

ABSTRACT

The team members of the project consisted on two students, Ziad Tuffaha and Majed Tayyem, with Dr.Mohammed AlSayed being the supervisor. The project was an energy audit for Rafidia hospital, which is one of the largest hospitals in the West Bank, following the ASHRAE Type 2 audit methodology. Energy audits are a method to decrease energy consumption and increase energy efficiency without disrupting the output or quality of life of the audited establishment. During both semesters, numerous visits to the hospital were taken. During these visits, the team members got familiarized with the site, collected data, and used energy management tools to collect more information and readings. Some of the tools used include a flue gas analyzer, multimeter, and power analyzer. After the visits and the data collection, the data was analyzed to find the best saving opportunities for the hospital. Moreover, each saving opportunity had an economic evaluation conducted, and the most feasible were selected. The identified saving opportunities were heat recovery from the which is achieved by rerouting and utilizing the wasted heat from the oxygen production compressors. This opportunity can save 25,351 NIS, and 11.4 tons of CO² annually, with a very short payback period of 8 months. The second identified opportunity was applying overall boiler maintenance to the steam boiler, which will result in savings of 95,922 NIS and 41.4 tons of CO² annually, with a payback period less than 6 months. The third identified opportunity was adjusting and increasing the load factor of the washing machines. Finally, information management and tracking systems have been recommended as there is a scarcity of data in the hospital.