

# Driving Industrial Sustainability

## Delivering Value in Fluid-Flow Processes

Midwest IDEAS Investor Conference – 25-26 August 2021

## 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.

# ENERGY RECOVERY SNAPSHOT



We design and manufacture solutions that accelerate the environmental sustainability of our customers' operations.



Our solutions increase efficiency and lower lifecycle cost by reducing waste and energy consumption in industrial fluid-flow systems.



Our flagship PX<sup>®</sup> Pressure Exchanger<sup>®</sup> (PX) energy recovery device (ERD) revolutionized seawater reverse osmosis desalination (SWRO), reducing energy costs by up to 60%.<sup>1</sup> The PX is now the industry standard for energy recovery.



We continue to push the boundaries of our core technology, the pressure exchanger, to handle different operating environments of industrial or commercial applications.

## Financial Snapshot<sup>2</sup>

### Product Rev Growth

|                              |     |
|------------------------------|-----|
| <b>Avg. Growth '15 - '20</b> | 21% |
|------------------------------|-----|

|             |     |
|-------------|-----|
| <b>2020</b> | 27% |
|-------------|-----|

|                    |     |
|--------------------|-----|
| <b>2021 (est.)</b> | 10% |
|--------------------|-----|

|                    |     |
|--------------------|-----|
| <b>2022 (est.)</b> | 25% |
|--------------------|-----|

|                              |     |
|------------------------------|-----|
| <b>2021 YTD Gross Margin</b> | 67% |
|------------------------------|-----|

|                              |        |
|------------------------------|--------|
| <b>Cash &amp; Securities</b> | \$121M |
|------------------------------|--------|

|             |    |
|-------------|----|
| <b>Debt</b> | -- |
|-------------|----|

<sup>1</sup>Energy Recovery estimate; <sup>2</sup>Growth and Gross Margin from Product Revenue only

## WE HAVE A STRONG ESG STORY

**\$2.6B** saved for customers on energy expenses annually<sup>1</sup>

**25k+** PXs installed worldwide

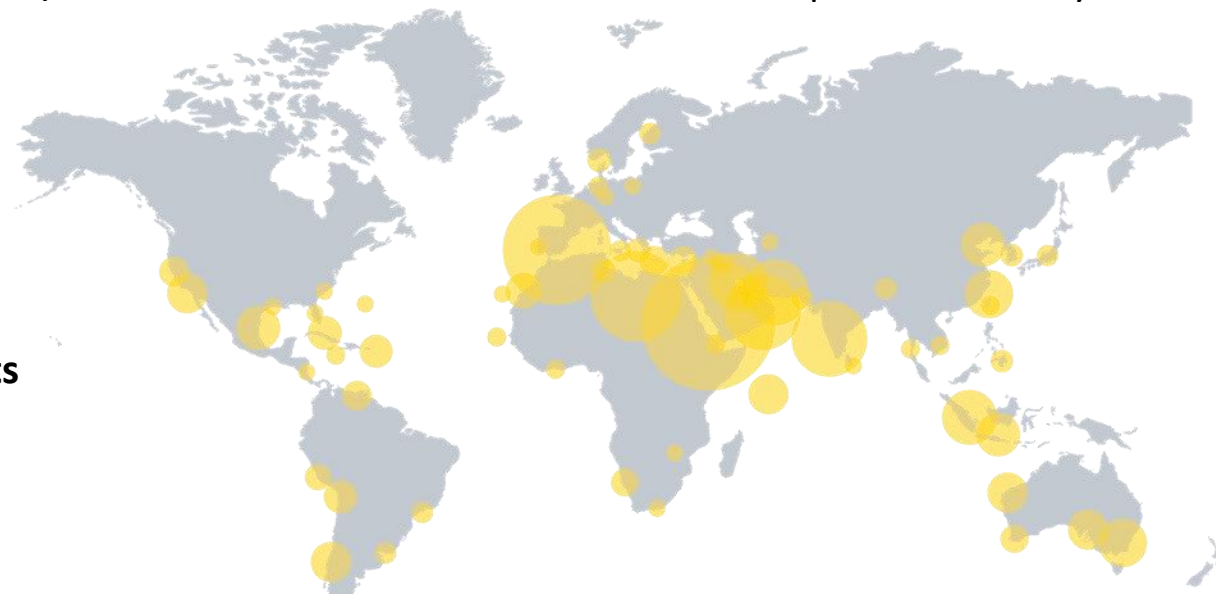
**90%+** product revenue from energy-efficiency related products

**12.5M** metric tons emissions avoided due to PXs = >2.7M vehicles removed from the road annually<sup>1</sup>

**96%** PXs use components made from recycled materials

**100%** Of waste metal from our operations is recycled

### Global Installations of Energy Recovery Desalination Products



<sup>1</sup>Energy Recovery estimates. Assumes all deployed devices are in operation

# ESG AT ENERGY RECOVERY – MAKING PRODUCTS TO HELP IMPROVE THE ENVIRONMENT

## 2<sup>nd</sup> Annual ESG report to be issued Sept 2021

- Aligned with SASB and GRI sustainability reporting frameworks; select U.N. Sustainable Development Goals

## Reflects ongoing commitment to becoming a more sustainable, resilient business

- Our products address climate change, sustainable industrialization, energy efficiency, and water scarcity







To download the full report, please visit

[bit.ly/ERI-ESG](https://bit.ly/ERI-ESG)

THE USE BY ENERGY RECOVERY OF ANY MSCI ESG RESEARCH LLC OR ITS AFFILIATES ("MSCI") DATA, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT, RECOMMENDATION, OR PROMOTION OF ENERGY RECOVERY BY MSCI. MSCI SERVICES AND DATA ARE THE PROPERTY OF MSCI OR ITS INFORMATION PROVIDERS, AND ARE PROVIDED 'AS-IS' AND WITHOUT WARRANTY. MSCI NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI.

