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PRESENTATION

Operator

Good day and welcome to the Energy Recovery's Second Quarter 2017 Earnings Conference Call. Today's conference is being recorded.

At this time, I would like to turn the conference over to Chris Gannon, Chief Financial Officer. Please go ahead.

Chris M. Gannon ***Energy Recovery, Inc. - CFO***

Good morning everyone and welcome to Energy Recovery's earnings conference call for the second quarter of 2017. My name is Chris Gannon, Chief Financial Officer of Energy Recovery and I'm here today with our President and Chief Executive Officer, Mr. Joel Gay.

During today's call, we may make projections and other forward-looking statements under the safe harbor provisions contained in the Private Securities Litigation Reform Act of 1995 regarding future events or the future financial performance of the company. These statements may discuss our business, economic and market outlook, the company's ability to achieve the milestones under the VorTeq licensing agreement, growth expectations, gross profit margins, new products and their performance including the MTeq system, cost structure and business strategy.

Forward-looking statements are based on information currently available to us and on management's beliefs, assumptions, estimates, or projections. Forward-looking statements are not guarantees of future performance and are subject to certain risks, uncertainties and other factors. We refer you to the documents the company files from time to time with the SEC, specifically the company's Form 10-K and 10-Q. These documents identify important factors that could cause actual results to differ materially from those contained in our projections or forward-looking statements. All statements made during this call are made only as of today, August 3, 2017, and the company expressly disclaims any intent or obligation to update any forward-looking statements made during this call to reflect subsequent events or circumstances, unless otherwise required by law. In addition, we will make some references to non-GAAP financial measures during this call. You will find supplemental data in the company's earnings press release filed yesterday with the SEC which includes reconciliations of the non-GAAP measures to the comparable GAAP results.

Now turning to the financials. I will begin with a brief analysis of our financial results on a consolidated basis. I will then turn to a segmented examination of our financial results to provide further transparency and clarity to our business. As such I will discuss our 2 segments namely, Water and Oil & Gas, as well as our corporate expenditures. I will conclude with a discussion of our liquidity position.

I will begin with our Q2 2017 consolidated results. Revenue totaled $12.2 million in last year's second quarter, a decrease of 8% or $1.1 million from the comparable period last year. Product revenue was $10.9 million for the quarter, while license revenue totaled $1.3 million. Of the $1.1 million decrease in revenue, $2.2 million was attributable to the Water segment offset by a $1.1 million increase in the Oil & Gas segment. The $2.2 million decrease in Water segment product revenue was driven by delays in the timing of project shipments, while the $1.1 million increase in Oil & Gas segment product revenue was due entirely to the percentage of completion revenue recognition associated with the previously announced sale of multiple units of our IsoBoost system. Product gross margin was 67.7%, representing an increase of 310 basis points over the comparable period last year and the highest product gross margin in our history. The increase in gross margin was primarily driven by favorable Water segment price and mix and production efficiencies. Despite lower gross margins in our Oil & Gas segment associated with the PoC revenue, total gross margin for the period was 71%, which is inclusive of license revenue. Operating

expenses were $9.3 million, representing an increase of 9.7% from $8.5 million in the second quarter of 2016. The increase in operating expense was driven by our continued investment in our emerging Oil & Gas segment, particularly related to our VorTeq and MTeq commercialization efforts.

The company reported a quarterly net loss of $550,000 or a loss of $0.01 per share as compared to a net income of $460,000 or an income of $0.01 per share in the comparable period last year.

Now turning to the segment analysis, beginning with the Water segment. This segment generated product revenue of $9.8 million for the quarter which represents a decline of 18% or $2.2 million year-over-year. The decrease was driven by delays in the timing of OEM and aftermarket product shipments. MPD revenues were relatively flat compared to the second quarter of 2016.

Water segment gross margins of 72.7% for the quarter represent the highest Water segment gross margin in our history, and an 810 basis point improvement over the prior year. This increase was due to favorable PX sales price and mix and production efficiencies.

Water segment operating expenses were on par with the prior year of $1.9 million. With lower revenues, record gross margins and relatively flat OpEx, Water segment contributed $5.2 million in operating income for the second quarter or 53% of revenue. Comparatively, the company or the Water segment generated $4.5 million in operating income in Q1 2016 or 38% of revenue.

Now transitioning into our Oil & Gas segment, which includes our hydraulic fracturing, gas processing and chemical processing business lines. The Oil & Gas segment generated total revenues of $2.4 million for the quarter, an increase of 93% year-over-year. This increase was driven by the previously mentioned PoC product revenue of $1.2 million. We did not recognize any PoC product revenue during the same period last year. However, we recognized $1.3 million of license revenue in both periods.

Oil & Gas segment product gross margin was 25%, while license gross margin was 100% yielding a weighted average total gross margins of 64%. Oil & Gas segment operating expenses increased by $920,000 year-over-year to $3.8 million, driven primarily by our continued investment in R&D to commercialize our VorTeq and MTeq technologies.

