

Apu fuel saving vs
cost of availability of
ground carts for
cooling and electrici...



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APU fuel saving VS cost of availability of ground carts for cooling and electricity
Lecturer According to Barney (2015; 142), APU generator provides power to run cabin equipment, instrumentation, and on-board air conditioning systems of aircrafts while on the ground. In some cases, it may be used to start aircraft engine or during flight and taxi operations. They consume fuel in production of power and are prone to emissions. Generally, the operational cost of using an APU can be said to be approximately \$250 per hour. The APU power generate consumes 150 pounds of fuel (JET-A), which is approximately 30 gallons, per hour. The cost of the fuel used per hour is approximately \$200. Nevertheless, the APU requires a typical maintenance plan that costs approximately \$50 per hour (John, 2015; 210).

Considering an aircraft that flies 400 hours in a year, the cost of APU fuel would be \$80, 000/year. The cost of maintenance would be \$20, 000.

Therefore, the total annual cost of using the APU power generator would \$100, 000. However, the cost might vary depending on changes on fuel price and also labor charges (Thom, 2014; 120). According to Green (2015; 216), there are other expenses that are associated with the use of APU power generators. They have to undergo through a process of approval by the FAA and other governing bodies. This process is very expensive and adds cost to the specified operational costs. Therefore, it is evident that the cost of using APUs is higher than \$100, 000 during the first year of use. These expenses are made high due to factors such as high expense of the JET-A fuel that is used by the APUs (Williams, 2015; 514).

On the other hand, the cost of using Ground carts is generally lower compared to that of APUs. The cost of using Ground Power Units varies

according to the size of aircraft being serviced and also the overall services
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required (McCartney, 2014; 22). The initial cost of a Ground cart ranges between \$12, 000 and \$18, 000. However, charges for 400 Hz electricity and pre-conditioned air are administered on hourly rates, and they depend on the group of the aircraft (Middel, 2015; 418). Most airports classify aircrafts as; size A, size B and size C. For the size A aircrafts, the charges for 400 Hz electricity and pre-conditioned air are \$38 per hour and \$80 per hour respectively. The charges for size B aircrafts are \$66 per hour and \$139 per hour for 400 Hz electricity and pre-conditioned air respectively. On the other hand, size C aircrafts are charged \$93 per hour and \$200 per hour for Hz electricity and pre-conditioned air respectively (Nielsen, 2013; 244).

Therefore, considering the charges of a size A aircraft that operates for 400 hours in a year, the charges for 400 Hz electricity and pre-conditioned air would be \$15, 200 and \$32, 000 per year. Moreover, other agents charge fixed prices of \$90 per hour for using GPUs. This offer becomes even cheaper compared to the use of APUs because the total charges for an aircraft that operates for 400 hours in a year would be \$36, 000 annually.

According to Stewart (2014; 110), even after calculating the annual maintenance cost that is incurred in using Ground Carts, the amount would be less than the one incurred in using APUs. Therefore, it can be concluded that use of Ground Power Units is more cost efficiency than use of APU power generators.

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