Integration of Model-Driven Electricity Load Forecasting Algorithm in Java

GENERAL JOB DESCRIPTION:

For smart charging (SC) of electric vehicles (EVs), accurate day-ahead forecasts of the electricity load are essential so that EV loads are intelligently distributed within time to minimize the risk of overloading the electricity grid. Recently, a new method named as the probabilistic forecasting approach (PFA) has been developed to address this need. Since the real-time operation of the complete SC protocol relies on a Java program, the PFA algorithm that is currently developed in Matlab has to be converted into Java. In total, there are 3 modules to be formed as shown in the following figure.

Part of this conversion has been made already, another part is pending. The work consists of two parts:

1. To complete the conversion of the PFA Matlab source to JAVA (to be carried out at TU/e).
2. To compare the performance of the algorithm to an existing algorithm available with Enexis (to be carried out at Enexis, ’s Hertogenbosch).

The first part of this assignment is *paid* for by Enexis. Precise agreements on finances are available upon request.

**Project duration:** 3 months full-time.

**Requirements:**

- Good knowledge of JAVA (1.7.0_xx) or Java 8. Knowledge of or willingness to learn Eclipse IDE for JAVA EE developers.
- Willingness to learn some basics on time-series modeling and forecasting where assistance will be provided.

**Contact information:** Siep Weiland, Can Bikcora, Ton van Cuijk (Enexis).