ENPRO 354

Small-Scale Desalination for Global Water Solutions
The Team

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Discussion Topics

Introduction Topics
• Problem
• Solution
• Why?

Business Topics
• Organization Summary
• Marketing Plan
• Fundraising
• Financial Plan
• Critical Risk Factors
• Desired Social Impacts
Water Scarcity

- Population
- Urbanization
- New Middle Class
- B.R.I.C.
Water Scarcity

- Melting Glaciers
- Rainfall Patterns
- Agriculture
- Runoff
Those Most Affected

• People in underdeveloped countries

• Lack money or resources to improve conditions
Addressing the Issue

• Business Solution

• *FreshSea*

• Non-Profit

• Water by Small-Scale Desalination
Small-Scale Desalination

- Reverse Osmosis
- Existing technologies
- Market tested
- Reliable

Science of Reverse Osmosis

1. Seawater Supply
   - Salt water

2. Pretreatment System
   - Mesh spacer
   - Membrane sandwiches

3. Reverse Osmosis Process
   - Concentrated seawater

4. Post-Treatment
   - Treated water

5. Freshwater Storage

Diagram:
- Pressure
- Membrane
- Water Flow

Diagram showing the flow of seawater through membranes to produce freshwater.
Power Sources

- Off-grid
- Wind
- Solar
- Battery

EverLite 3kw turbine
So you may be asking yourself...

- Innovative?
- New technology vs. already existing
- Infeasible by Initial Research
- Financial and Reliability Issues
Business Topics
FreshSea

- Non-Profit
- “Social Entrepreneurship”
- Different kind of Return-on-Investment
- Startup

Proposed logo
Marketing

• What sets us apart?

• Different Approach

• Barriers

• Strategic Partnerships
Areas around the globe suffering from depleted water resources

**Physical water scarcity**
Water resource development is approaching or has exceeded sustainable limits. More than 75% of river flow is extracted for agriculture.

**Approaching physical water scarcity**
More than 60% of river flow is extracted. These areas will experience physical water scarcity in the near future.

**Economic water scarcity**
Limited access to water even though natural local supplies are available to meet human demands. Less than 25% of water extracted for human needs.

**Little or no water scarcity**
Abundant water resources relative to use, with less than 25% of water extracted for human purposes.

**Not estimated**
Fundraising

- Outside funding
- Grants
- Foundations
- Corporations
- Individuals

Potential Sources of Funding

- Foundations and Trusts: 74%
- Grants: 15%
- Fundraising Events: 9%
- Corporations: 1%
- Individuals: 1%
Finances

- Known Costs
- Prototype
- Staff Pay

Expenses

- 73% Desalination Units
- 11% Power Sources
- 10% Administrative Costs
- 4% Shipping Costs
- 1% Staff Pay
## First Fiscal Year Projections

### REVENUE AND SUPPORT
- Foundations and Trusts: $185,000
- Grants: $25,000
- Fundraising Events: $2,000
- Corporations: $35,000
- Individuals Donations: $3,000

**TOTAL REVENUE AND SUPPORT**: $250,000

### OPERATING EXPENSES
- Desalination Units: ($27,000)
- Power Sources: ($25,000)
- Shipping & Installation: ($5,500)

### SUPPORT EXPENSES
- Staff Pay: ($175,000)
- Administrative Costs: ($10,000)

**TOTAL EXPENSES**: ($242,500)

**NET ASSETS**: $7,500
Risk Factors

• Political and Social Instability
• Funding Shortfall
• Power Source Reliability
• Quality of RO Unit
• Theft
Thoughts for the Future

Desired Impact

• Improved Quality of Life
• Encourage Economic Growth
• Stability

Future Recommendations

• Continue this ENPRO
• Further research
• Improve business model
Q & A