



5 March 2020

Companies Announcement Office
ASX Limited
Exchange Centre
Level 4, 20 Bridge Street
Sydney, NSW 2000

Dear Sir/Madam

BPH Energy Ltd (ASX:BPH) US life sciences consulting firm and incubator invests in Cortical Dynamics Ltd

The board of BPH Energy Limited (ASX:BPH) (**BPH** or **Company**) is pleased to announce that investee Cortical Dynamics has secured an investment of \$250,000 from IntuitiveX (www.intuitive-x.com) and Korean based VC investor Gentium Partners.

Mr. Charles Chang and Mr. Ashley Zimpel will join the Cortical board following the resignations of other Cortical directors. BPH director David Breeze remains as a Cortical board member.

Intuitive -X and Gentium Partners

IntuitiveX (IX) www.intuitive-x.com is a Seattle-based life science consulting firm and incubator. Its management team is comprised of life science entrepreneurs, physicians, investors, and innovators. It brings a combined 100+ years of experience in R&D, Clinical, IP Strategy, Prototyping, Product Development, and Commercialisation. IX catalyzes medical innovation by identifying novel and timely ideas and applying its resources to make them possible. From initial concept to final commercialisation, IntuitiveX has the in-house knowledge and network to meet the unique needs of the most innovative life science companies in the world.

The Intuitive X team will assist Cortical in the FDA regulatory approval process. It has investments in eleven MedTech, digital health, robotics to augmented reality, and 3-D printing to biotech and brings to Cortical extensive experience in the US capital raising and commercialisation arena.

Gentium Partners Inc (“GP”) is a FSS licensed asset management company based in Seoul, South Korea. It was established in 2018 by professionals who have broad experience in domestic and global financial institutions. Previously, the partners have headed up divisions at Morgan Stanley, Bankers Trust, KB Bank, Commerzbank, and Meritz Securities. Using their collective broad network and experience, GP was created to assist venture companies, particularly those in the startup stages, with mentoring and fund raising. GP also assists and

invests in promising pre-IPO companies. While sector agnostic, GP prefers to invest in companies with innovative technologies and/or ideas, particularly when they are impactful in healthcare, environment, and lifestyle. Among some of GP's investments are: the leading urban farm business in Korea; B2C payment technology based on Bluetooth identifier; a biomedical startup with a breakthrough approach for diagnosing and treating amyloid diseases; and "hycore" for electrifying a 26" bicycle, just to name a few.

Appointment of new Cortical directors.

Mr. Charles Chang

Mr. Chang is a board member and senior advisor to Intuitive- X. Mr. Chang formed Accolade, Inc. in April of 2000 and then Susterra EnVision, a clean energy developer. Accolade provides strategic advisory services to domestic/foreign corporates and private equity. Prior to Accolade, Charles was a Managing Director at Bankers Trust Korea. Charles earned his M.S. from Dartmouth and B.A. in Economics from University of California Berkeley. He is a US citizen and currently resides in Seoul ,South Korea.

Mr. Ashley Zimpel

Mr. Zimpel is Perth based business developer, corporate financier and senior banker/investment banker with broad financial markets experience and a strong focus on innovation, client interaction, financing and business strategy. He has a 35 year track record of founding, investing in and establishing businesses in financial capital markets, Agri- business and fintech in WA and Australia wide. Adviser and mentor to Start-ups, SMEs and state government. He has a long history of interaction with Western Australian Government Sector, WA Universities, business incubators and innovation community. He has an exemplary record of capital raising in both equity, debt and structured financial products for start-ups, SMEs, ASX listed public companies and government agencies both in Australia and internationally. He has held positions of executive chairman, executive director, director, partner and financial advisor in financial institutions and ASX listed companies including Aurora Labs (ASX:A3D). His prior roles include:-Enable Funding-Co-Founder and Founding Chairman, Charter Pacific Corporation-Chairman Advisory Committee, Marine Produce Limited-Chairman, Macquarie Bank-Director, Bankers Trust Australia- Senior Vice President, Rand Merchant Bank Australia-Co Founder and Executive Director, Hattersley Maxwell Noall Stockbrokers-Partner.

