



Original research article

Coal fires, steel houses and the man in the moon: Local experiences of energy transition



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ABSTRACT

Energy transitions involve long-term structural change and are generally presented and discussed in ‘grand narrative’ terms: low carbon, sustainable growth, smart systems. Yet demand for energy services has always been highly distributed and local considerations are also becoming more prominent on the supply side, with developments in distributed electricity generation and heat networks.

This paper is based primarily on interviews and observations with low-income householders and their energy advisers, carried out in a district of central Scotland whose economy had depended on coal and paraffin shale mining for over a century. Many older residents had experienced a transition from belonging to fuel-producing communities and handling solid fuels to becoming ‘consumers’ in uneasy and uncomprehending relationships with distant suppliers of gas and electricity. Their stories add texture to ‘grand narratives’ of energy transition, demonstrating, for a particular place and time, some of the complexity and path dependencies of energy systems and how they play out in social and distributional terms. They show how local resources, institutions, social networks and built environment can affect energy services and responses to them, highlighting the role of ‘middle actors’ in an energy advice service as guides to transition.

1. Introduction

Stories have been used throughout history to make sense of both extraordinary and everyday phenomena, and to shape our responses to them. The term ‘story’ can be understood as a fiction, something out of place in rational discourse. Yet stories or narratives are a constant in research literature: almost every paper opens, like this one, with a few paragraphs that situate what is to follow in terms of some narrative, such as that Earth’s climate is warming, enzyme deficiency contributes to a disease, indoor air quality is a growing problem in modern housing. Such introductory sentences help readers make sense of what is to follow (or warn them to avoid it), by linking it to narratives that will already be familiar.

This paper starts from two premises: that energy transition operates at many levels or scales and can be understood at many levels; and that transition is not a uniform process but one influenced by both geography and history [1,2]. It offers extracts from residents and energy advisers’ accounts of energy transition in a particular locality and uses them to illustrate the value of personal and communal stories for energy research and policy. In particular, the stories illustrate ways in which geography, history and politics have shaped the built environment and patterns of energy supply and demand, the impacts of change on relatively vulnerable citizens, and the role of energy

advisers in helping them to cope. They show how energy transition stories can emerge from lived experience and social learning, as well as from a policy blueprint or high-level scenario: transition is enacted, experienced and expressed in personal and local terms, not only as a grand progress of technological innovation and adoption. The paper demonstrates how individual and localised stories can contribute to analysis of topics such as utility-customer relations and social adaptation to changing circumstances; and it supports the argument for attending to the role of ‘middle actors’ in energy transition [3], not least because of the interpretive skills of these actors and their ability to communicate between actors and channel resources. In a special issue dedicated to storytelling, these personal accounts of energy transition complement the oral histories and interpretations of home heating and comfort by Goodchild et al. [4] and Goodhew et al. [5, in this special issue].

Personal stories can be viewed as peripheral to the serious business of energy policy and transition, optional ornamentations of the research literature. Here, it is argued that they can offer essential contributions to debate on the future of energy systems with their ‘horizontal complexity’, path dependencies and intense governance challenges [6], challenging standard policy narratives [7].

Much of the material in the paper is drawn from a study carried out in 2000–2001 in a deprived area of lowland Scotland, part of a broader

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enquiry into the value of energy advice and the role of social learning in residential energy use [8–10]. While the study is not recent, the stories remain open to interpretation and new insight, while the issues they raise are still relevant for energy transition research, particularly in relation to deprivation and fuel poverty [11].

2. Scene-setting: geography, economy, housing and the local authority energy advice service

West Lothian District covers an area of 426 km² to the west of Edinburgh, the Scottish capital. Based on an ancient county, it has a population of roughly 180,000. The largest settlement is the new town of Livingston with over 50,000 residents, which played a major part in housing newcomers from Glasgow since the 1960s¹; the rest of the population live in five smaller towns and a scattering of villages.

The western part of the District overlies coal deposits, while the east sits on paraffin shale (oil shale), discovered in 1858. The West Lothian Official Industrial Handbook for 1965 notes that ‘about 75% of Scotland’s energy, lighting and space heating requirements are based solidly on coal and known reserves ensure that this indigenous source of power will be available far into next century at least...the range of free-burning solid fuels available from existing shafts is not surpassed in any other coalfield... Polkemmet (in West Lothian) is perhaps one of the finest and most technically efficient pits in Britain’ (p. 39). The handbook tells how Livingston New Town and other industrial centres were to provide outlets for locally-mined coal: for example, the town of Bathgate was home to a car factory that employed 6000 workers and to the North British Steel foundry, with a 2.5 MW furnace running on offpeak electricity. The South of Scotland Electricity Board had a seven-year, £360m + expansion programme under way to meet rising demand in the area.

