Trevi Systems Inc.
Business Plan

An Energy Efficient Forward Osmosis Process for Desalination and Purification of Water

May 10, 2016

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Trevi Systems: Business Plan

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Executive Summary

Trevi Systems, Inc. - Corporate Summary:

Trevi Systems was incorporated in Delaware in December 2010 after several years of research and development (R&D) on water purification technologies. Trevi is headquartered in Petaluma, California, where it has a general R&D laboratory as well as a specialized membrane spinning laboratory, polymer synthesis laboratory and large systems laboratory equipped with 15,000 gallon tanks to conduct water research in desalination and related purification technologies.

Trevi's Mission

Trevi System's goal is to develop systems that use an innovative and highly energy efficient Forward Osmosis (FO) processes, in order to produce clean water from saltwater, brackish water, or industrial wastewater at much lower cost and energy use as compared with existing technologies. Trevi's FO processes are a disruptive technology, which can help meet the world's rapidly increasing demand for clean water using a small fraction of the energy needed for existing water purification systems.

Research & Management Team

Trevi's founders and early investors include veteran entrepreneurs with track records in starting and building successful companies. John Webley, Chief Executive Officer, has a strong background in founding and growing companies to scale for either initial public offerings or acquisition. He was one of the three co-founders of Advanced Fibre Communications (AFC), which successfully went public in 1996 and grew to $6B and employed more than 800 people by 1999. He founded Turin Networks in 2000 and was its CEO and Chairman through 2005; it was later sold to Dell Computer for $700 million.

Trevi's Chief Science Officer, Gary Carmignani, has over 40 years of experience in both the analysis of pollutants in the marine environment and also the development of water purification technologies. He also developed an advanced oxidation technology that Intel uses exclusively to fabricate their small line width chips.

The company's first 3 equity rounds of investment include the venture fund of Don Green (Green Venture Capital II), a highly successful entrepreneur and experienced CEO, and a large international membrane manufacturer.

Technology & Products

Current technologies used to desalinate seawater and brackish water consumes a great deal of electric or thermal energy, requiring plants that are expensive to build and operate. The most popular technology today is reverse osmosis (RO), which uses high pressure pumps to force seawater through a semi-permeable membrane. The membrane is engineered to allow water molecules to pass through, but prevent the salts from doing so. Trevi has designed the first system to successfully use forward osmosis (FO) to desalinate water and produce potable water.

Rather than force water through a membrane as in RO systems, FO relies on osmotic pressure to draw water across the membrane. In the FO system, the "feed" solution or contaminated water is pumped to one side of the semi-permeable membrane. The "draw" solution, which has a high concentration of a specially designed chemical and a low concentration of water relative to the feed solution, is pumped to the other side of the membrane. The water molecules are attracted or pulled through the membrane via osmotic pressure – that is, the water molecules want to migrate from an area of high water concentration to one of low water concentration. Accordingly, water is pulled through the membrane using no energy, leaving the salts or other contaminates on the opposite side.

The key missing link for a successful FO system has been the draw solution. Trevi's R&D efforts have produced a draw solution that works, which can then be separated from the clean water. This is done by heating up the solution containing both the draw chemical and the clean water; the draw chemical settles out and the clean water is drawn off the top. The draw solution is then recycled and used continuously inside the FO system.

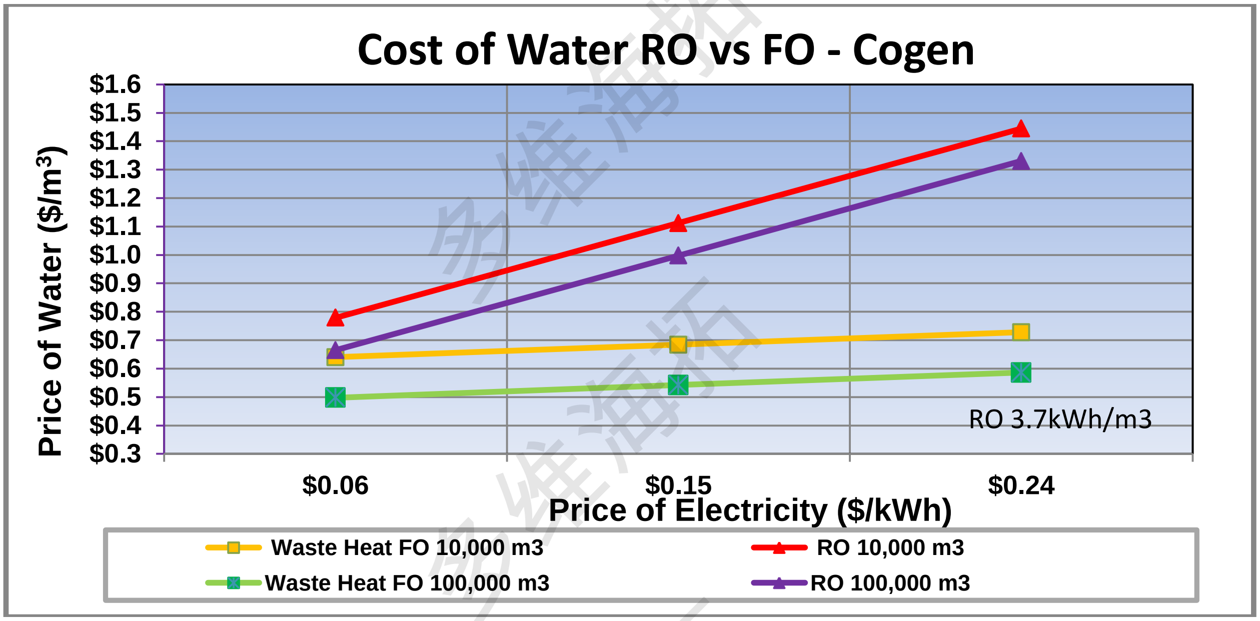
The benefits of the Trevi FO system are numerous:

- The system requires only a small fraction, approximately 1/4, of the electrical energy of current RO systems.
- The system uses relatively low cost waste heat or low temperature heat to separate the draw chemical from the clean water.
- The system can be customized to work under specific water conditions such as seawater, brackish water, municipal wastewater, or industrial wastewater.
- When used for desalination, the system can also be customized to produce brine streams of varying salt concentrations depending on the environmental requirements of the location.
- The system operates at ambient pressure, avoiding the extra costs of the high pressure stainless steel plumbing required by RO systems, and the need for expensive high pressure pumps.

The system's first pilot trial period was completed in June 2012, demonstrating energy consumption below 0.9 kilowatt hours per cubic meter of water (kWh/m^3) and thermal costs of 130 megajoules per cubic meter of water (MJ/m^3) in a 1 m^3/day system. Trevi is now completing a number of large scale field trials at Masdar in the UAE (50m3/day), KISR in Kuwait (10m3/day) and at Orange County Wastewater Department (OCWD) in Orange county, CA (100m3/day).

Our FO system's low-grade heat requirement allows the heat to be provided by co-generation (such as heat from a diesel generator), solar thermal, condenser steam from power plants, or gas-fired boiler hot water. A cost of water per cubic meter model has been developed in order to show that using the most expensive source of thermal heat, solar thermal flat plate, results in a cost equal to current island electricity rates of 42 cents per kilowatt hour (c/kWh). This will allow hotels on islands to truly represent "eco" resorts by producing desalinated water with solar energy. This will yield a large energy savings since producing fresh water is typically the largest consumer of electrical energy on an island.

The cost savings of the Trevi FO system as compared with RO systems depends on the cost of thermal energy and electricity in a particular location. For instance, when using natural gas at $2.75 per million BTU (mmbtu) and electricity at 15 c/kWh, the FO system produces a 25 percent savings over a RO system. When a co-gen heat source is used at $0.12/mmbtu and the same 15 c/kWh electricity cost, the FO system produces a 45 percent savings in the cost of water over a RO system, as shown in the graph below. These savings are very significant considering the large scale of desalination systems as well as the growing worldwide demand for such systems.



As described in this plan, in 2015 Trevi built a series of increasingly larger FO systems for both seawater desalination and industrial wastewater clean-up, to further demonstrate the system's performance capabilities. This scaling up process will also confirm the cost to build the systems. The next step will be to build systems for sale in both desalination and water reuse in the industrial sector.

Intellectual Property

Trevi has filed multiple U.S. patent applications to protect the key intellectual property (IP) of its FO system. Of these, 5 patent applications have been filed with the U.S. Patent and Trademark Office that deal with enhancements to the system. Some of these provisional applications may be kept "in house" as trade secrets, as they deal with changes in the draw solution that will further optimize the energy consumption of the system. Trevi's key system patent has been granted in 5 of 21 countries, with the remainder still in examination.

Market

The market for purified and potable water is large, growing, and global. The demand for water has been increasing at a rate that is double the rate of population growth. Taking this into account, by 2025 water scarcity will affect 14% of the world's population. This ignores the effect of climate change, which is expected to affect up to 25% of the worlds population.

Total on-line installed capacity of desalination plants exceeded 74 million m^3/day at the end of 2012. The long-term growth rate in the desalination market has been around 12%.
Global contracted desalination capacity is expected to increase from 68.3 million m^3/day at the beginning of 2010 to 129.9 million m^3/day at the end of 2016 – ***a 90 percent increase in just seven years.*** Of this 61.6 million m^3/day of new capacity, 77 percent or 47.2million m^3/day will be seawater desalination. The rest will be desalination of brackish water and low salinity waters. Market projections show a 15% annual growth rate for the next 10 years.

Market Access Strategy

Trevi will compete with RO systems based on the superior economics of the FO system when waste heat is available. The initial focus will be on developing and marketing systems that are in the small to medium size categories, between 100m^3/day and 5,000m^3/day. System sizes of greater than 5000m^3/day will require onsite construction, mandating a different business approach than the more traditional contract manufacturing one initially contemplated for the years 2015-2018. As the first low energy FO system available in the world, with very large operating cost savings over existing RO systems, the question is how best to leverage the operating cost savings.

The strategy will involve four potential sources of revenue:

1. Direct sales of small systems - Trevi will have the systems built by a contract manufacturer and shipped directly to the customer in containers for system sizes less than approximately 1,000m^3/day (multiple of these to reach 5,000m^3/day). The sales price will include a premium above the cost of a competitive RO system, to capture upfront a portion of the energy savings to be realized by the customer. We anticipate this will be a 20% premium.
2. For larger systems (>5000m^3/day) that have to be built on site, Trevi will sell key components to the customer and follow a licensing model. These will include the Trevi-branded draw solution, possibly membranes, custom heat exchangers and the system control consisting of both the hardware and software to run the plant. These sales are not reflected in the 2015-2018 business plan as it is anticipated that large system sales only commence once customer acceptance of this new technology matures after 2018. For these larger systems, Trevi also expects to be a subcontractor to, or form joint ventures

with, the large contractors which manage these projects. In exchange for providing the proprietary Trevi FO system design, Trevi expects to charge a one-time upfront licensing fee. This fee will capture a small portion of the energy savings to be realized by the customer over the life of the plant, but be paid up front, and it does not require ongoing monitoring of those savings and payments over time. In some cases it might be preferable to charge an annual licensing fee for the first two to five years of the systems' operations. Other mechanisms for capturing a share of the energy savings may be developed. These models will be further refined once large system demand occurs.

3. The sale of Trevi's branded draw solution for all systems. This will ensure an ongoing revenue stream for installed systems once the service interval for replacing the draw solution is determined (probably 2-3 years).
4. Service revenue. A fee of 10-12% of CAPEX will be charged for annual maintenance of these small systems which is common in the industry. A one year warranty is included in the initial sales contract, thereafter annual maintenance fees will be charged.