## INDUSTRIES BENEFITING FROM PX TECHNOLOGY

| Industry  | Markets  | Customer Type  | Key Benefits Provided  |
|---|--|--|--|
|    | <ul style="list-style-type: none"> <li>○ Seawater Desalination</li> <li>○ Brackish Water Desalination</li> </ul> | <ul style="list-style-type: none"> <li>○ Global EPC Firms</li> <li>○ Desalination OEMs</li> <li>○ Plant Owners and/or Operators</li> </ul> | <ul style="list-style-type: none"> <li>○ Less Energy Consumption</li> <li>○ Lower Emissions</li> <li>○ Reduced Costs</li> </ul>          |
|    | <ul style="list-style-type: none"> <li>○ Industrial Wastewater Treatment</li> </ul>                              | <ul style="list-style-type: none"> <li>○ Global EPC Firms</li> <li>○ Industrial Plant Owners and/or Operators</li> </ul>                   | <ul style="list-style-type: none"> <li>○ Less Energy Consumption</li> <li>○ Lower Emissions</li> <li>○ Reduced Costs</li> </ul>          |
|    | <ul style="list-style-type: none"> <li>○ Natural Gas Processing</li> </ul>                                       | <ul style="list-style-type: none"> <li>○ EPC Firms</li> <li>○ Plant Owners and/or Operators</li> </ul>                                     | <ul style="list-style-type: none"> <li>○ Less Energy Consumption</li> <li>○ Lower Emissions</li> <li>○ Reduced Costs</li> </ul>          |
|  | <ul style="list-style-type: none"> <li>○ CO2 Refrigeration</li> </ul>  | <ul style="list-style-type: none"> <li>○ OEMs</li> <li>○ Supermarkets</li> </ul>   | <ul style="list-style-type: none"> <li>○ Lower Emissions vs. HFCs</li> <li>○ Less Energy Consumption</li> <li>○ Reduced Costs</li> </ul> |

# OUR ENERGY RECOVERY DEVICES

## Desalination

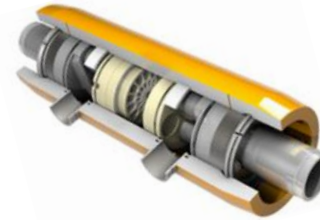


*PX® Pressure Exchanger®*



*Turbocharger*

## Industrial Wastewater Treatment



*PX® Pressure Exchanger®*



*Ultra PX™*

## CO2 Refrigeration



*PX® G1300*

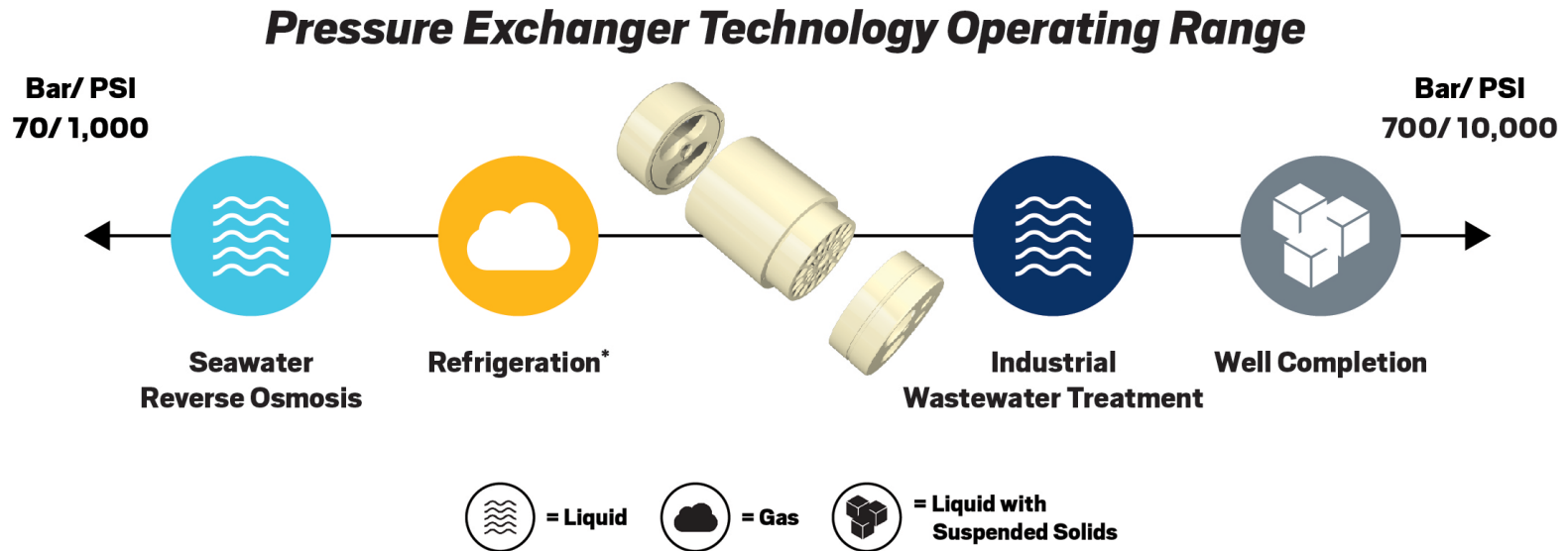
## Natural Gas Processing



*IsoBoost*

# PX TECHNOLOGY PLATFORM – EXCELLING IN A WIDE-RANGE OF PRESSURE APPLICATIONS

- The Pressure exchanger is Energy Recovery's core technology. This versatile technology acts as a fluid piston, efficiently transferring energy between high- and low-pressure fluids and gases through continuously rotating ducts

