Desalination of Water using Low Grade Heat Source

CLAIM:
- Desalination unit
- Absorption refrigeration system (ARS).
- Thermal Energy Storage

OVERVIEW:
Potable water is a scarce and valuable resource. This technology is able to sustainably desalinize and purify non-potable water with low maintenance and operation costs.

ADVANTAGES:

- This technology operates efficiently by evaporating water under a vacuum, which creates low pressure conditions, enabling the system to operate using less energy. Uses 40% less energy than multi-stage flash distillation, which is the most widely used method to desalinize water.
- Less expensive to maintain than reverse osmosis systems, which require frequent replacement of membranes.
- Because of low maintenance and operation costs, this technology can be made accessible to markets that otherwise would not be able to afford filtration systems.
- Can be scaled and manufactured for municipal, agricultural, or private applications.

<table>
<thead>
<tr>
<th>Low Grade Thermal Heat</th>
<th>Reverse Osmosis</th>
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</thead>
<tbody>
<tr>
<td>• Low capital and operating costs</td>
<td>• Low capital cost</td>
</tr>
<tr>
<td>• High performance (brackish water &amp; seawater)</td>
<td>• High operating cost (energy and maintenance fees)</td>
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<tr>
<td>• Output meets US EPA drinking water standards</td>
<td>• High performance (brackish water)</td>
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<tr>
<td>• Corrosion resistant</td>
<td>• Replaceable membrane</td>
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<tr>
<td>• Low pressure</td>
<td>• High pressure</td>
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</tbody>
</table>

Output: 100 L/day Energy: 4.44 W-hr/L Cost: $5,300
Output: 150 L/day Energy: 8.06 W-hr/L Cost: $10,300

INVENTOR(S) EXPERTISE

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