



Reduction in the consumption of electricity

Heol, Agence Locale de l'Energie du Pays de Morlaix - France

Summary

Till the 1st March 2000 to 31st March 2002 proceeded on the canton of Lanmeur (29) a pilot operation of Demand Side Management for Electricity carried out by the Inter-commune Trade union of Electrification of the canton of Lanmeur in partnership with the ADEME (Agency Of the Environment and the Control of Energy and Electricity of France). This operation first of all proposed a visit in residence of an adviser energy. Then, a financial assistance allotted by the ADEME to the private individuals having the electric heating could make it possible to reduce the cost of work intended to reduce their invoice of electricity. The objective of the 3 partners was to reduce the calls of power of electricity in order to avoid reinforcements of the distribution network of electricity and also to reduce consumption of electricity. From 2001, the animation of the operation was taken again by Heol, the Local Energy of the Country of Morlaix.

459 visits in residence were carried out. On did these 459 visits, 374 i.e. 81,5% obtain a financial assistance of 1 372,04 € maximum for a total amount of 365 152 € (976 € on average). The amount of generated work related to energy saving except handicraft is higher than 1 000 000 € that is to say 2 850 € on average, and the total amount of the sales turnover produced is higher than 1 700 000 € that is to say 4 600 € on average.

The amount of the handicraft necessary to the whole of this work is approximately 200 000 €.

End-user area

- New buildings
- Refurbishment of buildings
- Transport and mobility
- Financial instruments
- Industry
- Legal initiatives (regulations, directives, etc)
- Planning issues
- Sustainable communities
- User behaviour
- Education
- Other

Target Audience

- Citizens
- Households
- Property owners
- Schools and universities
- Decision makers
- Local and regional authorities
- Transport companies
- Utilities
- ESCOs
- Architects and engineers
- Financial institutions
- Other

Technical

- Energy efficiency
- Heating
- Cooling
- Appliances
- Lighting
- CHP
- District Heating
- Solar energy
- Biomass
- Wind
- Geothermal
- Hydro power
- Other

Context

The Inter-commune Trade union of Electrification of the canton of Lanmeur consists of 8 communes which count a population of almost 12 000 inhabitants, representing 7 800 customers of electricity including approximately 2 000 having electric heating.

The necessary electric stock management, if it rises from a general policy, applies to the ground. This application takes particular methods in rural zone. The rural electrical supply networks are indeed the property, not of Electricity of France, but of the communes.

It is the Inter-commune Trade union which carries out work of reinforcements or extensions of the distribution network to ensure the private individuals an electricity supply of quality. This work is necessary when the



delivered tension -230V- is not sufficient any more. (the acceptable variation lies between 207V and 243,8V i.e. an acceptable variation of +6% / -10% of the standard). But they are expensive for the community: each operation of reinforcement amounts on average to 30 000 €. To avoid, or at least to differ longest possible this work, is the greatest interest for the rural communes.

Objectives

Main goal continued by the operation is the reduction of consumption of energies in general and electricity in particular by the citizens. Indeed, the reduction of consumption of electricity will generate a reduction in the calls of power and thus a reduction in the falls of tension which will make it possible to differ from work of reinforcements of electric network.

Process

The operation takes for targets all customers of electricity, whatever they are: owners occupying, renters, deprived, professional, associative, etc. All will be informed of the installation of the operation. All will profit of free advise to control their consumption of energy.

According to cases', some will profit from commercial assistances on work to realize.

The collective goals being of great importance, the operation was thus organized so that each one, on its level, is recipient and plays an active part in the success of the operation.

The operation, is so orchestrated simultaneously near the consumers of electricity, the professional fitters, the elected officials:

- the mayors of the eight communes concerned informed by a first mail addressed to managed canton of Lanmeur the reason and the objectives of the operation.
- All customers of electricity received then with a mail of the president of the Inter-commune Trade union, a plate of information. The objectives by these mails and this plate is that, sensitized by the benefit as well personal as collective of the operation, the maximum of people contacts the advisers.
- The technician of the trade union initially then Local Energy Agency of the Country of Morlaix, Heol, whose co-ordinates appear on all the supports is the only interlocutor and adviser in energy near people and thus centralizes all the calls, the requests and restores with the applicants the answers: councils on work to be carried out, assistances to finance work, assembly of the files... It is assisted in its task, but in a transparent way for the applicants, by professionals of Electricity of France and ADEME.

Financial resources and partners

The cost of the operation was approximately 440 000 € including 365 000 € of financial assistance. The remainder is the animation of the operation, the communication and the material. Electricity of France dealt with the communication part and mailing while the ADEME took the remainder (financial assistance, materials...).

From 2001, Heol took again the animation of the operation and thus realized the visits in residence, managed the files of requests for financial assistances, established a final assessment.

Results

It is very difficult to evaluate the number of kWh saved in this operation. The figures which are certain are as follows:

459 hearths were visited. On did these 459 visits, 374 i.e. 81,5% obtain a financial assistance of 1 372,04 € maximum for a total amount of 365 152 € (976 € on average).

The amount of generated work related to energy saving except handicraft is higher than 1 000 000 € that is to say 2 850 € on average, and the total amount of the sales turnover produced is higher than 1 700 000 € that is to say 4 600 € on average.

The amount of the handicraft necessary to the whole of this work is approximately 200 000 €.



Work which were carried out and the estimate of the avoided powers which results from this are as follows:

Work carried out	Number of files or replaced elements
Insulation of the roofs	42
Insulation of the walls	33
Insulation of the ground	6
Replacement of opening	677
Programming of the heating	149
Regulation of the heating	156
Unballasting	75
Replacement of the heating appliances	1 271
Controlled ventilation	45
Closed chimney	3

Key figures of the operation:

- 7 800 informed hearths.
- 2 000 hearths having the electric heating of which 50% with an old installation
- 427 visited hearths have the electric heating
- Part of penetration of information: $427/2000=11,4\%$
- Impact of work: $374/1000\ 37,4\%$
- Generated investments: 1 700 k€

Lessons learned and repeatability

The profits in invoicing of the customers will be certainly the key of the profitability of the project, more than the economies of investment on the networks. It still would be necessary to be able to measure them with a reasonable precision.

The other positive effects of the operation are:

Effects on the energy efficiency of the park of residences;

Effects on satisfaction of the customers, through the improvement of the comfort which work completed allowed;

Repercussions in term of public notoriety for the trade union,

Satisfaction of the contractors who estimate to have drawn from it an interesting experiment because of an original work on equipment of high quality, we think for a purpose of training for the contractors;

Economic repercussions of work, which one can this time measure by the invested amounts

Effects on the use and the energy expertise of the communities

Behaviour of the customers to the energy efficiency.



Contact for more information:

Organisation / Agency: Heol - Agence Locale de l'Energie du Pays de Morlaix

Main contact : Frédéric Marchand

Address: 9, rue Basse 29 600 Morlaix

Tel: + 33 2 98 15 18 08

Fax: + 33 2 98 63 27 57

E-mail: conseils.energies@wanadoo.fr