Energy Recovery
Investor Presentation

November 2019

NASDAQ: ERII

FORWARD LOOKING STATEMENT

This presentation contains forward-looking statements within the “Safe Harbor” provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements in this report include, but are not limited to, statements about our expectations, objectives, anticipations, plans, hopes, beliefs, intentions, or strategies regarding the future. Forward-looking statements that represent our current expectations about future events are based on assumptions and involve risks and uncertainties. If the risks or uncertainties occur or the assumptions prove incorrect, then our results may differ materially from those set forth or implied by the forward-looking statements. Our forward-looking statements are not guarantees of future performance or events. Words such as “expects,” “anticipates,” “believes,” “estimates,” variations of such words, and similar expressions are also intended to identify such forward-looking statements.

These forward-looking statements are subject to risks, uncertainties, and assumptions that are difficult to predict; therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. You should not place undue reliance on these forward-looking statements, which reflect management’s opinions only as of the date of this presentation. All forward-looking statements included in this presentation are subject to certain risks and uncertainties, which could cause actual results to differ materially from those projected in the forward-looking statements, as disclosed from time to time in our reports on Forms 10-K, 10-Q, and 8-K as well as in our Annual Reports to Stockholders and, if necessary, updated in our quarterly reports on Form 10 Q or in other filings. We assume no obligation to update any such forward-looking statements. It is important to note that our actual results could differ materially from the results set forth or implied by our forward-looking statements.

STRATEGIC AND COMMERCIAL UPDATE

Board Chairman Robert Mao appointed Interim President and CEO

- President & CEO Chris Gannon resigned November 1, 2019 citing personal reasons
- No shift in business strategy – continued focus on water growth, VorTeq commercialization

Seawater Reverse Osmosis (SWRO) Desalination Continues to Drive Growth

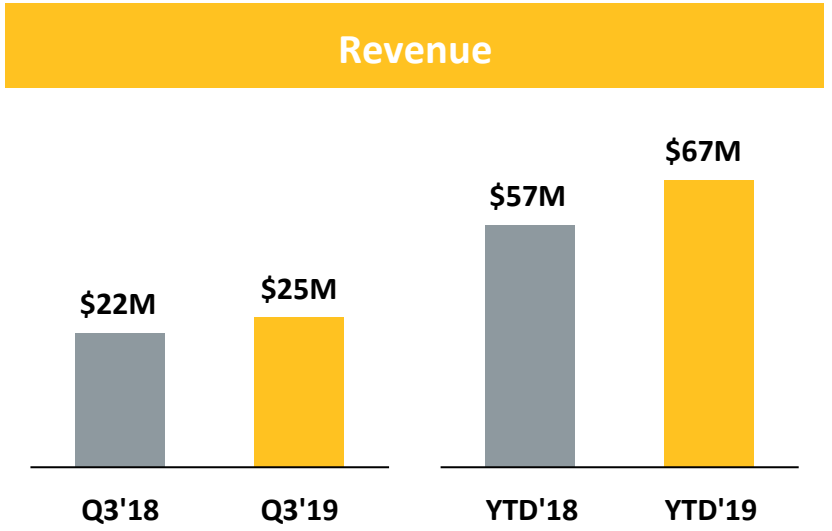
- Record 2019 YTD revenue pace continues; FY19 revenue growth forecast increased to 15-17%
- Industry trends continue to point to lengthened growth cycle; Water revenue outlook increased.
  - 2020 growth rate: 20-25%; 2021 growth rate: 10-15%
- Capacity Expansion: Phase 1 complete; Phase 2 underway, completion expected mid-2020

VorTeq Testing Ongoing at our Katy, TX Facility,

- Testing centered on finding failure modes of the system and engineering solutions
  - Successful commercialization depends on proving durability and reliability in the field
- Modular VorTeq introduced to facilitate testing iteration
- Site visits ongoing, including investors and analysts
- Progress on facility construction – focused on commissioning manufacturing capabilities

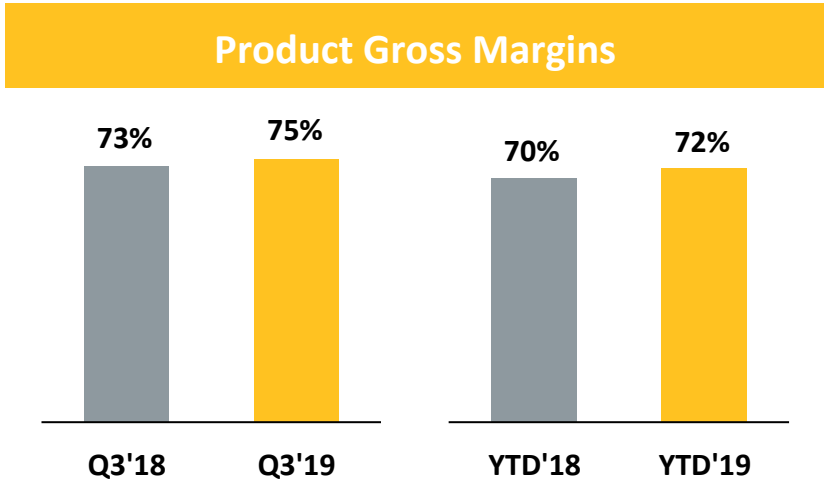
Strong Q3 Results Driven by Water

- 12% Q3 revenue growth over Q3 2018
- 19% revenue growth YTD
- Net cash (and securities) position of over $97M



Compelling Product Gross Margins

- Profitability driven by PX Pressure Exchanger sales
- High margins expected to continue for immediate future

