

MEMORANDUM OF UNDERSTANDING

between

INNOVATION NORWAY

and the

TECHNOLOGY STRATEGY BOARD

1. INTRODUCTION

- a. In order to share costs across governments and maximise exploitation of research and development in areas of common interest the above parties have the intention of first evaluating possible opportunities for bilateral programmes, and then potentially jointly funding research and development activities (R&D) under the auspices of the following Partnership.
- b. The purpose of this document is to describe the arrangements for the collaboration between the Innovation Norway (IN) and the Technology Strategy Board (TSB) in the funding and management of the Partnership.
- c. The activities of the Partnership are jointly administered by the TSB and IN.
- d. The Partnership will support a number of activities based on Industrial Biotechnology and Biorefining. Both parties believe that these technologies underpin the bioeconomy, which in Europe has a market size of €2 trillion and employs 21.5 million people. Investment in these technologies can help to meet the increasing demand for a *sustainable* supply of food, industrial products and fuels. Both organisations believe that through joint activities such as knowledge exchange and R&D projects, they will generate economic growth.

2. DEFINITIONS

“**IN**” means Innovation Norway, whose contact details are set out at paragraph 3 below;

“**TSB**” means Technology Strategy Board, whose contact details are set out at paragraph 3 below;

“**MOU**” means this memorandum of understanding;

“**Partnership**” means the plan of shared activities defined in Appendix 1;

“**Industrial Biotechnology**” is the use of biobased feedstocks and biotechnologies, such as biocatalysis, to develop new, more efficient and sustainable methods to produce energy, chemicals and materials.

“**Biorefining**” is the identification, extraction and modification of valuable components from a biobased feedstock.

3. PARTNER DETAILS

- a. Innovation Norway is a government owned and financed organization offering advisory services and financial support in order to nurture business innovation and entrepreneurship, foster regional

development, international cooperation and market access. Innovation Norway acts as an advisor to the Government on industry policy in close cooperation with the Norwegian Research Council. It is a main priority for Innovation Norway to help Norwegian companies become leaders in the utility of renewable resources, e.g. efficient value creation from wood or marine derived biomass, areas where Norway by tradition is strong.

- b. The Technology Strategy Board’s role is to stimulate technology-enabled innovation in the areas which offer the greatest scope for boosting UK growth and productivity. It promotes, supports and invests in technology research, development and commercialisation. It spreads knowledge, bringing people together to solve problems or make new advances. The UK has strong capabilities in bioscience through a combination of world-class academic research and a vibrant mix of small and medium-sized companies, particularly with an industrial biotechnology expertise. The Technology Strategy Board believes that it can support the UK to realise its potential to become world leader in this area - at the heart of the most dynamic region in the developing bio-based economy.
- c. Contact Details

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- d. Other organisations may choose to support or fund elements of the Partnership. If this happens, their additional contributions and requirements may be documented as an Appendix.

4. DURATION

It is planned that this MOU will be in place for the duration of the Partnership. The proposed duration of the Partnership is 3 years plus an additional 2 years to complete and evaluate any ongoing R&D projects. However, this is an estimate only and is subject to alteration by the IN and TSB at any time. Partnership activities will be planned and budgeted on a yearly basis.

5. PROJECT APPLICATION, ASSESSMENT AND MONITORING

- a. A joint project application, assessment and monitoring process will be designed, based on existing methods where possible. Organisations that receive funding from the Partnership for R&D projects will be funded by their own relevant national funding organisation. Decisions on the appropriateness of settling claims rest with the relevant organisation. Also if there are any non-routine matters to be dealt with, such as any concerns related to project progress, issues requiring resolution, or if there is any doubt as to the appropriateness of settlement of any particular claim or set of claims, then these will be discussed in reviews to be arranged by IN and the TSB.

- b. The application and monitoring process may be added as an Appendix when completed.

6. USE AND EXPLOITATION OF INTELLECTUAL PROPERTY

- a. IN and TSB agree not to cause or permit to be done anything which may damage or endanger the intellectual property of the project participant's title to such intellectual property, or assist or allow others to do so.
- b. The use of all intellectual property rights is to be determined by the project participant which owns those rights.

7. FINANCIAL ARRANGEMENTS

- a. As a general principle, TSB and IN will support the activities of project participants from their respective countries, i.e. TSB will support UK-driven R&D and IN Norwegian-driven R&D.
- b. IN's contribution to the funding for each activity is expected to be in line with standard Innovation Norway policy and criteria.
- c. TSB's contribution to the funding for each activity is expected to be in line with standard Technology Strategy Board policy and criteria.
- d. For any jointly funded activities the balance due to one party will be settled by invoicing the other party in arrears.