Now transitioning into corporate OpEx. The company incurred $3.6 million in operating expenditures for the second quarter of 2017, representing a decline of 5% year-over-year. This decline was primarily driven by the elimination of non-recurring expenses related to the General Counsel transition, partially offset by an increase in corporate development activities.

To conclude my remarks, I will discuss our liquidity position as of June 30, 2017. In the second quarter of 2017, our net cash position decreased by $8.2 million. Cash used in operating activities was $1.2 million, which includes a net loss of $550,000 and non-cash expenses of $1.7 million. Unfavorably impacting cash from operating activities by $1.9 million was an increase in billed and unbilled receivables and earnings in excess of billings attributed to our shipments and the aforementioned Oil & Gas segment PoC revenue, a $1.3 million reduction in deferred revenue related to the amortization of a license agreement exclusivity fee and a $1.4 million increase in inventory, offset by an increase of $1.1 million in accounts payable and $980,000 increase in accrued expenses.

Note, we anticipate a material portion of the working capital build experienced throughout the first half of the year to reverse itself by year-end as we monetize receivables in earnings in excess of billings and further monetize inventory shipments.

Cash used in investing activities was $20.6 million driven by $18.9 million of net marketable security investments, $3.2 million in capital expenditures principally related to our R&D facility, offset by a $1.6 million decrease in restricted cash. Cash used in financing activities was $3.6 million driven by $4.3 million in common stock purchases, offset by $690,000 from the issuance of common stock related to stock exercises.

The company ended the quarter with unrestricted cash of $33.3 million current and non-current restricted cash of $3.3 million and short-term investments of $57.5 million all of which represents a combined total of $94.1 million.

At this point, I will turn the call over to our President and CEO, Joel Gay, to provide a commercial and strategic update. Joel, please go ahead.

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Thank you, Chris. The second quarter's financial performance reaffirms our expectation that 2017 will be an impressive year and potentially a consecutive record year pursuant to revenue, gross profitability and gross profit margin. While revenue of $12.2 million was slightly lower in the first quarter due to discrete project timing, total gross profit margins of 71% represent a new high watermark for the company and the 6th consecutive quarter above 65%. Idiosyncratic and systematic factors remained favorable in the quarter. Our Water segment posted total gross profit margins of 73%. This is a function of continued manufacturing optimization in the form of increasingly lean operational measures, as well as the monetization of pricing power [extracted] through mutually beneficial, and at times exclusive supply agreements with our customers.

Additionally, our marketing mix again shifted toward pressure exchangers away from pumps and turbochargers, and we achieved greater plant utilization as a function of current period and future shipments, both of which are evidence and leading indicators of bullish market conditions.

Within our Oil & Gas segment, we continue to recognize revenue against the multiple unit IsoBoost purchase order announced in the second quarter of 2016, and expect to deliver said units throughout the third and fourth quarters of this year. This purchase order relates to 1 of the 6 gas processing plant projects announced in the Middle East alone since August of 2016 and is indicative of a broader trend throughout the global midstream, mainly continued infrastructural investments despite flattish pricing conditions, this a function of the rising demand in the near future.

Total segment gross profit margins were, of course, lifted by the amortization of the VorTeq licensing agreement exclusivity fee, a recurring benefit of the contract design. We have often in the past discussed our portfolio management strategy of harvesting profits from our desalination business to fund both our early stage enterprises and more notably, our product development roadmap and associated pipeline. This strategy was evidenced in the quarter's results as fundamental performance buttressed our R&D and corporate development efforts for the balance of the year, a subject that I will fully address in the forthcoming commentary.

Now for an update on our progress against the 4 imperatives that comprise our long-term corporate strategy, namely, to, 1, achieve proof of concept of one derivative of the pressure exchanger each year; 2, to establish and drive growth in the PX as a pump market beginning with the commercialization of our VorTeq technology; 3, to enhance our market position in desalination through the expansion of our product and service offering; and 4, to monetize our centrifugal product line, IsoBoost and IsoGen and gas processing and pipeline applications.

Let's begin with an update on our efforts to achieve proof-of-concept of one derivative of the pressure exchanger annually. In May of this year, we announced the MTeq, a novel solution for mud pumping in Oil & Gas drilling operations. This is consistent with our objective of introducing one new derivative of the pressure exchanger annually beginning in 2017. Concurrent to this announcement was also the consummation of our latest strategic alliance with Sidewinder Drilling with whom we will partner to validate the MTeq technology in the field.

The MTeq operates under the same fluid physics and system level design principles as the VorTeq, which is to say, it allows for the efficient transfer of hydraulic pressure energy from a clean fluid to a process fluid, thereby isolating the incumbent pumps from the aforementioned process fluid, the process fluid that has detrimental properties, which in turn creates cost and efficiencies for the service provider.

