BPH GLOBAL LTD
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Company Announcements Platform
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Temasek Polytechnic (Singapore) R&D agreement – Development of seaweed-based bio-stimulant formulations to promote higher growth and yields in the oil palms and rice

Highlights

- **R&D Project to develop innovative seaweed-based bio-stimulant formulations**
- **R&D program undertaken by Temasek Polytechnic, overseen by Company's R&D consultant**
- **Bio-stimulants to target improved growth, yield, nutrient uptake, and stress tolerance in crops**
- **Initial commercial focus on oil palm and rice industries in Southeast Asia**
- **Early-stage discussions underway for a potential bio-stimulant production plant in Indonesia**

The Board of BPH Global Ltd (ASX: BP8) (**Company**), is pleased to announce the execution of a research and development consultancy agreement with TP Innovation Holdings Pte Ltd (**TPIH**), acting on behalf of Temasek Polytechnic in Singapore. Under the agreement, the Company's wholly owned, Singapore-based subsidiary Stemcell United Pte Ltd (**BP8 Singapore**) has engaged TPIH to conduct research into the extraction and analysis of seaweed components for formulation as bio-stimulants. These formulations are intended to enhance growth rates and yields in oil palm trees and rice crops (**Consulting Agreement**).

Managing Director Matthew Leonard said: "This agreement marks another significant step forward in our strategy to unlock the full potential of seaweed-derived products. Partnering again with TPIH and Temasek Polytechnic allows us to tap further into their high quality R&D capabilities, accelerating the development of bio-stimulants that support sustainable agriculture while also advancing our ambitions in the Traditional Chinese Medicine and functional food sectors.".

The Company's objectives and business model

In its announcement to the market on 23 January 2025 regarding completion of the Indonesian seaweed project acquisition, the Company stated that it would combine its proprietary seaweed-sector intellectual property and resources with those of its joint venture partners to focus on the research, development, and commercialisation of seaweed-based bio-stimulant formulations. As a value-added product, the development and sale of bio-stimulants aligns with the Company's medium-term objective of establishing a suite of higher-margin, seaweed-based solutions targeting the agricultural and wellness sectors.

As part of its broader commercialisation strategy, the Company also proposes to establish its own manufacturing facility for the production of seaweed-based bio-stimulants. Early-stage discussions have commenced with potential partners and stakeholders regarding the feasibility of establishing a plant in Indonesia. This initiative aligns with the Company's long-term objective to secure greater control over its supply chain, reduce production costs, and support regional agricultural markets through localised manufacturing capabilities. The Company will provide further updates on this initiative in due course.

About Bio-Stimulants and Seaweed R&D Focus

Bio-stimulants are natural biological substances that, when applied to plants, stimulate their internal processes. These enhancements promote more efficient nutrient use, support growth, and improve resilience against abiotic and biotic stressors. Unlike traditional fertilisers, which supply nutrients directly, bio-stimulants act by activating the plant's own physiological mechanisms.
The aim of this R&D program is to formulate seaweed-derived bio-stimulants that enhance nutrient availability and uptake in food crops, with a focus on improving outcomes associated with Traditional Chinese Medicine (TCM) through the development of functional foods.

Seaweeds—macroalgae found in marine and coastal ecosystems—are essential components of global biodiversity. They are known to contain a complex array of bioactive compounds, including:

- Carbohydrates;
- Amino acids;
- Phytohormones;
- Osmoprotectants; and
- Proteins.

Seaweed-based bio-stimulants work by enhancing several key areas of plant performance:

- **Enhanced growth and yield** – stimulate root and shoot development.
- **Improved nutrient uptake** – boost fertiliser efficiency by increasing nutrient absorption.
- **Greater stress tolerance** – help plants withstand drought, salinity, heat, and cold.
- **Better crop quality** – improve fruit size, colour, flavour, and shelf-life.

As part of this project, research will focus on the bio-stimulant potential of three specific seaweed species:

- *Eucheuma cottonii*;
- *Gracilaria spp*; and
- *Ulva Lactuca*.

These species were selected for their availability, established use in seaweed farming, and their documented bioactive properties.

