



SARDAR PATEL COLLEGE

Re- Accredited 'B+' Grade

14 Padmarao nagar, Secunderabad – 500025

(Affiliated to Osmania University, Hyderabad- TS)

Sponsored and Managed jointly by the Osmania Graduates association and the Exhibition Society)

BEST PRACTICE-I

Title of the Practice: CONSERVATION OF ENERGY, ENHANCEMENT OF SOLAR POWER GENERATION

Objectives of the Practice: The College has taken the initiative to enhance solar power energy as a further step towards conservation of energy. Solar energy is produced by the sunlight which offers many benefits that make it one of the most promising energy. It is renewable, inexhaustible, and non-polluting, avoids global warming, reduces use of fossil fuels, and contributes to sustainable development. Use of solar energy also helps in managing the electrical cost. It has reduced the burden of heavy electricity bills. The management in addition has replaced the incandescent bulbs with LED (Light emitting diode) bulbs in the previous year, which are more efficient in energy saving.

The Context: To educate and make aware students on the issues such as renewable energy sources, global warming and harmful impacts on our natural ecosystem etc. There is a greater need to generate power from renewable, inexhaustible and non-polluting sources of energy which contributes towards environment protection and its sustainable development. Thus, the institution has decided to work in the areas of minimal power consumption and follow the motto 'Affordable and clean energy for all'.

The Practice: The institution has put this principle in practice and effectively started using solar energy along with the other sources of energy. It is an important component of higher education to make the students aware about ecological destruction which is a consequence of the construction of dams for hydroelectric power generation and the use of fossil fuels etc. Institution has also replaced all the traditional bulbs with LEDs and tubes in the whole campus to minimize the consumption of electricity and put a step forward to reduce global warming and this has also helped in reducing the electricity bill.

Evidence of Success: The institution has enhanced solar capacity with 60KW and 2 Inverters of capacity 40KW & 20KW roof top system in the new building of the college which enhanced the power generation that has increased the total solar power generation to 60KW. The electricity consumption bill has been minimized. Maximum use of pollution free, eco- friendly and renewable sources of energy as an initiative towards reduction of global warming.

Problems Encountered and Resources Required:

- Cost Management: Installation & maintenance of solar power projects is a costly affair due to the expensive panels.
- Availability of labour: wherein we always encounter the problem of labour availability.



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BEST PRACTICE-II

Title of the Practice: WATER CONSERVATION , ENHANCEMENT OF R.O PLANT

Objectives of the Practice: The primary goal of enhancing the RO water plant is to increase efficiency, reduce operational costs, and improve water quality. This ensures that the institution can meet the growing demand for clean water, comply with health and safety standards, and maintain an eco-friendly environment

The Context: Our institution, access to clean, potable water is vital for the health and well-being of students, faculty, and staff. As the demand for safe drinking water increases, optimizing and enhancing the Reverse Osmosis (RO) water plant becomes crucial. Reverse Osmosis is a highly effective filtration method that removes contaminants, such as bacteria, viruses, salts, and heavy metals, ensuring the production of purified water.

The Practice: RO plants are energy-intensive due to the high pressure required to force water through the membranes. Incorporating energy recovery devices, such as pressure exchangers or turbochargers, can reduce energy consumption by up to 30-40%. This not only lowers operational costs but also reduces the institution's carbon footprint. Use of energy-efficient pumps and motors can further contribute to the sustainability of the plant.

Evidence of Success: Enhanced R.O plant with 500lph was supplied at old block near Auditorium to the existing R.O plant 500lph supply at new block in 2016. As the institution's population grows, the demand for water will increase. Expanding the plant's capacity to meet future demands should be considered. This could involve adding additional RO units, increasing storage capacity, or improving distribution systems to ensure adequate supply across the campus. An upgraded RO plant will be more reliable and efficient, capable of handling increased demand while maintaining high water quality standards.

Conclusion: The enhancement of the RO water plant in the institution is a vital step toward ensuring reliable access to clean water while promoting sustainability. By upgrading the filtration system, improving energy efficiency, increasing water recovery, and implementing modern monitoring technologies, the institution can optimize the performance of its RO plant, reduce operational costs, and ensure the health and safety of its population. Investing in these improvements will not only enhance the overall water supply but also align the institution with environmental and social responsibility goals.



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Problems Encountered and Resources Required:

1. **High Initial Capital Investment:** Enhancing an RO plant requires substantial investment in advanced technologies, equipment, and infrastructure. This includes upgrading filtration systems, installing energy-efficient devices, improving water recovery rates, and enhancing automation.
2. **Technical Complexity and Integration:** The implementation of newer RO technologies, such as energy recovery systems, advanced filtration membranes, and automation for monitoring, can be technically complex. Integrating these systems into the existing infrastructure requires highly skilled technicians and engineers.
3. **Operational and Maintenance Costs:** While the goal of enhancing the RO plant is often to reduce operational costs over the long term, some upgrades, such as energy-efficient pumps or automation systems, still require significant maintenance and operational costs.