## ENERGY RECOVERY INVESTOR PRESENTATION (NASDAQ: ERII)

March 2019



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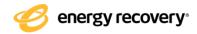
## STRATEGIC AND COMMERCIAL UPDATE

# Investing in Critical Infrastructure for Near-Term Execution and Long-Term Growth Water

- Record levels of revenue, gross profit, and operating income
- Strong global water demand provides optimism for 2019 and beyond
  - Historically high backlog and most robust project pipeline
  - Expanding water manufacturing capacity to meet anticipated demand
- Pursuing water growth initiatives focused on expanding product portfolio
  - Leveraging global sales and distribution channel

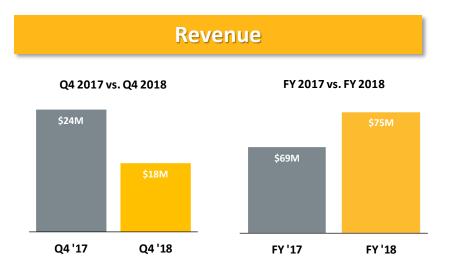
#### Oil & Gas

- VorTeq
  - Focus remains on commercialization
  - Accelerated implementation of system-level enhancements agreed to by Energy Recovery and the product licensee ahead of Milestone 1
- Invested in R&D autonomy to shorten product development cycle
  - Acquired field resources and hydraulic fracturing equipment for greater independence and less reliance on partner resources
  - Broke ground on Commercial Development Center in Houston, TX area
  - Center allows for constant testing of oil & gas solutions



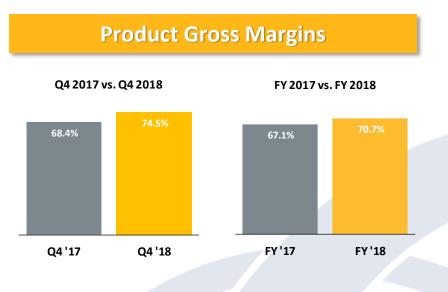
#### **Record 2018 Results**

- o 7.8% total revenue growth
- $\circ$  11% water revenue growth
- Generated \$7.6M in operating cash vs.
  \$2.9M in 2017
- Net cash and securities position of over \$96M



#### **Record Product Gross Margins**

- Steady rise in product gross margins since 2014
- Profitability driven by PX Pressure Exchanger sales
- High margins expected to continue for foreseeable future



#### Who Are We

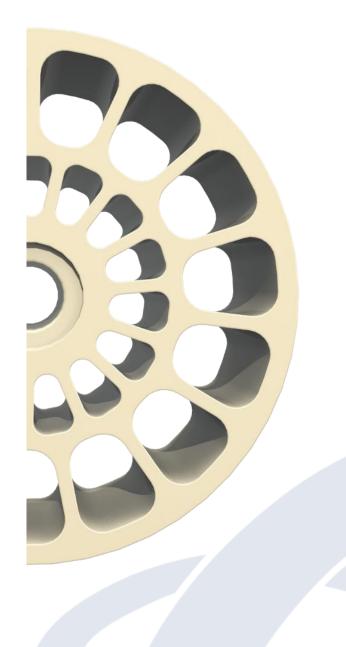
- A global, engineering-driven technology company delivering solutions for industrial fluid flow processes
- We drive meaningful, immediate cost savings and operational efficiencies for customers

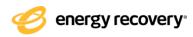
#### **Our Approach**

- Convert wasted pressure energy into a reusable asset
- Preserve or eliminate pumps that are subject to and destroyed by hostile process fluids

