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The aim of this presentation is to present a methodology for modeling future energy systems, in Santiago de Chile, with focus on sustainable development.

Modeling future energy demand, at a city level, is very complex problems were many agents establish complex relations between each other. To handle this big problem, it is necessary to represent the consumption of energy in the Industries, household and Transportation.

Industry grows in a dynamic way, industrial sectors have different levels of evolution, some are more efficient than others, some are more contaminant and others more regulated.

To represent different sectors of the industry an agent modeling is propose. This allow to make more complex models for the most important agents and more simple once for others, regarding the estimation of energy demand. Other important consideration of this approach is that the transportation can be include as an agent, in connection with almost all agents, nevertheless transportation model will by independent of industry model.

On household's models clustering techniques will be used for determinate types of electric consumption.

These results will be cross with other characteristics of households for finding patterns of consumption related to the characteristic of the house and the consumer. These patterns will be very important and will have incidence in the industry model.

Consumers and Industry are in a continuous feedback. The behavior of consumer affects Industry and vice versa. This relation will be incorporated to the modeling and the consumers will consume from Industry, like any other agent. The patterns of the data mining will be inputs for each type of consumer, connecting the two approaches. Consumers will act according to fuzzy rules for decision-making, representing in a more realistic way human behavior.

For connecting models with the information require and to storage future simulations, a main repository or Data warehouse will be developed.