This expansionary activity did not last long. The Polkemmet mine closed in 1986, as the Conservative Government pursued a policy of closing British pits. Production at the Bathgate car works also ended in 1986. A condenser company with over 1400 workers closed in the early 1980s, as did hosiery factories and two gas works²; the steel industry was virtually gone by the turn of the century. Unemployment in the town of Bathgate reached 24% in 1984 and although an American electronics firm set up a plant there in 1992 that employed over three thousand workers, it closed only nine years later. At the beginning of the 21st century, West Lothian was still seen as significant for Scottish manufacture but had been badly shaken by industrial decline and insecure employment. Health indicators were close to the Scottish average and household income was slightly higher than average [12], but the District contained pockets of serious deprivation, particularly in the southwest [13].

With public housing as with industry, outcomes had fallen short of policy ambitions. The 1965 Official Industrial Handbook stated proudly that ‘Housing in West Lothian is concerned with people, not just bricks and mortar. Whether it be in their own extensive building programme, or in approving private developments, the County Council’s first consideration is the provision of attractive modern homes, as opposed to the mere provision of “living space”’. While the Council buildings may have been thoughtfully designed by the standards of the time, some of the materials and techniques left a cold, damp and even flimsy legacy. One of the energy advisers told me of a neighbourhood where a middle-aged woman had been able to punch a hole through the rendered asbestos wall of her home to vent her tumble-drier.

The West Lothian District Council had set up advice services to assist citizens in navigating their way through financial, legal, employment and other difficulties. One of these was the West Lothian Council Energy Advice Project (later WLC Energy Services, or WLCES), estab-

lished in 1994 as part of a national programme to promote economic and social development in deprived areas. 75% of the funding came from central government and 25% from the District Council. The mission statement and aims of the Project were:

To initiate and administer activities likely to reduce fuel poverty³ levels in the Urban Programme areas of West Lothian.⁴ This will be done by providing a proactive and responsive information and advice service, targeted at the residents of the designated areas..... To implement the following general aims:

- *improve access to information and advice and in particular raise awareness of energy related matters*
- *increase household disposable income through either maximising income, ensuring*
- *maximum benefits take-up, or minimising expenditure by reducing fuel bills*
- *improve comfort levels in homes and therefore the health of the residents*
- *encourage landlords to adopt an effective policy on energy efficiency and fuel poverty*
- *promote the re-utilisation and conservation of resources’. (Initial plan for WLEAP, 1994)*

The service was comprehensive: free, confidential and impartial advice on all fuel-related issues.... heating use, payment methods, cutting down fuel bills, insulation, billing problems, energy efficiency grants ... and ‘new tenant advice’ (a proactive service to help tenants manage energy in their new homes). Advisers were trained to negotiate with fuel suppliers and help arrange individual payment plans, to carry out home visits, and to give talks and training to community groups and organisations.

Take-up was high: in 2001–2002, at the time of the study reported here, the programme reported dealing with 7725 enquiries. This made it by far the most significant provider of energy advice in the area. Personal contact between advisers and clients was also a feature: 1933 of those enquiries led to the opening of case files detailing a series of contacts and casework, and 1696 home visits were carried out [14].

Advice giving and progress-tracking were tailored as far as possible to individual needs and it was striking how little printed material was used. Face-to-face social contacts appeared to shape client awareness and know-how far more than written information. None of the clients interviewed had a computer – perhaps not surprising, at the turn of the century – but they did not mention TV or radio as sources of useful information, either.

Tracking progress was a central part of the service for those with the most difficulty in paying their fuel bills, as noted by one of the advisers:

[The service] provides tailored advice, usually through a home visit within two days of contact. An initial fuel meter reading is taken when the client first contacts the project. Following the visit [when a second meter reading is taken] clients phone in weekly with readings for four weeks in order to check whether they are achieving savings and for further advice if needed... It is possible to pick up clients who are falling behind their targets for reduction while the weekly meter readings are being taken, by checking against the pattern of use based on the first two readings. Readings are phoned in until the customer and adviser are satisfied that ‘consumption is consistently within [the customer’s] means or target. (Personal communication from the Advice Centre manager, 2000)

³ The term ‘fuel poverty’ is here used as a state in which a household is unable to afford adequate energy services. While the definition is contested, there is wide agreement on three contributory factors: the energy efficiency of the home and its appliances, household income, and unit costs of fuel and electricity [24].

⁴ Some 30,000 in 12,000 households. The unemployment rate was estimated at 15%, with over 30% of the population in fuel poverty and 40% in receipt of state housing benefit.

¹ <http://www.westlothian.gov.uk/article/2093/Information-and-Statistics>.

² Producing ‘town gas’ from coal.

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