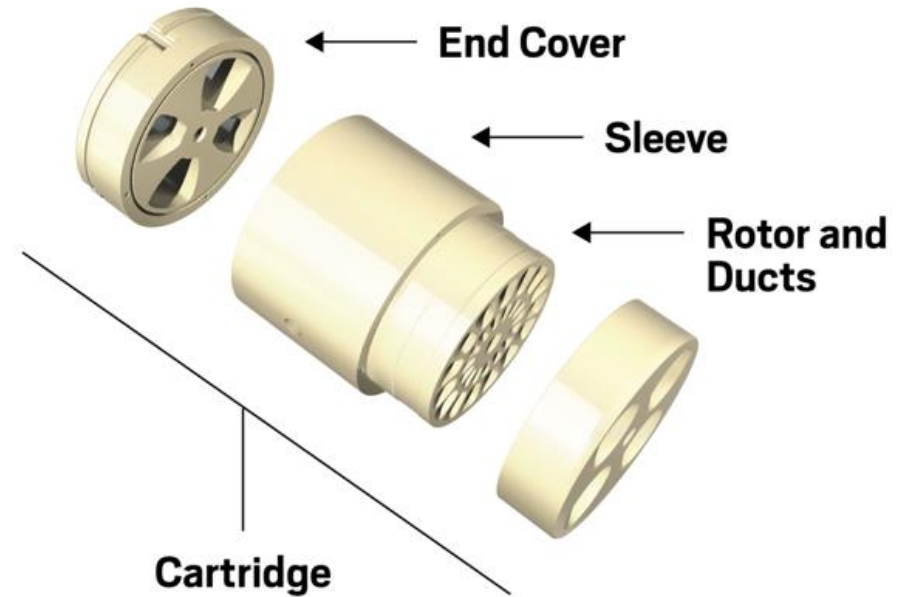


*\*Pressure Exchanger in refrigeration can handle multiple phases of CO<sub>2</sub> (liquid, gas, and supercritical fluids)*



## PRESSURE EXCHANGER TECHNOLOGY PLATFORM

- Our pressure exchanger technology works as a platform to build product applications
- The technology is versatile – can handle liquid, gas, and a range of pressures
- Benefits include lower lifecycle cost and energy use in industrial fluid-flow systems
- Pressure exchanger technology is at the heart of many of our products



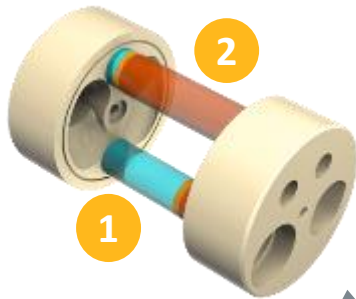
### Anatomy of a Pressure Exchanger

Transfers energy from high-pressure to low-pressure fluids (both liquids and gas) through continuously rotating ducts with only one moving part (the rotor).

# HOW PRESSURE EXCHANGER TECHNOLOGY REDUCES ENERGY CONSUMPTION

## Sealed Phase

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



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

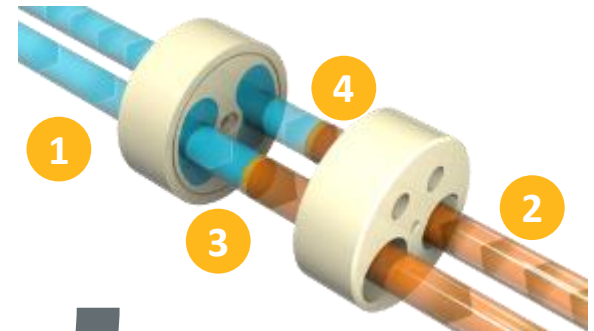
Rotor duct rotates to pressure exchange phase



