

# Utilities help home-owners to cut energy consumption by 12 %

## Summary

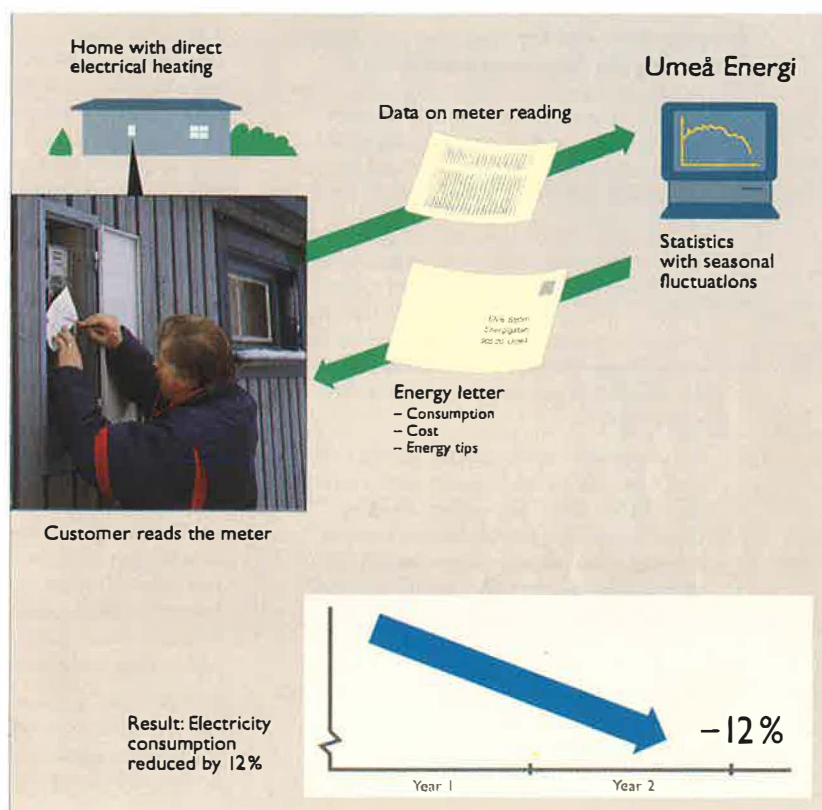
The Energy Letter concept was introduced in autumn 1989 in a move to provide home-owners with a statistical breakdown of their water and electricity consumption. Customers learn about their energy use and get an almost immediate response on

efficiency measures applied.

As a result of the project, the average amount of energy used per customer was reduced by 2,400 kWh per year. The Energy Letter does not require any investment cost.

## Highlights

- 12 % saving in cost of energy
- Zero capital investment
- Home owners more aware of energy conservation



## Aim of the Project

The habits of individual households play a key role in determining the level of energy consumption. It depends partly on the level of comfort desired, although energy consumption can rise with no corresponding increase in comfort. Conscious energy-efficient behaviour assumes that the individual is aware of how energy is used - and to what extent.

These customers, significant as a group but small as individuals (and therefore easily neglected), are developing increased confidence in Umeå Energi. The Energy Letter scheme provides a natural channel of information between "small" customers and the power company.

The most important piece of advice Umeå Energi offers its customers is "start at the right level". This means that cus-

tomers should develop an increased awareness of their energy consumption thus decreasing their total energy consumption.

## The Principle

Customers who join the Energy Letter scheme agree to read their water and electricity meters once a month and send the results to the power company.

