UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2018

or

☐ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________

Commission File Number 0-29185

QS ENERGY, INC.
(Exact name of registrant as specified in its charter)

Nevada	**52-2088326**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

23902 FM 2978
Tomball, TX 77375
(Address, including zip code, of principal executive offices)

(281)738-1893
(Registrant's telephone number, including area code)

____
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Exchange Act: None.

Securities registered pursuant to Section 12(g) of the Exchange Act: Common Stock, $0.001 par value.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company", and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one)

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☒
Emerging growth company ☐	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates (excluding voting shares held by officers and directors) as of June 30, 2018 was $28,673,000.

The number of shares of the Registrant's Common Stock outstanding as of March 27, 2019 was 280,202,988.

DOCUMENTS INCORPORATED BY REFERENCE - None

Transitional Small Business Disclosure Format (Check one)

Yes ☐ No ☒

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. These forward-looking statements include predictions and statements regarding our future:

- revenues and profits;
- customers;
- research and development expenses and efforts;
- scientific and other third-party test results;
- sales and marketing expenses and efforts;
- liquidity and sufficiency of existing cash;
- technology and products; and
- the effect of recent accounting pronouncements on our financial condition and results of operations.

You can identify these and other forward-looking statements by the use of words such as “may,” “will,” “expects,” “anticipates,” “believes,” “estimates,” “intends,” “project,” “potential,” “forecast” “continues,” “strategies,” or the negative of such terms, or other comparable terminology, and also include statements concerning plans, objectives, goals, strategies and future events or performance.

Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below under the heading “Risk Factors.” We cannot assure you that we will achieve or accomplish our expectations, beliefs or projections. All forward-looking statements included in this document are based on information available to us on the date hereof. We assume no obligation to update any forward-looking statements.

Item 1. Business

The discussion of our business is as of the date of filing this report, unless otherwise indicated.

Overview

QS Energy, Inc. ("QS Energy" or "Company" or "we" or "us" or "our") develops and commercializes energy efficiency technologies that assist in meeting increasing global energy demands, improving the economics of oil transport, and reducing greenhouse gas emissions. The Company's intellectual properties include a portfolio of domestic and international patents and patents pending, a substantial portion of which have been developed in conjunction with and exclusively licensed from Temple University of Philadelphia, PA ("Temple"). QS Energy's primary technology is called Applied Oil Technology (AOT), a commercial-grade crude oil pipeline transportation flow-assurance product. Engineered specifically to reduce pipeline pressure loss, increase pipeline flow rate and capacity, and reduce shippers' reliance on diluents and drag reducing agents to meet pipeline maximum viscosity requirements, AOT is a 100% solid-state system that reduces crude oil viscosity by applying a high intensity electrical field to crude oil while in transit. AOT technology delivers reductions in crude oil viscosity and pipeline pressure loss as demonstrated in independent third-party tests performed by the U.S. Department of Energy, the PetroChina Pipeline R&D Center, and ATS RheoSystems, a division of CANNON™, at full-scale test facilities in the U.S. and China, and under commercial operating conditions on one of North America's largest high-volume crude oil pipelines. Prior testing on a commercial crude oil condensate pipeline demonstrated high correlation between laboratory analysis and full-scale AOT operations under commercial operating conditions with onsite measurements and data collected by the pipeline operator on its supervisory control and data acquisition ("SCADA") system. The AOT product has transitioned from laboratory testing and ongoing research and development to initial production and continued testing in advance of our goal of seeking commercial acceptance and adoption by the upstream and midstream pipeline marketplace. We continue to devote the bulk of our efforts to the promotion, design, testing and the commercial manufacturing and operations of our crude oil pipeline products in the upstream and midstream energy sector. We anticipate that these efforts will continue during 2019.

Our Company was incorporated on February 18, 1998, as a Nevada Corporation under the name Mandalay Capital Corporation. The Company changed its name to Save the World Air, Inc. on February 11, 1999. Effective August 11, 2015, the Company changed its name to QS Energy, Inc. The name change was affected through a short-form merger pursuant to Section 92A.180 of the Nevada Revised Statutes. Additionally, QS Energy Pool, Inc., a California corporation, was formed as a wholly-owned subsidiary of the Company on July 6, 2015 to serve as a vehicle for the Company to explore, review and consider acquisition opportunities. To date, QS Energy Pool has not entered into any acquisition transaction. However, the Company will still consider entering into potential beneficial acquisitions. The Company is considering dissolving QS Energy Pool to reduce costs associated with operating this subsidiary. The Company's common stock is quoted under the symbol "QSEP" on the Over-the-Counter Bulletin Board. More information including the Company's fact sheet, logos and media articles are available at our corporate website, www.qsenergy.com.

Between 2011 and 2012, the Company transitioned from prototype testing of its AOT technology at the U.S. Department of Energy Rocky Mountain Oilfield Testing Center, Midwest, Wyoming ("RMOTC"), to the design and production of full-scale commercial prototype units. The Company worked in a collaborative engineering environment with multiple energy industry companies to refine the AOT Midstream commercial design to comply with the stringent standards and qualification processes as dictated by independent engineering audit groups and North American industry regulatory bodies. In May 2013, the Company's first commercial prototype unit known as AOT Midstream, was completed.

In 2013, the Company entered into an Equipment Lease/Option to Purchase Agreement ("TransCanada Lease") with TransCanada Keystone Pipeline, L.P. by its agent TC Oil Pipeline Operations, Inc. ("TransCanada") which agreed to lease and test the effectiveness of the Company's AOT technology and equipment on one of TransCanada's operating pipelines. As previously reported in our 10-K report filed with the SEC on March 16, 2015, in June 2014, the equipment was accepted by TransCanada and the lease commenced and the first full test of the AOT equipment on the Keystone pipeline was performed in July 2014 by Dr. Rongjia Tao of Temple University, with subsequent testing performed by an independent laboratory, ATS RheoSystems, a division of CANNON™ ("ATS") in September 2014. Upon review of the July 2014 test results and preliminary report by Dr. Tao, QS Energy and TransCanada mutually agreed that this initial test was flawed due to, among other factors, the short-term nature of the test, the inability to isolate certain independent pipeline operating factors such as fluctuations in upstream pump station pressures, and limitations of the AOT device to produce a sufficient electric field to optimize viscosity reduction. Subsequent testing by ATS in September 2014 demonstrated viscosity reductions of 8% to 23% depending on flow rates and crude oil types in transit. In its summary report, ATS concluded that i) data indicated a decrease in viscosity of crude oil flowing through the TransCanada pipeline due to AOT treatment of the crude oil; and ii) the power supply installed on our equipment would need to be increased to maximize reduction in viscosity and take full advantage of the AOT technology. While more testing is required to establish the commercial efficacy of our AOT technology, we are encouraged by the findings of these field tests performed under commercial operating conditions. The TransCanada Lease was terminated by TransCanada, effective October 15, 2014. Upon termination of the TransCanada Lease, all equipment was uninstalled, returned, inspected and configured for re-deployment.

On July 15, 2014, the Company entered into an Equipment Lease/Option to Purchase Agreement ("Kinder Morgan Lease") with Kinder Morgan Crude & Condensate, LLC ("Kinder Morgan") under which Kinder Morgan agreed to lease and test the effectiveness of the Company's AOT technology and equipment on one of Kinder Morgan's operating crude oil condensate pipelines. Equipment provided under the Lease includes a single AOT Midstream pressure vessel with a maximum flow capacity of 5,000 gallons per minute. The equipment was delivered to Kinder Morgan in December 2014 and installed in March 2015. In April 2015, during pre-start testing, low electrical impedance was measured in the unit, indicating an electrical short. A replacement unit was installed May 2015. The second unit also presented with low impedance when flooded with crude condensate from Kinder Morgan's pipeline. Subsequent to design modifications, a remanufactured AOT unit was installed and tested at Kinder Morgan's pipeline facility in August 2015. Initial results were promising, with the unit operating generally as expected. However, voltage dropped as preliminary tests continued, indicating decreased impedance within the AOT pressure vessel. QS Energy personnel and outside consultants performed a series of troubleshooting assessments and determined that, despite modifications made to the AOT, conductive materials present in the crude oil condensate appeared to be the root cause of the decreased impedance. Based on these results, QS Energy and Kinder Morgan personnel mutually agreed to put a hold on final acceptance of equipment under the lease and suspended in-field testing to provide time to re-test crude oil condensate in a laboratory setting, and thoroughly review and test selected AOT component design and fabrication. Subsequent analysis and testing led to changes in electrical insulation, inlet flow improvements and other component modifications. These design changes were implemented and tested by Industrial Screen and Maintenance (ISM), one of QS Energy's supply chain partners in Casper, Wyoming. Tests performed by ISM at its Wyoming facility indicated significant improvements to system impedance and efficiency of electric field generation.

In February 2016, the modified AOT equipment was installed at Kinder Morgan's facility. Pre-acceptance testing was performed in April 2016, culminating in more than 24 hours of continuous operations. In-field viscosity measurements and pipeline data collected during this test indicated the AOT equipment operated as expected, demonstrating viscosity reductions equivalent to those measured under laboratory conditions. Supervisory Control And Data Acquisition ("SCADA") pipeline operating data collected by Kinder Morgan during this test indicated a pipeline pressure drop reduction consistent with expectations. Results of this test were promising, however due to the short duration of the test and limited data collection, definitive conclusions regarding the AOT performance and its impact on pipeline operations could not be reached. Based on final analysis of in-field test results, SCADA operating data and subsequent analysis of crude oil condensate samples at Temple University, it is unlikely Kinder Morgan would use the AOT at the original test location or other condensate pipeline. Kinder Morgan has expressed interest in AOT operations at one of their heavy crude pipeline locations subject to results of other AOT demonstration projects and has provided the Company with additional crude oil samples which have been tested at Temple University for future test correlation and operational planning purposes. The Kinder Morgan Lease is currently in suspension and lease payments have not yet commenced.

Southern Research Institute (SRI) was engaged by QS Energy in 2015 to investigate the root cause of the crude oil condensate impedance issue by replicating conditions experienced in the field utilizing a laboratory-scaled version of the AOT and crude oil condensate samples provided by Kinder Morgan. In addition, QS Energy retained an industry expert petroleum pipeline engineer to review the AOT design and suggest design modifications to resolve the crude oil condensate impedance issue. This engineer has studied design details, staff reports and forensic photographs of each relevant AOT installation and test. Based on these investigations, specific modifications were proposed to resolve the impedance issue, and improve the overall efficiency of the AOT device, resulting in a new value-engineered design of certain AOT internal components.

During the third quarter 2016, the Company developed an onsite testing program to demonstrate AOT viscosity reduction at prospective customer sites. This program utilized a laboratory-scale AOT device designed and developed by the Company and tested at the Southern Research Institute. Under this program, Company engineers set up a temporary lab at the customer's site to test a full range of crude oils. Fees charged for providing this service were dependent on scope of services, crude oil sample to be tested, and onsite time requirements. In the fourth quarter 2016, the Company entered a contract to provide these onsite testing services to a North American oil producer and pipeline operator over a one-week period in early 2017 at a fixed price of $50,000. This test was performed in January 2017; data analysis and final report was completed in March 2017. Test results demonstrated viscosity reduction under limited laboratory conditions. The oil producer has since requested access to observe a full-scale demonstration facility and view operating data when they become available.

In 2014, the Company began development of a new suite of products based around the new electrical heat system which reduces oil viscosity through a process known as joule heat ("Joule Heat"). The Company built and tested its first Joule Heat prototype in June 2015. The system was operational; however, changes to the prototype configuration will be required to determine commercial effectiveness of this unit. In December 2015, we suspended Joule Heat development activities to focus Company resources on finalizing commercial development of the AOT. We plan to resume Joule Heat development in the future depending on the availability of sufficient capital and other resources.

In July 2017, the Company filed for trademark protection for the word “eDiluent” in advance of rolling out a new marketing and revenue strategy based on the concept of using AOT to reduce pipeline dependence upon diluent to reduce viscosity of crude oils. A primary function of AOT is to reduce viscosity by means of its solid-state electronics technology, in essence providing an electronic form of diluent, or “eDiluent”. The Company plans to market and sell a value-added service under the name eDiluent, designed to be upsold by the Company’s midstream pipeline customers in an effort to provide the Company with long-term recurring revenues.

During the third quarter 2017, the Company built a dedicated laboratory space at its Tomball Texas facility, and now has the capability to perform onsite testing utilizing our laboratory-scale AOT device, among other equipment. Development of an AOT unit for use in crude oil upstream and gathering operations was restarted in September 2017 utilizing resources at the Tomball facility, and the Company plans to resume Joule Heat development in the future depending on the availability of sufficient capital and other resources. Also, during the third quarter 2017, the Company built an outdoor facility at its Tomball Texas facility for onsite storage of AOT inventory and other large equipment. The Tomball facility is owned by the Company’s CEO as described in our Form 10-K filed with the SEC on April 2, 2018.

Throughout 2018 our primary strategic goal has been focused on installing and operating a demonstration AOT project on a commercial crude oil pipeline. Much of our time was spent meeting with industry executives and engineers in North and South America and working with local representatives in the Asian and the Middle Eastern markets. In December 2018, we reached mutual agreement with a major U.S.-based pipeline operator on a demonstration project and are now prepared to deliver and install our AOT equipment on a crude oil pipeline located in the Southern United States in 2019. We believe the selected project site should be ideal for demonstration purposes, delivering heavy crudes which, based on samples tested at Temple University, should experience significant viscosity reduction when treated with our AOT technology.

While management focused on finding a partner and finalizing terms of the demonstration project, our engineering team worked throughout 2018 to improve our AOT design and prepare one of our inventoried AOT units for deployment. All system upgrade, inspections and testing protocols were completed in December 2018, and the AOT unit is now ready for delivery to the demonstration site. The pipeline operator finalized site selection and began site design and engineering in January 2019. Based on the most recent project update provided by the pipeline operator, we anticipate shipping the AOT equipment to the demonstration site in early April 2019, with installation to be completed in late April. We anticipate demonstration operations to begin early May 2019.

Plans moving forward are centered on achieving commercial adoption of our AOT device leading to sales and revenue in 2019. Over the past year, we have met with many industry executives who expressed interest in AOT subject to seeing and evaluating commercial operations and data. Assuming successful operations, the demonstration AOT project should provide data requested such as real-time changes in viscosity, pipeline pressure drop reduction and increases in pipeline operating flowrates. All collected data will be normalized such that it can be used to evaluate the financial and operational benefits across a wide range of commercial operating scenarios without disclosing confidential details of our demonstration partner’s operations. We believe that real-world data from our proposed pilot AOT project may be used to accelerate our desire to achieve commercial adoption of our AOT technology, positioning us to re-engage with industry executives, targeting sales in late 2019.

The Company is currently pursuing AOT testing in several countries in South America related to upstream, midstream, barge, and tanker truck applications. Oil samples from multiple clients have been shipped from South America for testing at Temple University. There is a vast amount of heavy oil in these countries and we believe the Ministers of Hydrocarbons have standing orders to increase production and transportation capacity. We are also in discussions with an exploration and production company regarding AOT operations on a West Coast heavy crude gathering line that relies heavily on diluent to achieve required viscosity. This project could be designed to demonstrate AOT for upstream and trucking applications. We continued work with an existing client in Asia on a potential AOT demonstration project; however, progress on this project slowed from our original targets. In August 2018, we were informed by our Asian client the project would be suspended and reassessed in 2019 subject to budget and project approval requirements imposed by new management. In August 2018, we were approached by a prospective customer with operations in Russia and other regions in the former Soviet Union with expressed interest in receiving a proposal to install AOTs on a new 2,000 km pipeline. Ongoing communications are continuing with energy companies in Europe and the Middle East. Our ability to do business in some of these and other potential target markets, specifically including Russia, China and Venezuela are now, or may in be future become, restricted or impacted by sanctions, tariffs and other government actions imposed by the United States or foreign governments.

Our expenses to date have been funded through the sale of shares of common stock and convertible debt, as well as proceeds from the exercise of stock purchase warrants and options. We will need to raise substantial additional capital through 2019, and beyond, to fund our sales and marketing efforts, continuing research and development, and certain other expenses, until we are able to achieve a revenue base.

There are significant risks associated with our business, our Company and our stock. See "Risk Factors," below.

Our Business Strategy

QS Energy intends to continue to seek commercialization and marketing of its current technologies. Our current and primary product portfolio is dedicated to the crude oil production and transportation marketplace, with a specifically-targeted product offering for enhancing the flow-assurance parameters of new and existing pipeline gathering and transmission systems.

Our primary goal is to provide the oil industry with a cost-effective method by which to increase the number of barrels of oil able to be transported per day through the industry's existing and newly built pipelines. The greatest impact on oil transport volume may be realized through reductions in pipeline operator reliance on diluent for viscosity reduction utilizing AOT technology; a process the Company refers to as electronic diluent, or "eDiluent". The Company filed for trademark protection of the term eDiluent in 2017. We also seek to provide the oil industry with a way to reduce emissions from operating equipment. We believe our goals are realizable via viscosity reduction using our AOT product line.

We believe QS Energy's technologies will enable the petroleum industry to gain key value advantages boosting profit, while satisfying the needs of regulatory bodies at the same time. In 2014 and 2016, we installed and operated AOT equipment on two North American pipelines, demonstrating our ability to build, deliver and operate our AOT equipment on a high-volume commercial pipeline. Key players in the pipeline industry continue to demonstrate interest in our technologies.

Our manufacturing strategy is to contract with third-party vendors and suppliers, each with a strong reputation and proven track record in the pipeline industry. These vendors are broken up by product component subcategory, enabling multiple manufacturing capacity redundancies and safeguards to be utilized. In addition, this strategy allows the Company to eliminate the prohibitively high capital expenditures such as costs of building, operating and maintaining its own manufacturing facilities, ratings, personnel and licenses, thereby eliminating unnecessary capital intensity and risk.

Our identified market strategy is to continue meeting with oil and gas industry executives in the upstream, gathering, and midstream sectors from both domestic and foreign companies. Our goal is to introduce our technology to oil and gas companies and to demonstrate potential value for the purposes of negotiating commercial implementation of our AOT technology to their existing infrastructures.

Our strategy includes:

1. Continue optimization and value engineering of our AOT Midstream commercial product line.
2. Install and operate AOT equipment on a commercial midstream pipeline.
3. Directly market AOT technology to midstream pipeline operators based on results and analysis of data from the AOT demonstration project.
4.
5. Present demonstration project results and analysis at various trade conferences.
6. Continue to make inroads and meet with key strategic potential customers in the following geographic regions:

   a. United States
   b. Canada
   c. South and Central America
   d. Middle East
   e. Asia

7. Continue to make inroads and strategic alliances with additional supply chain and logistics support to rapidly expand our production capacity beyond its current physical limitations, adding capacity, reach and stability with pre-approved supply chain members that meet the criteria of the customers' procurement divisions.
8. Develop new AOT technologies crude oil technologies with the potential to expand our market reach upstream and gathering pipeline, offshore pipelines, rail and trucking containers, and crude oil container ships.
9. Continue to develop collaboratively additional scientific and technical whitepaper reports, product development enhancements, and additional products with our engineering support, consultants and relationships.
10. Seek long-term recurring revenues by directly offering or licensing electronic viscosity reduction (electronic diluent, or "eDiluent") as a service to reduce reliance on physical diluent.

Market Analysis Overview

QS Energy's AOT crude oil viscosity reduction technology directly targets the heavy crude oil transportation industry, initially targeting the midstream crude oil pipeline operations which deliver high volumes of heavy crude oil to market. The U.S. Energy Information Administration (EIA) estimates the 2018 worldwide crude oil production at 82 million barrels per day. North American production (U.S. and Canada) is estimated at 16 million barrels per day. At $60 per barrel, this represents annual worldwide and North American sales of $1.8 trillion and $350 billion, respectively. The EIA estimates 71% worldwide crude oil production is transported by midstream pipelines, with 90% of North American production transported by midstream pipelines. In 2014, the Congressional Research Service estimated the average cost of midstream pipeline transportation at $5 per barrel. Assuming a $5 per barrel transportation cost and 2018 crude oil production rates, annual worldwide and North American midstream crude oil transportation costs are approximately $100 billion and $26 billion, respectively.

The energy sector continues to operate in a period of both rapid change and expansion. Due to the relatively recent and widespread adoption of advanced oilfield drilling and completion technologies, known as enhanced oil recovery (EOR) techniques, enormous reserves of "tight" oil and gas are now recoverable from shale formations throughout North America and the world. This historic surge in upstream crude oil production has resulted in costly and persistent transportation bottlenecks when moving upstream production to downstream storage, offloading facilities and refineries. This persistent and severe industrywide problem is stimulating investments in new and existing pipeline infrastructure and a reliance on less desirable alternate forms of transport, including rail and freight truck.

Since the initial use of EOR or tertiary recovery techniques in the 1970s, oil and gas producers have progressively relied more heavily on the application of gas and chemical injection as well as thermal recovery. These extraction techniques, coupled with a much greater number of new wells in active oilfields, has raised the output of reservoirs by 30 to 60 percent above traditional primary and secondary recovery practices. Due to the rapid adoption of advanced extraction technologies throughout the U.S. energy industry, a 34-year decline in domestic oil and gas production was reversed in 2006. Historically high output from massive shale formations such as North Dakota's Bakken, Texas' Eagle Ford and Permian Basin, Colorado's Green River and Utah's Uintah Basin continues to the present day.

Other nations with significant exploitable shale formations include Russia, China, Argentina, Colombia, Ecuador, Libya, Australia, Venezuela, Mexico and dozens of others, providing a ready market for crude oil pipeline optimization technologies as production comes online. All told, the U.S. Energy Information Administration estimates there to be 345 billion barrels of identified and recoverable shale oil worldwide.

Consequently, oil production exceeds the capacity of existing pipelines in the U.S., Canada, South and Central America, and many other regions of the world, often resulting in delivery delays to refineries and increased reliance on more costly rail and tanker truck transport.

Recently, the softening of oil prices worldwide has incentivized producers and transporters to reduce costs and seek technologies that can provide greater operational efficiencies. AOT is specifically designed to increase pipeline capacity, while reducing reliance on diluent, pipeline operating costs and overhead, thereby increasing margins and delivering measurable competitive advantages.

Projected Pipeline Infrastructure Investment

Among the challenges facing the global crude oil production and transportation sectors, few are as intransigent or detrimental to the industry as the transportation bottlenecks and well-to-market delivery delays that are endemic here in North America and overseas. While new pipeline infrastructure projects are underway here in the U.S., Canada and in foreign markets, gaining legislative approval is a lengthy process and their construction is highly capital-intensive.

Although pipelines are by far the safest and most economical transportation method, outmoded pipeline infrastructure constructed primarily in the 1950s and 1960s cannot provide the capacity necessary to move production downstream to storage, refinery and offloading facilities. Consequently, delivery delays to refineries and reliance on less desirable rail and tanker truck transport have increased exponentially since 2008 when the shale boom began in earnest. Data compiled by the U.S. Energy Information Administration, IHS Global and the American Petroleum Institute identify billions in lost revenue opportunities for E&P companies and tax collection agencies in leading oil producing states such as Texas, North Dakota, Alaska, California, Colorado, Wyoming and Utah directly attributable to production takeaway constraints.

Despite the recently depressed price level of global oil benchmarks, experts forecast continued growth in crude oil pipeline capital expenditures. In June 2018, the Interstate National Gas Association of America published a study titled "North America Midstream Infrastructure through 2035." Among its key findings, this report estimates $321 billion will be invested in midstream crude oil infrastructure between 2018 and 2035. This demand is largely due to capacity constraints coupled with the high cost of delivering crude oil by truck or rail.

We believe QS Energy's AOT technology is strategically aligned with the major requirements and challenges facing the petroleum pipeline economy. The AOT is designed to increase pipeline flowrate while relaxing pipeline viscosity requirements, effectively increasing pipeline capacity and reducing or eliminating bottlenecks. This has the ancillary benefit of reducing the need to add diluent or heat to reduce viscosity while reducing reliance on more costly truck and rail transport to meet increasing capacity demands. Our AOT technology may also mitigate costly operating factors such as vapor pressure, pigging (pipeline cleaning) frequency, power consumption, and onset of turbulent flow. Of these factors, vapor pressure, which may be mitigated by AOT through reduced reliance on diluent and a reduction in heat buildup in transit, is of high importance to many pipeline operators as vapor pressure is tightly controlled by the EPA and is very expensive to mitigate by other means. We are now seeking to commercialize AOT as a cost-efficient solution for both new and existing pipeline operations.

Target Markets

The oil and gas sector market can be segmented into three primary categories: Upstream Producers, Midstream Transporters and Downstream Refiners:

- The Upstream segment is involved in the exploration and production (E&P) of oil and gas.
- Midstream companies and partnerships transport oil and gas to markets via pipelines, rail and shipping, and provide storage in the field and at the destination location.
- The Downstream sector refines oil and gas into finished products and, in cooperation with manufacturers and retailers, markets and distributes fuels and other refined petroleum products.

Upstream Producers

The Upstream segment has the greatest exposure to commodity prices. When prices fall as has been the case recently, they feel the brunt of this realignment. They also have the most to gain from additional flow throughput capacity and therefore would see immediate benefit from QS Energy's AOT.

This sector is typically nimble and faces few barriers to entry. With clear financial upside for every additional barrel of crude oil that they are able to transport, these companies are often open to new and innovative technology capable of providing greater efficiencies, lower costs and improved cash flow. Upstream producers physically move the most volume of product. They are customers to the Midstream transporters and enter into long-term contractual shipping obligations (tariff-based transportation contracts) with Midstream transporters to secure the movement of product from their fields to the refiners and markets downstream.

Producers make the spot market price for every barrel delivered to refinery, minus the transport costs, tariffs, and marketing discounts associated with bringing the product to market. A rough rule of thumb for this market is that the further away they are from the refinery, the higher the transport costs to deliver the product. Discussions with Upstream entities has uncovered strong interest in solutions that unlock chokepoints from their field equipment to the transmission line loading terminals through viscosity reduction (AOT). In addition, this group would also benefit from transporters implementing our AOT transmission-line series due to its ability to increase the overall flow capacity of pipelines transporting product from loading terminals to market.