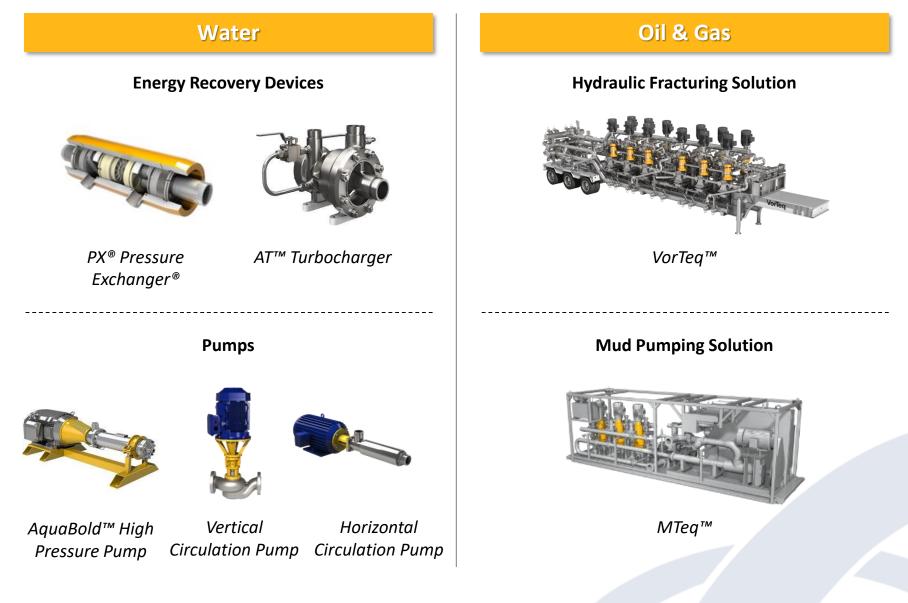
#### **Our Current Markets**

- $\circ$  Water
- o Oil & Gas



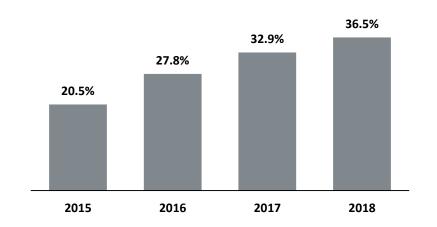


## **OUR PRODUCTS AND SOLUTIONS**



- Energy Recovery is anchored by world-class engineers
- One-third of our company holds engineering degrees
  - 9 Ph.Ds and 14 Masters Degrees
  - Over 45% increase in R&D headcount since 2013
- Advanced testing capabilities in CA and at-scale in TX
- Rapid concept to prototype process

## **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



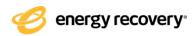
## Advanced Ceramics Manufacturing Capabilities Help Drive Water Success

- 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**

- Similar manufacturing process for tungsten carbide PX
  Pressure Exchanger
  - Production follows comparable path from powder to final machining
  - Rigid quality control and precision manufacturing
- Commercial Development Center in Houston, TX area broke ground in 2019





# Seasoned Water Salesforce and Global Distribution Channel

- Salesforce's tenure delivers strategic advantages in a relationship-driven market
  - Business unit leader Rodney Clemente, a
     20 year industry veteran, has overseen rapid water growth
  - Entrenched, stable global water team
- Strong relationships and extensive database enable early project identification

## Oil & Gas Sales Strategy Differs Due to Our Position

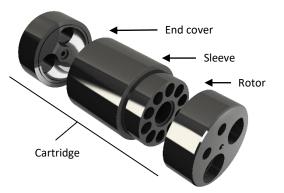
- Licensing model is more effective for a newcomer in a large, mature and vastly competitive industry
  - De-risks market entry
  - The right partnerships provide quicker credibility
  - Eliminates need to build our own distribution channel
  - Reduces time to market



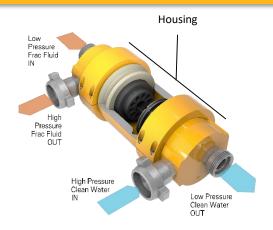


## **Pressure Exchanger Key Components**

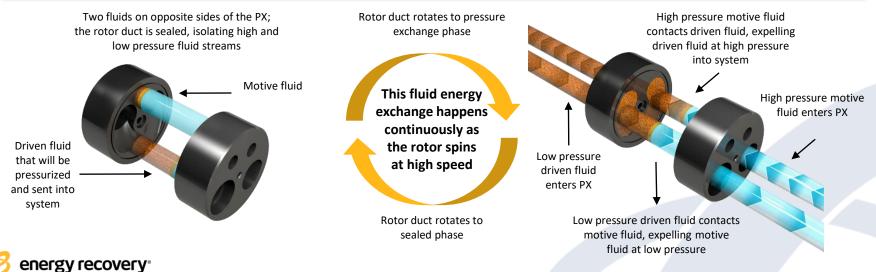
Transfers energy with only one moving part (rotor)



