

## Abstract

The accurate electrical load forecast has become a major issue for the planning, development and operation of electrical utilities. Scope of this project is the investigation, comparison and evaluation of the most common load forecasting methods. As a result, one of these methods will be selected and will be applied in a case study which is the long term load forecasting for the Greek public electrical network. The accuracy of the method will be evaluated by comparing the actual consumptions obtained from previous years with the estimated results that the forecast method will provide. The success and the viability of the method will be evaluated by the accuracy of the results based on this comparison. It follows the process of forecasting the future needs in energy demand in Greece and the results are evaluated against the accuracy level that the model demonstrates during the testing process. The viability, advantages & disadvantages of the method it is expected to be proved after the output of the test model implementation.



## Case Study

The case study is the application of the long term load forecasting in Greece paradigm. Initially it will include a test model application for which the forecasting process will be performed on actual consumption data and the produced outputs will be estimations for past years consumptions. These results will be compared to actual consumptions. Through that process several conclusions will be made about the accuracy of the model.

It follows the process of the forecasting results generation according to the scope of this project. The model will generate results for the predicted energy electricity demands in Greece for the next 30 years. The results of the quantity analysis for the two processes will be presented and for the test model will be provided the comparison of the forecasted and the actual results.

The features for the model's selection in the case study will be the accuracy, the simplicity, the time efficiency and the easy implementation of the model.

