



FDA

intensifies 'watchful eye' on
Ranbaxy

Criticism vs
Biotech progress

“ Irrespective of VCs' fears, biotech manages to pool in the required money for investment. ”

Dr. Maloy Ghosh, Head R&D, Theramyt.



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Campus Watch



Tete-a-tete with **Biorizon**

Given the global challenges that society is facing with respect to CO₂ emissions, pollution, global warming and shortage of suitable fossil oil reserves, new biobased production routes need to be realized urgently to address the ecological and economic challenges that humanity and industry are facing.

The Netherlands is well on its way towards a workable, yet innovative solution to this dilemma...

Biorizon OF Netherlands

Aromatics represent a significant share of our today's chemical building blocks, not only to create fuel components, base chemicals or polymers, but also to create polymer additives, colourants, flavours and fragrances. The market for aromatics is growing 5 to 10% annually. Virtually all aromatic building blocks are made from fossil oil that will become scarce. Hence, it is important to develop technology to replace the current aromatic petrochemical based building blocks by alternative feedstock. Shale gas and shale oil are rapidly emerging as a new feedstock, and they produce no aromatic compounds contrary to fossil oil and naphta.

The Netherlands TNO and Green Chemistry Campus, in collaboration with Belgium's VITO recently announced the launch of Biorizon. This Shared Research Center is anticipating the expected growing shortage of aromatics from the petrochemical industry and the widely shared ambition to green the chemical industry. Biorizon has received €2.5 million start up funding that enables them to start working on innovative technologies to develop aromatics out of agro-residuals. Biorizon's ambition is to become one of the world's top centers within five years. Currently Biorizon is attracting global leaders as well as SME's in the fields of feedstock, conversion, equipment and end products to join the Center. By 2020, the EU intends to be a leading biobased economy with a global market value of €200 billion.

By the year 2022, Biorizon aims to achieve mass commer-

cialization and production of biobased aromatics. Most lab activity and research will occur between years 2013 and 2019. For effective production of bulk aromatics and specialty aromatics,

If this research is successful, pharma companies can look to biobased aromatics for the production of greener products.

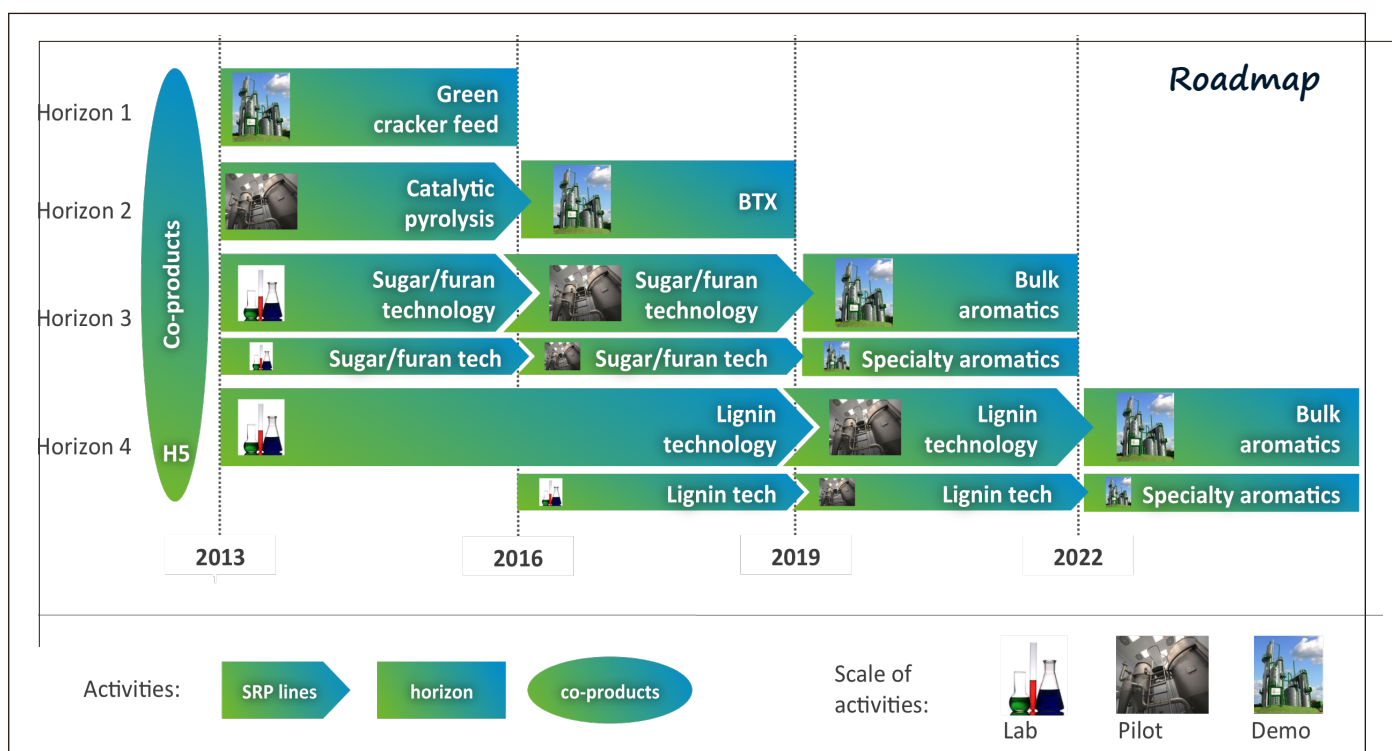
Talking more about this development, we have the researchers of Biorizon facilitating us with more details over an interview as below:

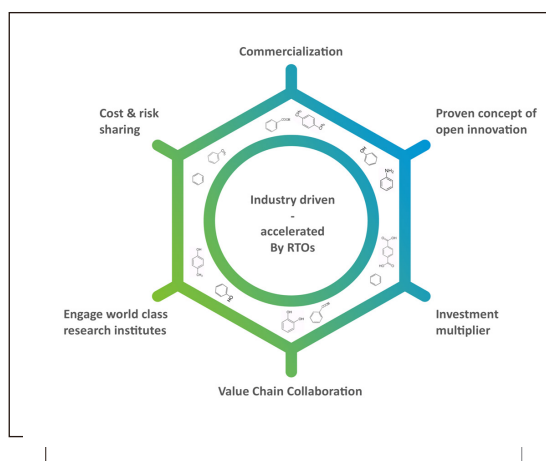
Q. "Aromatics out of agro-residuals," how did this initiative of working on biobased aromatics conceptualize? How did the union between TNO, VITO and Green Chemistry Campus happen?

A. Initially the Green Chemistry Campus was founded as part of the Bio Based Delta, the area covering Antwerp and Rotterdam. Open innovation was at the heart of the strategy of the GCC and both VITO and TNO picked up this strategy to form a Shared research program. Based on Industry consultation the big need for Bio Based Aromatics was selected as the focus and the program was branded "Biorizon - The way to Aromatics"

Q. The tagline says 'The way to Aromatics'. Could you throw some insight on the products and services by Biorizon?

A. Biorizon is a shared research program, so we develop





Biorizon
The way to aromatics

new technologies. It is very much focused on industry so we go from lab scale to pilot scale to demo scale and deliver profitable bio-based aromatics solutions. The target Bio Aromatics include phenol, phthalic acids, functionalized specialty aromatics, lignin applications (polymeric, oligomeric).

Q. Are there more products and services in store?

A. Typical results we deliver to our participants are Roadmaps, early Business case analysis (including legal and corporate affairs, and financials), bench/pilot scale demonstrators, detailed experimental results, samples of product (for evaluation and market testing) and IP rights.

Q. Biorizon is using lignin technology and sugar/furan technology. Could you detail us more about the technology involvement in the making of aromatics? What is the science behind making of bioaromatics?

A. In the sugar/furan program line we focus on highly selective catalysed chemical pathways to bio aromatics. The chemistry we use is highly versatile and allows for tailor made pathways to very

specific target bio aromatics. In the lignin program line the expertise is in modifying, cracking and functionalising lignin to fine tune the properties to the specifications needed for applications.

Q. Biorizon has received € 2.5 million start up funding to enable them start working on their innovative technologies. How easy or difficult was it to attract venture capitalists for setting up Biorizon?

A. Attracting investments is always a challenge in the early stage when the risk is still high. We have been fortunate in setting up a good cooperation supported by the European Union/Netherlands/Flanders and province of Noord Brabant. Having a strong industry based vision backed up by a technological differentiating roadmap was key in this.

Q. Biorizon's ambition is to become one of the world's top centers within five years. What is the roadmap laid to achieve the set target? Who are all the participating research organizations?

A. First of all we have a clear focus and roadmap for profitable routes to bio aromatics. Secondly VITO and TNO initiated Biorizon and we expect 2 more RTO's from the top of Europe to join shortly. Thirdly we have a cooperation model that involves industry and all their experience and knowledge. The combined intelligence and created critical mass will bring us to global top, which is nothing less than our customers expect from their partners.

Q. Does Biorizon face any competition in the market across the globe?

A. There are other initiatives towards Bio Aromatics, such as Gevo, Virent, Micromidas, Amyris. We think that our technology and way of working both provide us with a strong competitive edge.





Q. Are there any plans for Biorizon to engage with Indian pharmaceuticals and biotech companies any time in future?

A. These plans are not fixed yet, however Professor Ludo Diels who is the Biorizon contact from VITO has strong contact in India and travels frequently to the country.

Q. Are there any incentives for foreign investors, say India to do R&D and manufacturing in Netherlands?

A. The knowledge base, facilities and way of working together are strong arguments as well as the close proximity to leading players in both the agro and chemical industry.

Q. How friendly are the government policies and framework for biotech and life science start ups in Netherlands?

A. Bio-based initiatives get strong support both from an EU as well as from a National point of view.

Q. Would you like to send out a message to our global readers?

A. Profitable technologies for functionalised Bio-based Aromatics are being developed in Biorizon using a smart way of working together in shared research. If you want to be a participant in this please contact Joop Groen, Manager, New Business Development Biorizon (Email joop.groen@tno.nl)

About the Biorizon Initiators:

TNO

TNO is an independent research organization that, on the basis of its expertise and innovations, makes an important contribution to the competitive strength of businesses and organizations, the economy and the quality of society in its entirety. TNO occupies a unique position thanks to its versatility and its capacity to integrate this knowledge.

<http://www.tno.nl>

VITO

As an independent and customer-orientated research organization, VITO provides innovative technological solutions and makes scientifically-based recommendations and provides support to stimulate sustainable development and reinforce the economic and social fabric of Flanders.

<http://www.vito.be>

Green Chemistry Campus

The Green Chemistry Campus, located on the SABIC Innovative Plastics site in Bergen op Zoom is an incubator where businesses accelerate their bio-based innovations on the cutting edge of agro and chemistry. The campus is an initiative of the Province of North Brabant, the Municipality of Bergen op Zoom and NV REWIN West-Brabant.

<http://www.greenchemistrycampus.com>

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"Hank, I'm not one to complain about budget cuts, but regarding these new 'microscopes' ..."