BPH GLOBAL LIMITED
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Company Announcements Platform
Australian Securities Exchange

BP8 to expand seaweed R&D activities into essential mineral extraction utilising AI search technology; carbon credits

Highlights

- **R&D program now includes:**
  - **Essential Mineral Extraction: extraction of seaweed-based individual macro & micro minerals for sale into the commodities markets and industry specific markets like the battery and energy industries;**
  - **Artificial Intelligence technology (AI): AI to be developed and deployed to enhance nutraceutical and essential mineral identification and extraction; and**
  - **Carbon Credits: sale of seaweed cellulose fibre to the building materials and battery industries to attract Carbon Credits.**
- **R&D program focussed on potential commercialisation opportunities.**

The Board of BPH Global Ltd (ASX: BP8) (**Company**) is pleased to announce that the Company is expanding the nature of its business to include the following projects:

- **Essential mineral extraction:** The Company's extraction of individual macro minerals and micro minerals from seaweed and sea plant biomass, to enable the sale of those macro and micro minerals to the commodities markets, and to industry specific markets such as the battery industry, and thereby create an additional revenue stream for the Company; and
- **Seaweed and Blue Carbon Credits:** The Company's sale of seaweed cellulose fibre as a filler in biopolymer, bioplastic and battery electrolyte solution separator materials as revenue streams for the Company and to serve as a means of evidencing carbon sequestration and storage for the purposes of qualifying for blue carbon credits. On receipt of the blue carbon credits, the Company would seek to sell those blue carbon credits as an additional revenue stream.

(Together, the **New Projects**)

The research and development (**R&D**) that the Company intends to undertake on the New Projects is in addition to the Company's existing R&D activity which is focusses on:

- Edible bird's nest product enhancement by the infusion of seaweed-derived nutrients; and

- Creation of a range of prototypes for food products, dietary supplements, healthcare products, and cosmetic applications that incorporate seaweed-sourced and/or bird's nest-sourced nutraceuticals.

ASX Listing Rule 11.1.2 doesn't apply to the expanded "nature" of the Company's business

Following its review of the Company's submission letter, the Company has received notice from ASX that the expenditure of $250,000 to investigate the possibilities of the New Projects will not attract the application of Listing Rules 11.1.2. The Company will notify ASX once anything eventuates from the R&D on the New Projects, and if the Company decides to pursue further opportunities, to report to ASX on the size and scope of the further developments.

Essential Mineral Extraction

Seaweed in general has a chemical composition significant in polysaccharides (agar), essential minerals and trace elements, although the composition varies from species to species. The target compounds of interest to the Company will affect the choice of species selection for the sake of commercial production and will also affect the method of post-harvest treatment and extraction for specific compounds.

For essential mineral extraction for sale into the commodities markets and for use in the battery technology and energy production industries, the initial specific focus is on nickel and cobalt. The Company is also monitoring the results of published research regarding the use of seaweed-derived chemicals and cellulose micromaterials in enhancing battery performance. Examples of recently published studies include the improvement made by added cellulose micromaterials to battery separators in sodium-metal batteries and to a prototype battery electrode made from a combination of silicon and a seaweed-derived alginate which improved the electrode's elasticity and ability to store energy. The Company regards itself as a potential supplier of essential minerals, including these seaweed-derived cellulose micromaterials and alginates, to the current and emerging battery technology and battery manufacturing industries.

