



INDUSTRIAL BIOTECHNOLOGY IN SWEDEN

INDUSTRIAL BIOTECHNOLOGY IN SWEDEN¹

INTRODUCTION	3
A. Public research funding	4
B. Pilot and demonstration plants	4
i. pilot plants	4
ii. demonstration plants	5
II. POLICY	6
A. Policies and regulations	6
B. Public procurement	6
C. Standardisation, labelling and certification	6
D. Access to finance	6
E. Communication	6

Released in January 2009

¹ Please send your contributions and modifications to [a.peeters\[at\]europabio.org](mailto:a.peeters[at]europabio.org)

INDUSTRIAL BIOTECHNOLOGY IN SWEDEN

INTRODUCTION

The Swedish biotechnology industry was ranked amongst the top five in Europe in 2000, and biotechnology has been defined as one of the priority growth areas by VINNOVA, which is the main policy agency to support problem-oriented research in the country. For a few years now, the agency has been supporting industrial biotechnology via several programmes. Industrial biotechnology is not the most developed biotechnology in Sweden but it represents an important opportunity for further development of the biotech sector in the country. Indeed, a number of prerequisites are there: raw material, pulp and paper industry, high level of R&D support and competence in life science... Building on those strengths, Swedish industrial biotechnology actors are now aiming at improving the regulatory framework for their development and increasing awareness amongst citizens, enterprises and politicians about industrial biotechnology and bio-based products.

RESEARCH AND INNOVATION

Modern industrial biotechnology is a relatively new discipline, with major areas of knowledge still to be explored. Public support to research as well as the establishment of pilot and demonstration facilities to scale-up individual processes will therefore help in the development of a European bio-based economy.

A. Public research funding

Vinnova², the Swedish Governmental Agency for Innovation is member as partner of the European Network Area on Industrial biotechnology (**ERA-net IB**)³.

Vinnova has a **programme dedicated to industrial biotechnology**⁴. It aims to stimulate research and development and the implementation of industrial biotechnology in various sectors in order to promote more environmentally friendly processes linked to economic growth. SEK 50 million was granted in the first call as project support in 2008.

Mats Jarekrans⁵ is in charge of the programme.

VINNOVA also runs a programme named "VINNVÄXT"⁶ which in June 2008 granted SEK 13 million to Processum Biorefinery Initiative for a project called "The future biorefinery".

Mistra⁷ (The Foundation for Strategic Environmental Research) funds a programme called Greenchem – Specialty Chemicals from Renewable Resources⁸. The program runs from 2003 to 2010 with Lund University as the main contractor. The Mistra support is SEK 71,4 million. A group of 8 industries which represent renewable raw material providers as well as producers and users of chemicals participate in the programme.

B. Pilot and demonstration plants

In October 2008, a delegation from the Swedish actors' group for industrial biotechnology, established by BioteknikForum⁹, met with the State Secretary of the Swedish Ministry of Enterprise, Mr. Jöran Hägglund. This meeting was the start of a dialogue on the possibility of establishing a joint effort regarding a Swedish pilot/demonstration plant. The dialogue will continue.

i. pilot plants

Piteå

Solander Science Park	
General, products, feedstocks	The approach is multidisciplinary and research projects in areas such as raw material characterization and supply, thermochemical and biochemical conversion of biomass, process integration and energy-economic system analysis are suggested.
Services	A full list of infrastructure is available on http://www.solandersciencepark.se/research/appendix/

² www.vinnova.se

³ <http://www.era-ib.net>

⁴ www.vinnova.se/In-English/Activities/Biotechnology

⁵ Mats.Jarekrans@VINNOVA.se / +46 8 473 31 85

⁶ <http://www.vinnova.se/In-English/Activities/Strong-research-and-innovation-environments/VINNVAXT/>

⁷ www.mistra.org/mistra/english/whatson

⁸ <http://www.greenchem.lu.se/>

⁹ <http://www.bioteknikforum.org/>

Financing	Public
Contact	Rikard Gebart rikard.gebart@solandersciencepark.se / Magnus Marklund magnus.marklund@solandersciencepark.se http://www.solandersciencepark.se/

- a) Open to all
- b) Partly restricted
- c) Restricted

ii. demonstration plants

Örnsköldsvik (Processum Cluster)

SEKAB's Ethanol Research and Development Plant	
General, products, feedstocks	The current raw material used in the development process is wood chips from pine trees, but other raw materials such as bagasse from sugarcane, wheat and corn stover, energy grass and recycled waste are also of future interest for the project.
Services	It has a capacity of 300-400 litres of ethanol per 24 hours.
Financing	Public private partnership
Contact	http://www.sekab.com/default.asp?id=2018&refid=2030

The biorefinery cluster in Örnsköldsvik (**need for more information**)

The processum cluster (**need for more information**)

- a) Open to all
- b) Partly restricted
- c) Restricted

II. POLICY

Public authorities can promote the quick take-up of industrial biotechnology innovations by implementing a number of “instruments” or policy initiatives. This can be the improvement of the regulatory framework; the integration of specification for bio-based products in public procurement; the establishment of standardisation, labelling and certification schemes to overcome perceived uncertainty about product properties and weak market transparency; the development of financial instruments and supports to increase investments into research, technology development and innovation as well as the elaboration of communication and information campaign to communicate the benefits of bio-based products to users.

A. Policies and regulations

No information.

B. Public procurement

So far there is no public procurement policy established for bio-based products.

C. Standardisation, labelling and certification

The Swan label¹⁰ applies in Sweden. This label has been introduced by the Nordic Council of Ministers with the objective to promote a more sustainable consumerism with the goal of creating a sustainable society.

In this voluntary system, the applicant agrees to follow a certain criteria set outlined by the Nordic Ecolabelling in cooperation with stakeholders. These criteria include environmental, quality and health arguments. The criteria levels promote products and services belonging to the most environmentally sound and takes into account factors such as free trade and proportionality (cost versus benefits).

The Swan label does not communicate specific bio-based properties/qualities as a specific labelling system does not exist for bio-based products.

D. Access to finance

No information.

E. Communication

Industrial biotechnology companies are represented via the national association BioteknikForum¹¹. Discussions are ongoing with several Swedish organisations with the aim of establishing improved communication channels for white and green biotechnology in early 2009. BioteknikForum also wants to formally establish a Swedish Technology platform.

¹⁰ <http://www.svanen.nu>

¹¹ <http://www.bioteknikforum.org/>