We have often discussed the theme of trickle-down R&D as a positive externality of the leverageable nature of the pressure exchanger. More than an externality, we actively seek to minimize the marginal investment to spawn new PX derivatives by targeting analogous applications to existing ones. The MTeq and mud pumping more broadly is an example of this tactic. As you are aware, we recently concluded the most rigorous design effort in the company's history to produce the second generation VorTeq system. Included here was an entirely new and bespoke cartridge, our pressure exchanger explicitly designed to mitigate the operating concerns witnessed in testing last year.

The MTeq is the beneficiary of this process and will initially present identical cartridge technology designed for far more challenging

hydraulic fracturing conditions. In this, we successfully minimize the marginal cost to develop the offering while designing to a technical bar that is theoretically and materially above the intended purpose. The immediate critical path is as follows.

The MTeq is currently being manufactured, which is to say the core components or pressure exchangers, as well as the skid and ancillary equipment. Post manufacturing, we will initiate full scale private testing where wellhead conditions will be best simulated. Contingent upon the results of private testing, we will then initiate field trials with Sidewinder, beginning with full-scale yard testing where varying levels of rig integration will be evaluated. It should be noted that such is the identical processes executed throughout 2015 with Liberty Oilfield Services to then evaluate the field readiness of the VorTeq.

Post the conclusion of this process, we will of evaluate results and determine next steps. We are not providing discrete timing against this critical path other than an expectation to begin private testing by the end of the year.

A consistent theme to our product's value proposition is that of omni-cyclicality which is to say, we can create value across all points of a given cycle. Drilling is yet another example here. With a fragile global oil supply and demand balance, E&Ps will continue to exact pricing concessions from service providers, thereby amplifying the need for sustainable and bona fide cost reductions. Our estimates suggest that with the employment of the centrifugal pumps, the MTeq could generate up to $600,000 per rig, per annum in value. Given a lower-for-longer outlook of mid $40s per barrel of oil equivalent and potentially stagnating day rates, we find that upon commercialization, the MTeq's value proposition will resonate throughout the upstream value chain.

In the interim, we remain laser focused on achieving field validation of the technology, continuing our corporate development efforts to identify and engage a potential late stage licensing partner and look forward to providing updates to our shareholders at the process (inaudible).

Now for an update on our VorTeq development and commercialization efforts. The company recently concluded the most rigorous and comprehensive design process in its history. This to produce the second generation VorTeq hydraulic fracturing system. This system is comprised of the VorTeq pressure exchanger, the equipment housing and the manifold or missile.

To briefly reiterate the design objectives at a high level; 1, to design a cartridge that would be impervious to external physical forces such as pressure and force pulsations; and 2, to design a missile or manifold that would insulate, if not isolate the cartridges from external physical forces. These design objectives were born from operating concerns witnessed throughout testing last year, operating concerns that we have referred to as system excitation generally.

To achieve the first objective, we created bespoke fluid and structural interaction computational models that allowed for rapid design iteration and optimization. To achieve the second objective, we partnered with Caterpillar Kemper, who presents a wealth of domain design expertise pursuant to the high pressure oilfield services equipment. We effectuated a heuristic design process which is to say, we endeavored to design every component of the system to operate symbiotically with its counterparts.

To validate the computational designs, we executed rigorous testing at our R&D facilities here in the broader Silicon Valley area. Importantly, we enhanced the test loop to simulate the vibrational conditions witnessed in milestone field testing last year. In short, we designed a shaker table upon which the cartridge and the equipment rest allowing for testing within the same amplitude and frequency regimes witnessed in the field last year. As the quarter progressed, we became increasingly impressed with testing results that best mirrored the milestone conditions. This as it relates to treating pressure in excess of 9,000 PSI, profit loading 1.5 to 2 pound -- 1.5 to 2.5 pounds per gallon added, flow rate, the scaled equivalent of at least 60 barrels per minute and finally, and most importantly, vibrational conditions at emblematic frequencies and amplitudes.

Earlier in the quarter, an opportunity arose to host investors and analysts for a plant tour, Q&A with management and finally a witness test of the new generation VorTeq cartridge. As was disclosed, via a current report on Form 8-K, the witness test consisted of a greater than 9,000 PSI, 1.5 to 2 pounds per gallon added, greater than 7 barrels per minute run, whereat our guests were privy to the test results that we have consistently replicated since the completion of the new cartridge design. It bears noting that the prior generation cartridge that which was

tested during the milestone process last year, when exposed to the same test, the same vibrational and operating conditions fails or stalls with 100% repeatability.

Specific to the critical path to milestone testing, the following applies. We are currently in the manufacturing process for our system components to include the cartridges, equipment housings, the missile, and all ancillary components. Assuming no manufacturing delays, we expect to take receipt of all components early September and we'll spend the balance of the month commissioning or shaking down the system. Following the commissioning process, we will initiate full scale private testing, which is to say we endeavor to execute a test in which we achieve the KPIs or key performance indicators required under milestone one.

Contingent upon the results of private testing, we will then immediately mobilize to attempt milestone one. Based on the current manufacturing schedule and status and our test results to date, our best estimate therefore is to achieve milestone one in the fourth quarter, and if so commercialization at some point in 2018. As material updates arise, we will update our shareholders accordingly.