The keys to successfully executing this strategy are four-fold:

1. Developing systems in the smaller size categories that can fit inside a shipping container, are reliable, and can be built in volume to sell at competitive prices and provide attractive margins.
2. Developing proprietary Trevi-branded components that provide additional revenues and means of capturing the operating cost savings of the Trevi FO system.
3. For larger systems, finding the right companies to partner with to achieve a growing share of the rapidly expanding worldwide market, and create a healthy revenue stream for Trevi based on the superior economics of its proprietary FO system.
4. Building the management and staff of Trevi systems to take full advantage of the opportunities for its disruptive technology.

Series D Round

Trevi is seeking to raise a minimum of $30,000,000 in a Series D Round, to be closed during the first half of 2016. This round will finance the operations of the company through the end of 2018, until we are cash positive and fund the development of the series of increasingly larger FO systems for both seawater desalination and industrial applications. The round will also fund the development and sales of the first commercial systems to use the Trevi FO process.

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Trevi Systems: Business Plan

1. Company Overview and Background

Trevi's Mission

Trevi System's mission is to develop systems that use an innovative and highly energy efficient Forward Osmosis (FO) process to produce clean water from saltwater, brackish water, or industrial wastewater at much lower cost and energy use compared with existing technologies. Trevi's FO process is a disruptive technology that can help meet the world's rapidly increasing demand for clean water using a small fraction of the energy of existing water purification systems.

Trevi Systems, Inc. Overview

Trevi Systems, Inc. was incorporated in Delaware in December 2010 after two years of research and development on water purification technologies. The company is headquartered in Petaluma, California and has a 15,000 sq. ft. laboratory in addition to general office space. Our Series A and B investment round was led by Green Venture Capital II, management, as well as a corporate international partner, in October 2011.

Trevi's founders and senior staff are experienced entrepreneurs with demonstrated track records in starting and building successful companies with innovative technologies. They are highly motivated to commercialize the first energy efficient FO system in the world, and help satisfy the world's demand for clean water at low cost. The system can also be powered by renewable energy sources, opening up the field of renewable energy for water production. More information on the senior team is provided in Appendix A.

Milestones Achieved

Trevi has succeeded in developing a working FO system that produces drinking quality water from seawater, using just 1/4 of the electrical energy of current RO systems, and a modest amount of low-grade thermal energy. This system has been tested and verified at the U.S. Navy Seawater Desalination Test Facility in Port Hueneme, California, and the results have been verified by a third-party engineering consulting company, Carollo Engineers. Their report is available on request. Trevi was also selected by the Kuwait Institute of Scientific and Industrial Research (KISR) and has brought on-line a 10m3/day research skid at their facility in addition to selling them two Forward Osmosis membrane test stations. Two larger system sales are under discussion with KISR for shipment in the latter half of 2016 and commercial terms are nearing completion. Trevi was also selected as the *only winner* in the Innovative category for renewable desalination by the Masdar Institute in the UAE. The Masdar Institute goal is to have a desalination plant operate at below 1.2kWh/m^3 electrical power consumption, and Trevi was the only vendor to be selected in this category after a rigorous one year evaluation period. The system was constructed in the UAE by a large Engineering company, Deutsche Babcock Bilfinger. The plant went live in March 2016 and will be run for 9 months, delivering water to a nearby community. Thereafter the plan is to scale up to significantly larger systems at Masdar.

Trevi was also selected as the top recipient in a California Energy Commission grant to produce potable water at the Orange County Water District plant in Los Angeles. This $1.7mm grant will run 21/2 years and produce potable water from Reverse Osmosis brine water. Should this trial conclude successfully, the market for waste water will be opened in California and elsewhere in the USA, creating a huge new market for beneficial water re-use. Pilot water studies are underway at the OCWD test facility, with the $100m^3$/day system expected to be built by the end of 2016.

Additional orders from Saudi Arabia's SWCC and the US Navy have been received, these systems are in final fabrication for shipment in 2016.

2. Technology and Products

Technology and Energy Consumption Edge

The uniqueness of Trevi System's FO desalting process rests in its use of osmotic pressure as a "driving" force to pass water through a semipermeable membrane, and then using thermal energy in the form of waste heat to produce pure water. It is a simple and elegant method of purifying water while conserving energy. Reverse Osmosis's driving force is hydraulic pressure (800 psi – 1,000 psi) which is used to pass water through a semipermeable membrane. To produce hydraulic pressure, pumps are required which consume large quantities of energy. Both RO and FO systems require pre-treatment of the sea water prior to desalting.

The table below gives the Specific Energy Consumption ("SEC") of various types of pre-treatment; this study was commissioned by the IDA and is considered a good representation of the current state of power consumption for pre-treatment. Most new RO plants use the DAF+MF approach, which equates to approximately $0.24kWh/m^3$.

Although much has been published on the reduced fouling properties of FO, Trevi Systems has not deployed a system for any substantial length of time and so we take the position for now that FO pre-treatment will be equivalent to RO pre-treatment until we have operated a larger scale pilot plant for 6 to12 months.

The table immediately following the pre-treatment table shows the SEC of RO systems with increasing salinity. As expected, RO power consumption rises significantly with increasing salinity to over $4.5kWh/m^3$ in the Middle East, with an average value of $3.7kWh/m^3$ at nominal conditions.

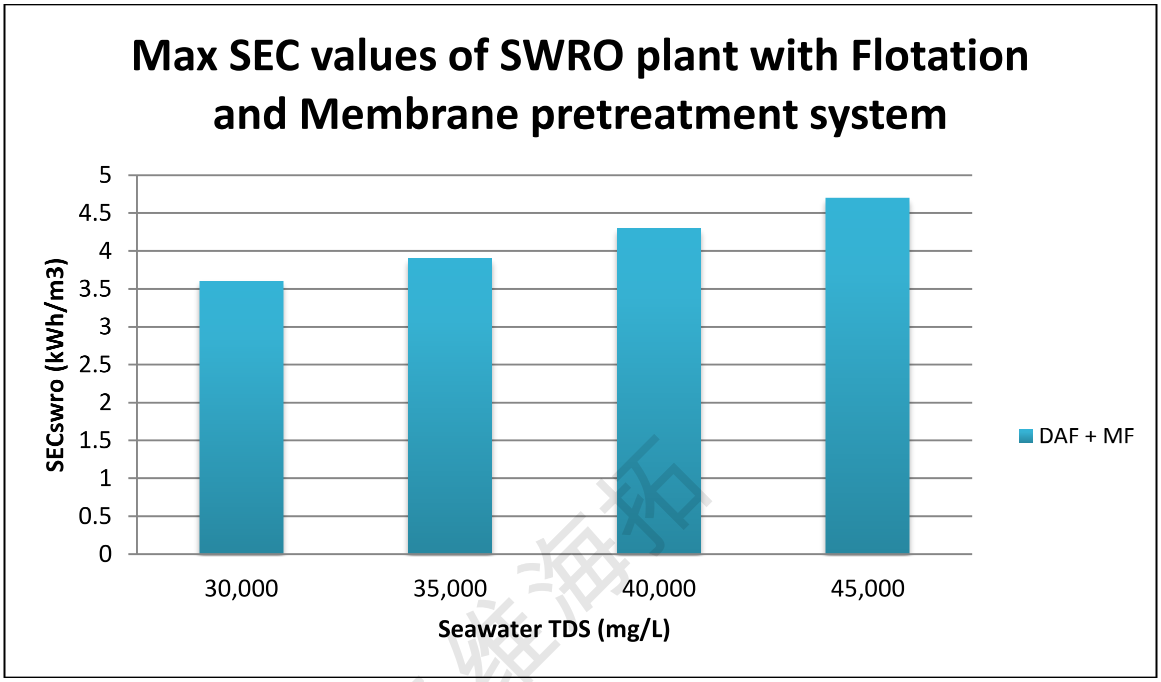
When considering just the RO stage alone, the next table shows the SEC for just an RO pump and RO membranes with one of several energy recovery devices. Again, at nominal operating conditions and energy recovery, a modern RO system can achieve $2.7\text{-}3.5kWh/m^3$ (salinity and recovery device dependent). With Trevi's system expected to yield a power consumption of

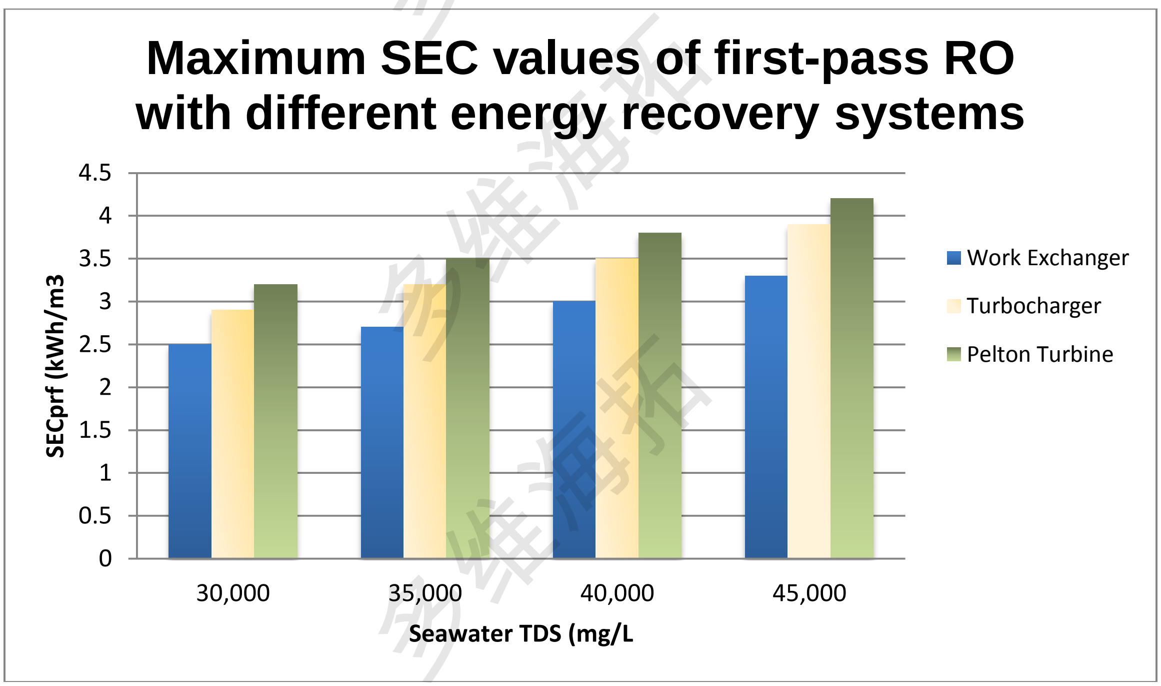
0.23kWh/m^3, our statement of 4 time's lower electricity consumption is conservative. If we include 0.24kWh/m^3 of pre-treatment, then our combined SEC is 0.47kWh/ m^3 compared with 3.7kWh/m^3 for RO, which is a reduction in overall energy consumption of almost eight times. Since this includes the pre-treatment, it is a more realistic level and we have used 0.5kWh/m^3 for our FO process and 3.7kWh/m^3 for RO in order to compute energy savings throughout this business plan.

The purpose of the 100 m^3/day pilot systems is to determine what the fouling properties and advantages FO might have over RO, particularly in the pre-treatment stage.