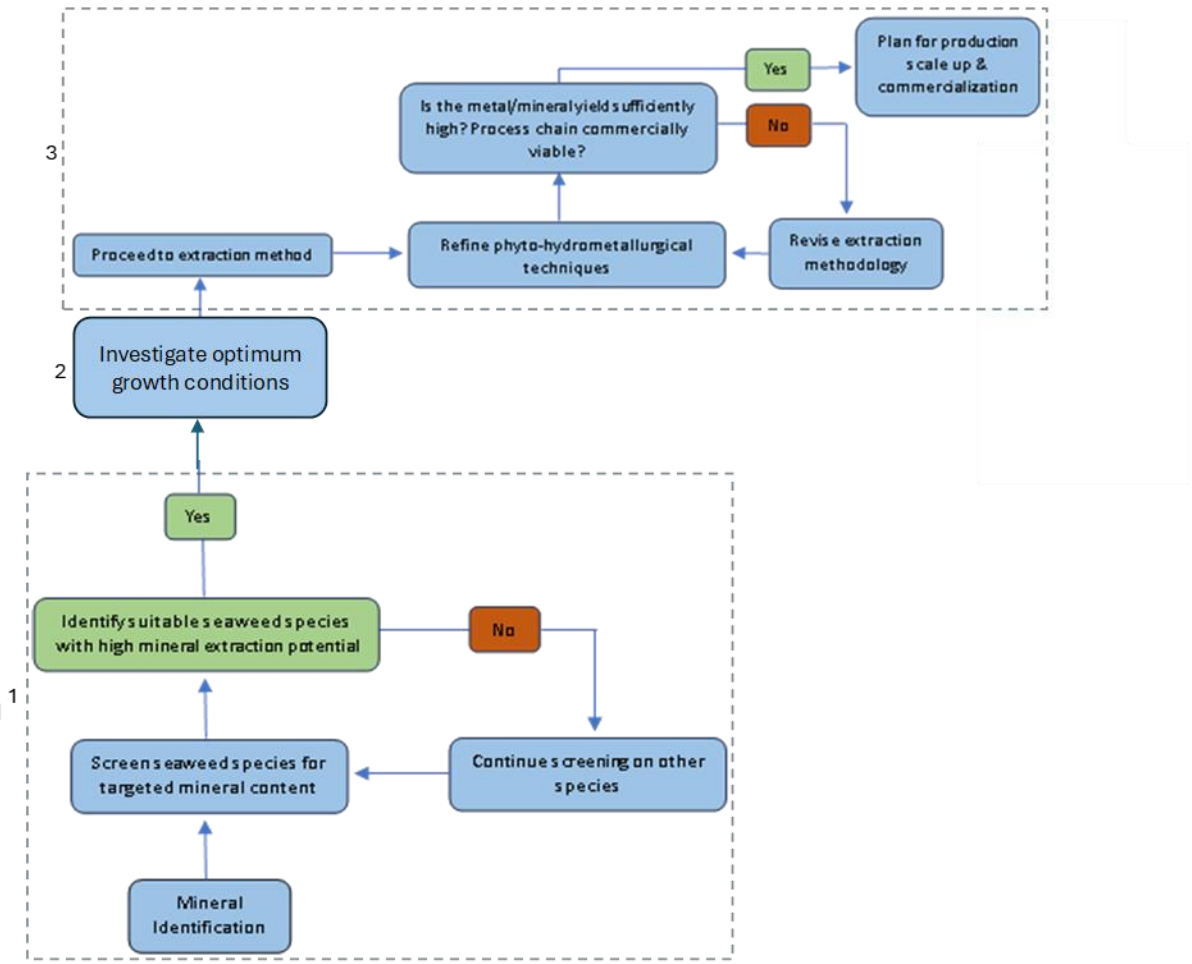
Regarding essential mineral extraction for use in vitamin supplement manufacture, the Company's specific focus is on trace metals that are established by science to occur in rich concentrations in seaweed: nickel, cobalt and manganese. These minerals are common trace elements in vitamin supplements**.**

The key points of the R&D plan regarding essential mineral extraction are:

- **Overview and objectives of R&D plan:** Leveraging its existing Phyto-hydrometallurgical techniques developed for the extraction of nutraceuticals from seaweed, the Company plans to develop and deploy artificial intelligence (**AI**) technology to enhance essential mineral identification and isolation, and to further develop its Phyto-hydrometallurgical techniques to extract from seaweed:
    - Minerals and nano-minerals such as cobalt and nickel for sale to:
        - the commodities markets; and
        - battery manufacturers and other operators in the energy industry, including the for the enhancement of battery life and performance.; and
    - Essential minerals for use as nutraceutical raw materials in vitamin supplement manufacture.
- **R&D program components for Proof of Concept:**
    - **Stage One – seaweed prospecting and identification:** Conduct prospecting to identify tropical seaweed species with the highest concentration of agarose, macro mineral (potassium) and micro minerals (nickel, cobalt and manganese). To undertake this prospecting, the Company is planning to develop low-cost, efficient techniques, including