Rotor duct rotates to sealed phase

## Pressure Exchange Phase

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

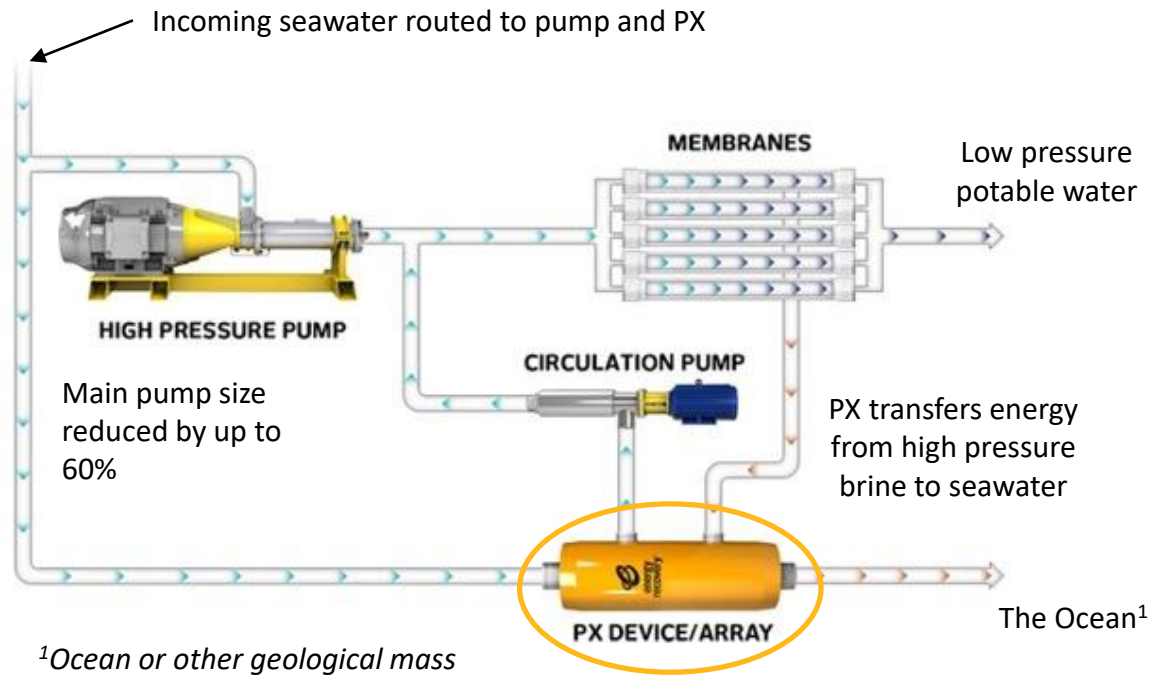


3. Low pressure driven fluid contacts motive fluid, expelling it at low pressure
4. High pressure motive fluid contacts driven fluid, expelling it at high pressure