SEC_{prf} of pretreatment processes and configurations				
Number	Pretreatment Process	Number of Filtration Stages	Abbreviation	SEC_{prf} kW· h/m^3
1	Floc filtration gravity + static mixer	1	FF + SM (1F)	0.02
		2	FF + SM (2F)	0.03
2	Floc filtration gravity + floc basins	1	FF + FB (1F)	0.10
		2	FF + FB (2F)	0.12
3	Floc filtration pressure + static mixer	1	FFP + SM (1F)	0.10
4	Sedimentation + filtration	1	S + F (1F)	0.14
		2	S + F (2F)	0.15
5	Flotation + filtration	1	DAF + F (1F)	0.15
		2	DAF + F (2F)	0.16
6	Membrane filtration	-	MF	0.1-0.2
7	Flotation + membrane filtration	-	DAF + MF	0.24
SEC_{prf} = specific energy consumption (SEC) pretreatment filtrate				

Table from IDA Journal second quarter 2010, Volume 2, Number 2, Page 62





IDA Journal: Desalination and Water Reuse,
Second Quarter 2010 Volume 2, Number 2

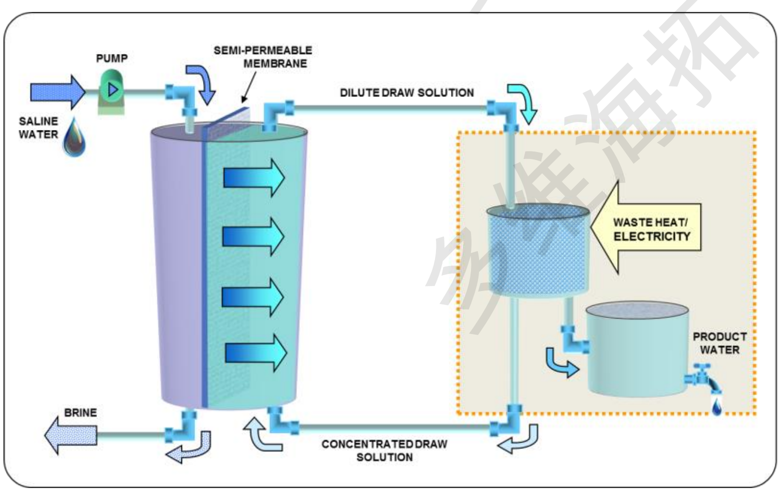
Forward Osmosis in Nature

Osmosis is the net movement of solvent molecules through a partially permeable membrane into a region of higher solute concentration, in order to equalize the solute concentrations on both sides of the membrane. It requires no energy. This simple process, created by nature, is the main way fluids are transported between cells and is the basis of life on earth. As the figure below illustrates, nature uses this process every day. Since the term osmosis existed long before people desalinated using high pressure pumps, reverse osmosis was coined to denote this "against natural flow" process. Trevi System borrows from nature what nature has given us, osmotic pressure, and uses it in its Forward Osmosis process to purify water.

Trevi's Forward Osmosis Process

Overview

Referring to the figure below, Trevi uses its proprietary, retrograde thermo solute draw solution to create the osmotic pressure needed to desalt water. Waste heat is used to cause a phase separation (similar to oil in water layer) of the draw solute from the water, producing water and concentrated draw solute. This abrupt phase separation at a very specific temperature is what imparts the low energy to our process. The concentrated draw solute is recycled back to the FO membrane and the heat used is recovered with heat exchangers to minimize energy consumption. The product water is passed through a nano-filter and the draw solute is then recycled back to the FO membrane. The purified water is passed on to the end user. Even the phase separation is very well controlled, as a small portion of the draw solution still escapes from the process into the drinking water. Although Trevi can drive this amount down into the parts per billion ranges, a draw solution that is safe to drink is obviously preferable. The combination of an edible/non-toxic draw solution with good separation properties is one of Trevi's key inventions.



Products

The main product of the FO process is purified water. Trevi's FO process can be scaled up from a 1 m^3/day system to a 500,000 m^3/day system simply by increasing membrane surface area as is done in RO, and by increasing pumping capacity and the size of the heat exchangers. There are no difficult scaling hurdles to overcome, such as in membrane distillation, just an increase in surface area and pump size. The water source can be sea water, brackish water, industrial water, and municipal waste water. The end product from all of the above mentioned water sources is purified water that can be used for drinking, for industrial applications, for agriculture, for mining, or for oil production.

Unique and competitive advantages

The uniqueness of Trevi's FO process is its ability to use osmotic pressure to produce purified water at an energy cost that is ten times lower than for RO. The thermal heat source can be solar thermal, liquefied Natural Gas (LNG), waste heat from a power plant, industrial boilers or any co-generation or CHP application including air conditioning expansion gas heat, etc. In some cases where waste heat is not available, Trevi has developed an electrically driven FO process, and is trialing the system in Q2, 2016 at its Redwood Shores desalination facility.

Intellectual Property

Trevi Systems has hired Novak Druce + Quigg, LLP as our law firm for patent applications and IP protection.

During 2011 through 2014 Trevi filed 5 U.S. patent applications to protect the key IP of its FO system. We will also be selecting the foreign countries in which to file for patent protection, with the key system patent already approved in 5 of 21 countries. A recent patent application allows for the electrical regeneration of the draw solution, especially targeted to industrial applications in the emerging 'zero liquid discharge' market sector which will be very significant in China.

Trevi's Advantage

There is no energy efficient FO process that Trevi is aware of on the market today that can desalt water at the same performance level as Trevi's. Trevi's patent position will protect its FO process and unique Retrograde Thermal Solute draw solution. Additional patent applications are underway to address varying the draw solution properties for specific applications, varying the phase change temperature to optimize it for solar applications, and a number of process control parameters that are necessary to control Trevi's FO process. Our new ZLD patent is expected to significantly expand our market potential beyond sea water desalination.

3. Market Definition

Drivers of Demand for Potable Water: Growing Water Scarcity

The market for potable water is large, growing, and global. As the world population expands so too does the demand for fresh water, but natural systems are not producing any more of it. In addition, the demand for water has been increasing at a rate that is double the rate of population growth. Higher per capita income levels lead to higher water usage by individuals. The greatest impact, however, is from agricultural use, which accounts for 71 percent of global water usage.[1] As societies become richer, the proportion of meat in the diet increases. As demand for meat rises, there is an increase in water usage, as the amount of water required to produce a pound of meat is ten times the amount required to produce a pound of rice.[2] In addition, the demand for recycling industrial water is rapidly growing as a means to 'save' water for human consumption. More and more industries are being mandated to recycle water, especially if the application is non-potable such as in power plants, steel mills and pulp and paper processors.

The growing demand for water is exacerbated by several factors:

- Higher-than-average rates of population growth and economic growth in areas with limited natural water resources;
- Greater demand by agriculture to produce not only more meat but also crops for energy (e.g., corn to produce ethanol);
- Extreme weather events, such as droughts, which create water shortages in specific regions.
- Increased global industrialization.

In stark contrast to oil and other natural resources, the problem of water scarcity is not caused by a declining supply of water. Water is a fully renewable resource, renewed constantly through the water cycle. And, in fact, we use only a small percentage of the water available on the planet. Water scarcity is really a result of the mismatch between the demand for water and the supply of water, either in location, in time or in the quality of the water required. One forecast estimates that by 2025 water scarcity will affect 14% of the world's population, or 1 billion people.[3]

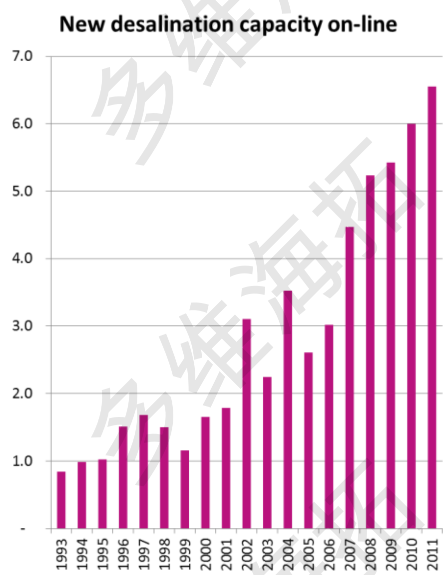
There are many ways to address this mismatch of potable water supply and demand, including transporting water using canals or pipelines, building more water storage capacity such as dams and reservoirs and increasing the efficiency of water usage. The other way is to produce drinking water from lower quality but available water sources, such as desalinating seawater or cleaning up brackish water, which is Trevi's focus. This is also a strong growth area since it is drought-proof and frequently easier to implement than other options.

[1] Desal Markets 2010, p. 23.
[2] Desal Markets 2010, p. 24.
[3] Desalination Market Update Sept. 25, 2012, Global Water Intelligence.

The Trevi FO process can be used in a variety of applications, from new desalination plants, improving existing ones, inland brackish water treatment, industrial water recycling, waste water treatment facilities, brine concentration, and mining and fracking re-use. Our near-term strategic focus is on industrial water desalination for re-use since market lead time is dictated by simple cost saving economics versus social good. Sea water desalination applications demand is is worldwide, large and growing, and our product development efforts have yielded a working seawater desalination system, however the market acceptance will be at least 3 to 5 years due to public safety concerns. We anticipate shipping mostly systems for industrial water reuse due to the short lead times of these customers as the water is for reuse, not potable.

Global Desalination Market

Total on-line installed capacity of desalination plants was greater than 74 million m^3/day at the end of 2012. The rate of adding new capacity has been increasing since the early 1990s, as shown below. More new desalination capacity came on line in 2011 than ever before. The long-term growth rate in the desalination market has been around 12 percent.

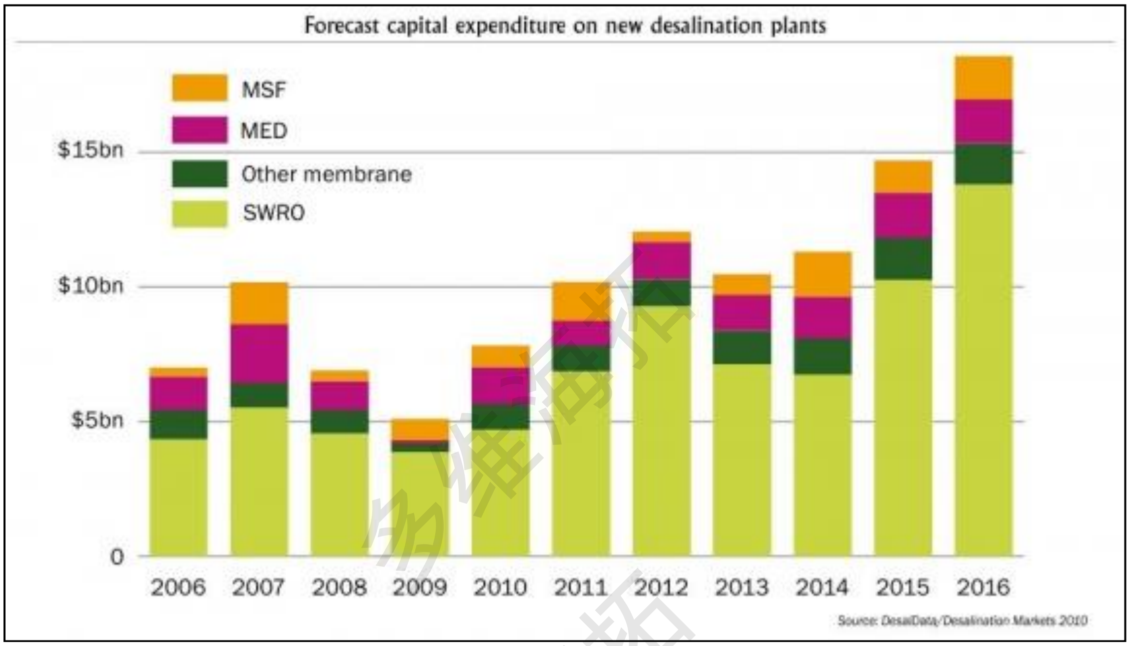


[Source: Desalination Market Update Sept. 25, 2012, Global Water Intelligence; units in millions m^3/day]

