

Saudi Aramco
Mechanical Shops Services Department

Sustainable Industrial Waste Water Treatment System for Reusing Purposes

By: Faisal Bader Almutairi
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Outline

- Introduction
- Overview
- Wastewater Generation
- Proposed System
- Performance Analysis
- Economical Analysis
- Conclusion

Introduction

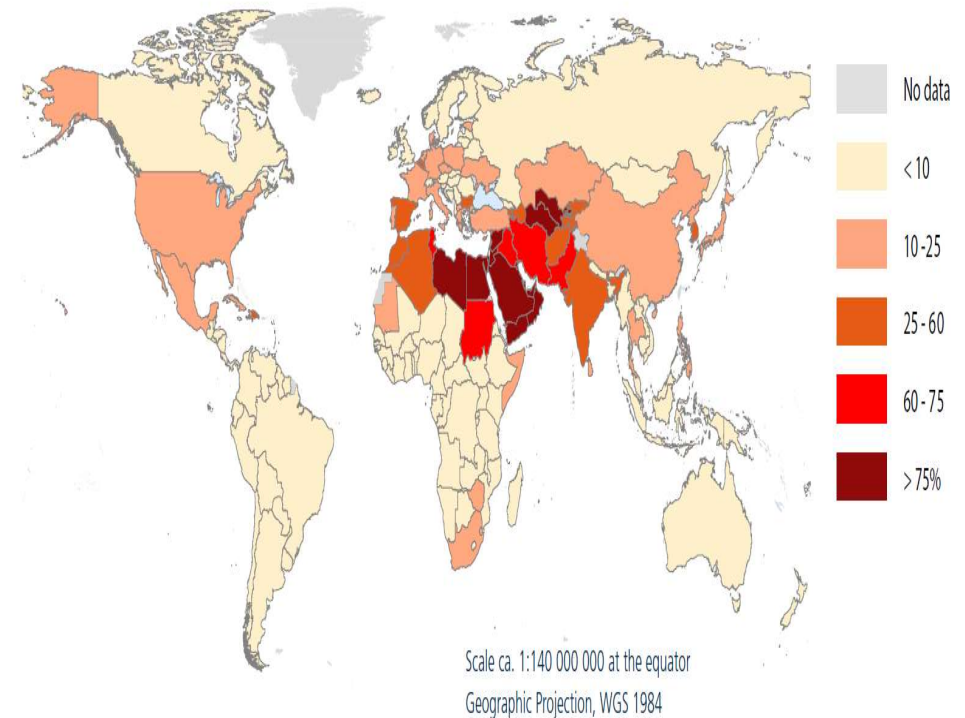
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Water Scarcity

- KAS produces **more than 6.6 million cubic meters** of desalinated water per day
- Water demand increased by **8%** every year
- 2025, **1.8 billion** people would suffer from water scarcity