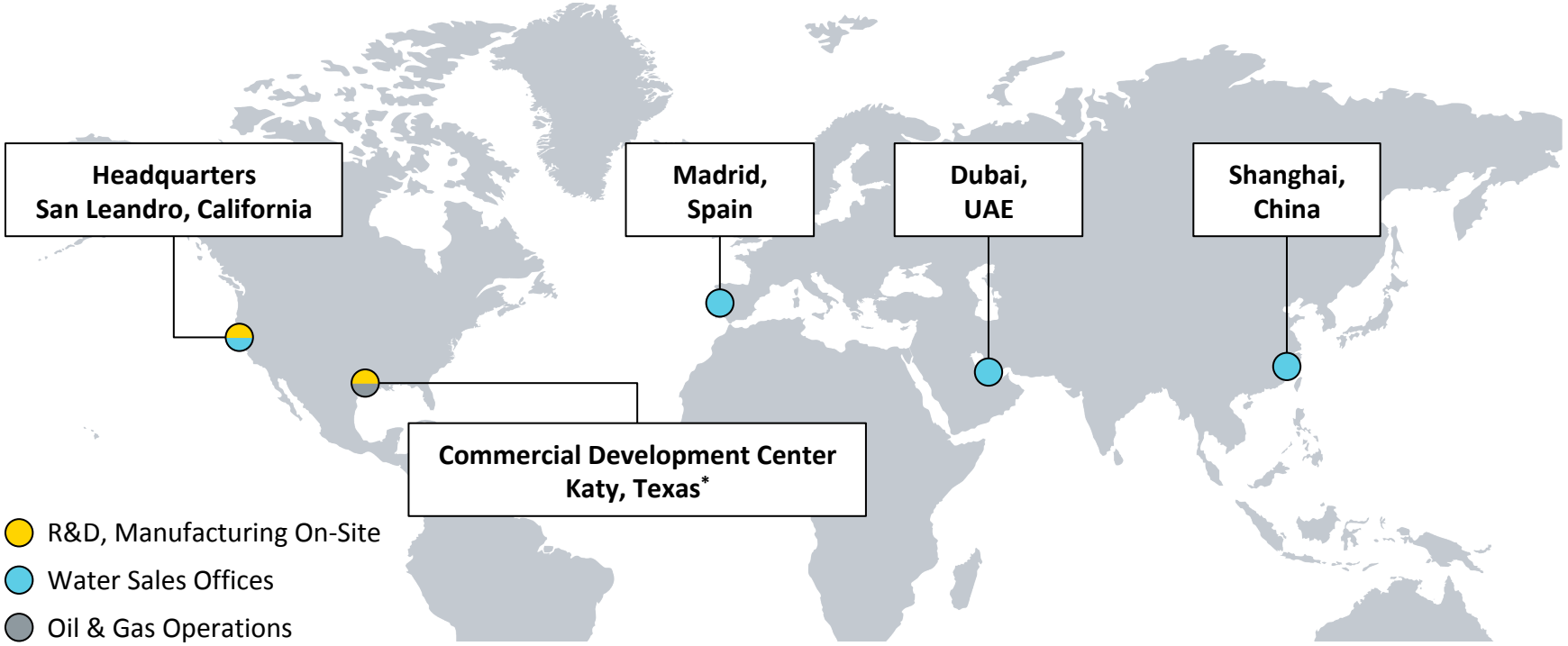


energy recovery

About Energy Recovery

ENERGY RECOVERY SNAPSHOT

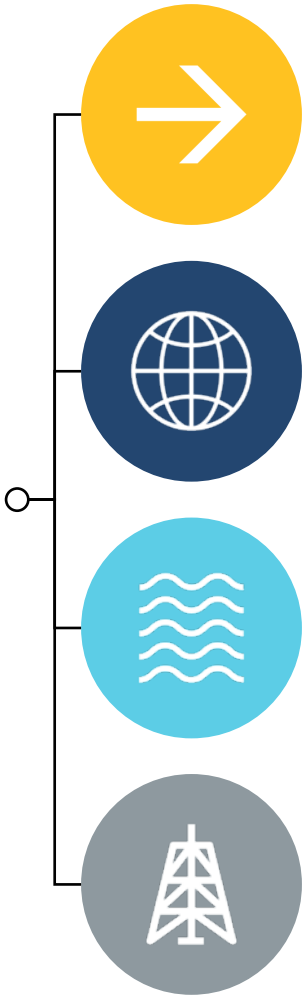
- For more than 20 years, Energy Recovery has created technologies that solve complex challenges for industrial fluid flow markets
- We design and manufacture solutions that reduce waste, improve operational efficiency, and drive significant cost-savings for our customers in Water and Oil & Gas
- Our worldwide sales and technical service organization provides on-site support for our products



**Office space, manufacturing facility under construction*

WHY ENERGY RECOVERY?

energy recovery®



Our technologies lower production costs of clean water and oil & gas, enabling more affordable access to these critical resources

Our Water solutions are in desalination facilities on seven continents, reducing carbon emissions and helping to combat water scarcity around the globe

The PX® Pressure Exchanger® energy recovery device revolutionized seawater reverse osmosis desalination, reducing energy costs by up to 60%*

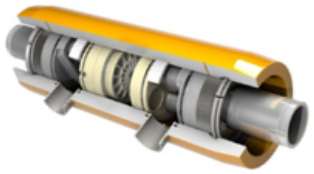
In-development VorTeq™ technology can reduce emissions and energy intensity of oil & gas production while lowering costs – fewer pump failures, smaller site footprint

**Energy Recovery estimate*

OUR PRODUCTS AND SOLUTIONS

Water

Energy Recovery Devices



PX® Pressure Exchanger®

AT Turbocharger

Pumps

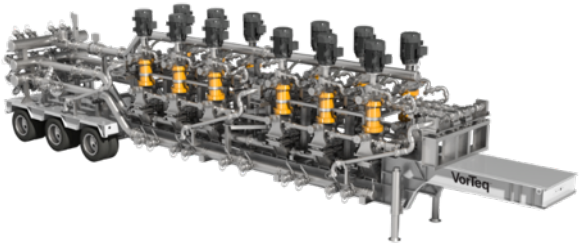
AquaBold™ High Pressure Pump

Vertical Circulation Pump

Horizontal Circulation Pump

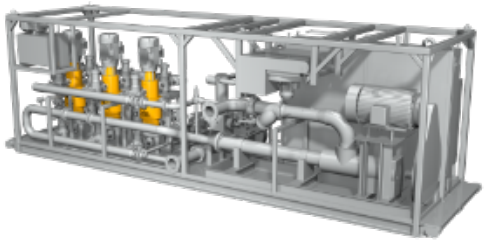
Oil & Gas

Hydraulic Fracturing Solution



VorTeq™

Mud Pumping Solution



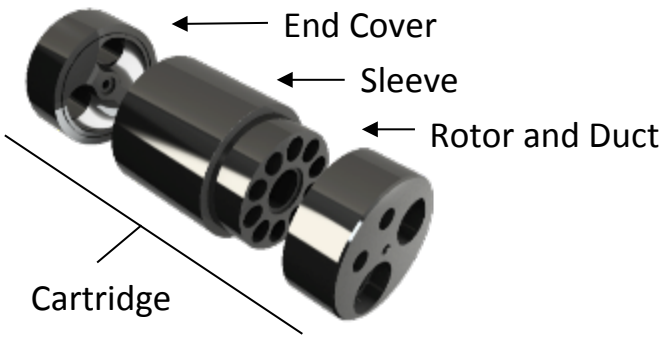
MTeq™

OUR CORE TECHNOLOGY IS THE PRESSURE EXCHANGER (PX)

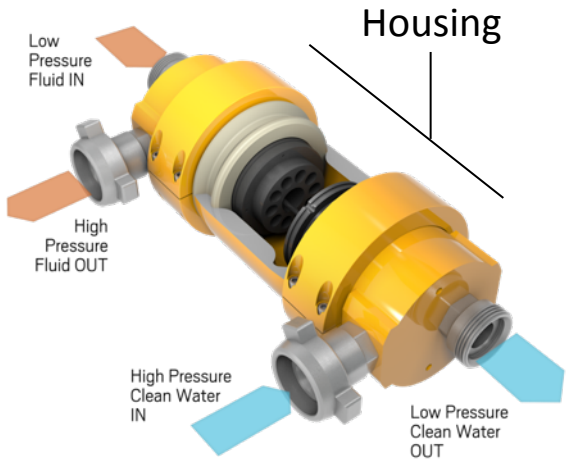
- Our pressure exchanger acts like a fluid piston, transferring energy between high- and low-pressure fluids through continuously rotating ducts
- PX technology provides benefits in a variety of industrial applications using high-pressure fluids
  - **Water** – pressure exchangers lower energy consumption and emissions, as well as reduce the pump size needed for seawater reverse osmosis desalination (PX Pressure Exchanger)
  - **Oil & Gas** – pressure exchangers can protect pumps from erosion, reducing equipment failure common during well completion and drilling operations (VorTeq and MTeq)

Pressure Exchanger Internal Components

Transfers energy with only one moving part (rotor)



Fluid Flows in a Pressure Exchanger



HOW PRESSURE EXCHANGER TECHNOLOGY WORKS

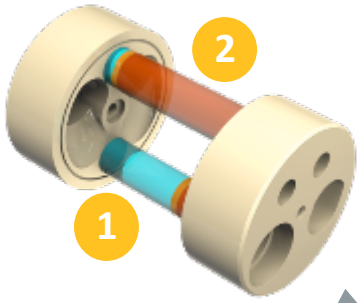
Sealed Phase

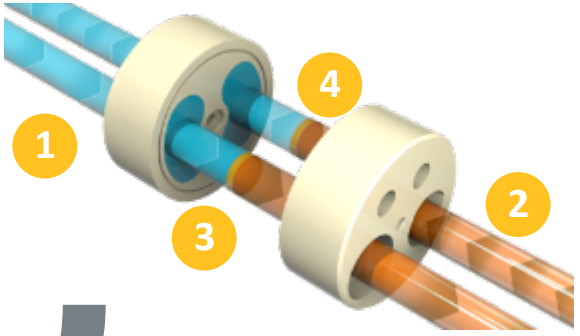
Two fluids on opposite sides of PX; rotor duct is sealed, isolating high, low pressure fluid streams

