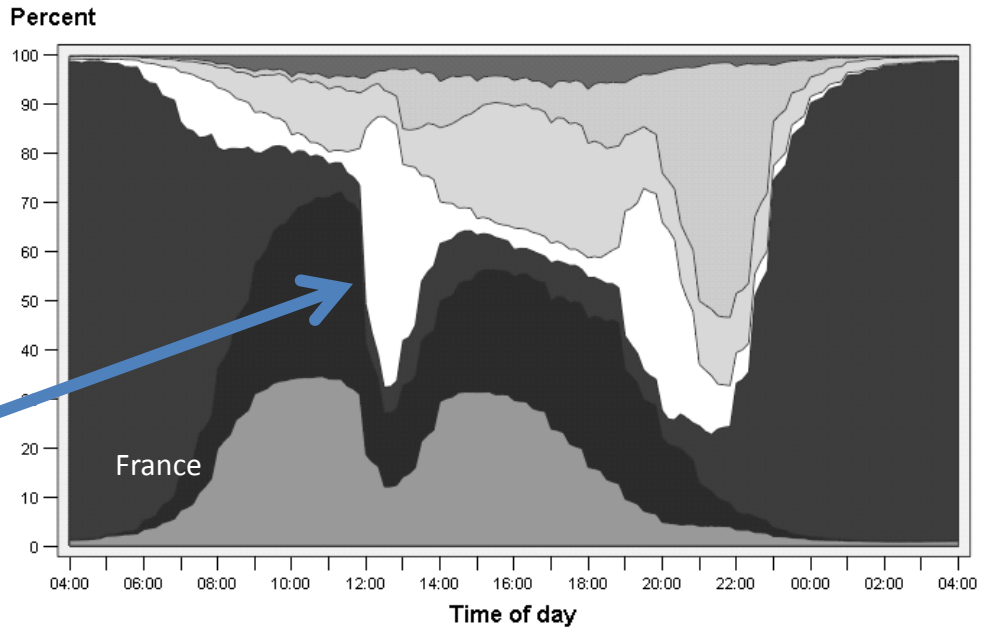
Such patterns matter for what happens when, and hence for peak demand.



Reframing the agenda:

If energy consumption is an outcome of societal rhythms and dynamic patterns of practice, research and intervention relating to peak load should focus on time, timing and social practice

This is not a matter of individual choice, and decision making.



Data from the multi-national time use studies, 2000.

Example 2: Dynamics of practice: why is the indoor climate now set at 22°C?

Normally…

The problem of air conditioning is seen as a problem of making technologies more efficient. Energy modellers assume that in hot countries people will get air conditioning as soon as they can afford it.

BUT….

