

DEMAND  
DICTIONARY  
OF  
PHRASE AND  
FABLE

Seventeenth Edition







The seventeenth edition includes obsolescent terms, and new words that have crept into the vocabulary.

Many of these developments are attributed to the DEMAND Centre (2013-2018) supported by the Engineering and Physical Sciences Research Council [grant number EP/K011723/1] as part of the RCUK Energy Programme and by EDF as part of the R&D ECLEER Programme...but to be honest, no one really knows how languages and ideas evolve.

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# Avoided energy

|ə'vɔɪdɪd 'enədʒi|\*

noun

Avoided energy use in Million Tonnes of Oil Equivalent compared to a situation without change or intervention.

‘Achieving the maximum market shares for hydrogen vehicles could lead to up to 2.5 Mtoe avoided fossil fuel use in 2020’.

Now obsolete.

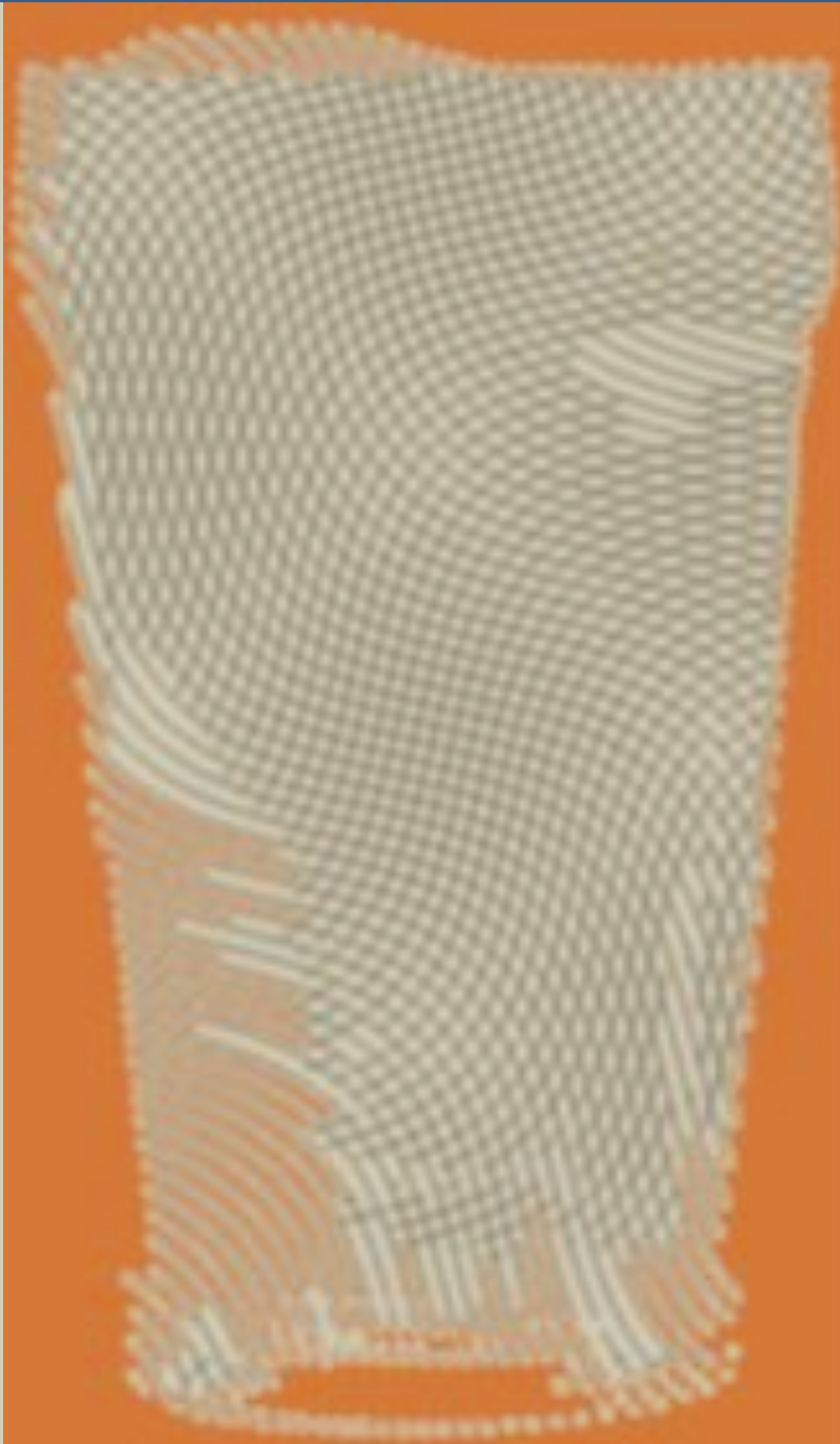
Complete nonsense. Unrealistically assumes that the future is knowable, that energy services remain stable, and that an intervention leads to a calculable reduction in energy demand.

\*Not to be confused with : ‘Avoided beers’

| ə'vɔɪdɪd bɪəz |

These are all the beers that you have not drunk in your life. Including the ones you are not drinking now. Ususally measured in Mloab (Million litres of avoided beer). Some national statistics offices record Mloab.





# Car dependence

|kɑː dɪ'pend(ə)ns|

noun

Updated definition (17<sup>th</sup> Edition)

Car dependence is the consequence of the extent to which driving has become integral to the conduct of an increasing range of social practices, including shopping, commuting and getting to work or to school.





It is generally agreed that reductions in transport emissions are difficult to achieve because driving is so deeply embedded in daily life.

Within transport studies and the mobilities literature, some refer to the ‘car dependence’ of individuals, i.e. those who rely on the use of a car.

Others use the term to characterize either a location or a society as a whole. A third possibility is to understand car dependence as a feature or characteristic not of people or of places but of practices.

It is now obvious that forms of car dependence emerge through the intersection of infrastructural arrangements that are integral to the conduct of many practices at once.

Related terms:

‘Automobile dependency’. See the encyclopaedia of transport demand management for a primitive definition.

See: ‘Infrastructuration’; ‘Energy Services’

# Comfort

|'kʌmfət|

noun [mass noun]

1. a state of physical ease and freedom from pain or constraint: there is room for four people to travel in comfort
2. the easing or alleviation of a person's feelings of grief or distress: a few words of comfort

verb [with object]

1. ease the grief or distress of: the victim was comforted by friends before being taken to hospital
2. improve the mood of or restore a sense of physical well-being to: he dined outdoors, comforted by the crackling sounds of the fire

Related terms: ‘Thermal comfort’.

Thermal comfort was until recently mistaken for an absolute human requirement, devoid of history, culture or context. Universal comfort standards were thought to exist. This erroneous idea had huge implications for heating, cooling and resource consumption.

## Updated definition (17<sup>th</sup> Edition)

Comfort is one of the many services that energy makes possible. It is now recognised that Comfort is a dynamic and contextual achievement.

The term no longer describes a set of thermal conditions or standards that must be provided.

Comfort is a process. It is adaptable, negotiable and socio-cultural.

There are many meanings of comfort and many ways of being and becoming comfortable.

This less 'Demanding' definition has reduced energy consumption around the globe.



# Demand (1)

|dɪ'mɑːnd|

noun

1. a strong request. an insistent and peremptory request, made as of right: 'You can't give in to children's demands all the time'
2. demands (plural) the difficult things that you have to do: 'His new job makes a lot of demands on him'.

verb

1. to ask for something forcefully, in a way that shows that you do not expect to be refused, ask authoritatively or brusquely: 'I demanded an explanation'
2. to need something such as time, effort, or a particular quality: 'He seems to lack many of the qualities demanded of a successful politician.'



Energy demand is an outcome of the social, infrastructural and institutional ordering of what people do. Energy is used in accomplishing social practices at home, at work and in moving around (e.g. heating, commuting, laundering, cooling etc.).

Practices demand energy, but social practices are not pre-given: they change at different rates and in different ways. Energy demand is consequence of these arrangements.

Primary confusions:

Energy demand is still often confused with: consumption, use, need, the quantity of a commodity or a service that people are willing or able to buy at a certain price.

Secondary confusions:

Demand side management: efforts to reduce consumption whilst maintaining 'demand' .

See: 'Efficiency'; 'Derived Demand' and 'First, second and third order demand'.

# Derived Demand

|dɪ'raɪvd dɪ'mɑːnd|

noun

Derived demand is a term used to remind analysts that aggregate units of demand (e.g. kilometres driven and kilowatt hours) only result or 'derive' from underlying practices such as getting to work taking the dog for a walk or cooking the dinner.

Routinely stated to be a foundational assumption and then just as routinely overlooked , as attention focuses back on measures like road widths or power capacity, around which systems are in fact designed.

Extended use: (17<sup>th</sup> Edition)

Previously confined to transport studies, the concept of derived demand is now widely taken for granted.

In a few years, we expect the 'derived' qualifier to fall out of use.

It is obvious that all energy demand is derived.





# De-tethering

|di:'tɛðəɪŋ|

verb [with object]

A new term.

De-tethering was introduced in 2017 to address the changing spatial and temporal ties of energy demand. Followed by the availability of portable and chargeable appliances, energy can be shared across sites and appliances. This also affects the timing of energy demand.