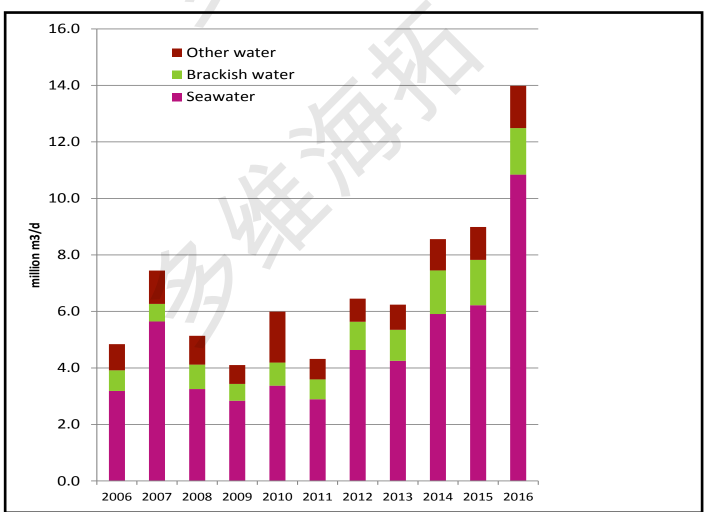
Global contracted desalination capacity is expected to increase from 68.3 million m^3/day at the beginning of 2010 to 129.9 million m^3/day at the end of 2016 – ***a 90 percent increase in just seven years.*** Of this 61.6 million m^3/day of new capacity, 77 percent or 47.2 million m^3/day will be seawater desalination. The rest will be desalination of brackish water and low salinity waters.[4]

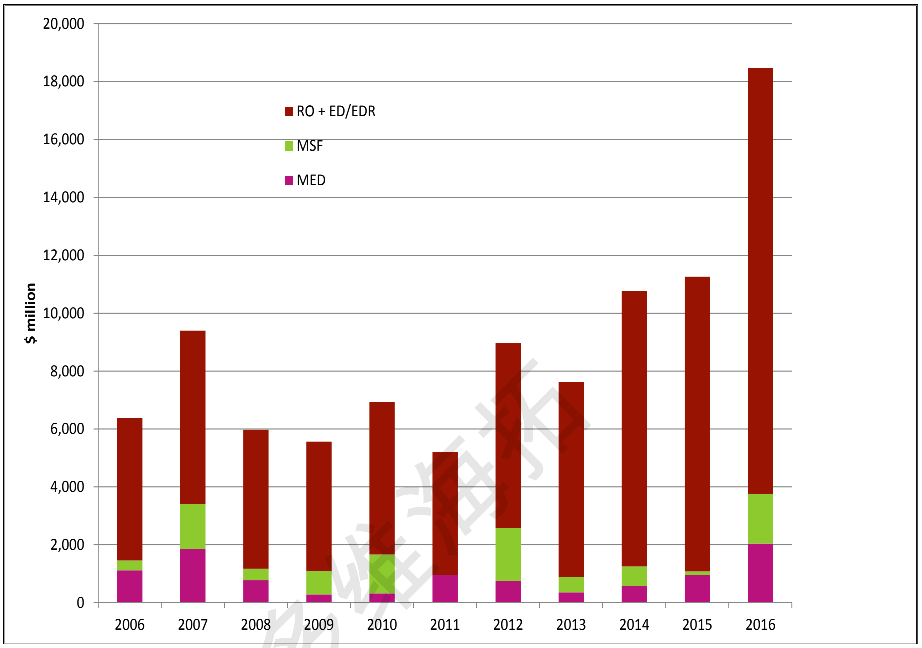
[4] Desal Markets 2010, p. iv.

Capital expenditures on new desalination capacity are expected to top $10 billion in 2013, and grow to over $18 billion by 2016. Annual operating costs are expected to exceed $8.7 billion in 2013, with more than 45 percent of that total spent on electricity and thermal energy.



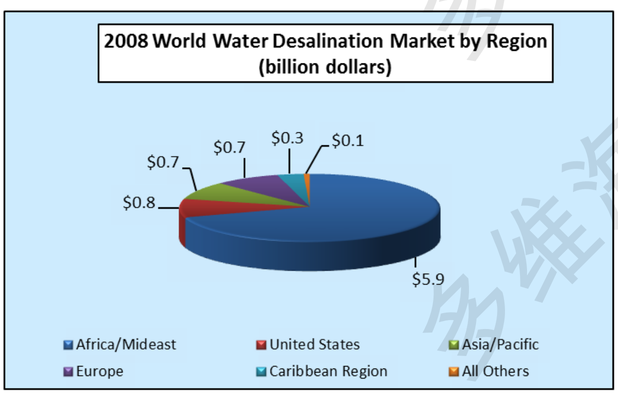
As shown in the above graph and in the breakouts by process and feed water type below, seawater reverse osmosis (SWRO) is expected to account for more than 70 percent of the capital expenditures on new desalination plants by 2016. Other types of plants are Multi-Stage Flash (“MSF”) and Multi-Effect Distillation (“MED”).

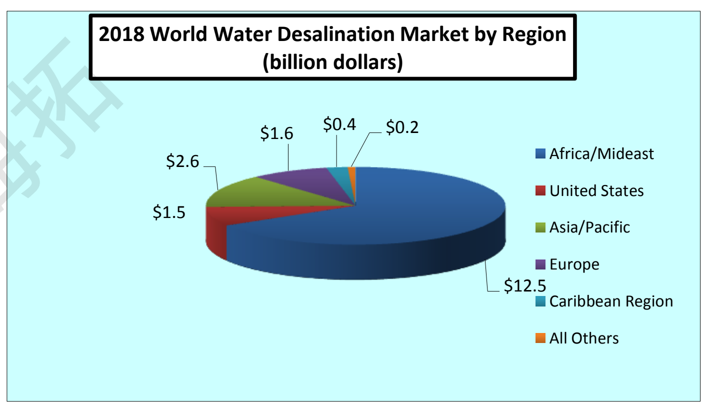




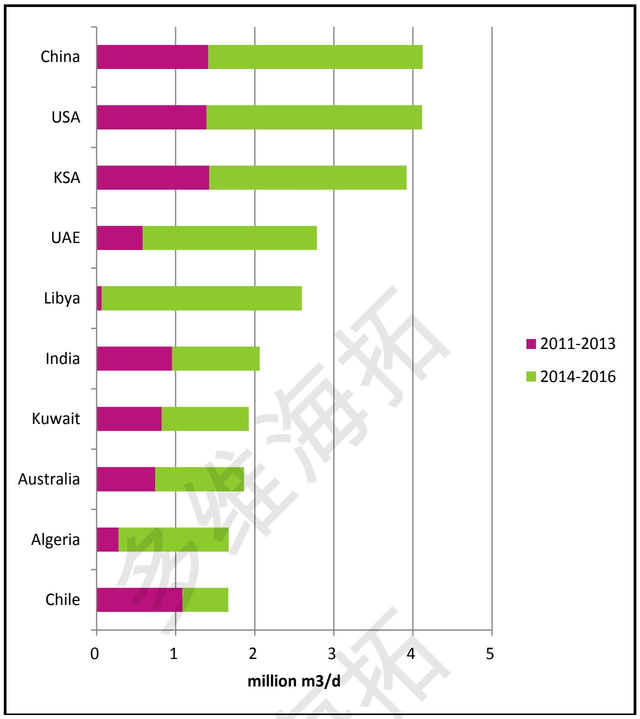
Geographic Concentrations of the Market

As shown in the chart below, the Middle East and Africa have historically dominated the market for new desalination capacity, and they are expected to continue this dominance through 2018, as the Gulf region countries have few alternatives to desalination. Other regions, particularly Asia/Pacific and the United States, are expected to see substantial growth.





The below chart shows that five countries are expected to see large additions to their desalination capacity in the 2013-2016 timeframe – China, the United States, Saudi Arabia (KSA), United Arab Emirates (UAE) and Libya. There are many more countries with active and growing desalination markets. The major database of desalination projects tracks projects in more than 50 countries.



In the table above, Trevi is currently either trialing or entering trials in China (industrial re-use), the USA (Oil and municipal waste water), KSA, UAE and Kuwait (all sea water desal). China will be the most rapidly growing market, with upside in the business plan not fully disclosed due to rapidly changing issues. Saltwater desalination in the United States has been slow to take off primarily due to concerns about the environmental impacts of new plants, the long permitting processes (particularly in California) and water utilities not being convinced of the economic benefits of desalination. The U.S. is a very large market for desalination; it is largely concentrated in California, Florida and Texas. Texas is expected to become the leader in growth in the near future for brackish water, with California a close second. Droughts in California and Texas are expected to continue through 2018.

Market Segments

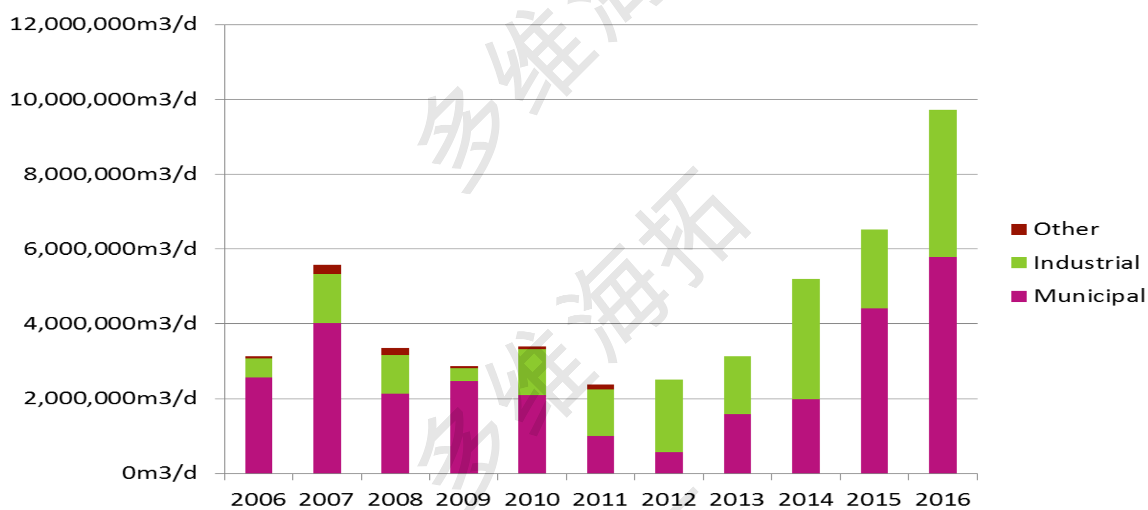
In addition to geographic segmentation, the desalination market can also be divided up by the type of feed water being treated, the ownership and application of the plant, and the size of the plant.

Feed Water Types

The two principal types of feed water are seawater and brackish water. Seawater typically has a total dissolved solids concentration of 35,000 mg/l. Brackish water is water containing low concentrations of soluble salts, usually between 1,000 and 10,000 mg/l. Seawater desalination is by far the bigger market segment, accounting for 77 percent of the forecasted new capacity during the 2010-2016 periods.

Plant Ownership

In terms of plant ownership, the two biggest sectors are municipal and industrial. Industrial plants are further broken down by industry, with the largest ones being mining, power, and oil and gas refining. The municipal sector has traditionally been larger than industrial, but industrial has been stronger during the 2010-12 period. The financial crisis hit the municipal sector harder, but both are expected to be strong going forward.