Rotor duct rotates to pressure exchange phase

Pressure Exchange Phase

1. Low pressure driven fluid enters the rotor duct
2. High pressure motive fluid enters the rotor duct





1. Low pressure driven fluid that will be pressurized and sent into system
2. High pressure motive fluid

Rotor duct rotates to sealed phase

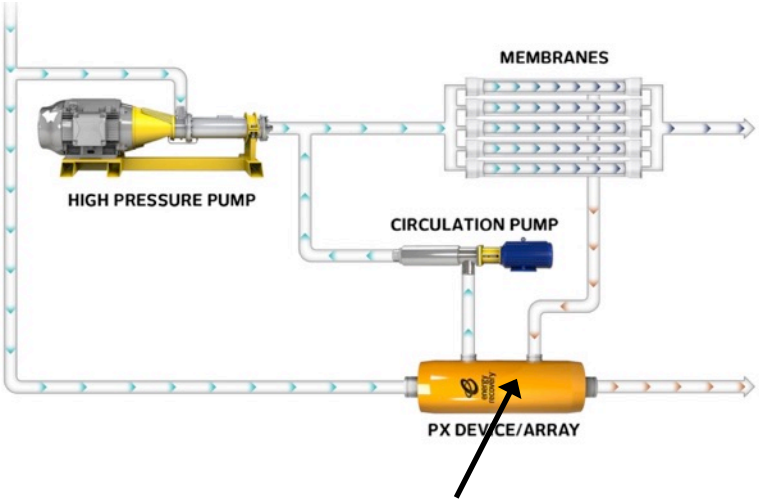
3. Low pressure driven fluid contacts motive fluid, expelling it at low pressure
4. High pressure motive fluid contacts driven fluid, expelling it at high pressure

Pressure is exchanged continuously as the rotor spins at high speed

PRESSURE EXCHANGER TECHNOLOGY IN A SYSTEM

Water

- Works as an energy recovery device
  - Recycles pressure energy in an SWRO system
  - Up to 60% less energy consumption



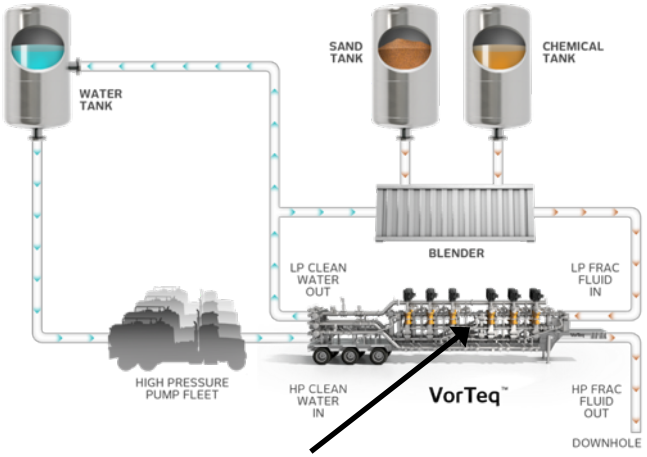
Seawater enters membrane array, which filters fresh water from seawater, forming salty brine concentrate

Brine leaves membranes at high pressure, enters PX (*red flow*)

PX transfers pressure energy from brine to incoming seawater (*blue flow*), pushing pressurized seawater towards membranes

Oil & Gas

- Works as a pump
  - Frac fluid is pressurized in manifold without running through pumps
  - Protects pumps from erosion, reduces operational downtime



Frac fluid (water, sand, chemicals) leaves blender, enters manifold at low pressure (*red flow*)

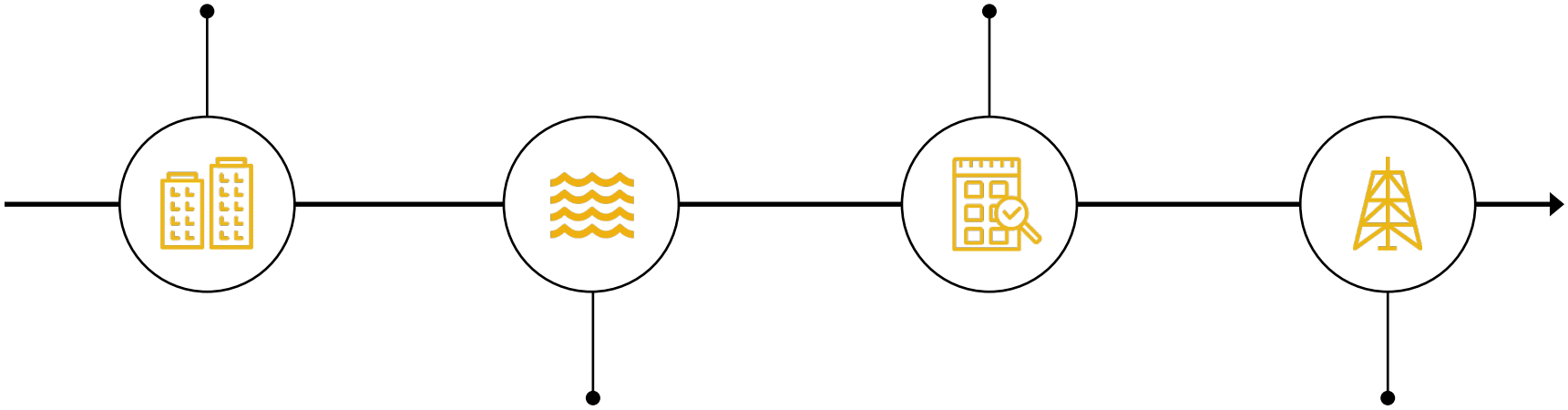
Clean water (*blue flow*) enters manifold at high pressure, transfers pressure energy to frac fluid

PX pumps pressurized frac fluid downhole

STRATEGIC OBJECTIVES

Build and enhance infrastructure for growth

Commission Commercial Development Center



Grow and expand market presence in SWRO desalination and beyond

Commercialize VorTeq

BUILDING AND ENHANCING INFRASTRUCTURE FOR GROWTH

In 2018, we began investing in infrastructure to ensure we can deliver on growth expectations

- Realigned organization to ensure proper focus on execution and resource allocation
- Refocused on key strategic imperatives – Water growth/reinvestment; VorTeq commercialization
- Began implementing new systems and hiring talent to support growth

In 2019, we are continuing to build and enhance our infrastructure to support growth

- Expanding our Water business
  - Finalizing phase 1 of capacity expansion in 2019; phase 2 completion expected 2020
  - Improving existing product lines
  - Advancing water growth initiatives (organic and inorganic)
- Investing in critical Oil & Gas expertise and assets
  - Commenced construction of Commercial Development Center facility
  - Procured equipment to precision machine and inspect tungsten carbide components
  - Expanding field operations team
  - Hiring and training machinists and other manufacturing personnel
  - Expanding supply base for key VorTeq system-level components to manage potential bottlenecks at commercialization

STRATEGICALLY SHIFTING TO AN ENGINEERING DRIVEN ORGANIZATION

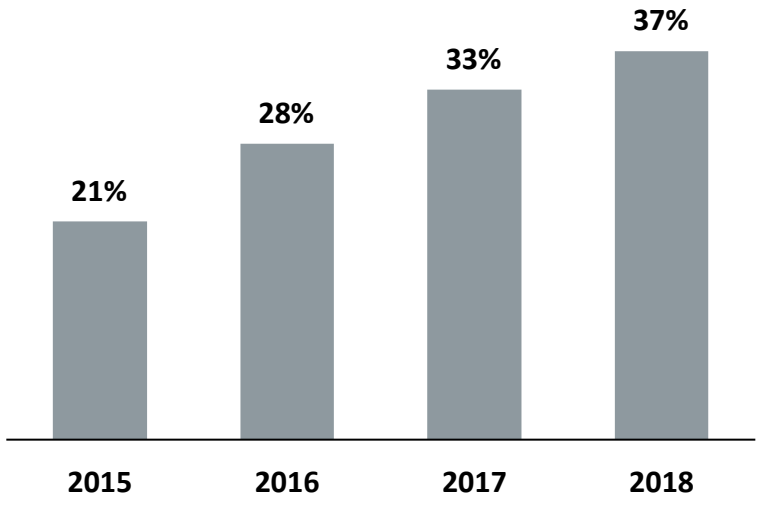
Investing in multi-disciplinary engineering talent

