

# **Modelling for policy support in the Colombian electricity market**

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## **ABSTRACT**

As competition turns vigorous in the Colombian power supply industry, companies seek to develop tools and models for policy support. In this new industry environment, similar to the British one (although primarily hydroelectric with little regulation capacity), a number of minor capital-intensive opportunities have emerged, including gas-based and micro hydropower stations.

As revenues forecasting exhibits greater uncertainties, because of system restrictions and plant dispatch merit order criteria, companies need close evaluation of investment and trading strategies. This paper describes in broad terms a System Dynamics based model especially developed for assessing company policies in the Colombian electricity market. Typical simulation results are exhibited.

# **Modelling to assess policies on gas penetration in the Colombian energy sector**

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## **ABSTRACT**

As the Colombian gas industry rapidly captures a larger share of the energy market, it is difficult to assess the extent of its effect both within the gas sector as in connection with its substitutes. For years politicians and experts have argued in favour of an extensive gas plan for Colombia, yet little has been done in terms of valuing negative impacts. Gas benefits have been partly evaluated as a substitute in the household and commerce sectors for cooking and water heating as well as in the power supply industry for electricity generation - in this sense progress has been made.

However little is known in relation to its availability (reserves and transport) and use for large scale urban transport (taxis and buses). Many questions still remain unanswered, such as supply reliability, market penetration and environmental impacts. This paper exhibits a model as support tool to address some of these questions, particularly with respect to the sustainability and discovery issues. Results are exhibited.

# **Microworlds for training electricity traders**

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## **ABSTRACT**

As liberalisation of energy markets are rapidly taking place around the globe, little time has been allowed for institutional preparation to confront the current industry conditions. The new market set-up requires that companies undertake major structural transformation, including changes in corporate mission and operation, management culture, decision support tools and information support systems.

In this newly engineered market, with hundreds of awkward rules which are difficult to understand not only to newcomers but also to incumbent companies, the application of new management development tools may be an effective strategy. With such tools, companies will gain competitive advantage as performance will depend greatly on discovering new opportunities as well as on defending from competitors.

ISA, which aims to promote electricity markets, has decided to design training programs for electricity trading, supported by MICROWORLDS. The objective of these programmes is to prepare a new generation of executives as well as re-educating the existing ones. This papers presents the rational behind the flight simulator and the initial model specified to support such training programs.