artificial intelligence (**AI**) enhanced detection and screening processes, for identifying the presence of macro and micro minerals. The rationale is to target seaweeds which have particular metal concentrations and in higher concentrations. Consideration will be given to targeting seaweeds that grow in waters polluted by heavy metals. Seaweeds grown in such waters are not suitable for direct human consumption because of the high heavy metal content. Given that seaweeds absorb heavy metals, the cultivation of seaweeds in waters polluted by heavy metals would also have a bio-remedial effect on those areas and would enable the Company to make a significant contribution to global sustainability (ESG) goals.

- **Stage Two – growth factors and mass cultivation strategy:** Investigate optimum growth factors for selected seaweed species (light intensity, temperature, nutrient profile) and determine the suitable substrate inoculation strategy for mass cultivation.
- **Stage Three – extractive strategies:** Investigate different extractive strategies (pyrolytic vs non-pyrolytic/low heat) to achieve highest yield of target compounds out of selected seaweed species.



- **Budget:** The budget for the R&D plan regarding essential mineral extraction is $200,000 across a two-year period.
- **Commencement date:** The commencement date for the R&D plan regarding essential mineral extraction is anticipated to be during the second quarter of calendar year 2024.

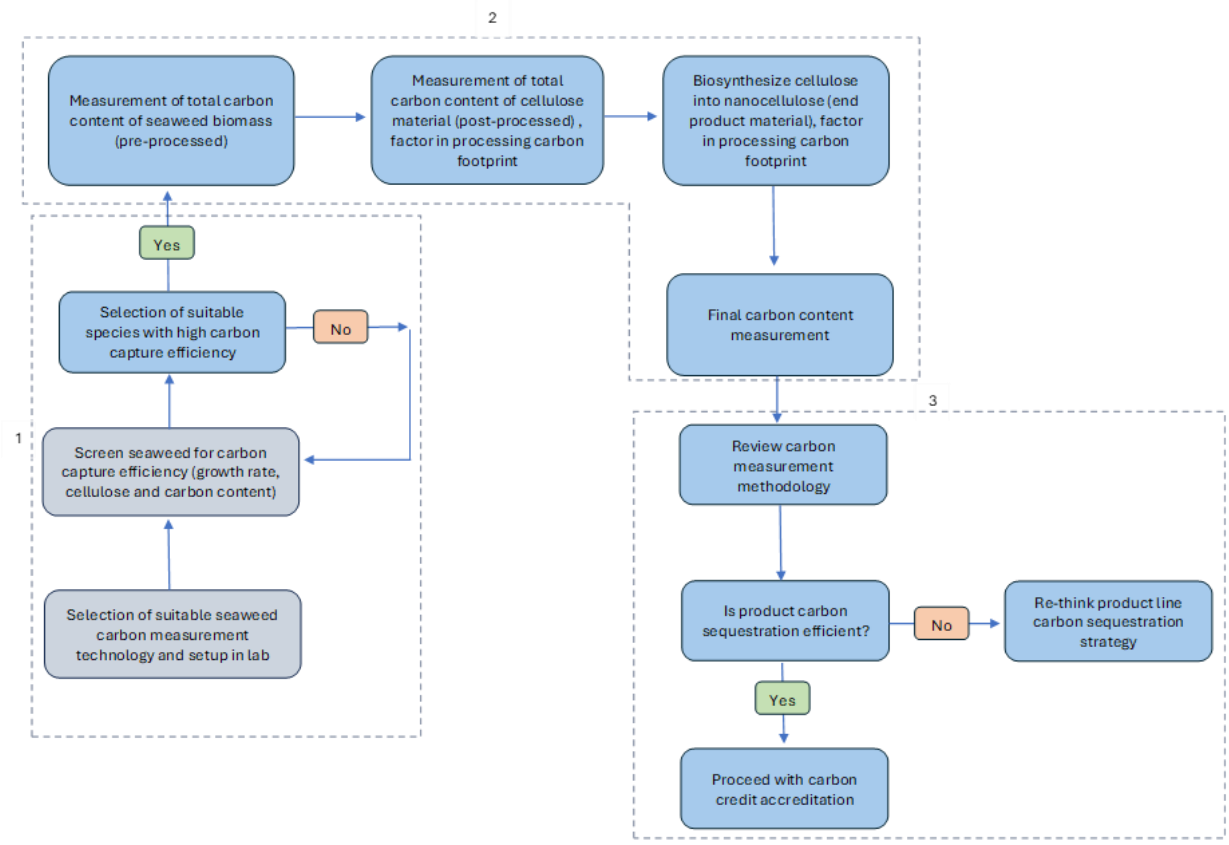
Seaweed and Blue Carbon Credits

The key points are:

- **Background:** Seaweeds and sea plants are very effective at capturing carbon (up to four times greater than by land-based plants), yet their on-going storage of carbon can be problematic. Once harvested, seaweed typically decays quicky and releases the captured carbon back into the atmosphere. Existing carbon credit accredited schemes and certification protocols are almost exclusively focused on land-based plants (green carbon credits). As far as the Company is aware, there is no internationally accepted methodology for the measurement of both the sequestration (capture) and storage of carbon by seaweed and sea plants (blue carbon credits). To achieve carbon credit accreditation, an applicant must be able to demonstrate that its operations both capture and, most importantly, store carbon. The Company has identified the following areas of R&D focus regarding seaweed and carbon credits:
    - **Cold water environments:** The Company is considering the use of carbon-containing seaweed cellulose fibre as a raw material to biosynthesize nanocellulose. The significance of using carbon-containing seaweed and sea plant cellulose fibre in the construction of biopolymer and bioplastic materials (typically used in the construction industry) is the potential for demonstrating carbon storage. For bioplastics and bio polymer composite materials, cold water brown seaweed species such as Kelp, Fucus and Ascophyllum Nodosum found along the southern Australian coastlines produce cellulose fibre with mechanical properties suited for such applications.