[Source: Desalination Market Update Sept. 25, 2012, Global Water Intelligence]

Plant Size

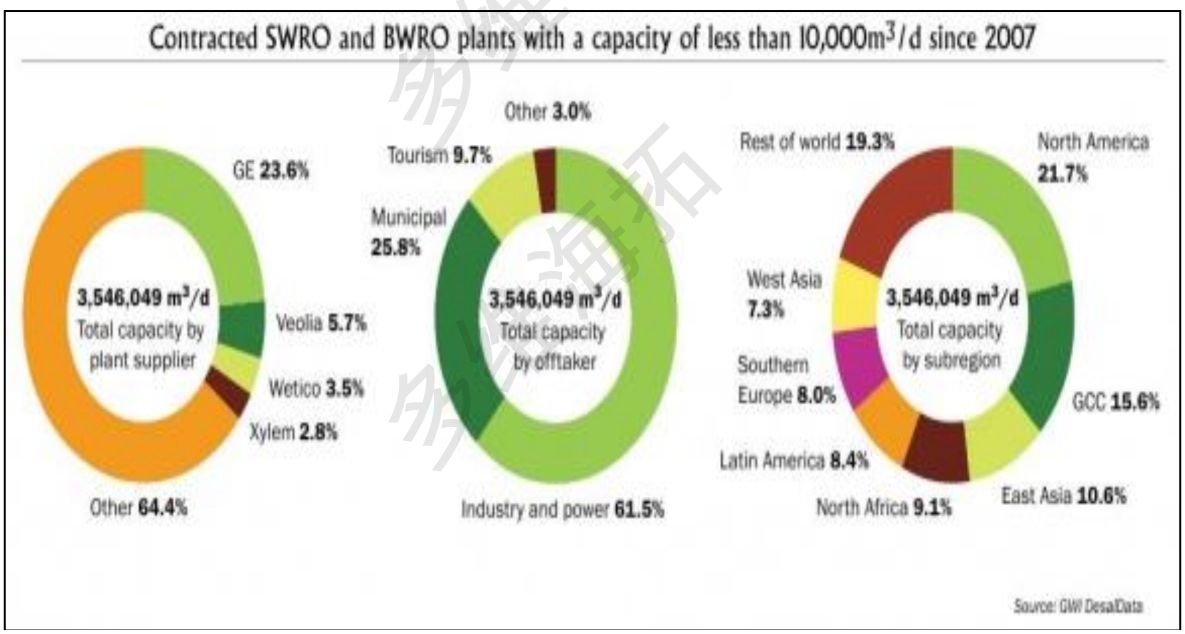
Desalination plants range in size from 100 m^3/day to greater than 550,000 m^3/day on the large end. Here are the four major categories used by industry analysts:

- Large: $\geq$ 50,000 m^3/day
- Medium: 10,000-49,999 m^3/day
- Small-Medium: 1,000-9,999 m^3/day
- Small: < 1,000 m^3/day

Given the forecasted growth in desalination plants, even the small-medium segment is expected to see significant growth in the next several years for seawater reverse osmosis, growing from $400 million/year to more than $1 billion/year, as shown below.

[Source: Desalination Market Update Nov. 29, 2012, Global Water Intelligence]

The following chart also shows that for just one year, 2007, the total contracted seawater and brackish water reverse osmosis (SWRO and BWRO, respectively) plants with capacity less than 10,000 m^3/day amounted to more than $3.5 billion of investment. These plants are spread around the world and are used for a variety of purposes. While GE was the largest supplier, there are many other suppliers as well.



4. Competitive Analysis

Competitors in Forward Osmosis (FO)

There are two components to a working forward osmosis system: a FO membrane and a draw solute with a method of separating the pure water from the draw solute. In order to compete with RO the entire process must be more energy efficient than RO and ***not much more expensive*** to build.

When looking at the competition in the FO market, there are two categories:

1) Companies who have a working FO technology. This means they have a FO membrane, a draw solute and a process to separate the draw solute from water. Companies that fall into this category are: Hydration Innovation Technology (HTI), ModernWater Ltd. and Oasys Water, Inc. Hydration Technologies recently filed for bankruptcy re-organization. The table below summarizes the competitors in FO.

Company	Trevi Systems	Oasys	HTI	Modern Water	Porifera	AquaPorin
Proprietary Draw?	Yes	Yes	No	No	No	No
Proprietary Membrane	Yes	Yes	Yes	No	Yes	Yes
Thermal Energy	Yes	Yes	No	No	No	No
Electrical Energy Savings?	50% Reduction. (Navy) Low or High TDS	35% High TDS (Permian) No Low TDS	No	No	No	No
High Salinity Water	Yes	Yes	No	No	No	No
Potable Water	Yes	No	Yes	Yes	Yes	?
Pilot Scale Demo?	US Navy, Masdar, Kuwait	Permian Basin, China	Many	Oman	No	No
Last Round Valuation & Size	\$5mm on \$38mm Jun 2014	\$20mm on \$100mm Dec 2014	Out of Business	\$10mm on \$70mm March 2014	-	\$10mm on \$100mm raise Dec 2014

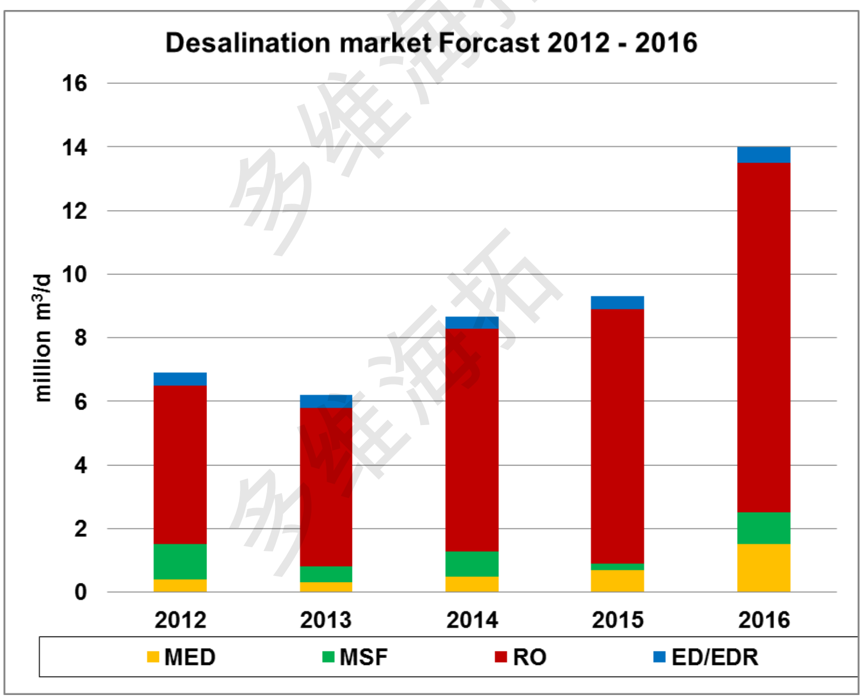
2) Companies or individuals who have filed for intellectual property protection. These are comprised of include less than ten groups, none of whom have systems similar to Trevi's FO system.

Trevi has researched these potential competitors and will provide additional information upon request.

If and when these potential competitors will produce energy efficient commercial FO process for desalting water is unknown. Since this has been an active area of research for more than 15 years, we believe that Trevi has a significant head start on its potential competitors.

Competition - Other Desalination Technologies

Other desalination technologies compete with RO and FO, and FO must demonstrate that it has advantages over these other technologies. Desalination is broken down into two main groups, thermal and membrane desalination. These are then broken down into subgroups – Multi-stage flash (MSF), Multi-effect Distillation (MED), Mechanical Vapor Compression (MVC) and Thermal Vapor Compression (TVC), Electro-dialysis (ED), and Electro-dialysis Reversal (EDR). These technologies are all energy intensive. As the graphs and table below illustrate, their market share is small compared with RO.



[Source: DesalData Market Outlook 2010 -2016 Christopher Gasson, March 6, 2012.]

Country	MSF	MED	VC	RO	ED	Total	%
Saudi Arabia	2700		50	1000	94	3844	48.8
USA	50	50	130	1600	280	2110	26.8
Kuwait	350			50		400	5.1
Libya	400			130	67	597	7.6
Spain	56		40	230	45	371	4.7
Italy	200		75	40	50	365	4.6
Algeria	60		30	80	16	186	2.4
Total	3816	50	325	3130	552	7873	100
Percent (%)	48.5	0.6	4.1	39.8	7.0	100	

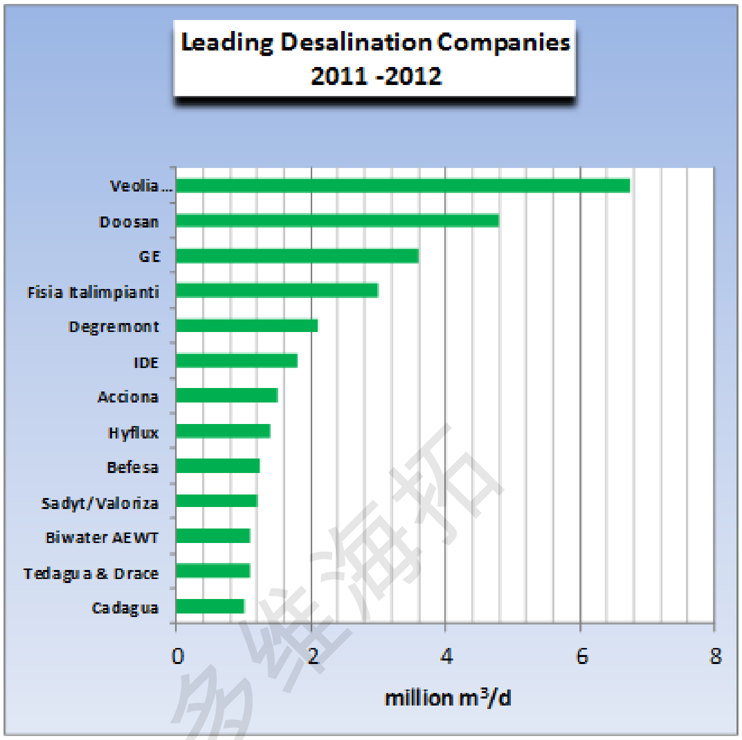
[Source: Frederick, J., May 9, 2010, "Desalination: Can it be greenhouse gas free and cost competitive," Yale School of Environmental Studies, Master's Thesis.]

Engineering/Procurement/Construction (EPC) Companies

The recession in the desalination market has increased competition. There were twenty desalters chasing half of the business in 2011. The big companies are:

- Veolia: offers a complete suite of desalination technologies for municipal and industrial applications.
- IDE: an aggressive competitor in the sector.
- Acciona: green distillation and tough projects.
- Degremont: global reach and interesting pretreatment claims.
- Doosan: has grown through aggressive project acquisition in the Middle East.
- Hyflux: the lowest cost Build, Operate, Transfer (BOT) developer in the Far East region, leveraging inexpensive financing options from the Singapore government.
- Fisia: master developer of multi-stage Flash Systems.
- Abengoa Water: best at BOT's in tough conditions – recently filed for bankruptcy protection.
- GE Water: a leader in industrial and small seawater and brackish water systems (1,000 m^3/day to 50,000 m^3/d).

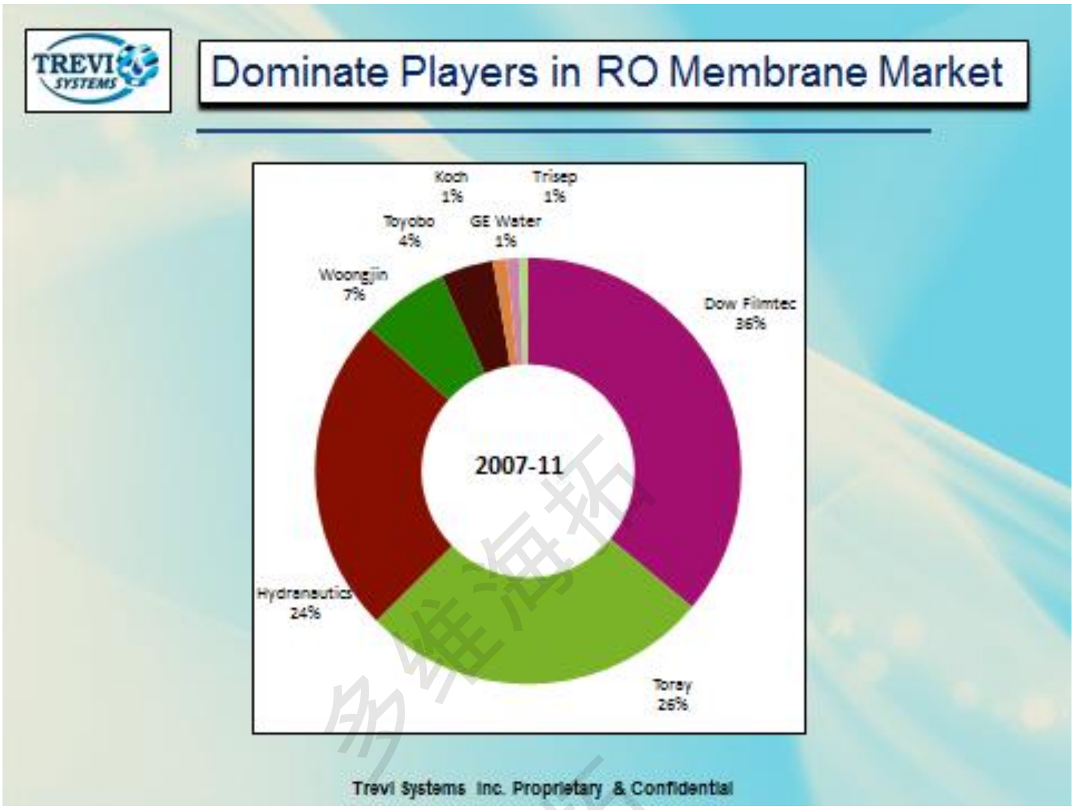
Below are listed the leading EPC desalination companies for 2011 – 2012.