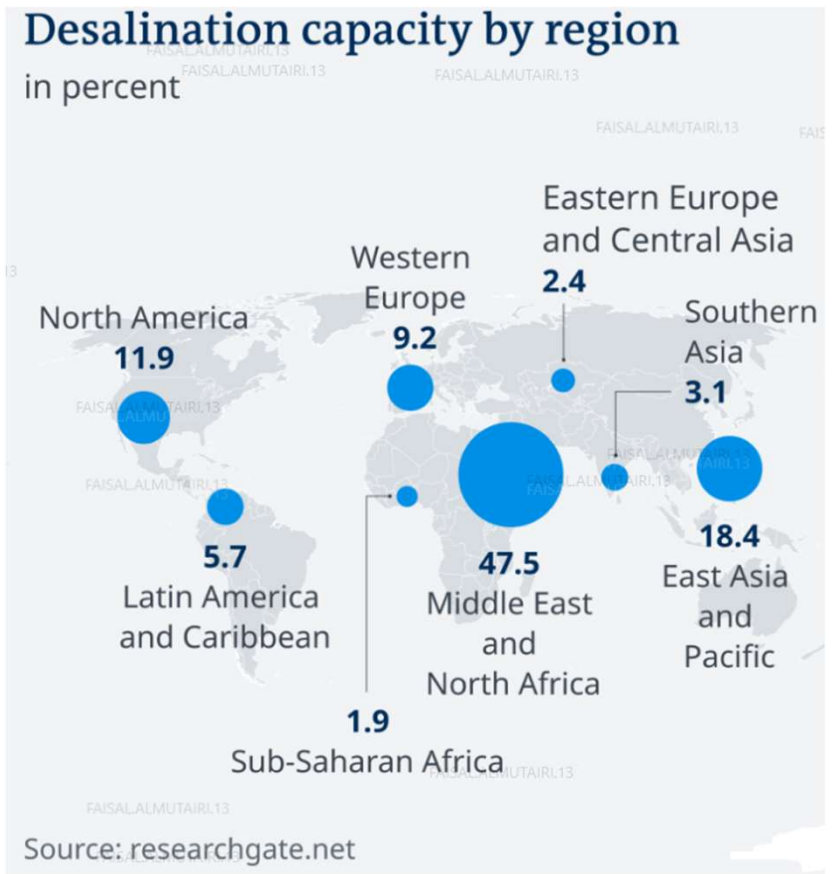
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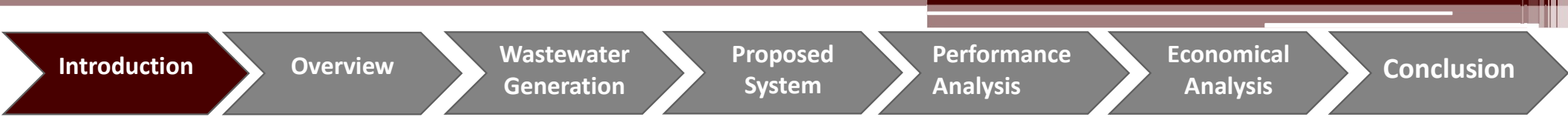
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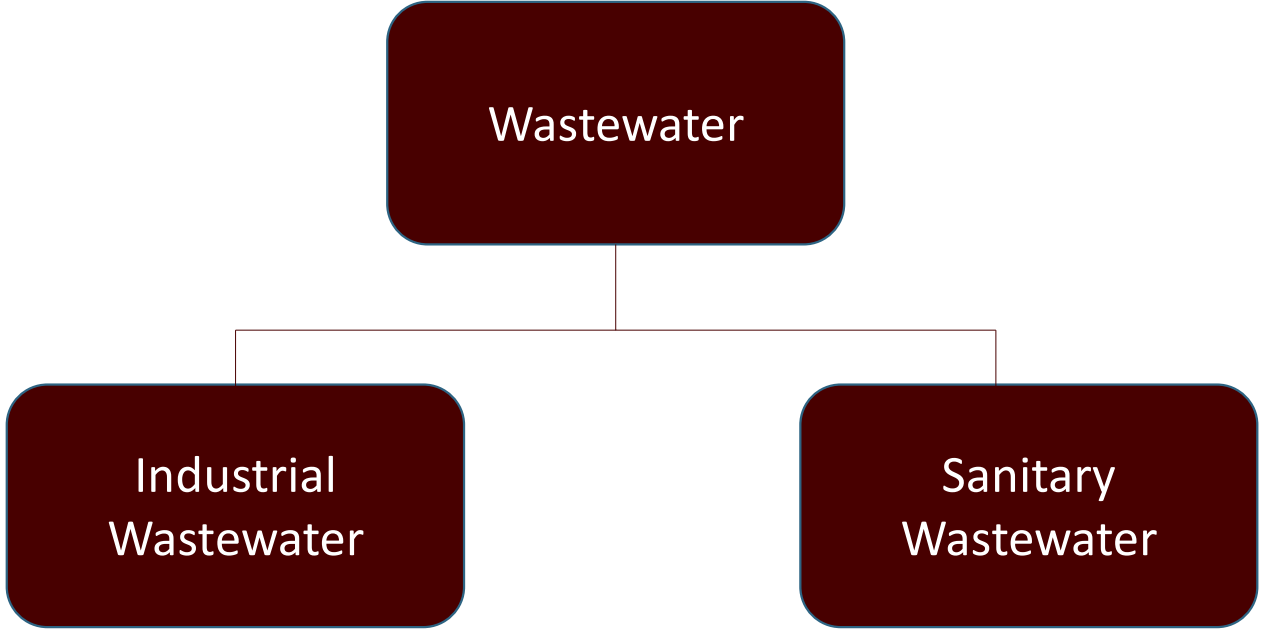
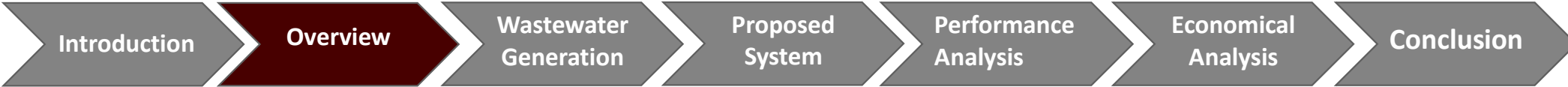
- KSA represents **54%** of the production in the gulf region and **22%** of the total of desalinated water in the world.
- Average cost of **USD\$0.80 / m³**
- Therefore, by utilizing an effective Wastewater Treatment system , this amount of expensive water will be optimized

