

# MOTORIZED CLEANING AQUA PURIFIER FOR OFF-GRID ENVIRONMENTS



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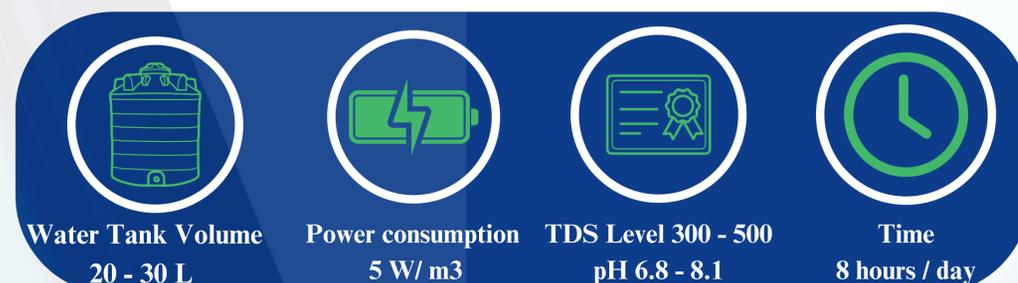
## INTRODUCTION

Sediment filtration, post-carbon filtration, and activated alumina filtration form the backbone of our water purification system. Water first passes through a sediment filter to remove large particles, followed by post-carbon and activated alumina filters to adsorb impurities like chlorine, fluoride, and heavy metals. Additionally, our system utilizes a sun-tracking solar panel to power operations sustainably. An automated cleaning mechanism, employing acid and base solutions, ensures consistent water quality. Through this comprehensive approach, our project delivers clean, safe water by effectively removing contaminants and promoting sustainable practices.

## PROBLEM STATEMENT

Limited clean water access and high waterborne disease rates are prominent issues, especially in remote areas with minimal infrastructure and brackish salty well water challenges. Energy constraints and reliance on non-renewable sources further complicate efforts to provide sustainable water solutions, our project endeavors to develop a clean water unit, offering a sustainable solution to mitigate clean water scarcity and enhance the quality of life for affected communities.

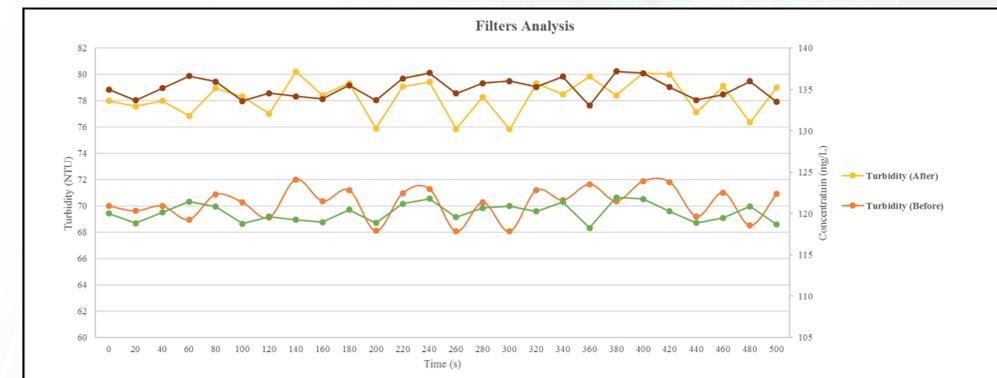
## TARGET SPECIFICATIONS



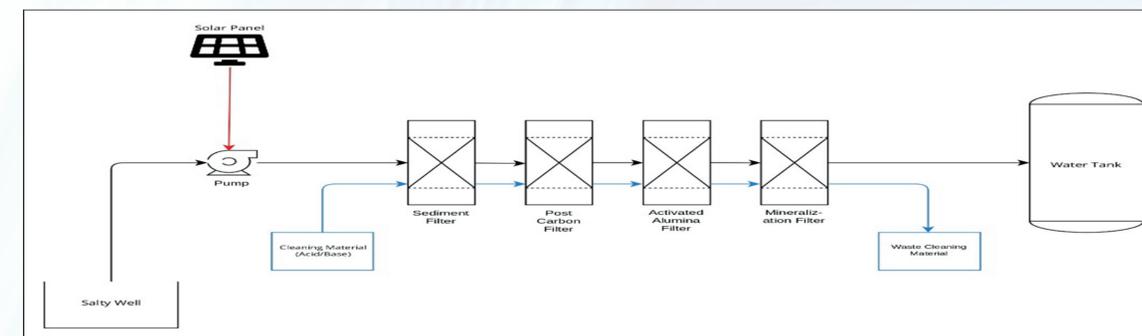
## OBJECTIVE

Our goal is to create a water filtration system powered by sun-tracking solar panels, capable of efficiently purifying brackish well water into clean, drinkable water. This project aims to offer a sustainable solution to water scarcity in remote or off-grid locations, utilizing renewable energy sources and advanced purification techniques.

## TESTING / VALIDATION



## PROCESS FLOW DIAGRAM



## CONSTRAINTS



Maintenance and Serviceability



Power Supply and Storage Optimization



Environmental and Regulatory Considerations



Variation in Water Quality

## CONCLUSION

In conclusion, this project provides a sustainable and efficient solution for converting brackish water into clean, drinkable water through advanced purification techniques. The integration of sun-tracking solar panels as a renewable energy source ensures self-sufficiency and reduces reliance on external electricity grids.