Midstream Gathering Transporters

A subset of the Midstream transporters sector is the gathering line operators. This group often functions as a part of the Upstream producers' operations, or within the Midstream transporter's operations. Midstream gathering lines are the regional transportation infrastructure that connect Upstream oilfield gathering lines to Midstream long-distance main trunk lines. Typically, these pipelines are of a relatively short length (20-100 miles) and have diameters between 6" and 12", and could benefit from our smaller, lower cost AOT technology.

Midstream entities transport the bulk of the world's crude oil output via the 400,000 miles of crude oil pipelines globally. Domestically, they deliver a large percentage of the U.S. daily production of 9.2 million barrels per day through 160,000 miles of crude pipelines. Midstream operators represent a strong and ready market for AOT, and field test deployments for both solutions are underway.

The pipeline transport operators' business model is to charge a tariff to transport each barrel of oil through their pipeline. Due to the high daily volume of oil being transported and its value as a commodity, even incremental performance efficiencies can drive significant reductions in overhead reduction and increases in toll revenues. AOT may also provide pipeline operators the opportunity to offer on-demand electronic diluent as a service at a premium fee to customers highly dependent on diluent to meet viscosity requirements.

The potential benefits of AOT includes increased flow, reduced pipeline operating pressure and reduced friction losses and friction-induced heat build-up, providing economic benefits through increased capacity and toll rate income, and regulatory benefits through reductions in BTU per ton-mile, off-gassing and reduced carbon emissions (CO2).

<u>Other heavy crude oil transporters</u>

Truck, rail and marine crude oil carriers rely on heat and other costly and potentially hazardous measures to address the difficulties of onloading and offloading thick, heavy crudes. The Company is investigating AOT equipment designs specifically targeting this market's viscosity and vapor pressure requirements and related evaporation mitigation practices mandated by the U.S. Environmental Protection Agency.

Our Products and Technology

<u>AOT Commercial Products</u>

Beginning in the second quarter of 2012, the Company began the design and engineering efforts required to transition from laboratory and prototype testing to AOT units designed for full-scale commercial testing. The Company established its supply chain, designs, drawings, engineering, certifications and specifications to comply with the engineering audit processes as dictated by the energy industry regulation processes and North American regulatory bodies. We have built, delivered and tested, under limited duration and conditions, AOT equipment on a high-volume commercial pipeline. We have not proven the commercial viability of this product. Please see "ITEM 1A, Risk Factors", for a discussion associated with the commercial viability of our products.

The first commercial deployment of AOT occurred on the Keystone Pipeline in Udall, Kansas in May 2014, utilizing four AOT pressure vessels in a parallel "4-Pack" configuration for a cumulative capacity of 600,000 barrels per day. This system was operated under normal pipeline operating conditions as reported in the ATS RheoSystems field test summary report dated February 5, 2015. See section titled "Laboratory and Scientific Testing" below for more information on test procedures and results. Subsequent to testing and termination of the TransCanada lease, the AOT 4-Pack was uninstalled and reconfigured for deployment as four individual AOT units.

Our second AOT commercial installation was a single AOT deployment initially installed in March 2015 on the Kinder Morgan Crude & Condensate pipeline, which provides takeaway capacity for the Eagle Ford Shale in South Texas, primarily delivering light crude oil. As discussed in the Overview section above, equipment was installed limited operations and tests were performed in 2015 and 2016. Based on final analysis of in-field test results, SCADA operating data and subsequent analysis of crude oil samples at Temple University, it is unlikely Kinder Morgan would use the AOT at the original test location or other condensate pipeline. Kinder Morgan may consider AOT operations at one of their heavy crude pipeline locations subject to results of other AOT demonstration projects.

The Company continues to optimize and value engineer its AOT product line, targeting both midstream and upstream markets. The Company is in the process of developing an AOT demonstration project in cooperation with a major U.S. pipeline operator which, based on the most current schedule provided by the pipeline operator, is expected to be operational in May 2019,

Joule Heat Product Development

The Company began development its Joule Heat product in 2014, based around the new electrical heat system which reduces oil viscosity through a process known as joule heat, specifically targeting the upstream crude oil transportation market. The Company's first Joule Heat prototype was installed for testing purposes under a joint development agreement with Newfield Exploration Company in June 2015 and the system was operational; however, changes to the prototype configuration will be required to determine commercial effectiveness of this unit. In December 2015, we temporarily suspended Joule Heat development activities to focus Company resources on finalizing commercial development of the AOT. We plan to resume Joule Heat development in the future depending on the availability of sufficient capital and other resources.

AOT Commercial Supply Chain

The Company has developed a well-established supply chain for fabrication of the commercial AOT. The supply chain consists of multiple component suppliers and manufacturing companies engaged under Independent Contractor Agreements according to their respective fields of expertise. The supply chain entities have been chosen for their ability to work collaboratively with QS Energy and for their existing relationships with current and potential future customers of QS Energy technologies. The external components such as pressure vessels, inlet and outlet piping header systems, personnel and equipment shelters have been manufactured under contract with Power Service Inc. with offices in Wyoming, Utah, Colorado, Montana, North Dakota, and Texas. Internal components such as grid packs, electrical connections and other machined parts have been manufactured by Industrial Screen and Maintenance, with offices in Wyoming and Colorado. All equipment is manufactured in the United States of America, using only approved raw materials and vendors for quality control and import/export compliance purposes and meet the certifications and specifications as dictated by our customers and their independent oversight and auditing authorities.

Other components such as power systems, electrical junction boxes, cabling, hardware, switches, circuit breakers, computer equipment, sensors, SCADA/PLC, software and other power and integration equipment are purchased as complete units from various suppliers with operations based throughout North America. All component vendors are required to meet or exceed the same specifications as the parts manufacturers to maintain compliance as dictated by our customers and their independent oversight and auditing authorities.

AOT Intellectual Property

The Company began its own independent audit process for the updating of its intellectual property portfolio in 2012. The goal of this process was to streamline unnecessary legacy items left over from prior management, consolidate efforts to countries and regions of interest and retire items that were no longer valid or had been replaced with new intellectual property developments. In 2013, the Company retained the law firm of Jones Walker LLP, with operations based in Houston, Texas and began consolidation and streamlining efforts to manage intellectual properties. Since that time, QS Energy has filed two additional provisional patents related to our technologies' method and apparatus.

QS Energy is currently maintaining and licensing from Temple University a portfolio of domestic and international patents, which have either been granted or have been published and are pending subject to final approval by the respective patent agency. Each of these intellectual properties are related to QS Energy's AOT, Joule Heat and Fuel Injector technologies. AOT technologies are being actively developed and marketed by the Company. Development of QS Energy's Fuel Injector and Joule Heat technologies have been suspended. The Company continues to maintain a license agreement with Temple University with respect to the underlying Fuel Injector patents, and is considering its options to re-start commercialization, sublicense the technology, or terminate the fuel injector license agreement with Temple. For details of the licensing agreements with Temple University, see Financial Statements attached hereto, Note 6. Please see ITEM 1A, Risk Factors below for a discussion of risks associated with these intellectual properties.

Current Business Status

The Company is currently working with a major U.S. pipeline operator to install and operate for testing purposes an AOT demonstration project on a high-volume crude oil pipeline. Once operational, the Company plans to analyze and use AOT performance data to re-engage current and new prospective customers in our primary target North American and South American midstream crude oil markets.

In November 2017, the Company's CEO and VP of Engineering traveled to South America, meeting with eight companies in Ecuador, Colombia, and Peru. After communicating remotely with engineers and executives of these companies over the past few months, this trip provided an opportunity to meet face-to-face, tour facilities and operations, and see first-hand how and where AOT would likely provide benefit to their operations. Each of these companies expressed both interest and need for our AOT technology and discussions are continuing at a variety of levels.

One of the Company's most interesting South American prospects has a defined need to increase capacity on pipelines transporting a very heavy crude typical throughout South America. This operator is weighing the benefits of AOT against the option of installing more pump stations while adding more diluent to its blend to meet its needs. A heavy crude oil sample provided by this operator was tested at Temple University in March 2018, demonstrating viscosity reductions of 50% and above at variety of temperatures from room temperature up to 160 degrees Fahrenheit. Duration testing indicated this crude oil maintains AOT-induced viscosity reduction well beyond 24 hours, retaining 85% of its AOT viscosity reduction 24 hours post-treatment. Preliminary analysis of laboratory results applied to this operator's pipeline infrastructure indicates AOT could decrease reliance on diluent and increase flow rates, resulting in increased pipeline capacity of more than 20%. Data to be collected from the Company's AOT demonstration project could be relevant to this South American operation.

Our efforts are tightly focused on executing our pilot program strategy and conversations continue with prospective customers in the Gulf Coast, Canada, Europe, and the Middle East.

Laboratory and Scientific Testing

From 2010 through 2013, the Company worked with the U.S. Department of Energy ("US DOE") to test its technology at the Department of Energy's Rocky Mountain Oilfield Testing Center ("RMOTC"), near Casper, Wyoming. This third-party testing independently verified the efficacy of the Company's technology operating in a controlled facility, using commercial-scale prototype of our AOT equipment. These tests were summarized in the US DOE Rocky Mountain Oilfield Test Center report dated April 4, 2012 ("ROMRC Report"), which reported AOT measured pressure loss reduction of 40% and viscosity reduction of 40%; and reported observed reductions in line-loss and gains in pump operation efficiency across the entire length of the 4.4-mile test pipeline. A subsequent long-duration (24-hour) test at the RMOTC facility tested the effectiveness of AOT in treating oil overnight, as pipeline oil temperatures and viscosities drop. In its report dated May 3, 2012 to May 4, 2012, US DOE engineers recorded 56% reduction in viscosity of the AOT-treated oil versus untreated oil, with AOT effectively stabilizing oil viscosity throughout the overnight run despite dropping temperatures.

Laboratory testing of our AOT technology has been conducted by Dr. Rongjia Tao. Testing of the technology as applied to crude oil transmission has been conducted at Temple University in their Physics Department, in addition to the US DOE, at their Rocky Mountain Oilfield Testing Center, located on the Naval Petroleum Reserve #3 Teapot Dome Oilfield, north of Casper, Wyoming. In addition, a group led by Dr. Rongjia Tao, Chairman, Department of Physics of Temple University conducted experiments, using the laboratory-scale Applied Oil Technology apparatus at the National Institute of Standards and Technology (NIST) Center for Neutron Research (CNR). NIST is an agency of the U.S. Department of Commerce, founded in 1901 in Gaithersburg, Maryland.

Independent laboratory testing was also conducted as a collaborative effort by Temple University and PetroChina Pipeline R&D Center ("PetroChina") in 2012. In its report dated June 26, 2012 ("PetroChina Report"), PetroChina concluded, "The above series of tests show that it is very effective to use AOT to reduce the viscosity of crude oil. We can see that AOT has significantly reduced the viscosity of Daqing crude oil, Changqing crude oil, and Venezuela crude oil, and greatly improved its flow rate.".

As previously reported in 2014, QS Energy installed and tested its commercial AOT equipment, leased and operated by TransCanada on TransCanada's high-volume Keystone pipeline operation. The first full test of the AOT equipment on the Keystone pipeline was performed in July 2014, with preliminary data analyzed and reported by Dr. Rongjia Tao of Temple University. Upon review of the July 2014 test results and preliminary report by Dr. Tao, QS Energy and TransCanada mutually agreed that this initial test was flawed due to, among other factors, the short-term nature of the test, the inability to isolate certain independent pipeline operating factors such as fluctuations in upstream pump station pressures, and limitations of the AOT device to produce a sufficient electric field to optimize viscosity reduction. Although Dr. Tao's preliminary report indicated promising results, QS Energy and TransCanada mutually agreed that no conclusions could be reliably reached from the July 2014 test or from Dr. Tao's preliminary report. As a result of this test, the Company modified its testing protocols and contracted with an independent laboratory, ATS RheoSystems, a division of CANNON ("ATS"), to perform follow-up tests at the TransCanada facility. This independent laboratory performed viscosity measurements at the TransCanada facility during subsequent testing in September 2014. As detailed in its field test report dated October 6, 2014, ATS measured AOT viscosity reductions of 8% to 23% depending on flow rates and crude oil types in transit. Over the duration of a 24-hour test intended to measure the recovery of the AOT treated oil from its reduced-viscosity treated state to its original pre-treated viscosity, ATS measured viscosity reductions of 23% three hours after treatment and 11% thirteen hours after treatment, with the crude oil returning to its untreated state approximately twenty-two hours after treatment. In its summary report dated February 5, 2015, ATS concluded that i) data indicated a decrease in viscosity of crude oil flowing through the TransCanada pipeline due to AOT treatment of the crude oil; and ii) the power supply installed on our equipment would need to be increased to maximize reduction in viscosity and take full advantage of the AOT technology.

Although, as reported by ATS, the efficacy of the AOT technology operated in the TransCanada field test was constrained due to limitations of the electric field applied by that unit's power supply, subsequent analysis by QS Energy personnel of ATS test results compared against laboratory tests performed at Temple University on oil samples provided by TransCanada revealed a single test run in which the electric field generated by the AOT was sufficient to fully treat the oil given operating conditions at the time of the test. In this test run, ATS measured a 23% reduction in viscosity three hours after AOT treatment. Laboratory tests at Temple University performed on a sample of crude oil provided by TransCanada of the same type treated in that specific field test measured a 27% reduction in viscosity in the laboratory immediately following treatment. Allowing for the actual three-hour of recovery time of the field test measurement, the resulting field test viscosity reduction of 23% correlates very well to the 27% viscosity reduction achieved in the laboratory setting.

Due to the small sample size of tests performed during the TransCanada field test, results reported by ATS are statistically inconclusive and cannot be relied upon to provide proof of AOT efficacy. While more testing is required to establish the efficacy of our AOT technology, we are encouraged by the findings of our independent research laboratory and the results of subsequent comparative analysis of data collected under laboratory and commercial operating conditions. We look forward to further development and commercialization of our technology. The TransCanada Lease was terminated by TransCanada, effective October 15, 2014. The Company has modified the design of the AOT power supply such that future installations of the AOT device are expected to achieve sufficient electric field to optimize viscosity reduction.

The Company contracted Southern Research Company ("SRI") in 2015 to perform independent laboratory tests on its prototype Joule Heat units AOT Upstream units. SRI performed tests on a prototype Joule Heat unit in September 2015, which showed promising results in which the Joule Heat prototype was observed to increase crude oil temperatures. In December 2015, we suspended Joule Heat and AOT Upstream development activities to focus Company resources on finalizing commercial development of the AOT Midstream.

Competition

The oil transportation industry is highly competitive. We are aware of only three currently available competitive technologies in widespread use for reducing the viscosity of oil throughout the world. Many of our competitors have greater financial, research, marketing and staff resources than we do. For instance, oil pipeline operators use heat, diluents such as naphtha and/or natural gasoline, and/or chemical viscosity reduction additives, or chemical drag-reducing agents to improve flow in pipelines. Our research indicates that these methods are either very energy-intensive, or costly to implement on a day to day basis. Management believes that the Company's AOT technology presents advantages over traditional methods, yet the industry's willingness to experiment with new technology may pose some challenges in acceptance.

We are not aware of any other technology using uniform electrical field crude oil viscosity reduction technology which is designed to significantly improve pipeline operation efficiency. Although we are unaware of any technologies that compete directly with our technologies, there can be no assurance that any unknown existing or future technology will not be superior to products incorporating our AOT technology. Major domestic and international manufacturers and distributors of pipeline flow-improvement chemical solutions include Pemex, Petrotrin, Pluspetrol, Repsol, Glencore, Conoco-Philips, and Baker-Hughes. According to our research, heater skid manufacturers are generally local to the oilfield and pipeline regions, and are comprised of a large number of relatively small businesses in a fragmented industry. Major heater skid manufacturers are Parker, KW International, Thermotech Systems, LTD.

Government Regulation and Environmental Matters

Our research and development activities are not subject to any governmental regulations that would have a significant impact on our business and we believe that we are in compliance with all applicable regulations that apply to our business as it is presently conducted. Our products, as such, are not subject to certification or approval by the EPA or other governmental agencies domestically or internationally. Depending upon whether we manufacture or license our products in the future and in which countries such products are manufactured or sold, we may be subject to regulations, including environmental regulations, at such time.

Non-Disclosure Agreements

To protect our intellectual property, we have entered into agreements with certain employees and consultants, which limit access to, and disclosure or use of, our technology. There can be no assurance, however, that the steps we have taken to deter misappropriation of our intellectual property or third-party development of our technology and/or processes will be adequate, that others will not independently develop similar technologies and/or processes or that secrecy will not be breached. In addition, although management believes that our technology has been independently developed and does not infringe on the proprietary rights of others, there can be no assurance that our technology does not and will not so infringe or that third parties will not assert infringement claims against us in the future. Management believes that the steps they have taken to date will provide some degree of protection; however, no assurance can be given that this will be the case.

Employees

As of December 31, 2018, the Company had five (5) full-time employees. We also utilized the services of part-time consultants on an as-needed basis to assist us with various matters, including engineering, logistics, investor relations, public relations, accounting and sales and marketing. We intend to hire additional personnel to provide services when they are needed on a full-time basis. We recognize that our efficiency largely depends, in part, on our ability to hire and retain additional qualified personnel as and when needed and we have adopted procedures to assure our ability to do so.

Item 1A. Risk Factors

We have a history of losses, and we cannot assure you that we will ever become or remain profitable. As a result, you may lose your entire investment.

We generated insignificant revenues from operations in late 2006 and subsequently did not generate any revenues until 2014 and we have incurred recurring net losses every year since our inception in 1998. For the fiscal years ended December 31, 2018 and 2017, we had net losses of $3,059,000 and $4,835,000 respectively. To date, we have dedicated most of our financial resources to research and development, general and administrative expenses and initial sales and marketing activities. We have funded all of our activities through sales of our debt and equity securities for cash. We anticipate net losses and negative cash flow to continue until such time as our products are brought to market in sufficient amounts to offset operating losses. Our ability to achieve profitability is dependent upon our continuing research and development, product development, and sales and marketing efforts, to deliver viable products and the Company's ability to successfully bring them to market. Although our management is optimistic that we will succeed in marketing products incorporating our technologies, there can be no assurance that we will ever generate significant revenues or that any revenues that may be generated will be sufficient for us to become profitable or thereafter maintain profitability. If we cannot generate sufficient revenues or become or remain profitable, we may have to cease our operations and liquidate our business.

Our independent auditors have expressed doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.

In their report dated April 1, 2019, our independent auditors stated that our consolidated financial statements for the year ended December 31, 2018 were prepared assuming that we would continue as a going concern. Our ability to continue as a going concern is an issue raised as a result of our recurring net losses and accumulated deficit from operations since inception. We had a stockholders' deficit of $1,482,000 as of December 31, 2018. Our ability to continue as a going concern is subject to our ability to obtain significant additional capital to fund our operations and to generate revenue from sales, of which there is no assurance. The going concern qualification in the auditor's report could materially limit our ability to raise additional capital. If we fail to raise sufficient capital, we may have to liquidate our business and you may lose your investment.

Since we have not yet begun to generate positive cash flow from operations, our ability to continue operations is dependent on our ability to either begin to generate positive cash flow from operations or our ability to raise capital from outside sources.

We have not generated positive cash flow from operations since our inception in February 1998 and have relied on external sources of capital to fund operations. We had $1,153,000 in cash at December 31, 2018 and used cash from operations of $1,476,000 for the year ended December 31, 2018.

We currently do not have credit facilities available with financial institutions or other third parties, and historically have relied upon best efforts third-party funding. Though we have been successful at raising capital on a best-efforts basis in the past, we can provide no assurance that we will be successful in any future best-efforts financing endeavors. We will need to continue to rely upon financing from external sources to fund our operations for the foreseeable future. If we are unable to raise sufficient capital from external sources to fund our operations, we may need to curtail operations.

We will need substantial additional capital to meet our operating needs, and we cannot be sure that additional financing will be available.

As of December 31, 2018 and thereafter, our expenses ran, and are expected to continue to run, at an approximate "cash burn rate" of $100,000 per month, which amount could increase during 2019. In order to fund our capital needs, we conducted private offerings of our securities in 2017 and 2018. While discussion regarding additional interim and permanent financings are being actively conducted, management cannot predict with certainty that an equity line of credit will be available to provide adequate funds, or any funds at all, or whether any additional interim or permanent financings will be available at all or, if it is available, if it will be available on favorable terms. If we cannot obtain needed capital, our research and development, and sales and marketing plans, business and financial condition and our ability to reduce losses and generate profits will be materially and adversely affected.

Our business prospects are difficult to predict because of our limited operating history, early stage of development and unproven business strategy. Since our incorporation in 1998, we have been and continue to be involved in development of products using our technology, establishing manufacturing and marketing of these products to consumers and industry partners. Although we believe our technology and products in development have significant profit potential, we may not attain profitable operations and our management may not succeed in realizing our business objectives.

If we are not able to devote adequate resources to product development and commercialization, we may not be able to develop our products.

Our business strategy is to develop, manufacture and market products incorporating our AOT technology. We believe that our revenue growth and profitability, if any, will substantially depend upon our ability to raise additional necessary capital for research and development, complete development of our products in development and successfully introduce and commercialize our products.

Certain of our products are still under various stages of development. Because we have limited resources to devote to product development and commercialization, any delay in the development of one product or reallocation of resources to product development efforts that prove unsuccessful may delay or jeopardize the development of other product candidates. Although our management believes that it can finance our product development through private placements and other capital sources, if we do not develop new products and bring them to market, our ability to generate revenues will be adversely affected.

The commercial viability of QS Energy's technologies remains largely unproven and we may not be able to attract customers.

Despite the fact that we leased AOT equipment in 2014 to a major oil pipeline operator and tested the equipment on their high-volume pipeline under normal operating conditions, entered into a lease agreement with a second major oil pipeline operator to operate and test AOT equipment in 2015, and have initiated a project to demonstrate our AOT technology on a commercial pipeline in 2019, the commercial viability of our devices is not known at this time. If commercial opportunities are not realized from the use of products incorporating the AOT technology, our ability to generate revenue would be adversely affected. There can be no assurances that we will be successful in marketing our products, or that customers will ultimately purchase our products. Failure to have commercial success from the sale of our products will significantly and negatively impact our financial condition. There can be no assurances that we will be successful in marketing our products, or that customers will ultimately purchase our products. Failure to have commercial success from the sale of our products will significantly and negatively impact our financial condition.

If our products and services do not gain market acceptance, it is unlikely that we will become profitable.

At this time, our technology is commercially unproven, and the use of our technology by others is limited. Specific examples of use to date include:

- Temple University, testing, research and joint development;
- U.S. Department of Energy Rocky Mountain Oilfield Testing Center, testing and research;
- PetroChina Pipeline R&D Center, testing and research;
- TransCanada, testing;
- Kinder Morgan Crude and Condensate, testing, possible conversion to commercial use;
- Newfield Exploration Company, testing and joint development;
- On-site testing of a laboratory-scale AOT at a Canadian oil producer's facility in Alberta Canada.

The commercial success of our products will depend upon the adoption of our technology by the oil industry. Market acceptance will depend on many factors, including:

- the willingness and ability of consumers and industry partners to adopt new technologies;
- our ability to convince potential industry partners and consumers that our technology is an attractive alternative to other technologies;
- our ability to manufacture products and provide services in sufficient quantities with acceptable quality and at an acceptable cost; and,
- our ability to place and service sufficient quantities of our products.

If our products do not achieve a significant level of market acceptance, demand for our products will not develop as expected and it is unlikely that we will become profitable.

We outsource and rely on third parties for the manufacture of our products.

Our business model calls for the outsourcing of the manufacture of our products in order to reduce our capital and infrastructure costs, capital expenditure and personnel. Accordingly, we must enter into agreements with other companies that can assist us and provide certain capabilities that we do not possess, and to increase our manufacturing capacity as necessary. We can provide no assurances that any such outsourcing will be at commercially acceptable rates or profitable. Moreover, we do not have the required financial and human resources or capability to manufacture, market and sell our products. Our business model calls for the outsourcing of the manufacture, and sales and marketing of our products in order to reduce our capital and infrastructure costs as a means of potentially improving our financial position and the profitability of our business. Accordingly, we must enter into agreements with other companies that can assist us and provide certain capabilities that we do not possess. We may not be successful in entering into additional such alliances on favorable terms or at all. Furthermore, any delay in entering into agreements could delay the development and commercialization of our products and reduce their competitiveness even if they reach the market. Any such delay related to our existing or future agreements could adversely affect our business.

If any party to which we have outsourced certain functions fails to perform its obligations under agreements with us, the development and commercialization of our products could be delayed or curtailed.

To the extent that we rely on other companies to manufacture, sell or market our products, we will be dependent on the timeliness and effectiveness of their efforts. If any of these parties do not perform its obligations in a timely and effective manner, the commercialization of our products could be delayed or curtailed because we may not have sufficient financial resources or capabilities to continue such development and commercialization on our own.

Any revenues that we may earn in the future are unpredictable, and our operating results are likely to fluctuate from quarter to quarter.

We believe that our future operating results will fluctuate due to a variety of factors, including delays in product development, market acceptance of our new products, changes in the demand for and pricing of our products, competition and pricing pressure from competitive products, manufacturing delays and expenses related to and the results of proceedings relating to our intellectual property.

A large portion of our expenses, including expenses for our facilities, equipment and personnel, is relatively fixed and not subject to further significant reduction. In addition, we expect our operating expenses will increase in the future as we continue our commercialization efforts and increase our production and marketing activities, among other activities. Although we expect to generate revenues from sales of our products, revenues may decline or not grow as anticipated and our operating results could be substantially harmed for a particular fiscal period. Moreover, our operating results in some quarters may not meet the expectations of stock market analysts and investors. In that case, our stock price most likely would decline.

Nondisclosure agreements with employees and others may not adequately prevent disclosure of trade secrets and other proprietary information.

In order to protect our proprietary technology and processes, we rely in part on nondisclosure agreements with our employees, licensing partners, customers, consultants, agents and other organizations to which we disclose our proprietary information. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover trade secrets and proprietary information, and in such cases, we could not assert any trade secret rights against such parties. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position. Since we rely on trade secrets and nondisclosure agreements, in addition to patents, to protect some of our intellectual property, there is a risk that third parties may obtain and improperly utilize our proprietary information to our competitive disadvantage. We may not be able to detect unauthorized use or take appropriate and timely steps to enforce our intellectual property rights.

The manufacture, use or sale of our current and proposed products may infringe on the patent rights of others, and we may be forced to litigate if an intellectual property dispute arises.