Progressing now to an update on our efforts to enhance our market position within the global desalination market. Our horizontal integration and project financing initiatives continue as a means of delivering the most compelling offering to our customers as well as increasing the addressable market beyond the theoretical recurring $50 million to $60 million estimate. During the last call, we discussed a new partnership with Duchting Pumpen, a German manufacturer of pumping technology. That partnership contemplates the provision of technology into special purpose entities pursuant to our Energy Service Agreement or ESA procurement vehicle, as well as the bundling of pumps and ancillary equipment not included in our existing product catalog for capital sales into either the new build or retrofit segment of the market.

Just recently, we consummated the first bundled sale presenting Energy Recovery pressure exchangers and Duchting booster pumps increasing the revenue potential on said specific opportunity by 25%. While we need amass a statistically significant samples of sales to extrapolate the steady state recurring market impact, it is nonetheless a positive indicator of the partnership's potential.

Regarding our ESA, our project financing initiative, I've stated previously that some variant of risk participating project financing could be the procurement vehicle of the future. This, as it relates to new build and retrofit opportunities. Our business developers are actively pursuing potential opportunities and we are optimistic that we can consummate the maiden agreement in the near future.

Not surprisingly and with any new offering, here a financial product, the majority of our efforts are spent educating the customer base as to the merits of the procurement vehicle, one in which they purchase a service from our company namely energy savings or a reduction in specific energy consumed to desalinate water. Again, our media campaign is being waged in the retrofit segment of the market, where capital scarcity and technology obsolescence are believed to be compelling demand drivers for the ESA product.

To the extent that the ESA is considered too esoteric for a customer's liking, we have also developed operating and capital leases as a means of monetizing a market segment that has been largely dormant for our company.

For the foreseeable future, however, we anticipate the majority of our desalination revenues to be generated within the new build capital sales segment of the market. And here, market fundamentals remain strong and indicate further bullishness for the balance of 2017 and preliminarily 2018.

Earlier, I described the manifestation of 2 leading indicators in the quarter's results, namely, a shift in our marketing mix toward Pressure Exchanger and increased plant utilization in response to purchase order bookings for periods beyond the current fiscal period. A broader examination of the macroeconomic conditions in historically high growth geographies suggests that the growth cycle may continue into 2018.

The Middle East and North Africa regions have been a bellwether for mega project activity. Saudi Arabia's national transformation program initiated and funded $1.3 billion of water-related projects in June of this year, a portion of which relates to reverse osmosis desalination activity.

Thus far, projects totaling approximately 400,000 cubic meters per day have been announced. We have noted similar yet scaled down federal initiatives in smaller economies, such as Kuwait and Egypt. Notably, the Egyptian currency devaluation of 2015 stimulated significant levels of foreign investment in infrastructure projects, another microeconomic driver for desalination activity in that market. Ultimately, public entity, liquidity determines the rate at which capital projects are led. Most specifically, the health of municipal or equivalent bond markets.

Here, we find the onset of the Chinese bond connect plan, which allows foreign investors to buy and trade Chinese bonds to further stimulate private-public partnerships, specifically those form to build, own and operate desalination plants. While macro and microeconomic indicators suggest a bullish market posture, we remain cognizant of the erratic behavior of desalination and more broadly the global water market. It is precisely the stochastic nature of this market that underscores the importance of our horizontal integration in project financed initiatives.

Beyond riding the systematic wave to shore, we remain in an attack posture as it relates to our competition. The superiority of our technology, vis-a-vis our competitors, is best demonstrated when a given plant is retrofitted with pressure exchangers. As of the close of the second quarter, based on management's estimates, we have replaced approximately 25% of Flowserve DWEER's installation base, our largest competitor historically. We haven't provided quarter or relief to the smaller competitors either. Over the past 2.5 years, we have replaced several devices originally sold by Isobarix, a company that manufactures a similar device to our flagship PX, and with whom we have litigated in the past for IP infringement. Not resting on the laurels of our flagship PX and the Q line, we have also introduced the PX Prime, which presents the latest technology derived through the development of the VorTeq and its derivatives, a product currently and exclusively being offered to our ESA initiative.

In summary, we have and will continue to guard, feed and optimize the cash cow that is our water business. We look forward to providing further updates on this segment and enhancing our position in the desalination market on the next call.

Lastly, an update on our efforts to monetize the centrifugal product line, namely IsoBoost and IsoGen, for gas processing and pipelines applications. Last quarter, we announced an exclusive licensing agreement with Alderley, a U.K. based vertically-integrated oil and gas capital equipment manufacturer. Said licensing agreement presents a field of use of gas processing and pipeline applications within the Gulf Cooperation Council countries or the GCC. This agreement is yet another proof point toward Energy Recovery's evolution into a license or a technology where execution in capital risk are minimized. Moreover, it is indicative of our rifle shop business development and marketing program, where we prospect only in the most target-rich environments.