- Over 5x increase in R&D headcount since 2013
  - One-third of our company now holds engineering degrees
  - 9 PhDs and 14 Masters Degrees

Realigning R&D organization to improve focus and ability to execute

- Building necessary infrastructure
- Enhancing capabilities critical for development of disruptive technologies

R&D Spend as % of OPEX



Our In-House Expertise Spans Critical Engineering Disciplines

Fluid Mechanics & Aerodynamics	*Multi-Phase Flow*	*Material Science & Coatings*
Solid Mechanics	*Dynamics & Controls*	*Pumps and Turbines*
CFD & FEA	*Acoustics & Vibrations*	*Turbomachinery*
Hydrodynamic Bearings	*Tribology*	*Rotating Equipment*

EVOLVING MANUFACTURING CAPABILITIES

Advanced ceramics manufacturing capabilities help drive water success

- Vertically integrated ceramics manufacturing facility located in-house in CA
  - Creates potential competitive barrier to entry
- Best practices ensure high-quality production process
  - Approximately 99.9% of every PX Pressure Exchanger passes final stringent quality control before shipping

Ceramics expertise directly translates to tungsten carbide for Oil & Gas applications

- Production follows comparable path – from powder to final machining
- Rigid quality control and precision manufacturing

DISTRIBUTION STRATEGY LEVERAGES OUR STRENGTHS IN EACH MARKET

Global Water Distribution Channel

- Sales and technical service organization's tenure and global reach delivers advantages in a relationship-driven market
  - Entrenched, stable team located in 11 countries across 5 continents
- Strong relationships and extensive database enable early project identification

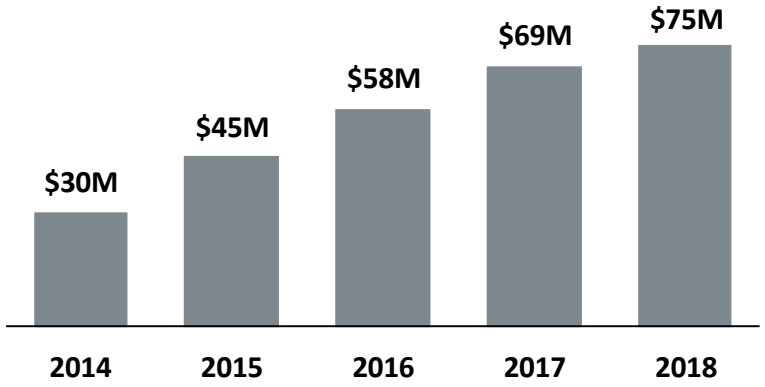
Oil & Gas Strategy Differs Due to Our Position

- Licensing model is more effective for a newcomer in a mature, competitive market
  - De-risks market entry
  - Partnerships provide faster credibility
  - Eliminates need to build our own distribution channel
  - Reduces time to market

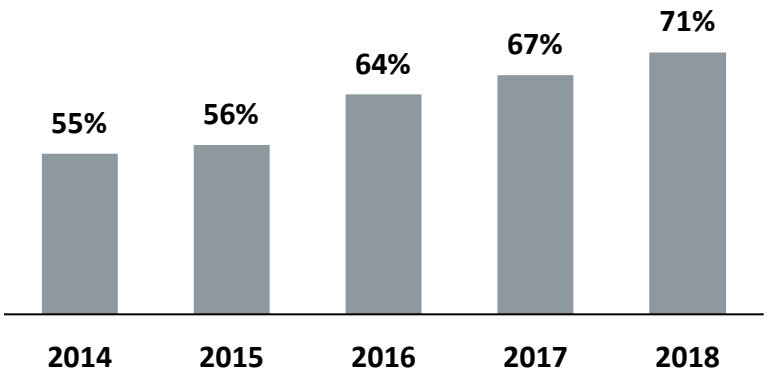
Water sales and service personnel located in United States, Canada, Spain, India, China, Saudi Arabia, United Arab Emirates, Jordan, Egypt, Mexico, Peru

HISTORICAL FINANCIAL RESULTS

Revenue: 25% CAGR 2014-2018



Product Gross Margin Strength



Net Cash and Securities Position of over $97M

We are positioned to make critical investments in our business

- Organic or inorganic opportunities to expand our water business
- Commercialization and subsequent launch of VorTeq, further development of operational infrastructure

energy recovery

Water – Global Demand Trends Driving Robust Future Outlook for Energy Recovery

FRESH WATER SCARCITY IS INCREASING

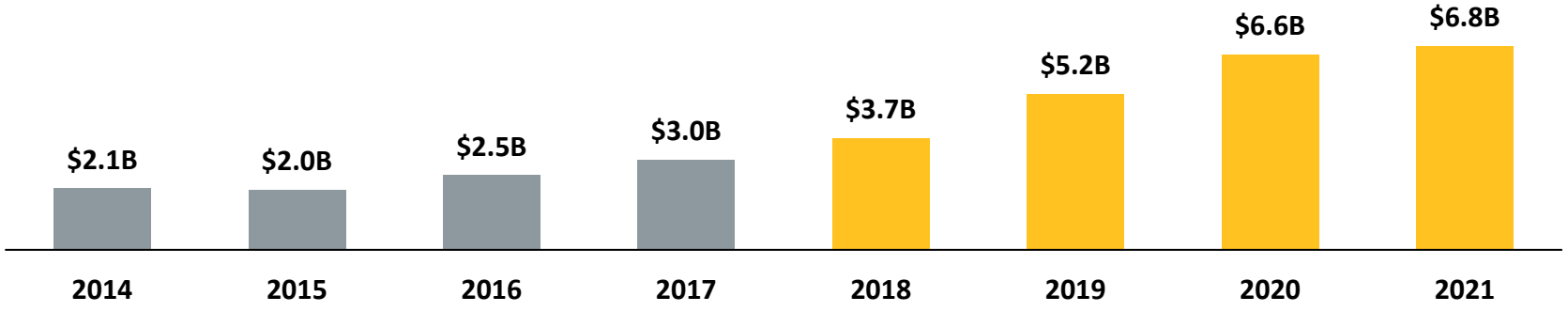
Fresh water demand is increasing, creating global demand gaps

- Water demand driven by population growth, industrialization, rapid urbanization, climate change
- The world will only have 60% of the water it needs by 2030[1]
- Potable water demand expected to increase by roughly 30% by 2050[2]

Desalinating seawater is an increasingly important part of meeting global water demand

- We are well-positioned to be part of the global supply solution
- SWRO expertise and commanding market position offers a springboard to growth

Continued Growth in SWRO Desalination CAPEX Spend 2014 – 2021[3]