#### **Fluid Flows in PX Pressure Exchanger**



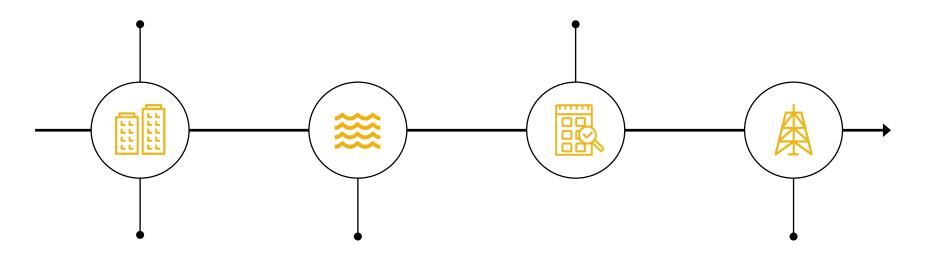
#### **How the PX Pressure Exchanger Works**



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Further execute on two business units to make capital allocation decisions based on opportunity

**Commission Commercial Development Center** 

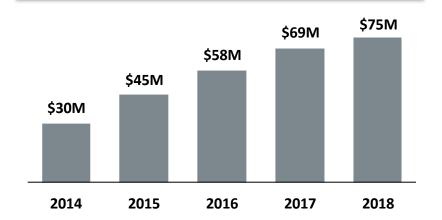


Build infrastructure for growth

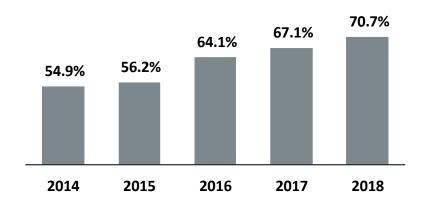
Grow and expand existing market presence in seawater desalination and beyond Commercialize VorTeq Further Develop MTeq

#### **FINANCIAL RESULTS**

#### Revenue: 25% CAGR 2014-2018



#### **Product Gross Margin Strength**



#### Net Cash and Securities Position of over \$96M

- 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
- Financially prepared for market fluctuations



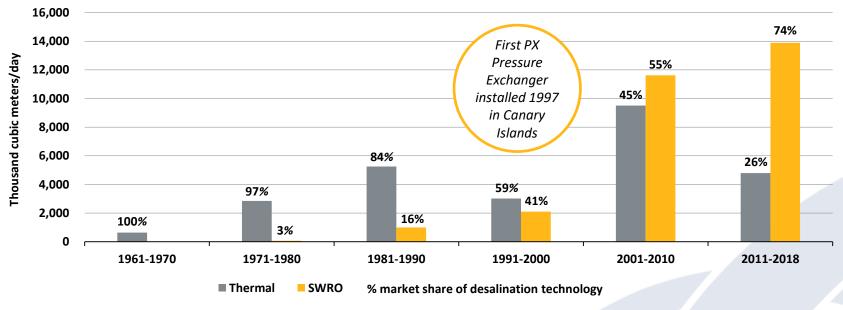


## Water – Our First Market Transformed





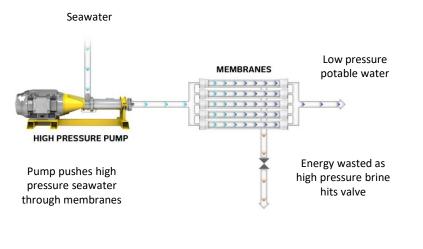
- Thermal desalination was the norm before our PX Pressure Exchanger technology
- Our PX Pressure Exchanger reduces energy costs by up to 60%, making seawater reverse osmosis (SWRO) desalination plants more economically viable
- o Our solutions deliver meaningful economical benefits to customers
  - \$1.9 billion savings on energy expenses
  - Reduces project lifecycle costs due to durability of products
- We dominate the SWRO industry (89% market share in large-scale desalination projects<sup>1</sup>)



#### Desalination Capacity Increases by Decade<sup>2</sup>

#### **OUR PX RECYCLES HYDRAULIC ENERGY, REDUCES ENERGY COSTS**

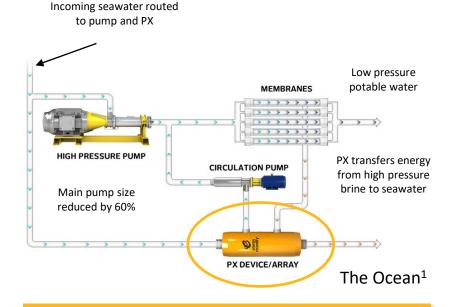
## Without Energy Recovery Devices (ERDs)



The Ocean<sup>1</sup>

- 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 reduces energy consumption and cost by approx. 60%
- Recycles energy, reduces high pressure pump size making SWRO more economical