To provide investors more color [as to] the structure of this agreement, Energy Recovery will be paid a prenegotiated one-time royalty for each IsoBoost or IsoGen units sold by Alderley. Alderley is therefore responsible for first wave business development and prospecting whilst receiving technical support from Energy Recovery.

In order to maintain exclusivity, Alderley is required to satisfy an annual quota. Appreciating the elongated sales cycle into the midstream for such products, the annual quota ramps exponentially over a 3-year period. Pursuant to the scope of supply, Energy Recovery is limited to the rotating assemblies, hydraulic turbochargers and turbines, as well as the control logic in automation. All components that are not central to our core competencies are to be procured or manufactured by Alderley. Examples here would be the skid itself, high pressure iron, valves and the like.

The economic value of the agreement is estimated to be greater than that which would be created through a continued direct sales effort. Revenues will indeed be lower on a per unit basis. However, the gross profit per unit will exceed historical levels. Importantly, the cash flow characteristics of each royalty producing event will be quite favorable, given the capital light design of the agreement, as we are again only supplying the rotating assemblies and control logic.

We are now in the execution phase of the agreement, and are supporting Alderley's efforts accordingly. We remain confident that Alderley's distribution channel and brand equity throughout the GCC will allow for a higher rate of adoption than that which was achieved through the legacy product strategy and business model. After the GCC, North America is considered the most valuable or target-rich environment. And to this end, our corporate development efforts to secure a licensing agreement continue. As and when an agreement is consummated, we will announce such and update our investors accordingly. Similarly, as and when we generate the first royalty through the Alderley agreement, we

will update our investors [and kind].

In closing, the second quarter built upon the momentum created in the first quarter of the year. In addition to generating the highest total gross profit margin in the history of the company, the combined total gross profit of the first and second quarters represent the greatest cumulative total for any 2 such periods in the history of the company. This level of profitability allows for the continued and aggressive funding of our product development roadmap and associated R&D pipeline, and ultimately, the execution of our long-term strategic plan. We are increasingly battle tested. We are replete with resolve and we look forward to a successful conclusion of the second half of the year.

With that, I will now open the line up for questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) And we'll take our first question from James West with Evercore ISI.

Blake Geelhoed Gendron ***Evercore ISI, Research Division - Associate***

This is Blake on for James. My first question was related to the VorTeq. You guys answered it pretty succinctly, just the delta between what you guys saw with the first generation testing, and now it seems like probably development is relative with the risks, so I'll shift to the MTeq. Can you give us in terms of pressure and flow regime, the order of magnitude below which the MTeq will be expected to operate? And possibly why this could streamline the commercialization process?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes, sure. So, let's juxtapose the operating envelops or conditions between hydraulic fracturing in MTeq and ultimately that will serve as a commentary to why we are so confident that we can commercialize the MTeq in a relatively short period of time as compared to the VorTeq. So pressure regimes are approximately 50% of that which you would note in hydraulic fracturing, with the majority of mud pumping applications being performed at 5,000 psi with the peak of 7,500 psi. As it relates to rate, you're talking anywhere from 7 to 21 barrels per minute at the peak with the majority of applications occurring between 12 and 15 barrels a minute, this as compared to 80 to a 120 barrels per minute. Now why is that important? You're familiar with the system excitation failure mode that we witnessed with the VorTeq and that's simply to say that, as you add more flow at a given pressure through a system, the amplitude of the vibrations or the shaking increases exponentially. Therefore, lower flow rates or lesser flow through a given system translates to considerably less system excitation. And so, we've got lower pressures, we have lesser flows or lower flow rates; and then third, as we examine the particular content in fracking of course, proppant is the motive by which the fissures in the shale are propped open, and so service providers are purposefully adding anywhere from 1 to 10 pounds per gallon added depending upon the frac chemistry. Whereas in mud pumping, there is in fact particulate in the fluid, but the majority of that particulate is removed through a number of filtration systems, such as desilters, desanders, shale shakers and the like. And so that which actually passes through the pump is much smaller, you're talking ultra-fine, if not micron sized particles. And of course, as we think about the durability of our product, despite the fact that it's made of tungsten carbide, smaller particles emits lower pressure regimes at lower flow rates and therefore, lower velocities all translate to a much lower technical hurdle for us to meet, as it relates to commercializing that technology.

Blake Geelhoed Gendron ***Evercore ISI, Research Division - Associate***

And my second question is related to the Water segment. You guys mentioned that you got some product mix and you also got some pricing, but also some manufacturing efficiencies in the second quarter. How sustainable are those manufacturing efficiencies moving forward, and what do you expect from the revenue pull through that you will likely get in the second half in terms of the pricing and product mix?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes, alright. So Blake, if you ever have the morbid curiosity to do so, you can go back to the year-end 2014 call that we did in the first quarter of 2015, and we were asked a similar question. And my response was that gross profit margins in the low to mid-60s are in facts sustainable, given sufficient volume or capacity utilization through our plan. We have now posted the 6th consecutive quarter above 65%. I'm not ready to say that gross profit margins above 65% are sustainable. But I will triple down on my original statement that low-to-mid-60s are in fact sustainable When you get above 65%, that's frankly the function -- are a function of systematic risk, namely the health of the market.