[1,2]United Nations World Water Development Report; [3]DesalData Forecasts

THERMAL DESALINATION DECOMMISSIONING CREATING INCREMENTAL DEMAND

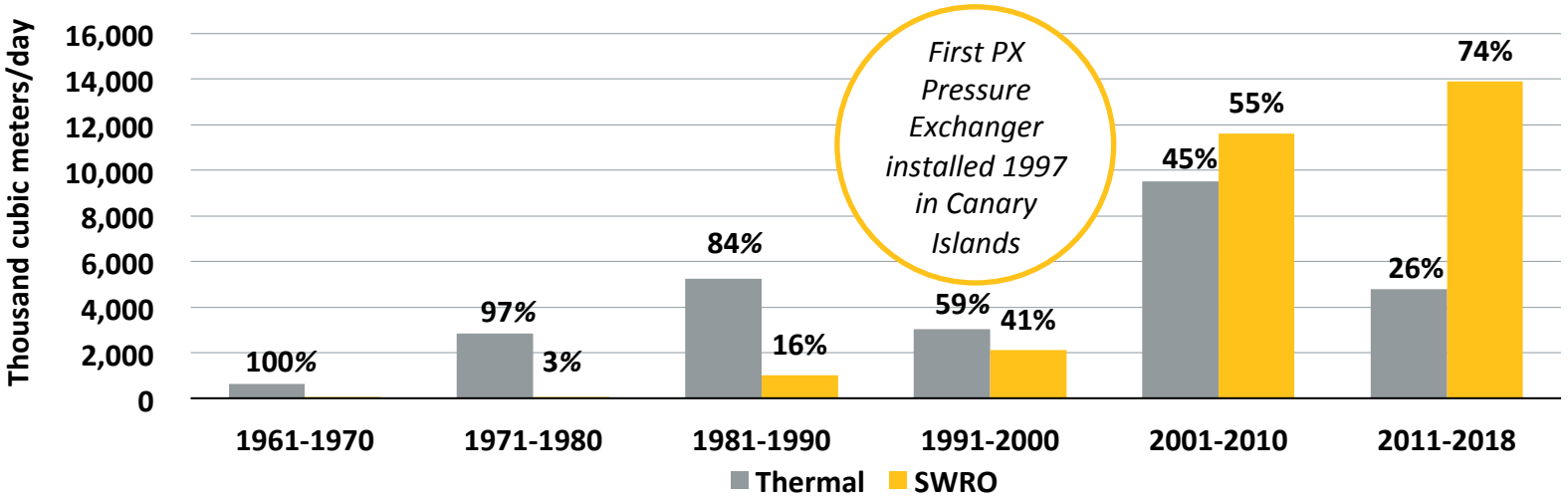
Thermal seawater desalination was the dominant technology through the 1990s

- Operational savings from devices like the PX made SWRO significantly cheaper than thermal
  - Thermal OPEX costs today are roughly 2x higher than SWRO
  - $1B SWRO retrofit of two Saudi thermal plants will generate OPEX savings of $360M/year[1]

Potential for 100 - 150 new SWRO mega projects to maintain water supply status quo[2]

- Cost saving opportunities could accelerate pace of thermal to SWRO retrofits

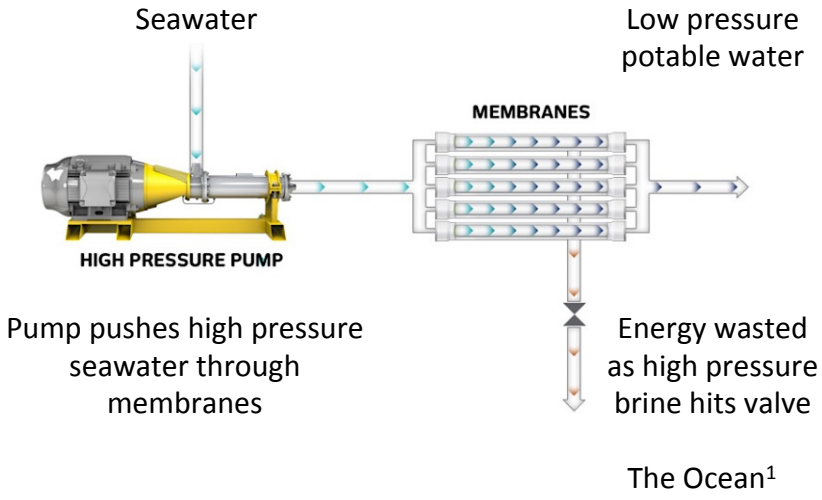
Desalination Capacity Increases and Percent Market Share by Decade



[1]DesalData Forecasts; [2]Energy Recovery estimates

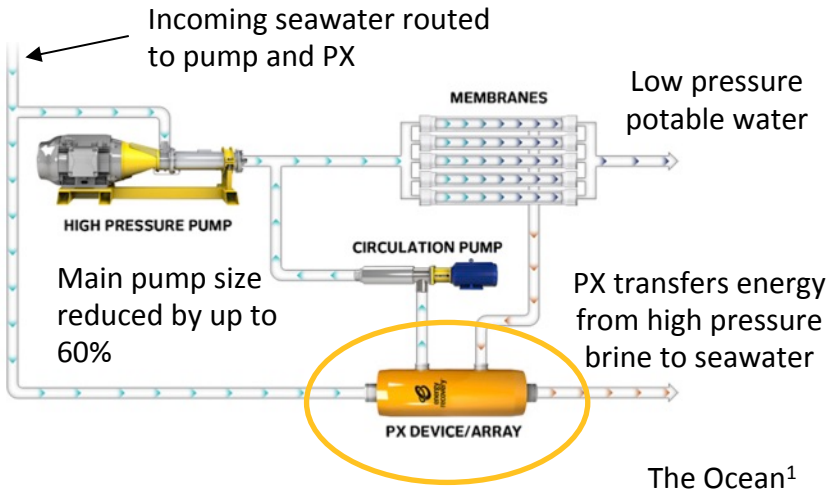
PX PRESSURE EXCHANGER RECYCLES HYDRAULIC ENERGY, REDUCES ENERGY COSTS

Without Energy Recovery Devices (ERDs)



- Energy consumption and costs made SWRO uneconomical historically
- Approx. 60% of energy wasted during SWRO prior to implementation of ERDs

With PX Pressure Exchanger

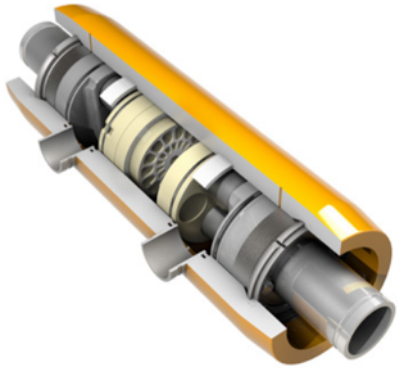


- PX lowers energy consumption by up to 60%
- Recycles energy, reduces high pressure pump size, making SWRO more economical
- PX durability lowers facility lifecycle cost

[1]Ocean or other geological mass

Energy Recovery Devices

PX Pressure Exchanger



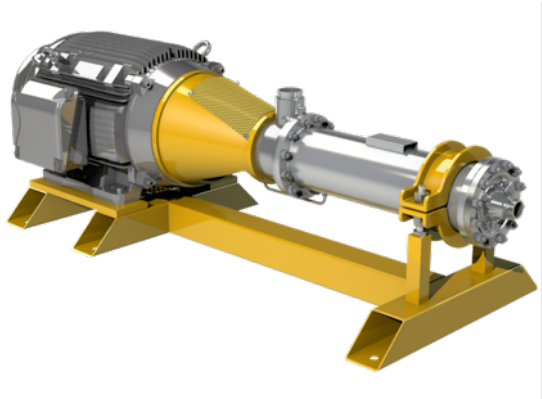
- Most widely used ERD in SWRO
- Unmatched efficiencies for desalination up to 98%
- Highest uptime in the market (99.8%)
- Designed for up to 25+ years of useful life

AT Turbocharger

- Efficiencies up to 80%
- Volute insert technology for best efficiency range
- Lower initial capital costs

