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Telling by Showing: Early Twentieth Century Exhibitions as Advocates in Energy Transition Processes

Popular perceptions of energy regime changes often suggest that transitions happen rather abruptly and result in complete substitutions of older, traditional energy carriers with more efficient, comfortable, and inexpensive ones. A closer look at the history of energy, however, shows that energy transitions, particularly when it comes to private households, are often characterized by a slow fade-out of older energy forms as they are increasingly replaced by newer, supposedly more modern energy carriers. The reasons for energy transitions and for the speed with which they occur are manifold. Scholarly literature has primarily focused on the technological, economic, and political circumstances in which they take place. Psychological, social, and cultural aspects have been underexposed. This has led to an incomplete, at times even biased understanding of energy history. The neglect of these issues is particularly grave for private households, where recent studies have demonstrated how both users and mediators (organizations positioned between producers and consumers) can significantly affect energy choices and practices.

As agents of knowledge and appropriators of technology, exhibitions (and most notably museum exhibitions) have played an important role in the early twentieth century, when gas and electricity, the quintessential modern energy sources, aimed to oust wood, coal, and peat while simultaneously competing intensely with each other. Exhibitions are multimedia, synesthetic arenas of cognition and experience where the dichotomy between producers and consumers of energy is overcome. On the exhibition floor, producers' expectations and interpretations, translated by the exhibits' curators and designers, meet with the hopes and fears of the consumers. Exhibitions can never depict their content neutrally. Displaying and arranging objects, texts, and images are acts of interpretation. In this way, exhibitions and the stakeholders in them exercise a mediating influence in the process of energy transition. On a fundamental level, exhibitions formulate and convey knowledge about specific technologies, appliances, and their energy needs. Beyond that, they communicate ideas about modernity, gender roles, political ideologies, and consumption styles. They also serve as translators between different, at times opposing stakeholders in the economic, political, and

cultural worlds. By decoding the language of exhibitions and uncovering inscribed discourses on energy, a fuller understanding of energy transitions, their delays, their circumstances, and their consequences will result.

Convincing German consumers of the need for a private energy transition from wood, peat, and coal to gas and electricity was not as simple as it may seem in hindsight. Despite giving the impression of a rather predetermined, linear success story, electrification proved to be a contested field in the early twentieth century in Germany. Consumers were reluctant to abandon their traditional energy consumption practices, which were determined by the energy carrier that was used, for the sake of new energy forms that often required very different handling and carried the danger of unreliability, excessive costs, and even potential harm to the body. Therefore, gas and electricity networks, appliance manufacturers, and reform-oriented social activists, architects, designers, and educators worked towards a fast and complete transition from older (and, in their eyes, obsolete) energy carriers like wood, peat, and even coal to gas and electricity by educating the users about the advantages of these new energy forms in customer centers. Because exhibitions are ideally suited for conveying messages to the masses, they became an increasingly important medium for advocates of the new energy regime in the early twentieth century. Almost all of them used consumer-oriented settings to promote comparisons with traditional sources. The strong competition between gas and electricity as modern, network-dependent energy carriers influenced the exhibition world tremendously. Both energy forms competed for sales to private households, which promised to grow into a large and, compared to industry, stable market. At first, gas started from a better position. Its supply network had already been established in the late nineteenth century and was thus ready to grow. The relatively low price of gas in comparison to electricity also meant that even the middle and lower classes could benefit from the conveniences of gas lighting and connected appliances such as irons, small cooking plates, coffee-pots, and gas heating. After World War I, however, with the expansion of the electrical grid, electricity quickly gained ground. Faced with this competitive situation, both the gas and the electricity industries developed elaborate marketing campaigns and established central institutions for the promotion of gas and electricity as readily available, cheap, and easy-to-use energy sources.

Records of discussions by the Munich government about a proposed exhibition on gas scheduled for 1914 show that the industry felt increasingly threatened by elec-

tricity. In the face of wide-reaching and emotionally effective promotion campaigns for the Promethean technology of electricity, stakeholders lamented the lack of publicity for gas and policymakers' lack of awareness of the potentials of gas. What bothered the gas industry in particular was its rival's campaign to present electricity as the cleaner, easier, safer, and more versatile form of energy. For smaller appliances such as irons, coffee-pots, and cigar lighters, gas had a hard time proving its equality with electricity. Technical requirements played a significant role in this, too, as electrical plugs were easy to handle, despite lacking security standards, compared to gas lines and valves, which were prone to leaking, leading to gas poisoning, fire, and occasionally even death.

Figure 1: Title page of the exhibition catalog "Gas: Its Production and Its Municipal, Private and Industrial Usage, Munich 1914."

In both the general and trade literature, the growing competition between gas and electricity became a hot topic over the course of the 1910s. In 1911, the director of the *Zentrale für Gasverwertung* (Center for Gas Usage) emphasized the affordability of gas for working-class households and explicitly criticized electricity for keeping households from modernization. Since electrical lighting kept gas out of the homes of many middle- and lower-class families while electricity remained too expensive for cooking, these families were forced to stick with outmoded and inefficient coal stoves. Beyond these differences, the gas and electricity industries shared the impression that it was mainly the reluctant German housewife who stood between them and enormous profits. In the December 1911 edition of the *Journal für Gasbeleuchtung und Wasserversorgung (Journal for Gas Lighting and Water Supply)*, the travelling promoter of gas usage in the home, "Fräulein Josepha Wirth," claimed that "our housewives are, when it comes to the question of the home, particularly the kitchen, endlessly con-

