

## THE SOCIAL LIFE OF ENERGY FUTURES

Throughout the twentieth century, experts, governments, international organisations and companies developed their own forecasts of what an energy future ‘might’ look like. These forecasts were not only predictive exercises, but were interactive, guiding as much as representing future consumption patterns.

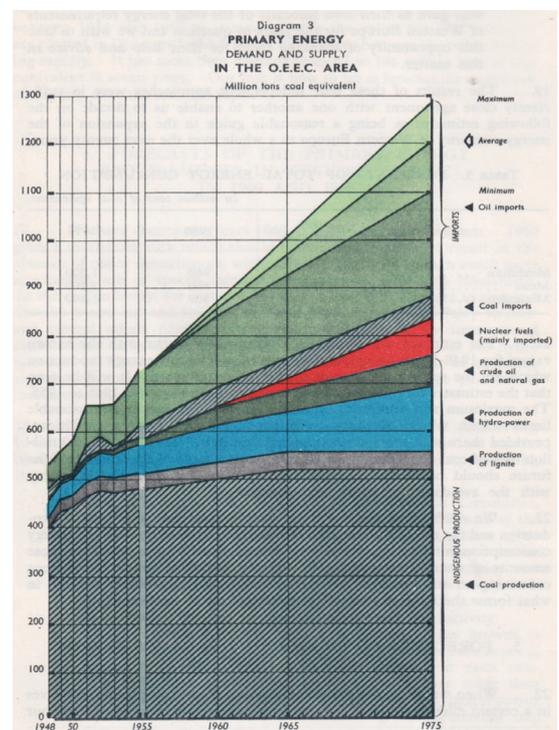
### KEY FINDINGS

- Energy forecasts mirrored evolving models of expertise and political regimes
- Expert models affected how consumers were represented and modelled; the rise of economic models after 1945, such as GNP, abstracted consumers from national forecasts
- How forecasts were framed in relation to diverse policy areas, such as housing, influenced how consumer practices were incorporated into forecasts of energy demand
- Outside of official forecasts there was a range of civic engagement in the role of consumers in guiding energy futures

The practice of forecasting sped up after the Second World War when fuel shortages raised fears about the longevity and security of energy supply. Competing visions of energy futures mirrored political regimes and evolving models of expertise.

In the years after 1945, **scientific planning** shifted to **economic expertise** in forecasting models. In the first half of the twentieth century, energy futures were conceived by fuel experts trained in the natural sciences, geology and administration. Their method was to gather statistics about natural resources through national, international and commercial bodies, such as the U.S. Geological Survey and the World Power Conference. The aim was to quantify reserves rather than anticipate patterns of demand. After the Second World War, technocratic expertise gave way to economics and forecasting.

The shift in expertise can be seen in two fuel reports published just four years apart by the Organization for European Economic Co-operation (OEEC). The first report, written in 1956, *Europe's Growing Need of Energy, How Can They be Met?*, was written by Harold Hartley, a physical chemist and administrator who had been Chairman of the World Power Conference. Hartley's report reflected his scientific background. Europe faced an imminent energy shortage, the report predicted, unless sufficient policies were put in place to stimulate coal production and fuel efficiency. In contrast, the 1960 OEEC report, *Towards a New Energy Pattern in Europe* written by the economist Austin Robinson, projected a much more optimistic picture of Europe's energy future. Here the market was the optimal allocator of resources. Where Hartley saw the energy mix as a series of individual fuels bolstered by specialist policies, Robinson envisaged an energy future where energy was steered by market forces and price.

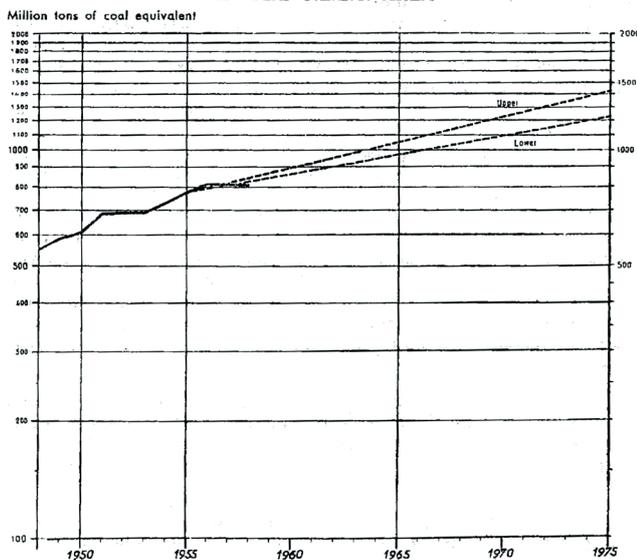


The scientist and administrator Harold Hartley broke down future energy demand into individual fuel types.

