# Análisis dinámico de una microrred DC considerando el modelo de carga ZIP para vehículos eléctricos [

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Analítica

The energy transition involves changes in the dynamics of the provision of electric energy services and the insertion of new technologies. Within these technologies are DC microgrids, which, compared to traditional networks, have higher energy efficiency, lower installation and maintenance costs, and allow the simple integration of renewable sources. This paper presents dynamic small signal stability analysis for a DC microgrid, using the Runge Kutta integration method and the Matlab/Simulink tool. This DC microgrid is planned to be built in a Higher Education Institution in Colombia, and integrates different energy sources, such as solar, wind, storage systems, and also electric vehicles. The dynamic response of the DC microgrid is examined considering different operating conditions of generation and charging, and also different penetration scenarios of electric vehicles. The results show that to ensure the stability of the system in the face of variations in demand, it is essential to keep the electrical network in permanent operation, since it provides the necessary power that the microgrid cannot supply during times of greatest demand. Additionally, the power grid plays a vital role in regulating the voltage on the DC bus when loads increase. Therefore, to ensure the stability of the microgrid in various operating scenarios and demand levels, a connection with the electrical grid is essential
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