[Source: Desal Data, March 6, 2012]

Key Players in RO Membrane Market

Trevi looks to the manufacturers of RO membranes to become manufacturers of FO membranes, as the manufacturing capabilities are similar. There is already growing evidence of this crossover effect. Trevi has had discussions with a number of RO membrane manufacturers who are either developing FO membranes or intending to do so; they include Dow Water Solutions, Toyobo, Toray, Woongjin and Nitto Denko/Hydranautics.



TREVI SYSTEMS
Dominate Players in RO Membrane Market
Koch 1%
Trisep 1%
Toyobo 4%
GE Water 1%
Woongjin 7%
Dow Filmtec 36%
2007-11
Hydranautics 24%
Toray 26%
Trevi Systems Inc. Proprietary & Confidential

5. Market Positioning

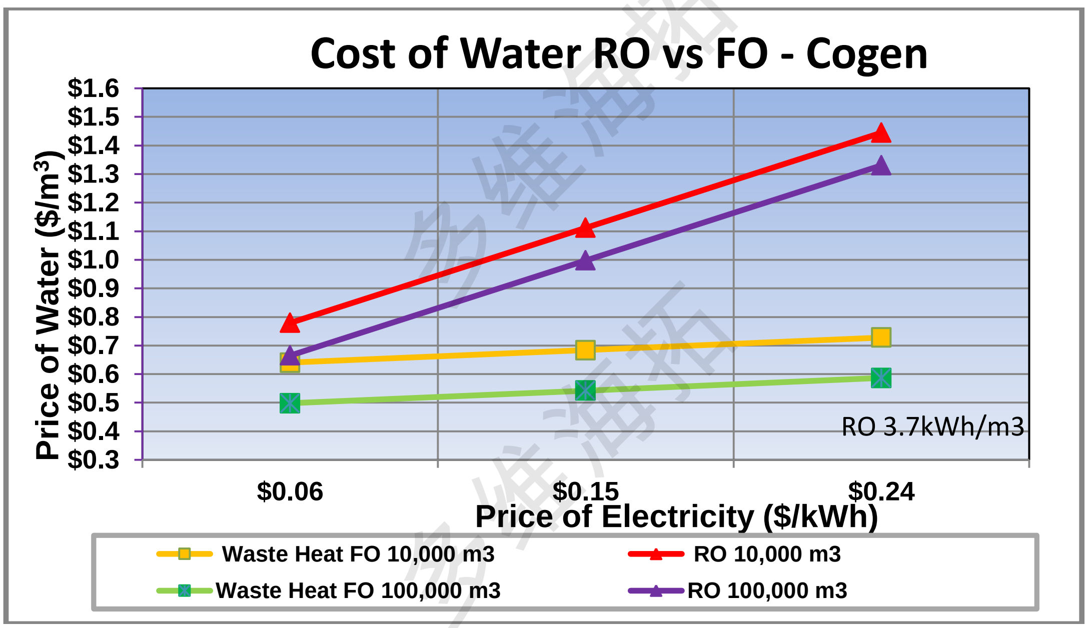
Trevi's FO process is four times more energy efficient when compared with other desalination technologies. This means that the FO system is much less expensive to operate, and therefore yields a lower cost of water, and a much higher return on investment (ROI) compared with an RO system.

Comparing Cost of Water Using FO versus RO

The chart below compares the cost of water ($/m^3) for a 10,000 m^3/day system at different prices for electricity:

- At a relatively low electricity cost of $0.06/kWh, the cost of water using FO is $0.65/m^3, and the cost of water using RO is $0.78/ m^3 – so FO is 16.7% less expensive.
- At a relatively high electricity cost of $0.24/kWh, the cost of water using FO is $0.73/m^3, and the cost of water using RO is $1.43/ m^3 – so FO is 49% less expensive.

So FO has a significantly lower cost of water compared to RO, ranging from 16.7% to 49%, increasing as the cost of electricity increases since FO is much more energy efficient. When comparing FO to RO at the larger plant size of 100,000 m^3/day, similar results are achieved. (Cogen's thermal energy is valued here at $0.00011 per megajoule.)

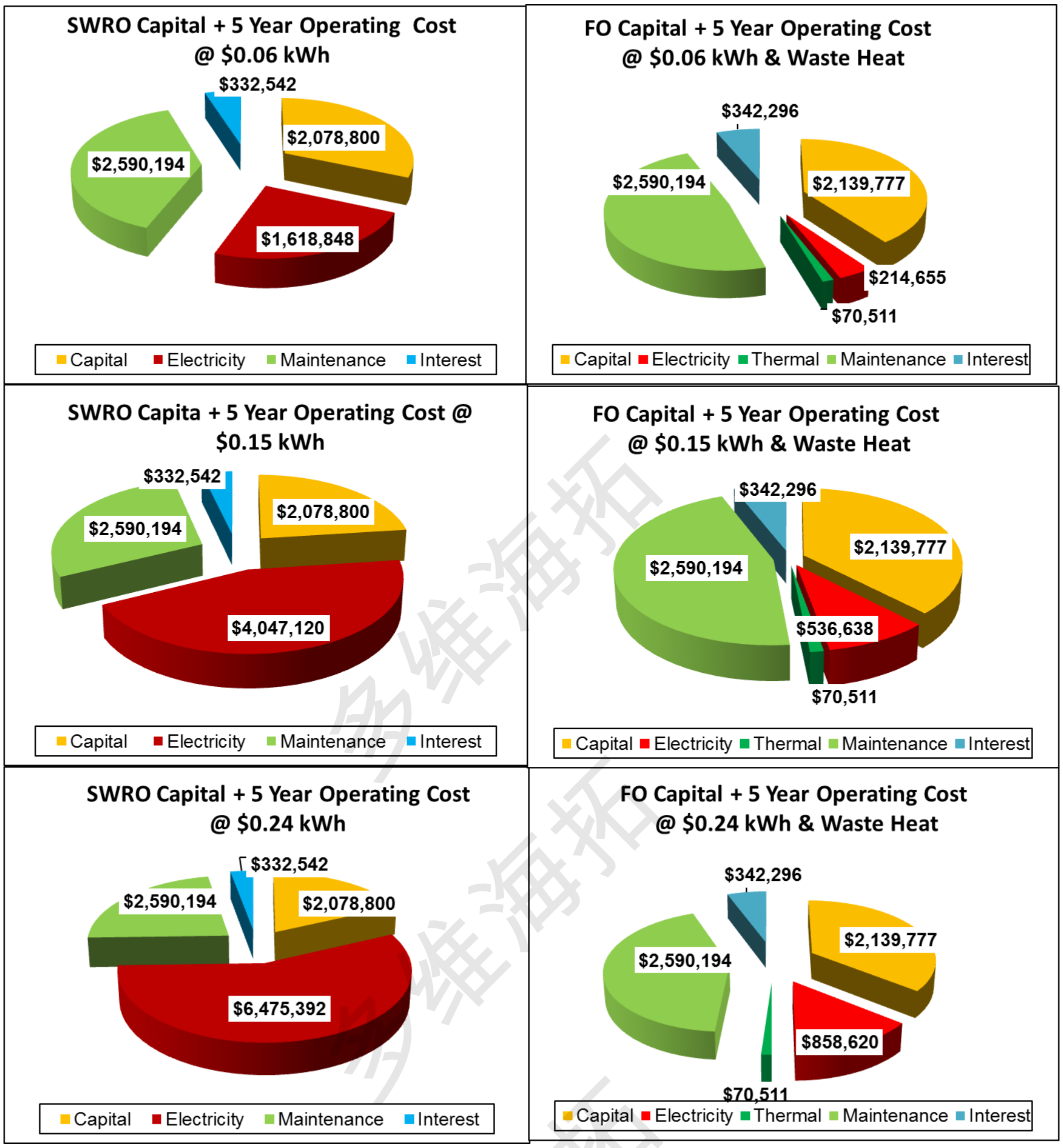


Capital Cost plus 5 Year Operating Cost Comparison FO vs. RO

While the estimated capital cost for a large, 100,000 m^3/day seawater desalination system using FO is slightly more expensive than a system using RO, the total cost of the FO system over the operating lifetime is substantially lower due to the large energy savings. We estimate that the capital cost for a FO system of this size is 6.6% more than for a RO system, due predominantly to the cost of the heat exchangers in the FO system to recover the waste heat. RO systems operating lifetime varies between 5 years for small systems to 30 years for very large systems.

However, as the charts below illustrate, the electrical cost for RO for each category of electricity cost ($0.06/kWh, $0.15/kWh and $0.24/kWh) far exceeds the electrical costs for FO. The electrical costs for FO are almost constant over the entire price range of electricity. This translates into a lower total cost of operating the FO system when the total capital and operating costs are considered. As a result, the cost of water is less with the FO system, and the return on investment (ROI) is greater with the FO system.

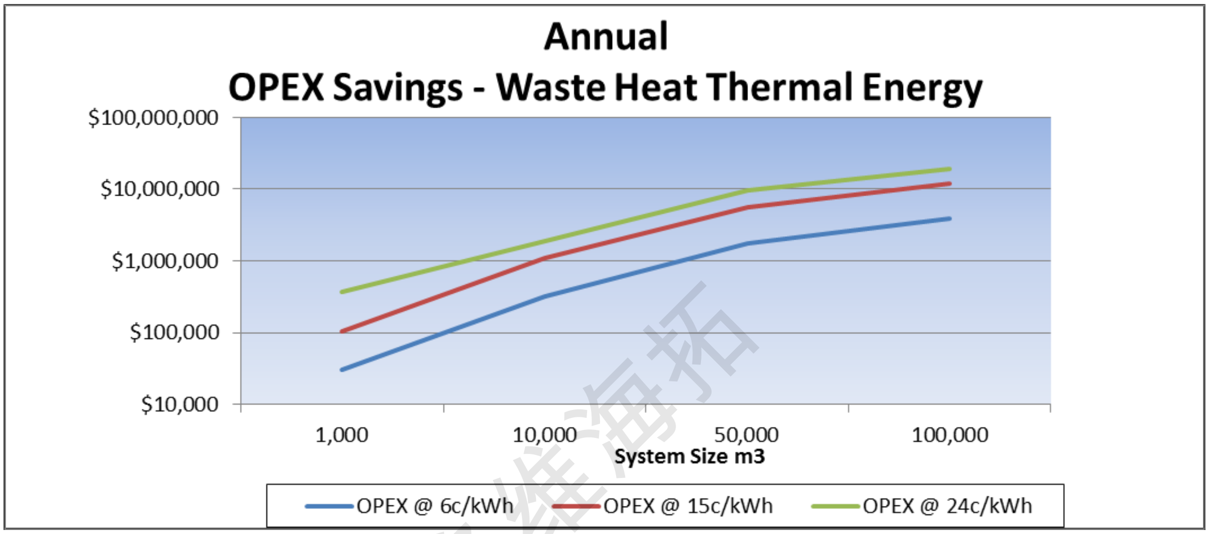
For example, as shown below for a small 1000m^3/day system, when the cost of electricity is $0.24/kWh, the total cost of the FO system over 5 years is $6.0 million, and the total cost of the RO system over 5 years is $11.5 million. The FO system is approximately ½ the cost of the RO system, which includes a relatively short amortization period of 5 years. Larger plants with interest payments over 20 years will see greater savings (since the amortization period may be reduced due to higher cash flow), a reduction of 2-3 times the cost over a comparable RO plant is not unexpected.