Pump Products

AquaBold High Pressure Pump

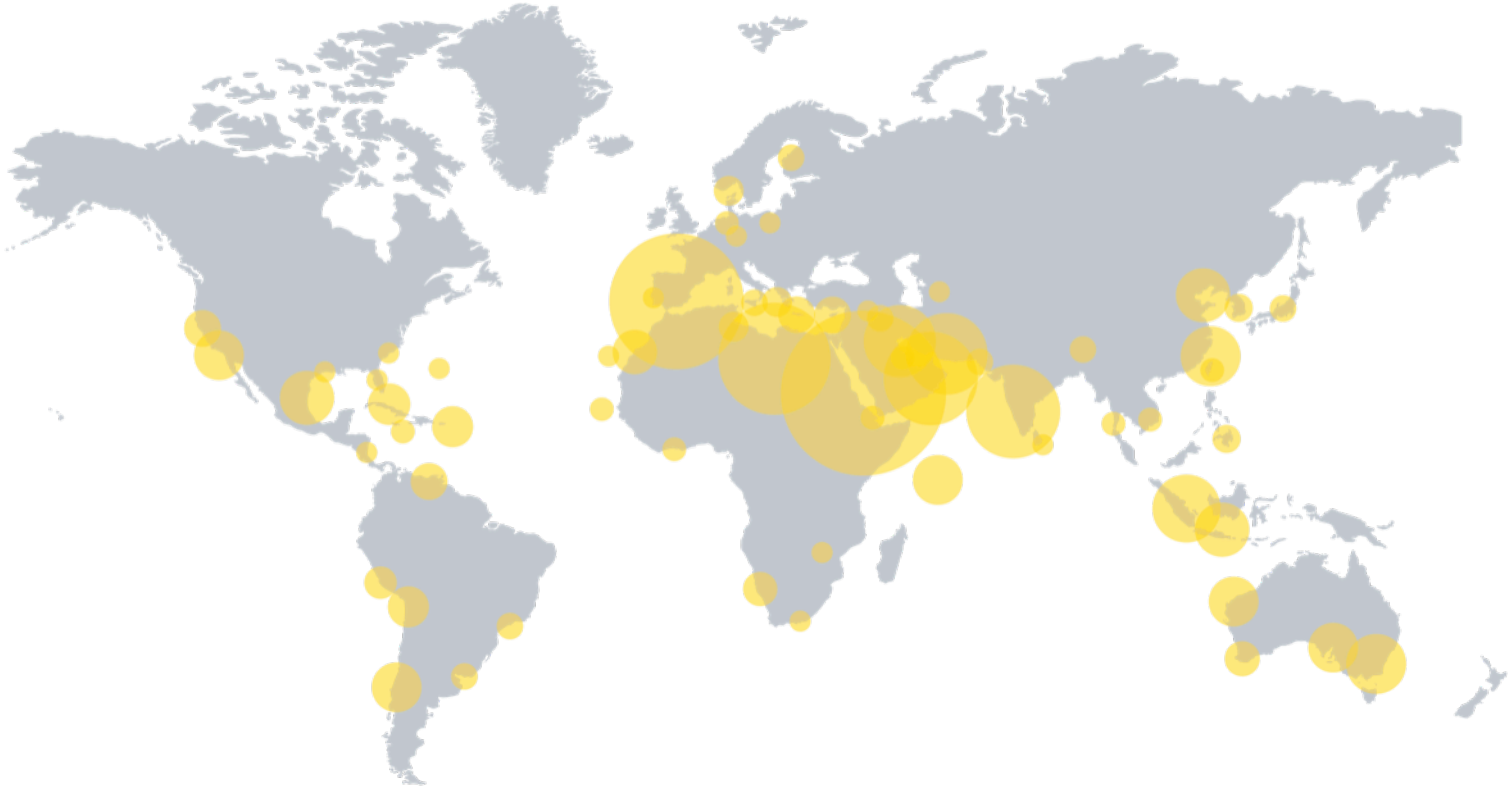


- Water lubricated bearing for long life and low maintenance
- Cast, duplex stainless steel hydraulics for higher quality and uptime

Vertical and Horizontal Circulation Pumps

- Specialized pumps pair with PX application
- Designed for long life with low maintenance
- Reliable performance in high suction pressure operating environments

GLOBAL REACH OF ENERGY RECOVERY WATER SOLUTIONS



17M cubic meters/ day of potable water produced	**Helps produce water to meet daily consumption of >50M people**	**$2.0B/year saved for customers**	**>11.5M metric tons CO_2 emissions prevented/year – equal to >2.4M cars**	**>20,000 devices installed worldwide**

Energy Recovery estimates, assumes all deployed devices are in operation

OUR IP AND GLOBAL FOOTPRINT HAVE DRIVEN GROWTH AND PROFITABILITY

Consistent revenue growth

- Mega projects continue to drive 2019 revenues
- Owing to our robust pipeline and backlog, we expect strong growth to continue into 2020 and beyond

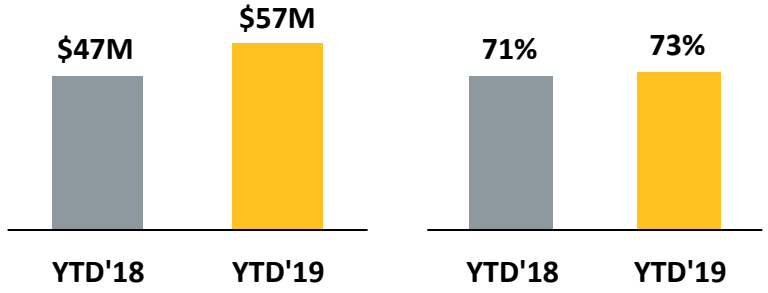
Extended growth cycle

- Upward revenue trend since 2014
- Evidence of extended cycle and upward shift in global demand curve

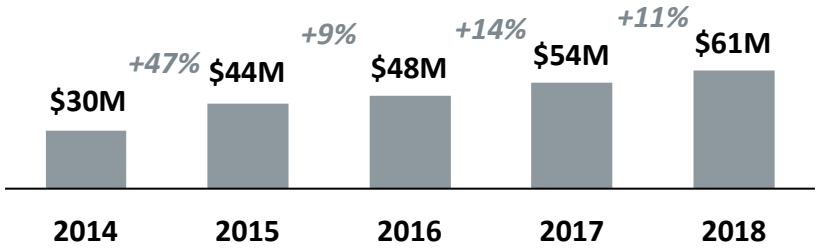
Exceptional margins

- Water gross margins have grown from less than 54% in 2014 to approximately 70% today
- Margin strength provides optionality as growth initiatives are explored

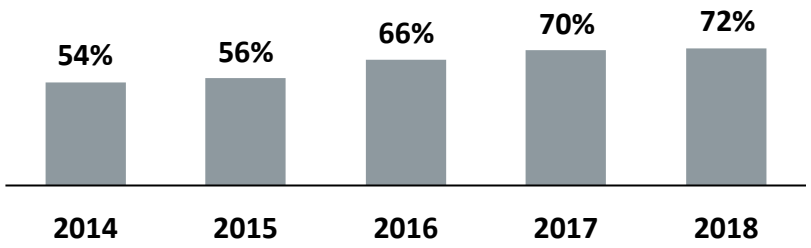
Water Revenue and Gross Margin



Historical Water Revenues



Historical Water Gross Margins



FOCUSED ON EXPANDING OUR WATER BUSINESS

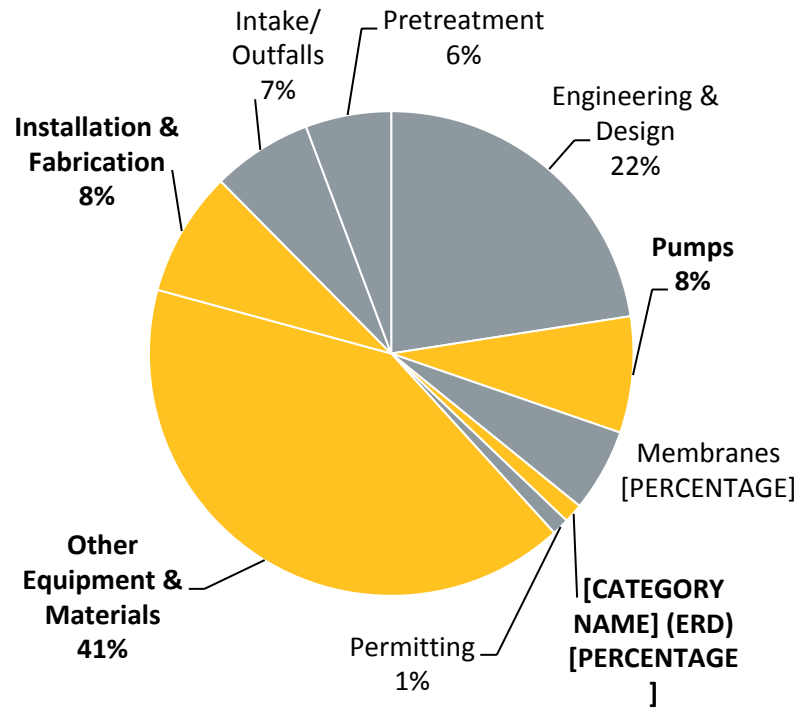
We currently focus on only 1-2% of a project's capital spend