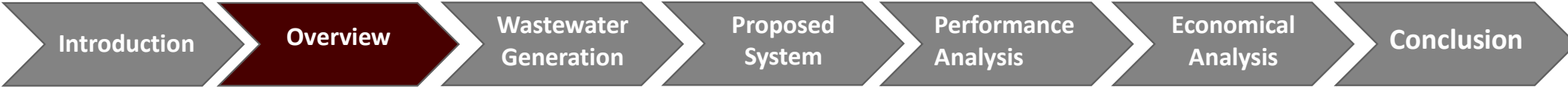




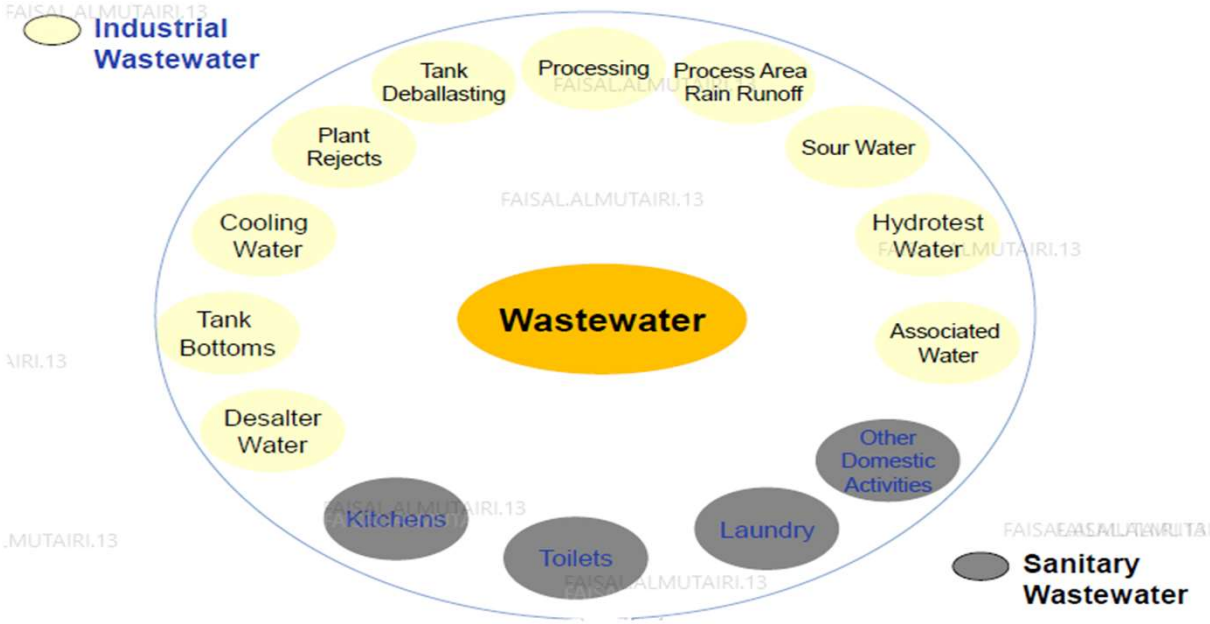
Benefits of Treating the Wastewater

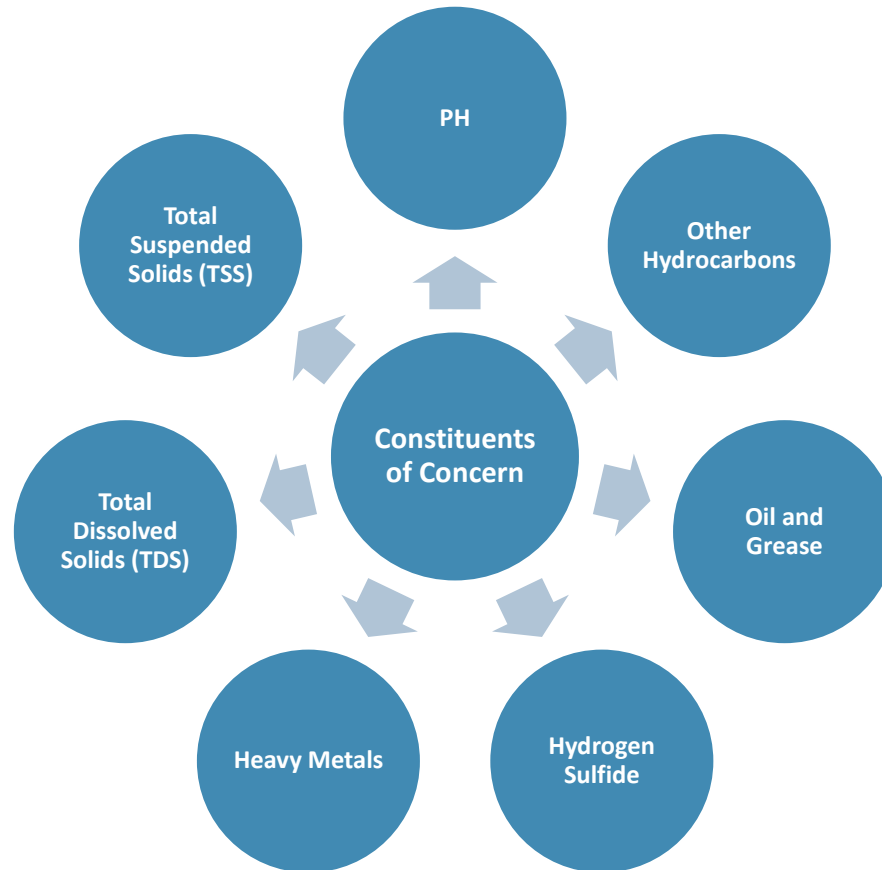
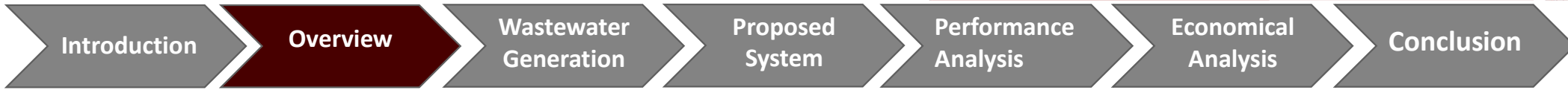
- Maintain Clean and usable water
- Protect the environment
- Protect the Public health
- Financial benefits





Wastewater Sources







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WASTEWATER TREATMENT REGULATIONS

1. SAES-A-104 Wastewater Treatment, Reuse and Disposal
2. SAES-A-103 Discharges To The Marine Environment
3. GI-151.006 Saudi Aramco Sanitary Code
4. Doc. 1409-01 Environmental Protection Standards in the Kingdom of Saudi Arabia
5. ENV107.03, Industrial and Sanitary Wastewater

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Wastewater Generation Rates

- Saudi Aramco is generating over **31MMCMY** of oily water sewer effluents
- Saudi Aramco is generating over **47 MMCMY** of sanitary wastewater