‘John quickly de-tethered himself from the office and rushed to catch the train. As soon as he found his seat he re-connected to his email: tied, and untied at one and the same time’

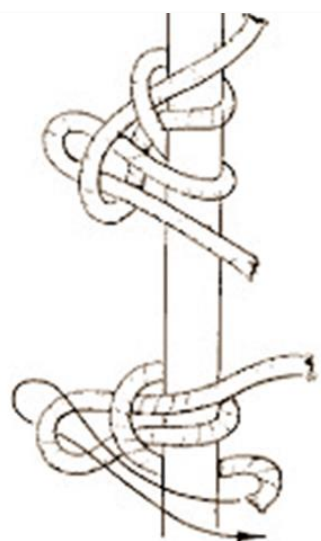
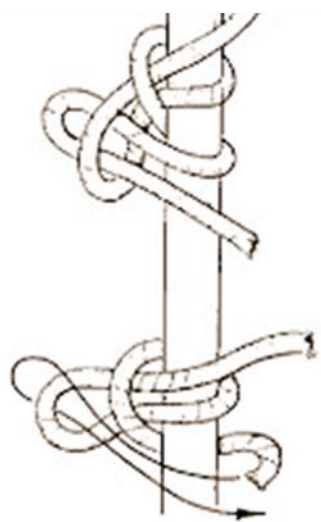
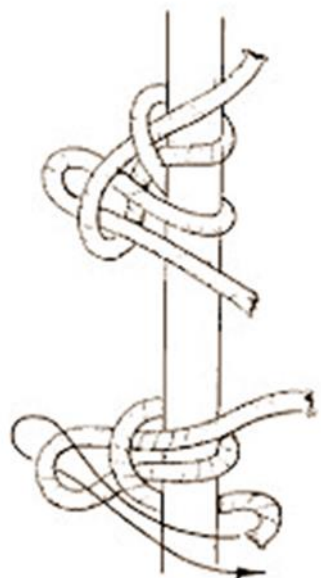
Often confused with:

Tethering (Technical):

Tethering is the sharing of a mobile device's internet connection with other wirelessly connected computers.

Other confusions:

As John knows only too well, the experience really is confusing.





# Efficiency

ɪˈfɪʃ(ə)nsi/

noun

The ratio of the useful work performed by a machine or in a process to the total energy expended or heat taken in.

‘The boiler has an efficiency of 45 per cent.’

Previously used in policy:

Using energy more efficiently is an essential part of the strategy to lower carbon emissions in the UK.

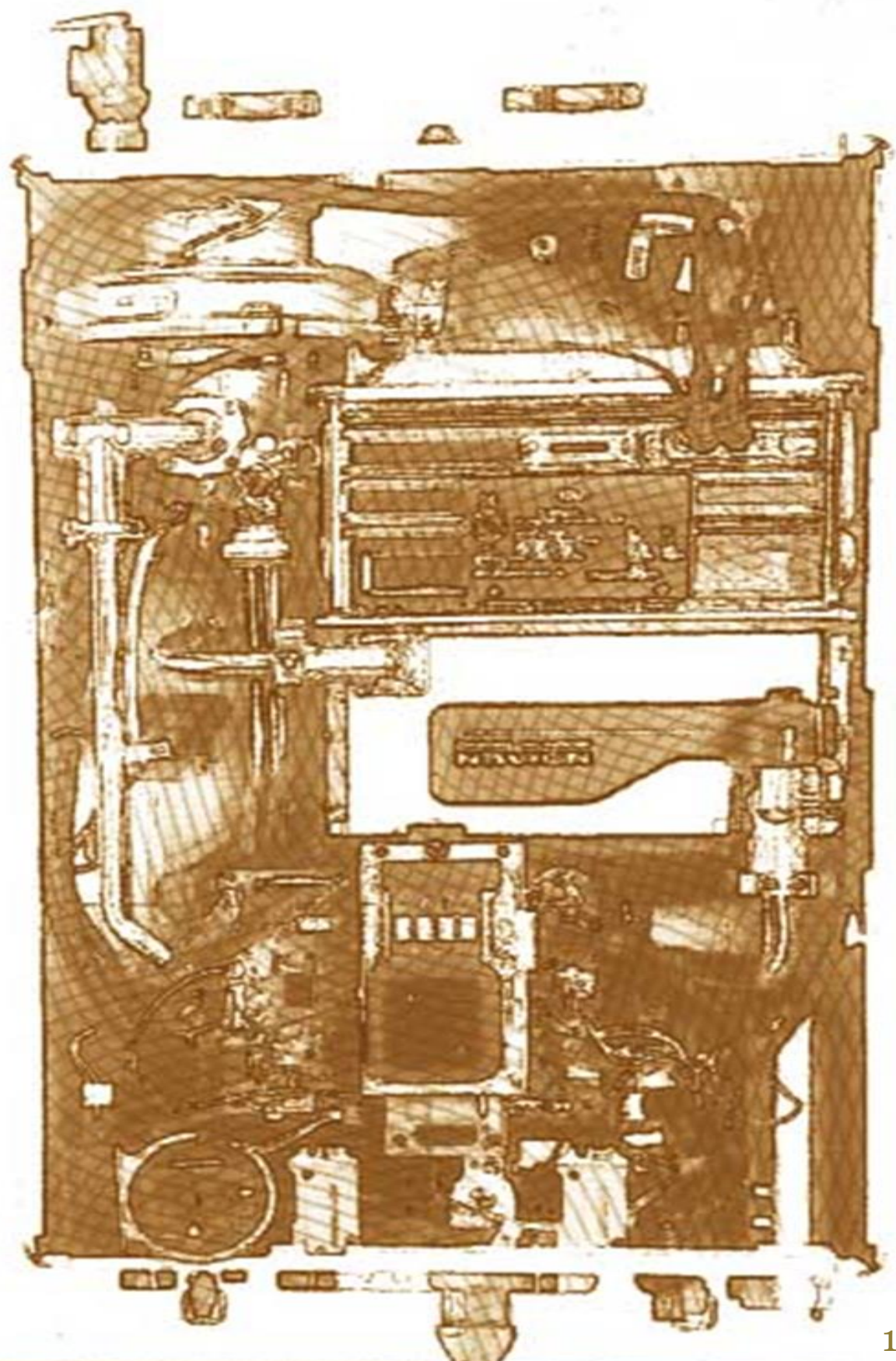
Now obsolete.\*

It became clear, towards the end of 2017, that ‘efficiency’ as a goal, was obstructing serious thought about energy demand, and reifying culturally specific interpretations of normality, need and service.

Concepts that have taken its place include: ‘Energy Service’, ‘Demand.’, ‘Infrastructuration’.

Related terms: ‘Rebound’ – also obsolete

*\*Editors’ Note: The term ‘Efficiency’ is still found in Engineering dictionaries, and when very narrowly defined it may still make sense.*



# Endogenous and exogenous change

endogenous – exogenous

|ɛn'dʊdʒɪnəs, ɪk'sʊdʒɪnəs |

noun

Endogenous: having an internal cause or origin.  
'The expected rate of infection is endogenous to the system.'

Exogenous: having an external cause or origin.  
'Technological changes exogenous to the oil industry'

In recent years, both terms have run into trouble given the tightly bound nature of 'the system' under consideration. Such distinctions are particularly problematic for a whole system understanding of energy demand.

What is external and what is not?





Reversible

# Energy service

['ɛnədʒi 'sə:vɪs]

noun

Established term\* (17<sup>th</sup> Edition)

It is now widely agreed that energy is not consumed for its own sake but for the services it provides.