The Company's initial industry focus

The Company's commercialisation strategy will initially target the oil palm and rice growing industries, two of the most significant crop sectors across Southeast Asia. Seaweed-based bio-stimulants are already being used in these industries to promote root development, improve nutrient uptake efficiency, and enhance resistance to abiotic stressors such as drought and salinity. In oil palm cultivation, bio-stimulants have been shown to improve fruit bunch weight and oil yield, while in rice farming, they have demonstrated positive effects on grain size, tillering, and overall crop uniformity. By leveraging scientific research and regionally available seaweed biomass, the Company aims to offer high-performance, sustainable solutions tailored to the needs of large-scale agricultural producers.

The services to be provided by TPIH

Under the Consultancy Agreement, TPIH will conduct a feasibility study focused on the extraction and analysis of seaweed components for use in the formulation of seaweed-based bio-stimulants. The key components of the work program are:

- **Extraction of bio-stimulants from seaweeds:** BP8 Singapore will provide clean, dried seaweed samples to TPIH, comprising the following species:
    - *Eucheuma Cottonii*;
    - *Gracilaria*; and
    - *Ulva Lactuca*.

  The samples will be finely ground into powder form prior to extraction. To ensure optimal recovery of bioactive compounds, TPIH will explore multiple extraction methodologies comprising:
    - fermentation extraction;
    - solvent extraction; and
    - boiling extraction.

- **Testing methodologies for bio-stimulants:** TPIH will conduct mineral content analysis using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) to determine concentrations of essential macro- and micro-nutrients. This will support efficacy validation for plant growth enhancement.

- **Data analysis:** Analysis will focus on the nutritional profile of each seaweed sample, including macro- and micro-nutrient concentrations and auxin levels. The objective is to identify the most promising compositions for effective bio-stimulant formulations.

- **Formulation:** The seaweed extracts obtained will be used to create trial bio-stimulant formulations:
    - **Three individual formulations**, each based on one of the three seaweed species combined with appropriate additives; and
    - **Combined formulations** using mixed extracts from all three species, also blended with relevant additives.
- **Deliverables:** TPIH will provide BP8 Singapore with the following:
    - A report on optimal extraction methodologies for each seaweed species; and
    - A summary of preferred formulations, based on testing outcomes.
- **Timelines:** TPIH will provide the services in accordance the following timeline milestones:
    - Testing of the various extraction methodologies (Weeks 1-3);
    - Initial testing of bio-stimulant extracts (Week 4);
    - Refining of extraction processes (Week 5-6);
    - Data analysis and report preparation (Week 7-8); and
    - Production of trial bio-stimulant formulations (Week 8).

Throughout the project, TPIH will review preliminary results in consultation with BP8 Singapore and adjust experimental approaches as required.

Other material terms of the TPIH Consultancy Agreement

Other material terms of the Consultancy Agreement:

- The term of the Consulting Agreement is two (2) months from the commencement date (15 July 2025) ending on 15 September 2025.
- In consideration of TPIH providing the R&D services, BP8 Singapore will pay TPIH SGD$1,640.63 + GST (**Project Fee**). The Project Fee is payable in full by the commencement date.
- All Project intellectual property is the property of BP8 Singapore.
- The Company grants TPIH and its affiliates and/or subsidiaries an irrevocable, non-exclusive, royalty-free, perpetual, worldwide licence to use the Project Intellectual Property owned by the Company for non-commercial purposes including, but not limited to, the undertaking of any collaborative projects with any third party.

About Temasek Polytechnic

Temasek Polytechnic is a leading institution of higher learning located in Tampines, Singapore. Established in 1990, the campus of Temasek Polytechnic sits on a 30 hectare plot near the Bedok Reservoir in the eastern part of Singapore. The institute has approximately 15,000 full-time students and more than 1,200 academic and administrative staff. Temasek Polytechnic offers 37 full-time diploma courses in the areas of applied sciences, business, design, engineering, humanities & social sciences, and informatics & IT.

Authorised for lodgement by the Board of the Company

For further information, please visit our website at www.bp8global.com or contact:

Mr Paul Stephenson
Chairman of BPH Global Limited
E: pauls@bp8global.com