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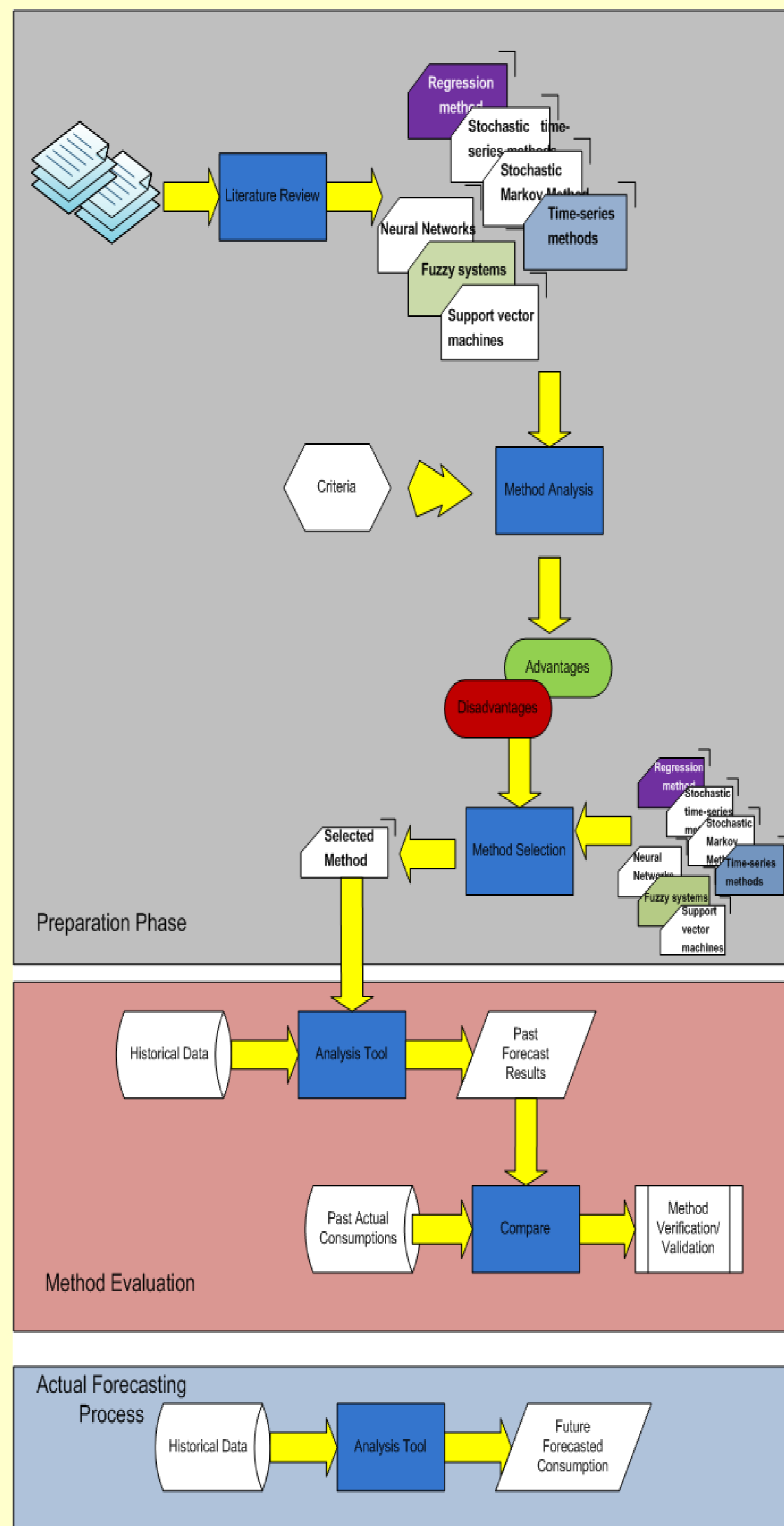
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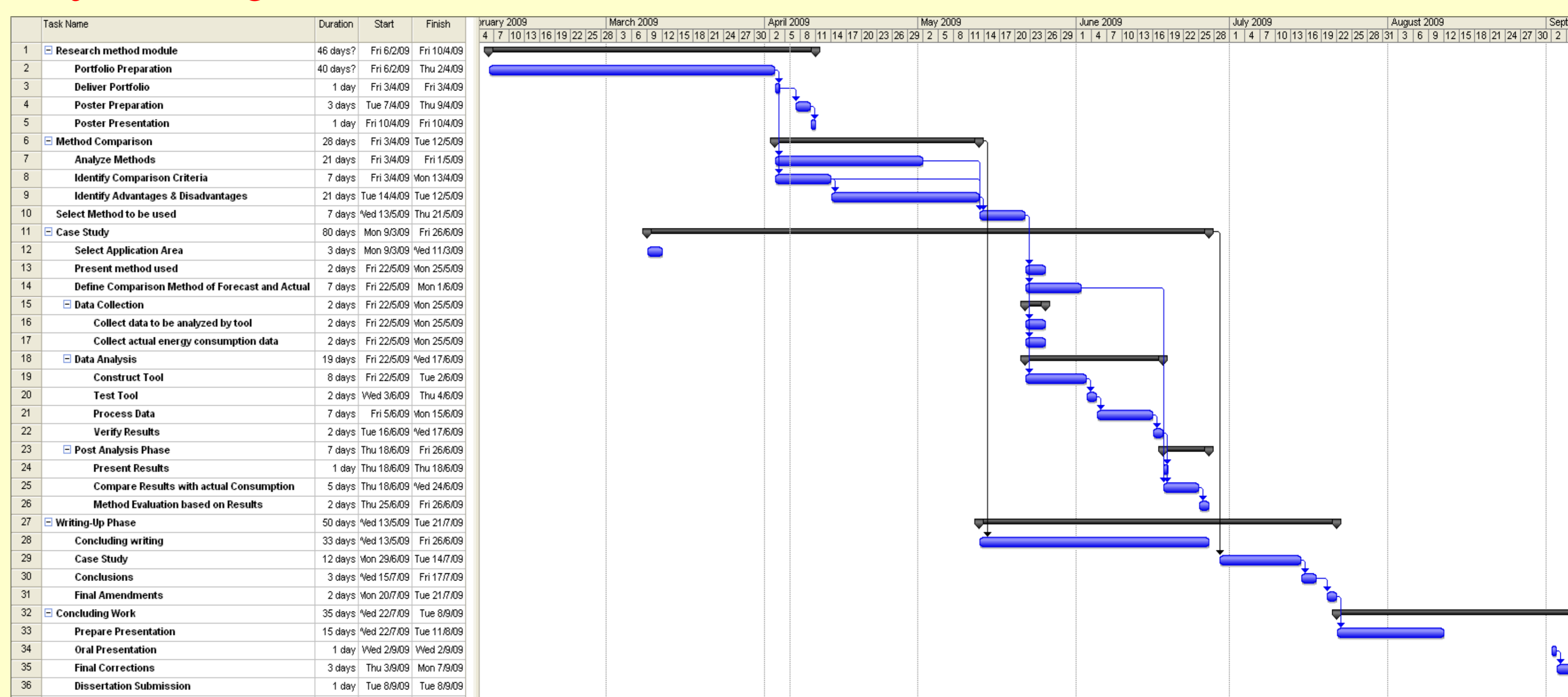
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## Schematic Project Description



## Project Management



## Aim

Assess the degree of accuracy and suitability of a selected long-term energy load forecasting method on the Greek paradigm.

## Objectives

- Presentation and critical analysis of a number of load forecasting methods as a result of a literature survey taking into account their forecasting capacity, accuracy and application area.
- Laying out sample of representative methods that will be analyzed and compared with each other against a list of pre-selected criteria.
- Identifying a prevailing method that will be tested with real consumption data, obtained from the Greek public corporation, in order to rate its long-term forecasting suitability and accuracy.
- Implementation and training of a model for the selected long term method using consumption data from the Greek power system and other inputs (as weather data).

## Conclusions

Based on parameters such as accuracy, time efficiency and ease of implementation it can be estimated the viability and the effectiveness of the technique. The methods validation depends on the results that the model will generate and the positive or negative conclusions that will be presented for the reliability of the method and the adequacy of the input parameters that have been chosen. Future work remains to be done regarding the geographical allocation of the energy consumption in Greece as vast differences of energy consumption are observed among the locations. This is an issue that should be also considered in the utilities planning.