- Energy recovery devices make up a small fraction of CAPEX and are critical to make plant operations affordable
- We have a small offering of high efficiency Pumps (<1%)
- Currently no exposure to other areas of desalination spend

Leverage our market leadership presence

- Our desalination position and distribution channel is a springboard to expand sales
- Improving our existing solutions to further increase competitive advantage
- Focused on increasing offering in pumps and packaged/engineered solutions
- Utilize demand for and recognition of our strong PX Pressure Exchanger brand

Average Desal Project Capital Spend[1]



Energy Recovery dominates the ERD segment and has select offerings in Pumps

[1]*DesalData Forecasts for 2023*

energy recovery

Oil & Gas – Material Progress Made on Path to Commercializing the VorTeq Technology

WE ARE APPLYING OUR WATER EXPERTISE TO OIL & GAS

Water and Oil & Gas have similarities

- High pressure fluid environments
- Potential to transfer pressure energy from a high-pressure fluid to a low-pressure fluid
- Opportunities to eliminate waste in system – increase efficiencies and decrease costs

Leveraging Water experience to build core competencies in Oil & Gas

- Advanced fluid & structural mechanics, bearing performance, and material expertise of R&D
- Precision manufacturing coupled with enhanced experimental capabilities
- In-house simulation tools to model performance and results

Our Solutions Can Protect Pumps

High pressure pumps used in Oil & Gas are susceptible to abrasion, erosion, fatigue, corrosion

+

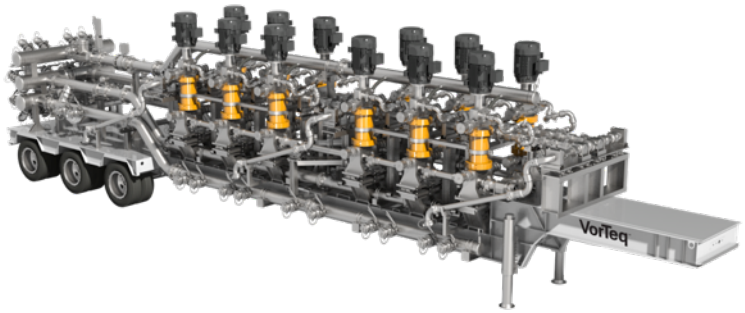
We keep abrasive frac and drilling fluid away from pumps - pressure exchangers handle these fluids instead of pumps

→

- ✓ Fewer pump failures, less pump redundancy
- ✓ Lower maintenance, capital costs
- ✓ Reduced emissions, energy intensity
- ✓ Smaller site footprint

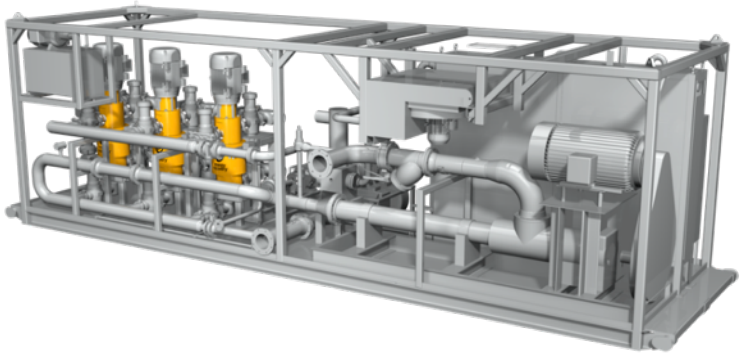
OUR SOLUTIONS

VorTeq



- Hydraulic fracturing technology solution
- Houses 12 pressure exchangers
- Designed to isolate and save frac pumps
- Addresses pump failure at frac sites
- Re-routes hostile frac fluid away from critical and costly pumps
- Currently in R&D stage

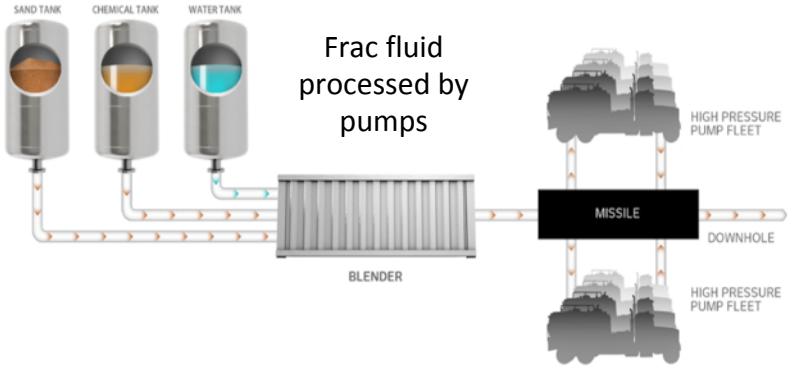
MTeq



- Mud pumping technology solution
- Houses 3 pressure exchangers
- Designed to isolate and save mud pumps
- Addresses pump failure at drilling sites
- Re-routes hostile drilling fluid away from critical and costly pumps
- Currently in R&D stage

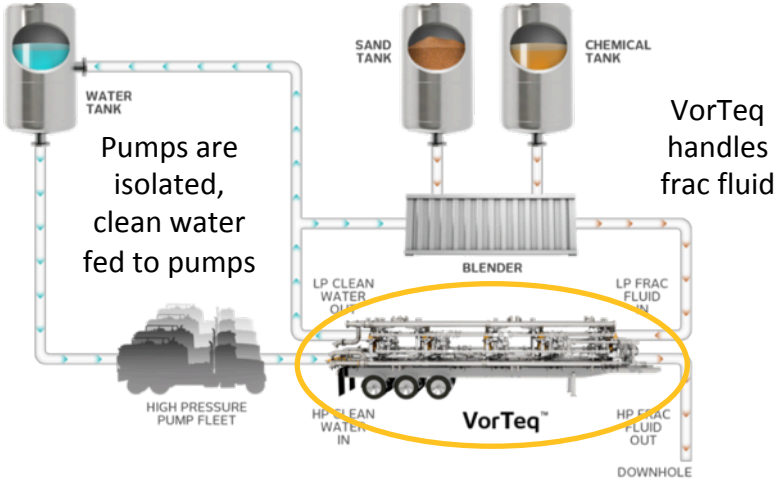
VORTEQ PROTECTS HIGH PRESSURE PUMPS, REDUCES COSTS

Status Quo



- Pumps handle frac fluid (water, chemicals and sand)
- Pumps quickly destroyed

With VorTeq



- Capital savings ($1M - $2M[1]) – less pump redundancy = less waste
- Maintenance savings ($3M - $4M[1])

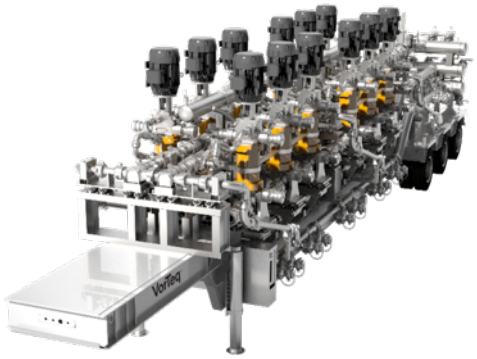
Longer-term it may be possible to pair VorTeq with highly efficient centrifugal pumps, reducing site footprint and further decreasing need for pumps ($8M - $12M savings[1])