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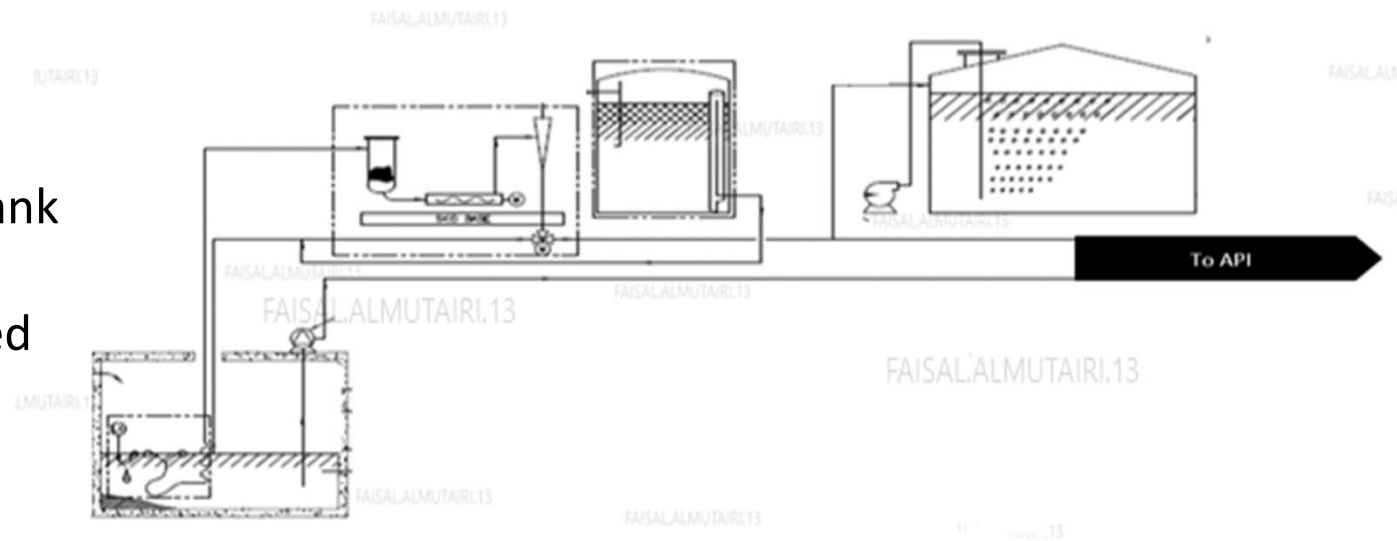
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System Main Component and Features :

- Separation Stage
 - Physical Separator
 - centripetal force
- Oil Storage and Decant Tank (OSD Tank)
 - Store the concentrated oil for disposal
- Treatment Stage
 - VOB Tank