*Pressure is exchanged continuously as the rotor spins at high speed*

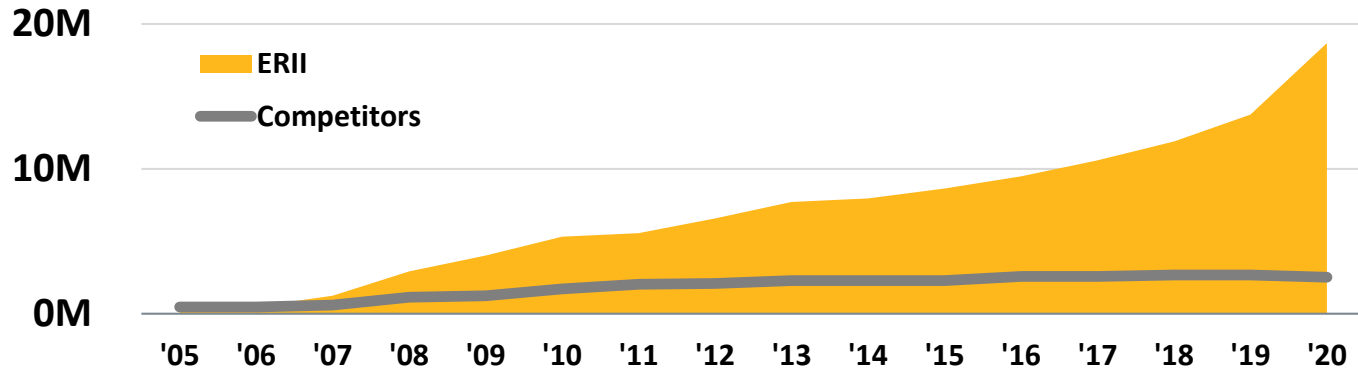
## PX for SWRO

PX lowers energy consumption by up to 60%



# OUR PX PLATFORM HAS COME TO DOMINATE LARGE SCALE SWRO DESALINATION

## Cumulative Won Mega Project<sup>1</sup> Desal Capacity (m<sup>3</sup>/day)



## Technology Strength = High Margin

**67%** ERII Gross Margin<sup>2</sup>

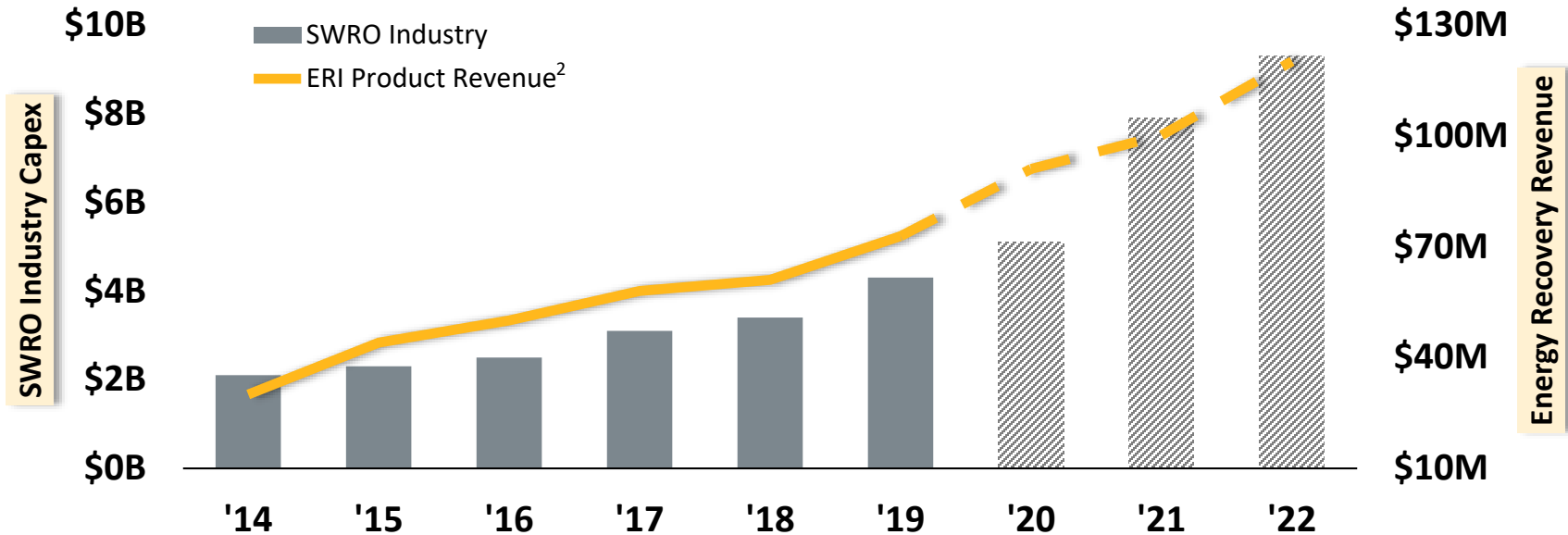
**25%** Russell 2000 Industrials

Our ceramic PX Pressure Exchanger is designed for a 25-year life, needs no maintenance and has up to 98% efficiency – unrivalled quality that translates into high profitability

<sup>1</sup> Mega Projects produce 50,000 cubic meters or more of water per day; <sup>2</sup>YTD 2021 Reported Gross Margin

# NEW WATER DEMAND AND TECHNOLOGY SHIFT DRIVING SECULAR SHIFT IN SWRO

## Annual SWRO Capital Expenditures<sup>1</sup>



Our growth roughly tracks overall SWRO desal capital spend

<sup>1</sup>DesalData Estimates; <sup>2</sup>2020-2022 – ERI Estimates

# THE WORLD NEEDS MORE WATER

---

## FINANCIAL TIMES

No end to crisis in sight as drought grips India's Chennai



Saudi Water Partnership Company has released its Seven-Year Statement for 2020-26

## The Washington Post

Africa's largest dam powers dreams of prosperity in Ethiopia – and fears of hunger in Egypt



Australia prepares for 'Day Zero' – the day the water runs out

## The New York Times

*Flash Drought in the South Brings Record Heat Without Rain*



South America ravaged by unprecedented drought and fires



Alaska Villages Run Dry and Residents Worry About a 'Future of No Water'

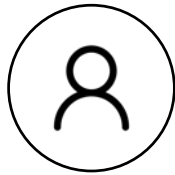
## EXISTING FRESH WATER SUPPLIES WILL LIKELY NOT MEET FUTURE DEMAND

---



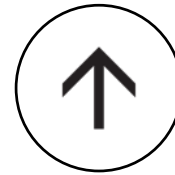
**60%**

The world will only have 60% of the water it needs by 2030



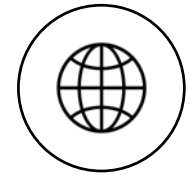
**>2B People**

1/4 of all people live in high water-stress territories



**30%**

Potable water demand expected to increase 30% by 2050



**26%**

Global population is expected to grow from 7.7B to 9.7B in 2050

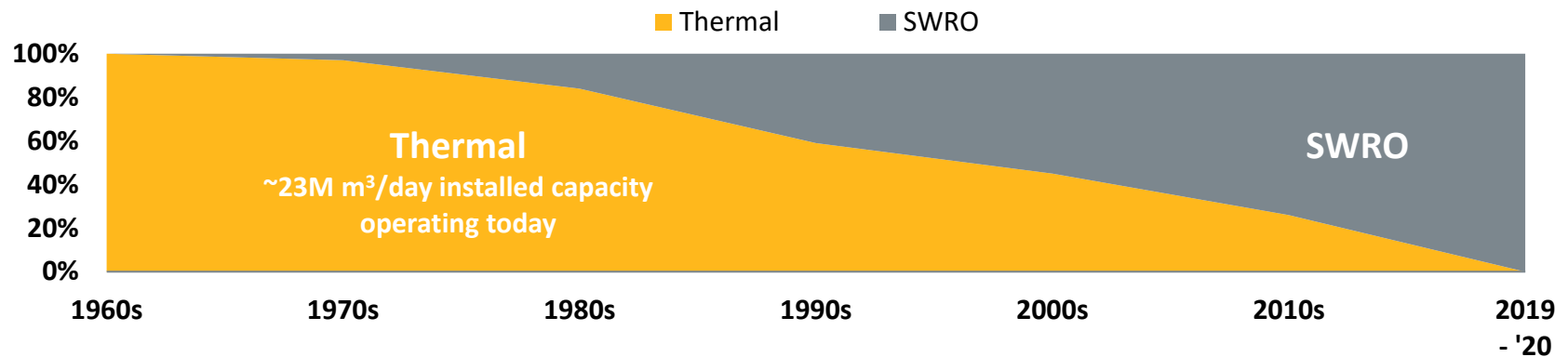
*All statistics – United Nations*

# TECHNOLOGY SHIFT FROM THERMAL TO SWRO: \$0.5B TAM TO MAINTAIN EXISTING CAPACITY

## SWRO Eclipsed Thermal Desalination as Technology of Choice in the 2000s

- Existing thermal capacity should eventually be replaced by SWRO
- We are seeing this demand in our revenue and pipeline today
- SWRO is more efficient, less energy intensive and far more economical
  - \$1B SWRO retrofit of two Saudi thermal plants will generate OPEX savings of \$360M/year<sup>1</sup>