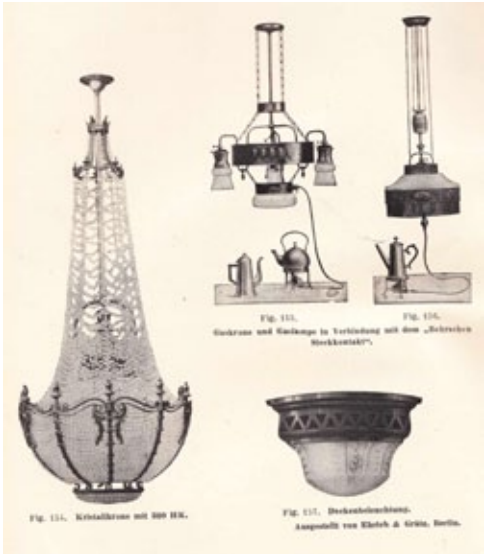

Figure 2: In reaction to the rising competition with electricity, gas suppliers and appliance manufacturers promoted gas lighting devices equipped with connecting valves for the operation of irons or coffee pots. Source: exhibition catalog "Gas: Its Production and Its Municipal, Private and Industrial Usage, Munich 1914."

servative. They cling to traditional customs until they have seen convincing evidence that just 'good' is not good enough."

The Munich Gas Exhibition in 1914 that was organized by the municipal gas company and the *Zentrale für Gasverwertung* under the patronage of the Bavarian King Ludwig III aimed at informing both the general public and municipal, regional, and national political stakeholders about the versatility of gas. The sections of the exhibition covered everything from the technologies of extraction, refinement, and distribution to the use of gas in industry, trade, and the private household. In their exhibition booths, household gas appliance manufacturers listed the same advantages as they did for their electrical appliances: cleanliness, comfort, time saving, and affordability. Gas appliances also shared some problems with electrical appliances. Since many homes lacked central heating systems, cooking with gas was not an option year-round. Gas cookers did not heat up the room as cooking with coal stoves had done and, secondly, steam that came with the burning of gas would cover the cold walls, furniture, and dishes. "Combination" was therefore the buzzword on the exhibition floor. Several companies displayed their new inventions, ranging from gas stoves that could also be used as coal-heating systems in the winter to stoves with integrated storage heaters in the fashion of familiar fuel-saving cooking boxes. Steering the right course between the technical needs arising from the use of gas as fuel and the expectations and usage patterns of housewives was a challenge that engineers of gas and electric stoves shared.

Many manufacturers, such as the long-standing family business F. Küppersbusch & Söhne, were in fact reluctant to stake everything on one card and continued to produce both coal- and gas-fired appliances while also developing electrical models. In general, the gas exhibition in Munich focused less on the competition with electricity

and instead featured gas in relation to earlier energy sources, particularly coal. By curating the exhibition in this way, the gas industry succeeded in presenting gas as the newer energy form that connoted modernity, despite the fact that coal was still being used by many people for quite good reasons. Yet the fact that gas was quickly losing out to electricity became absurdly obvious. The exhibition halls where the gas industry displayed its refined technology had already been electrified a few years earlier. In order to provide the infrastructure for the exhibition's demonstrations of gas usage, gas pipes had to be re-installed and electrical lighting fittings remodeled. Those electrical lamps that could not be remodeled for gas were kept inoperative for the duration of the exhibition.

Figure 3: Exhibition stand of F. Küppersbusch & Söhne at the Munich Gas Exhibition, 1914 showing both gas and coal kitchen appliances. Source: exhibition catalog "Gas: Its Production and Its Municipal, Private and Industrial Usage, Munich 1914."

Even though the course was already set, the gas industry managed to keep its product in the game during the 1930s and 1940s. Despite widespread electrification of more and more urban households during the 1920s and 1930s, gas remained an alternative for many already connected to the gas grid. However, unlike the even more traditional coal, gas made inroads only in those areas where governments and private investors were willing to provide the necessary financial and bureaucratic support for gas companies and their building of a gas network. As municipal governments had to choose

either electricity or gas, with the former winning in more and more cases, gas was able to maintain its position as the primary energy source for domestic heating and cooking only in scattered urban "gas pockets" in German-speaking areas such as Vienna or (in the post-World War II period) Bielefeld in West Germany.

Even more surprising, however, is the steadfast presence of coal as an energy alternative for private cooking, bathing, and heating. Due to a fear of energy shortages, many households were not willing to commit themselves to a network-dependent energy source over which they exercised even less control than they did with coal. In the 1950s, the so-called "economic miracle" brought German households a long-wished-for share in the booming consumer society, including modern electrified living spaces. Germany's development towards a mass consumer society during these postwar decades would eventually deliver the final deathblow to traditional household energy forms like peat, petroleum, wood, and coal. While coal continued to be an important energy source, its usage moved outside of the home into the arena of electricity production. At the same time, however, coal and, to some extent, wood played a significant role in the history of private energy consumption until the 1970s. At least in the psyche of German consumers, coal still figured prominently as a reliable energy source, as high sales figures of combination stoves that used both electricity and coal demonstrate. The psychological imprint of energy shortages during World War II and rationing in the immediate postwar years left its mark well into the years of decreasing energy prices and all-encompassing household electrification. During the late 1940s and early 1950s, it was difficult to get coal, but at least people felt that their private energy supply was ultimately in their power rather than in the hands of gas or electricity networks detached from their daily lives. At the same time, coal, wood, and peat made their users' hands dirty and the air smelly—vivid evidence of the process of energy transformation. With the all-electrical household that became a reality for most German households in the 1960s and 1970s, the sensory experience of energy usage was reduced to plugging appliances into wall sockets. The electrification of the private household was also a transition from an energy-conscious lifestyle to energy oblivion, in which users were detached from the primary energy sources behind their comfort—be it coal, oil, or uranium.

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