© OECD, *Europe's Growing Needs of Energy, How Can They be Met?*, OEEC, 1956, p.22

The changes in expert paradigms took place within broader shifts in **political ideology**. The Cold War in particular deepened the mark of ideology on energy futures. The 1952 report, *Resources for Freedom*, published by the President's Materials Policy Commission (the Paley Report) set out growth, individual choice and the market as central to American freedom and made them the fundamental cornerstones of energy policy. Political ideologies thus merged with expert models to determine what should and should not be included in energy futures and who should determine the future; should it be left to the market, experts and planners, or the popular will?

FORECAST OF TOTAL DEMAND FOR PRIMARY ENERGY IN THE O.E.C. AREA



Austin Robinson relied on an economic model to project future demand for primary energy in the OEEC area.

© OECD, *Towards a New Energy Pattern in Europe*, OEEC, 1960, p. 30

How energy forecasts were framed also depended on the **changing meaning and associations attached to the term 'energy'**. In the 1950s and 1960s, policy makers and commercial interests began to use the word 'energy' to describe a single interactive system in which different fuels compete with each other. It was, however, not until the 1973 oil crisis that energy entered into common parlance in policy circles and in public rhetoric to encompass all fuel sectors. Prior to this, individual fuels were not referred to as energy, but as fuel or power. Forecasts were divided into individual sectors (coal, gas, oil, electricity or water) each with their own conference panels, proceedings and professional networks. The independence of energy sources is evidenced in the range of policy departments which considered individual fuels. In the United Kingdom, before the Second World War, electricity was dealt with by the Ministry of Transport, while coal was considered by the Board of Trade and the Mines Department. Even though the Ministry of Fuel and Power (founded in 1942), and from 1957 the Ministry of Power oversaw

the different fuel industries, it was not until the foundation of the Department of Energy in 1974 that energy became a distinct policy arena.

Prior to this paradigm shift from multiple fuels to holistic energy, **the place of consumers in different policy areas was fragmented**. This meant that futures were variously defined as an element of national security, industrial development or housing. How consumers were represented depended on how forecasts were framed. Two war-time British reports (the 1945 Egerton report and the 1946 Simon report) focused on the coal fire and provided a comprehensive account of consumer practices in relation to household heating, including the impact of thermal comfort and heating practices on energy demand. Although recognition of factors such as thermal comfort, minimal standards, temperature and equipment emerged in relation to housing, they were excluded in national fuel policy plans, which took for granted that industrial development and GNP drove consumption. At the level of national planning for fuel policy, industry thus beat households and private consumption. Such silencing would become a headache in the 1970s when it became increasingly clear that private consumption of electricity did not follow GNP in a linear fashion and had its own dynamic.

The way futures were envisaged and constructed also depended on the **type of fuel at stake**. Early advocates of nuclear energy exaggerated future levels of energy demand. Private companies, such as Southern California Edison circulated alarmist scenarios about imminent energy shortages to stress the importance of continued investment in its nuclear programme. National governments and inter-governmental bodies also exaggerated concerns about energy deficits to justify building up nuclear energy. In 1957, the European Atomic Energy Commission in its report *A Target for Euratom* warned about the 'whole future of Europe's economic growth, and even of its political stability in the world' stressing the need to urgently invest in its nuclear capabilities.

The petroleum industry meanwhile tried to counteract the narrative of abundance provided by nuclear advocates and simultaneously alleviate fears over 'peak oil'. Unsurprisingly, M. King Hubbert's 1956 'peak oil' prognosis attracted little support within the petroleum industry – after all, it undermined the growth-based future on which the industry depended for investment and exploration. It was in response to Hubbert's 'peak-oil' theory that the petroleum industry changed its forecasting methods, giving greater attention to price controls and new technologies to mitigate limitations to reserves. While nuclear energy was promoted for the infinite amount of energy released from the

atom, the petroleum industry looked to technology and the market to construct a future that could be represented as expandable, in spite of its infinite reserves.