And as I posited in my commentary, when there is a preponderance of mega project activity or what I'd refer to as large scale capital projects in the market, the majority of those are pressure exchanger derived, as opposed to other technologies. So MPD activity is a bellwether for the overall health of the desalination market, so you have the benefit of growth, and then you have the secondary benefit of a further shift toward pressure exchangers in your marketing mix. So there is a symbiotic relationship between those 2 leading indicators. Now to directly answer the predicate of your question, as it relates to the second half of the year, we do expect current levels of profitability to continue or at least very close to current levels of profitability. And with respect to volume, as you know, last year was a record year for us, top line and gross profitability wise, and I believe I said in my -- either my quote in the press release or my prepared remarks here, that we expect that 2017 could potentially be yet another record year. So, as you think about the seasonality of 2017, the quarterly distribution of revenues, surely you should expect -- have your third quarter and fourth quarter than that which we saw last year, just based on the project delays that we experienced in the second quarter this year. Net-net, Blake, we're bullish on this year. As it relates to desal, we're certainly bullish at the consolidated level with respect to posting yet another record year.

Operator

And moving on, we'll go to Thomas Curran with FBR Capital Markets.

Thomas Patrick Curran ***FBR Capital Markets & Co., Research Division - Senior VP and Senior Research Analyst***

Joel, returning to VorTeq. So when it comes to the final steps leading up to milestone one. Are any of them new or different from what you had originally planned and what I'm trying to clarify is -- as the timeframe for M1 has drawn closer, weather in this release you're merely zooming in on the remainder of the path or revealing additional required testing?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

No. We haven't revealed any additional required testing. I believe, on the prior call, we characterize the nexus in time between the issuance of the purchase order to Kemper to when we would have the system fully commissioned and ready for private testing is being 6 months. That was back on March 29, I stated that we're going to take receipt of the missile early September, we'll commission it throughout September and therefore initiate private testing in October. So I would be a bit confused as to the confusion of anyone who has been paying attention as to how we've somehow deviated from what we originally said. So that 6 months, we'll commission in September, we'll initiate private testing in October. And that private testing period is very important Tom, and I want to make sure the sell side and buy side understand what we're doing there and why we're doing it. In essence, we are going to perform a microcosm of the first milestone, where we will evaluate system performance against the KPIs that are required in the first milestone. So it will be a very telling process, and as I stated, assuming we are successful in that private testing process, and I'm not going to book-end the duration of private testing, but assuming we are successful, we would then step immediately into the first milestone, hence our belief that we will achieve the first milestone in the fourth quarter of 2017.

Thomas Patrick Curran ***FBR Capital Markets & Co., Research Division - Senior VP and Senior Research Analyst***

Thanks, that's entirely consistent with how I read and understood it. So I imagine the explication though is still helpful. And then, turning to the remaining 2 landmarks on the road to commercialization milestone 2 and Schlumberger's global rollout for which still have up to 5 years. Would you please remind us of the expected timeline for each and clarify for each of those whether there's been any changes?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes, sure. So it's been a while since anyone has actually asked that question. I think it might have been you originally, Tom, but -- or maybe it was Brian Uhlmer (inaudible). So, yes, it's a great opportunity to address that question. So I'd rather focus on the nexus in time between the achievement of the first milestone and commercialization. So if we go back at one point I characterize it as, okay, potentially a 2 to 3-month period between milestone one and milestone two. The reality is we're not thinking about that specific delta meaning between M1 and M2, until we achieve the first milestone because it doesn't matter. We are, however, contemplating the duration between the completion of milestone one and when we deliver the first fully commercialized unit to our licensing partner. And so we're looking at that as anywhere from a 6 to 8-month period, if you will. So 6 to 8 months after we achieve the first milestone, we expect ceteris paribus to deliver the first fully commercialized unit to our licensing partner.

Thomas Patrick Curran ***FBR Capital Markets & Co., Research Division - Senior VP and Senior Research Analyst***

So, if I recall correctly then that sounds as if it is entirely consistent with the guidance you had given when we last discussed it.

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes, Tom, it is entirely consistent and I am glad that your reading comprehension is excellent. I appreciate it.

Thomas Patrick Curran ***FBR Capital Markets & Co., Research Division - Senior VP and Senior Research Analyst***

Well, shifting gears to the Water side, I'm going to show some of my own morbid curiosity here. Chris, could you provide us with the first half '17 revenue breakdown for Water between MPD, OEM in aftermarket and just speak to how you would expect that mix to evolve going forward?

Chris M. Gannon ***Energy Recovery, Inc. - CFO***

Sure. So in terms of revenue $7 million -- $7.1 million was MPD for the entire first half, $9 million was OEM, and then aftermarket was roughly $4.3 million of the total. In terms of the remainder of the year, I would anticipate that we will see similar percentages for over the entire second half of the year. OEM may tick up a little bit as may MPD, but in general, I think those percentages will stay, based on what can see today.