We have taken measures to protect ourselves from infringing on the patent rights of others; however, if we infringe or are alleged to have infringed another party's patent rights, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, do not successfully defend an infringement action or are unable to have infringed patents declared invalid, we may incur substantial monetary damages ,encounter significant delays in marketing our current and proposed product candidates, be unable to conduct or participate in the manufacture, use or sale of product, candidates or methods of treatment requiring licenses, lose patent protection for our inventions and products; or find our patents are unenforceable, invalid, or have a reduced scope of protection.

Parties making such claims may be able to obtain injunctive relief that could effectively block our ability to further develop or commercialize our current and proposed product candidates in the United States and abroad and could result in the award of substantial damages. Defense of any lawsuit or failure to obtain any such license could substantially harm the company. Litigation, regardless of outcome, could result in substantial cost to and a diversion of efforts by the Company to operate its business.

We may face costly intellectual property / license agreements disputes.

Our ability to compete effectively will depend in part on our ability to develop and maintain proprietary aspects of our technologies and either to operate without infringing the proprietary rights of others or to obtain rights to technology owned by third parties. Our pending patent applications, specifically patent rights of the AOT technology and Joule Heating process may not result in the issuance of any patents or any issued patents that will offer protection against competitors with similar technology. Patents we have licensed for our technologies, and which we may receive, may be challenged, invalidated or circumvented in the future or the rights created by those patents may not provide a competitive advantage. We also rely on trade secrets, technical know-how and continuing invention to develop and maintain our competitive position. Others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. See Note 6 of our financial statements attached hereto for a discussion and status of our license agreements with Temple University.

Changes in governmental regulations and policies may affect export of our technologies.

The Company recognizes domestic and foreign governmental actions, including but not limited to trade restrictions and tariffs, may adversely affect our ability to export our technologies, or may adversely affect the economics of cross-border transactions.

We may not be able to attract or retain qualified senior personnel.

We believe we are currently able to manage our current business with our existing management team. However, as we expand the scope of our operations, we will need to obtain the full-time services of additional senior management and other personnel. Competition for highly-skilled personnel is intense, and there can be no assurance that we will be able to attract or retain qualified senior personnel. Our failure to do so could have an adverse effect on our ability to implement our business plan. As we add full-time senior personnel, our overhead expenses for salaries and related items will increase compensation packages, these increases could be substantial.

If we lose our key personnel or are unable to attract and retain additional personnel, we may be unable to achieve profitability.

Our future success is substantially dependent on the efforts of our senior management. The loss of the services of members of our senior management may significantly delay or prevent the achievement of product development and other business objectives. Because of the scientific nature of our business, we depend substantially on our ability to attract and retain qualified marketing, scientific and technical personnel, including consultants. There is intense competition among specialized automotive companies for qualified personnel in the areas of our activities. If we lose the services of, or do not successfully recruit key marketing, scientific and technical personnel, the growth of our business could be substantially impaired. We do not maintain key man insurance for any of these individuals.

Currently, there is only very limited trading in our stock, so you may be unable to sell your shares at or near the quoted bid prices if you need to sell your shares.

The shares of our common stock are thinly-traded on the OTC Bulletin Board, meaning that the number of persons interested in purchasing our common shares at or near bid prices at any given time may be relatively small or non-existent. This situation is attributable to a number of factors, including the fact that we are a small company engaged in a high-risk business which is relatively unknown to stock analysts, stock brokers, institutional investors and others in the investment community that can generate or influence daily trading volume and valuation. Should we even come to the attention of such persons, they tend to be risk-averse and would be reluctant to follow an unproven, early stage company such as ours or purchase or recommend the purchase of our shares until such time as we became more seasoned and viable. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal or non-existent, as compared to a seasoned issuer which has a large and steady volume of trading activity that will generally support continuous trading without negatively impacting share price. We cannot provide any assurance that a broader or more active public trading market for shares of our common stock will develop or be sustained. Due to these conditions, we cannot give any assurance that shareholders will be able to sell their shares at or near bid prices or at all.

The market price of our stock is volatile.

The market price for our common stock has been volatile during the last year, ranging from a closing price of $0.20 on January 3, 2018 to a closing price of $0.07 on August 20, 2018, and a closing price of $0.23 on March 14, 2019. Additionally, the price of our stock has been both higher and lower than those amounts on an intra-day basis in the last year. Because our stock is thinly traded, its price can change dramatically over short periods, even in a single day. The market price of our common stock could fluctuate widely in response to many factors, including, developments with respect to patents or proprietary rights, announcements of technological innovations by us or our competitors, announcements of new products or new contracts by us or our competitors, actual or anticipated variations in our operating results due to the level of development expenses and other factors, changes in financial estimates by securities analysts and whether any future earnings of ours meet or exceed such estimates, conditions and trends in our industry, new accounting standards, general economic, political and market conditions and other factors.

Substantial sales of common stock could cause our stock price to fall.

In the past year, there have been times when average daily trading volume of our common stock has been extremely low, and there have been many days in which no shares were traded at all. At other times, the average daily trading volume of our common stock has been high. Nevertheless, the possibility that substantial amounts of common stock may be sold in the public market may adversely affect prevailing market prices for our common stock and could impair a shareholder's ability to sell our stock or our ability to raise capital through the sale of our equity securities.

Potential issuance of additional shares of our common stock could dilute existing stockholders.

We are authorized to issue up to 500,000,000 shares of common stock and up to 100,000,000 of preferred stock. To the extent of such authorization, our Board of Directors has the ability, without seeking stockholder approval, to issue additional shares of common stock or preferred stock in the future for such consideration as the Board of Directors may consider sufficient. The issuance of additional common stock or preferred stock in the future may reduce the proportionate ownership and voting power of shareholders.

We may not be successful in identifying, making, financing and integrating acquisitions.

A component of our business strategy is to make selective acquisitions that will strengthen our core services or presence in selected markets. The success of this strategy will depend, among other things, on our ability to identify suitable acquisition candidates, to obtain acceptable financing, to timely and successfully integrate acquired businesses or assets and to retain the key personnel and the customer base of acquired businesses. Any future acquisitions could present a number of risks, including but not limited to:

- incorrect assumptions regarding the future results of acquired operations or assets or expected cost reductions or other synergies expected to be realized as a result of acquiring operations or assets;
- failure to integrate successfully the operations or management of any acquired operations or assets in a timely manner;
- failure to retain or attract key employees; and
- diversion of management's attention from existing operations or other priorities.

If we are unable to identify, make and successfully integrate acquired businesses, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our common stock is subject to penny stock regulation, which may make it more difficult for us to raise capital.

Our common stock is considered penny stock under SEC regulations. It is subject to rules that impose additional sales practice requirements on broker-dealers who sell our securities. For example, broker-dealers must make a suitability determination for the purchaser, receive the purchaser's written consent to the transaction prior to sale, and make special disclosures regarding sales commissions, current stock price quotations, recent price information and information on the limited market in penny stock. Because of these additional obligations, some broker-dealers may not effect transactions in penny stocks, which may adversely affect the liquidity of our common stock and shareholders' ability to sell our common stock in the secondary market. This lack of liquidity may make it difficult for us to raise capital in the future.

Item 1B. Unresolved Staff Comments

None

Item 2. Properties

In April 2017, the Company moved its executive offices to 23902 FM 2978, Tomball, Texas 77375. From May 2016 through May 2017, the Company's executive offices were located at 5266 Hollister Avenue, Suite 219, Santa Barbara, CA 93111.

Total rent expense under these leases in effect during the years ended December 31, 2018, and 2017 was $18,000 and $20,000, respectively which are included as part of Operating Expenses in the attached consolidated statements of operations. The Tomball Texas office is under a month-to-month lease payable at $1,500 per month. The Tomball facility is leased from JBL Energy Partners, an entity solely owned by Jason Lane, Company CEO. See Note 9 of our consolidated financial statements attached hereto for a discussion and status of our office lease agreements.

We believe our facilities are adequate to meet our current and near-term needs.

Item 3. Legal Proceedings

There is no litigation of any significance with the exception of the matters that have arisen under, and are being handled in, the normal course of business.

Item 4. Mine Safety Disclosures.

None.

PART II

Item 5. Market for Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Through May 21, 2007, our common stock was traded on the Over the Counter Bulletin Board (the "OTCBB") under the symbol "ZERO". Effective May 22, 2007, our common stock was removed from the OTCBB and placed on the "Pink Sheets". Effective February 8, 2010, our common stock was reinstated and currently trades on the OTCBB. On October 30, 2014, our common stock was listed for trading on the OTCQX and OTCQB marketplace under the symbol "ZERO". Effective August 11, 2015, the Company changed its name to QS Energy, Inc., and changed its trading symbol to "QSEP". The following table sets forth the high and low bid prices of the Company's common stock for the quarters indicated as quoted on the OTCBB as reported by Yahoo Finance. These quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission, and may not represent actual transactions.

	2018		2017		2016	
	High	**Low**	**High**	**Low**	**High**	**Low**
First Quarter	$ 0.20	$ 0.08	$ 0.12	$ 0.05	$ 0.21	$ 0.07
Second Quarter	$ 0.15	$ 0.08	$ 0.30	$ 0.07	$ 0.19	$ 0.10
Third Quarter	$ 0.13	$ 0.06	$ 0.29	$ 0.17	$ 0.17	$ 0.10
Fourth Quarter	$ 0.11	$ 0.06	$ 0.32	$ 0.15	$ 0.07	$ 0.03

According to the records of our transfer agent, we had approximately 1,000 stockholders of record of our common stock at March 14, 2019. The Company believes that the number of beneficial owners is substantially higher than this amount.

We do not pay a dividend on our common stock and we currently intend to retain future cash flows to finance our operations and fund the growth of our business. Any payment of future dividends will be at the discretion of our Board of Directors and will depend upon, among other things, our earnings, financial condition, capital requirements, level of indebtedness, contractual restrictions in respect to the payment of dividends and other factors that our Board of Directors deems relevant.

In August 2017, shareholders approved an increase in authorized shares of common stock from 300,000,000 to 500,000,000, approved the creation of a new class of preferred stock, and authorized the Company to issue up to 100,000,000 shares of preferred stock.

Issuances of Unregistered Securities in Current Fiscal Year

During the year ended December 31, 2018, the Company issued an aggregate of 22,046,608 shares of its common stock as follows:

- In March 2018, the Company issued 50,000 shares of its common stock valued at $0.24 per share in exchange for services valued $12,000.
- The Company issued 9,288,125 shares of its common stock upon the conversion of $578,000 in convertible notes pursuant to the convertible notes conversion prices of $0.05 to $0.08 per share.

Shares of Common Stock Issued on Conversion of Notes in Year Ended December 31, 2018

Month of Issuance	Principal and Interest Converted to Common Stock	Conversion Price	Shares of Common Stock Issued
March 2018	$ 118,000	$ 0.08 per share	1,471,250
April 2018	$ 146,000	$ 0.05 to 0.08 per share	1,918,125
May 2018	$ 61,000	$ 0.05 to 0.08 per share	1,086,250
June 2018	$ 11,000	$ 0.08 per share	137,500
July 2018	$ 110,000	$ 0.05 per share	2,200,000
August 2018	$ 28,000	$ 0.05 to 0.08 per share	385,000
September 2018	$ 104,000	$ 0.05 per share	2,090,000
	$ 578,000		9,288,125

· The Company issued 12,517,773 shares of its common stock upon the exercise of warrants for proceeds of $634,000 at exercise prices of $0.05 to $0.08 per share.

Shares of Common Stock Issued on Exercise of Warrants in Year Ended December 31, 2018

Month of Issuance	Warrant Proceeds	Warrant Exercise Price	Shares of Common Stock Issued
January 2018	$ 3,000	$ 0.05 per share	55,000
February 2018	$ 50,000	$ 0.05 per share	990,000
March 2018	$ 6,000	$ 0.05 per share	121,000
April 2018	$ 110,000	$ 0.05 to 0.08 per share	2,036,773
May 2018	$ 240,000	$ 0.05 per share	4,805,000
June 2018	$ 225,000	$ 0.05 per share	4,510,000
	$ 634,000		12,517,773

· The Company issued 179,710 shares of its common stock upon the exercise of options for proceeds of $13,000 at exercise prices of $0.07 per share.

Shares of Common Stock Issued on Exercise of Options in Year Ended December 31, 2018

Month of Issuance	Option Proceeds	Option Exercise Price	Shares of Common Stock Issued
February 2018	$ 13,000	$ 0.07 per share	179,710
	$ 13,000		179,710

· The Company issued convertible notes in aggregate value of $1,955,000 for net proceeds of $1,778,000, convertible into 36,477,375 shares in common stock of the Company at a conversion price of $0.05 to $0.08 per share, and in connection with these notes, issued warrants to purchase 18,238,688 shares of common stock of the Company at an exercise price of $0.05 per share and expiring one year from the date of issuance, summarized by month as follows:

Convertible Notes Issued in Year Ended December 31, 2018

Month of Issuance	Cash Proceeds	Face Value of Note	Conversion Price	Convertible to Shares of Common Stock	Warrants to Purchase Common Stock	Warrant Exercise Price	Warrant Expiration Month
February 2018	$ 90,000	$ 99,000	$ 0.08/share	1,237,500	618,750	$ 0.08/share	February 2019
March 2018	$ 155,000	$ 171,000	$ 0.08/share	2,131,250	1,065,625	$ 0.08/share	March 2019
April 2018	$ 74,000	$ 81,000	$ 0.08/share	1,010,625	505,313	$ 0.08/share	April 2019
July 2018	$ 207,000	$ 228,000	$ 0.05/share	4,565,000	2,282,500	$ 0.05/share	July 2019
November 2018	$ 165,000	$ 182,000	$ 0.05/share	3,630,000	1,815,000	$ 0.05/share	November 2019
December 2018	$ 1,087,000	$ 1,194,000	$ 0.05/share	23,903,000	11,951,500	$ 0.05/share	December 2019
	$ 1,778,000	$ 1,955,000		36,477,375	18,238,688		

Issuances of Unregistered Securities in Prior Fiscal Year

During the year ended December 31, 2017, the Company issued an aggregate of 35,031,881 shares of its common stock as follows:

- In August 2017, the Company issued 181,355 shares of its common stock upon the private sale of restricted common stock for cash proceeds of $38,000 at a purchase price of $.21 per share.

- The Company issued 29,986,772 shares of its common stock upon the conversion of $1,528,000 in convertible notes pursuant to the convertible notes conversion prices of $0.05 to $0.48 per share.

Shares of Common Stock Issued on Conversion of Notes in Year Ended December 31, 2017

Month of Issuance	Principal and Interest Converted to Common Stock		Conversion Price		Shares of Common Stock Issued
February 2017	$	10,000	$	0.05 per share	191,400
March 2017	$	50,000	$	0.05 per share	990,000
April 2017	$	44,000	$	0.05 to 0.10 per share	880,000
May 2017	$	300,000	$	0.05 to 0.10 per share	5,919,680
June 2017	$	844,000	$	0.05 per share	16,877,300
July 2017	$	197,000	$	0.05 to 0.48 per share	3,453,092
August 2017	$	1,000	$	0.05 per share	25,300
September 2017	$	77,000	$	0.05 per share	1,540,000
October 2017	$	5,000	$	0.05 per share	110,000
	$	1,528,000			29,986,772

- The Company issued 4,414,000 shares of its common stock upon the exercise of warrants for proceeds of $359,000 at exercise prices of $0.05 to $0.10 per share.

Shares of Common Stock Issued on Exercise of Warrants in Year Ended December 31, 2017

Month of Issuance	Warrant Proceeds		Warrant Exercise Price		Shares of Common Stock Issued
June 2017	$	61,000	$	0.15 per share	605,000
July 2017	$	129,000	$	0.05 to 0.10 per share	1,760,000
August 2017	$	133,000	$	0.10 per share	1,334,000
September 2017	$	14,000	$	0.05 per share	275,000
October 2017	$	16,000	$	0.05 per share	330,000
November 2017	$	6,000	$	0.05 per share	110,000
	$	359,000			4,414,000

- The Company issued 449,754 shares of its common stock upon the exercise of options for proceeds of $37,000 at exercise prices of $0.07 to $0.13 per share.

Shares of Common Stock Issued on Exercise of Options in Year Ended December 31, 2017

Month of Issuance	Option Proceeds	Option Exercise Price	Shares of Common Stock Issued
July 2017	$ 12,000	$ 0.05 to 0.10 per share	178,002
August 2017	$ 12,000	$ 0.10 per share	93,750
November 2017	$ 13,000	$ 0.05 per share	178,002
	$ 37,000		449,754

· The Company issued convertible notes in aggregate value of $1,616,000 for net proceeds of $1,479,000, convertible into 32,321,540 shares in common stock of the Company at a conversion price of $0.05 per share, and in connection with these notes, issued warrants to purchase 16,160,770 shares of common stock of the Company at an exercise price of $0.05 per share and expiring one year from the date of issuance, summarized by month as follows:

Convertible Notes Issued in Year Ended December 31, 2017

Month of Issuance	Cash Proceeds	Face Value of Note	Conversion Price	Convertible to Shares of Common Stock	Warrants to Purchase Common Stock	Warrant Exercise Price	Warrant Expiration Month
February 2017	$ 121,000	$ 133,000	$ 0.05/share	2,662,000	1,331,000	$ 0.05/share	February 2018
March 2017	$ 80,000	$ 88,000	$ 0.05/share	1,760,000	880,000	$ 0.05/share	March 2018
April 2017	$ 155,000	$ 171,000	$ 0.05/share	3,413,540	1,706,720	$ 0.05/share	April 2018
May 2017	$ 1,113,000	$ 1,224,000	$ 0.05/share	24,486,000	12,243,000	$ 0.05/share	May 2018
	$ 1,469,000	$ 1,616,000		32,321,540	16,160,770		

The offering was made to non-U.S investors and to U.S. "accredited investors," as the term is defined in Regulation D under the Securities Act of 1933, as amended (the "Securities Act"), and were made without general advertising or solicitation. The securities sold in the offering were not registered under the Securities Act, or the securities laws of any state, and were offered and sold in reliance on exemptions from registration including the exemption from registration afforded by Section 4(a)(2) of the Securities Act and Regulation S promulgated under the Securities Act, and corresponding provisions of state securities law, which, respectively, exempt transactions by an issuer not involving any public offering or transactions with non-U.S. Investors.

Item 6. Selected Financial Data

None.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the Consolidated Financial Statements and supplementary data referred to in Item 7 of this Form 10-K.

This discussion contains forward-looking statements that involve risks and uncertainties. Such statements, which include statements concerning future revenue sources and concentration, selling, general and administrative expenses, research and development expenses, capital resources, additional financings and additional losses, are subject to risks and uncertainties, including, but not limited to, those discussed above in Item 1 and elsewhere in this Form 10-K, particularly in "Risk Factors," that could cause actual results to differ materially from those projected. Unless otherwise expressly indicated, the information set forth in this Form 10-K is as of December 31, 2018, and we undertake no duty to update this information.

Overview

In the second quarter of 2014, we reached a major milestone in the Company's evolution, generating revenues from our AOT technology for the first time since our inception in February 1998. We continue to devote the bulk of our efforts to the promotion, design, testing and the commercial manufacturing and operations of our crude oil pipeline products in the upstream and midstream energy sector. We anticipate that these efforts will continue during 2019.

Our expenses to date have been funded primarily through the sale of shares of common stock and convertible debt, as well as proceeds from the exercise of stock purchase warrants and options. We raised capital in 2018 and also need to raise substantial additional capital in 2019, and possibly beyond, to fund our sales and marketing efforts, continuing research and development, and certain other expenses, until our revenue base grows sufficiently.

Results of Operation

Revenue Comparison, 2018 and 2017

During the twelve-month period ended December 31, 2017, the Company recognized revenues of $50,000 pursuant to the completion of lease and testing agreement of the Company's AOT equipment. The Company had no revenue during the twelve-month period ended December 31,2018.

Operating Expense Comparison, 2018 and 2017

Operating expenses were $1,853,000 for the fiscal year ended December 31, 2018, compared to $2,938,000 for the fiscal year ended December 31, 2017, a decrease of 1,085,000. This decrease was attributable to decreases in non-cash expenses of $439,000 and cash expenses of $646,000. Specifically, the decrease in non-cash expenses is attributable to an increase in depreciation expense of $3,000 and decreases in stock-based compensation related to warrants and options issued to employees, directors and consultants of $442,000. The decrease in cash expenses is attributable to increases in corporate expenses of $26,000, insurance of $18,000, salaries and benefits of $87,000, public relations and investor relations of $9,000, rent and utilities of $3,000, and other expenses of $4,000, offset by decreases in severance agreement expense of $624,000, consulting fees of $25,000, freight and transportation of $3,000, office expenses of $25,000, legal and accounting of $69,000, patent application and maintenance of $16,000, and travel expenses of $31,000.

Research and development expenses were $208,000 for the fiscal year ended December 31, 2018, compared to $243,000 for the fiscal year ended December 31, 2017, a decrease of $35,000. This decrease is attributable to decreases in AOT prototype development costs of $33,000 and licensing and research fees of $2,000.

Interest expenses were $998,000 for the fiscal year ended December 31, 2018, compared to $1,704,000 for the fiscal year ended December 31, 2017, a decrease of $706,000. This decrease is attributable to a decrease in interest and financing expense of $758,000 to account the fair value of the warrants issued with our convertible notes and the notes' beneficial conversion feature, offset by an increase in other non-cash interest expenses of $52,000.

We had a net loss of $3,059,000 or $0.01 loss per share for the fiscal year ended December 31, 2018 compared to a net loss of $4,835,000 or $0.02 loss per share for the fiscal year ended December 31, 2017.

Liquidity and Capital Resources

General

We have incurred negative cash flow from operations since our inception in 1998. As of December 31, 2018, we had cash of $1,153,000 and a stockholders' deficit of $1,482,000. Our operating cash flow in 2018 was funded primarily through cash reserves, the exercise of stock purchase warrants and options for cash, and the issuance of convertible notes for cash, and the private sale of restricted common stock.

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. As reflected in the accompanying consolidated financial statements, the Company had a net loss of $3,059,000 and used cash in operations of $1,476,000 for the year ended December 31, 2018. These factors raise substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued. Our ability to continue as a going concern is dependent upon our ability to raise additional funds and implement our business plan. The consolidated financial statements do not include any adjustments that might be necessary if we are unable to continue as a going concern.

Summary

At December 31, 2018, the Company had cash on hand in the amount of $1,153,000. Management estimates that the current funds on hand will be sufficient to continue operations through September 2019. Management is currently seeking additional funds, primarily through the issuance of debt and equity securities for cash to operate our business, including without limitation the expenses it will incur in connection with the license agreements with Temple; costs associated with product development and commercialization of the AOT technology; costs to manufacture and ship the products; costs to maintain an effective system of internal controls and disclosure controls and procedures; costs of maintaining our status as a public company by filing periodic reports with the SEC and costs required to protect our intellectual property. In addition, as discussed below, the Company has substantial contractual commitments, including without limitation salaries to our executive officers pursuant to employment agreements, and certain payments to a former officer, during the remainder of 2019 and beyond. No assurance can be given that any future financing will be available or, if available, that it will be on terms that are satisfactory to the Company. Even if the Company is able to obtain additional financing, it may contain undue restrictions on our operations, in the case of debt financing or cause substantial dilution for our stock holders, in case of equity financing.

Contractual Obligations

The Company's contractual commitments for future periods, including office leases, minimum guaranteed compensation payments and other agreements as described in the following table and associated footnotes:

Year ending December 31,	License Agreements (1)	Compensation Agreements (2)	Total Obligations
2019	187,500	404,100	591,600
2020	187,500	–	187,500
2021	187,500	–	187,500
2022	187,500	–	187,500
2023	187,500	–	187,500
Total	$ 937,500	$ 404,100	$ 1,341,600

(1) Consists of license maintenance fees to Temple University in the amount of $187,500 paid annually through the life of the underlying patents or until otherwise terminated by either party.

(2) Consists of base salary and certain contractually-provided benefits, to i) a former executive officer, pursuant to an severance in the amount of $580,000 that will be paid through March 31, 2019 pursuant to a separation agreement effective April 1, 2017 as amended by letter agreements effective August 16, 2018 and March 31, 2019, modifying the payment schedule to a payment of $10,000 per month, continue paying his health insurance premium, and extending the term on a month-to-month basis until paid in full or otherwise terminated. As of December 31, 2018, $370,000 was payable under this agreement and was included as part of Accounts payable and accrued expenses in the accompanying consolidated balance sheet.; ii) an executive officer, pursuant to a two-year employment agreement effective April 1, 2017 at a base annual salary of $150,000 per year; and iii) an executive officer, pursuant to a two-year agreement effective April 1, 2017 at a base annual salary of $158,400 per year.

Licensing Fees to Temple University

For details of the licensing agreements with Temple University, see Financial Statements attached hereto, Note 6.

Critical Accounting Policies and Estimates

Our discussion and analysis of financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, expenses, and related disclosure of contingent assets and liabilities. We evaluate, on an on-going basis, our estimates and judgments, including those related to the useful life of the assets. We base our estimates on historical experience and assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The methods, estimates and judgments we use in applying our most critical accounting policies have a significant impact on the results that we report in our consolidated financial statements. The SEC considers an entity's most critical accounting policies to be those policies that are both most important to the portrayal of a company's financial condition and results of operations and those that require management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about matters that are inherently uncertain at the time of estimation. For a more detailed discussion of the accounting policies of the Company, see Note 2 of the Notes to the Consolidated Financial Statements, "Summary of Significant Accounting Policies".

We believe the following critical accounting policies, among others, require significant judgments and estimates used in the preparation of our consolidated financial statements.

Estimates

The preparation of consolidated financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Certain significant estimates were made in connection with preparing our consolidated financial statements as described in Note 2 to Notes to Consolidated Financial Statements. Actual results could differ from those estimates.

Stock-Based Compensation

The Company periodically issues stock options and warrants to employees and non-employees in non-capital raising transactions for services and for financing costs. The Company accounts for stock option and warrant grants issued and vesting to employees based on the authoritative guidance provided by the Financial Accounting Standards Board whereas the value of the award is measured on the date of grant and recognized over the vesting period. The Company accounts for stock option and warrant grants issued and vesting to non-employees in accordance with the authoritative guidance of the Financial Accounting Standards Board whereas the value of the stock compensation is based upon the measurement date as determined at either a) the date at which a performance commitment is reached, or b) at the date at which the necessary performance to earn the equity instruments is complete. Non-employee stock-based compensation charges generally are amortized over the vesting period on a straight-line basis. In certain circumstances where there are no future performance requirements by the non-employee, option grants are immediately vested and the total stock-based compensation charge is recorded in the period of the measurement date.

