COVID-19: Impact Analysis and Electricity Load Predictions using Machine Learning

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ABSTRACT

With the outbreak of COVID-19, most of the countries were following the full or partial lockdown during the first quarter of 2020, leading to which Global electricity demand decreased by 2.5%. Thus, the pandemic has led to the large economic shock to the world which was never been experienced since decades. To slow down the spread of the virus, many countries have issued restrictions, including the closure of malls, educational institutions, halting trains, suspending of flights, implemented partial or full lockdowns, insisted work from home to the employees which lead to great uncertainty over the world-wide electric sector. Thus, the current scenario of pandemic and prevailing government regulations of imposing full as well as partial lockdown is leading to drift in energy consumption patterns. The energy consumption in India plummeted dramatically in March after the announcement of "***Janta Curfew***". In account of this, electricity load forecasting predictions for state Haryana (India) is done for a week so as to know the required electricity load pre-hand which will aid the regional power systems to plan accordingly and avoid unnecessary power wastage. On analyzing the results, ANN proved to do better predictions as compared to conventional machine learning models. Further we can also investigate how and by when India will recover its energy consumption after this sudden decline.

Keywords: COVID-19, Energy demand, Electricity load forecasting, Machine learning

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