



Engineering Biology Leadership Council – Meeting 07
Wednesday, 23rd March 2022
2h Online meeting

Attendees:

Prof Lionel Clarke (EBLC Co-Chair), George Freeman MP (BEIS, EBLC Co-Chair)(for the first hour), Dr Jason Vincent (Tropic Biosciences), Prof Richard Kitney (Imperial College London; SynbiCITE), Dr Dana Heldt (Innovate UK KTN), Prof Dale Sanders (John Innes Centre), Prof Joyce Tait (Innogen Centre, University of Edinburgh), Stephanie Croker (GoS), Dr Rowan McKibbin (UKRI-BBSRC), Dr Gordon Ford (UKRI-Innovate UK), Mark Renshaw (BEIS), Philippa Sharma (BEIS)

Invited Guest: Paul Mines, Biome Technologies

Apologies: Dr David Tew (GSK), Dr Tim Brears (BIA EBAC), Prof Tim Daffron (University of Birmingham), Prof Petra Oyston (Dstl), Dr Martin Cannell (Defra), Hannah Williams (DiT)

1. Discussions with George Freeman

Lionel Clarke (EBLC Co-Chair) welcomed everyone to the meeting. This meeting was the first attendance for George Freeman MP as the new EBLC Co-Chair.

He outlined his view on Engineering Biology and his ambition as Minister for Science, Research, and Innovation:

- Commitment for science, research, and innovation to be the centre of economic development. This is being reflected by the commitment to increase investment into R&D to 2.4% GDP and a £40billion budget over the next 3 years, ensuring funding is available to support the implantation of the Government's innovation strategy.
- He highlights the 4 key points for implementing the strategy
 - (1) Set up and alignment of Government offices
 - (2) Investment
 - (3) Making UK as Science Superpower which includes ensuring UKRI is setup to be the best ecosystem, attracting and keeping talent and skills, investment into UKRI, addressing global challenges and attracting global R&D
 - (4) Ensure UK becomes an 'Innovation Nation', which includes targeted intervention to support the catapults and ensure industrial partnering, exploring cluster opportunities, exploiting post Brexit opportunities for a new regulatory framework as outlined in the TIGRR report

A key question raised by George Freeman was if Engineering Biology is a technology or indeed a sector, aligning with Industrial Biotechnology.

Lionel thanked the Minister for his introduction. He opened the discussion on the key points the EBLC wanted to discuss. A briefing paper (Paper 2 Plans and Priorities) on those points was shared with the Minister and EBLC members ahead of the meeting.

1) Commercial translation

Richard Kitney lead this discussion, highlighting that there are about 180 start-ups/SMES in the UK and that there is a need for long term funding from the Government to attract private match funding. He mentioned that SynbiCITE has supported over 27 companies.

Ask: George Freeman asked for a list outlining those companies. Richard Kitney to share list with EBLC members and George Freeman

2) Manufacturing and scale-up

Scale-up capabilities such as CPI were highlighted with the note of accessing them is challenging for SME and start-ups due to cost. Lionel gave 2 examples of companies going abroad (C3bio, DeepBranch) to develop their products. DeepBranch has also received funding from Europe to build demonstration plants in the Netherlands. [check this]

Paul Mines provided an overview on the IBLF, their focus and the work they are doing. A one pager document, summarizing this, was shared ahead of the meeting. IBLF has members from large, small and medium size companies. He highlights Croda and Unilever as examples, together with Corteva, who have a product pipeline, but struggle to identify CMOs to manufacture those. There is a need for medium-large scale fermentation capabilities and work is ongoing to develop a business plan for such CMO facilities within the UK.

He emphasized that Industrial Biotechnology involves a variety of technologies with Engineering biology being one of them.

The lack of continuous funding was highlighted. Currently, UKRI does not provide funding that enables companies to develop technologies/products from PoC to commercialisation. In addition, funding for the Synthetic Biology Research Centers is coming to an end this month, which in turn is already resulting in the loss of staff and skills.

Ask: George Freeman asked for a breakdown of UKRI investment into Synthetic Biology. Considering it is an integral part of the Innovation strategy, continued funding is crucial. BBSRC are currently reviewing their portfolio, analyzing what has been supported. Approximately over £400mio of expenditure through UKRI so far. UKRI to provide a public investment overview.

AgriTech was briefly mentioned as one of the key areas where engineering biology can make a huge impact. Due to limited time available for a detailed discussion, it was agreed that Joyce Tait would send the main points on this subject to George Freeman.

George Freeman picked up his introduction question of Engineering Biology being a technology or sector and the need to consider a more strategic case. To make impact, a sector approach should be considered, where the sector could be called 'biosciences for industrial applications' which covers the non-health parts of life sciences. The pitch is centered on the opportunities in an 'amazing era for biology' where it can help to solve global issues and generate revenue for the UK. Engineering Biology would be a key technology (which turbocharges 75% of IB, and which synbio and agri-tech would feed into).

Further discussion on this strategic approach of an overarching, broader Industrial Biotech sector is needed, and George Freeman suggested to reconvene in the next 1-2 month for a round table discussion with Industry representatives, Investors as well as Defra, DiT to scope out next steps.

2. Follow up from Discussion with George Freeman

It was agreed that synergy is crucial and next steps as well as which actions to take need to be discussed further offline.

Action: EBLC members to draw up a preliminary draft what an EB/IB-based sector could comprise, to be shared with Minister Freeman for his initial feedback and guidance, ideally within 1-2 weeks, before working up in more detail with BEIS as a basis for his envisaged roundtable discussion. Lionel Clarke to initiate this process with a draft to be circulated for co-development with EBLC members.

3. Internal Business

Minutes from the last meeting where approved, with the note that the outlined actions were no longer applicable and should be reworked and assimilated as relevant to the new targets identified in this meeting.

4. Biosecurity

The cabinet office is looking for advice and support on implementing the Biosecurity strategy. It was suggested to set up a subgroup to scope out how best to help companies to innovate safely.

The set-up of such group was endorsed by EBLC members. Lionel Clarke will follow up with Petra Oyston and Piers Millet who was suggested to lead the group.

5. Stakeholder update

Update from Science and Technology Group

The minutes from the S&T group were shared ahead of the meeting. Richard Kitney highlighted 2 key points.

- Education and training: Industries require trained personnel beyond Masters and PhD level, eg technicians
- UKRI has been funding capex but not opex

In response to the S&T subgroup update, Rowan responded that UKRI BBSRC are committed to training and skill retention, opex is required for skills funding and this can be harder to secure. The division between opex and capex and the rules pertaining to their use, are governed by Treasury and therefore it is unlikely that we will be able to change these.

Brief discussion on investment took place and the need to train companies looking for investment, as well as investors.

6. AOB

No other business was raised.

Actions

The actions are summarised in the table below

Actions	Description	Responsibility	Due date	Progress /outcome
7.1	Share Synbio/Engbio SME list with EBLC and George Freeman	Richard Kitney	asap	done
7.2	Provide Breakdown of UKRI investment into Synthetic Biology	UKRI representatives	asap	done
7.3	Draw up a preliminary draft what an EB/IB-based sector could comprise.	Lionel Clarke	Beginning of April	done