## OUR WATER PRODUCT LINE

## **Energy Recovery Devices**

### **PX Pressure Exchanger**

- 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

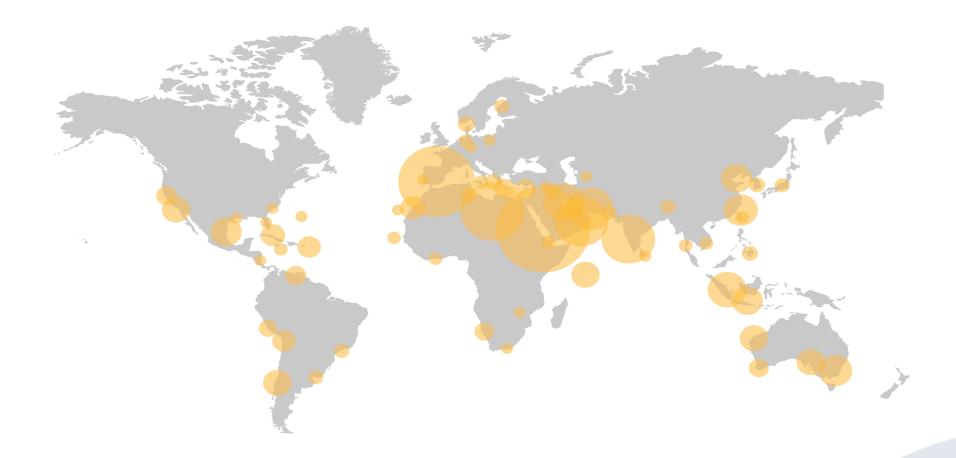


## **Vertical and Horizontal Circulation Pumps**

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



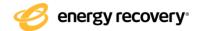
## **GLOBAL REACH OF ENERGY RECOVERY PRODUCTS**



17M cubic meters/day of potable water produced<sup>1</sup>

>19,000 devices installed worldwide

\$1.9B/year saved for customers<sup>2</sup>



<sup>1</sup>Assuming all deployed devices are in operation; <sup>2</sup>ERI estimates

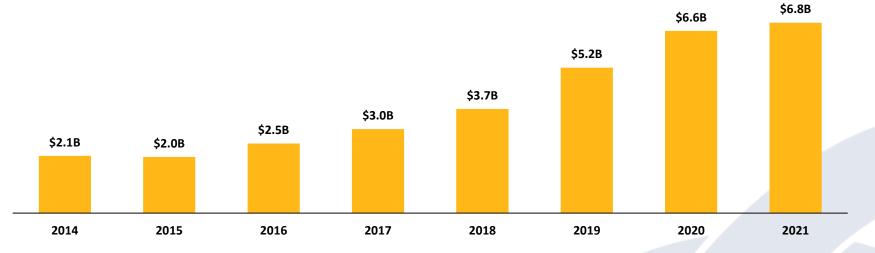
#### Water scarcity is increasing

- According to the OECD<sup>1</sup>, the world will only have 60% of the water it needs by 2030
- Desalination can help build a resilient, diversified water system

#### We are positioned to benefit from the ongoing secular shift in water demand

- SWRO expertise and commanding market position offers a springboard to growth
- o Sales team can leverage distribution channel to increase desalination sales
- We are investing to expand our product portfolio







#### **Consistent Revenue Growth**

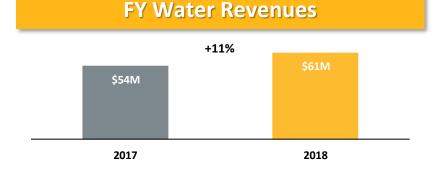
- Mega projects drove growth in 2018
- Owing to our strong backlog, robust pipeline and continued demand for desalination, we expect strong growth to continue into 2019 and 2020

#### **Extended Growth Cycle**

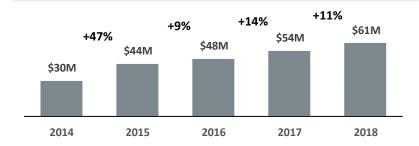
- Upward revenue trend since 2014
  - Evidence of extended cycle or shift in global demand curve

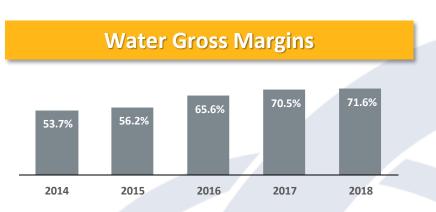
#### **Exceptional Margins**

- Water gross margins have grown from less than 54% in 2014 to over 71% today
- Margin strength provides optionality as growth initiatives are explored