## Thermal vs. SWRO<sup>1</sup> (% of Annual Plant Installations)



**23M cubic meters of thermal capacity equivalent to approximately \$0.5 Billion in PX sales<sup>2</sup>**

<sup>1</sup>DesalData; <sup>2</sup>ERI Estimate



# BUILDING LONG-TERM SUSTAINABLE GROWTH AND VALUE

| Revenue Growth  | Increase Bottom Line  | Sustainability   |
|---|---|--|
| <b>New Technologies</b><br>Develop new PX products, widen technical aperture  | <b>Leverage Existing Assets</b><br>Large investments in organization not needed for success         | <b>Environmental Sustainability</b><br>Accelerate the sustainability of customer operations via reduced energy consumption |
| <b>Diversify Revenue</b><br>Diversify outside of desalination, de-risking revenue and accelerating growth   | <b>Invest in Achievable Projects</b><br>Realistic commercial timelines, manage complexity and scope | <b>Align Organization</b><br>Align organizational aspirations with sustainable product aspirations                         |
| <b>Protect Position in SWRO</b><br>Invest in improved products and operations to protect existing strength in swiftly growing desalination market | <b>Discipline</b><br>Disciplined focus on financial KPIs and marketability of technologies          | <b>Shareholder Transparency</b><br>Open communication with shareholders on progress and plans                              |

# LEVERAGING PX TECHNOLOGY FOR SUSTAINABLE DIVERSIFIED GROWTH BEYOND DESALINATION



## Fluids

- Manage pressure energy between fluid flows
- Relatively clean seawater to caustic pressure pumping proppant; CO<sub>2</sub> gas



## Technology

- PX Platform – focus on reducing energy consumption
- 1,000 - 10,000+ PSI (70 – 700 bar)
- Build off what we know – we are not inventing new markets
- Industrial / Commercial applications
- Maintain first-in-class reliability



## KPIs

### Financial KPIs

- 20%+ ROI
- 50%+ Gross Margin

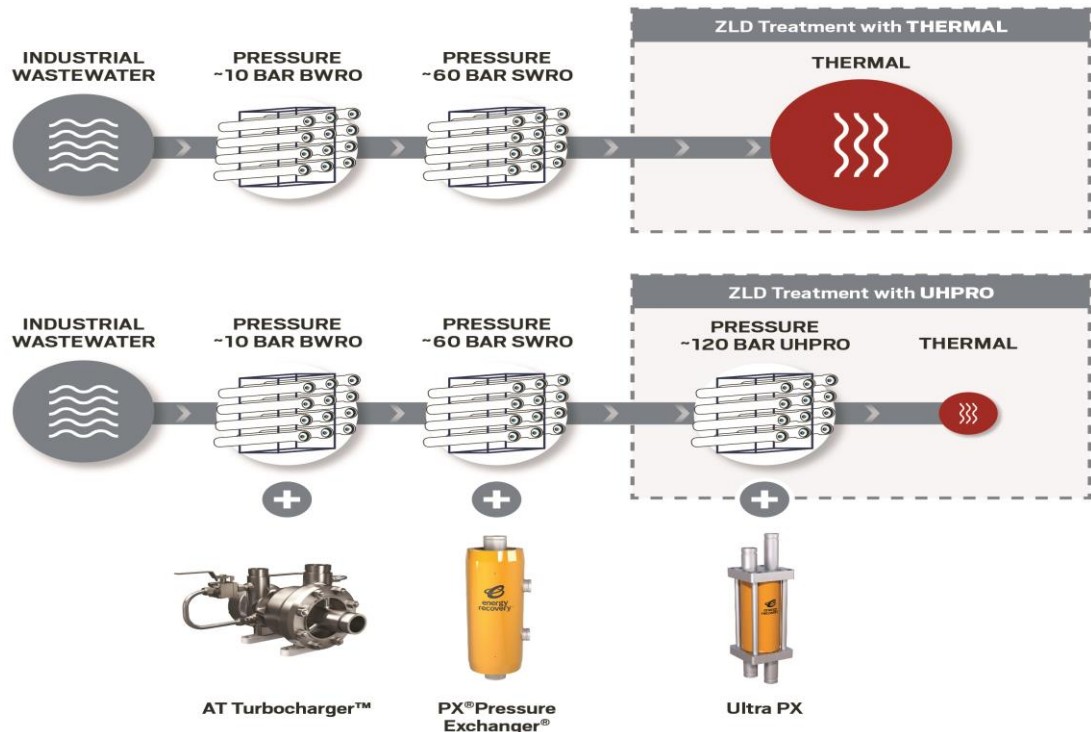
### 3 Year Timeline

- 1 year: prove technical validity
- 2 years: commercial product
- 3 years: cash flow positive run rate

- **Cap R&D Expense to limit size and scope of R&D projects: 15-20% of revenue in 2021**
- **Discipline: Maintain rigorous commercial hurdles for ROI, Gross Margin, and Timelines**

# ULTRA PX – MITIGATING ENVIRONMENTAL EFFECTS OF INDUSTRIAL WASTEWATER DISCHARGE

- Our PX and Ultra PX can recover up to 60% of wasted energy in the RO process with 93%+ efficiency
- RO can significantly reduce the thermal component of mitigating the effects of industrial wastewater due to superior efficiency, much as it has in SWRO
- Our PX is applicable in nearly all RO treatment methods and in most stages of the treatment process



*Applying UHPRO to ZLD treatment reduces thermal requirements at the end of the process*

## HFC PHASE OUT IN THE HEADLINES



...we already operate hundreds of facilities (stores and distribution centers) that utilize ultra-low GWP refrigerants including carbon dioxide (CO<sub>2</sub>).



