

Feasibility and Penetration of Electric Vehicles in Indian Power Grid

Authors : Kashyap L. Mokariya, Varsha A. Shah, Makarand M. Lokhande

Abstract : As the current status and growth of Indian automobile industry is remarkable, transportation sectors are the main concern in terms of Energy security and climate change. Rising demand of fuel and its dependency on other countries affects the GDP of nation. So in this context if the 10 percent of vehicle got operated in Electrical mode how much saving in terms of Rs and in terms of liters is achieved has been analyzed which is also a part of Nations Electric mobility mission plan. Analysis is also done for converting unit consumption of Electricity of Electric vehicle into equivalent fuel consumption in liters which shows that at present tariff rate Electrical operated vehicles are far more beneficial. It also gives benchmark to the authorities to set the tariff rate for Electrical vehicles. Current situation of Indian grid is shown and how the Gap between Generation and Demand can be reduced is analyzed in terms of increasing generation capacity and Energy Conservation measures. As the certain regions of country is facing serious deficit than how to take energy conservation measures in Industry and especially in rural areas where generally Energy Auditing is not carried out that is analyzed in context of Electric vehicle penetration in near future. Author was a part of Vishvakarma yojna where in 255 villages of Gujarat Energy losses were measured and solutions were given to mitigate them and corresponding report to the authorities of villages was delivered.

Keywords : vehiclepenetration, feasibility, Energyconservation, future grid, Energy security, pf controller

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