    - **Tropical environments:** Cellulose fibre material extracted from tropical seaweed species are better suited for manufacture of nanocellulose material. Green nanocellulose has biomedical applications which include the material used in the manufacture of wound dressings, medical staff clothing, and protective antimicrobial suits. The cellulose material extracted from tropical seaweed species is particularly suited to these medicine related purposes because tropical seaweed-derived nanocellulose has antimicrobial properties. Nanocellulose can also be applied as the electrolyte separator material in sodium ion batteries. Since the nanocellulose end-product does not leach out carbon (its precursor, biomass form is able to capture and store carbon), there is the potential to demonstrate carbon sequestration and storage.
- **Overview and objectives of R&D Plan:** On the basis that the Company can demonstrate the capture and retention of material levels of carbon in the seaweed post processing, the Company will work with the relevant accreditation authorities to develop carbon measurement methodologies to measure and verify stored carbon. If the Company is successful in achieving this initial step, it will then work with these accreditation authorities to seek to create a new, internationally recognised blue carbon credit standard for the issue of carbon credits in relation to the cultivation and harvesting of seaweeds.
- **R&D program components for Proof of Concept:**
    - **Stage One – initial carbon sequestration and retention measurement:** Investigate selected seaweed species in both cold water and tropical environments and measure carbon levels at harvest and, subsequently, the retained carbon levels post processing. To undertake this process of identifying the presence of carbon and its retention, the Company will develop low-cost, efficient techniques, including artificial intelligence (**AI**) enhanced detection and screening processes, for identifying the presence of carbon.
    - **Stage Two – development of carbon measurement methodology:** The Company will partner with a specialist carbon credits consulting firm to prepare a seaweed based blue

carbon sequestration and retention measurement methodology that can be submitted for approval and adoption by international carbon credit regulators and markets.

- **Stage Three – accreditation of seaweed carbon retention measurement methodology:** With the assistance of its carbon credits consulting firms, submit a proposal to, and liaise with a carbon credits regulator/issuer to receive accreditation of the Company's seaweed-based stored carbon measurement methodology.

