

# **Simulation of Shahr-e Rey subway station as power-plant station to back-up subway in critical situations**

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## **Abstract**

Since industrial revolution Air pollution and other related major problems in mega cities like Tehran play important role in civil engineering. In the other hand limitations such as timeworn urban textures challenge all governments to find certain solution for similar places. On the other hand, we faced lack of energy resource in Mega cities like Tehran also these cities don't have enough free land to make a local power plant that can support cities in critical situations like wars. In this paper, we will review all challenges and evaluate the advantages and disadvantages of turning a subway station to power plant here, we will simulate Shahr-e Rey station, which is one of fourteen the surface stations of southern line 1 of the Tehran metro system. Base of solar energy production income and despite budget, we need to develop power plant this method can boost expanding metro systems in Mega cities that surely have problem to provide the electrical energy needed for these transportations manners

**Key words:** Solar energy, power plant, power plant subway station, clean energy

## **1. Introduction**

Metro systems are the best transportation manners in Mega cities, although expanding this system is costly because of high machinery it needs to prepare tunnels and stations, but it can carry a mass number of passengers (about 67 million in 2015) without traffic jam and air pollution which motivate governments develop metro. Unfortunately, financial problems always stop these civil engineering projects to develop, so stuck market and private corporations can join and help governments to have better city management if they surely can have return and have enough usance. Shahr-e Rey subway station established since 2002 and vast number of people start using public transportation to get around the city, although traffic in the station zone has been in the highest rank ever, but it helped these masses of cars won't get to the city center. This paper would focus on methods that we can back stuck markers up financially. Green Energy power plants are one of the most attractive business for private corporations.