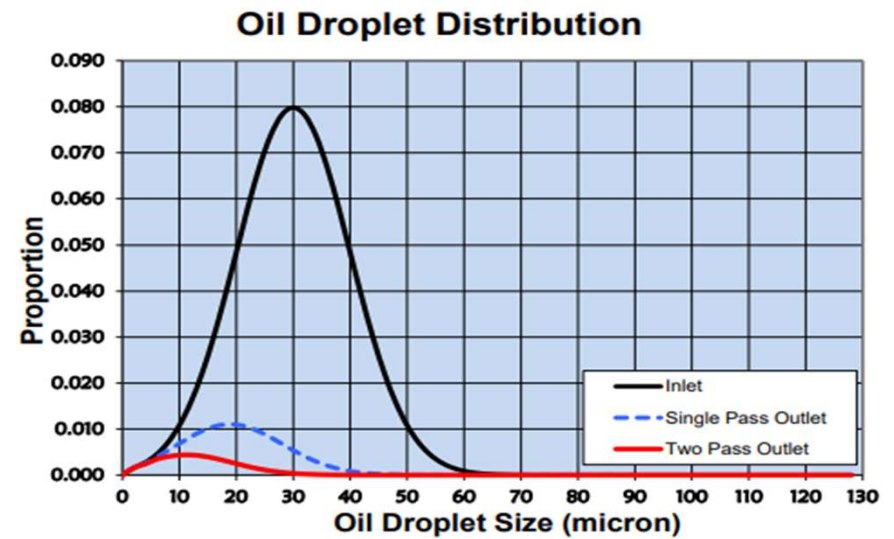
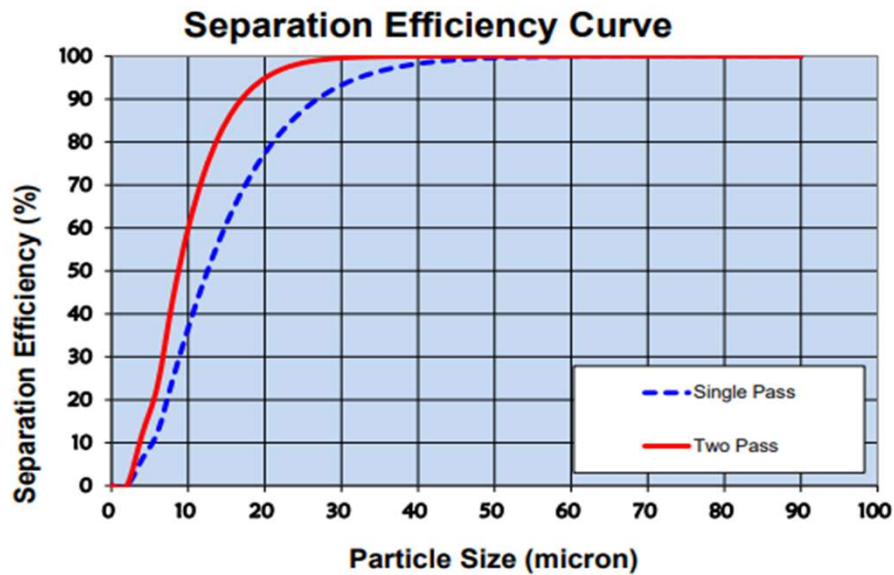
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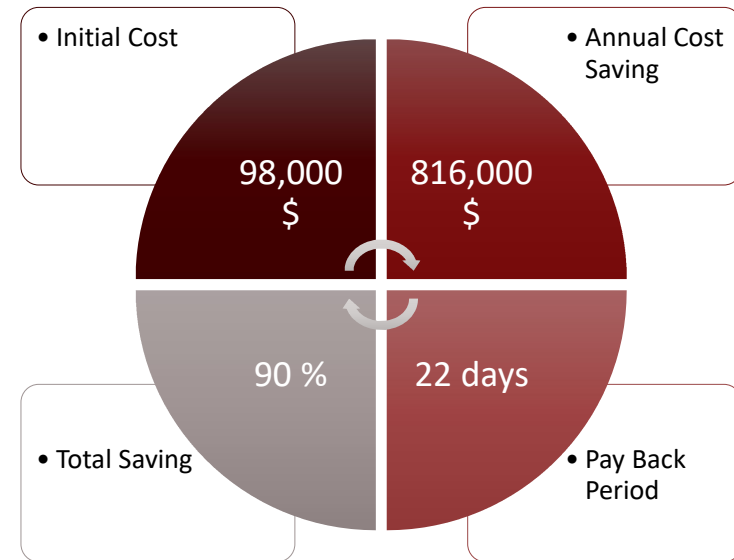
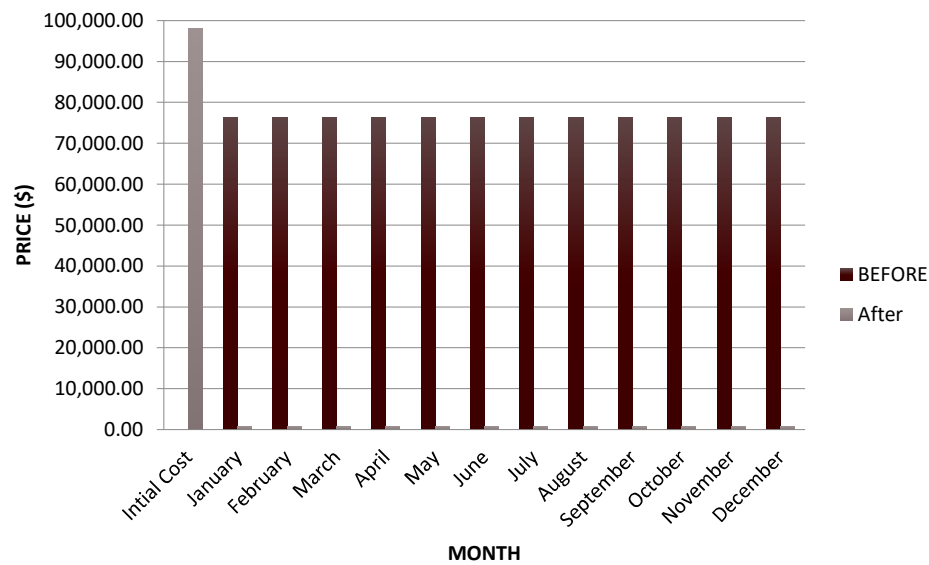
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CASH FLOW





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- Aramco goal is to conserve valuable water resources.
- The System theoretical analysis is very promising
- Saving the kingdom measurable amount of energy

Thank you!