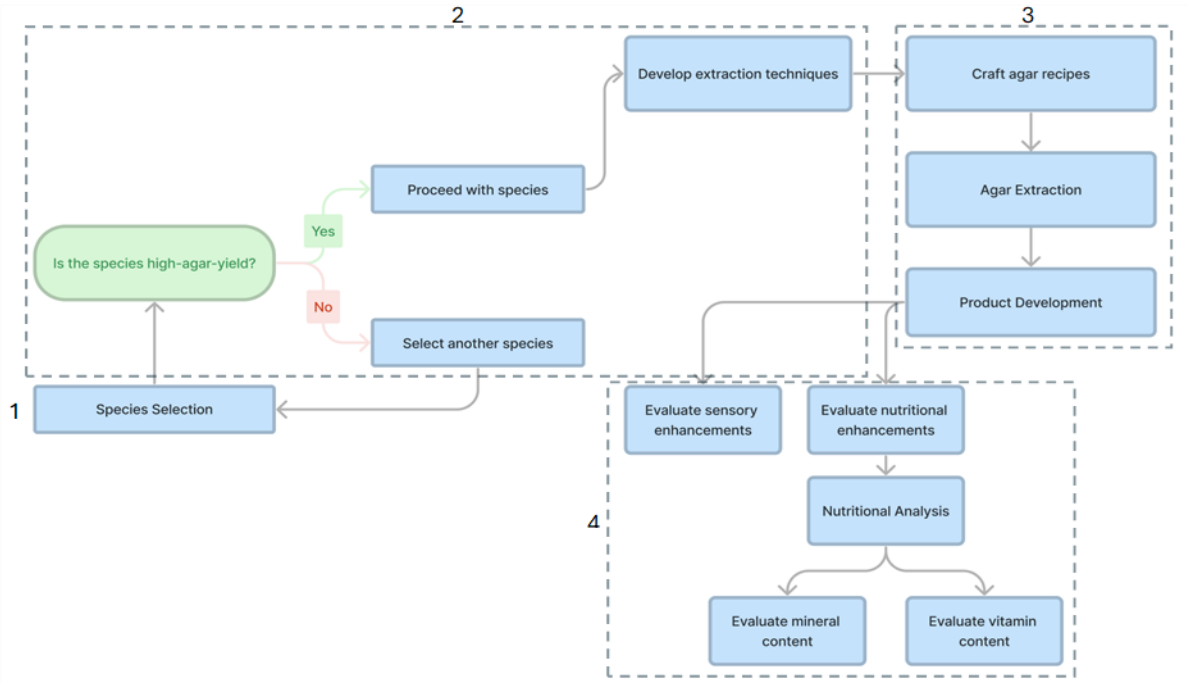


- **Budget:** The budget for the R&D plan regarding seaweed and carbon credits is $50,000 across a two year period.
- **Commencement date:** The commencement date for the R&D plan regarding seaweed and carbon credits is anticipated to be either late second quarter, or during the third quarter of calendar year 2024.