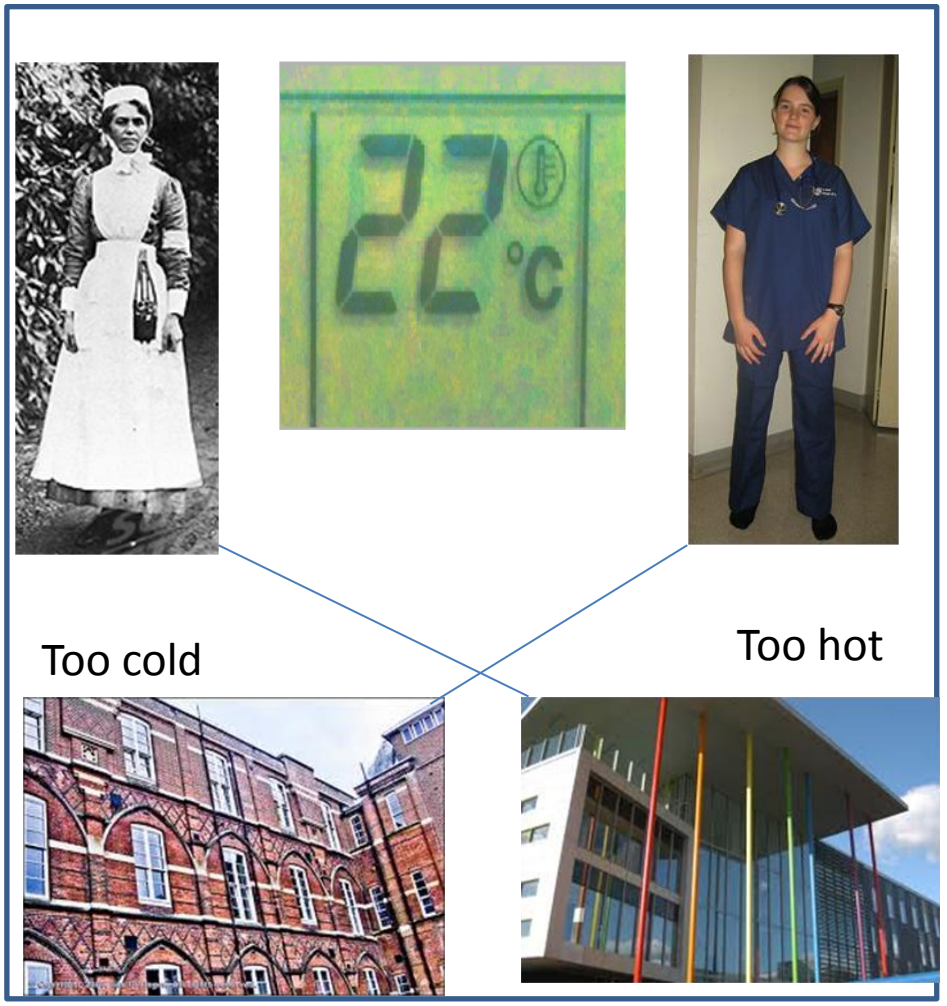
Mechanical cooling is part of a more complex system including clothing, building design, changing ideas of comfort.

There is nothing natural or inevitable about 22°C.

Implication

The real issue is about how and why indoor climates are managed as they are today. Current arrangements including air conditioning are new: they could be could be different.

This is not a matter of individual choice and decision-making.



Example 2: Dynamics of practice: why is the indoor climate now set at 22°C?

In UK hospitals and offices, cooling is needed for IT equipment and computers.

"the old equipment was fine – the new equipment is not fine because it shuts down when it gets too warm, it affects patient care."

Things are designed to operate at 22°C

In hotels, air conditioning is a sign of quality

"they just refurbished to the criteria that they thought necessary to make it marketable, which includes air conditioning"

We found that the routes through which air conditioning becomes 'normal' are not the same in hospitals and hotels. Cooling is required when it becomes part of the effective accomplishment of different social practices.

Reframing the agenda:

The challenge for research and policy is to understand how conventions of comfort, clothing and cooling are changing: is it possible to challenge the global standardisation of 22°C, what would it take to establish different concepts of comfort?

This is not a matter of individual choice and decision making.

