Bioresource Processing Alliance

CREATING ECONOMIC GROWTH BY HARNESSING HIDDEN VALUE

The BPA decision-making framework - Overview

Guiding document on the process and expectations

May 2016

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Introduction

This document provides an overview of the decision-making framework and staged product and process development system used by the BPA. It briefly outlines how the system is intended to be used, introduces the different stages, and lists the expected outcomes of each stage per assessment category. The information within this document is designed to guide you through the different stages of the BPA Decision Making Framework.

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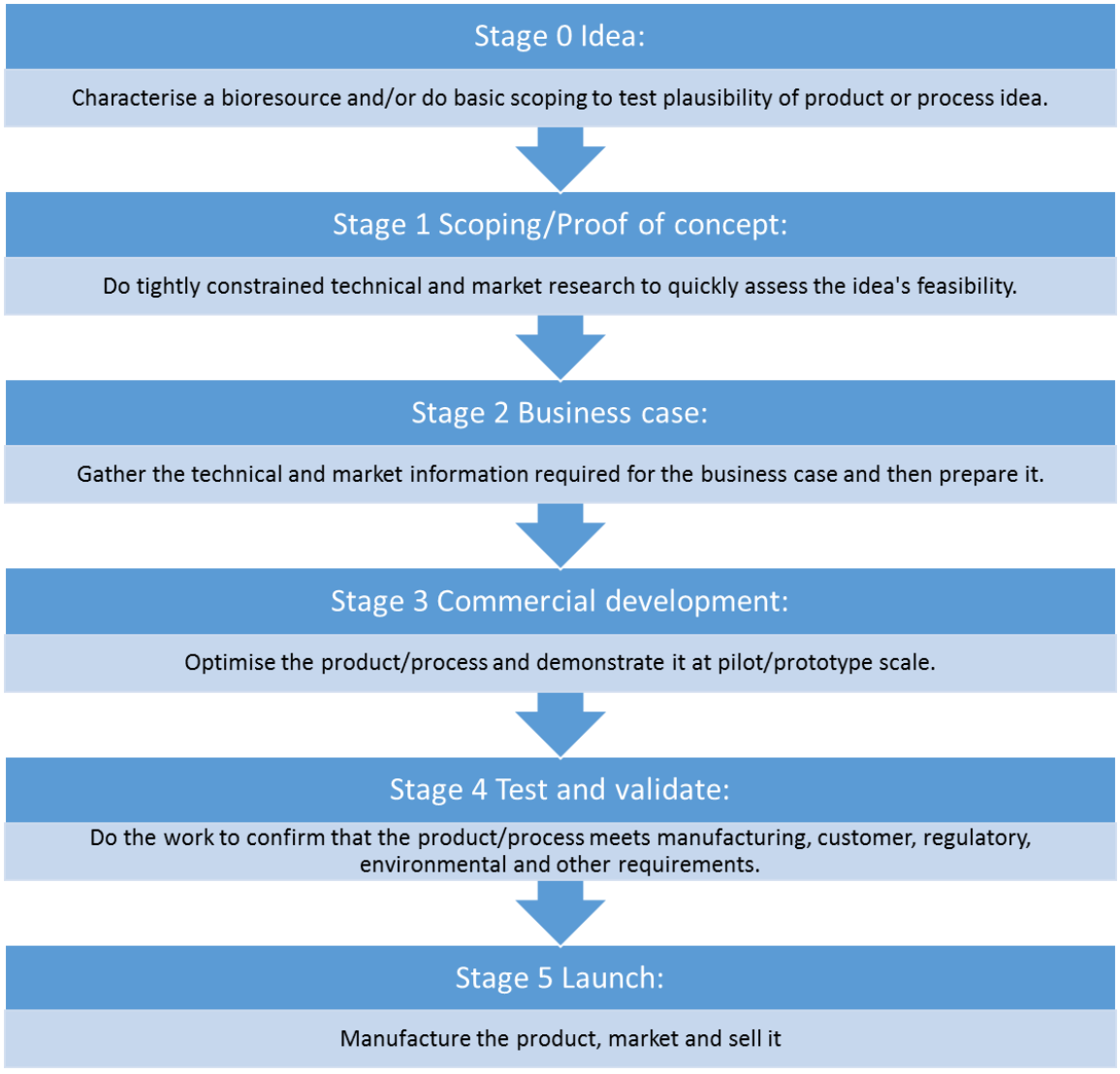
Decision-making framework overview

One of the core elements of the BPA decision-making framework (DMF) is a system to guide product and process development projects through the different stages of the development process, from idea to market launch. Figure 1 provides an overview of the stages within the DMF. The assessment categories, criteria and evaluation process used within the DMF have been developed specifically for the BPA.

Figure 1: Stages and Checkpoints of the BPA DMF



When a new project is submitted in the DMF, submitters are prompted to choose the stage that best fits the current state of their project. The DMF system then automatically saves the project under the chosen stage. To apply for BPA funding, several tasks have to be completed in each stage. First, submitters fill in the *funding application template* to the best of their knowledge.