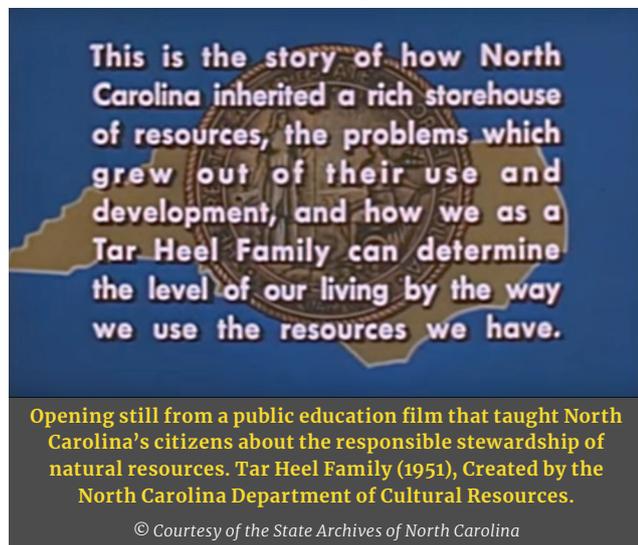
## Public Future, Real and Imagined

**Although consumers and private demand did occasionally surface in reports, overall, such considerations were excluded from official forecasts. Consumers did emerge, however, in wider public discourse on energy.**

While the Paley Report paid little attention to consumers, *The Mid-Century Conference*, held in 1953 debated the role of values, habits and alternative lifestyles in moulding future energy use. One participant pointed out how high standards of energy use had been normalized in American life: **“without a doubt we are often over-sheltered. Certainly we overheat our homes and offices. And, generally, the men, at least, are over-clothed.”** There remained a sense that there were ways to reduce consumption while maintaining a high standard of living.

Attempts to reach out and involve the public in discussions about resource futures were not unique to the Mid-Century Conference. Forecasts were often accompanied by educational programmes. In 1913, a National Conservation Exposition held in Knoxville, Tennessee attracted over a million visitors. The exhibition had a firm objective: **“to teach right living, the proper use of all natural wealth and the protection of the sources of this wealth”**.

In the wake of forecasts, public education campaigns taught consumers about the values of energy conservation. One example was the North Carolina Resource Use Education Commission, a state-wide programme that brought together 52 organizations, including government bodies, universities and schools to consider the problem of resource conservation. It sponsored the film *Tar Heel Family* (1951) which told the history of resource use and



called on citizens to take more responsibility for their use of natural resources.

With the rise of broadcast media, forecasts were circulated to an ever-broader audience. The Paley Report was publicized on CBS, as a film, and featured on Dwight Cooke's radio program *You and The World*. Other forecasts were repackaged for popular audiences, such as J. Frederic Dewhurst's *America's Needs and Resources*, which was remade as a musical documentary, *1960! Jiminy Cricket* (1947) animated by Walt Disney characters, including Jiminy Cricket, Donald Duck and the Seven Dwarfs. During this period there was a proliferation of educational films sponsored by businesses, charities, educational institutes and advocacy groups that drew on the findings provided in forecasts.

Awareness of alternative futures also circulated in popular culture, in particular, in the form of the future home. From its origins in 1908 the *Daily Mail Ideal Home Show* held in Olympia, London, included exhibits on the domestic use of energy. It was not until 1928, however, that the exhibition displayed its first *Ideal Home of the Future*. Designed by S. Rowland Pierce and R. A. Duncan the house contained many of the electrical appliances that we are familiar with today, as well as others that never materialized, such as a tele-newsprinter and an 'automatic secretary'.



In the coming years Ideal Homes were displayed at world fairs, expositions and at Disneyland, California, where the Monsanto House of the Future (built in 1957) modelled life in 1987. Gadgets aside, these future homes rarely rethought consumer practices reflecting conservative ideas about family and domestic life.

A wide range of citizen engagement with the future of energy circulated outside the realm of official forecasts. The public contributed to a wider discussion about what an energy future might look like and their role in creating such a future.

## FURTHER DISCUSSION

Wright, R. and F. Trentmann, 'The Social Life of Energy Futures', in M. Rivera, A. B. Sum and F. Trentmann (eds. *Futures Past: Experts, Development and Sustainability* (Munich: Oekom, forthcoming).

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## MATERIAL CULTURES OF ENERGY

**Material Cultures of Energy** has investigated energy transitions in daily life in the twentieth century. Our research seeks to understand better the roles played by people, households and communities in transformations in the past and the light they shed on the challenging task of transitions in the future. Research has investigated case studies in the United Kingdom, North America, Germany, Japan and India.

**Material Cultures of Energy** explores how:

- Networks and grids changed communities and their sense of space
- Transitions worked themselves out in people's homes
- Societies managed at times of shortages and disruption
- Energy futures were imagined and contested

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For further details take a look at our website <http://www.bbk.ac.uk/mce>

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