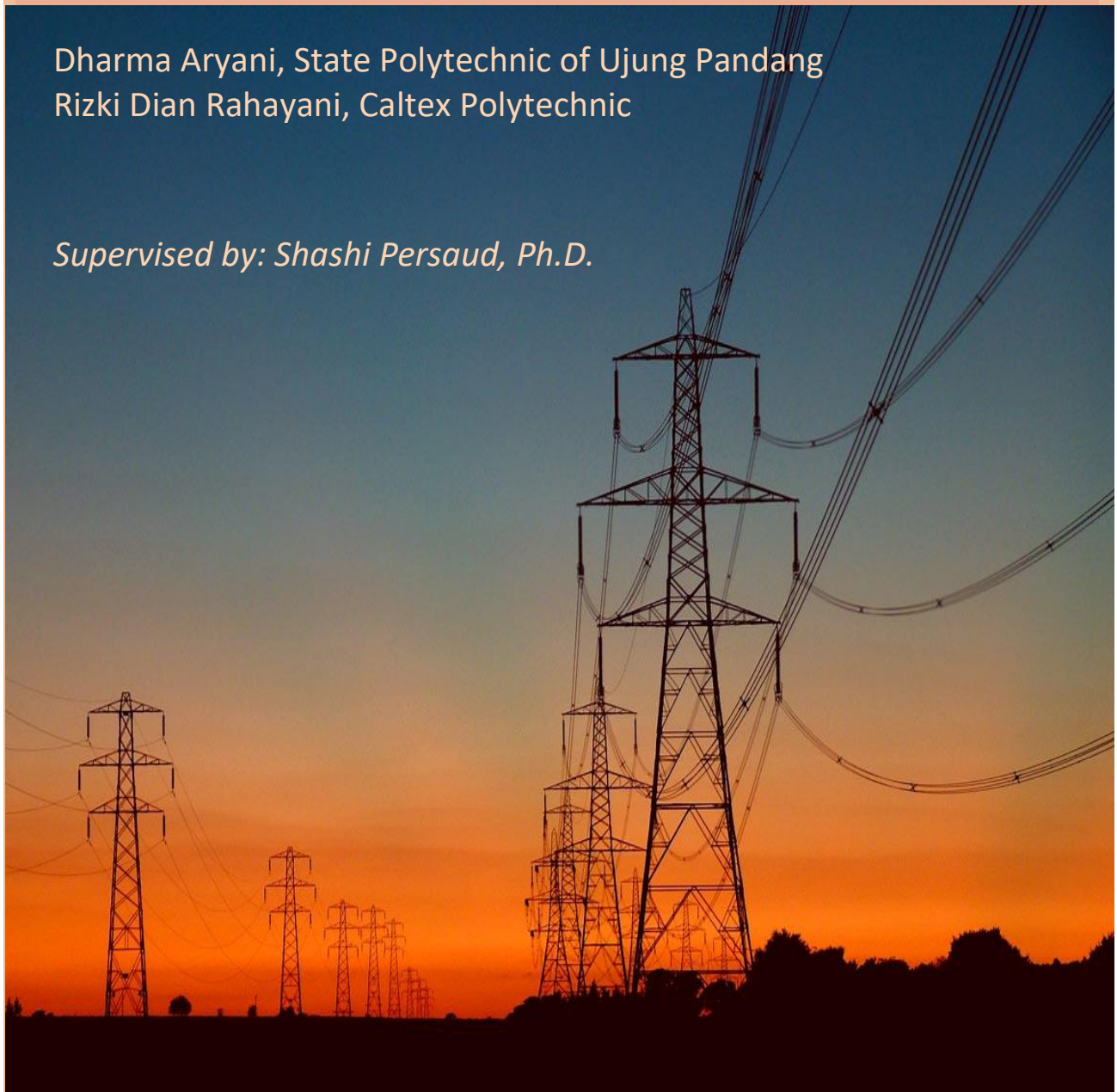


# AN INSIGHT INTO POWER SYSTEM OPERATION AND LOAD FORECASTING IN ALBERTA

CAPSTONE PROJECT REPORT  
POWER SYSTEM APPLIED COURSE, SAIT ALBERTA  
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# Capstone Project Report : AN INSIGHT INTO POWER SYSTEM OPERATION AND LOAD FORECASTING IN ALBERTA

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## Abstract

In 1996, Alberta began to restructure its electricity market away from traditional regulation to a market-based system. Nowadays, the power system operations are comprehensively managed by the respective authorities to implement reasonable approach for planning and operating the electricity system in order to meet the needs and demand of electricity in Alberta. The market scheme includes a host of buyers and sellers, and an increasingly diverse infrastructure. In the distribution side, consumers range from residential buyers to huge industrial consumers. Alberta Electric System Operator manages and coordinates operation of the power grid and makes sure that the supply of power is in constant balance with the demand for power across the province of Alberta, plans the provincial transmission system including all of its interties with neighboring provinces, and operates Alberta's wholesale electricity market based on the supply and demand forecasting. In power system, the forecasting of electrical demand and supply are estimated based on the prediction models. The electricity demand forecasting is very important to evaluate and to analyze the planning of production, transmission, and distribution capacities. A key factor affecting electricity demand in Alberta over the long term is economic growth. Alberta's economy is highly correlated with oil prices due to the size of its oil industry, especially the oilsands. In Alberta, AESO need the forecasting results to formulate and design the Reference Case, Scenario Load Peak, and the estimated installed generation by all type in the future years. This project is aimed to learn about the power system industry structure in Alberta and to conduct a study for the load forecasting management system. In the future, the outcomes of this project will be very valuable as references for study and investigation in Indonesia's electricity operational and market regulation system.

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