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Increased consumer involvement in electricity and water networks

A new study has reviewed the dramatic changes that have taken place over recent decades in 'network-bound systems' of electricity grids, water supply and wastewater management. Focusing on case studies in The Netherlands, the study found that consumers are becoming more active participants in the supply of these resources and services.

The way in which consumers use and connect to network-bound systems, in particular electricity and water, influences our use of natural resources. Large-scale changes, such as privatisation, have meant that supply is no longer in the hands of one public company, but a range of providers and distributers, with consumers taking an increasingly active role in becoming part of the networks.

The study focuses on sustainable consumption within network-bound systems of the Netherlands. In water supply and sanitation, there has been no privatisation and consumers tend to remain 'captive consumers', with no choice of supplier, as water supply companies hold a monopoly in the regions. However, water companies are increasingly monitoring client satisfaction and participation in water supply. There are also some cases of consumers taking a 'co-provider' role, by installing rainwater or greywater recycling systems for certain uses around the home, such as flushing and washing.

For sanitation, there are few examples of more active participation. For example, in one consumer managed sanitation project, residents were able to originate and design a sustainable housing estate. Thus the householders organised the management and maintenance of the greywater treatment systems between themselves and other waste water service providers.

The greatest shift in consumer involvement has been in electricity supply. Consumers have now become customers of commercially-delivered electricity services or co-providers of electricity through various means, such as photovoltaic solar panels and micro-combined heat and power. The ongoing introduction of smart meters is partly meant to allow consumers to monitor their usage and adjust their consumption behaviour accordingly.

The study indicates that the relationship between providers and consumers has become blurred in all three sectors considered. However, although consumers are more active, some of the organisational shifts have also made the boundaries between the institutions blurred. For example, the differences are now less defined between water companies and water boards, energy companies and energy distributors, and intermediaries, such as solar energy providers, greywater treatment providers and comparison services. The complexity of the different roles within systems could partly hinder consumer involvement, and greater participation could be encouraged if the workings of the system were communicated more clearly and transparently.

The consumption of water, electricity or wastewater services are all interconnected, and the study suggests that the dynamics within all network-bound systems should be discussed in relation to one another as well as to consumers. This is particularly so in the case of projects with interactions between different systems, for example, when water boards are involved in new sanitation projects that provide biogas for energy.

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