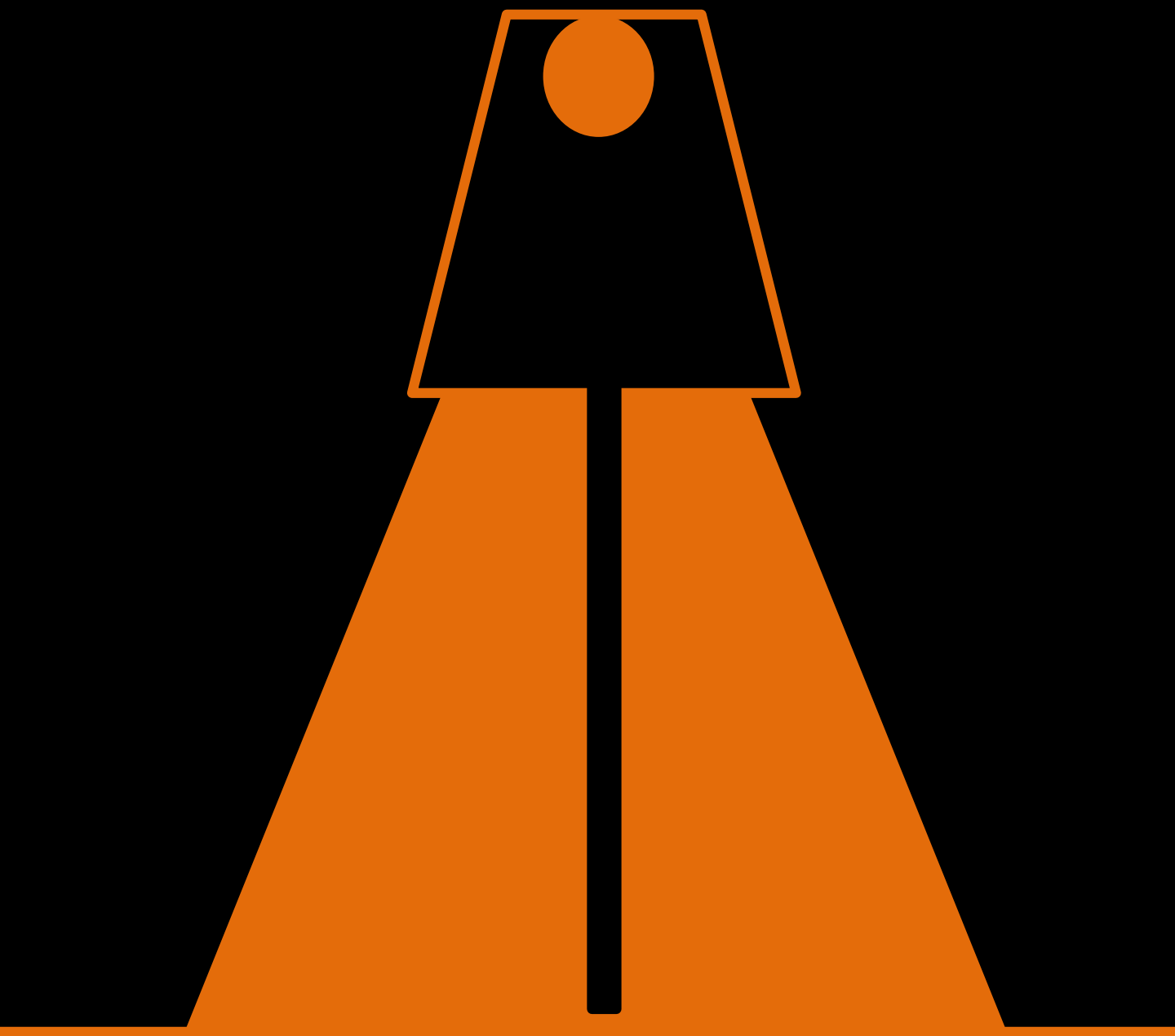
This realisation has transformed research and policy.

Analysing energy services requires putting aside questions about energy per se, and focusing on what energy is used for.

Since early 2018 Energy-as-something-that-enables-services has taken the place of previously popular treatments of energy-as-a-resource.

Related terms: meta-service.

*Editors' note: Although 'Energy Service' is an established term, we include it in the 17<sup>th</sup> Edition in recognition of its renewed significance.*



# Energy Trilemma

['ɛnədʒi traɪ'lem.ə]

noun

**Trilemma:** A situation in which a difficult choice has to be made between three alternatives, especially when these are equally undesirable.

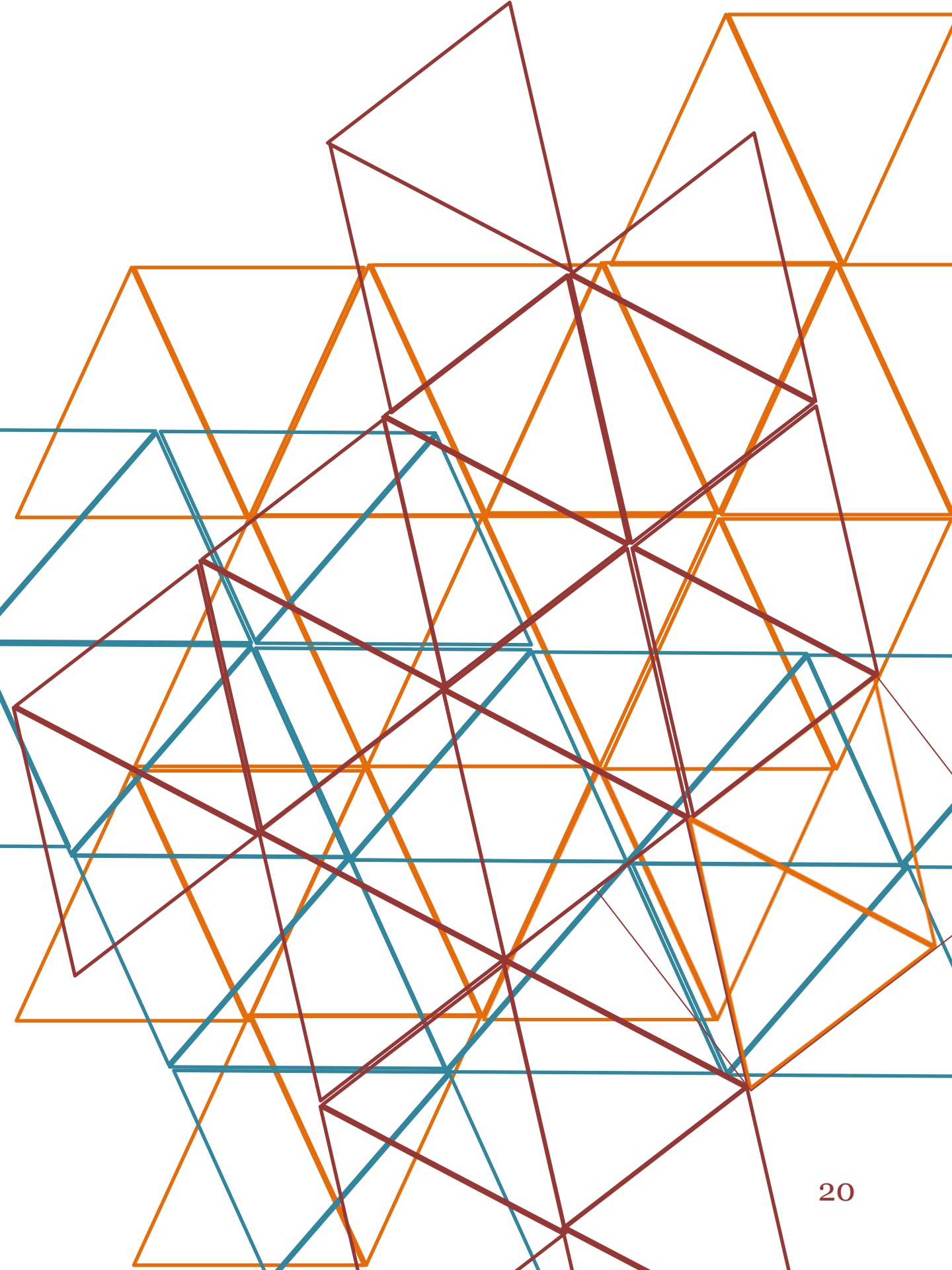
The 'energy trilemma' is a term used to describe the policy challenge of simultaneously responding to the sometimes competing goals of energy security, energy affordability and low carbon energy supply. In referring to the energy trilemma, proponents such as the World Energy Council underlined the need to recognise the interconnected character of different policy areas.

'Heavy reliance on fossil fuels affect the country's ability to balance the trade-offs between the three trilemma dimensions.'

Now obsolete.

As a concept, the energy trilemma focuses on questions of supply, and entirely overlooks levels and forms of energy demand. Demand is typically equated with present levels of consumption which are not expected to change. This is plainly nonsense.





# First, second and third order demand

[fɜːst, 'sek(ə)nd ənd θəːd 'ɔːdə di'maːnd |

noun

Updated definition (17<sup>th</sup> Edition).

Helps to distinguish between different aspects and moments of energy demand.

First order\* demand is about changes in what people do: how often they use laptops, what freezers are for etc.