The fair value of the Company's common stock option grant is estimated using the Black-Scholes Option Pricing model, which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the common stock options, and future dividends. Compensation expense is recorded based upon the value derived from the Black-Scholes Option Pricing model, and based on actual experience. The assumptions used in the Black-Scholes Option Pricing model could materially affect compensation expense recorded in future periods.

Recent Accounting Pronouncements

See Note 2 of the financial statements for discussion of recent accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We issue from time to time fixed rate discounted convertible notes. Our convertible notes and our equity securities are exposed to risk as set forth above, in Item 1A, “Risk Factors.” Please also see Item 7, above, “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements as of and for the years ended December 31, 2018 and 2017 are presented in a separate section of this report following Item 15 and begin with the index on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

1. Disclosure Controls and Procedures

The Company's management, with the participation of the Company's chief executive officer and chief financial officer, evaluated, as of December 31, 2018, the effectiveness of the Company's disclosure controls and procedures, which were designed to be effective at the reasonable assurance level. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of the Company's disclosure controls and procedures as of December 31, 2018, management, the chief executive officer and the chief financial officer concluded that the Company's disclosure controls and procedures were effective at the reasonable assurance level at that date.

2. Internal Control over Financial Reporting

(a) Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is defined in Rule 13a-15(f) or 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;

Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and

Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

QS Energy, Inc.'s internal control system is designed to provide reasonable assurance to the Company's management and Board regarding the preparation and fair presentation of published financial statements. All internal control systems, no matter how well designed, have inherent limitations which may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of QS Energy, Inc.'s internal controls over financial reporting as of December 31, 2018. In making this assessment, it used the criteria set forth in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") (2013 framework). Based on our assessment, we conclude that, as of December 31, 2018, the Company has maintained effective internal control over financial reporting based on those criteria.

This Annual Report on Form 10-K does not include an attestation report of the Company’s independent registered public accounting firm regarding internal control over financial reporting. Management’s report was not subject to attestation by our registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit us to provide only management’s report in this Annual Report on Form 10-K.

(b) Changes in Internal Control over Financial Reporting

No change in the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Composition of Board of Directors

Our bylaws provide that the Board shall consist of between one and eight directors, as determined by the Board from time to time. The number of directors is currently fixed at seven (7) members. Each board member serves a term of three years and will serve until their successors are elected and qualified, or until their earlier resignation or removal.

In 2016, the Board of Directors of the Company amended the Bylaws of the Company to divide Directors into three classes: Class I, Class II, and Class III. To implement this classified board structure, the initial term of the Class I, Class II, and Class III Directors was one (1), two (2), and three (3) years respectively, with subsequent three-year terms for all classes of Directors. All seven (7) Directors were elected to their respective Classes at the Company's Meeting of the Shareholders on July 14, 2017. The Class I Directors, Thomas Bundros and Eric Bunting, were elected to new terms at the Company's Meeting of the Company Shareholders on November 9, 2018.

Officers are appointed by our Board of Directors and their terms of office are, except to the extent governed by an employment contract, at the discretion of our Board of Directors. There are no family relationships among any of our current directors or our executive officers.

The following constitutes the Board of Directors as of December 31, 2018:

Name	Age	Position	Director Class	Director Since	Term Expires
Jason Lane	44	Chief Executive Officer and Chairman, Director (Non-Independent)	Class III	2017	2020
Donald Dickson(1)	61	Director (Independent)	Class II	2013	2019
Thomas Bundros(1)	62	Director (Independent)	Class I	2015	2021
Eric Bunting	49	Director (Independent)	Class I	2017	2021
Gary Buchler(1)	62	Director (Independent)	Class III	2017	2020
Richard Munn	62	Director (Independent)	Class III	2017	2020
William Green	62	Director (Independent)	Class II	2017	2019

(1) Member of the Audit Committee

Biographical Information Regarding Directors

Jason Lane, President and CEO (Non-Independent Director) was appointed to the Board of Directors effective April 1, 2017. Jason Lane is a veteran of the oil and gas industry with a 20-year track record of procuring and divesting oil and gas leases, mineral and royalty interests and production in the lower 48 States through his own partnerships and joint ventures. During his career, Mr. Lane has been directly involved in the leasing of more than 650,000 prime acres for his partnerships, has managed a 125 Landman operation responsible for title and lease acquisition work for several significant companies, and has operated and participated in the drilling of wells throughout the United States.

Don Dickson (Independent Director), appointed to Board of Directors on August 6, 2013, and currently is employed with Kinder Morgan, Inc. working on the Northeast Energy Direct Project, after finishing the Cortez Expansion project as project manager / engineering principal / construction support. The NED project will serve the Northeast United States delivering natural gas to the region, while the Cortez expansion project will increase the volume of CO2 being shipped from Southwest Colorado to West Texas for oil recovery. Prior to rejoining Kinder Morgan Mr. Dickson served as Chief Executive Officer for Advanced Pipeline Services (APS). APS was established for the purpose of providing a full range of services to the oil and gas industry. Core business areas are in new construction of pipeline and facilities, horizontal directional drilling and pipeline integrity/rehabilitation. Prior to APS, Mr. Dickson worked for Kinder Morgan in their natural gas operations, retiring after twenty-six years. During his time at Kinder Morgan served in different engineering capacities including as Director of Operations on two major pipeline projects, the 42" (REX) Rockies Mountain Express through the state of Illinois, and the 42" (MEP) Midcontinent Express Pipeline through the state of Louisiana. He also was Director of Operations with Tetra Resources completing various onshore and offshore oil and gas wells and a Senior Engineer with Halliburton Services. Mr. Dickson earned his B.S. in Engineering from Oklahoma State University.

Thomas Bundros (Independent Director), was appointed to the Board of Directors effective January 5, 2015. Mr. Bundros served as Chief Financial Officer at Colonial Pipeline Company from July 2009 to September 2012, the world's largest pipeline operator transporting 100 million gallons of refined petroleum products daily across 5,500 miles of pipeline. Mr. Bundros currently holds the post of Chief Executive Officer of Dalton Utilities (January 2016 to present), a provider of electricity, natural gas, water and telecommunications services to the city of Dalton and portions of northwest Georgia. Prior to his appointment as Chief Executive Officer, Mr. Bundros had served as Dalton Utilities' Chief Operations Officer for Dalton Utilities since October 2012. Mr. Bundros was Chief Financial Officer of Dalton Utilities from January 1997 to June 2009. Prior to Dalton Utilities, Mr. Bundros also held various financial positions in the Atlanta and New York offices of the Southern Company System, the 16th largest utility company in the world and the fourth largest in the U.S. with over 4 million customers in Alabama, Georgia, Florida, and Mississippi. He earned his Master of Business Administration in Finance and Bachelor of Science in Economics and Business Administration at the University of North Carolina at Greensboro.

Eric Bunting M.D. (Independent Director) was appointed to the Board effective April 1, 2017. Dr. Bunting is a board-certified Ear, Nose, and Throat physician, and he is an owner and partner in an independent specialty group. This group has partnered with Wichita Surgical Specialist ("WSS"), which remains one of the country's largest surgical multispecialty groups. Dr. Bunting has been on the board of directors of WSS for the last 10 years. Dr. Bunting graduated from Kansas University School of Medicine and subsequently received specialty training at Kansas University Medical Center. Dr. Bunting has many diverse business and entrepreneurial interests. Dr. Bunting has an interest in early startup companies and franchising opportunities. He is an owner and partner in approximately 40 fast-casual restaurant franchises in 10 states. He has board of director experience in the health care industry with multiple ambulatory surgical centers and a radiation center. Dr. Bunting has been an integral part of these boards through merger and acquisition periods. Other interests are in the wine and spirits industry where Dr. Bunting has been involved in a successful spirit start-up, which is poised for an acquisition opportunity. Dr. Bunting has other ongoing active business investments in the evolving internet artificial intelligence industry, as it relates to marketing and advertising. Dr. Bunting has been an investor in the Company, acquiring a significant number of shares over the last four years. During this period, he has been and will remain an unbiased shareholder advocate looking forward to commercialization, deployment, and eventual profitability for the Company.

Gary Buchler (Independent Director) was appointed to the Board on May 9, 2017. Mr. Buchler recently retired as Chief Operating Officer of the Natural Gas Pipeline business unit of Kinder Morgan, Inc. (NYSE: KMI) and operator of one of the largest interstate pipeline systems in the United States. With oversight of a combined annual expense/capital budget of $1.3 billion, Mr. Buchler was responsible for all Engineering, Operations, Environmental, Health and Safety (EHS), and Land Management functions for roughly 70,000 miles of transmission and gathering pipelines. Mr. Buchler was responsible for the day-to-day management of 3,900 employees, evaluation and oversight of expansion projects, and the evaluation of potential acquisitions. As Chief Operating Officer of the KM Gas Pipelines, Mr. Buchler was instrumental in the acquisition and integration of more than $45 billion in pipeline assets at Kinder Morgan. Mr. Buchler has held various management positions at Kinder Morgan since 1979, including Vice-President Engineering/Operations Pipeline Group, Vice-President Eastern Pipeline Operations, Vice-President Engineering and Operations Kinder Morgan Gas Treating/Kinderhawk Field Services, and Director of Pipeline Integrity. He earned a Bachelor's Degree in Electrical Engineering from the University of Iowa and an MBA from the Keller Graduate School of Management.

Richard Munn (Independent Director) was appointed to the Board on May 9, 2017. Mr. Munn is one of the top players in the royalty and mineral arena as demonstrated over the last 15 years with 39 years of industry experience. Of note, he managed the royalty acquisition teams at Noble Royalties and other companies, closing on the acquisition of approximately $450 million worth of Royalty and Mineral Interests involving over 50 separate transactions. Mr. Munn has a solid reputation and extensive relationships with private and public U.S.-based energy producers and mineral holders. He has also managed his own exploration and production companies. From 2005 to 2007, Mr. Munn chaired the IPAA Business Development Committee and from 2007 to 2009, he chaired the IPAA Business Development/ Membership Committee. From 2005 to 2007, Mr. Munn chaired the Society of Petroleum Engineers Business Development Committee. In addition, to his network of oil and gas industry relationships, Mr. Munn is a licensed registered professional geologist in Wyoming with a B.A. in Geology from the University of Colorado

William Green (Independent Director) was elected to by shareholders to the Board on July 14, 2017. Mr. Green recently retired as VP of Downstream Marketing for Devon Energy Corp. Mr. Green has more than 30 years of experience in natural gas marketing with Devon and Mitchell Energy Corporation, both major "Shale" players. He has served as the Chairman of Natural Gas Supply Association, and recently served a three-year term on the Oklahoma University Energy Institute Advisory Board.

Director Compensation Policy

Effective January 1, 2014, the Board passed a resolution suspending the July 1, 2013 Board compensation policy. Effective May 6, 2014, the Board approved a compensation policy which includes two annual grants of options, including i) an option to purchase a number of shares of common stock equal to $25,000 divided by the per share closing price on the date of grant with an exercise price equal to the stock closing price on the date of grant, a one year vesting period and an expiration date 10 years from the date of grant; and ii) an option to purchase a number of shares of common stock equal to $25,000 divided by the per share fair market value of the option calculated using the Black-Scholes Option Pricing Model based on market conditions, including stock closing price, risk free interest rate and stock volatility, on the date of grant with an exercise price equal to the stock closing price on the date of grant, vesting immediately and an expiration date 10 years from the date of grant. Also, effective July 1, 2013, the Board approved an annual grant of options to purchase 25,000 shares of common stock at a price equal to the stock's closing price on the date of grant, vesting immediately and expiring 10 years from the date of grant as compensation to the chairman of the Board's Audit Committee. Effective January 1, 2015, the Board amended the policy such that there is only one annual grant as follows: i) all options granted would vest over one year; and ii) options granted mid-year due to appointment to the Board or appointment to Chairman of the Audit Committee would be adjusted such that the number of shares would be calculated on a pro rata basis depending on the number of day remaining in the calendar year, and the options would vest December 31 of the year of grant.

Executive Officers

The following table sets forth certain information regarding our executive officers as of December 31, 2018:

Name	Age	Position
Jason Lane	44	Chief Executive Officer and President
Michael McMullen	59	Chief Financial Officer

Jason Lane, President and CEO, please see above under "Biographical Information Regarding Directors."

Michael McMullen, Chief Financial Officer, joined QS Energy in July 2013 as Controller. In this role, Mr. McMullen designed and managed implementation of the Company's Sarbanes-Oxley compliant internal controls and reporting procedures, and has been responsible for all financial operations and reporting. Mr. McMullen has extensive managerial and oversight experience in the areas of corporate governance, capitalization, asset valuation and risk assessment. Prior to joining QS Energy, Mr. McMullen served in senior executive capacities across a variety of industries. As a management consultant and financial advisor to mid-market healthcare and technology entities, he specialized in providing growth and transition management oversight to companies serving hospitals and cancer centers. In his role as Director of Strategic Development at Leema Energy Resources he managed acquisition, valuation and due diligence cycles for the purchase and resale of energy-related assets acquired from distressed savings and loan institutions, resulting in sale-leaseback, leveraged buyout and resale transactions totaling $150 million. At FloWind Corporation Mr. McMullen structured domestic power plant contracts, international joint venture agreements and equipment sales contracts in excess of $200 million and was responsible for management of FloWind's $7 million research program, resulting in the development of the company's next generation wind turbine technology. As CFO of SomethingNow, Inc. he was responsible for all finance and operations activities related to growing this internet company from start-up to commercial operations, resulting in the infusion of $20M in capital, establishing key strategic relationships and ultimately negotiating and closing the sale of the company to a NASDAQ 100 company.

CORPORATE GOVERNANCE

We maintain a corporate governance page on our corporate website atwww.qsenergy.com, which includes information regarding the Company's corporate governance practices. Our codes of business conduct and ethics, Board committee charters and certain other corporate governance documents and policies are posted on our website. In addition, we will provide a copy of any of these documents without charge to any stockholder upon written request made to Corporate Secretary, QS Energy, Inc., 23902 FM 2978, Tomball, TX 77375. The information on our website is not, and shall not be deemed to be, a part of this Form 10-K or incorporated by reference into this or any other filing we make with the Securities and Exchange Commission (the "SEC").

Board of Directors

Director Independence

Our Board of Directors as of December 31, 2018, consisted of seven (7) members. As of that date, the Board has affirmatively determined that Mr. Bundros, Mr. Dickson, Dr. Bunting, Mr. Buchler, Mr. Munn, and Mr. Green are independent directors. Mr. Lane, our President and Chief Executive Officer is not considered independent.

Meetings of the Board

The Board held four (4) meetings in 2018. A majority of the members attended all 4 board meetings held in 2018. The Board has held one (1) meeting in 2019 as of the date of this report.

Communications with the Board

The following procedures have been established by the Board in order to facilitate communications between our stockholders and the Board:

> Stockholders may send correspondence, which should indicate that the sender is a stockholder, to the Board or to any individual director, by mail to Corporate Secretary, QS Energy, Inc. 23902 FM 2978, Tomball, TX 77375 or by e-mail to info@qsenergy.com.
>
> Our Secretary will be responsible for the first review and logging of this correspondence and will forward the communication to the director or directors to whom it is addressed unless it is a type of correspondence which the Board has identified as correspondence which may be retained in our files and not sent to directors. The Board has authorized the Secretary to retain and not send to directors communications that: (a) are advertising or promotional in nature (offering goods or services), (b) solely relate to complaints by customers with respect to ordinary course of business customer service and satisfaction issues or (c) clearly are unrelated to our business, industry, management or Board or committee matters. These types of communications will be logged and filed but not circulated to directors. Except as set forth in the preceding sentence, the Secretary will not screen communications sent to directors.
>
> The log of stockholder correspondence will be available to members of the Board for inspection. At least once each year, the Secretary will provide to the Board a summary of the communications received from stockholders, including the communications not sent to directors in accordance with the procedures set forth above.

Our shareholders may also communicate directly with the non-management directors, individually or as a group, by mail c/o Corporate Secretary, QS Energy, Inc23902 FM 2978, Tomball, TX 77375 or by e-mail to info@qsenergy.com.

The Audit Committee has established procedures, as outlined in the Company's policy for **"**Procedures for Accounting and Auditing Matters**",** for the receipt, retention and treatment of complaints regarding questionable accounting, internal controls, and financial improprieties or auditing matters. Any of the Company's employees may confidentially communicate concerns about any of these matters by calling our toll-free number, +1 (844) 645-7737. Upon receipt of a complaint or concern, a determination will be made whether it pertains to accounting, internal controls or auditing matters and if it does, it will be handled in accordance with the procedures established by the Audit Committee.

Committees of the Board

The Board has a standing Audit Committee. This committee operates under a written charter. Copies of this charter, and other corporate governance documents, are available on our website, www.qsenergy.com In addition, we will provide a copy of any of these documents without charge to any stockholder upon written request made to Corporate Secretary, QS Energy Inc., 23902 FM 2978, Tomball, TX 77375.

The composition, functions and general responsibilities of this committee is summarized below.

Audit Committee

The Audit Committee currently consists of Mr. Bundros (chairperson), Mr. Dickson and Mr. Buchler. The Board has determined that Mr. Bundros, Mr. Dickson and Mr. Buchler are considered independent under rules of the SEC. The Audit Committee held a total of four (4) meetings during 2018, each attended by a majority of Audit Committee members. The Audit Committee has met once during 2019 as of the date of this report.

The Audit Committee operates under a written charter. The Audit Committee's duties include responsibility for reviewing our accounting practices and audit procedures. In addition, the Audit Committee has responsibility for reviewing complaints about, and investigating allegations of, financial impropriety or misconduct. The Audit Committee works closely with management and our independent auditors. The Audit Committee also meets with our independent auditors on a quarterly basis, following completion of their quarterly reviews and annual audit, to review the results of their work. The Audit Committee also meets with our independent auditors to approve the annual scope of the audit services to be performed.

As part of its responsibility, the Audit Committee is responsible for engaging our independent auditor, as well as pre-approving audit and non-audit services performed by our independent auditor in order to assure that the provision of such services does not impair the independent auditor's independence.

See "Audit Committee Report" below, which provides further details of many of the duties and responsibilities of the Audit Committee.

AUDIT COMMITTEE REPORT

The Audit Committee is currently composed of three (3) directors, Mr. Bundros (Chairperson), Mr. Dickson, and Mr. Buchler. The Board has determined that Mr. Bundros, Mr. Dickson and Mr. Buchler are considered independent within the rules of the SEC. The duties and responsibilities of a member of the Audit Committee are in addition to his duties as a member of the Board.

The Audit Committee operates under a written charter, which is available on the Company's website. The Board and the Audit Committee believe that the Audit Committee charter complies with the current standards set forth in SEC regulations. There may be further action by the SEC during the current year on several matters that affect all audit committees. The Board and the Audit Committee continue to follow closely further developments by the SEC in the area of the functions of audit committees, particularly as it relates to internal controls for non-accelerated filers, and will make additional changes to the Audit Committee charter and the policies of the Audit Committee as required or advisable as a result of these new rules and regulations. The Audit Committee met four (4) times during 2018 and each was attended by a majority of committee members. The Audit Committee has met once during 2019 as of the date of this report.

The Audit Committee's primary duties and responsibilities are to:

- engage the Company's independent auditor;
- monitor the independent auditor's independence, qualifications and performance;
- pre-approve all audit and non-audit services;

Management is responsible for the Company's internal controls and the financial reporting process. The Company's independent auditor is responsible for performing an independent audit of the Company's financial statements in accordance with the standards of the Public Company Accounting Oversight Board and issuing a report thereon. The Audit Committee's responsibility is to monitor and oversee these processes.

In February 2012, the Company began the process of designing and implementing various financial controls from within our finance department under the supervision of the Company's Chief Executive Officer and Chief Financial Officer. Furthermore, the Company also hired an outside consultant to further enhance these internal controls, policies and procedures. On March 19, 2013, the Company's Board of Directors approved and began the implementation of these internal controls, policies and procedures. In June 2013, the Company began the process of designing and implementing additional internal controls based on a continuous process of assessment and improvement under which board and management financial reporting objectives were defined and implemented, policies and procedures were tested for effectiveness and deficiencies were identified and remediated. On December 16, 2013, the Board of Directors approved a revised Internal Controls Policy based on policy refinements and improvements implemented under this assessment process. Additional controls and policies designed and implemented in second and third quarters of 2013 have been tested and identified deficiencies have been remediated. The Internal Controls Policy and Sarbanes-Oxley 302 matrix approved by the Board of Directors on March 19, 2013, as revised and approved by the board on December 16, 2013, have been implemented and are functioning as planned.

Our management evaluated, with the participation of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act") were effective as of September 30, 2013 and continue to be effective as of the date of this report.

Our Chief Executive Officer and Chief Financial Officer conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2018 based on the framework in Internal Control – Integrated Framework ("2013 Framework") issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our internal controls over financial reporting (as defined in Rules 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act") were effective as of December 31, 2018.

With respect to the Company's independent auditors, the Audit Committee, among other things, discussed with Weinberg & Co., P.A., matters relating to its independence, including the written disclosures made to the Audit Committee as required by the Independence Standards Board Standard No. 1 (Independence Discussions with Audit Committees). The Audit Committee also reviewed and approved the audit and non-audit fees of that firm.

On the basis of these reviews and discussions, the Audit Committee (i) appointed Weinberg & Co., P.A. as the independent registered public accounting firm for the 2018 fiscal year and (ii) recommended to the Board that the Board approve the inclusion of the Company's audited financial statements in the 10-K for filing with the SEC.

Respectfully submitted:

Thomas Bundros (Chairman)

Item 11. Executive Compensation

EXECUTIVE COMPENSATION DISCUSSION AND ANALYSIS

The following table sets forth certain information regarding the compensation earned during the last three fiscal years by the Named Executive Officers:

Summary Compensation Table

			Long-Term Compensation Awards				
Name and Principal Position	Fiscal Year	Annual Compensation Salary ($)	Stock Awards ($)	Securities Underlying Options (#)	Full Value of Options ($)	All Other Compensation ($)	Total ($)
Jason Lane (1)	2018	$ 150,000	$ –	––	–	$ ––	$ 150,000
Chief Executive Officer	2017	$ 150,000	$ –	3,000,000	$ 150,000	$ –	$ 300,000
Michael McMullen (2)	2018	$ 158,400	$ –	––	$ –	$ ––	$ 158,400
Chief Financial Officer	2017	$ 158,400	$ –	250,000	$ 15,000	$ –	$ 173,400
Greggory Bigger (3)	2018	$ –	$ –	––	$ –	$ ––	$ –
Former President, Chief Executive Officer and Chief Financial Officer	2017	$ 290,000	$ –	–	$ –	$ –	$ 290,000

(1) Mr. Lane was appointed Chief Executive Officer ("CEO") effective April 1, 2017. Mr. Lane's annual base salary under his employment agreement, as amended, as CEO is $150,000, for a two-year term. Additionally, Mr. Lane will be entitled to a bonus for any leased-based contract for the Company's AOT technology and for any sales or other non-leased contracts for the Company's AOT technology. The Company has also issued options ("Options") to Mr. Lane to purchase 3,000,000 shares of restricted common stock of the Company. The Options shall vest pursuant to a two year vesting schedule, pursuant to which 500,000 of the Options, priced at $0.15 per share, and 500,000 of the Options priced at $0.25 per share, vested on April 1, 2018; thereafter, 1,000,000 of the Options, priced at $0.30 per share and 1,000,000 of the Options priced at $0.40 per share shall vest on April 1, 2019. Please see the section below under the title Employment Agreements for greater detail concerning Mr. Lane's Employment Agreement with the Company.

Mr. Lane's Employment Agreement was amended and restated effective March 31, 2019. See Subsequent Events, footnote 11 of the accompanying financial statements.

(2) Mr. McMullen was appointed Chief Financial Officer ("CFO") effective April 1, 2017. Mr. McMullen's annual base salary under his employment agreement as CFO is $158,400, for a two-year term. The Company has also issued options ("Options") to Mr. McMullen to purchase 250,000 shares of restricted shares of common stock of the Company at a per share exercise price equal to the stock price listed on the OTCBB market at market close on April 3, 2017. 125,000 of the Options vested on April 1, 2017, and 125,000 Options vested on April 1, 2018. Please see the section below under the title Employment Agreements for greater detail concerning Mr. McMullen's Employment Agreement with the Company.

From January 2014 through March 2017, prior to his appointment as CFO, Mr. McMullen served as Controller of the Company, Mr. McMullen was under an at-will contract at an annual salary rate of $158,400. As Controller, Mr. McMullen was issued options to purchase 500,000 shares common stock as employee compensation from May 2016 through April 2017 at prices ranging from $0.07 to $0.18 per share, vesting over periods of up to two years, and expiring ten years from the date of issuance.

Mr. McMullen's Employment Agreement was amended and restated effective March 31, 2019. See Subsequent Events, footnote 11 of the accompanying financial statements.

(3) On February 1, 2012, Mr. Bigger was appointed Chief Financial Officer and later appointed as Chief Executive Officer. Mr. Bigger resigned from all positions with the Company effective on April 1, 2017. As part of a separation agreement with Mr. Bigger, the Company agreed to pay him a total of $613,000 on an equal installment basis over 24 months. The separation agreement was amended by letter agreements effective August 16, 2018 and March 31, 2019, modifying the payment schedule to a payment of $10,000 per month, continue paying his health insurance premium, and extending the term on a month-to-month basis until paid in full or otherwise terminated. As of December 31, 2018, $370,000 was payable under this agreement and was included as part of Accounts payable and accrued expenses in the accompanying consolidated balance sheet.

No options were issued as executive compensation to Mr. Bigger in 2016 or 2017; however, options were granted to Mr. Bigger under the Company's Board of Directors compensation policy as detailed in the Director Compensation section below.

OPTION GRANTS IN LAST FISCAL YEAR

During the year ended December 31, 2018, the Company granted no options to purchase shares of common stock to Named Executive Officers.