Small 1000m^3/day RO system vs. FO system total cost of ownership with 5 year payback schedule

Operating Cost Savings per Capacity

The graph below is an interesting look at the operating cost (OPEX) savings using Trevi's waste heat thermal energy process.



6. Marketing, Sales and Distribution

We will focus initially on small systems in the industrial waste water sector due to lower barriers to entry and the potential for faster sales ramp up. We will still take the necessary steps to demonstrate drinking water systems, but recognize the longer ramp up period to making commercial sales in that area.

- Industrial skid mounted systems allow us to build these locally and ship globally, taking advantage of reduced capital cost as a result of volume purchase agreements.
- These skid mounted systems are limited by the size of a container (or two), and typically range in size from 100m^3/day to 5000m^3/day.
- Potential sources of revenues – we have identified four, described in the Executive Summary, of which 3 are applicable to skid mounted systems.
- This market is highly fragmented and relies on distributors and engineering consulting companies to design and procure systems. Trevi will rely heavily on the "big 4" consulting companies as well as work with smaller regional companies, in particular in SE Asia. In addition, while pilot testing continued throughout 2014/15, Trevi identified several distributors that have specialization in specific industrial applications such as (a) food and beverage (b) textiles (c) municipal refuse incinerators (d) auto parts manufacturers and (e) electronics sub-assembly manufacturers.
- Systems may be built in 2 or 3 locations around the globe. Initially because of internal management constraints, Trevi will use a single local sub-contractor to build its skids in

the USA. Thereafter Trevi will establish a contract manufacturer in SE Asia, one in the ME and perhaps finally one in Europe. These may be shipped in containers to location. The local distributor will be responsible (together with the consulting engineer if involved) to install and commission the system.

- During 2016 Trevi will design a family of 3-4 system sizes, using common components as much as possible, to allow the local contract manufacturer time to learn the assembly steps. One or two pilot systems that Trevi will ship during 2015/16 will be built by the contract manufacturer during this "learning" phase. During 2015 Trevi refined the design, in particular doing final membrane selection, cost optimization and pre-treatment design.
- Sales offices will be established once a number of skids have been sold in a specific region such as SE Asia and the ME. Initially, all sales will be driven out of Trevi's headquarters in California until sales volume dictates and justifies the opening of the sales office.

Market Entry Strategy

To establish credibility as a vendor of water purification equipment, Trevi will initially target small systems sales (defined as below 5000m^3/day) in the industrial waste water sector. These systems offer a faster ramp up period to sales since they do not involve producing drinking water for public consumption. Potable water systems, whether desalination or other, present a longer gestation period before early sales due to the need for various testing agencies to perform two to three years of testing prior to being approved. China will be the first priority in a focused sales effort of its smaller industrial systems. Contract manufacturing will be established within China to service this market. A joint venture will probably be formed to fully exploit this large and growing market segment.

Sales

The challenge for Trevi will be to sell industrial systems at a premium to existing RO systems that have had the benefit of 30+ years of cost reduction. Given the immaturity of the FO technology, it will be difficult to compete on price because of (a) low volume purchasing power (b) expensive FO membranes (c) early adopter barriers (age of company, financial stability etc.). In order not to compete head to head with mature RO technology, Trevi will target the market segment that cannot be serviced by RO, the very high TDS market. This segment is rapidly growing due to the demand for zero liquid discharge, requiring water to desalt at levels unattainable by RO. The system will be priced at a premium over RO systems as there is no alternative to FO in this segment except for crystallizers, this premium calculated as 1- 2 years of projected energy saving. Additional downstream revenue will be generated by the sale of membranes and draw solution as will be detailed later.

Distribution

Systems at 100m^3/day, 200m^3/day, 500m^3/day and 5000m^3/day will be built by contract manufacturers at various locations around the globe. The heavy weight of these systems imposes a shipping penalty which can be significant at the small sizes, hence a geographically distributed manufacturing model is desirable. Systems at these sizes may be readily packaged into 40ft containers and shipped to locations where they will remain in the container, which also functions as the weatherproof enclosure.

Sources of Income

In all models, whether they are direct sales, utility owned or BOO/BOT, Trevi will generate 5 sources of income.

(1) The bi-annual sale (may be adjusted depending on water conditions etc.) of draw solution for all systems. Since Trevi has the draw solution manufactured for it, being able to aggregate volume purchasing with its supplier(s) will result in a lower price for its customers.

(2) Capital sale of skids mounted systems, for small systems the capital cost will include an energy savings premium 'bundled' into the upfront sales price, which will be based on what is learned during the consulting phase.

(3) For utility sales, a fixed "plant license" which is a percentage of CAPEX and an optional further annual license fee will be included in the sale to the utility, this license assessed as a percentage of the energy savings per year split into an upfront component and an annual portion. The period is necessarily shorter than the plant life to simplify later year collection issues and the upfront versus annual fee adjusted depending on the credit risk.

(4) Sale of components: there are at least three custom components in the FO system,

- (a) membranes
- (b) heat exchangers
- (c) instrumentation.

Trevi may or may not be able to control the FO membrane market depending on the success independent membrane suppliers have in designing FO membranes suitable for use with Trevi's FO system. At present Trevi's membrane requirements are being shared with a select few membrane suppliers to try and stimulate the market. Once a functioning membrane has been identified, Trevi will attempt to become the preferred supplier of such. Trevi is also developing low cost plastic heat exchangers for use in the system. These are optimized for our draw solution properties. They are being patented and will be manufactured exclusively for Trevi. These may be used as another very significant source of revenue, the heat exchangers contributing in excess of 10% of the total system cost and alternative off the shelf units being significantly more expensive. The third item is the custom control software and refractive index sensors that Trevi has developed. An annual software license and sale of the RI sensors is also possible, however the income will be relatively small.

(5) Service revenue. Since these systems are relatively new on the market, there are no experienced and trained operators and Trevi will be able to charge a small premium for the ongoing maintenance and servicing of these systems. This includes, after the first year which is covered by warranty, of a 10-12% maintenance fee.

General Marketing

Trade shows in the water industry are well developed and regionalized. The US has over 30 shows annually and most countries have 2-3 shows dedicated to water issues each year. Trevi will seek to build industry awareness by exhibiting at a number of the high profile trade shows. Trevi has already exhibited at WEFTEC in New Orleans, as well as attending several membrane specific trade shows and has presented papers and exhibited at several more during 2015. Since FO is a relatively new and exciting field with rapid technology developments occurring, procuring speaking opportunities is relatively easy and Trevi has submitted abstracts to a number of speaking events already. Trevi will have to budget for 4-6 shows per year simply to meet demand to demonstrate its technology. A small scale prototype system has been built to show a simplified version of the system to potential customers at these trade shows. Marketing brochures and collateral will be held to a minimum since technical marketing through the consulting engineers will be the best way to get the product in front of customers. Together with a few regional sales offices and local distributors we should be able to build out the marketing chain without a large direct sales force.

5. Sales Approach and Proposition

Trevi does not intend to build out a large sales force. Instead we will use our network of consulting engineers and distributors to generate opportunities for our early skid mounted systems. Our approach will be to:

- Hire a direct sales force of (1) two sales executives, one for each of our two initial focus regions, (2) marketing support staff, one in technical marketing and the other as sales support and (3) product line specialist(s) who can review order submission as well as verify system suitability and achievable energy savings.

- In the near term, engineering support will be required from our CSO to review systems for suitability and to audit waste heat energy sources and water quality issues.

- The sales cycle for small systems is expected to be relatively short, averaging around 120 days. It is important to note that these systems are custom designed and manufactured to the customer's specifications and that every system is unique to some extent (many varying only in their pre-treatment options. For larger systems, up to 10,000m^3/day, the sales cycle can last at least 1-2 years. For even larger systems it is not uncommon for a sales cycle to last 3-7 years depending on the region.

- None of the early target customers will be desalination customers because of the longer lead time for potable water certification. Starting in late 2016 or 2017, we will start selling desalination systems to resort hotels and small islands for example in the Caribbean and Alaska. These desalination systems will target islands with urgent needs and high energy costs, with some islands experiencing costs of over $0.50/kWh for electricity.

- Customers will be selected from a matrix with the following variables: (1) high cost of electricity (2) inexpensive or readily available form of waste heat (steam or diesel generator) (3) system size within Trevi's capability, (4) location of a distributor able to support the sale (5) ability to accurately quantify the savings to the customer based on sampled water parameters.

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8. Risks

Membranes

A risk to the success of Trevi's FO process is the development and manufacture of a FO membrane designed specifically for Trevi's draw solute. Trevi's research has identified the specific type of membrane that will work well with our draw solute and optimize membrane flux, which is the rate at which water molecules will travel through the membrane (measured in liters of water per square meter of membrane per hour). The goal is an FO membrane that will be competitive with RO membranes. Currently, we are working with membrane experts to develop the optimal membrane. In addition, we have built our own membrane research facility, capable of spinning hollow fiber membranes and are currently looking at possible contract manufacturers to enable large scale production of our membranes.

Draw Solute

The draw solute developed by Trevi functions well, but there are some potential improvements that would make our FO system perform even better. This is more of an opportunity to extend the advantages of our FO system than a risk. We are currently working with experts to test improved versions of our draw solute. The improvements have the potential to lower the overall system cost by 10% and lower the electrical energy consumption an additional 15-20%. Several new ones are also in development at Trevi, and we anticipate that this will be an active area of development in order to maintain our competitive advantage. We want to be known as the draw solution 'king' in the industry and have built two large scale polymer synthesis laboratories.

Scaling

We do not anticipate any problems in scaling up our FO process to larger capacities. In fact, the system will become more energy efficient when we scale up because it will take advantage of the better energy efficiencies of larger pumps and heat exchangers. This is demonstrated with the first 50 m^3/day pilot system in the UAE. We will be working with engineering consultants to pinpoint the scaling efficiencies of larger systems. A 10,000 m^3/d Trevi FO system could consume just 0.6kWh/m^3. Currently, the best that RO can achieve without pretreatment is 2.6kWh/m^3. This makes the Trevi FO process 4 times more energy efficient than RO.

Market Acceptance

There is likely to be a demonstration period that this FO process will have to go through before it is totally accepted as a reliable technology for desalting water. RO went through this process for years before it was totally accepted as a mature technology. For the most conservative prospective customers for FO this period could last up to 10 years. Trevi will mitigate this risk by starting with installing smaller systems (100 - 500 m^3/day) with customers interested in early adoption of the FO process for its many benefits. Trevi will next move to 1,000 m^3/day systems and then move up the ladder until complete acceptance is achieved with systems of more than 100,000 m^3/day capacity.

Intellectual Property

Trevi Systems currently has a U.S. patent granted covers both the FO process and the draw solution. Trevi has also filed five provisional patent applications to cover other aspects of the FO process.

Although we have done extensive research and do not know of any at this time, it is possible that another company has a provisional patent application with technology similar to ours.

Competition

In time we expect other companies will offer FO systems for salt water, brackish water, and industrial and waste water applications. However, because Trevi is the first company to introduce energy efficient process for desalting water, Trevi expects to maintain a leading position in the desalination marketplace, provided it has the needed funding.