Thomas Patrick Curran ***FBR Capital Markets & Co., Research Division - Senior VP and Senior Research Analyst***

And then for the same time frame, first half of '17 and then expectations for second half. What was the percentage for PX related offerings in total?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

So PXs were roughly 76% of the total, yes. So basically for the first half we had $17.7 million of PXs, $2.8 million of pumps and turbos and then the remainder was Oil & Gas. And in terms of that mix -- yes, in terms of that mix, we really -- in terms of the PX versus pumps and turbo mix, right now where we sit today, it looks like it will be pretty similar.

Operator

We'll go to Laurence Alexander with Jefferies.

Laurence Alexander ***Jefferies LLC, Research Division - VP and Equity Research Analyst***

2 questions. First, can you give a bit of a sense for how you think the MTeq will be presented to the market in terms of the customer CapEx cost or leasing cost, any initial thoughts there? And secondly, with the new licensing agreements, what you see as the timeline for them to start to have a material contribution to your licensing revenue line?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Laurence, great to hear from you, it's been a long time. So let me start with the second question, the orderly agreement and the timeline to material contribution. So let's first define material, keeping in mind that prior to the fourth quarter of 2016, we had generated virtually no revenue against our centrifugal product line in any application outside of reverse osmosis, desalination and then last year we were able to secure a purchase order totaling up to $11 million -- $7 million to $11 million with a delivery of multiple IsoBoost units. And as you know we have subsequently recognized that revenue from Q4 2016 through the present. So with that bit of historical context in mind, you could argue that any contribution from that royalty or rather from that licensing agreement would be deemed material. Now practically speaking, we understand and appreciate how elongated the sales cycle is for both of those products into midstream applications, be they in gas processing plants or be they at pipeline terminals and the like. And for that very reason, we allowed our partner a 3-year ramp to achieve the minimum quotas and then after 3 years it will be steady state. So I would expect material contributions beginning in the year 2 and then year 3 even more material and then hopefully we can establish an appreciable run rate of royalty income contribution from that agreement as they more broadly proliferate the IsoBoost and IsoGen throughout the GCC. Specific to the first question as it relates to how we will position the MTeq both from a business model, and then more importantly procurement vehicle perspective to the market. Consistent with what I've said before, Laurence, we are no longer interested at least as it stands today in effectuating direct sales into markets where our brand equity is relatively insignificant. And I would say that despite the marquee high profile nature of the VorTeq, we are still a relatively unknown quantity in oil and gas as well as the upstream of oil and gas. And for that very reason we will seek to license this technology, namely the MTeq to a channel partner who presents the appropriate domain expertise, the requisite brand equity and then ultimately a very, very broad distribution channel that will allow us to maximize the economic value associated with the intellectual property that underscores that product. Now, a little less philosophical, let's get down to actual numbers. We'd quantified the value per annum per rig of the MTeq to be $600,000.

That's on a gross basis, Laurence, okay. So if we were to give the technology away to the market without extracting any economic rents, the end user, meaning a service provider, would theoretically benefit to the tune of $600,000 per year per rig. Now obviously we price all of our products in particular when it comes to licensing deals on an economic value to the customer basis, and we believe in parity. So at the very least, we expect that we can garner $300,000 of economic value per year per rig and that would most likely come in the form of a royalty paid to us by an exclusive licensing partner or a semi-exclusive licensing partner. And so that's how we ultimately quantify the near-billion dollar opportunity based on a steady state rig count for the MTeq. Does that give you some more color, Laurence?

Laurence Alexander ***Jefferies LLC, Research Division - VP and Equity Research Analyst***

Perfect. Thank you.

Operator

(Operator Instructions) Joseph Osha with JMP Securities.

Joseph Osha

2 questions. first, yet again on MTeq. As you pointed out, the pressure regime is certainly different than the one you're dealing with proppant. But you've got different levels of viscosity depending on the fluid that you're working with and bentonite has its own characteristics. And then depending on where you are operating, even if you're operating south of the drillers which I assume you are, you could be dealing with a different temperature regime. So I'm just wondering if we can drill down a little bit more into some of the domain specific challenges that you might be encountering trying to deal with drilling mud. And then I have another question on Water.