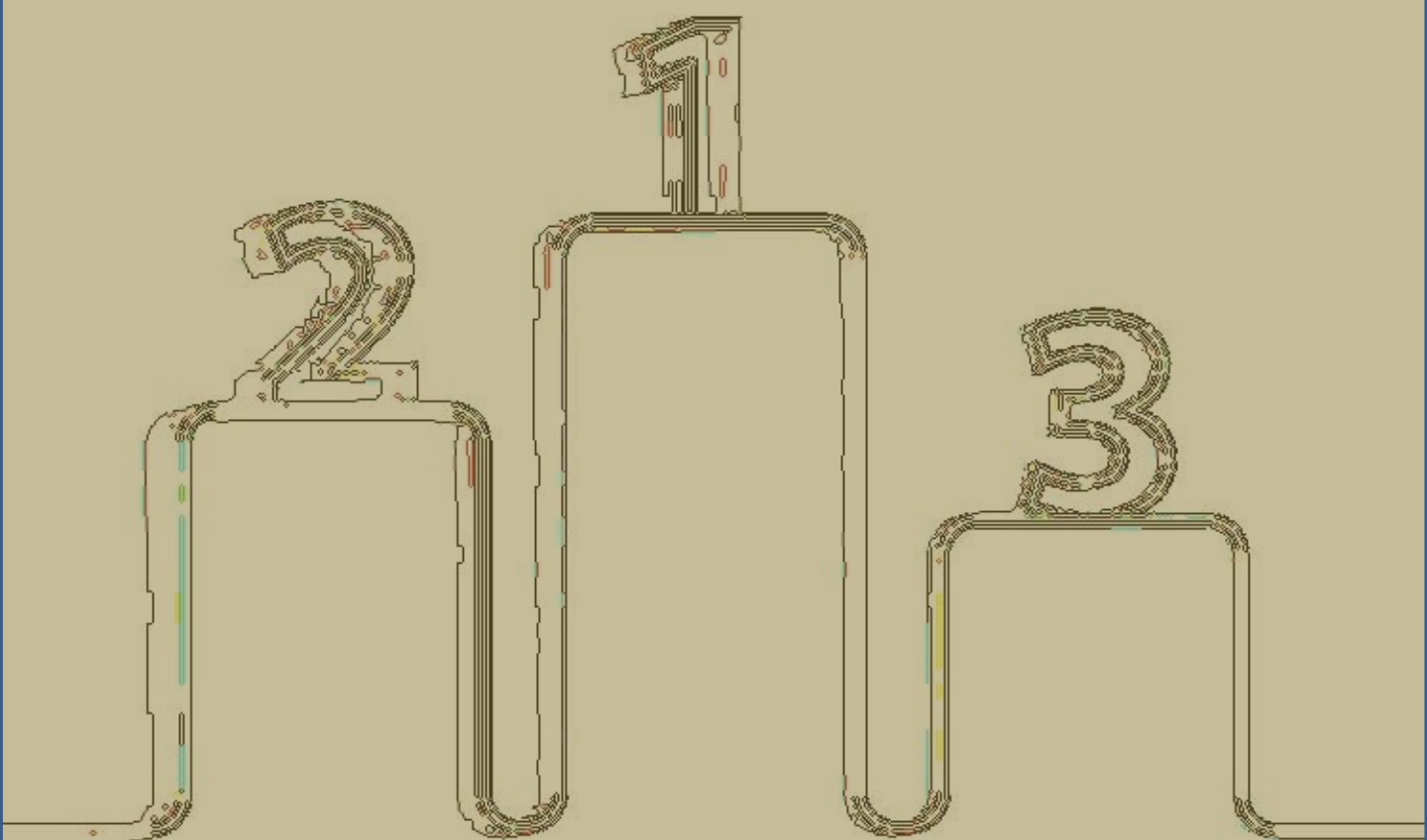
Second order demand is about providing for first\* order demand, and it is demand that takes place, for example, in server rooms or equivalent infrastructures.

Third\*\* order demand refers to the direct energy consumption from 'end uses': laptops, lighting systems, freezers etc.

\*Also known as 'third order' demand

\*\* Also known as 'first order' demand

*Editors' note: we give up. In the end, the order depends on your perspective – not ours.*



# Flexibility

|,flɛksɪ'bɪlɪti|

noun

the quality of bending easily without breaking: Players gained improved flexibility in their ankles.

Flexible:

adjective

1. capable of being bent, usually without breaking; easily bent: a flexible ruler.
2. susceptible of modification or adaptation; adaptable: a flexible schedule.
3. willing or disposed to yield; pliable: a flexible personality.

In energy systems:

Flexibility refers to the dynamic relation between supply and demand. Associated with the introduction of renewable energy sources and intermittent supply.

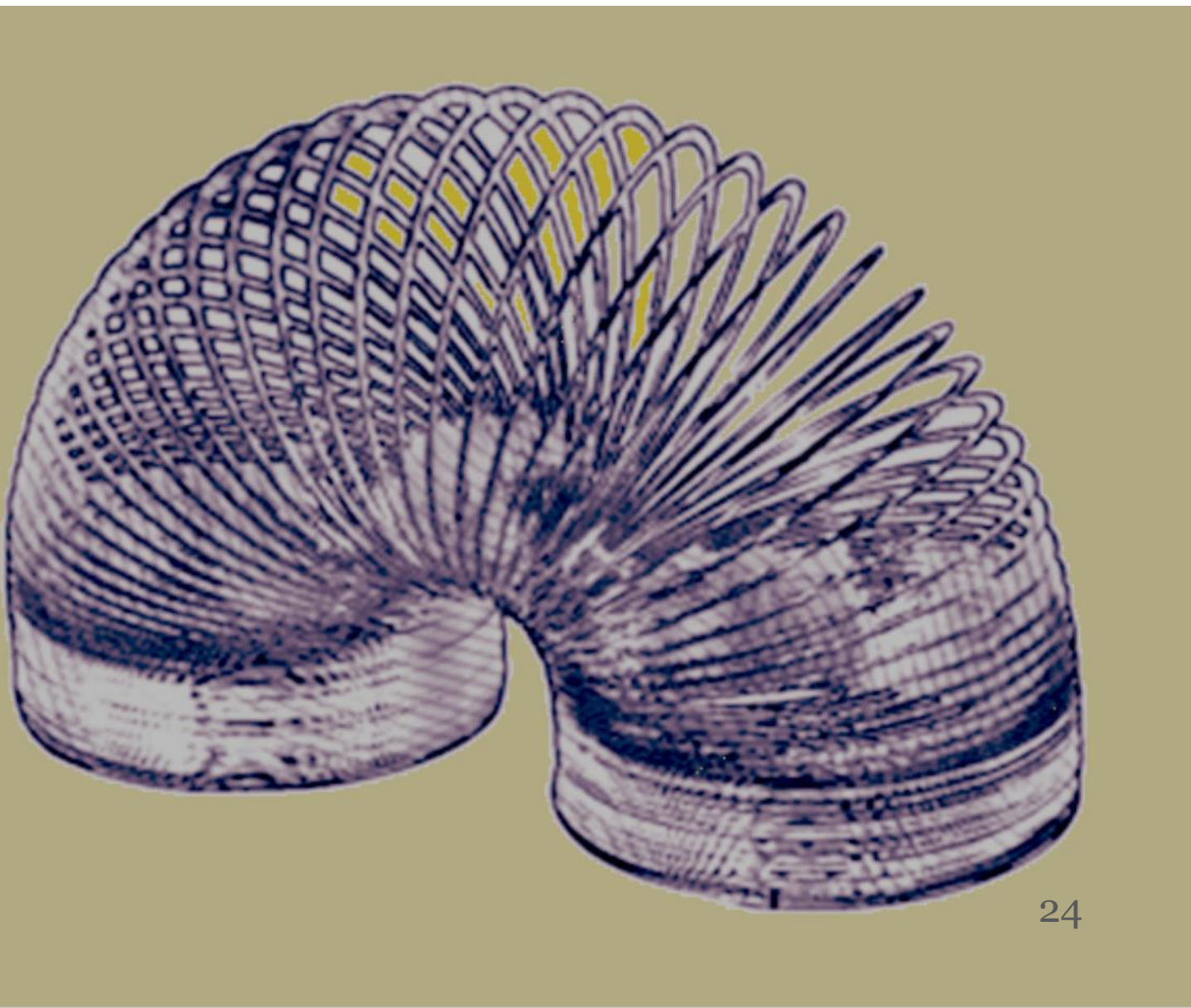
Until recently:

Consumers were thought to respond 'flexibly' to price signals – and were expected to reduce their 'demand' at will.



Updated definition (17th Edition)

Now understood to be a product of the temporal and spatial ordering of complexes of practice.



# Infrastructuration

|,ɪnfɹə'strʌktʃ(ə)reɪʃ(ə)n|

noun

A new term.

Refers to the dynamic relationship between infrastructures and social practices.

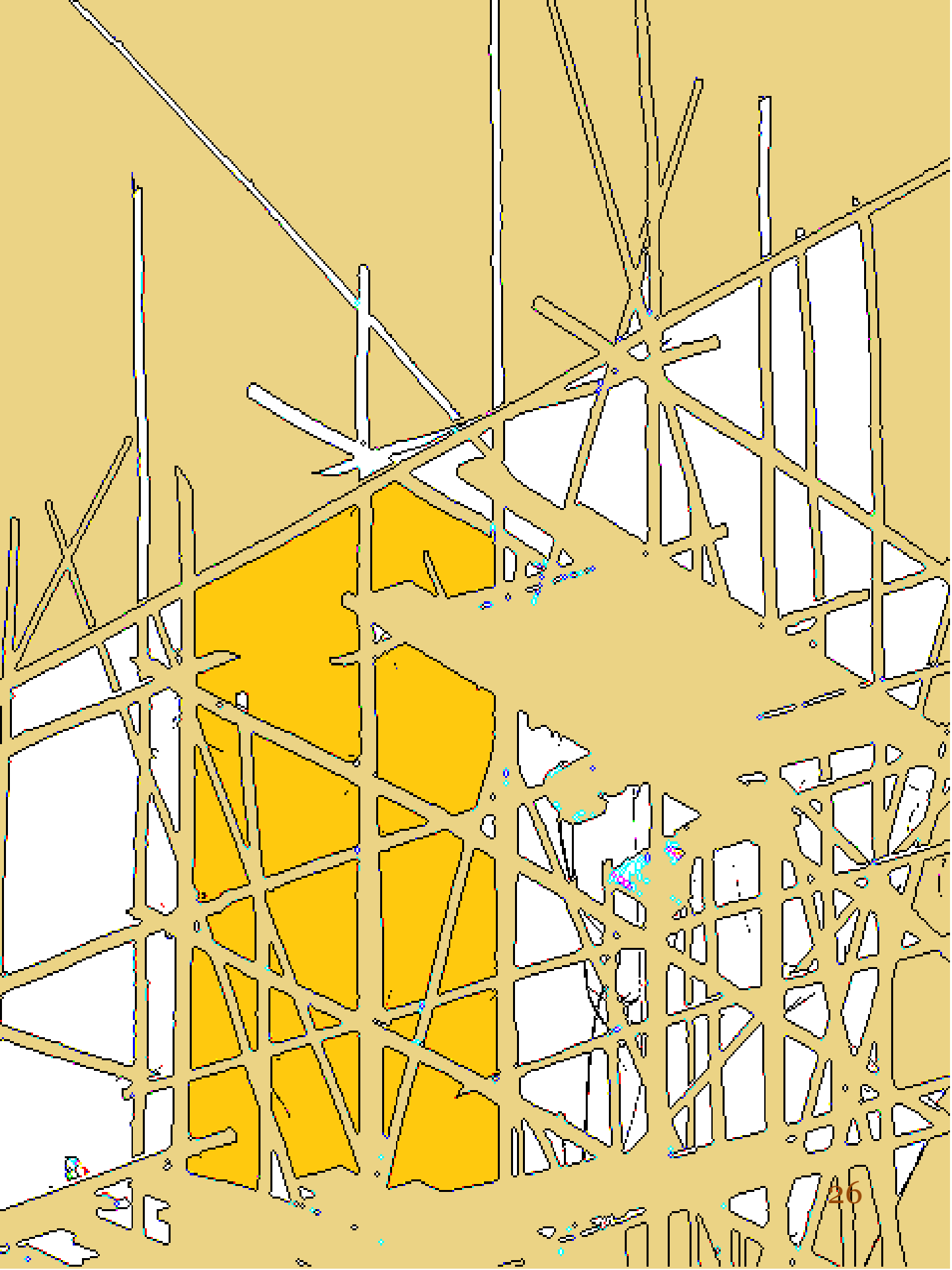
Infrastructures recursively constitute practices and practices recursively constitute infrastructures.