This template contain a number of questions for each of the assessment categories (listed in the next section), prompting the submitter to provide relevant information about their project. The *template* has two functions: 1) to provide decision-relevant information on

projects to the BPA Science Leadership Group to support funding decisions; and 2) to serve as a self-assessment for project leaders to identify gaps or weaknesses of their projects, so that research activities can focus on closing these gaps. The information contained in the *template* is summarised and evaluated in the *Scorecard*, which is filled in online and in the funding application. Submitters also need to complete a *Business Case* for any project at Stage 3 and onwards and an optional *Economic Analysis* for their project.

Stage 4 represents a transition point from successful demonstration of the business concept and development of the commercial proposition to full commercialisation and start-up. Subsequent phases will most likely follow a typical investment due diligence process to commercial scale up and deployment. It is anticipated that the commercial partner or owner of the project will lead this process. While the BPA may still provide support in testing and validation (Stage 4), the decision to launch at Stage 5 has to be made by the commercial partner.

Stages and template overview

This section outlines the expected outcomes of each stage, as well as the required information for any funding application.

Stage expectations

See Figure 1.

Funding application requirement

As a project progresses through the stages, both the amount and quality of required information increases. While at stage 0, high level estimates based on initial desk research and previous work or experience are sufficient, at stage 1 and 2 further information is required and at stage 3, 4 and 5 a business case is required.

Stage 0 and onwards

The following information is required at every stage:

Bioresource stream:

You will be asked to provide information on the target bioresource stream, including origins, locations, volume, characteristics, compositions, current uses, costs/earnings, environmental impact, challenges or uncertainties regarding the bioresource supply, at maturity how much bioresource, will be used in the opportunity

The Opportunity:

Complete either product and/or process/technology as appropriate for your project

Product(s):

Here you will be describing, based on what you know already, what the product(s) do, the problem it solves or the opportunity it presents, benefits and value it presents to customers At maturity, how much product will be sold annually and what will it sell for, $/kg, where in the supply chain is this price realised?

Process and/or technology:

Based on what you know already, what will the process or technology do? What is the problem it solves or the opportunity it presents? Has feasibility been proven at lab scale? What benefits and value does it present to customers?

IP Position:

Freedom to operate; have you determined that you are not infringing IP rights of other parties? What restrictions have you identified? Is this project likely to generate new IP? If so, please outline your IP protection and utilisation strategy.

Industrial harvesting/processing/manufacturing capability:

What industrial harvesting/processing/manufacturing capability is currently available to make the product and/or implement the process/technology? What capability is missing and how will these deficiencies be overcome?

Market(s):

Based on what you know already, describe the target market for the product/process/technology. What is the total market size and trends? What are the current pricing levels and trends? What are the competing products/processes/technologies? What are your strengths and weaknesses compared to the alternatives/competitors?

Marketing capability:
Based on what you know already, what marketing capability and distribution channels are available now? Within the wider project team (i.e. including current industry partner(s)), what is the nature of your experience or your relationships in the target market? What capability is missing and how will these deficiencies be overcome?

Stages 1 and 2

At stage 1 and 2, the following additional information is required:

Financial robustness:
What financial investments are likely to be needed to develop, establish industrial and marketing capabilities and launch this product/process/technology? When do you expect a revenue stream? What is the likely margin? For whom? What is the anticipated rate of return for this investment?

Environmental Performance:
Considering energy, water and materials consumption, and generation of wastes, effluents and emissions, how will your product / process /technology deliver environmental benefits compared to alternative products/ processes and to the status quo use of the bioresource stream. How can the environmental performance of industrial processes, or of the product itself, be improved?

Risks: Health and Safety, Regulatory Compliance, Environmental:
Considering HSNO/OSH, regulatory and environmental risks, outline any risks associated with this opportunity and the potential for any new hazards.

Broader benefits:
If this total development is commercialised successfully, outline the likely outcomes and benefits/impacts (economic, cultural, societal, environmental) to New Zealand and/or the rest of the world.

Risks to project success:
Outline the major risks to the overall project's success and the steps you're taking to treat (avoid, reduce/mitigate, share or accept) these risks.

Critical success factors and ability to deliver:
You will be asked to list the critical success factors (CSF), i.e. those few key things that must go well for this project to succeed, how will they be managed? Are any of the CSFs potential showstoppers, why? Provide a summary of the project team's track record in relevant initiatives. Considering the skills, equipment and other resources required to successfully deliver this project, identify any gaps and outline how they will be overcome.

Stage 3 and onwards

At stage 3, 4 and 5, a business case is required. You are allowed to use your own business case or the provided BPA business case assessment template. The BPA business case template contains the following sections, more details can be found in the template:

- Value Opportunity
- Market potential
- Technical Readiness
- IP Position
- Value Chain Integration and Partner Relationships

- Financial Robustness
- Environmental Performance
- Health and Safety, Regulatory Compliance, Environmental Risks
- Broader Benefits
- Critical Success Factors
- References

Optional Economic Analysis template

An optional economic analysis template is recommended at every stages. It requires the following information, more details can be found in the template:

- Year: Make year 1 the first year that the new product/process or improved process in manufactured.
- Investment: One-off costs that will be incurred to achieve the project objectives.
- Return: The gross profit from the investment.
- Cash flow: Gross profit-Total investment.
- Discount rate: Used to calculate the NPV.
- NPV: Net Present Value.
- IRR: Internal rate of return.