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Joe, it's a great question and I appreciate the technical nature of the question. So let's talk about viscosity. In drilling application, it's really more a function of density, but we can use -- we can equate density with viscosity. And so, as you know, we expect, at some point in the future, to develop a VorTeq technology for fracturing -- our hydraulic fracturing that can do more than just slick water. The non-slick water chemistries, linear gels, crosslinks, hybrids, fibers, et cetera, where you're talking centipoise viscosity ratings of anywhere from 200 to 1,000 cP. We have successfully, albeit on a limited scale, heretofore tested relatively high viscosity fluids with our VorTeq. Why does that -- why is that important to the MTeq? Well, it's important because, as I stated in my prepared remarks, we imported the exact same cartridge technology that we develop from the VorTeq into the MTeq, what I refer to as trickle-down R&D or perhaps (inaudible) R&D, but it's the exact same technology. And so to the extent that we've been able to pump relatively high viscosity fluids with our VorTeq cartridge or VorTeq design, we are not concerned with the density or the stereotypical viscosity that you find in a drilling application, more specifically mud pumping within a drilling application. Pursuant to temperature, we're not concerned about the operating temperatures either. We've done simulations and tests that suggests that our technology, our tungsten carbide cartridge can operate across a very wide spectrum of temperature, certainly those that are emblematic to a typical drilling job. Now that's not to say that there aren't challenges. Let's talk about some of the practical challenges that we have done FMEA analysis around. Unlike the VorTeq, Joseph, the MTeq is a closed loop system. So whereas the VorTeq, the pumps are pressurizing to the required treating pressure, the frac fluid is going into our device. We're transferring the energy and then we're setting the frac fluid down haul, and it is not recirculated through the system. Of course, there's frac flowback and whatnot, but that frac flowback water (inaudible) system. Conversely, the MTeq is, in fact, a closed loop system. And so, there are challenges associated with that with respect to maintaining the homogeneity of the drilling fluid such as what to do with the heat that is generated by the pumps in the other system or the other piece of equipment in that system, as a drilling job is effectuated. And these are the challenges and these of the problems that our very talented engineers have been analyzing and deriving solutions for throughout the balance of the year. So we're obviously going to learn a lot when we initiate field trials with Sidewinder, which is why we're being very cautious as to providing discrete timing guidances as to how long those field trials will last. But we think, with the expertise that Sidewinder presents and certainly the expertise that our group presents, we're sitting in a very, very good position with respect to that product.

Joseph Osha

Okay. And then the follow-up. Moving to Water, especially in some of these high insolation, and that's S-O-L, emerging markets, you're starting to see desal coupled with PV sort of versus a single economic proposition. I'm wondering if you're seeing any of that in your business, and if so how that might potentially operate to your advantage or disadvantage.

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes, right. So smart desal plants, that's been a trend, that's been emerging for quite some time. It hasn't taken hold to the extent that some may think and it's very simple to explain. With the advent of solar or photovoltaic panels, you're simply increasing the total -- the first cost of the given desalination plant. And whilst the economic, specifically the payback, may be perfectly sensible to a rational buyer, we understand that public officials make procurement decisions that sometimes deviate from typical economic rational theory. And so it's something that we're monitoring, we -- our Energy Services Agreement would lend very nicely to a smart desal plant that has solar capabilities as much as you could bundle the reduction in specific energy consumed, with a second layer of energy recycling in the form of solar. So, look, it's an interesting concept, but it has not yet gained too much traction within reverse osmosis desalination.

Operator

And we'll go to a follow-up and that will be from James West with Evercore ISI.

Blake Geelhoed Gendron ***Evercore ISI, Research Division - Associate***

Just a quick one on the MTeq. You mentioned the licensing partner dynamics a few questions ago. I was just wondering if it was possible that you guys will be having these conversations, even though it's still early days, the MTeq before the field trials are concluded with Sidewinder?

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Yes. Sure, Blake. We are, of course, in discussions with a number of potential licensing partners. We have a very, I would say, aggressive corporate development practice, and we understand that the cycle time to consummate a licensing agreement similar to, let's just say, the VorTeq licensing agreement can be elongated, and so we start early and often we began with a profiling exercise, which is to say, first of all, you're going to segment the various types of potential licensors. Do we -- would we potentially license this technology to a service provider or would we license this technology to a capital equipment manufacturer, and of course there are variance there in. But, yes, that corporate development program is underway and it will, of course, be informed by the field trials and certainly the results from those field trials.

Operator

And there are no further questions in the queue at this time. I'd like to turn the call over Joel Gay, Chief Executive Officer.

Joel Gay ***Energy Recovery, Inc. - CEO, President & Director***

Okay. Well, thank you. In closing, I just want to reiterate the key takeaways from the call and more specifically my prepared remarks. Number one, through continued sound operational and financial management, we generated record gross profit margins and year-to-date gross profit. Number 2, we concluded the design process for the second-generation VorTeq system and are now in the manufacturing process; expect to take delivery of a unit in September; initiate private testing in October; and ultimately achieve milestone one in the fourth quarter. 3, we concluded the design process for the MTeq mud pumping solution; are now in the manufacturing process and expect to initiate private field testing by the end of the year. Number 4, we demonstrated the potential of the desalination horizontal integration initiative by consummating the first purchase order bundling our PXs with Duchting pumps, thereby increasing that specific revenue opportunity by 25%. And number 5, we entered the execution phase of the Alderley licensing agreement; anticipate the maiden royalty event to occur in the foreseeable and continue the effort to secure a licensing partner for the North American market. With that said, we look forward to updating you again on our progress in 90 days' time. Thank you.

Operator

And that will conclude today's conference. We'd like to thank everyone for their participation. You may now disconnect.