

## ENERGY IMPROVEMENT IN URBAN DOMESTIC & TERTIARY SECTOR OF BUENOS AIRES

E. Rosenfeld, O. Ravella, A. Fabris, C. Discoli  
C. Ferreyro, J. Czajkowski, G. San Juan

IDEHAB, Instituto de Estudios del Habitat, FAU-UNLP

Calle 47 N°162. (1900) La Plata, Buenos Aires, Argentina.

The Project disclosed how power is used in the AMBA (Buenos Aires Metropolitan Area) residential area, which includes the most important metropolitan sector in the Republic of Argentina.

The main aims of the project are: (a) to obtain segregated information on power consumption; (b) to estimate saving potential; (c) to carry out pilot action for energy and habitability improvement; (d) to develop methods adapted to the wide typological dispersion of buildings in the area.

The first stage covered: (a) a typological catalogue of the area residential buildings; (b) typologically representative overall energy diagnosis on 350 cases out of an initial 2,400-case sample; (c) detailed thermal diagnosis on 91 typological cases; (d) a socio-energetic survey on 300 cases; (e) measuring of the saving potential of the residential sector.

The zones includes 10.5 million inhabitants, 2.85 million dwellings (INDEC 1980) and approximately 40% of the country's total power consumption.

**CONCLUSIONS:** In relation to power consumption in the residential area:

- 1.- As compared with international data, actual heating gas consumption in our country is similar to that of those countries where conservation measures have been enforced.
- 2.- The gas used for cooking and for heating water is essential, its consumption being annually very important.
- 3.- The socio-energetic profile of the homes is not consistent with the various kinds of power. This would seem to indicate that any action taken towards power rationalization should be specific for each type of power and should be aimed at the highest consumption homes and dwellings as a priority.
- 4.- It seems clear that the saving strategies of the consumer are restricted to rationalization of the use of appliances.
- 5.- It has been found that most consumers are somehow motivated to consume less power and that such attitude results in actual practice towards that end, that is, underconsumption. Therefore, it would seem evident that any policy for the rational use of power should be aimed at revising the deepest causes and make it possible for the consumers to adopt energetically more efficient practices, equipment, installations and housing accommodations within their income.

In relation to power saving potential of the residential segment:

- 6.- The consistency between probable and actual power consumption as recorded by power supply companies would seem to indicate that the method is adequate for the study of segregated power consumption. This should be confirmed by further research.
- 7.- The most significant potential saving detected is on natural gas used for heating (58.8%) which represent 24.7% of the total gas consumption and 14.7% of total primary power.
- 8.- In relation to electric power, the potential is lower, since saving in this area is more restricted and only covers lighting, with 17% saving. This represents 8% of the total electric power and 3.3% of the total primary power.

The second stage involves work being done on periurban areas consuming LP gas in cylinders, on a sample of 50 cases.

A third stage has been planned which includes: (a) typological catalogue of the Health subarea; (b) action-oriented research on selected cases to set achieve improvement of rationalization in existing buildings and to set up guidelines to improve the design of those projects that are the State responsibility.