

## **1. Summary**

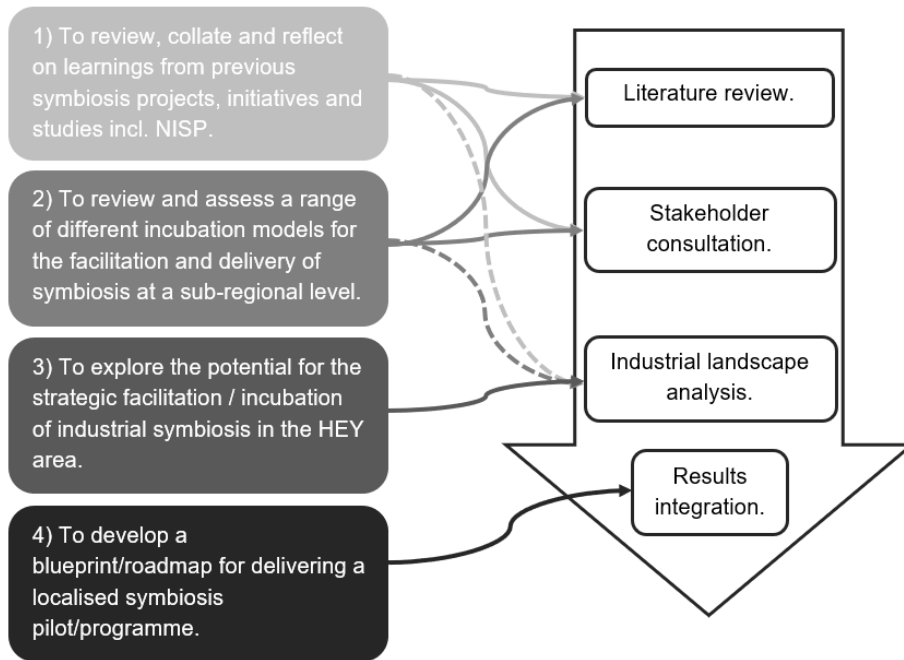
1.1. This report updates the LEP Board in relation to the recently commissioned industrial symbiosis feasibility study completed for the HEY Region.

## **2. Recommendations**

2.1. That the Board notes the latest progress report.

## **3. Background and methodology to the study**

1. The study was procured by the HEY LEP using funding secured from the North East and Yorkshire Net Zero Hub (NEYNZH), a collaboration between six Local Enterprise Partnerships with the aim of accelerating the transition to 'Net Zero' and facilitating further clean growth through local energy delivery. The study was undertaken by International Synergies Ltd in association with the University of Leeds and the Yorkshire Circular Lab. International Synergies are recognised as one of the world's leading consultants in the field of industrial symbiosis.
2. The study which was concluded in March 2023 investigates the potential to develop a viable model for the strategic incubation of industrial symbiosis opportunities that would support the development of a sustainable circular economy approach within Hull and East Yorkshire. The overarching purpose of this project is to identify an optimum viable delivery pathway to incubate industrial symbiosis and circular economy principles in the HEY region, leading to a more efficient utilisation of energy and materials sourced from the area's key sectors in a way that delivers environmental, social and economic benefits.
3. The core objectives of the study were:
  - To review, collate and reflect on learnings from previous symbiosis projects, initiatives and studies (including NISP®).
  - To review and assess a range of different incubation models for the facilitation and delivery of symbiosis at a sub-regional level.
  - To explore the potential for the strategic facilitation/incubation of industrial symbiosis in the HEY area.
  - To develop a blueprint/roadmap for delivering a localised symbiosis pilot/programme.
4. The methodology is illustrated in the diagram below:



#### 4. Study findings

1. It was determined from evaluating previous industrial symbiosis funded activity under the NISP programme and from the literature reviews and stakeholder discussions that the HEY region has significant opportunities for industrial symbiosis. The area is home to significant manufacturing capacity. Since the public funding stop for NISP in 2012 there is now a growing willingness to focus more on resource utilisation and waste reduction as evidenced by for example the development of a Yorkshire and Humber Circular Economy Framework Strategy and the production of the Humber Industrial Cluster Plan. This strategic approach is strengthened further by commercial input cost pressure realities, increasing supply risks due to geopolitical factors, and ever-increasing demands by consumers for low or zero-carbon products.
2. The region has a diverse industrial structure with a mix of established and emerging industries, the latter especially around low carbon energy. The industrial diversity could enable significant industrial symbiosis, including heating and cooling synergies, if effectively managed in addition to making the area more functionally attractive for inward investment.
3. Whilst individual examples of symbiosis can happen without external facilitation these examples are rare, tend to be very specific and often between our larger businesses. Opportunities within the SME sector are much more difficult to realise without match making capacity. A recent workshop facilitated by the consultants, in partnership with the TransFIRE hub, in the HEY region in April demonstrated the latent demand (particularly in the SME sector) for facilitated 'trading/matchmaking' of under-utilised resources with 274 potential matches recorded during the short session.
4. As part of the study several delivery options were considered ranging from self-facilitated model between companies to a fully funded, facilitated model incorporating an ICT platform for matching and trading resources between companies. The recommendation from the consultants is to consider the latter if resource synergies are to be fully maximised and accelerated in line with driving the growth of the region's industry whilst meeting the aspirations of a Net Zero economy.

## **5. Options for consideration**

1. Do nothing – Industrial symbiosis may continue largely unrecorded on a small scale and between individual companies where commercial need is a key driving factor. This is most likely to happen between large, interconnected businesses but the overall resource utilization will be sub optimal across the wider economy especially within the SME sector.
2. Implement and promote an online resource matching platform to allow companies to trade resources between themselves. There are existing platforms available commercially including a system managed by the consultants ISL who undertook the study. Estimated annual costs for their system is £50k.

Implement a fully facilitated model including a platform mentioned above. In this scenario advisors with both technical and sectorial local knowledge would be employed as a dedicated resource (employed directly or through an industrial symbiosis delivery partner) to engage directly with companies to determine and establish synergies between parties. This model would allow activity to be monitored and co-ordinated in a systematic way and allow the programme value to be demonstrated. The cost of this option is scalable depending on the number of advisors but could be circa £300k - £400k per year.