AGGREGATED OPTION EXERCISES IN LAST FISCAL YEAR AND YEAR-END OPTION VALUES

No options were exercised by any of the Named Executive Officers during the 2018 fiscal year. The following table sets forth the number of shares of our common stock subject to exercisable and unexercisable stock options which the Named Executive Officers held at the end of the 2018 fiscal year.

			Number of Securities Underlying Unexercised Options at Fiscal Year-End (#)		Value of Unexercised In-the-Money Options ($)(1)	
Name	**Shares Acquired on Exercise (#)**	**Value Realized ($)**	**Exercisable**	**Unexercisable**	**Exercisable**	**Unexercisable**
Jason Lane	$ –	$ –	1,813,492	2,000,000	$ 10,714	$ –
Michael McMullen	–	$ –	800,000	–	$ 5,000	$ –

(1) Market value of our common stock at fiscal year-end minus the exercise price. The closing price of our common stock on December 31, 2018 the last trading day of the year was $0.09 per share.

EMPLOYMENT AGREEMENTS

Employment Agreement with Jason Lane

Mr. Lane's employment agreement, as amended, ("Lane Employment Agreement") with the Company became effective April 1, 2017, pursuant to which he is serving as the Company's Chief Executive Officer. The term ("Term") of the Lane Employment Agreement is two years. Annual base salary under the Lane Employment Agreement for the full Term is $150,000. The Company will also issue options ("Options") to Mr. Lane to purchase 3,000,000 shares of restricted common stock of the Company. The Options shall vest pursuant to a two year vesting schedule, pursuant to which 500,000 of the Options, priced at $0.15 per share, and 500,000 of the Options priced at $0.25 per share, vested on April 1, 2018; thereafter, 1,000,000 of the Options, priced at $0.30 per share and 1,000,000 of the Options priced at $0.40 per share shall vest on April 1, 2019. The Options shall expire 10 years from the date of grant of the Options. Additionally, Mr. Lane will be entitled to a bonus for any leased-based contract for the Company's AOT technology in the amount of 8% of gross cash flow in the first year of the Term and 6% of gross cash flow in the second year of the Term generated by any such leased-based contract. For any sales or other non-leased contracts for the Company's AOT technology, Mr. Lane shall receive a one-time payment of 10% of the net profit of any such sale or contract. In addition, Mr. Lane shall be eligible to participate in any group health insurance plan offered by the Company to employees, or, should Mr. Lane select private health insurance outside of the Company's group plan, Mr. Lane shall receive each month an amount from the Company equal to the premium paid by Mr. Lane for such private health insurance.

Employment Agreement with Michael McMullen

Mr. McMullen's employment agreement ("McMullen Employment Agreement") with the Company became effective April 1, 2017, pursuant to which he is serving as the Company's Chief Financial Officer. The term ("Term") of the McMullen Employment Agreement is two years. Annual base salary under the McMullen Employment Agreement for the full Term is $158,400. The Company will also issue options ("Options") to Mr. McMullen to purchase 250,000 shares of restricted shares of common stock of the Company at a per share exercise price equal to the stock price listed on the OTCBB market at market close on April 3, 2017. The 125,000 of the Options vested on April 1, 2017, and 125,000 Options vested on April 1, 2018. The Options shall expire 10 years from the date of grant of the Options.

DIRECTORS COMPENSATION

During the year ended December 31, 2018, the Company granted options to purchase 2,083,335 shares of common stock to members of the Board of Directors under a new Board of Directors compensation policy adopted by the Company on May 6, 2014 and as amended effective January 1, 2015. The options are exercisable at $0.18/share and expire ten years from the date of grant. A total of 2,083,335 options vested on December 31, 2018. Total fair value of these options at grant date was approximately $313,000 using the Black-Scholes Option Pricing model with the following assumptions: life of 5.5 years; risk free interest rate of 1.70%; volatility of 118%; and dividend yield of 0%.

The table below summarizes the compensation paid by the Company to its directors for the fiscal year ended December 31, 2018.

Name	Fees earned or paid in cash (1) ($)	Stock Awards ($)	Option Awards (2) ($)	Non-Equity Incentive Plan Compensation ($)	Change in Pension Value and Nonqualified Deferred Compensation Earnings ($)	All Other Compensation ($)	Total ($)
Jason Lane (3)	$ –	–	$ 41,700	–	–	–	$ 41,700
Thomas Bundros (4)	$ 6,000	–	$ 62,500	–	–	–	$ 68,500
Donald Dickson (5)	$ 6,000	–	$ 41,700	–	–	–	$ 47,700
Eric Bunting (6)	$ –	–	$ 41,700	–	–	–	$ 41,700
Gary Buchler (7)	$ 6,000	–	$ 41,700	–	–	–	$ 47,700
Richard Munn (8)	$ –	–	$ 41,700	–	–	–	$ 41,700
William Green (9)	$ –	–	$ 41,700	–	–	–	$ 41,700

(1) Effective July 1, 2013, the Board approved a compensation policy which includes a $500 monthly fee paid to any member of the Board of Directors who serves on a Board Committee. Effective May 6, 2014, the Board approved a revised compensation policy which continued this $500 monthly fee. As of December 31, 2018, Board Committee fees in the amount of $13,000 remained unpaid and was included as part of Accrued Expenses-related parties in the accompanying consolidated balance sheet.

(2) Effective January 1, 2014, the Board passed a resolution suspending the July 1, 2013 Board compensation policy. Effective May 6, 2014, the Board approved a compensation policy which includes two annual grants of options, including i) an option to purchase a number of shares of common stock equal to $25,000 divided by the per share closing price on the date of grant with an exercise price equal to the stock closing price on the date of grant, a one year vesting period and an expiration date 10 years from the date of grant; and ii) an option to purchase a number of shares of common stock equal to $25,000 divided by the per share fair market value of the option calculated using the Black-Scholes Option Pricing Model based on market conditions, including stock closing price, risk free interest rate and stock volatility, on the date of grant with an exercise price equal to the stock closing price on the date of grant, vesting immediately and an expiration date 10 years from the date of grant. Also, effective July 1, 2013, the Board approved an annual grant of options to purchase 25,000 shares of common stock at a price equal to the stock's closing price on the date of grant, vesting immediately and expiring 10 years from the date of grant as compensation to the chairman of the Board's Audit Committee. Effective January 1, 2015, the Board amended the policy such that i) all options granted would vest over one year; and ii) options granted mid-year due to appointment to the Board or appointment to Chairman of the Audit Committee would be adjusted such that the number of shares would be calculated on a pro rata basis depending on the number of day remaining in the calendar year, and the options would vest December 31 of the year of grant.

(3) On January 2, 2018, Mr. Lane was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Lane's options that vested.

(4) On January 2, 2018, Mr. Bundros was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Bundros's options that vested.

On January 2, 2018, as Chairman of the Audit Committee, Mr. Bundros was granted options to purchase 138,889 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $20,800 using Black-Scholes Option Pricing.

During the year ended December 31, 2018, the Company recognized compensation costs of $63,000 based on the fair value of Mr. Bundros' options that vested. As a member of a Board Committee, Mr. Bundros received compensation in the amount of $500 per month for the twelve-month period of January 1, 2018 through December 31, 2018.

(5) On January 2, 2018, Mr. Dickson was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Dickson's options that vested. As a member of a Board Committee, Mr. Dickson received compensation in the amount of $500 per month for the twelve-month period of January 1, 2018 through December 31, 2018.

(6) On January 2, 2018, Dr. Bunting was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Dr. Bunting's options that vested.

(7) On January 2, 2018, Mr. Buchler was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Buchler's options that vested. As a member of a Board Committee, Mr. Buchler received compensation in the amount of $500 per month for the six-month period of June 1, 2018 through December 31, 2018.

(8) Mr. Munn On January 2, 2018, Mr. Munn was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Munn's options that vested.

(9) On January 2, 2018, Mr. Green was granted options to purchase 277,778 shares of common exercisable at $0.18/share, vesting monthly through December 31, 2018, and expiring ten years from the date of grant. Total fair value of these options at grant date was approximately $41,700 using Black-Scholes Option Pricing. During the year ended December 31, 2018, the Company recognized compensation costs of $41,700 based on the fair value of Mr. Green's options that vested.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the beneficial ownership of our common stock as of December 31, 2018.

- each person, or group of affiliated persons, known by us to be the beneficial owner of more than 5% of the outstanding shares of our common stock;
- each of our directors;
- the Company's Chief Executive Officer and President, and Chief Financial Officer, are the only persons serving as a Named Executive as of December 31, 2018 whose total annual salary and bonus exceeded $100,000, for services rendered in all capacities to the Company (such individuals are hereafter referred to as the "Named Executive Officers"); and all of our directors and executive officers serving as a group.

Named Executive Officers and Director Name and Address of Beneficial Owner (1)	Number of Shares of Common Stock Beneficially Owned (2)	Percentage of Shares Beneficially Owned (2)
Lane, Jason – Chief Executive Officer, President, Director	1,813,492	0.71%
Bundros, Thomas – Director	4,261,236	1.65%
Dickson, Donald – Director	4,570,740	1.77%
Bunting, Eric – Director	9,617,308	3.62%
Buchler, Gary – Director	709,133	0.28%
Munn, Richard – Director	899,778	0.35%
Green, William – Director	400,345	0.16%
McMullen, Michael – Chief Financial Officer	800,000	0.31%
All directors and executive officers as a group	23,123,515	8.26%

(1) Unless otherwise indicated, the address of each listed person is c/o QS Energy, Inc., 23902 FM 2978, Tomball, TX 77375.

(2) Percentage of beneficial ownership is based upon 256,123,515 shares of the Company's common stock outstanding as of December 31, 2018. Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock subject to options and warrants currently exercisable or convertible, or exercisable or convertible within 60 days, are deemed outstanding for determining the number of shares beneficially owned and for computing the percentage ownership of the person holding such options, but are not deemed outstanding for computing the percentage ownership of any other person. Except as indicated by footnote, and subject to community property laws where applicable, the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Accrued Expenses - Related Parties

As of December 31, 2018 and 2017, total accrued expenses – related parties amounted to $55,000 and $31,000, respectively. Included in the December 31, 2018 accrued amount are accrued payroll expenses to current executive officers and unpaid committee fees to current members of the Company's Board of Directors of $24,000 and $31,000, respectively. Included in the December 31, 2017 accrued amount are accrued payroll expenses to current executive officers and unpaid committee fees to current members of the Company's Board of Directors of $19,000 and $13,000, respectively.

Director Independence

The Company believes Mr. Dickson, Mr. Bundros, Dr. Bunting, Mr. Buchler, Mr. Munn, and Mr. Green are independent, and Mr. Lane is non-independent.

Item 14. Principal Accounting Fees and Services

The Audit Committee has selected Weinberg & Company, P.A. to audit our financial statements for the fiscal year ended December 31, 2018.

Weinberg & Company, P.A. was first appointed in fiscal year 2003, and has audited our financial statements for fiscal years 2002 through 2017.

Audit and Other Fees

The following table summarizes the fees charged by Weinberg & Company, P.A. for certain services rendered to the Company during 2018 and 2017.

	Amount	
Type of Fee	**Fiscal Year 2018**	**Fiscal Year 2017**
Audit (1)	$ 84,000	$ 73,000
Audit Related (2)		
Taxes (3)	16,000	10,000
All Other (4)		
Total	$ 100,000	$ 83,000

(1) This category consists of fees for the audit of our annual financial statements included in the Company's annual report on Form 10-K and review of the financial statements included in the Company's quarterly reports on Form 10-Q. This category also includes advice on audit and accounting matters that arose during, or as a result of, the audit or the review of interim financial statements, statutory audits required by non-U.S. jurisdictions and the preparation of an annual "management letter" on internal control matters.

(2) Represents services that are normally provided by the independent auditors in connection with statutory and regulatory filings or engagements for those fiscal years, aggregate fees charged for assurance and related services that are reasonably related to the performance of the audit and are not reported as audit fees. These services include consultations regarding Sarbanes-Oxley Act requirements, various SEC filings and the implementation of new accounting requirements.

(3) Represents aggregate fees charged for professional services for tax compliance and preparation, tax consulting and advice, and tax planning.

(4) Represents aggregate fees charged for products and services other than those services previously reported.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this Form 10-K.

Financial Statements:

Reference is made to the contents to the consolidated financial statements of QS Energy, Inc. under Item 7 of this Form 10-K.

(b) Exhibits:

The exhibits listed below are required by Item 601 of Regulation S-K.QS

Exhibit No.	Description
3.1(1)	Articles of Incorporation, as amended, of the Registrant
3.1(6)	Articles of Merger
3.1(5)	Amendment to Articles of Incorporation (12/20/13)
3.1(15)	Second amendment to Articles of Incorporation (10/12/17)
3.2(4)	Amended and Restated Bylaws of the Registrant
3.2(8)	Amendment to the Amended and Restated Bylaws
10.1(2)	License Agreement between the Registrant and Temple University dated February 2, 2007
10.2(3)	License Agreement between the Registrant and Temple University dated August 9, 2011
10.4(7)	Registrant's Business Plan
10.8(9)	Jason Lane Employment Agreement effective April 1, 2017
10.9(10)	Michael McMullen Employment Agreement effective April 1, 2017
10.10(11)	Bigger Separation Agreement effective April 1, 2017
10.13(12)	Forms of Convertible Note, Warrant, and Securities Purchase Agreement in 2017 Spring Offering
10.11(13)	Amendment to the License Agreement between the Registrant and Temple University
10.12(14)	Submission of Matters to a Vote of Security Holders
10.13(16)	Amendment to Jason Lane employment agreement
10.14(17)	Form of Spring 2018 Securities Purchase Agreement
10.15(*)	Form of Winter 2018-2019 Offering Securities Purchase Agreement
10.16(*)	Amendment to Jason Lane employment agreement effective April 1, 2019
10.17(*)	Amendment to Michael McMullen employment agreement effective April 1, 2019
21	List of Subsidiaries (18)
24*	Power of Attorney (included on Signature Page)
31.1*	Certification of Chief Executive Officer of Annual Report Pursuant to Rule 13(a)—15(e) or Rule 15(d)—15(e).
31.2*	Certification of Chief Financial Officer of Annual Report Pursuant to 18 U.S.C. Section 1350.
32.1*	Certification of Chief Executive Officer and Chief Financial Officer of Annual Report pursuant to Rule 13(a)—15(e) or Rule 15(d)—15(e).
101.INS*	XBRL Instance Document
101.SCH*	XBRL Schema Document
101.CAL*	XBRL Calculation Linkbase Document
101.DEF*	XBRL Definition Linkbase Document
101.LAB*	XBRL Label Linkbase Document
101.PRE*	XBRL Presentation Linkbase Document

*	Filed herewith.
**	Confidential treatment previously requested.
†	Management contract or compensatory plan or arrangement.

(1) Incorporated by reference from Registrant’s Registration Statement on Form 10-SB (Registration Number 000-29185), as amended, filed on March 2, 2000
(2) Incorporated by reference from Registrant’s Form 8-K filed on February 8, 2007
(3) Incorporated by reference from Registrant’s Form 8-K filed on August 11, 2011
(4) Incorporated by reference from Registrant’s Form 8-K filed on July 8, 2013
(5) Incorporated by reference from Registrant’s Form 8-K filed on December 20, 2013
(6) Incorporated by reference from Registrant’s Form 8-K filed on August 11, 2015
(7) Incorporated by reference from Registrant’s Form 8-K filed on December 1, 2015
(8) Incorporated by reference from Registrant’s Form 8-K filed on November 14, 2016
(9) Incorporated by reference from Registrant’s Form 10-K filed March 31, 2017
(10) Incorporated by reference from Registrant’s Form 10-K filed March 31, 2017
(11) Incorporated by reference from Registrant’s Form 10-K filed March 31, 2017
(12) Incorporated by reference from Registrant’s Form 8-K filed June 6, 2017
(13) Incorporated by reference from Registrant’s Form 8-K filed July 14, 2017
(14) Incorporated by reference from Registrant’s Form 8-K filed July 19, 2017
(15) Incorporated by reference from Registrant’s Form 8-K filed October 12, 2017
(16) Incorporated by reference from Registrant’s Form 10-Q filed November 14, 2017
(17) Incorporated by reference from Registrant’s Form 10-K filed April 2, 2018

Item 16: Form 10-K Summary

None

SIGNATURES

In accordance with Section 13 or 15(d) of the Exchange Act, the Registrant has caused this report to be signed on its behalf by the undersigned, hereunto duly authorize.

QS Energy, Inc.

Date: April 1, 2019

By: /s/ Jason Lane
Jason Lane
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Jason Lane as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and re-substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934 this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

NAME	TITLE	DATE
/s/ Jason Lane Jason Lane	Chief Executive Officer and Chairman of the Board of Directors	April 1, 2019
/s/ Thomas Bundros Thomas Bundros	Director	April 1, 2019
/s/ Donald Dickson Donald Dickson	Director	April 1, 2019
/s/ Eric Bunting, M.D. Eric Bunting, M.D.	Director	April 1, 2019
/s/ Gary Buchler Gary Buchler	Director	April 1, 2019
/s/ Richard Munn Richard Munn	Director	April 1, 2019
/s/ William Green William Green	Director	April 1, 2019

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
QS ENERGY, INC. AND SUBSIDIARIES
DECEMBER 31, 2017 AND 2016

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
QS Energy, Inc. and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of QS Energy, Inc. and Subsidiaries (the "Company") as of December 31, 2018 and 2017 and the related consolidated statements of operations, stockholders' deficit and cash flows for the years ended December 31, 2018 and 2017, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2018 and 2017, and the consolidated results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1, the Company has experienced recurring operating losses and negative operating cash flows since inception, has a stockholders' deficit, and has financed its working capital requirements through the recurring sale of its debt and equity securities. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1 to the financial statements. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

We have served as the Company's auditor since 2002

/s/ Weinberg & Company, P.A.

Weinberg & Company, P.A.
Los Angeles, California
April 1, 2019

QS ENERGY, INC.
CONSOLIDATED BALANCE SHEETS

		December 31 2018		December 31 2017
ASSETS				
Current assets:				
Cash	$	1,153,000	$	204,000
Prepaid expenses and other current assets		34,000		38,000
Total current assets		1,187,000		242,000
Property and equipment, net of accumulated depreciation of $73,000 and $51,000 at December 31, 2018 and 2017, respectively		24,000		46,000
Other assets		2,000		2,000
Total assets	$	1,213,000	$	290,000
LIABILITIES AND STOCKHOLDERS' DEFICIT				
Current liabilities:				
Accounts payable-license agreements	$	1,073,000	$	852,000
Accounts payable and accrued expenses		658,000		748,000
Accrued expenses-related parties		55,000		31,000
Convertible debentures, net of discounts of $1,100,000 and $47,000 at December 31, 2018 and 2017, respectively		909,000		533,000
Total current liabilities		2,695,000		2,164,000
Commitments and contingencies				
Stockholders' deficit				
Common stock, $0.001 par value: 500,000,000 shares authorized, 256,123,515 and 234,076,907 shares issued and outstanding at December 31, 2018 and 2017, respectively		256,123		234,077
Additional paid-in capital		111,429,877		108,000,923
Accumulated deficit		(113,168,000)		(110,109,000)
Total stockholders' deficit		(1,482,000)		(1,874,000)
Total liabilities and stockholders' deficit	$	1,213,000	$	290,000

The accompanying notes are an integral part of these consolidated financial statements.

QS ENERGY, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year ended December 31	
	2018	2017
Revenues	$ –	$ 50,000
Operating expenses	1,853,000	2,938,000
Research and development expenses	208,000	243,000
Loss before other income (expense)	(2,061,000)	(3,131,000)
Interest and financing expense	(998,000)	(1,704,000)
Net Loss	$ (3,059,000)	$ (4,835,000)
Net loss per common share, basic and diluted	$ (0.01)	$ (0.02)
Weighted average common shares outstanding, basic and diluted	246,255,784	217,790,405

The accompanying notes are an integral part of these consolidated financial statements.

QS ENERGY, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT
FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017

	Common Stock		Additional Paid-in	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Deficit	Deficit
Balance, January 1, 2017	199,045,026	199,045	103,716,955	(105,274,000)	(1,358,000)
Common stock issued on private sale of securities	181,355	181	37,819	–	38,000
Common stock issued upon exercise of warrants	4,863,754	4,864	391,136	–	396,000
Common stock issued upon conversion of notes payable	29,986,772	29,987	1,498,013	–	1,528,000
Fair value of warrants and beneficial conversion feature of issued convertible notes	–	–	1,469,000	–	1,469,000
Fair value of options and warrants issued as compensation	–	–	888,000	–	888,000
Net loss	–	–	–	(4,835,000)	(4,835,000)
Balance, December 31, 2017	234,076,907	234,077	108,000,923	(110,109,000)	(1,874,000)
Common stock issued upon exercise of warrants	12,697,483	12,697	634,303	–	647,000
Common stock issued upon conversion of notes payable	9,299,125	9,299	569,701	–	579,000
Fair value of warrants and beneficial conversion feature of issued convertible notes	–	-–	1,778,000	–	1,778,000
Fair value of options and warrants issued as compensation	–	–	435,000		435,000
Common stock issued for services	50,000	50	11,950	–	12,000
Net loss	–	–	–	(3,059,000)	(3,059,000)
Balance, December 31, 2018	256,123,515	$ 256,123	$ 111,429,877	$ (113,168,000)	$ (1,482,000)

The accompanying notes are an integral part of these consolidated financial statements.

QS ENERGY, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year ended December 31 2018	2017
Cash flows from Operating Activities		
Net loss	$ (3,059,000)	$ (4,835,000)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock based compensation expense	435,000	888,000
Issuance of common stock for services	12,000	–
Amortization of debt discount and interest expense	955,000	1,713,000
Depreciation and amortization	22,000	19,000
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	4,000	(6,000)
Accounts payable and accrued expenses	(90,000)	497,000
Accounts payable – license agreements	221,000	47,000
Accounts payable and accrued expenses – related parties	24,000	(104,000)
Deposits and other current liabilities	–	(5,000)
Net cash used in operating activities	(1,476,000)	(1,786,000)
Cash flows from investing activities		
Purchase of equipment	–	(49,000)
Net cash used in investing activities	–	(49,000)
Cash flows from financing activities		
Net proceeds from private sale of restricted common stock	–	38,000
Net proceeds from issuance of convertible notes and warrants	1,778,000	1,469,000
Net proceeds from exercise of warrants and options	647,000	396,000
Net cash provided by financing activities	2,425,000	1,903,000
Net increase in cash	949,000	68,000
Cash, beginning of period	204,000	136,000
Cash, end of period	$ 1,153,000	$ 204,000
Supplemental disclosures of cash flow information		
Cash paid during the year for:		
Interest	$ –	$ –
Income Taxes	$ 1,600	$ 1,600
Non-cash investing and financing activities		
Conversion of convertible debentures to common stock	$ 579,000	$ 1,528,000
Deposit exchanged to convertible note payable	$ –	$ –
Fair value of warrants and beneficial conversion feature associated with issued convertible notes	$ 1,778,000	$ 1,469,000

The accompanying notes are an integral part of these consolidated financial statements.

1. Description of Business

Description of Business

QS Energy, Inc. ("QS Energy", "Company") was incorporated on February 18, 1998, as a Nevada Corporation under the name Mandalay Capital Corporation. The Company changed its name to Save the World Air, Inc. on February 11, 1999. Effective August 11, 2015, the Company changed its name to QS Energy, Inc. The Company's common stock is quoted under the symbol "QSEP" on the Over-the-Counter Bulletin Board. More information including the Company's fact sheet, logos and media articles are available at our corporate website, www.qsenergy.com.

QS Energy develops and commercializes energy efficiency technologies that assist in meeting increasing global energy demands, improving the economics of oil extraction and transport, and reducing greenhouse gas emissions. The Company's intellectual properties include a portfolio of domestic and international patents and patents pending, a substantial portion of which have been developed in conjunction with and exclusively licensed from Temple University of Philadelphia, PA ("Temple"). QS Energy's primary technology is called Applied Oil Technology (AOT), a commercial-grade crude oil pipeline transportation flow-assurance product. Engineered specifically to reduce pipeline pressure loss, increase pipeline flow rate and capacity, and reduce shippers' reliance on diluents and drag reducing agents to meet pipeline maximum viscosity requirements, AOT is a 100% solid-state system that reduces crude oil viscosity by applying a high intensity electrical field to crude oil feedstock while in transit. The AOT product has transitioned from the research and development stage to initial production for continued testing in advance of our goal of seeking acceptance and adoption by the midstream pipeline marketplace.

The Company also began commercial development of a suite of products based around the Joule Heat technology. The Company began fabrication of prototype equipment to be operated under a joint development agreement with a commercial entity in the fourth quarter of 2014. The Company's first Joule Heat prototype was installed for testing purposes at the Newfield facility in June 2015 and the system was operational; however, changes to the prototype configuration will be required to determine commercial effectiveness of this unit. In addition, the Company filed two additional provisional patents related to the technology's method and apparatus. In December 2015, we temporarily suspended Joule Heat development activities to focus Company resources on finalizing commercial development of the AOT Midstream. We currently plan to resume Joule Heat development in in the future depending on the availability of sufficient capital and other resources.

Going Concern

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. As reflected in the accompanying consolidated financial statements, during the twelve-months ended December 31, 2018, the Company incurred a net loss of $3,059,000, used cash in operations of $1,476,000 and had a stockholders' deficit of $1,482,000 as of that date. These factors raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued. The ability of the Company to continue as a going concern is dependent upon the Company's ability to raise additional funds and implement its business plan. The financial statements do not include any adjustments that might be necessary if the Company is unable to continue as a going concern.

At December 31, 2018, the Company had cash on hand in the amount of $1,153,000. Management estimates that the current funds on hand will be sufficient to continue operations through September 2019. We will need to raise additional funds in in 2019 and beyond, primarily through the issuance of debt and equity securities for cash to operate our business, including without limitation the expenses it will incur in connection with the license and research and development agreements with Temple University; costs associated with product development and commercialization of the AOT technology; costs to manufacture and ship the products; costs of maintaining our status as a public company by filing periodic reports with the SEC and costs required to protect our intellectual property. In addition, as discussed below, the Company has substantial contractual commitments, including without limitation, payment of license and other fees to Temple University, salaries to our executive officers pursuant to employment agreements, certain payments to a former officer and consulting fees, during the remainder of 2019 and beyond.