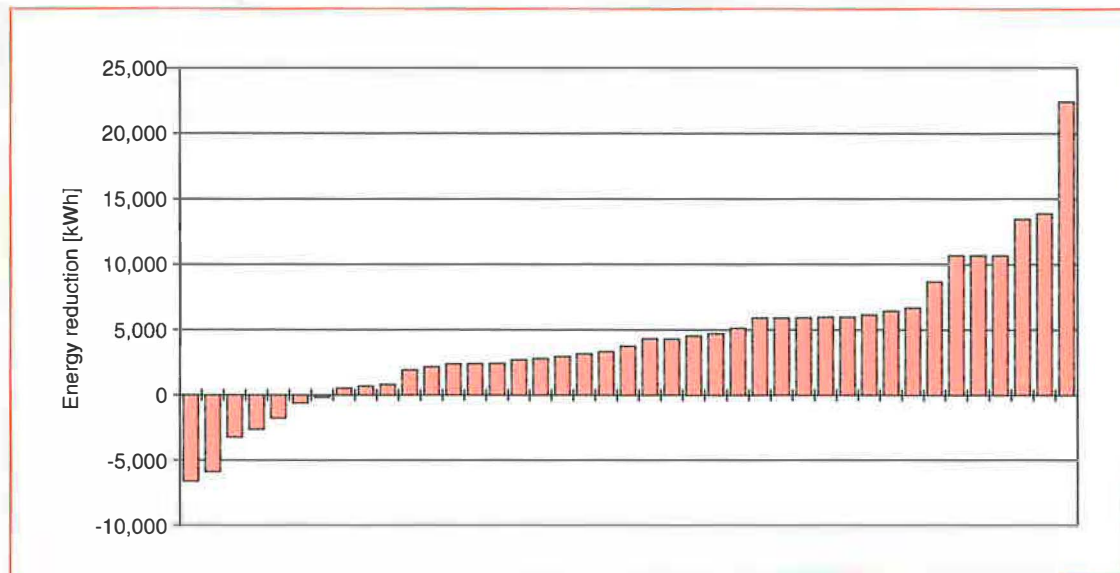
Umeå Energi scans and adjusts consumption forecasts against recorded values, adjusts the electricity value according to temperature and returns the data in the form of an Energy Letter. The Letter uses simple diagrams and a simple style to chart the customer's water and electricity consumption in SEK, m<sup>3</sup> and kWh. Rapid response by the power company enhances customer interest and commitment. The Energy Letter also contains suggestions

as to how the customer can reduce electricity consumption.

Umeå Energi also actively helps customers that consume significantly more energy than the average. After an energy audit, Umeå Energi suggests appropriate efficiency measures specifically developed for the customer. These suggestions are followed up to ensure that the measures carried out positively influence the energy consumption.

The information system is in the power company's computer. The Energy Letter is built up as a separate module, distinct from the invoicing system, yet using data generated by the invoicing system. This means that the program is easy to use with all types of invoicing systems. It can be used to analyse system effects on the company's electricity supply.

Figure 1: Reduced electricity consumption for all home-owners in the pilot group, 1989-91. Corrected for temperature changes.