‘Infrastructuration’ describes these ongoing and inherently dynamic processes.

The term is based on Giddens’ concept of structuration theory, which addresses agency and structure without giving priority to either.

Not to be confused with: infrastructuralism (French); infatuation (quite a different topic); or infantilism (which is for babies).

Similar to: ‘rekursiivisesti muodostettuja käytäntöjä’ (Finnish).



# Innovation

|ɪnə'veɪʃ(ə)n|

noun

1. the introduction of something new
  2. a new method, idea, product, etc.
- ‘technological innovations designed to save energy’

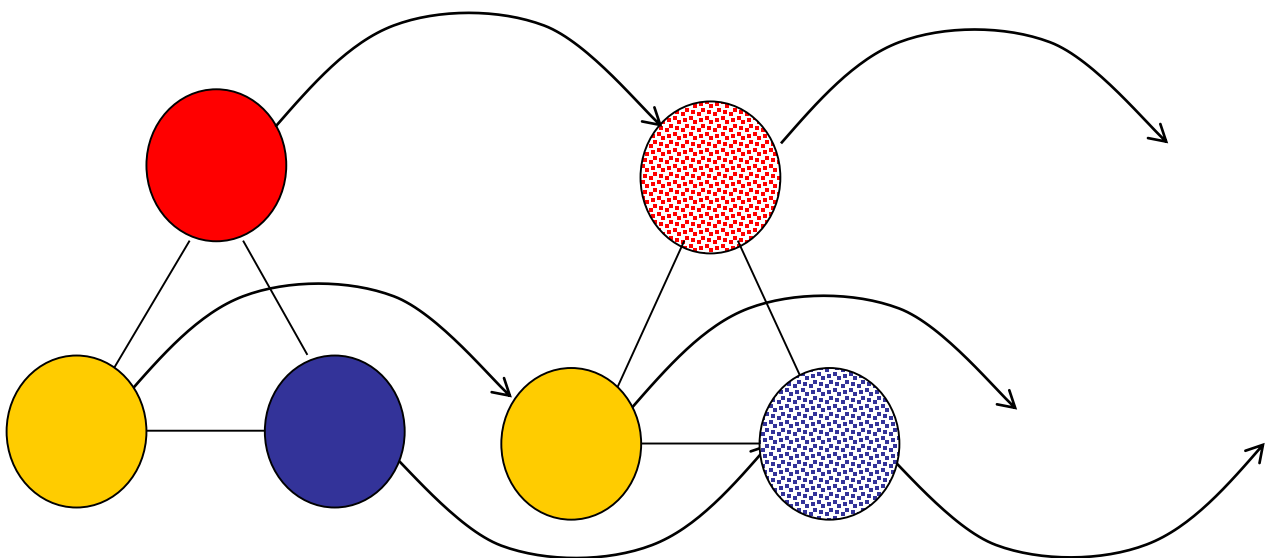
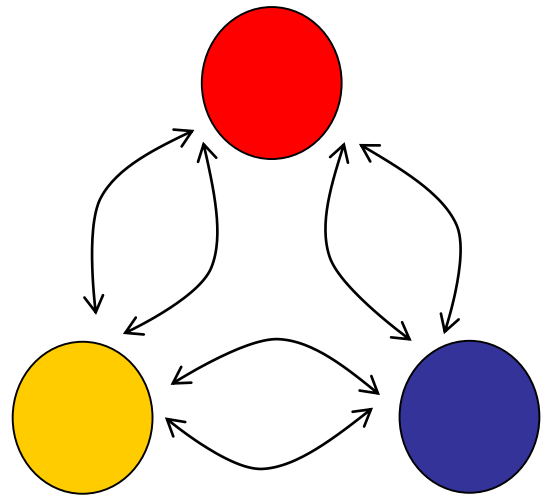
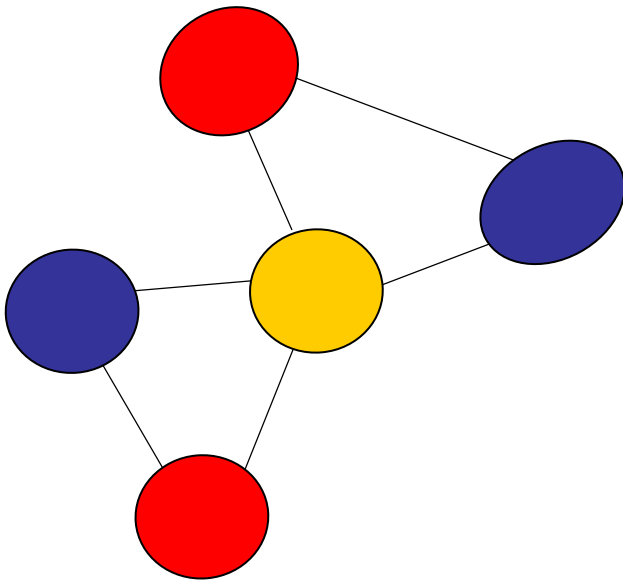
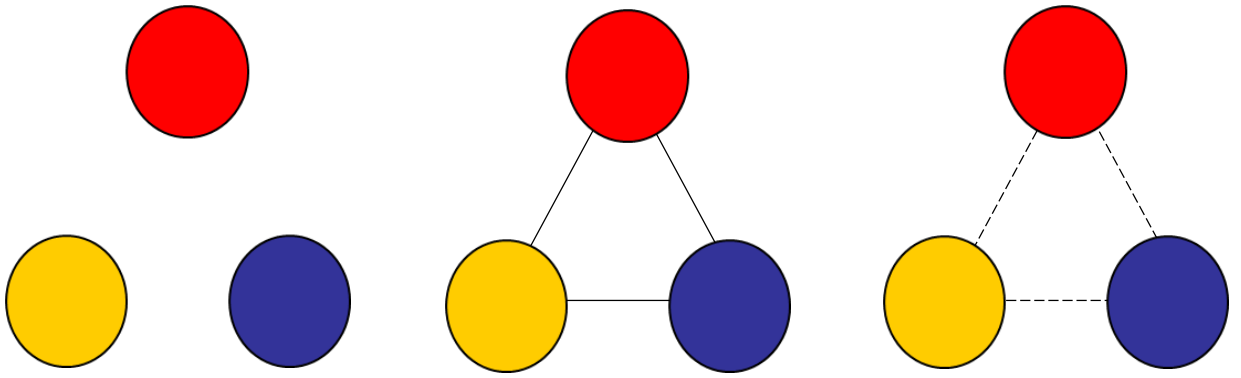
Often seen as an outcome of new combinations of pre-existing but separate entities by an entrepreneur (Schumpeter).

Problematic because it does not focus on innovation in what people do, and tends to reproduce a view of innovation as a one-off moment rather than as a continuous on-going process.

Suggested alternative:

‘Innovation in practice’, - a concept that recognises the active and creative role of practitioners, and acknowledges that consumers and producers both participate in emergent communities of practice.





# Invisible Energy Policy

|ɪnˈvɪzɪb(ə)l ˈɛnədʒi| ˈpɒlɪsi| |

noun

A new term.

Managing energy demand has traditionally been the task of institutions focusing on energy policy.

However, many different areas of non-energy policy – including health, education, welfare and economic policy – have consequences for what people do and so for energy demand and related patterns of mobility.

Invisible energy policies are those which have a significant effect on energy demand, where this effect is not noticed or not understood by those involved in developing the policy.

Not all non-energy policies are ‘invisible’, but all invisible energy policies are non-energy policies.

There is increasing interest in using non-energy policy to steer demand. Some invisible energy policy makers use special ink.



# Journey purpose

| 'dʒə:ni 'pə:pəs |

Noun technical

The reason for an act of travelling from one place to another.

