

Global trends

The industrial transformation from traditional heavy industry into clean tech requires industries to cooperate across traditional sector boundaries. To this end, industrial symbioses have been the focus of intensive research for the past 15 years. This research has mainly focused on describing the functions within existing industrial areas and how to measure their success. Far less emphasis has been put on the development of altogether new sites for industrial symbiosis and the concomitant technical, economic and regulatory conditions for successful symbiosis design.

There is thus a great need to create new tools for industrial symbiosis creation. Obsolete industrial and spent land areas offer a good scope for such tools. For example, as a result of changing waste regulation, landfill site operators across Europe are losing their traditional role of waste managers. At the same time, however, the sites offer business possibilities for recyclers and energy producers, they have installed capacity on electricity, heat and water as well as road infrastructure, and finally, their environmental permits often allow for easy access for new industrial entrepreneurs. Obsolete mining sites offer a similar challenge from land use perspective. The tools required include business models, specific cross-sectorial technological concepts for industrial symbiosis as well as grounded regulatory analysis of the case context. Combined, these elements contribute to a comprehensive process model of industrial symbiosis creation.