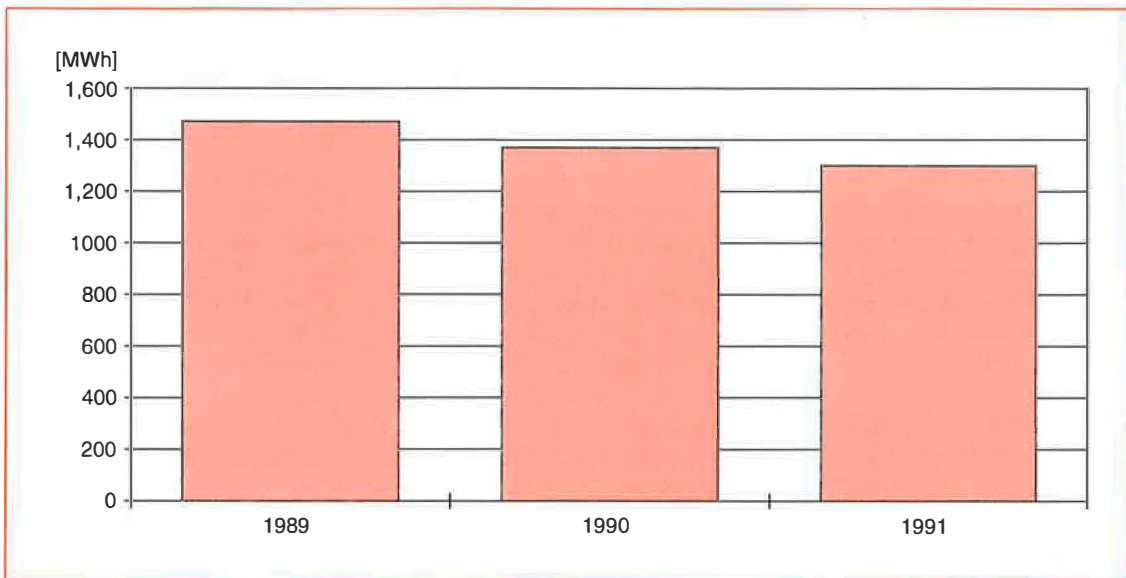


Figure 2: The pilot group shows 12 % energy saving 1989-91. The consumption is corrected for temperature changes.

### The Situation

A pilot group of approximately 50 home-owners was established at the end of 1989. During the first year, this pilot group reduced its electricity consumption by 6 %. In early 1991, all customers charged at time-related tariffs were offered the chance to join the Energy Letter scheme. The offer aroused considerable interest. No less than 20 % applied to join immediately. More than 500 customers have now joined the Energy Letter scheme.

Since its inauguration, 9 % of original Energy Letter participants have left the scheme, mainly as a result of their moving out of the area. The target is to supply the Energy Letter service to 1,500 electrical heating customers. To simplify administrative routines, Umeå Energi will also introduce Energy Response.

This system enables customers to register meter readings directly via their own push button phones. A market survey revealed that 85 % of the pilot group are in favour of an Energy Response Service.

Energy consciousness presumes that people know how the energy is used and how to carry out energy efficiency measures. These must then be carried out in the right order, with simple measures applied first.

In the pilot project the home-owners have, in most cases, changed their energy consumption habits (e.g. lower indoor temperature and more efficient use of appliances). But the project has also led to replacement of thermostats, increased insulation and installation of a residential heat pump. The results of the measures taken over the two-

year period are shown in Figure 1.

In future, the Energy Letter scheme could function like an electricity bill, with exact invoicing every month. Payment could be made via direct transfer from the customer's bank account.

Monthly readings enable Umeå Energi to compile extremely reliable statistics on energy consumption. The energy program's code system permits classification of customers in terms of installation type and other data, making it possible to chart each customer's energy consumption habits. These data make it easier for Umeå Energi to assist customers and provide effective advice. They can also subsequently be used when updating the invoicing system.

## The Organisation

Umeå Energi has 46,000 customers and supplies 640 GWh of district heating and 650 GWh of electricity annually. The company, which is owned by the Municipality of Umeå, employs approximately 230 people and has an annual turnover of more than SEK 600 million.

The company also advises its customers on how to use district heating and electricity in the most efficient way. Projects like the Energy Letter are carried out to promote efficient use of energy.

## Economics

The Energy Letter scheme functions on a voluntary basis and does not involve any investment cost for the end-user, hence all energy savings translate directly into money savings. As a result of the project, customers in the pilot group have, on average, reduced energy consumption by 2,400 kWh per annum, equivalent to no less than a 12 % reduction over the two-year period (shown in Figure 2). The only extra investment for Umeå Energi consists of costs for handling and distributing the Energy Letter.

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\* IEA: International Energy Agency  
OECD: Organisation for Economic  
Co-operation and Development

### IEA

The IEA was established in 1974 within the framework of the OECD to implement an International Energy Programme. A basic aim of the IEA is to foster co-operation among the 23 IEA Participating Countries to increase energy security through energy conservation, development of alternative energy sources, new energy technology, and research and development (R&D).

This is achieved, in part, through a programme of energy technology and R&D collaboration currently within the framework of 35 Implementing Agreements, containing a total of more than 60 separate collaboration projects.

### The Scheme

CADET functions as the IEA Centre for Analysis and Dissemination Demonstrated Energy Technologies for all IEA CADETT member countries.

This project can now be repeated in CADETT member countries. Parties interested in adopting this process can contact their National Team or CADETT.

Demonstrations are a vital link between R&D or pilot studies and the end-use market. Projects are published as a CADETT 'Demo' or 'Result' respectively, for on-going and finalised projects.

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