## **Historical Water Revenues**







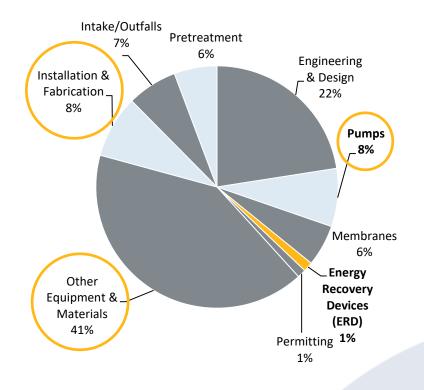
## We Currently Focus on Only 1-2% of a Project's Capital Spend

- Energy recovery devices are critical to make plant operations affordable
  - We dominate this market
- Current standing serves as competitive barrier to entry
- Limited exposure to other areas of desalination spend
  - Small offering in Pumps (<1%)</li>

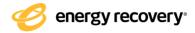
#### Leverage Our Market Leadership Presence

- Our desalination position and distribution channel is a springboard to expand sales
- 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<sup>1</sup>

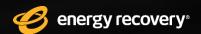


Energy Recovery dominates the ERD segment and has select offerings in Pumps

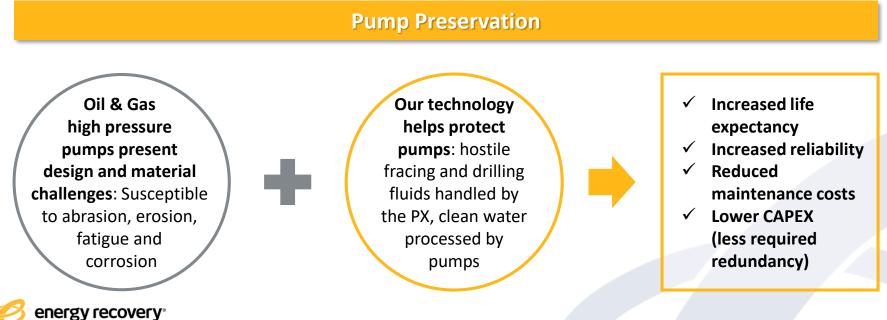


## Oil & Gas – Our Next Market to Transform

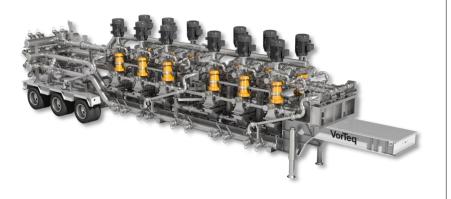




- Our PX Pressure Exchanger technology can add strategic value to the Oil & Gas industry
- Water and Oil & Gas have similarities
  - High pressure fluid environments
  - Transference of hydraulic energy from a high pressure fluid to a low pressure fluid
- We have leveraged our water experience to evolve our core competencies for Oil & Gas success
  - Advanced fluid & structural mechanics, bearing performance and material expertise of R&D
  - Precision manufacturing coupled with enhanced experimental capabilities
  - In-house state of the art simulation tools to model performance and results

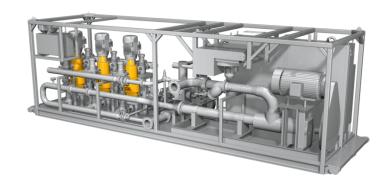


## VorTeq



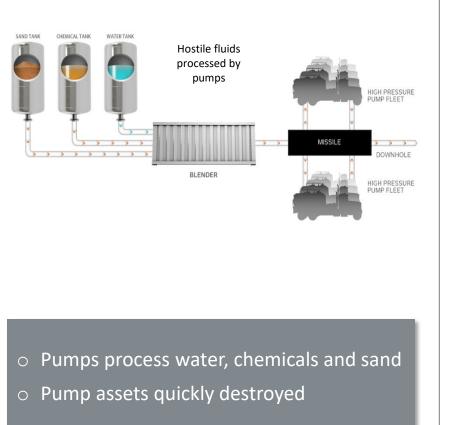
- Hydraulic fracturing technology solution
- Houses 12 PX Pressure Exchangers
- Designed to isolate and save frac pumps
- Addresses pump failure at frac sites
- Re-routes hostile frac fluid away from critical and costly pumps
- Currently in R&D stage
- Annual royalty of \$1.5M/VorTeq or \$80-\$200M following commercialization