No assurance can be given that any future financing will be available or, if available, that it will be on terms that are satisfactory to the Company. Even if the Company is able to obtain additional financing, it may contain undue restrictions on our operations, in the case of debt financing or cause substantial dilution for our stockholders in case of equity financing.

2. Summary of Significant Accounting Policies

Consolidation Policy

The accompanying consolidated financial statements of QS Energy Inc. include the accounts of QS Energy Inc. (the Parent) and its wholly owned subsidiaries, QS Energy Pool, Inc. and STWA Asia Pte. Limited. Intercompany transactions and balances have been eliminated in consolidation.

Revenue Recognition Policy

Under its business plan, the Company anticipates the leasing its primary technology. The Company will recognize lease revenue ratably over the life of the lease upon commencement of the lease. Revenue on future product sales will be recognized in accordance with Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers. ASU 2014-09 is a comprehensive revenue recognition standard that supersedes nearly all existing revenue recognition guidance under current U.S. GAAP and replaces it with a principle-based approach or determining revenue recognition. ASU 2014-09 will require that companies recognize revenue based on the value of transferred goods or services as they occur in the contract. The ASU also will require additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract.

Property and Equipment and Depreciation

Property and equipment are stated at cost. Depreciation is computed using the straight-line method based on the estimated useful lives of the assets, generally ranging from three to ten years. Expenditures for major renewals and improvements that extend the useful lives of property and equipment are capitalized. Expenditures for repairs and maintenance are charged to expense as incurred. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful life of the asset or the lease term.

Impairment of Long-lived Assets

Our long-lived assets, such as property and equipment, are reviewed for impairment at least annually, or when events and circumstances indicate that depreciable or amortizable long-lived assets might be impaired and the undiscounted cash flows estimated to be generated by those assets are less than the carrying amount of those assets. When specific assets are determined to be unrecoverable, the cost basis of the asset is reduced to reflect the current value.

We use various assumptions in determining the current fair value of these assets, including future expected cash flows and discount rates, as well as other fair value measures. Our impairment loss calculations require us to apply judgment in estimating future cash flows, including forecasting useful lives of the assets and selecting the discount rate that reflects the risk inherent in future cash flows.

If actual results are not consistent with our assumptions and judgments used in estimating future cash flows and asset fair values, we may be exposed to future impairment losses that could be material to our results. Based upon management’s annual review, no impairments were recorded for the years ended December 31, 2018, and 2017.

Loss per Share

Basic loss per share is computed by dividing net loss available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted loss per share reflects the potential dilution, using the treasury stock method that could occur if securities or other contracts to issue common stock were exercised or converted into common stock or resulted in the issuance of common stock that then shared in the loss of the Company. In computing diluted loss per share, the treasury stock method assumes that outstanding options and warrants are exercised, and the proceeds are used to purchase common stock at the average market price during the period. Options and warrants may have a dilutive effect under the treasury stock method only when the average market price of the common stock during the period exceeds the exercise price of the options and warrants.

For the years ended December 31, 2018 and 2017, the dilutive impact of outstanding stock options of 35,301,300 shares and 35,397,675 shares; outstanding warrants of 21,055,355 shares and 17,622,437 shares; and notes convertible into 36,477,375 and 4,847,333 shares of our common stock, respectively, have been excluded because their impact on the loss per share is anti-dilutive.

Income Taxes

Income taxes are recognized for the amount of taxes payable or refundable for the current year and deferred tax liabilities and assets are recognized for the future tax consequences of transactions that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is provided when it is more likely than not that some portion or entire deferred tax asset will not be realized.

Stock-Based Compensation

The Company periodically issues stock options and warrants to employees and non-employees in non-capital raising transactions for services and for financing costs. The Company accounts for stock option and warrant grants issued and vesting to employees based on the authoritative guidance provided by the Financial Accounting Standards Board ("FASB") whereas the value of the award is measured on the date of grant and recognized over the vesting period. The Company accounts for stock option and warrant grants issued and vesting to non-employees in accordance with the authoritative guidance of the FASB whereas the value of the stock compensation is based upon the measurement date as determined at either a) the date at which a performance commitment is reached, or b) at the date at which the necessary performance to earn the equity instruments is complete. Non-employee stock-based compensation charges generally are amortized over the vesting period on a straight-line basis. In certain circumstances where there are no future performance requirements by the non-employee, option grants are immediately vested and the total stock-based compensation charge is recorded in the period of the measurement date.

The fair value of the Company's stock options and warrants grant is estimated using the Black-Scholes Option Pricing model, which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the stock options or warrants, and future dividends. Compensation expense is recorded based upon the value derived from the Black-Scholes Option Pricing model, and based on actual experience. The assumptions used in the Black-Scholes Option Pricing model could materially affect compensation expense recorded in future periods.

Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates include those related to assumptions used in impairment analysis for property and equipment, valuing accruals and equity instruments issued for services, and realization of deferred tax assets, among others. Actual results could differ from those estimates.

Fair Value of Financial Instruments

Effective January 1, 2008, fair value measurements are determined by the Company's adoption of authoritative guidance issued by the FASB, with the exception of the application of the statement to non-recurring, non-financial assets and liabilities as permitted. The adoption of the authoritative guidance did not have a material impact on the Company's fair value measurements. Fair value is defined in the authoritative guidance as the price that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. A fair value hierarchy was established, which prioritizes the inputs used in measuring fair value into three broad levels as follows:

Level 1—Quoted prices in active markets for identical assets or liabilities.

Level 2—Inputs, other than the quoted prices in active markets, are observable either directly or indirectly.

Level 3—Unobservable inputs based on the Company's assumptions.

The Company is required to use of observable market data if such data is available without undue cost and effort.

The carrying amounts for cash, accounts payable, accrued expenses and convertible debentures approximate their fair value due to their short-term nature.

Patent Costs

Patent costs consist of patent-related legal and filing fees. Due to the uncertainty associated with the successful development of our AOT product, all patent costs are expensed as incurred. During the years ended December 31, 2018 and 2017, patent costs were $29,000 and $45,000, respectively, and were included as part of operating expenses in the accompanying consolidated statements of operations.

Recent Accounting Pronouncements

In February 2016, the FASB issued Accounting Standards Update (ASU) No. 2016-02, *Leases*. ASU 2016-02 requires a lessee to record a right of use asset and a corresponding lease liability on the balance sheet for all leases with terms longer than 12 months. ASU 2016-02 is effective for all interim and annual reporting periods beginning after December 15, 2018. Early adoption is permitted. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. The Company is in the process of evaluating the impact of ASU 2016-02 on the Company's financial statements and disclosures.

In July 2017, the FASB issued Accounting Standards Update No. 2017-11, Earnings Per Share (Topic 260); Distinguishing Liabilities from Equity (Topic 480); Derivatives and Hedging (Topic 815): (Part I) Accounting for Certain Financial Instruments with Down Round Features; (Part II) Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception ("ASU 2017-11"). ASU 2017-11 allows companies to exclude a down round feature when determining whether a financial instrument (or embedded conversion feature) is considered indexed to the entity's own stock. As a result, financial instruments (or embedded conversion features) with down round features may no longer be required to be accounted for as derivative liabilities. A company will recognize the value of a down round feature only when it is triggered, and the strike price has been adjusted downward. For equity-classified freestanding financial instruments, an entity will treat the value of the effect of the down round as a dividend and a reduction of income available to common shareholders in computing basic earnings per share. For convertible instruments with embedded conversion features containing down round provisions, entities will recognize the value of the down round as a beneficial conversion discount to be amortized to earnings. ASU 2017-11 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. The guidance in ASU 2017-11 is to be applied using a full or modified retrospective approach. The adoption of ASU 2017-11 is not currently expected to have any impact on the Company's financial statement presentation or disclosures.

Other recent accounting pronouncements issued by the FASB, including its Emerging Issues Task Force, the American Institute of Certified Public Accountants, and the Securities and Exchange Commission did not or are not believed by management to have a material impact on the Company's present or future consolidated financial statement presentation or disclosures.

3. Accrued Expenses – Related Parties

Accrued Expenses – Related Parties consists of unpaid salaries and corresponding payroll taxes of officer's salaries, unused vacation of officers and unpaid board and committee fees to members of the Company's Board of Directors. As of December 31, 2018 and 2017, total accrued expenses – related parties amounted to $55,000 and $31,000, respectively.

4. Property and Equipment

At December 31, 2018 and 2017, property and equipment consists of the following:

	December 31, 2018	December 31, 2017
Office equipment	$ 30,000	$ 30,000
Furniture and fixtures	5,000	5,000
Testing equipment	37,000	37,000
Leasehold Improvements	25,000	25,000
Subtotal	97,000	97,000
Less accumulated depreciation	(73,000)	(51,000)
Total	$ 24,000	$ 46,000

Depreciation expense for the years ended December 31, 2018 and 2017 was $22,000 and $19,000, respectively.

5. Convertible Notes and Warrants

	December 31, 2018	December 31, 2017
Convertible note	$ 1,886,000	$ 509,000
Interest	123,000	71,000
Subtotal	2,009,000	580,000
Convertible note discount	(1,100,000)	(47,000)
Total	$ 909,000	$ 533,000

As of December 31, 2016, $417,000 of convertible notes and $23,000 if accrued interest was due to note holders. During the year ended December 31, 2017, the Company issued convertible promissory notes in the aggregate of $1,616,000 for cash proceeds of $1,469,000 and a discount of $147,000. The notes do not bear any interest; however, the implied interest rate used was 10% since the notes were issued 10% less than its face value, are unsecured, mature in twelve months from issuance and convertible at $0.05 per share. In addition, the Company also granted these note holders warrants to purchase 16,160,770 shares of the Company' common stock. The warrants are fully vested, exercisable at $0.05 per share and expire one year from the date of issuance. As a result, the Company recorded a note discount of $1,616,000 to account for the relative fair value of the warrants, the notes' beneficial conversion factor ("BCF") and original issue discount ("OID"). The note discounts are amortized over the life of the notes or were amortized in full upon the conversion of the corresponding notes to common stock. During 2017, a total of $1,528,000 of notes payable were converted into 29,986,732 shares of common stock and amortized note discount of $1,661,000 was recorded as interest expense. As of December 31, 2017, total outstanding notes payable amounted to $509,000 which are due through June 2018 and unamortized note discount of $47,000. During the year ended December 31, 2017, the Company accrued interest of $48,000. As of December 31, 2017, total accrued interest amounted to $71,000 which was reported as part of convertible debentures in the accompanying consolidated balance sheet. As of December 31, 2017, $381,000 of these notes were past due.

During the year ended December 31, 2018, the Company issued convertible promissory notes in the aggregate of $1,955,000 for cash proceeds of $1,778,000 and a discount of $178,000. The notes do not bear any interest; however, the implied interest rate used was 10% since the notes were issued 10% less than its face value, are unsecured, mature in twelve months from issuance and convertible at $0.05 to $0.08 per share. In addition, the Company also granted these note holders warrants to purchase 18,238,688 shares of the Company' common stock. The warrants are fully vested, exercisable at $0.05 to $0.08 per share and expire one year from the date of issuance. As a result, the Company recorded a note discount of $1,778,000 to account for the relative fair value of the warrants, the notes' BCF and OID. The note discounts are amortized over the life of the notes or were amortized in full upon the conversion of the corresponding notes to common stock. During 2018, a total of $579,000 of notes payable were converted into 9,299,125 shares of common stock and amortized note discount of $902,000 was recorded as interest expense. As of December 31, 2018, total outstanding notes payable amounted to $1,886,000 which are due through December 2019 and unamortized note discount of $1,100,000.

During the year ended December 31, 2018, the Company accrued interest of $52,000. As of December 31, 2018, total accrued interest amounted to $123,000 which was reported as part of convertible debentures in the accompanying consolidated balance sheet. As of December 31, 2018, $454,000 of the outstanding notes are past due and the Company is currently in negotiations with the noteholders to settle the matured notes payable.

6. Research and Development

The Company constructs, develops and tests the AOT technology with internal resources and through the assistance of various third-party entities. Costs incurred and expensed include fees such as license fees, purchase of test equipment, viscometers, SCADA systems, computer equipment, direct costs related to AOT equipment manufacture and installation, payroll and other related equipment and various logistical expenses for the purposes of evaluating and testing the Company's AOT prototypes.

Costs incurred for research and development are expensed as incurred. Purchased materials that do not have an alternative future use are also expensed. Furthermore, costs incurred in the construction of prototypes with no certainty of any alternative future use and established commercial uses are also expensed.

For the years ended December 31, 2018 and 2017, our research and development expenses were \$208,000 and \$243,000, respectively.

AOT Prototypes

During the years ended December 31, 2018 and 2017, the Company incurred total expenses of \$20,000 and \$53,000, respectively, in the manufacture and delivery of the AOT prototype equipment under lease agreements. These expenses have been reflected as part of Research and Development expenses on the accompanying consolidated statements of operations.

Temple University Licensing Agreement

On August 1, 2011, the Company and Temple University ("Temple") entered into two (2) Exclusive License Agreements (collectively, the "License Agreements") relating to Temple's patent applications, patents and technical information pertaining to technology associated with an electric and/or magnetic field assisted fuel injector system (the "First Temple License"), and to technology to reduce crude oil viscosity (the "Second Temple License"). The License Agreements are exclusive, and the territory licensed to the Company is worldwide and replace previously issued License Agreements.

Pursuant to the two licensing agreements, the Company paid Temple a non-refundable license maintenance fee of \$300,000, and agreed to pay (i) annual maintenance fees of \$187,500; (ii) royalty fee ranging from 4% up to 7% from revenues generated from the licensing agreements; and (iii) 25% of all revenues generated from sub-licensees to secure or maintain the sub-license or option thereon. The term of the licenses commenced in August 2011 and will expire upon expiration of the patents. The agreements can also be terminated by either party upon notification under terms of the licensing agreements or if the Company ceases the development of the patent or fails to commercialize the patent rights.

As of December 31, 2016, the unpaid license fees to Temple were \$805,000. During 2017, the Company paid Temple \$130,695 and incurred an additional \$178,000 of costs (including the \$187,500 annual maintenance fee). Also during 2017, the Company and Temple amended the Second Temple License agreement. Pursuant to the amendment, the Company and Temple agreed to defer payment of \$135,000 of the amount payable until such time the Company generates revenues totaling \$835,000 from the license. In addition, the parties agreed that the unpaid balance of \$135,000 will accrue interest of 9% per annum. As of December 31, 2017, the total unpaid fees due to Temple pursuant to these agreements are \$852,000, which are included as part of Accounts Payable – license agreements in the accompanying consolidated balance sheets.

During 2018 the Company paid Temple \$10,000 and incurred an additional \$230,700 of costs (including the \$187,500 license fee and \$43,200 of interest). As of December 31, 2018, total unpaid fees due to Temple pursuant to these agreements are \$1,073,000, which are included as part of Accounts Payable – license agreements in the accompanying consolidated balance sheets. With regards to the unpaid fees to Temple, a total of \$135,000 are deferred until such time the Company achieves a revenue milestone of \$835,000 or upon termination of the licensing agreements and the remaining \$938,000 are deemed past due. The Company is currently in negotiations with Temple to settle or cure the past due balance.

The Company generated \$50,000 in revenue from the viscosity reduction license during the twelve-month period ended December 31, 2017. This amount is not sufficient to be subject to additional license fees under the license agreement. The Company generated no revenue from the viscosity reduction system during the twelve-month period ended December 31, 2018.

7. Common Stock Transactions

Year Ending December 31, 2018

During the year ended December 31, 2018, the Company issued an aggregate of 22,046,608 shares of its common stock as follows:

- The Company issued 9,299,125 shares of its common stock upon the conversion of $579,000 in convertible notes pursuant to the convertible notes conversion prices of $0.05 to $0.08 per share.
- The Company issued 12,517,773 shares of its common stock upon the exercise of warrants for proceeds of $634,000 at an exercise prices $0.05 per share.
- The Company issued 179,710 shares of its common stock upon the exercise of options for proceeds of $13,000 at an exercise price of $0.07 per share.
- The Company issued 50,000 shares of its common stock at a value of $0.24 per share in exchange for services valued $12,000.

Year Ending December 31, 2017

In August 2017, shareholders approved an increase in authorized shares of common stock from 300,000,000 to 500,000,000, approved the creation of a new class of preferred stock, and authorize the Company to issue up to 100,000,000 shares of preferred stock. During the year ended December 31, 2017, the Company issued an aggregate of 35,031,881 shares of its common stock as follows:

- The Company issued 181,355 shares of its common stock upon the private sale of restricted common stock for cash proceeds of $38,000 at a purchase price of $.21 per share.
- The Company issued 29,986,772 shares of its common stock upon the conversion of $1,528,000 in convertible notes pursuant to the convertible notes conversion prices of $0.05 to $0.48 per share.
- The Company issued 4,414,000 shares of its common stock upon the exercise of warrants for proceeds of $359,000 at exercise prices of $0.05 to $0.10 per share.
- The Company issued 449,754 shares of its common stock upon the exercise of options for proceeds of $37,000 at exercise prices of $0.07 to $0.13 per share.

8. Stock Options and Warrants

The Company periodically issues stock options and warrants to employees and non-employees in capital raising transactions, for services and for financing costs. Options and warrants vest and expire according to terms established at the grant date.

Options

Employee options vest according to the terms of the specific grant and expire from 5 to 10 years from date of grant. The weighted-average, remaining contractual life of employee and Non-employee options outstanding at December 31, 2018 was 5.2 years. Stock option activity for the period January 1, 2017 to December 31, 2018, was as follows:

	Options	Weighted Avg. Exercise Price
Options outstanding, January 1, 2017	23,474,256	$ 0.30
Options granted	12,561,852	0.12
Options exercised	(449,754)	0.05
Options cancelled	(188,679)	0.53
Options outstanding, December 31, 2017	35,397,675	$ 0.23
Options granted	2,083,335	0.18
Options exercised	(179,710)	0.07
Options cancelled	(2,000,000)	0.28
Options outstanding, December 31, 2018	35,301,300	0.22

The weighted average exercise prices, remaining contractual lives for options granted, exercisable, and expected to vest as of December 31, 2018 were as follows:

	Outstanding Options			Exercisable Options	
Option Exercise Price Per Share	Shares	Life (Years)	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
$ 0.05 - $ 0.24	13,766,250	8.1	$ 0.10	13,466,250	$ 0.10
$ 0.25 - $ 0.49	20,913,552	3.3	0.27	18,913,552	0.27
$ 0.50 - $ 0.99	471,052	5.3	0.85	471,052	0.85
$ 1.00 - $ 2.00	150,446	4.6	1.18	150,446	1.18
	35,301,300	5.2	$ 0.22	33,001,300	$ 0.21

As of December 31, 2018, the market price of the Company's stock was $0.09 per share. At December 31, 2018 the aggregate intrinsic value of the options outstanding was $286,000. Future unamortized compensation expense on the unvested outstanding options at December 31, 2018 is approximately $19,000.

Year Ending December 31, 2018

- In January 2018, the Company issued options to purchase a total of 2,083,335 shares of common stock to employees, officers and members of the Board of Directors with a fair value of $313,000 using the Black-Scholes Option Pricing model. The options are exercisable from $0.18 per share, vesting within year and expiring in ten years from the date of grant. During the year ended December 31, 2018, the Company recognized compensation costs of $313,000 based on options that vested.

- During the year ended December 31, 2018, the Company amortized $121,000 of compensation cost based on the vesting of the options granted to employees and directors in prior years.

Year Ending December 31, 2017

- From January through July 2017, the Company issued options to purchase a total of 12,561,852 shares of common stock to employees, officers and members of the Board of Directors with a fair value of $647,000 using the Black-Scholes Option Pricing model. The options are exercisable from $0.07 up to $0.40 per share, vesting within one to three years and expiring in ten years from the date of grant. During the year ended December 31, 2017, the Company recognized compensation costs of $761,000 based on options that vested.

- During the year ended December 31, 2017, the Company amortized $36,000 of compensation cost based on the vesting of the options granted to employees and directors in prior years.

Black-Scholes Option Pricing

The Company used the following average assumptions in its calculation using the Black-Scholes Option Pricing model:

	Years Ended	
	2018	2017
Expected life (years)	5.5	5 – 6
Risk free interest rate	1.70%	1.72 – 1.94%
Volatility	118%	114 – 124%
Expected dividend yield	0%	0%

The assumptions used in the Black Scholes models referred to above are based upon the following data: (1) the contractual life of the underlying non-employee options is the expected life. The expected life of the employee option is estimated by considering the contractual term of the option, the vesting period of the option, the employees' expected exercise behavior and the post-vesting employee turnover rate. (2) The expected stock price volatility was based upon the Company's historical stock price over the expected term of the option. (3) The risk-free interest rate is based on published U.S. Treasury Department interest rates for the expected terms of the underlying options. (4) The expected dividend yield was based on the fact that the Company has not paid dividends to common shareholders in the past and does not expect to pay dividends to common shareholders in the future.

Warrants

The following table summarizes certain information about the Company's stock purchase warrants.

	Warrants		Weighted Avg. Exercise Price
Warrants outstanding, January 1, 2017	11,446,892		0.15
Warrants granted	16,160,770		0.05
Warrants exercised	(4,414,000)		0.08
Warrants cancelled	(5,571,225)		0.10
Warrants outstanding, December 31, 2017	17,622,437	$	0.09
Warrants granted	18,238,688		0.05
Warrants exercised	(12,517,773)		0.05
Warrants cancelled	(2,287,997)		0.05
Warrants outstanding, December 31, 2018	21,055,355		0.09

At December 31, 2018 the price of the Company's common stock was $0.09 per share and the aggregate intrinsic value of the warrants outstanding was $661,000. As of December 21, 2018, all warrants were fully vested.

	Outstanding Warrants				Exercisable Warrants		
Warrant Exercise Price Per Share	Shares	Life (Years)		Weighted Average Exercise Price	Shares		Weighted Average Exercise Price
$ 0.05 - $ 0.24	18,343,688	0.9	$	0.06	18,343,688	$	0.06
$ 0.25 - $ 0.49	2,641,667	2.2		0.30	2,641,667		0.30
$ 0.50 - $ 1.00	70,000	5.3		0.80	70,000		0.80
	21,055,355	1.1	$	0.09	21,055,355	$	0.09

Year Ending December 31, 2018

- In February through December 2018, pursuant to terms of convertible notes issued, the Company granted warrants to purchase 18,238,688 shares of common stock with an exercise price of $0.05 to $0.08 per share, vesting immediately upon grant and expiring one year from the date of grant. See Note 5 for further discussion.

Year Ending December 31, 2017

- In January through May 2017, pursuant to terms of convertible notes issued, the Company granted warrants to purchase 16,160,770 shares of common stock with an exercise price of $0.05 per share, vesting immediately upon grant and expiring one year from the date of grant. See Note 5 for further discussion.

- Effective May 2017, the Company amended the terms of a warrant issued in 2015, extending the expiration date of the warrant by twenty-four months with no changes to the other terms of the original grant. As a result, the Company recorded the incremental change in the fair value of this warrant before and after the date of the amendment of $90,000, computed using the Black-Scholes Option Pricing model with the following assumptions: life of 1.5 years; exercise price of $0.30 per share; stock price of $0.24 per share, average risk-free interest rate of 1.70%; average volatility of 140% and dividend yield of 0%. During the year ended December 31, 2017, the Company recognized an expense of $90,000 based on the fair value of the warrant as amended.

- During the year ended December 31, 2017, the Company amortized $1,000 of compensation cost based on the vesting of the warrants granted consultants in prior years.

9. Commitments and Contingencies

We are involved in certain legal proceedings that arise from time to time in the ordinary course of our business. Except for income tax contingencies, we record accruals for contingencies to the extent that our management concludes that the occurrence is probable and that the related amounts of loss can be reasonably estimated. Legal expenses associated with the contingency are expensed as incurred. There is no current or pending litigation of any significance with the exception of the matters that have arisen under, and are being handled in, the normal course of business.

Leases

In April 2017, the Company moved its executive offices to 23902 FM 2978, Tomball, Texas 77375. From May 2016 through May 2017, the Company's executive offices were located at 5266 Hollister Avenue, Suite 219, Santa Barbara, CA 93111.

Total rent expense under these leases in effect during the years ended December 31, 2018, and 2017 was $18,000 and $20,000, respectively which are included as part of Operating Expenses in the attached consolidated statements of operations. The Tomball Texas office is under a month-to-month lease payable at $1,500 per month. The Tomball facility is leased from JBL Energy Partners, an entity solely owned by Jason Lane, Company CEO.

Contractual Commitments

The Company's contractual commitments for future periods, including office leases, minimum guaranteed compensation payments and other agreements as described in the following table and associated footnotes:

Year ending December 31,	License Agreements (1)	Compensation Agreements (2)	Total Obligations
2019	187,500	404,100	591,600
2020	187,500	–	187,500
2021	187,500	–	187,500
2022	187,500	–	187,500
2023	187,500	–	187,500
Total	$ 937,500	$ 404,100	$ 1,341,600

(1) Consists of license maintenance fees to Temple University in the amount of $187,500 paid annually through the life of the underlying patents or until otherwise terminated by either party.

(2) Consists of base salary and certain contractually-provided benefits, to i) a former executive officer, pursuant to an severance in the amount of $580,000 that will be paid through March 31, 2019 pursuant to a separation agreement effective April 1, 2017 as amended by letter agreements effective August 16, 2018 and March 31, 2019, modifying the payment schedule to a payment of $10,000 per month, continue paying his health insurance premium and extending the term on a month-to-month basis until paid in full or otherwise terminated. As of December 31, 2018, $370,000 was payable under this agreement and was included as part of Accounts payable and accrued expenses in the accompanying consolidated balance sheet.; ii) an executive officer, pursuant to a two-year employment agreement effective April 1, 2017 at a base annual salary of $150,000 per year; and iii) an executive officer, pursuant to a two-year agreement effective April 1, 2017 at a base annual salary of $158,400 per year.