‘The purpose of Susan’s journey\* was to buy sprouts’ Code as Journey Purpose: shopping

Until around 2017, in frequent use in transport statistics.

Now obsolete.

Statistics on journey purpose fossilise categories of activities: meanwhile, practices like shopping continue to evolve.

Statistics on journey purpose obscure really important processes, such as fitting many activities into the same journey and multi-tasking on route.

\*Susan also took the dog for a walk (see Car Dependence); popped into the library, and did some on-line shopping whilst she was in the supermarket café.





# Keeping the lights on

|'ki:pɪŋ ðə laɪts ɒn|

A phrase used to justify energy reforms such as nuclear new build: symbolises right to unlimited power.

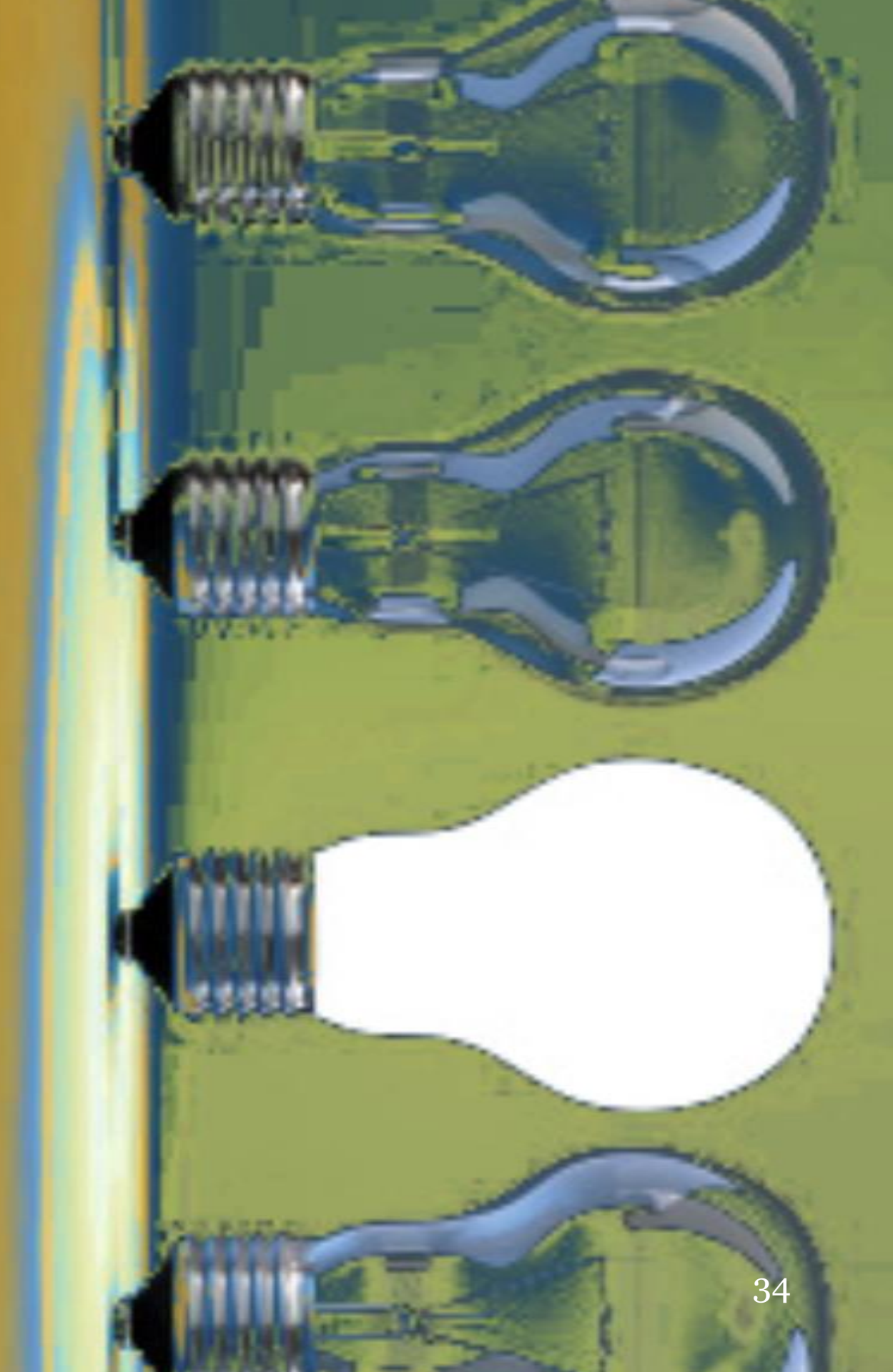
Now obsolete.

Perpetuated an unquestioned reliance upon electric power, reinforcing the view that energy consumption is non-negotiable and that it lies outside and not within the frame of legitimate policy debate.

Hence, obscured questions of what energy is for, how energy demands arise and how they change.

Phrases that have taken its place include:

‘Keeping some of the lights on’;  
‘Which lights should we turn off next?’  
and ‘What’s wrong with a bit more dark?’





# Low hanging fruit

[ləʊ 'hæŋɪŋ fru:t]

noun informal

1. the fruit that grows low on a tree and is therefore easy to reach
2. a course of action that can be undertaken quickly and easily as part of a wider range of changes or solutions to a problem; the most easily achieved of a set of tasks, measures, goals, etc.: first pick the low-hanging fruit.

‘It's more difficult to produce new drugs—all the low-hanging fruit has been picked’.

Until around 2018 widely used in energy policy to indicate the simplest and most cost effective methods of saving energy. The idea was to begin with measures that are within easy reach such as swapping light bulbs, or replacing an old boiler.

Related terms:

High hanging fruit (also known as coconuts).

Now obsolete.

Reproduced a narrow, ahistorical, and isolated view both of the problem of demand reduction and of the form and character of any possible response. As energy efficiency is now seen as part of the problem, the term has fallen out of use. (See 'Efficiency')





# Predict and provide

|prɪˈdɪkt ənd prəˈvaɪd|

verb

A term used in transport policy to describe planning, in which the continual expansion of transport infrastructure meets inferred latent demand.

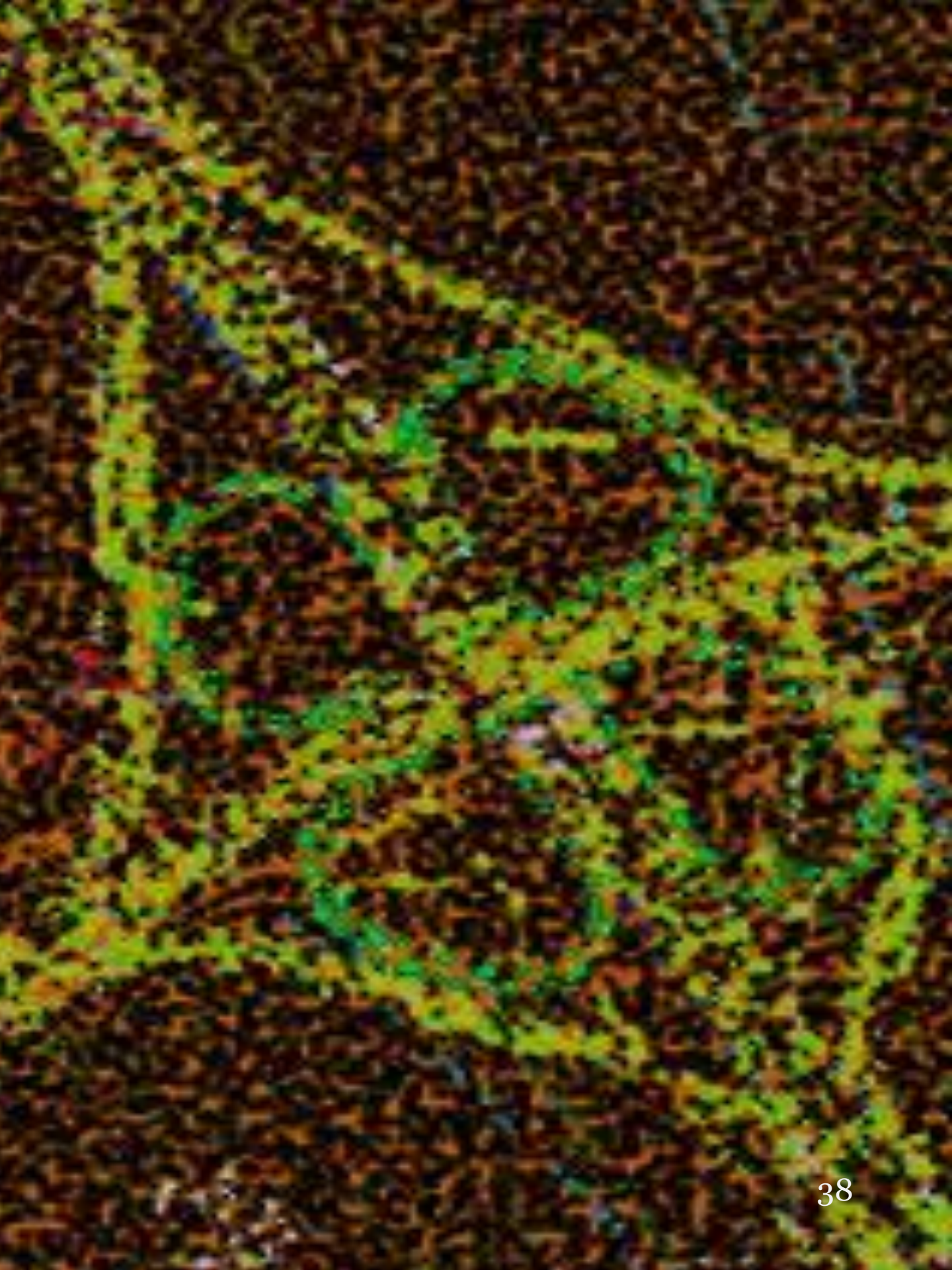
The aim was to predict future transport and energy demand and provide the means to meet it: e.g. more power stations or more roads.