Over the next 15 years, the U.S. is set to slash the use of powerful greenhouse gases used in refrigerants. That means changes to your grocery store, a switch that's already underway in California.



New York State Bans Hydrofluorocarbon Refrigerants.



(HFCs) capacity to warm the atmosphere – measured as global warming potential – is thousands of times greater than carbon dioxide, with some being up to 13,850 times more potent.



China's commitment on HFCs, by ratification of the Kigali Amendment, sends key signal of its commitment to reduce emissions.

# PX TECHNOLOGY IS A GAME CHANGER FOR THE REFRIGERATION INDUSTRY

## Over 35,000 CO<sub>2</sub> Installations Globally

- Conversion to CO<sub>2</sub> from HFCs (current refrigerants) is fully underway in cool climates
- Regulations are driving adoption in moderate to warm climates
- CO<sub>2</sub> is a 'future proof' green refrigerant

## Hurdles to Faster CO<sub>2</sub> Adoption Remain

- Electricity usage of CO<sub>2</sub> systems increases in warm climates as pressures increase to support refrigeration cycle
- This undercuts environmental benefits of CO<sub>2</sub> and increases operating costs of these systems
- Existing technologies do not sufficiently address this hurdle

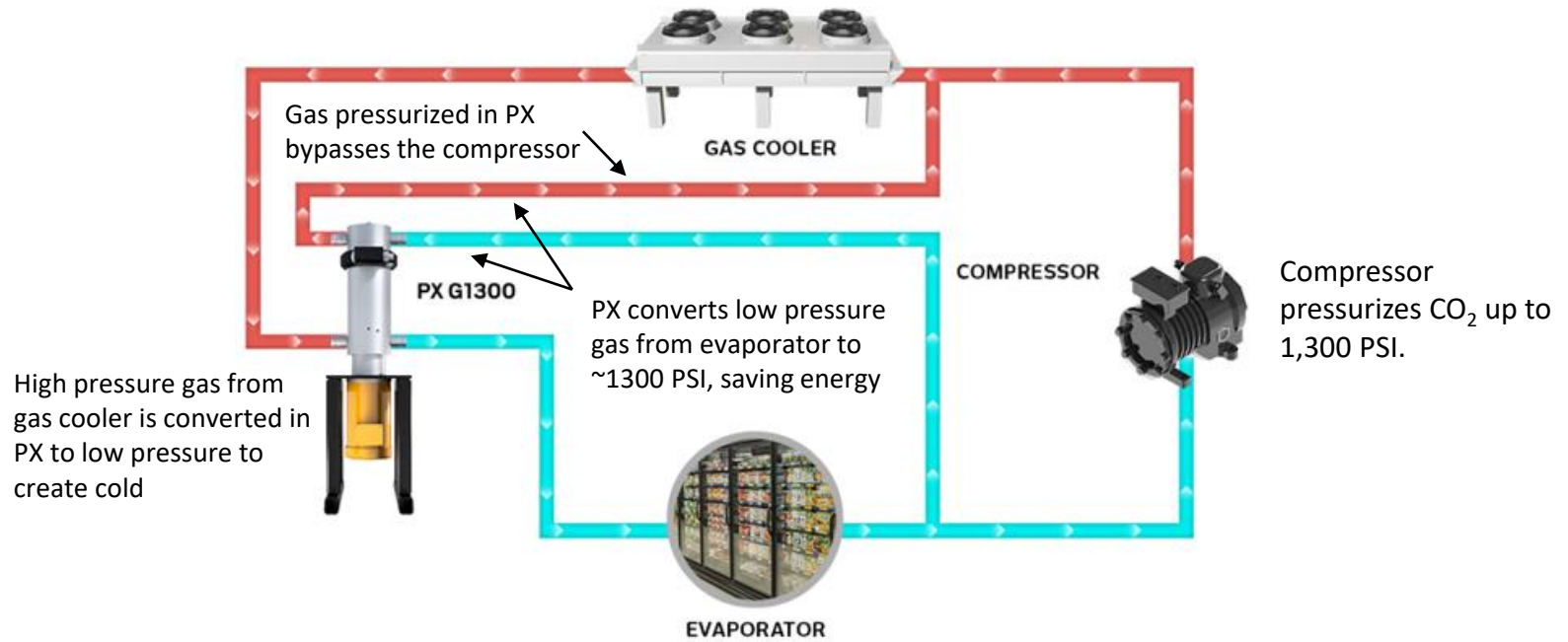
## The PX G enables faster CO<sub>2</sub> adoption

- Reduces/eliminates electricity usage disparity
- Efficiency advantages of the PX G grows the hotter it gets and when refrigeration is most needed
- Helps solve the new CO<sub>2</sub> market's most pressing pain point – high electricity costs

The global transition to CO<sub>2</sub> refrigeration could translate to ~\$1B annual TAM for ERI by 2030<sup>1</sup>

<sup>1</sup>Energy Recovery estimates.

