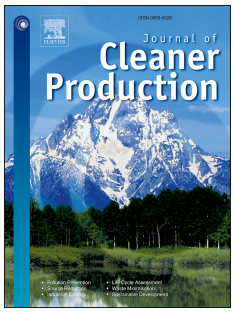
Accepted Manuscript



Construction of a Chilean Energy Matrix Portraying Energy Source Substitution: A System Dynamics Approach

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PII: S0959-6526(17)31282-9

DOI: 10.1016/j.jclepro.2017.06.111

Reference: JCLP 9861

To appear in: *Journal of Cleaner Production*

Please cite this article as: Carla Rúa Gómez, Santiago Arango-Aramburo, Erik R. Larsen, Construction of a Chilean Energy Matrix Portraying Energy Source Substitution: A System Dynamics Approach, (2017), doi: 10.1016/j.jclepro.2017.06.111

CONSTRUCTION OF A CHILEAN ENERGY MATRIX PORTRAYING ENERGY SOURCE SUBSTITUTION: A SYSTEM DYNAMICS APPROACH

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Abstract
The energy matrix is a useful tool for understanding the trends of production and consumption in a country and for evaluating long-term energy policies. This paper presents a behavioral simulation model of the evolution of Chile's energy matrix . The model is developed and calibrated by considering a dynamic substitution of energy sources. Chile's stated policy is to become less dependent on imported fossil fuels, to increase security of supply and improve the environment. The simulation experiments show that the energy matrix is very robust with regards to external fuel prices and changes in investment cost. Thus, in order to be able to observe changes in the composition of the energy matrix, there is a need for strong intervention by the regulator, or the government, to provide incentives for renewables.

Keywords
Energy planning, System Dynamics, energy matrix, Chilean energy sector

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