Further detail

Shareholding -IntuitiveX and Gentium will be issued with 12,500,00 shares representing 9.8% of the increased capital base .Intuitive X will be investing \$186,657 (9,328,358 shares) and Gentium \$63,433(3,171,642 shares) . BPH currently holds 4.38% of Cortical Dynamics. Directors -The Cortical directors who have resigned are David Liley and Gary Todd.



Authorised by
David Breeze Executive Director

About the BARM System

The Brain Anaesthesia Response (BARM) System measures a patient's brain electrical activity, the electroencephalogram (EEG), in order to indicate how deeply anaesthetised a patient is during an operation via an adhesive sensor applied to the forehead. The BARM System is designed to assist anaesthetists and intensive care staff in ensuring patients do not wake unexpectedly, as well as reducing the incidence of side effects associated with the anaesthetic.

About Cortical

Cortical is an Australian based medical device technology company that has developed a next generation Brain Function Monitor. The company is focused on commercialising the intellectual property developed at Swinburne University. The core-product the Brain Anaesthesia Response (BARM) System has been developed with the objective of better detecting the effect of anaesthetic agents on brain activity, aiding anaesthetists in keeping patients optimally anaesthetised.

The BARM System improves on currently used electroencephalogram (EEG) technologies by incorporating the latest advances in our understanding of how the brain's rhythmic electrical activity, the electroencephalogram (EEG), is produced. The approach used is fundamentally different from all other devices currently available in the market in that its underlying algorithm produces EEG indexes which are directly related to the physiological state of the patient's brain.

The global brain monitoring devices market is broadly segmented into three categories based on its product, application, and end-user. Fueling market growth is the various technological advancements which are leading to high functionality, lower costs, ease of operation, and miniaturization of devices.

Cortical will initially focus on Korea and the Total Intravenous Anaesthesia ("TIVA") market within Europe. TIVA provides a method of inducing and maintaining general anaesthesia without the use of any inhalation agents.

The English healthcare body NICE (National Institute for Health and Care Excellence) has recommended EEG (electroencephalogram) based depth of anaesthesia monitors as options in patients receiving TIVA and in patients who are considered at higher risk of adverse outcomes during any type of general anaesthesia.

This includes patients at higher risk of unintended awareness and/or excessively deep anaesthesia. It has been estimated that approximately 29 million major general surgery general anaesthetics are conducted in the EU each year of which 55% are balanced anaesthesia (using a combination of intravenous agents such as propofol and volatile gases) and 20% are total intravenous anaesthesia (TIVA) using propofol. Source :PAION "General Anaesthesia (Europe)", accessed March 2017, <http://www.paion.com/remimazolam/sedation-anesthesia-market/general-anesthesia-europe/>. In Italy the Society of Intravenous Anaesthesia has reported that TIVA usage has already reached 40% of all anaesthesia procedures.

Cortical's technology has a versatility that goes beyond depth of anaesthesia and may be applied to other EEG based markets, such as Neuro-diagnostic, drug discovery, drug evaluation and the emerging Brain Computer Interface (BCI) market.

There are considerable opportunities offered by subsequent expansion of the company's core technology through developing the product to carry out additional functions including neuro-diagnostics of changes in brain and memory functions to provide early warning of degenerative diseases, pain response and tranquilizer monitoring for trauma patients in intensive care units.

While a number of EEG monitors are commercially available, one that is reliably able to quantify the patient's anaesthetic state is still desperately needed. The specific advantages of Cortical's BARM System over all other competing systems include: It produces EEG indexes which are based on physiological mechanisms direct from the patient, unlike other systems on the market which produces EEG indexes based on statistically based empirical approaches.

It is therefore fundamentally differentiated from the competitive technologies. It produces a reading within 3 seconds of start-up and an updated reading every second thereafter, compared to 30 second updates on competing systems. It has shown to be able to monitor hypnosis and analgesia independently by EEG. It provides much greater sensitivity, allowing the monitor to identify changes in brain function and detect several classes of anaesthesia and other brain disorders.

The BARM System is protected by five patent families in multiple jurisdictions worldwide consisting 22 granted patents
