



Transition of the Greek Energy System to Sustainability: Effects on Employment

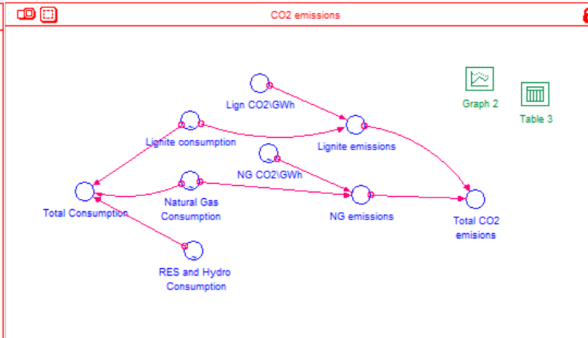
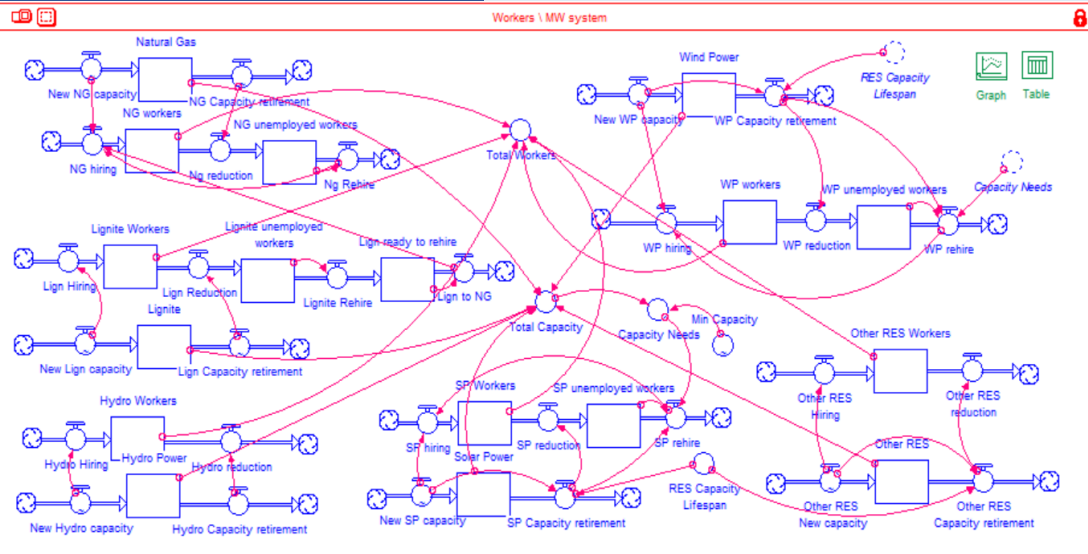
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Introduction

Global electricity generation is changing and becoming environmentally friendly. This dissertation evaluates the electricity market today and estimates the evolution of jobs in electricity generation. The employment forecast model for 2050 is being developed using the System Dynamics method and the iThink program. The estimation was based on three scenarios that refer to the mixture of installed and produced power sources and the CO2 emissions caused by them.

Methodology



Scenario 1 : Basic scenario for 2050 based on the plan that Ministry of Energy has announced.
Scenario 2 : Scenario based on the development of new technologies which are going to increase efficiency in production and reduce CO2 emissions.
Scenario 3 : Scenario that predicts the production of composite fuels in order to save RES energy when and make the system more flexible

Conclusions

The number of jobs in electricity system is highly increased in all three scenarios. Scenarios 2 and 3 are the most optimistic ones and involve further technological development from the already existing. Furthermore, new employees must be specialized and well educated because of that new technologies. Gas emissions are also expected to decrease in the coming years, as we can observe in scenario 2 which reduces them up to 95% by 2020. The most structural changes in the system are predicted to happen between the following decade (2020-2030), with the number of jobs also effected by that. The penetration of RES in the system exceeds 85% and their participation in employment in 2050 reaches 90% in all three scenarios.

Results