## PX G1300 for CO<sub>2</sub> Refrigeration



We have expanded the aperture of the PX technology to successfully compress gas, allowing for efficient energy transfer in refrigeration<sup>2</sup>

## WE HAVE COME FAR TO UNLOCKING A LARGE MARKET WITH THE PX G

---

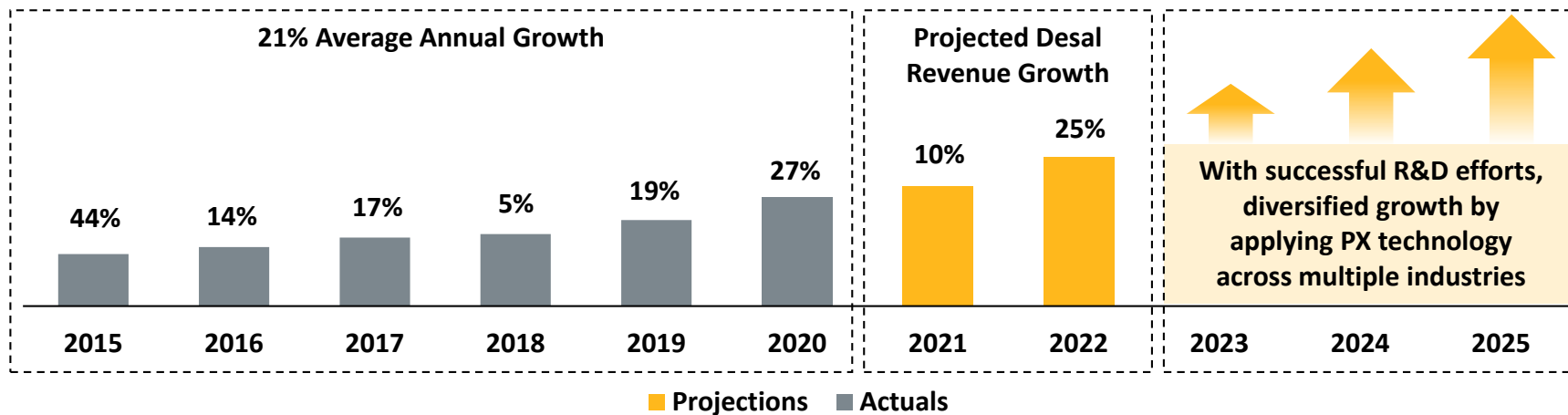
### Current status of the PX G1300

- Successfully tested across a range of temperatures in our full refrigeration test-loop in California
- Control system developed to manage it in operations
- Building our first commercial ready system

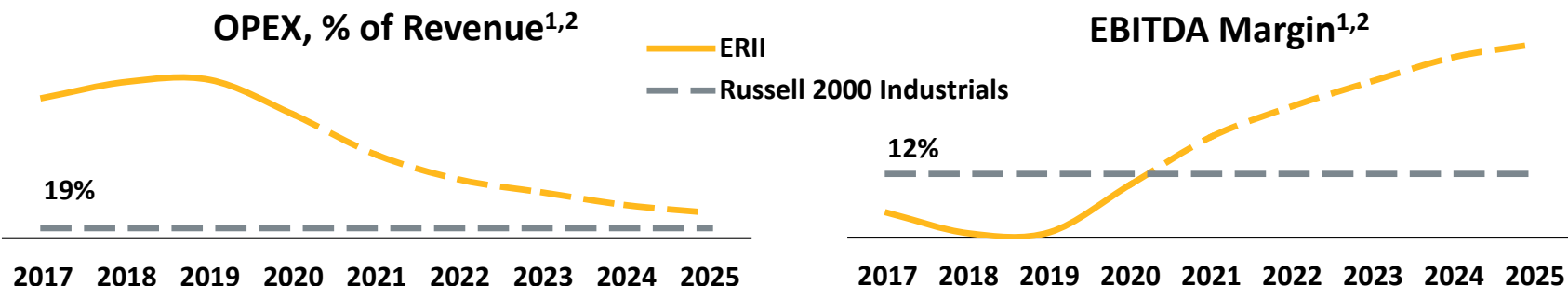


# DISCIPLINED FOCUS DRIVING TOP AND BOTTOM-LINE GROWTH

## Drive Diversified PX Top Line Growth<sup>1</sup>



## Maintain Gross Margin and Manage OPEX to Drive EBITDA

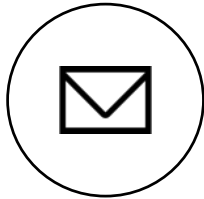


<sup>1</sup>2020 – 2025 are estimated projections; <sup>2</sup>Excluding Schlumberger License and Development Revenue



Thank You





**James Siccardi, VP, Investor Relations**

+1.832.474.7628 | Mobile

[jsiccardi@energyrecovery.com](mailto:jsiccardi@energyrecovery.com)

**Lionel McBee, Sr. Mgr., Investor Relations**

+1.832.334.3685 | Mobile

[limcbee@energyrecovery.com](mailto:limcbee@energyrecovery.com)

[ESG@energyrecovery.com](mailto:ESG@energyrecovery.com)

*(for ESG inquiries)*



**Energy Recovery, Inc.**

1717 Doolittle Drive

San Leandro, CA 94577, USA

**[energyrecovery.com](http://energyrecovery.com)**