[1]Energy Recovery Estimates – savings measured in pumps/year pumps/fleet

VORTEQ COMMERCIALIZATION REMAINS OUR FOCUS

Materially advancing VorTeq technology

- Confident in core pressure exchanger technology
- Substantial progress in advancing and implementing system level design enhancements
  - Required prior to Milestone 1
  - Critical for technology commercialization
- Technical challenges continue to become less complex in nature



Continual field testing and system run time critical to reach commercialization

- Confirming system reliability and repeatability in imperfect real-world operating conditions
- Establishing VorTeq operating protocols
  - Integrating pressure exchangers, missile manifold, and controls and automation
  - Understanding interplay of VorTeq technology with standard frac operations
- Identifying any and all failure modes to engineer solutions

OUR COMMERCIAL DEVELOPMENT CENTER IS CRITICAL TO GROWTH

Rigorous VorTeq testing ongoing

- Center uses industry standard equipment to simulate pressures, flow, and operating conditions of a frac site
- Allows us to confirm system reliability and repeatability in real-world conditions

Expanded testing capabilities help accelerate the path to commercialization

- Continuous access to testing resources speeds R&D cycle from design concept to validation and implementation
- Investing in additional personnel to expand testing capabilities to seven days/week

An investment in the long-term success of our Oil & Gas business

- Will house advanced equipment to machine, inspect and test tungsten carbide components
- Enables rigorous testing of tungsten carbide pressure exchangers prior to field deployment
- Designed to scale up or down according to our needs

VORTEQ AGREEMENT & COMMERCIALIZATION PATH

Entered into a 15-year license agreement with Schlumberger Technology Corporation

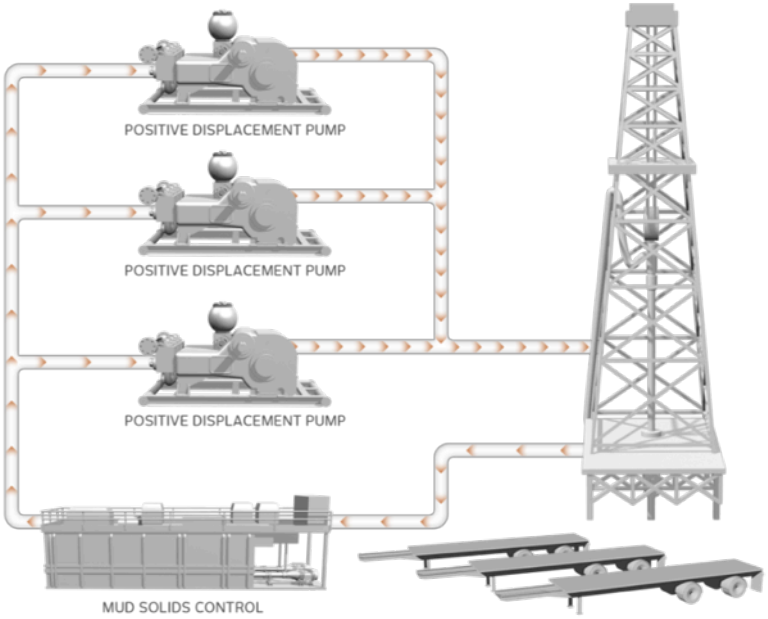
- Exclusive rights to VorTeq for on-shore hydraulic fracturing
  - Upfront **$75M** exclusivity fee
  - Two separate **$25M** milestone payments (for a total of **$50M**) subject to certain KPIs
    - ✓ Milestone 1 (M1): Frac at product licensee test facility
    - ✓ Milestone 2 (M2): Frac at customer exploration & production (E&P) well
  - Commercialization Highlights:
    - ✓ $1.5MM per VorTeq per year
    - ✓ Acceptance standards inclusive of M1 and M2, as well as other performance tests
    - ✓ Product licensee responsible for missile manufacturing; ERI provides PX Pressure Exchangers, housing and motors
    - ✓ Five years from first unit to full deployment across product licensee fleets

Liberty Oilfield Services carve-out (our early-stage test partner)

- Rights for up to 20 VorTeq units for up to 5 years
- We provide full missile and cartridges – vendors have been qualified
- Commercialization standards differ and thus speed to market may be faster
- Pricing based on contractual ROIC

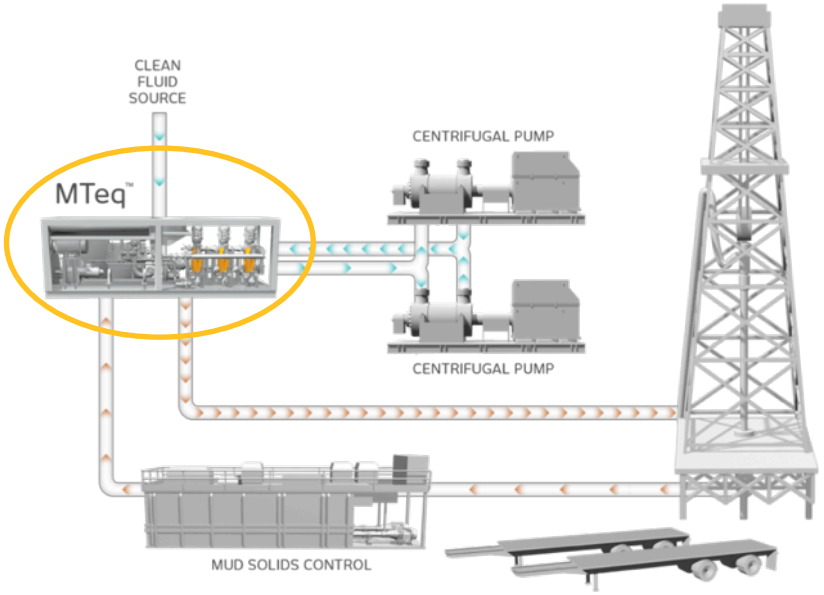
MTEQ REPLACES POSITIVE DISPLACEMENT PUMPS, REDUCES COSTS

Status Quo



- Positive displacement pumps process drilling fluid
- Wears down and destroys pumps

With MTeq



- Centrifugal pumps can process clean water
- Can reduce and preserve pumps, lengthen life and reduce costs

WE ARE PREPARING FOR POST COMMERCIALIZATION EXECUTION

Manufacturing

- Construction ongoing on manufacturing facility
- Building infrastructure to support testing and commercial production levels
  - Procuring advanced equipment to precision machine, inspect and test tungsten carbide components
  - Enables rigorous testing of tungsten carbide pressure exchangers at scale prior to field deployment
- Training machinists in preparation for opening of facility later this year

Supply Chain

- Sourcing and qualifying multiple suppliers for critical components
- Working through lead time and supplier constraints

Organizational Execution

- Key members of Oil & Gas team relocated to Texas
- Building support organization
- Investing in IT and other necessary infrastructure

Strategic Summary

ENERGY RECOVERY – A BALANCED RISK / REWARD APPROACH

Water

Steady, Visible Growth

- Global water demand outlook continues to improve and leads to further optimism
- Robust backlog and pipeline driving significant growth in 2019 and 2020-2021
- Thermal to SWRO transition adds to potential long-term demand trends
- Looking to leverage our current desalination position
  - Sales and distribution channel offers product portfolio expansion potential
  - Exploring organic and inorganic growth initiatives

Oil & Gas

Applying Pressure Exchanger Expertise to a New Industry

- VorTeq – Focus remains on expediting path towards commercialization and shortening design iteration cycle
- Commercial Development Center yard is operational
  - Accumulating critical runtime at representative scale

Financially Flexible Balance Sheet

- Solid net cash position allows for strategic options

Thank You