## MTeq



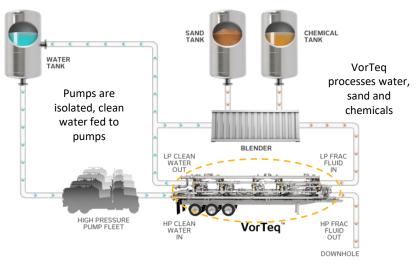
- Mud pumping technology solution
- Houses three PX Pressure Exchangers
- Designed to isolate and save mud pumps
- Addresses pump failure at drilling sites
- Re-routes hostile drilling fluid away from critical and costly pumps
- $\circ~$  Currently in R&D stage

#### **VORTEQ PROTECTS HIGH PRESSURE PUMPS, REDUCES COSTS**



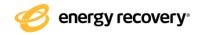
**Status Quo** 

## With VorTeq

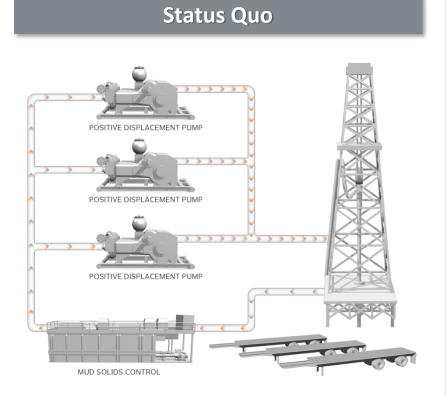


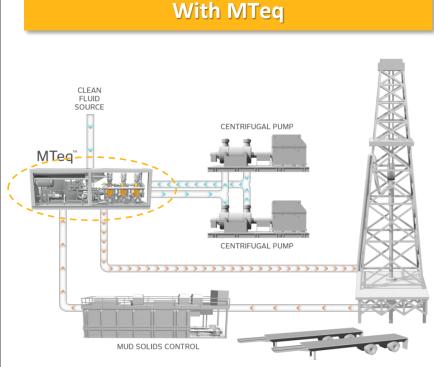
- Maintenance savings (\$3M \$4M<sup>1</sup>)
- Lower pump redundancy and CAPEX (\$1M - \$2M<sup>1</sup>)

Longer-term it may be possible to pair VorTeq with centrifugal pumps Further decreases need for pumps (\$8M to \$12M savings<sup>1</sup>)



### **MTEQ REPLACES POSITIVE DISPLACEMENT PUMPS, REDUCES COSTS**





Positive displacement pumps process drilling fluid today, wearing down and destroying pump assets Highly efficient centrifugal pumps process clean water, reduce/preserve pump assets, lengthen life and reduce costs



#### 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
- $\circ~$  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



#### In 2018, we invested in critical human and capital resources

- We purchased our own high pressure pumps and ancillary equipment to execute testing
  - Already shown dividends when utilized at partner facility in 2018
- We hired field service personnel with fracing expertise to further build our operations team

## Lease signed for new four-acre Commercial Development Center near Houston, Texas. Once operational, the center will:

- o Allow us to test all our Oil & Gas technology solutions at scale and in real-world conditions
- House advanced equipment to machine, inspect and test tungsten carbide components

#### The expanded capabilities of the center should shorten the path to commercialization

- o Reduces time between design enhancement, implementation and testing
- o Removes reliance on partner and product licensee resource availability
- o Enables rigorous testing of tungsten carbide pressure exchangers prior to field deployment



## STRATEGIC SUMMARY



#### Water: Steady, Visible Growth

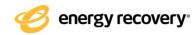
- Global demand for potable water leads to further optimism
- Robust backlog and pipeline driving expected water segment growth in 2019 and 2020
- Looking to leverage our current desalination position
  - Sales and distribution channel offers product portfolio expansion potential
  - Exploring organic and inorganic growth initiatives

#### Oil & Gas: Applying PX Pressure Exchanger Expertise to a New Industry

- Commercialization focus
- Commercial Development Center increases autonomy
  - Reduces the cycle time to test and validate PX advancements
  - Allow us to test all our Oil & Gas technology solutions at scale and in real-world conditions

#### **Financially Flexible Balance Sheet**

- Solid net cash position enables progression of corporate strategy throughout industry cycles
- Allows for strategic options



# THANK YOU