10. Income Taxes

The Company did not provide any Federal and State income tax for the years ended December 31, 2018 and 2017 due to the Company's net losses, other than $1,600 for the minimum state tax provision which was reported as part of operating expense in the accompanying statements of operations. A reconciliation of income taxes with the amounts computed at the statutory federal rate follows:

	December 31, 2018	December 31, 2017
Computed tax provision (benefit) at federal statutory rate (21% and 34%, 2018 and 2017, respectively)	$ (312,000)	$ (546,000)
State income taxes, net of federal benefit (0% in 2018 and 8.84% in 2017, respectively)	–	(142,000)
Valuation allowance	312,000	689,600
Income tax provision	$ –	$ 1,600

The deferred tax assets and deferred tax liabilities recorded on the balance sheet are as follows:

	December 31, 2018	December 31, 2017
Net operating loss carry forwards	$ 15,226,000	$ 14,746,000
Stock based compensation	(122,000)	(249,000)
Non-cash interest and financing expenses	(267,000)	(480,000)
Other temporary differences	(51,000)	(176,000)
Valuation allowance	(14,826,000)	(13,841,000)
Total deferred taxes net of valuation allowance	$ –	$ –

As of December 31, 2018, the Company had net operating losses available for carry forward for state and federal tax purposes of approximately $55 million expiring through 2038. These carry forward benefits will be subject to annual limitations due to the ownership change limitations imposed by the Internal Revenue Code and similar state provisions. The annual limitation, if imposed, may result in the expiration of net operating losses before utilization.

As of December 31, 2018, the Company recorded a valuation allowance of $14,826,000 for its deferred tax assets since the Company believes that such assets did not meet the more likely than not criteria to be recoverable through projected future profitable operations in the foreseeable future. This valuation is based on the new federal corporate tax rate of 21% effective 2018 resulting in an effective bended state and federal tax rate of 28%.

Effective January 1, 2007, the Company adopted FASB guidance that addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under this guidance, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position should be measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. The FASB also provides guidance on de-recognition, classification, interest and penalties on income taxes, accounting in interim periods and requires increased disclosures. As of December 31, 2018 and 2017, the Company does not have a liability for unrecognized tax benefits.

The Company files income tax returns in the U.S. federal jurisdiction and the State of California. The Company is subject to U.S. federal or state income tax examinations by tax authorities for years after 2002. During the periods open to examination, the Company has net operating loss and tax credit carry forwards for U.S. federal and state tax purposes that have attributes from closed periods. Since these net operating losses and tax credit carry forwards may be utilized in future periods, they remain subject to examination. The Company's policy is to record interest and penalties on uncertain tax provisions as income tax expense. As of December 31, 2018, the Company has no accrued interest or penalties related to uncertain tax positions. The Company believes that it has not taken any uncertain tax positions that would impact its consolidated financial statements as of December 31, 2018 and 2017.

11. Subsequent Events

Unregistered Sales of Equity Securities

Subsequent to the reporting period of this Form 10-K for the year ended December 31, 2018, the Company closed a private placement sale of unregistered equity securities. From November 1, 2018, through March 31, 2019, the Company issued and sold to accredited US investors and non-U.S. investors an aggregate of $2,112,000 Convertible Promissory Notes (the "Notes") and warrants to purchase an aggregate of 42,233,400 shares of common stock (the "Warrants") (collectively, the private placement sale of the Notes and Warrants shall be referred to as the "Winter 2018-2019 Offering"). The Company received proceeds from the Winter 2018-2019 Offering of $1,920,000, which funds were used, and are being used, for general corporate purposes and working capital.

The Notes are due twelve (12) months from their respective issuance dates (the "Maturity Date"). The Notes do not bear interest and were issued in the face amount equal to 110% of the purchasers' commitments. The Notes are convertible into shares of the Company's common stock at a rate of $0.05 per share. If the Notes are not paid in full by the Maturity Date, the balance remaining on the Maturity Date shall be increased by 10% and the Company shall be required to pay interest at a rate of 10% per annum thereon until all sums thereunder are paid in full.

The Warrants are exercisable into shares of the Company's common stock for a term of one (1) year at an exercise price of $0.05 per share. The Warrants also contain provisions that protect the holders against dilution by adjustment of the conversion price in certain events involving a reduction or increase in the Company's shares.

Due to the timing of the Winter 2018-2019 Offering, beginning in 2018 and ending in 2019, the Notes and Warrants are and will be reported in the Company's Consolidated Financial Statements in two separate portions, as follows:

First, from November 1, 2018 up to December 31, 2018, the Company issued and sold Notes in aggregate of $1,377,000 convertible to 27,533,000 shares of common stock of the Company and Warrants to purchase 13,766,500 shares of common stock of the Company, and the Company received cash proceeds of $1,252,000. For the avoidance of doubt, this is a subset of the total Notes and Warrants sold under the Winter 2018-2019 Offering. As a result, the Company recorded a note discount of $1,252,000 to account for the relative fair value of the Warrants, the Notes' beneficial conversion feature and original issue discount which is reported in these Consolidated Financial Statements for the period end December 31, 2018 and will be amortized as interest expense over the life of the Notes.

Second, the remainder of the Notes and Warrants in the Winter 2018-2019 Offering were issued and sold subsequent to the reporting period of this Form 10-K. From January 1, 2019 up to March 31, 2019, the Company issued and sold Notes in aggregate of $735,000 convertible to 14,700,400 shares of common stock of the Company and Warrants to purchase 7,350,200 shares of common stock of the Company, and the Company received cash proceeds of $668,000. Again, for the avoidance of doubt, this is a subset of the total Notes and Warrants sold under the Winter 2018-2019 Offering. As a result, the Company will record a note discount of $668,000 to account for the relative fair value of the warrants, the Notes' beneficial conversion feature and original issue discount which will be amortized as interest expense over the life of the Notes.

The Winter 2018-2019 Offering was made to non-U.S investors and to U.S. "accredited investors," as the term is defined in Regulation D under the Securities Act of 1933, as amended (the "Securities Act"), and were made without general advertising or solicitation. The securities sold in the Winter 2018-2019 Offering were not registered under the Securities Act, or the securities laws of any state, and were offered and sold in reliance on exemptions from registration including the exemption from registration afforded by Section 4(a)(2) of the Securities Act and Regulation S promulgated under the Securities Act, and corresponding provisions of state securities law, which, respectively, exempt transactions by an issuer not involving any public offering or transactions with non-U.S. Investors.

Conversion of Convertible Notes

From January 1, 2019 up to March 31, 2019, Company issued 22,467,945 shares of common stock upon conversion of previously issued convertible notes in aggregate value of $1,025,000.

Exercise of Warrants

In January 2, 2019 up to March 31, 2019, the Company issued 1,333,750 shares of common stock upon the exercise of previously issued warrants for aggregate cash proceeds of $96,000.

Amendment to Employee Agreements

Effective March 31, 2019, the Company amended employment agreements of the Company's Chief Executive Officer (CEO) and Chief Financial Officer (CFO). Prior these amendments, both employment agreements had been scheduled to terminate on March 31, 2019. As amended, each contract has been extended by 90 days to give the Board sufficient time to negotiate new contracts with these Executive Officers.

Grant of Stock Options

The Company granted members of the Board of Directors stock options to purchase a total of 4,687,500 shares of common stock. The stock options vest over one year, exercisable at $0.08 per share and will expire in 10 years. Total fair value of the stock options amounted to $306,000 which will be expensed over the vesting period.

Amendment to Separation Agreement

Effective March 31, 2019, a separation agreement between the Company and a former Chief Executive Officer was amended, continuing payments of $10,000 per month, payment of health insurance premiums, and extending the term on a month-to-month basis until paid in full or otherwise terminated.

Cash Deposit Paid

In January 2019, the Company paid $500,000 as a deposit under terms of a work order for work to be performed by a pipeline operator.

EXHIBITS

Exhibit No.	Description
10.15	Form of Winter 2018-2019 Offering Securities Purchase Agreement
10.16	Amendment to Employment Agreement
10.17	Amendment to Employment Agreement
24	Power of Attorney (included on Signature Page)
31.1	Certification of Chief Executive Officer of Annual Report Pursuant to Rule 13(a)—15(e) or Rule 15(d)—15(e).
31.2	Certification of Chief Financial Officer of Annual Report Pursuant to 18 U.S.C. Section 1350.
32.0	Certification of Chief Executive Officer and Chief Financial Officer of Annual Report pursuant to Rule 13(a)—15(e) or Rule 15(d)—15(e).
101.INS	XBRL Instance Document
101.SCH	XBRL Schema Document
101.CAL	XBRL Calculation Linkbase Document
101.DEF	XBRL Definition Linkbase Document
101.LAB	XBRL Label Linkbase Document
101.PRE	XBRL Presentation Linkbase Document

Exhibit 10.15

SECURITIES PURCHASE AGREEMENT
Convertible Promissory Notes and
Stock Purchase Warrants

THIS SECURITIES PURCHASE AGREEMENT (this “Agreement”) is made and entered into as of _________, 2018, by and between QS Energy, Inc., a Nevada corporation (the “Issuer”) and those individuals and entities who sign and deliver an executed copy of this Agreement to the Issuer (each, a “Purchaser” and collectively, the “Purchasers”), with reference to the following:

RECITALS

A. Purchasers desire to purchase from Issuer and Issuer desires to sell to Purchaser certain of Issuer’s Convertible Notes, in the aggregate face amount up to a maximum of One Million Five Hundred Thousand Dollars ($1,500,000) in the form of Exhibit A attached hereto (individually, a “Note” and collectively, the “Notes”), and certain of Issuer’s Stock Purchase Warrants to purchase up to a certain number of shares of the common stock (the “Common Stock”) of the Issuer equal to 50% of the number of shares initially issuable on conversion of the Notes, in the form of Exhibit B attached hereto (individually, the “Warrants” and collectively with the Notes, the “Securities”). The face amount of the Note each Purchaser has committed to purchase, and the amount of the purchase price thereof to be paid to the Issuer by the Purchaser (a “Commitment”) is listed on the signature page such Purchaser executes and delivers to the Issuer. Minimum Commitment shall be no less than $10,000.

B. Issuer’s sale of the Securities to the Purchasers may be made in reliance upon the provisions of Section 4(a)(2) under the Securities Act of 1933, as amended (the "Securities Act") or Rule 506 of Regulation D promulgated by the Securities and Exchange Commission (the ”SEC”) thereunder, or other applicable rules and regulations of the SEC or upon such other exemption from the registration requirements of the Securities Act as may be available with respect to the transactions contemplated hereby.

C. At any time when any amount of principal or interest of the Notes shall be outstanding, such unpaid amounts shall be convertible, at the election of the Purchaser, into shares of the Issuer’s Common Stock at a price of $0.05 per share (the “Conversion Price”).

D. The Warrants shall be issued at the same time each Note is issued to the Purchaser hereunder and shall be exercisable at $0.05 per share (the “Exercise Price”), for such number of shares equal to 50% of the result obtained by dividing (i) the face amount of the Notes issued simultaneously with the Warrant by (ii) the Conversion Price. The Warrants shall expire one (1) year from the date of issuance thereof.

AGREEMENT

NOW THEREFORE, in consideration of the foregoing recitals, which shall be considered an integral part of this Agreement, the covenants and agreements set forth hereafter, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Purchasers and the Issuer hereby agree as follows

1. Purchase of the Notes and Warrants. On the terms and subject to the conditions set forth in this Agreement and in the Notes and Warrants, the Purchasers shall purchase from the Issuer and the Issuer shall sell to the Purchaser the Securities.

2. Purchaser’s Representations, Warranties and Covenants. In order to induce the Issuer to sell and issue the Securities to the Purchaser under one or more exemptions from registration under the Securities Act, the Purchasers, severally and not jointly, represent and warrant to the Issuer, and covenant with the Issuer, that:

(a) (i) Such Purchaser has the requisite power and authority to enter into and perform this Agreement, and each of the other agreements entered into by the parties hereto in connection with the transactions contemplated by this Agreement (collectively, the "Transaction Documents"), and to purchase the Securities in accordance with the terms hereof and thereof.

(ii) The execution and delivery of the Transaction Documents by the Purchaser and the consummation by it of the transactions contemplated thereby have been duly and validly authorized by the Purchaser's organizational documents and no further consent or authorization is required by the Purchaser.

(iii) The Transaction Documents have been duly and validly executed and delivered by the Purchaser.

(iv) The Transaction Documents, and each of them, constitutes the valid and binding obligation of the Purchaser enforceable against the Purchaser in accordance with their respective terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of creditors' rights and remedies.

(a) The execution, delivery and performance of the Transaction Documents by the Purchaser and the consummation by the Purchaser of the transactions contemplated thereby will not conflict with or constitute a default under any agreement or instrument to which the Purchaser is a party or by which the Purchaser is bound.

(b) The Purchaser is acquiring the Securities for investment for its own account, and not with a view toward distribution thereof, and with no present intention of dividing its interest with others or reselling or otherwise transferring or disposing of all or any portion of either the Notes or Warrants. The undersigned has not offered or sold a participation in this purchase of either the Notes or Warrants, and will not offer or sell any interest therein. The Purchaser further acknowledges that the Purchaser does not have in mind any sale of either the Notes or Warrants currently or after the passage of a fixed or determinable period of time or upon the occurrence or non-occurrence of any predetermined events or consequence; and that it has no present or contemplated agreement, undertaking, arrangement, obligation, indebtedness or commitment providing for or which is likely to compel a disposition of either the Notes or Warrants and is not aware of any circumstances presently in existence that are likely in the future to prompt a disposition thereof.

(e) The Purchaser acknowledges that the Securities have been offered to it in direct communication between itself and the Issuer and not through any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or on the Internet or broadcast over television or radio or presented in any seminar or any other general solicitation or general advertisement.

(f) The Purchaser acknowledges that the Issuer has given it access to all information relating to the Issuer's business that it has requested. The Purchaser has reviewed all materials relating to the Issuer's business, finance and operations which it has requested and the Purchaser has reviewed all of such materials as the Purchaser, in the Purchaser's sole and absolute discretion shall have deemed necessary or desirable. The Purchaser has had an opportunity ask questions of and to discuss the business, management and financial affairs of the Issuer with the Issuer's management. Specifically but not by way of limitation, the Purchaser acknowledges the Issuer's publicly available filings made periodically with the SEC, which filings are available at www.sec.gov and which filings the Purchaser acknowledges reviewing or having had the opportunity of reviewing.

(g) The Purchaser acknowledges that it has, by reason of its business and financial experience, knowledge, sophistication and experience in financial and business matters and in making investment decisions of this type that it is capable of (i) evaluating the merits and risks of an investment in the Securities and making an informed investment decision in connection therewith; (ii) protecting its own interest; and (iii) bearing the economic risk of such investment for an indefinite period of time for Securities which are not transferable or freely tradable. The undersigned hereby agrees to indemnify the Issuer thereof and to hold each of such persons and entities, and the officers, directors and employees thereof harmless against all liability, costs or expenses (including reasonable attorneys' fees) arising by reason of or in connection with any misrepresentation or any breach of warranties of the undersigned contained in this Agreement, or arising as a result of the sale or distribution of the Securities or the Common Stock issuable upon conversion of the Notes or exercise of the Warrants, by the undersigned in violation of the Securities Act, the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or any other applicable law, either federal or state. This subscription and the representations and warranties contained herein shall be binding upon the heirs, legal representatives, successors and assigns of the Purchaser.

(h) The Purchaser is familiar with the definition of an "accredited investor" as that term is defined in Rule 501(a) of Regulation D of the Securities Act and represents and warrants to the Issuer that it is either (i) an accredited investor at such time it was offered the Securities and will be on each date which it converts any of the Notes or exercises any of the Warrants as so defined or (ii) a "qualified institutional buyer" as defined in Rule 144A under the Securities Act. Such Purchaser is not required to be registered as a broker-dealer under Section 15 of the Exchange act. If the Purchaser is not a resident of the United States, the Purchaser is not a "U.S. person[s]" as that term is defined in Rule 902 of Regulation S promulgated under the Securities Act of 1933, as amended.

(i) During the term of this Agreement and the other Transaction Documents, the Purchaser will comply with the provisions of Section 9 of the Exchange Act, and the rules and regulations promulgated thereunder, with respect to transactions involving the Common Stock. Commencing on the date on which the Purchaser received a term sheet from the Company or any representative or agent of the Company (written or oral) setting forth the material terms of the transactions contemplated hereunder until the date hereof and during the term of this Agreement and the other Transaction Documents, the Purchaser agrees not to sell the Issuer's Common Stock short or engage in any hedging transactions in the Issuer's Common Stock, either directly or indirectly, through its affiliates, principals, agents or advisors.

(j) The Purchaser is aware that the Notes and the Warrants, and the shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants are restricted securities as defined under federal securities laws and are not freely tradeable and may only be disposed of in compliance with state and federal securities laws. In connection with any transfer of the Notes and the Warrants, and the shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants, other than pursuant to an effective registration statement or Rule 144, the Issuer may require the transferor thereof to provide to the Issuer an opinion of counsel, the form and substance of which opinion shall be reasonably satisfactory to the Issuer, to the effect that such transfer does not require registration of such transferred Securities under the Securities Act. Further, the Purchaser understands and acknowledges that any certificates evidencing the Notes, the Warrants or the shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants will be restricted securities and not freely tradeable and will bear the legend in substantially the following form:

THE SECURITIES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR QUALIFIED FOR SALE UNDER ANY STATE SECURITIES LAWS (COLLECTIVELY, "SECURITIES LAWS") AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED UNLESS REGISTERED OR QUALIFIED FOR SALE UNDER ALL APPLICABLE SECURITIES LAWS OR UNLESS, IN THE OPINION OF COUNSEL SATISFACTORY TO THE ISSUER, IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, ANY SUCH OFFER, SALE OR OTHER TRANSFER IS EXEMPT FROM THE REGISTRATION OR QUALIFICATION REQUIREMENTS OF SUCH SECURITIES LAWS.

(k) The Purchaser understands and acknowledges that following the purchase of the Notes, the Warrants and any shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants, each may only be disposed of pursuant to either (i) an effective registration statement under the Securities Act or (ii) an exemption from the registration requirements of the Securities Act.

(l) The Purchaser understands and acknowledges that the Issuer has neither filed a registration statement with the SEC or any state authorities nor agreed to do so, nor contemplates doing so in the future for the transactions contemplated by this Agreement or the other Transaction Documents, and in the absence of such a registration statement or exemption, the undersigned may have to hold the Notes, the Warrants and any shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants, indefinitely and may be unable to liquidate any of them in case of an emergency.

(m) The Purchaser is purchasing the Notes and Warrants, and will acquire any shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants, for its own account for investment purposes and not with a view towards distribution and agrees to resell or otherwise dispose of any of the Notes or the Warrants, or any shares of Common Stock issuable upon conversion of the Notes or exercise of the Warrants, in accordance with the registration provisions of the Securities Act (or pursuant to an exemption from such registration provisions).

(n) The Purchaser is not and will not be required to be registered as a "dealer" under the Exchange Act, either as a result of its execution and performance of its obligations under this Agreement or otherwise.

(o) The Purchaser understands and acknowledges that proceeds raised in connection with this Agreement will be used by Issuer for general working capital purposes, including without limitation, the payment of salaries and professional fees, overhead and general administrative expenses.

(p) The Purchaser understands that it is liable for its own tax liabilities and has obtained no tax advice from the Issuer in connection with the purchase of the Securities.

(q) The Purchaser will not pay or receive any finder's fee or commission in respect of the consummation of the transactions contemplated by this Agreement.

(r) Purchaser hereby agrees and acknowledges that it has been informed of the following: (i) there are factors relating to the subsequent transfer of any of the Securities or shares of Common Stock underlying the Notes and Warrants that could make the resale of such Securities or shares of Common Stock underlying the Notes and Warrants difficult; and (ii) there is no guarantee that the Purchaser will realize any gain from the purchase of the Securities. The purchase of the Securities involves a high degree of risk and is subject to many uncertainties. These risks and uncertainties may adversely affect the Company's business, operating results and financial condition. In such an event, the trading price for the Common Stock could decline substantially and Purchaser could lose all or part of its investment. Purchaser is urged to review the risks identified under the Risk Factors section of Issuer's Form 10-K for the year ended December 31, 2017, as filed with the SEC on April 2, 2018.

(s) Purchaser understands and acknowledges that the Notes have an implied annual interest rate of 10%, inasmuch as the Notes will be issued and paid in an amount equal to 110% of the Commitment, except that if a Note is not paid on the Maturity Date, which is twelve (12) months from the date of issue of the Note, then the balance of the unpaid amount of the Note shall be increased by 10% and the Issuer shall then commence paying interest thereon at the rate of 10% per annum until all sums due under the Note are paid.

3. Issuer's Representations, Warranties and Covenants. The Issuer represents and warrants to the Purchaser that:

(a) The Issuer is a corporation duly organized and validly existing in good standing under the laws of the State of Nevada, and has the requisite corporate power and authorization to own its properties and to carry on its business as now being conducted.

(b) (i) The Issuer has the requisite corporate power and authority to enter into and perform this Agreement, and each of the other agreements entered into by the parties hereto in connection with the transactions contemplated by the Transaction Documents, and to issue the Notes and Warrants in accordance with the terms hereof and thereof.

(ii) the execution and delivery of the Transaction Documents by the Issuer and the consummation by it of the transactions contemplated hereby and thereby, including without limitation the reservation for issuance and the issuance of the Notes and Warrants pursuant to this Agreement, have been duly and validly authorized by the Issuer's Board of Directors and no further consent or authorization is required by the Issuer, its Board of Directors, or its shareholders.

(iii) The Transaction Documents have been duly and validly executed and delivered by the Issuer.

(iv) The Transaction Documents, and each of them, constitutes the valid and binding obligation of the Issuer enforceable against the Issuer in accordance with their respective terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of creditors' rights and remedies.

(c) The execution, delivery and performance of the Transaction Documents by the Issuer and the consummation by the Issuer of the transactions contemplated thereby will not conflict with or constitute a default under any agreement or instrument to which the Issuer is a party or under any organizational documents of the Purchaser.

4. Closing and Deliverables.

(a) Subject to the provisions of Section 4(b) below, provided that the Issuer shall have received on or prior to November 30, 2018 copies of this Agreement executed by Purchaser, there shall be a closing or closings (each, a "Closing Date") at which:

(i) Purchaser shall deliver to the Issuer immediately available funds, by check or by wire transfer (bank wiring instructions to be provided by Issuer on request) in an amount equal to the amount of the Purchaser's Commitment as set forth beside the name of the Purchaser on the Purchaser's signature page hereto. Funds paid to Issuer under this Agreement will be deposited in Issuer's operating account and used as working capital.

(ii) The Issuer shall deliver to the Purchaser (x) a Note, in the face amount equal to 110% of the Purchaser's Commitment and (y) a Warrant to purchase the exercisable amount of the Issuer's Common Stock at the Exercise Price. The Note and Warrant will be dated as of the Closing Date, as such date may be extended by us.

(b) The Issuer may continue to accept Commitments from Purchasers and issue and sell Securities to Purchasers at Closings on the terms and subject to the conditions set forth in this Agreement until (i) the aggregate amount of the Commitments equals $1,500,000 or (ii) on or before November 30, 2018, whichever shall first occur.

5. Miscellaneous.

(a) Each party shall pay the fees and expenses of its own advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of the Transactions Documents.

(b) This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature transmitted by e-mail shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original signature.

(c) The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement. Whenever required by the context of this Agreement, the singular shall include the plural and neutral shall include the masculine and feminine.

(d) If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) This Agreement and the Notes and Warrants represent the final agreement between the Purchasers and the Issuer with respect to the terms and conditions set forth herein, and, the terms of this Agreement and the Notes and Warrants may not be contradicted by evidence of prior, contemporaneous, or subsequent oral agreements of the parties. No provision of this Agreement and the Notes and Warrants may be amended other than by an instrument in writing signed by the Purchaser and the Issuer, and no provision hereof or thereof may be waived other than by an instrument in writing signed by the party against whom enforcement is sought.

(f) Any notices or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered (i) upon receipt, when delivered personally; (ii) upon receipt, when sent by facsimile (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one (1) day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses and facsimile numbers for such communications shall be:

If to the Issuer:

QS Energy, Inc.
23902 FM 2978
Tomball, TX 77375
Telephone: (281) 738-1893
Fax: (281) 738-5366

If to a Purchaser:

To the address set forth on the Purchaser's signature page hereto.

Each party shall provide five (5) days prior written notice to the other party of any change in address or facsimile number.

(g) This Agreement may not be assigned by Purchaser.

(h) This Agreement is intended for the benefit of the parties hereto and is not for the benefit of, nor may any provision hereof be enforced by, any other person.

(i) The representations and warranties of the Purchaser and the Issuer contained herein shall survive each of the Closings and the termination of this Agreement and the other Transaction Documents.

(j) The Purchaser and the Issuer shall consult with each other in issuing any press releases or otherwise making public statements with respect to the transactions contemplated hereby, except that no consultation shall be required if such disclosure is required by law or the rules and regulations of the SEC.

(k). Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby.

(l) The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party, as the parties mutually agree that each has had a full and fair opportunity to review this Agreement and the other Transaction Documents and seek the advice of counsel on it and them.

(m) The Purchaser and the Issuer each shall have all rights and remedies set forth in this Agreement and all rights and remedies which such holders have been granted at any time under any other agreement or contract and all of the rights which the Purchaser has by law. Any person having any rights under any provision of this Agreement shall be entitled to enforce such rights specifically (without posting a bond or other security), to recover damages by reason of any default or breach of any provision of this Agreement, including the recovery of reasonable attorneys' fees and costs, and to exercise all other rights granted by law.

(n) This Agreement shall be governed by and construed in accordance with the laws of the State of California applicable to contracts made and to be performed wholly within such state.

[remainder of page intentionally left blank]

IN WITNESS WHEREOF the Purchasers and the Issuer have executed this Agreement as of the date first above written.

THE ISSUER

QS ENERGY, INC.

By:__________________________
Jason Lane
Its: Chief Executive Officer

THE PURCHASER

____
Name (signature)

____
Amount of Commitment
(U.S. Dollars)

____
Print Name

____
Date

____
Address

____
Address

____
Phone Number

____
Fax Number

____
Social Security Number

____
E-mail Address

EXHIBIT A

CONVERTIBLE NOTE

THE SECURITIES EVIDENCED BY THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR QUALIFIED FOR SALE UNDER ANY STATE SECURITIES LAWS (COLLECTIVELY, "SECURITIES LAWS") AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED UNLESS REGISTERED OR QUALIFIED FOR SALE UNDER ALL APPLICABLE SECURITIES LAWS OR UNLESS, IN THE OPINION OF COUNSEL SATISFACTORY TO THE ISSUER, IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, ANY SUCH OFFER, SALE OR OTHER TRANSFER IS EXEMPT FROM THE REGISTRATION OR QUALIFICATION REQUIREMENTS OF SUCH SECURITIES LAWS.