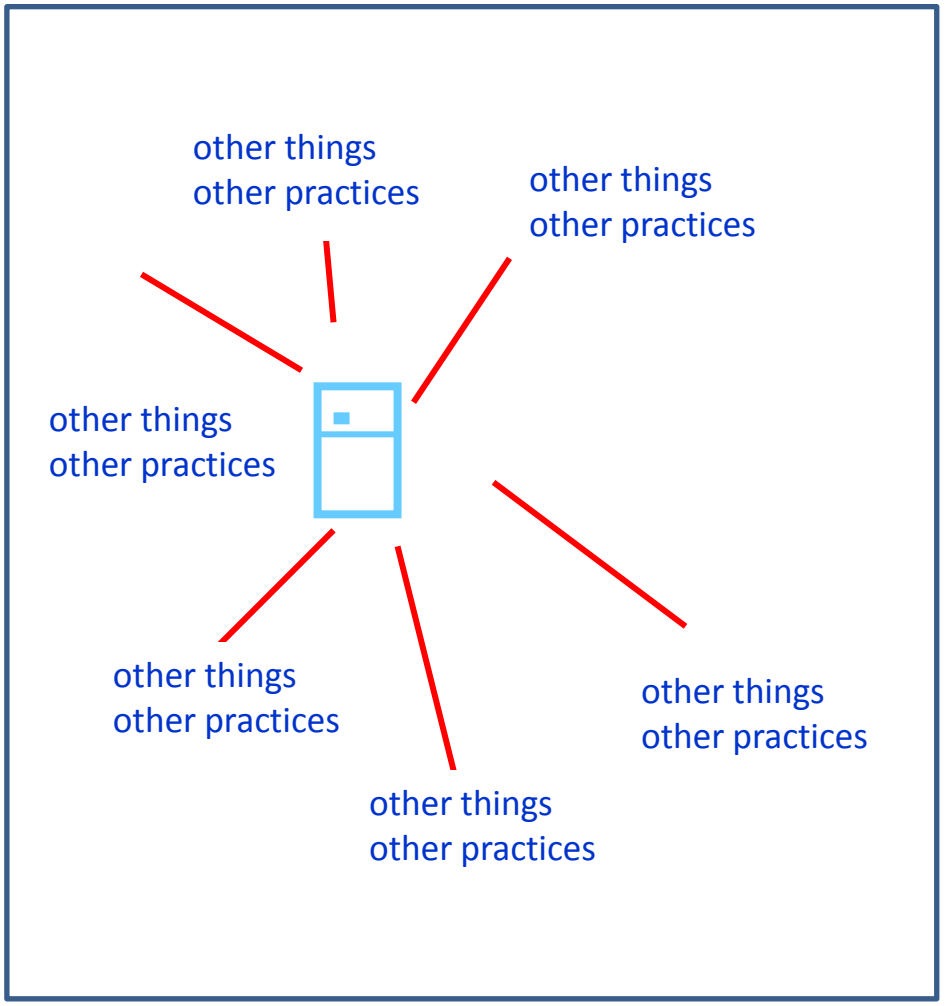
Example 3: Systems of provision: freezers and food

Normally… The problem with appliances is one of making and of persuading people to buy more efficient technologies and of then using them 'properly'.

BUT…. Appliances like freezers and fridges are embedded in systems of provision and practice.

They reproduce, and do not challenge, a highly resource intensive system of food provisioning.

Implication What freezers are *for* and hence how their design and use depends on the food system of which they are a part.



Example 3: Systems of provision: freezers and food

"Today's food system is built upon refrigeration. For many foods, refrigeration is a feature of almost every stage in the supply chain."
Garnett, T. (2007)

Freezers have become essential and not optional instruments of household management.

