

**FURTHER DASHBOARD APPLICATION DEVELOPMENT AND
FRONTEND OPTIMIZATION FOR SMART GRID CLUSTER
CONTROLLER**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgment is made in the thesis.



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ABSTRACT

FURTHER DASHBOARD APPLICATION DEVELOPMENT AND FRONTEND OPTIMIZATION FOR SMARTGRID CLUSTER CONTROLLER

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The development of the smart grid system is due to the urgent need for more efficient energy consumption in the face of diminishing energy resources. This system combines Information Technology (IT) with the conventional electrical grid, enabling advanced monitoring, control, and optimization of energy distribution and consumption. The Smart Grid Cluster Controller (SGCC) is a realization of the Clustering Power System Approach (CPSA). Special software applications are developed in the SGCC to fulfill grid operation requirements. This thesis covers the further development of the frontend application based on Angular. This includes the further development of the dashboard application, transitioning from Node-RED based to utilizing C3.js or InfluxDB dashboard. This dashboard is necessary for enabling real-time data monitoring, which plays a significant role in the efficient operation of a smart grid system. Furthermore, functionality and visual enhancements will be further improved to optimize the frontend application and improve its efficiency.

Keywords: Frontend Development, Angular, Dashboard, Optimization, Smart Grid.

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DEDICATION

I dedicate this thesis work to my family, friends, and colleagues for the never-ending support they provided throughout my whole life.

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