$__________ _____________, 2018 ("Issuance Date")

FOR VALUE RECEIVED, **QS ENERGY, INC.**, a corporation organized under the laws of the State of Nevada (the "Company"), promises to pay to the order of ___________________________ "Investor", as that term is defined on the Acknowledgement and Acceptance page of this Convertible Note ("Note") (hereafter, together with any subsequent holder hereof, called "Holder"), at "Investor's Address," as that term is set forth on such page or at such other place as Holder may direct, the amount noted above, payable in full Twelve (12) Months from the Issuance Date (the "Maturity Date").

If this Note is not paid in full on or prior to the Maturity Date the remaining balance shall be increased by 10% and the Company shall pay interest thereon at the rate of 10% per annum until all sums due hereunder are paid in full.

Payments of both principal and interest will be made in immediately available funds in lawful money of the United States of America to the Holder at the Investor's Address.

This Note is subject to the following additional provisions:

1. The Company shall be entitled to withhold from all payments of principal and/or interest of this Note any amounts required to be withheld under the applicable provisions of the U.S. Internal Revenue Code of 1986, as amended, or other applicable laws at the time of such payments.

2. This Note has been issued subject to representations, warranties and covenants of the original Holder hereof as contained in that certain Securities Purchase Agreement ("Agreement") of even date herewith, and subject to all restrictions, terms, conditions and disclosures in the Agreement, and may be transferred or exchanged only in compliance with the Securities Act of 1933, as amended, and applicable state and other securities laws. Prior to the due presentment for such transfer of this Note, the Company and any agent of the Company may treat the person in whose name this Note is duly registered on the Company's Note register as the owner hereof for the purpose of receiving payment as herein provided and all other purposes, whether or not this Note is overdue, and neither the Company nor any such agent shall be affected by notice to the contrary. The transferee shall be bound, as the original Holder, by the same representations and terms described herein and under the Agreement.

3. The Holder may, at such Holder's option, at any time while any sums are outstanding and unpaid hereunder, convert the then-outstanding principal amount of this Note or any portion thereof, and any interest and any penalties accrued and unpaid thereon (the "Conversion Amount"), into a number shares of fully paid and nonassessable Common Stock of the Company (the "Conversion Shares") pursuant to the following formula: the Conversion Amount divided by $0.05 (the "Conversion Price"). The Holder may exercise the right to convert all or any portion of the Conversion Amount by delivering to the Company (i) an executed and completed notice of conversion in the form attached to this Note (the "Notice of Conversion") to the Company and (ii) this Note. The business day on which a Notice of Conversion and this Note are delivered to the Company in accordance with the provisions hereof shall be deemed a "Conversion Date." The Company will transmit the certificates representing Conversion Shares issuable upon such conversion of this Note within a reasonable time after the Conversion Date to the Holder electronically through the Company's transfer agent by means of a direct registration system ("DRS"). Physical stock certificates will be issued upon written request subject to shipping cost paid by holder of the Shares. No fractional shares shall be issued upon conversion of this Note. The amount of any of the Conversion Amount which is less than a whole share of Common Stock shall be paid to the Holder in cash. Any delay due to such circumstance shall not be an event of default under this Note.

4. The principal amount of this Note, and any accrued interest thereon, shall be reduced as per that principal amount indicated on the Notice of Conversion upon the proper receipt by the Holder of such Conversion Shares due upon such Notice of Conversion.

5. The number of Conversion Shares shall be adjusted as follows:

a. If the Company shall at any time after the Issuance Date subdivide its outstanding shares of Common Stock into a greater number of shares of Common Stock, the number of Conversion Shares in effect immediately prior to such subdivision shall be proportionately increased, and conversely, in case the outstanding shares of Common Stock shall be combined into a smaller number of shares of Common Stock, the Conversion Price in effect immediately prior to such combination shall be proportionately reduced.

b. If the Company shall at any time or from time to time after the Issuance Date makes, or fixes a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the number of Conversion Shares issuable upon conversion of this Note shall be proportionately increased; provided, however, that if such record date is fixed and such dividend is not fully paid, or if such distribution is not fully made on the date fixed therefor, the number of Conversion Shares shall be recomputed to reflect that such dividend was not fully paid or that such distribution was not fully made.

c. If Company at any time or from time to time after the Issuance Date makes, or fixes a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of Company other than shares of Common Stock, then and in each such event provision shall be made so that Holder shall receive upon exercise of the conversion right of this Note, in addition to the number of shares of Common Stock receivable thereupon, the amount of securities of Company which Holder would have received had the Conversion Amount of this Note been exercised on the date of such event and had it thereafter, during the period from the date of such event to and including the date of conversion or purchase, retained such securities receivable during such period.

d. If the Common Stock issuable upon the conversion of this Note or option to purchase is changed into the same or a different number of shares of any class or classes of stock, whether by recapitalization, reclassification or otherwise (other than a transaction described elsewhere in Section 5 of this Note), then, and in any such event, each Holder shall have the right thereafter, upon conversion of this Note or purchase pursuant to option to receive the kind and amount of stock and other securities and property receivable upon such reorganization or other change, in an amount equal to the amount that Holder would have been entitled to had it immediately prior to such reorganization, reclassification or change converted this Note, but only to the extent this Note is actually converted, all subject to further adjustment as provided herein.

6. No provision of this Note shall alter or impair the obligation of the Company, which is absolute and unconditional, upon an Event of Default (as defined below), to pay the principal of, and interest on this Note at the place, time, and rate, and in the coin or currency herein prescribed.

a. Events of Default. Each of the following occurrences is hereby defined as an "Event of Default:"

Nonpayment. The Company shall fail to make any payment of principal, interest, or other amounts payable hereunder when and as due; or

Dissolutions, etc. The Company or any subsidiary shall fail to comply with any provision concerning its existence or any prohibition against dissolution, liquidation, merger, consolidation or sale of assets; or

Noncompliance with this Agreement. The Company shall fail to comply in any material respect with any provision hereof, which failure does not otherwise constitute an Event of Default; or

Insolvency. The institution of bankruptcy, insolvency, reorganization or liquidation proceedings or other proceedings for relief under any bankruptcy law or any law for the relief of debtors shall be instituted by or against Company, which proceedings shall not have been vacated by appropriate court order within sixty (60) days of such institution.

If one or more "Events of Default" shall occur, then, or at any time thereafter, and in each and every such case, unless such Event of Default shall have been waived in writing by the Holder (which waiver shall not be deemed to be a waiver of any subsequent default) or cured as provided herein, at the option of the Holder, and in the Holder's sole discretion, the Holder may elect to consider this Note (and all interest through such date) immediately due and payable. In order to so elect, the Holder must deliver written notice of the election and the amount due to the Company via certified mail, return receipt requested, at the Company's address as set forth herein (or any other address provided to the Holder), and thereafter the Company shall have thirty (30) business days upon receipt to cure the Event of Default or pay this Note, or convert the amount due on the Note pursuant to the conversion formula set forth above.

7. In case any provision of this Note is held by a court of competent jurisdiction to be excessive in scope or otherwise invalid or unenforceable, such provision shall be adjusted rather than voided, if possible, so that it is enforceable to the maximum extent possible, and the validity and enforceability of the remaining provisions of this Note will not in any way be affected or impaired thereby.

8. This Note does not entitle the Holder hereof to any voting rights or other rights as a shareholder of the Company prior to the conversion into Common Stock thereof, except as provided by applicable law. If, however, at the time of the surrender of this Note and conversion the Holder hereof shall be entitled to convert this Note, the Conversion Shares so issued shall be and be deemed to be issued to such holder as the record owner of such shares as of the close of business on the Conversion Date.

9. The Holder shall pay all issue and transfer taxes and other incidental expenses in respect of the issuance of certificates for Conversion Shares upon the conversion of this Note, and such certificates shall be issued in the name of the Holder of this Note.

10. This Note may be prepaid in whole or in part at any time or from time to time without premium or penalty upon 10 days' prior written notice from the Company to the Holder.

11. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Note, and in case of loss, theft or destruction of this Note, upon delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, upon surrender and cancellation of such Note, and upon reimbursement to the Company of all reasonable expenses incidental thereto, the Company will make and deliver to the Holder, in lieu thereof, a new Note in substantially identical form.

12. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall be a Saturday or a Sunday or shall be a legal holiday in the United States or the State of California, then such action may be taken or such right may be exercised on the next succeeding business day.

13. (a) This Note shall be governed by and construed in accordance with the laws of the State of California applicable to contracts made and to be performed wholly within such state.

(b) Except as otherwise provided herein, any notice or demand which, by the provisions hereof, is required or which may be given to or served upon the parties hereto shall be in writing and, if by e-mail or facsimile transmission, shall be deemed to have been validly served, given or delivered when sent, and if by personal delivery, shall be deemed to have been validly served, given or delivered upon actual delivery and, if mailed, shall be deemed to have been validly served, given or delivered three (3) business days after deposit in the United States mails, as registered or certified mail, with proper postage prepaid and addressed to the party or parties to be notified.

(c) The Holder acknowledges that the Conversion Shares acquired upon the exercise of this Note will have restrictions upon its resale imposed by state and federal securities laws, together with other restrictions, terms, conditions and disclosures as fully set forth in the Agreement.

(d) With regard to any power, remedy or right provided herein or otherwise available to any party hereunder (i) no waiver or extension of time shall be effective unless expressly contained in a writing signed by the waiving party; and (ii) no alteration, modification or impairment shall be implied by reason of any previous waiver, extension of time, delay or omission in exercise, or other indulgence.

(e) This Note may not be amended, altered or modified except by a writing signed by the Company and the Holder.

IN WITNESS WHEREOF, the Company has caused this Convertible Note to be duly executed by an officer thereunto duly authorized.

QS ENERGY, INC.
23902 FM 2978
Tomball, TX 77375

By ____________________________
Name: Jason Lane
Title: Chief Executive Officer

ACKNOWLEDGED AND ACCEPTED:

____
Investor Name (Signature)

____
Print Name

____

____
Investor Address

____

NOTICE OF EXERCISE OF CONVERSION RIGHT

TO: (Company Name)

(1) The undersigned hereby elects to convert $______________ of the attached Note into ______________ shares of Common Stock (the "Shares") of QS Energy, Inc. ("Company") pursuant to the terms of the attached Note.

(2) Please issue a certificate or certificates representing the Shares in the name of the undersigned or in such other name as is specified below:

____
(Print Name)

Address:
____
____
____

(3) The Company shall issue the Shares electronically through its transfer agent by means of a direct registration system ("DRS")[1]. Physical stock certificates will be issued upon written request subject to shipping cost paid by holder of the Shares.

(4) The undersigned confirms that the Shares are being acquired for the account of the undersigned for investment only and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or selling the Shares.

(5) The undersigned accepts such shares subject to the restrictions on transfer and other terms, conditions and disclosures set forth in the attached Note and set forth in that certain Securities Purchase Agreement between the Company and the undersigned dated as of the date of the attached Note.

____
(Date)

____
(Signature)

____
(Print Name)

[1] The Company's transfer agent, Nevada Agency and Transfer Company ("NATCO") is a participant in the Depository Trust Company's FAST program. The FAST program allows NATCO to provide DWAC (deposit/withdrawal at custodian) and DRS (direct registration system) services to the Company and its shareholders. This eliminates the risk of lost certificates and courier fees by providing electronic transfers.

EXHIBIT B
STOCK PURCHASE WARRANT

THIS WARRANT AND ANY SHARES ISSUED UPON ITS EXERCISE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISPOSITION OF ANY SHARES ISSUED UPON EXERCISE HEREOF MAY BE AFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL SATISFACTORY IN FORM AND SUBSTANCE TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT. THE TRANSFER OF THIS WARRANT IS RESTRICTED AS SET FORTH HEREIN.

No. ______ ______________, 2018

QS ENERGY, INC.
WARRANT TO PURCHASE COMMON STOCK

VOID AFTER 5:00 P.M. (Pacific Time) ON ______________, 2019

THIS CERTIFIES that, for the value received, the holder identified on the last page of this Warrant ___________________________ (the "Holder") is entitled, upon the terms and subject to the conditions hereinafter set forth, at any time on or after the date of this Warrant and on or prior to 5:00 p.m. P.S.T. on the first anniversary of the date of this Warrant (the "Expiration Time"), but not thereafter, to subscribe for and purchase, from QS ENERGY, INC., a Nevada corporation (the "Company"), up to _________________ (#) shares of the Company's Common Stock (the "Shares") at a purchase price per share equal to $0.05 (the "Exercise Price").

1. Exercise of Warrant.

The purchase rights represented by this Warrant are exercisable by the Holder, in whole or in part, at any time after the date of this Warrant and before the Expiration Time by the surrender of this Warrant and the Notice of Exercise annexed hereto duly executed at the office of the Company, in Tomball, Texas (or such other office or agency of the Company as it may designate by notice in writing to the Holder at the address of the Holder appearing on the books of the Company), and upon payment of an amount equal to the aggregate Exercise Price for the number of Shares thereby purchased (by cash or by check or certified bank check payable to the order of the Company in an amount equal to the purchase price of the shares thereby purchased); whereupon the Holder shall be entitled to receive a stock certificate representing the number of Shares so purchased. The Company agrees that if at the time of the surrender of this Warrant and purchase of the Shares, and the Holder shall be entitled to exercise this Warrant, the Shares so purchased shall be and be deemed to be issued to such holder as the record owner of such Shares as of the close of business on the date on which this Warrant shall have been exercised as aforesaid.

Upon partial exercise of this Warrant, the Holder shall be entitled to receive from the Company a new Warrant in substantially identical form for the purchase of that number of Shares as to which this Warrant shall not have been exercised. Certificates for Shares purchased hereunder shall be delivered to the Holder within a reasonable time after the date on which this Warrant shall have been exercised as aforesaid.

2. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. With respect to any fraction of a share called for upon the exercise of this Warrant, an amount equal to such fraction multiplied by the Exercise Price shall be paid in cash to the Holder.

3. Charges, Taxes and Expenses. The Holder shall pay all issue and transfer taxes and other incidental expenses in respect of the issuance of certificates for Shares upon the exercise of this Warrant, and such certificates shall be issued in the name of the Holder of this Warrant.

4. No Rights as a Stockholder. This Warrant does not entitle the Holder to any voting rights or other rights as a stockholder of the Company prior to the exercise hereof.

5. Loss, Theft, Destruction or Mutilation of Warrant. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant, and in case of loss, theft or destruction of this Warrant, upon delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, upon surrender and cancellation of such Warrant, and upon reimbursement to the Company of all reasonable expenses incidental thereto, the Company will make and deliver to the Holder, in lieu thereof, a new Warrant in substantially identical form and dated as of such cancellation.

6. Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall be a Saturday or a Sunday or shall be a legal holiday in the United States or the State of California, then such action may be taken or such right may be exercised on the next succeeding business.

7. Merger, Reclassification, etc.

(a) Merger, etc. If at any time the Company proposes (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger, consolidation or stock issuance) that results in the transfer of fifty percent (50%) or more of the then outstanding voting power of the Company; or (B) a sale of all or substantially all of the assets of the Company, then the Company shall give the Holder ten (10) days notice of the proposed effective date of the transaction. If, in the case of such acquisition of the Company, and the Warrant has not been exercised by the effective date of the transaction, this Warrant shall be exercisable into the kind and number of shares of stock or other securities or property of the Company or of the entity resulting from such merger or acquisition to which such Holder would have been entitled if immediately prior to such acquisition or merger, it had exercised this Warrant. The provisions of this Section 7(a) shall similarly apply to successive consolidations, mergers, sales or conveyances.

(b) Reclassification, etc. If the Company at any time shall, by subdivision, combination or reclassification of securities or otherwise, change any of the securities to which purchase rights under this Warrant exist into the same or a different number of securities of any class or classes, this Warrant shall thereafter be to acquire such number and kind of securities as would have been issuable as the result of such change with respect to the securities which were subject to the purchase rights under this Warrant immediately prior to such subdivision, combination, reclassification or other change. If the Shares are subdivided or combined into a greater or smaller number of Shares, the Exercise Price under this Warrant shall be proportionately reduced in case of subdivision of shares or proportionately increased in the case of combination of shares, in both cases by the ratio which the total number of Shares to be outstanding immediately after such event bears to the total number of Shares outstanding immediately prior to such event.

(c) Cash Distributions. No adjustment on account of cash dividends or interest on the Shares or other securities purchasable hereunder will be made to the Exercise Price under this Warrant.

8. Restrictions on Transfer.

(a) Restrictions on Transfer of Shares. In no event will the Holder make a disposition of this Warrant or the Shares unless and until, if requested by the Company, it shall have furnished the Company with an opinion of counsel satisfactory to the Company and its counsel to the effect that appropriate action necessary for compliance with the Securities Act of 1933, as amended (the "Act") relating to sale of an unregistered security has been taken. Notwithstanding the foregoing, the restrictions imposed upon the transferability of the Shares shall terminate as to any particular Share when (i) such security shall have been sold without registration in compliance with Rule 144 under the Act, or (ii) a letter shall have been issued to the Holder at its request by the staff of the Securities and Exchange Commission or a ruling shall have been issued to the Holder at its request by such Commission stating that no action shall be recommended by such staff or taken by such Commission, as the case may be, if such security is transferred without registration under the Act in accordance with the conditions set forth in such letter or ruling and such letter or ruling specifies that no subsequent restrictions on transfer are required, or (iii) such security shall have been registered under the Act and sold by the Holder thereof in accordance with such registration.

(b) Subject to the provisions of Section 8(a) hereof, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of the Warrant with a properly executed assignment at the principal office of the Company.

(c) Restrictive Legends. The stock certificates representing the Shares and any securities of the Company issued with respect thereto shall be imprinted with legends restricting transfer except in compliance with the terms hereof and with applicable federal and state securities laws substantially as follows:

> "THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND MAY NOT BE SOLD, TRANSFERRED, PLEDGED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933 OR AN OPINION OF COUNSEL SATISFACTORY TO THE ISSUER OF THIS CERTIFICATE THAT REGISTRATION IS NOT REQUIRED UNDER SAID ACT".

9. Miscellaneous.

(a) Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California applicable to contracts made and to be performed wholly within such state.

(b) Restrictions. The Holder acknowledges that the Shares acquired upon the exercise of this Warrant will have restrictions upon its resale imposed by state and federal securities laws.

(c) Waivers Strictly Construed. With regard to any power, remedy or right provided herein or otherwise available to any party hereunder (i) no waiver or extension of time shall be effective unless expressly contained in a writing signed by the waiving party; and (ii) no alteration, modification or impairment shall be implied by reason of any previous waiver, extension of time, delay or omission in exercise, or other indulgence.

(d) Modifications. This Warrant may not be amended, altered or modified except by a writing signed by the Company and the Holder of this Warrant.

IN WITNESS WHEREOF, QS ENERGY, INC. has caused this Warrant to be executed by its duly authorized representative dated as of the date first set forth above.

Holder:	QS ENERGY, INC. 23902 FM 2978 Tomball, TX 77375
____________________	By: _________________________ Name: Jason Lane Title: Chief Executive Officer

NOTICE OF EXERCISE

TO: QS ENERGY, INC., a Nevada corporation

(1) The undersigned hereby elects to purchase ______________ shares of Common Stock (the "Shares") of QS Energy, Inc. ("Issuer") pursuant to the terms of the attached Warrant, and tenders herewith payment of the purchase price in full, together with all applicable transfer taxes, if any.

(2) Please issue a certificate or certificates representing the Shares in the name of the undersigned or in such other name as is specified below:

Name:	Address:
______________________________	______________________________
(Print Name)	______________________________
	______________________________

(3) The Company shall issue the Shares electronically through its transfer agent by means of a direct registration system ("DRS")[2]. Physical stock certificates will be issued upon written request subject to shipping cost paid by holder of the Shares.

(4) The undersigned confirms that he is an "accredited investor" as defined by Rule 501(a) under the Securities Act of 1933, as amended, at the time of execution of this Notice.

(5) The undersigned confirms that the Shares are being acquired for the account of the undersigned for investment only and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or selling the Shares.

(6) The undersigned accepts such Shares subject to the restrictions on transfer set forth in the attached Warrant.

(7) The undersigned acknowledges that the Issuer has given it access to all information relating to the Issuer's business that the undersigned has requested. The undersigned has reviewed all materials relating to the Issuer's business, financial condition and operations which it has requested and the undersigned has reviewed all of such materials as the undersigned, in the undersigned's sole and absolute discretion has deemed necessary or desirable. The undersigned has had an opportunity to ask questions of and discuss the business, management and financial affairs of the Issuer with the Issuer's management. Specifically but not by way of limitation, the undersigned acknowledges the Issuer's publicly available filings made periodically with the SEC, which filings are available at www.sec.gov, and which filings the undersigned acknowledges reviewing or having had the opportunity of reviewing.

(8) The undersigned acknowledges that it has, by reason of its business and financial experience, such knowledge, sophistication and experience in financial and business matters and in making investment decisions of this type that it is capable of (i) evaluating the merits and risks of an investment in the Shares and making an informed investment decision in connection therewith; (ii) protecting its own interest; and (iii) bearing the economic risk of such investment for an indefinite period of time for shares which are not transferable or freely tradable. The undersigned hereby agrees to indemnify the Issuer and the officers, directors and employees thereof harmless against all liability, costs or expenses (including reasonable attorneys' fees) arising by reason of or in connection with any misrepresentation or any breach of warranties or representations of the undersigned contained in this Notice, or arising as a result of the sale or distribution of the Shares issuable upon exercise of the Warrants. The representations and warranties contained herein shall be binding upon the heirs, legal representatives, successors and assigns of the undersigned.

______________________	______________________________
(Date)	(Signature)
	______________________________
	(Print Name)

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[2] The Company's transfer agent, Nevada Agency and Transfer Company ("NATCO") is a participant in the Depository Trust Company's FAST program. The FAST program allows NATCO to provide DWAC (deposit/withdrawal at custodian) and DRS (direct registration system) services to the Company and its shareholders. This eliminates the risk of lost certificates and courier fees by providing electronic transfers.

Exhibit 10.16

2ND AMENDMENT TO THE EMPLOYMENT AGREEMENT

This Second Amendment to the Employment Agreement (the "2nd Amendment") is entered into by and between QS Energy, Inc. a Nevada corporation ("Employer") and Jason Lane ("Employee") (collectively, the "Parties"), effective as of April 1, 2019 (the "Effective Date").

RECITALS

A. Effective as of April 1, 2017, the Employer and Employee entered into an Employment Agreement, as amended by mutual agreement of the parties on November 12, 2017 (the "Employment Agreement");

B. It is now the desire of Employer and Employee to further amend the Employment Agreement.

NOW, THEREFORE, in consideration of the promises and the mutual covenants hereinafter set forth, the Parties agree as follows:

I. Section 3 of the Employment Agreement is hereby amended and restated as follows:

Term of Employment. Subject to earlier termination as provided in the Employment Agreement or as may be mutually agreed upon by the Parties, Employee hereby agrees to continue to be employed by Employer until July 1, 2019 ("Term") beginning on the Effective Date of this Agreement, and Employer hereby agrees to employ Employee during such Term.

II. If there are any inconsistencies between the Employment Agreement and this 2nd Amendment, the terms and conditions of this 2nd Amendment shall control.

III. Except for the changes set forth in this 2nd Amendment, all terms and conditions in the Employment Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"EMPLOYER"

QS ENERGY, INC.

Date:

By: /s/ Michael McMullen
Michael McMullen, CFO

"EMPLOYEE"

Date:

/s/ Jason Lane
Jason Lane

Exhibit 10.17

FIRST AMENDMENT TO THE EMPLOYMENT AGREEMENT

This First Amendment to the Employment Agreement (the "1st Amendment") is entered into by and between QS Energy, Inc. a Nevada corporation ("Employer") and Michael McMullen ("Employee") (collectively, the "Parties"), effective as of April 1, 2019 (the "Effective Date").

RECITALS

A. Effective as of April 1, 2017, the Employer and Employee entered into an Employment Agreement (the "Employment Agreement");

B. It is now the desire of Employer and Employee to further amend the Employment Agreement.

NOW, THEREFORE, in consideration of the promises and the mutual covenants hereinafter set forth, the Parties agree as follows:

I. Section 4 of the Employment Agreement is hereby amended and restated as follows:

Term of Employment. Subject to earlier termination as provided in the Employment Agreement or as may be mutually agreed upon by the Parties, Employee hereby agrees to continue to be employed by Employer until July 1, 2019 ("Term") beginning on the Effective Date of this Agreement, and Employer hereby agrees to employ Employee during such Term.

II. If there are any inconsistencies between the Employment Agreement and this 1st Amendment, the terms and conditions of this 1st Amendment shall control.

III. Except for the changes set forth in this 1st Amendment, all terms and conditions in the Employment Agreement, as amended, shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"EMPLOYER"

QS ENERGY, INC.

Date:

By: /s/ Jason Lane
Jason Lane, CEO

"EMPLOYEE"

Date:

/s/ Michael McMullen
Michael McMullen

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002
AND RULES 13A-14 AND 15D-14 UNDER THE SECURITIES EXCHANGE ACT OF 1934

I, Jason Lane, certify that:

1. I have reviewed this 10-K Report of QS Energy, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e) and internal control over financial reporting) as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its condensed consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 1, 2019

/s/ JASON LANE
Jason Lane
Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002
AND RULES 13A-14 AND 15D-14 UNDER THE SECURITIES EXCHANGE ACT OF 1934

I, Michael McMullen, certify that:

1. I have reviewed this 10-K Report of QS Energy, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e) and internal control over financial reporting) as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its condensed consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 1, 2019

/s/ MICHAEL MCMULLEN
Michael McMullen
Chief Financial Officer

Exhibit 32

CERTIFICATION OF PERIODIC FINANCIAL REPORT BY THE CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Solely for the purposes of complying with 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, we, the undersigned Acting Chief Executive Officer and the Chief Financial Officer of QS Energy, Inc. (the "Company"), hereby certify, based on our knowledge, that the Annual Report on Form 10-K of the Company for the year ended December 31, 2018 (the "Report") fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 1, 2019	/s/ JASON LANE Jason Lane Chief Executive Officer
Date: April 1, 2019	/s/ MICHAEL MCMULLEN Michael McMullen Chief Financial Officer