8. CONTRACTING AND RISK

- a. The joint IN and TSB grant support for co-funded Projects will be awarded through IN and TSB grant offer letters which are legally binding. Any special monitoring or reporting requirements should be included in the offer letters.
- b. IN and TSB are only responsible for their own part of co-funded projects according to the respective grant offer letter.

9. CONFIDENTIALITY

- a. Except as permitted by this paragraph, TSB and IN agree not to make or permit any disclosure of the existence or the terms of or any negotiations related to grant applications.
- b. Disclosure about grant applications is permitted to the extent that it is required by law or the general policies of the funding parties, e.g. the disclosure of the name and content of the grant letter for successful applicants.
- c. Announcements, grant calls and press releases about the partnership should be mutually agreed by written approval. Permission to publicise the Partnership in general should not be unreasonably withheld or delayed. The MOU document itself is public.

Authorised signatory on behalf of the Technology Strategy Board	Authorised signatory on behalf of Innovation Norway
Signature: Name: David Bott Director of Innovation Programmes	Signature: Name: Gunn Ovesen Managing Director
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Date:	Date:

Appendix 1 – Proposed Activities

1. Consultancy – identifying opportunities

Tender and manage the completion of a report on the high level opportunities and synergies for Norway and the UK. A follow up report focusing on more specific market or technology areas may be commissioned on completion of the initial study. The initial report is being funded jointly by the UK's Biosciences KTN (a networking organisation funded by the Technology Strategy Board) and Innovation Norway.

2. Online Networking

Innovation Norway intends to build a national Industrial Biotechnology web portal. The Technology Strategy Board will generate a UK-Norway group on its *Connect* site to promote online networking. One could envision building a system for functional integration between the national relevant web sites, and this integration may involve some cost. Management time will be required on both sides.

3. Physical Networking

In order to identify and encourage collaborative projects, the partners intend to organise networking events in both the UK and Norway. These events could be study trips, seminars, matchmaking or could also focus on knowledge transfer within a specific topic or opportunities for venture capital. They might also be aligned to other events e.g. conferences or site visits. The parties envision 2-4 events per year, contingent on each party's annual budget. Management time will be required on both sides.

4. Pilot and Demonstration Facilities

Industrial biotechnology and biorefining projects often require access to pilot or demonstration facilities and expertise on process development and scaling-up. The UK and Norway has a number of centres of excellence that provide these capabilities. These facilities will be highlighted to stakeholders in both countries, through presentations or study tours.

If such facilities identify areas of cross-border complementarity, for instance if one UK facility focuses on fermentation technologies, while a Norwegian facility focuses on separation technologies, the facilities may wish to form a business relationship involving co-marketing, exchange of personnel and joint management of specific projects. Exchange of technical personnel to encourage knowledge transfer and technical interaction might be supported. Management time to organise visits and stimulate partnerships will be required on both sides.

5. Norway-UK collaborative R&D projects

Projects may include companies, research and technology organisations and academic research groups, funded through a competitive process. Projects could be at any stage along the technology or product development chain, but the specifications and budget for joint funding programs will need to be worked out and agreed before any calls are announced. Management time will be required for working out program details and potentially for managing calls. Based on previous programs the parties envision that a budget of 5 mill GBP could support 5-15 projects over the term of the agreement. Successful projects will be competing with other opportunities, hence this number is only indicative, reflecting the expected amount of opportunities and associated funding requirement and not a commitment on the parties to a specific budget frame. Whether projects involving only academia will be funded will depend on the participation of the respective Research Councils.

The general principle is that all grants should be based on predefined policy and quality criteria. Moreover, each country would only be obliged to fund their own organisations (i.e. their part of the budget of

successful projects). Each call for grant applications will have its own requirements e.g. topic, timing, minimum size of project, assessment criteria or a minimum level of bilateralism.

Examples of potential topics:

- a. Feasibility projects where marine or terrestrial feedstocks are used to create high value products and biofuel
- b. Development of novel technologies for biocatalytic conversion
- c. Pilot scale demonstration of novel processes

An alternative funding scheme would follow the Norwegian IFU contracts, where cost is split between a larger business partner (a so called “demanding customer”), a technology developer (typically an SME) and Innovation Norway. This scheme would be suitable for projects involving a UK large chemical company and a Norwegian SME developing a relevant process.

Knowledge Transfer Partnerships is Europe's leading programme helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. It might be possible for UK companies to accept graduates from Norwegian universities or vice versa.

6. European Projects

The Parties have the intention to monitor EU calls for funding and encourage consortia containing UK and Norwegian partners to bid into the calls assisted by the activities 1-3 above, for instance, the ERANET in Industrial Biotechnology or the CSA action on Marine Biotechnology.