9. Financials

As of January 2016, Trevi Systems has raised $11 million in Series A, B and C Preferred Stock and an additional $3.5 million in Bridge Debt that could convert into the Series D Preferred Stock. These funds have been used to develop, fabricate and ship the 5 systems that are currently in testing around the world, build out a 20,000 sq. ft. research facility and hired a small team of 30.

Trevi Systems is raising $30 million in Series D Preferred Stock in order to build and test systems ranging in size from 100m^3/day to 5,000m^3/day, through the end of 2017. These funds will also be used to hire key staff including a VP of Engineering, process, test and mechanical engineers, establish a sales office in the ME and hire product line marketing and sales staff, retain a contract manufacturer, and hire additional administrative staff. Approximately $100,000 has been set aside through the end of 2016 for patent work. Funds will also be used for membrane development and other working capital requirements.

The Company currently has borrowed the maximum amount of $1 million under its working capital bank line. In addition, Trevi Systems plans to obtain a capital equipment lease line in 2016.

Customer List.

The following is a breakdown by customer (certain names excluded since we are under NDA with them).

CALENDAR YEAR: 2016				
USDA Pilot System	Jan	$	1,150,000	2000 m^3/d
Mosquito & Nekka Island System	April	$	850,000	1000m^3/d
US Navy (Grant Phase II)	July	$	1,700,000	500 m^3/d
JD Farms Brackish System	August	$	1,200,000	1500 m^3/d
Oman Sys	Sept	$	750,000	2000 m^3/d
Petro China ZLD system (2)	Nov	$	4,350,000	500 m^3/d
Budapha Univ Project Phase 1	Dec	$	700,000	3000 m^3/d
TOTAL BOOKINGS - $		**$**	**10,700,000**	
TOTAL - UNITS				**9**

CALENDAR YEAR - 2017				
Masdar Pacific Island Foundation (5 sys)	Jan	$	2,800,000	100 m^3/d
China Flue Gas Desalination Beijing Hldg's (2)	Feb	$	6,150,000	8000 m^3/d
JD Farms USDA (2)	March	$	2,650,000	10,000 m^3/d
China Powerplant Wastewater Re-use (3)	April	$	8,500,000	20,000 m^3/d
Thailand - Burapha 1000m3/day	May	$	1,700,000	2000m^3/d
leprino Industrial Food Proc. (3)	July	$	3,450,000	2000m^3/d
Kuwait Module 2000m3/day	Aug	$	7,650,000	5000 m^3/d
US Navy - Guam 1000m3/d	Sept	$	3,300,000	4,000 m^3/d
Masdar Module Scale 1000m3/day	Nov	$	3,300,000	5,000 m^3/d
TOTAL BOOKINGS - $		**$**	**39,500,000**	
TOTAL - UNITS				**19**

Appendix A: Management, Staffing Plan and Resumes

Management

Founders of Trevi Systems
John Webley, Chief Executive Officer
Gary Carmignani, Secretary and Chief Science Officer

Brief resumes are included below for the founders of Trevi.

Board of Directors
John Webley
Gary Carmignani
Tom Birdsall, Green Venture Capital
Donald Green, Green Venture Capital

Resumes:

John Webley
CEO

With his two co-founders, John grew Advanced Fiber Communications to become an 800-person team with a market capitalization of $6 billion by the time he left the company in 1999. His next venture was founding Turin Networks, an optical networking company backed by Sequoia, Baker Capital, Doll Capital, and numerous other venture capital funds. Six years later, when he retired as CEO, Turin was a $50 million per year business with more than 250 employees. After retiring from Turin and its subsequent sale to Dell for $700mm, John has been involved in a board capacity with numerous startups, including Red Condor, Clovis, SecurTrack, and MyJambi. After serving as CEO of PAX Streamline (a Khosla Ventures-funded cleantech company working on energy efficiency devices), John founded Innovative Labs, LLC to commercialize early stage green technologies. Together with Gary Carmignani, John founded Trevi Systems to commercialize a new water purification technology they had developed. John's telecommunications background extends over 25 years with two of the top selling telecom products globally. John received a B.S.E.E. and an M.S.E.E. from the University of Stellenbosch, South Africa in 1985 and an honorary Doctorate of Science from Sonoma State University.

Gary Carmignani
Chief Science Officer

Gary Carmignani has over forty years of experience in both the analysis of pollutants in the marine environment as well as the development of water purification technologies. He holds five U.S. patents on the filtration of pollutants from water, photocatalytic air and water purification, and Advanced Oxidation Process for removing Total Organic Carbon in ultrapure water. He has also authored seven scientific publications, and two publications in trade journals. He has managed four scientific research laboratories. At the University of California, Berkeley, he was part of an Antarctic expedition to examine the movement of DDT and PCB through the food chain. At Syntex Corporation he consulted for five years as a water quality scientist for their aquaculture project. At Data Consulting, a software company he started, he developed the first software to computerize the wine industry. All major wineries worldwide now use this software, which has become the standard of the industry. With Titan Technologies LLP, of which he was the founder, he received $2,000,000 in grant money to develop a technology to purify water for the semiconductor industry. An Advanced Oxidation Process was developed that reduced Total Organic Carbon to less than 1 part per billion. This technology has been installed in 26 semiconductor fabrication plants around the world. Intel exclusively uses this technology to make their chips. Mr. Carmignani has an MS in Marine Biology and a BA in economics.

Appendix B: Financials

TREVI SYSTEMS, INC.
STATEMENTS OF PROFIT AND LOSS
UNAUDITED

	YEAR ENDED 12/31/2011	YEAR ENDED 12/31/2012	YEAR ENDED 12/31/2013	YEAR ENDED 12/31/2014	YEAR ENDED 12/31/2015
PRODUCT REVENUE	$ -	$ -	$ -	$ -	$ 39,992
DEVELOPMENT & OTHER REVENUE	-	-	6,563	520,332	1,022,664
GOVERNMENT GRANTS	-	-	-	55,553	611,555
TOTAL REVENUE	-	-	6,563	575,885	1,674,211
TOTAL COST OF SALES (MFG OVERHEAD)	-	-	122,557	152,837	224,635
GROSS MARGIN	-	-	(115,994)	423,048	1,449,576
OPERATING EXPENSES:					
ENGINEERING	211,853	768,741	1,934,024	2,456,042	3,955,277
MARKETING	-	62,131	318,826	327,026	96,419
GENERAL & ADMINISTRATIVE	74,612	131,503	433,242	741,827	1,130,609
TOTAL OPERATING EXPENSES	286,465	962,375	2,686,092	3,524,895	5,182,305
OPERATING INCOME (LOSS)	(286,465)	(962,375)	(2,802,086)	(3,101,847)	(3,732,729)
NON-OPERATING INCOME (EXPENSE)	4	(3,182)	(156,247)	(37,273)	(142,394)
INCOME (LOSS) BEFORE TAXES	(286,461)	(965,557)	(2,958,333)	(3,139,120)	(3,875,123)
INCOME TAXES		800	800	800	800
NET INCOME (LOSS)	**$ (286,461)**	**$ (966,357)**	**$ (2,959,133)**	**($3,139,920)**	**$ (3,875,923)**

Trevi Systems: Business Plan

TREVI SYSTEMS, INC.
BALANCE SHEETS
UNAUDITED
PERIOD ENDED:

	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015
ASSETS:					
CASH	$267,482	$167,717	$304,135	$2,074,979	$ 148,570
ACCOUNTS RECEIVABLE, NET		1,550	839	81,376	197,408
INVENTORY, NET			38,587	1,082,785	143,695
DEFERRED COGS INVENTORY SHORT-TERM					370,853
PREPAIDS & OTHER ASSETS	1,233	232	12,035	161,763	74,892
TOTAL CURRENT ASSETS	268,715	169,499	355,596	3,470,424	935,418
NET FIXED ASSETS	15,729	92,140	307,879	612,238	984,490
DEFERRED COGS INVENTORY LONG-TERM					2,456,420
LONG-TERM ASSETS	3,062	3,062	9,783	145,781	174,561
TOTAL ASSETS	$287,506	$264,701	$673,258	$4,158,922	$ 4,550,889
LIABILITIES & STOCKHOLDERS EQUITY:					
ACCOUNTS PAYABLE & ACCRUED LIABILITIES	$22,301	$91,959	$446,930	$534,961	$ 811,785
CUSTOMER DEPOSITS & PREPAID DEVLPMT			99,843	1,126,834	125,000
BRIDGE DEBT		375,000	3,250,000		2,470,000
BANK DEBT				305,166	1,000,000
DEFERRED REVENUE SHORT-TERM				18,000	256,397
SHORT TERM PORTION OF CAPITAL LEASES			16,765	20,482	5,794
TOTAL CURRENT LIABILITIES	22,301	466,959	3,813,538	2,005,443	4,668,976
DEFERRED REVENUE LONG-TERM				6,173	468,496
LONG TERM PORTION OF CAPITAL LEASES			26,276	5,794	-
DEFERRED RENT	41	446	460	40,892	33,521
TOTAL LIABILITIES	22,342	467,405	3,840,274	2,058,302	5,170,993
COMMON STOCK	3,000	3,000	3,000	3,000	3,448
PREFERRED STOCK	587,341	1,085,830	1,080,651	9,488,207	10,642,958
RETAINED EARNINGS	(325,177)	(1,291,534)	(4,250,667)	(7,390,587)	(11,266,510)
TOTAL STOCKHOLDERS' EQUITY	265,164	(202,704)	(3,167,016)	2,100,620	(620,104)
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	$287,506	$264,701	$673,258	$4,158,922	$ 4,550,889

TREVI SYSTEMS, INC
STATEMENTS OF CASH FLOW
UNAUDITED

	YEAR ENDED 12/31/2011	YEAR ENDED 12/31/2012	YEAR ENDED 12/31/2013	YEAR ENDED 12/31/2014	YEAR ENDED 12/31/2015
Net Loss	$ (286,461)	($966,357)	($2,959,133)	($3,139,920)	($3,875,923)
Operating Activities:					
Depreciation and Amortization	9,076	4,974	75,238	91,655	172,318
Change in Accounts Receivable		(1,117)	711	(80,537)	(116,032)
Change in Inventory			(38,587)	(1,044,198)	939,090
Change in Deferred COGS Short-Term					(370,853)
Change in Other Current Assets	1,418	568	(11,803)	(149,728)	86,871
Change in Deferred COGS Long-Term					(2,456,420)
Change in Long-Term Assets	(3,062)		(6,721)	(135,998)	(28,781)
Change in A/P & Accrued Liabilities	11,686	69,657	354,971	88,036	276,825
Change in Deposits & Prepaid Development			99,843	1,026,991	(1,001,834)
Change in Deferred Revenue Short Term				18,000	238,397
Change in Deferred Revenue Long Term				6,173	462,323
Change in Other Long Term Liabilities	41	405	14	40,432	(7,371)
Net Cash From Operating Activities	(267,302)	(891,870)	(2,485,467)	(3,279,094)	(5,681,390)
Purchase of Fixed Assets	(10,930)	(81,385)	(290,977)	(396,019)	(544,570)
Financing Activities:					
Issuance of Stock	590,341	498,490	(5,179)	8,407,556	1,155,199
Short Term Debt	(44,627)	375,000	2,875,000	(2,944,834)	3,164,834
Current Portion Capitalized Leases			16,765	3,717	(14,688)
Long Term Portion of Capitalized Leases			26,276	(20,482)	(5,794)
Net Cash From Financing Activities	545,714	873,490	2,912,862	5,445,957	4,299,551
Change in Cash	267,482	(99,765)	136,418	1,770,844	(1,926,409)
Cash Balance Beginning of Period		267,482	167,717	304,135	2,074,979
Cash Balance At End of Period	**$ 267,482**	**$ 167,717**	**$ 304,135**	**$ 2,074,979**	**$ 148,570**