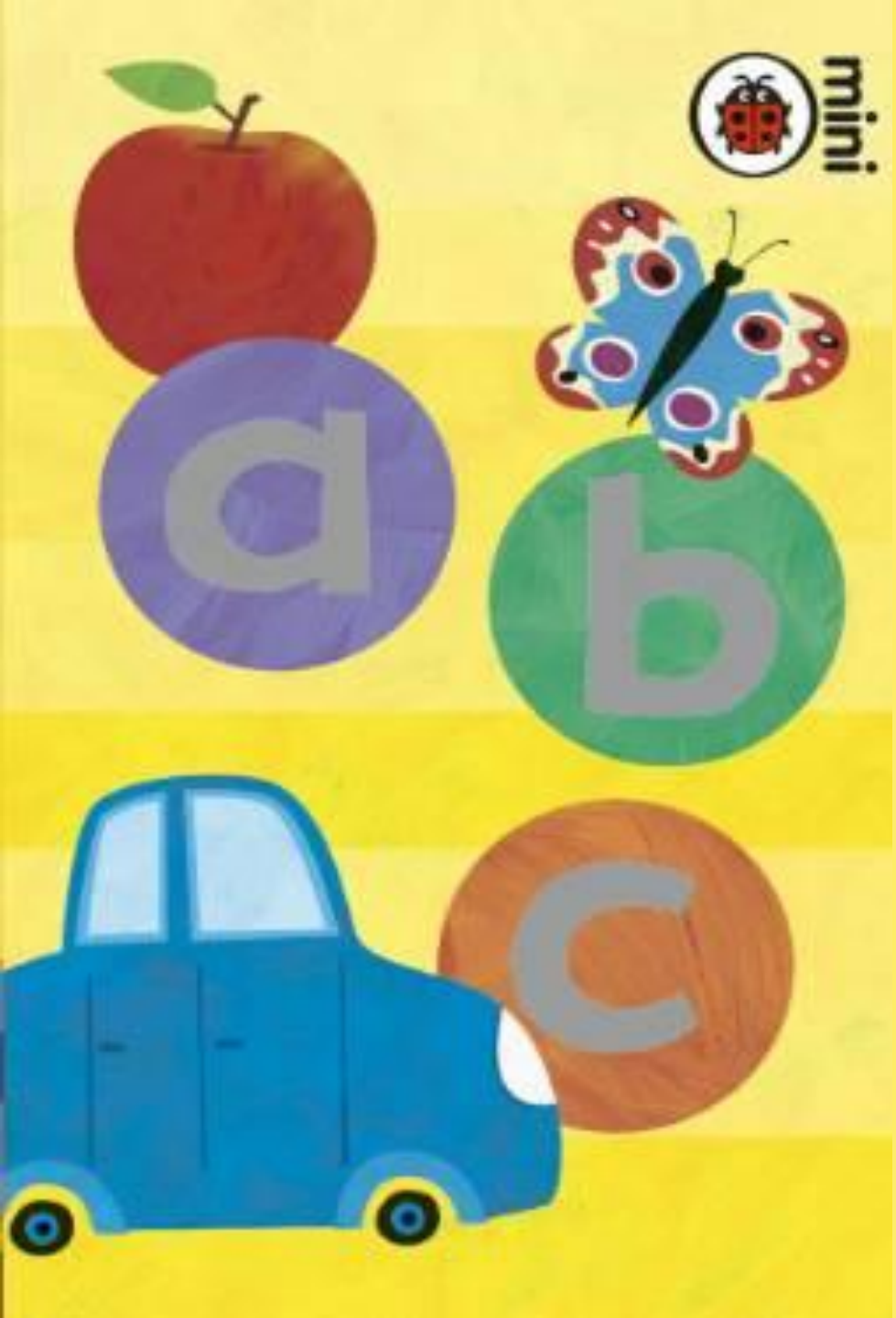
Freezers contribute to the "construction and reproduction of ... temporal orders, systems of provision and storage, and regimes of care and convenience"
Hand, M. and Shove, E. (2007). "Condensing Practices: Ways of living with a freezer." *Journal of Consumer Culture* .

Reframing the agenda:

How do appliances (help) reproduce systems of provision and practice? How is energy demand made by systems, technologies and patterns of food provisioning?

The problem of appliances is that they sustain and reproduce potentially unsustainable practices. Policy needs to engage with these bigger, basic questions of what energy is for.

This is not a matter of individual choice, and decision making.



These ideas takes us beyond the

ABC

of energy efficiency and behaviour

In which A is for attitude
B is for behaviour
and C is for choice.

DEMAND asks

- How and why do end uses/practices vary over space, time and social context; how do such practices evolve and how does this impact on energy demand?
- How can end uses/practices and related infrastructures be adapted to reduce demand?
- How much energy consumption and mobility is required to participate effectively in society, and how this might change?

To find out more:
www.demand.ac.uk

http://www.lancs.ac.uk/staff/shove/transitionsinpractice/tip.htm
http://www.lancs.ac.uk/staff/shove/lecture/filmedlecture.htm
Gordon Walker G.P.Walker@lancaster.ac.uk
Elizabeth Shove E.Shove@lancaster.ac.uk