Now obsolete.

It has become clear that transport planners have never been able to predict demand and, if their projections were to have been correct, they would never have been able to provide an engineering solution to cater for such demand.

It is now widely recognised that predictions are sometimes dangerously ‘performative’.

Alternative concepts include:  
‘Infrastructuration’, ‘Space-Time Practice Warping’; ‘Reconfigure’



# Reconfigure

|ri:kən'fɪgə|

verb [with object], reconfigured, reconfiguring

1. to change the shape or formation of; remodel; restructure.
2. to rearrange the elements or settings of (a system, device, computer application, etc.)

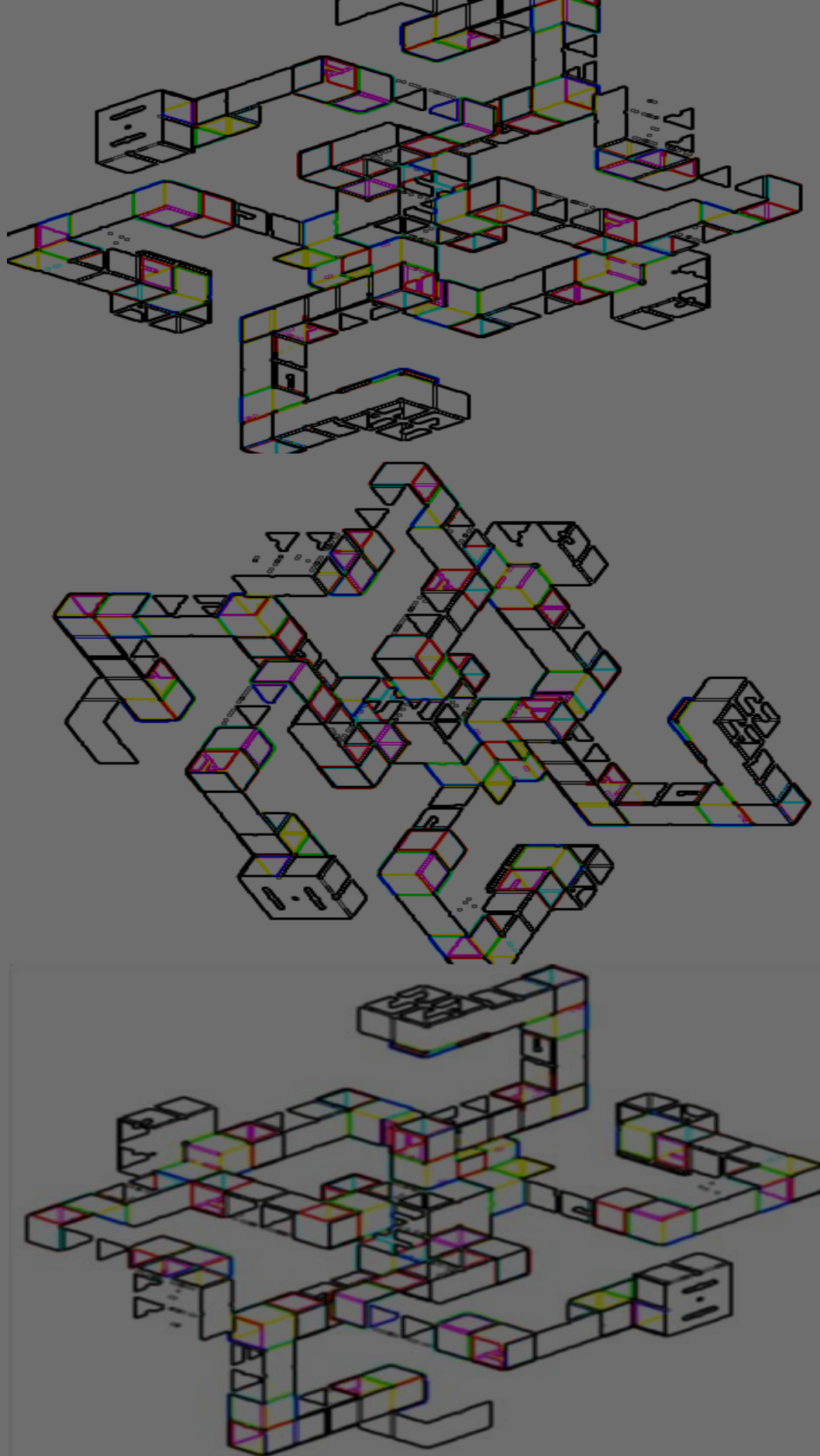
Reconfiguring.

A new term.

Refers to reconfiguring the elements of practice; and relations between practices.

See: 'Innovation', 'Space-Time Practice Warping', 'Infrastructuration'





# Rebound

|rɪˈbaʊnd|

verb

1. bounce back through the air after hitting a hard surface
2. recover in value, amount, or strength after a decrease or decline
3. have an unexpected adverse consequence  
'Nicholas's tricks are rebounding on him'

noun

1. an increase in value, amount, or strength after a previous decline
2. in sports, a ball or puck that becomes available after an unsuccessful attempt to score

phrases: 'on the rebound'

while still distressed by the ending of a romantic relationship.

'I was on the rebound when I met Jack'





In the energy field, the notion of ‘rebound’ describes possible responses to an increase in energy efficiency.

Since improvements in energy efficiency imply a reduction in the relative cost of the service, they may lead to some increase in demand for that service.

Alternatively, money saved because of efficiency in one area may be spent on other energy intensive activity.

This can partially or totally, offset the initial expected savings, an effect that is described as ‘rebound’.

Now obsolete.

Critics pointed out that rebound implies unrealistic forms of equivalence; people do not always spend the money they save; and new technologies make new opportunities - they do not merely change the relative costs of existing opportunities.

See: ‘Efficiency’



# Societal synchronisation

|sə'saɪnt(ə)l sɪŋkrənʌɪ'zeɪʃ(ə)n|

noun

A new term.

Used to describe the extent to which members of society are engaged in the same practices at the same time.