Company's existing R&D activity

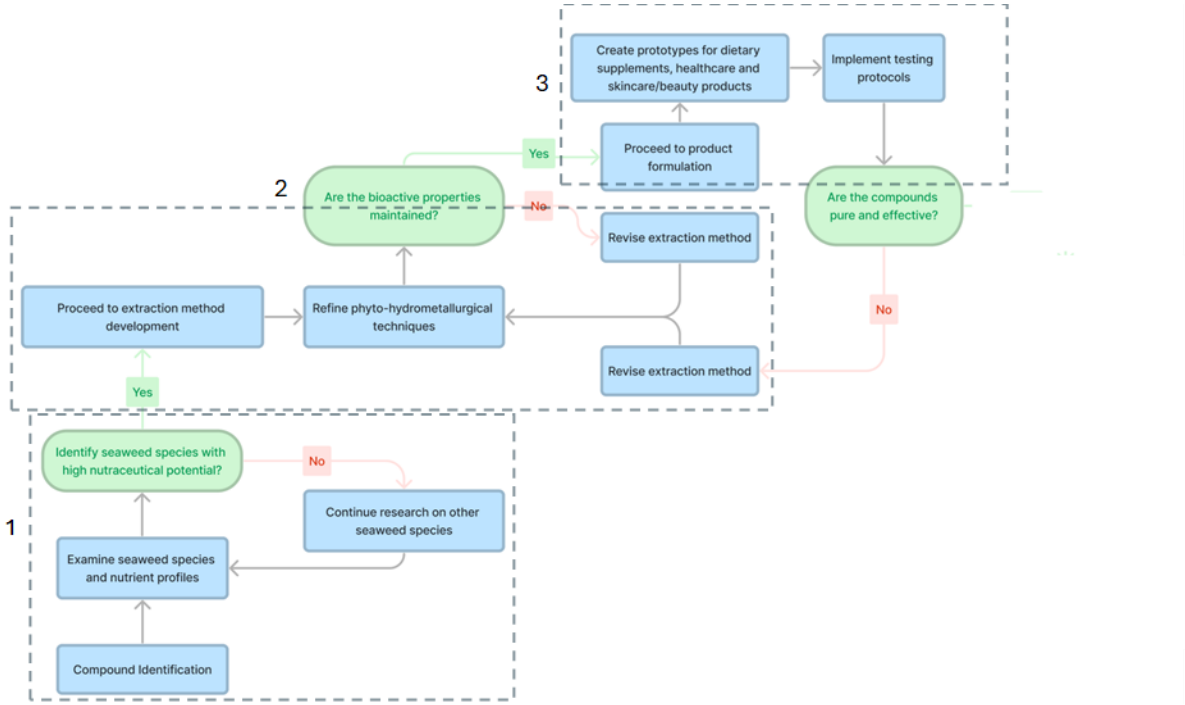
- **Summary:** The Company's existing R&D activity focusses on:
  - Edible bird's nest product enhancement by the infusion of seaweed-derived nutrients; and
  - Creation of a range of prototypes for food products, dietary supplements, healthcare products, and cosmetic applications that incorporate seaweed-sourced and/or bird's nest-sourced nutraceuticals.
- **Edible bird's nest product enhancement:** This project is focused on the integration of seaweed-derived agar, specifically from Rhodophytes (red seaweed), to enhance the quality and nutritional profile of edible bird's nest products. The research explores agar's role in improving taste, texture, and nutritional content, leveraging its rich mineral and vitamin composition, and its ability to absorb and enhance flavours. Components of this R&D Plan comprise:

- **Stage One - species selection:** Target high-agar-yield Rhodophytes, with a focus on species thriving in tropical Southeast Asian waters.
- **Stage Two – agar identification and extraction:** Develop low-cost, efficient techniques, including artificial intelligence (**AI**) enhanced detection and screening processes for identifying and extracting agar, a key polysaccharide that contributes to the desired gelatinous texture and nutrient enrichment.
- **Stage Three - product development:** Craft recipes that synergize the properties of agar and bird's nest, focusing on sensory and nutritional enhancements.
- **Stage Four - nutritional analysis:** Evaluate the enhanced nutritional profile of the bird's nest products, including minerals like calcium and magnesium, and vitamins such as K and E.



- **Extraction and infusion of seaweed-sourced nutraceuticals:** The plan is to harness the nutraceutical potential found within seaweed. This involves the extraction of a variety of health-enhancing compounds for application in several industries including food products, healthcare and personal care. By employing cutting-edge Phyto-hydrometallurgical techniques, the Company is focussed isolating these compounds effectively, thereby infusing a diverse array of products with the intrinsic benefits of seaweed-derived nutrients. Components of this R&D Plan comprise:
  - **Stage One - compound identification:** Conduct research on seaweed species and their associated nutrient profiles to identify those with the highest potential for nutraceutical yield. To achieve this capability, develop low-cost, efficient techniques, including artificial intelligence (**AI**) enhanced detection and screening processes, for identifying the presence of nutraceuticals.
  - **Stage Two - extraction method development:** Create and refine Phyto-hydrometallurgical techniques to extract a wide array of compounds efficiently while maintaining their bioactive properties.

- **Stage Three - product formulation:** Create a range of prototypes for food products, dietary supplements, healthcare products, and cosmetic applications that incorporate the extracted nutraceuticals.



The way forward

The Company will provide regular updates on all aspects of the R&D plan, including the New Projects, and the achievement of R&D plan milestones.

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Authorised for lodgement by the Board of the Company

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

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