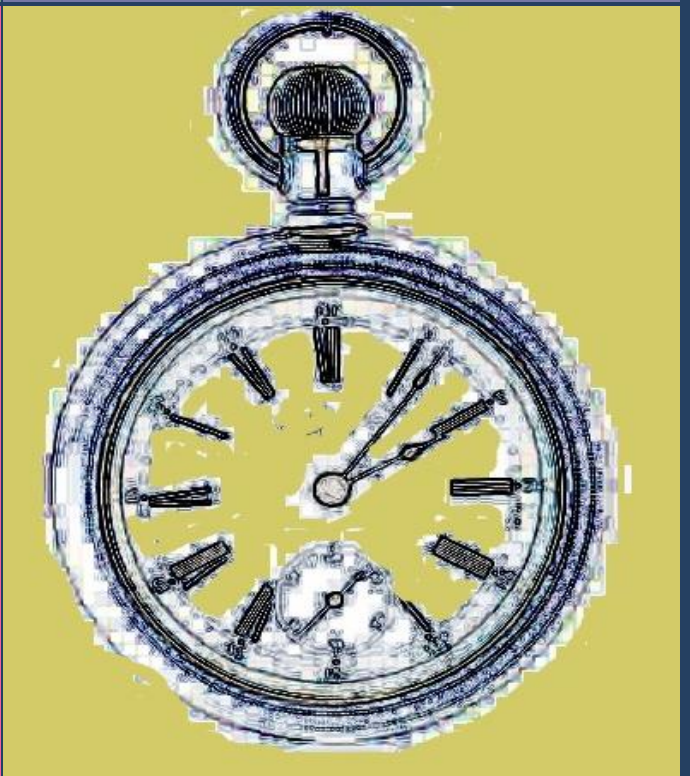
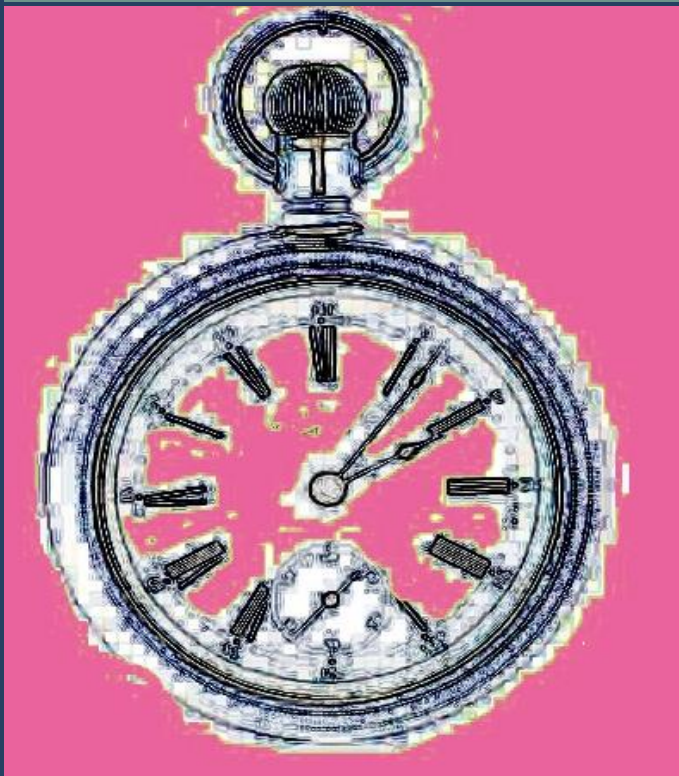
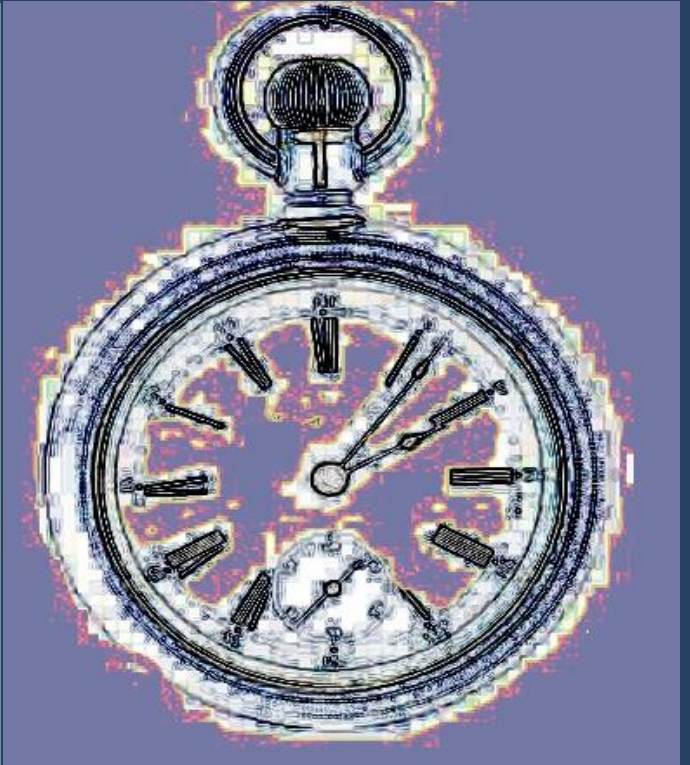
Moments when many people are doing the same thing at the same time can have a big impact on energy demand.

‘We see high levels of societal synchronisation and low levels of electricity use during the night when most people are sleeping.’

Societal synchronisation also explains peaks in demand, when people return home from work and start making dinner.

Measures of societal synchronisation are now routinely used by some of the new government Departments, including the Department of Demand, and the Department of Space-Time Practice.





# Space-time practice warping

|speɪs-tʌɪm 'præktɪs wɔːpɪŋ|  
noun

A new term.

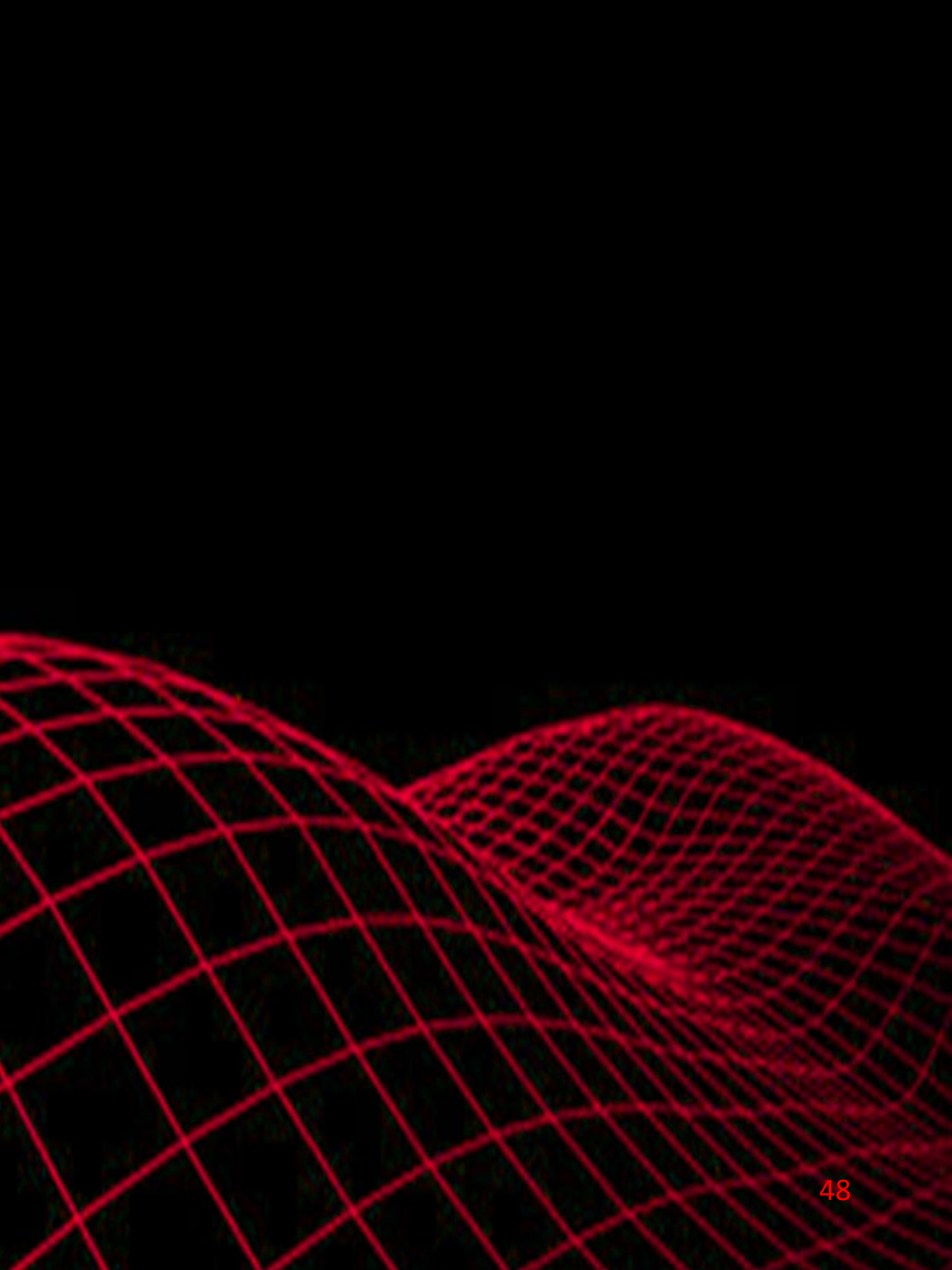
Something (such as a figure, pattern, or practice) that results from a particular arrangement of parts or components that have both spatial and temporal qualities.

In social theory 'spatio-temporal reconfiguration' often refers to the re-formation of practices in time and space.

The more complicated concept, captured by the term 'Space-time practice warping' is that practices are themselves constitutive of time and space. As practices evolve, so do the qualities of space and time.

See: 'Reconfiguration', 'Infrastructuration'





# Demand (2)

DEMAND was a large and complicated research centre, (2013-2018) involving around 20 projects, and 45 people from 11 universities and from EDF as well.

People who were part of DEMAND were known as 'Demanders'. They generated a host of 'demanding' new ideas. They had a lot of energy, and they wrote about energy as well.

They asked 'What is energy for?'

'What is demand?'

'How is demand constituted?'

'How does it change?'

'How can it be steered?'

Bit by bit Demanders revised the terms and concepts through which energy is known and understood. They did so to such an extent that we have had no option but to update the demand dictionary of phrase and fable.

For even more words see [www.demand.ac.uk](http://www.demand.ac.uk)



# List of Units

CACP: Chart atlas of contemporary practice

1 CLOTOG =  $0.15 \text{ W/m}^2\text{k}$  (1CT=3 jumpers)

FITI: Fossilisation, innovation, transformation index

IIPS: Interesting ideas per second (related to MDPRC)

MDPRC: Myths de-bunked per research centre

1 Mloab = 1 million litres of avoided beer

MtoepC = million tonnes of oil equivalent per century

POPM: Power outlets per Metre.

SSI: Societal synchronisation index. France scores 5. UK scores 2.

T/M<sup>2</sup> : Tablets per M<sup>2</sup> also known as the 'Lord Factor'

# List of Units contd.

## Elements (of Practice)\*

Ma = Materials, Infrastructure, Stuff, Resources

Co = Competence, Skills, Know -How

Me = Meaning, Image, Symbolic Significance

## Conversions

To convert Centigrade into Farenheit: multiply by 9, divide by 5, and add 32.

To convert Farenheit into Centigrade: subtract 32, multiply by 5, and divide by 9.

To convert dominant discourses in energy research and policy go to [www.demand.ac.uk](http://www.demand.ac.uk) and multiply the ideas you find there.

*\* Editors' note: Warning – never take these elements too literally.*









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