

Austrian Production Technologies – Better, Faster, Cheaper

Austria has a wide variety of companies providing enabling technologies across the whole value chain of production processes. These range from good manufacturing practice (GMP) know-how for setting up pharmaceutical plants to companies producing plasma, special enzymes and other biological substrates and even stem cell products for the repair of bones, cartilage or muscular tissue. Service providers such as good clinical practice (GCP) specialists help pharma or biotech companies and clinical trial units at hospitals to manage local or multicentre clinical trials to the highest regulatory standards. Close cooperation between universities, research centres and industry as well as highly trained and experienced local scientists, experts and technicians ensure the highest quality of products and services.

Serving the Pharmaceutical Value Chain

With an established and highly integrated industry, offering products and services underpinning production processes, Austria is in a strong position to compete in the world marketplace for globalised life sciences.

To reinforce this already strong position, Austria recently founded two world-class research centres as an engine for enterprise: the Austrian Centre of Industrial Biotechnology (ACIB) and the Research Centre Pharmaceutical Engineering (RCPE). The ACIB, with locations in Vienna, Graz and Innsbruck, focuses on coordinating the applied biotechnological research of seven Austrian universities and around 30 international companies. The Research Centre Pharmaceutical Engineering GmbH (RCPE) is an interdisciplinary research institute in the area of pharmaceutical process and product development located



in Graz. The RCPE focuses on the development and production of pharmaceuticals using efficient, science-based methods, as well as their manufacturing processes. The success of the RCPE has already resulted in its first spin-off, Pharmaceutical and Regulatory Services, which is a full service provider for pharmaceutical regulatory affairs.

These research centres reflect the pioneering spirit of companies across Austria, active in pharmaceutical production. The many innovative technologies make processes more efficient and less costly, and increase functionality, giving Austria the edge on the global stage.

With established drug developers comes a need for outside support from suppliers and service providers. Austria has met the challenge with

a plethora of businesses such as suppliers of clean rooms, preclinical research facilities, reagents, prion testing, essential basic materials including glassware, right up to GMP plants and GCP quality assurance. There is enough diversity in the Austrian industry to build supplier networks that are never more than one flight-hour apart and can truly be labelled “Made in Austria”. The following are just some of the really dynamic enabling technology companies supporting the whole value chain of pharmaceutical production in Austria.

Microinnova launched the Flow Miniplant as a tool for development and small-scale production in pharmaceutical and fine chemical companies - resulting in significant time and cost savings for clients. The engineers at Microinnova

REGULATORY & MARKET PLACE

have constructed manufacturing equipment in continuous flow mode for companies like Novartis, Roche, SigmaAldrich and Sandoz. A current collaboration including Evonik-Degussa and the IMM Mainz are aiming to design the chemical plant of the future.

For those companies looking to outsource production, Austria has its own home-grown contract manufacturing organisations (CMOs) as well. EUCODIS Bioscience, for example, is an application-driven, enzyme-engineering company with customers in the pharmaceutical, biotechnology, diagnostics and other industries. The company manufactures and markets over 50 well-characterised enzymes worldwide with a renowned customer portfolio, including Sandoz. piCHEM is a top producer of high-performance chemicals used in medical, biochemical, and pharmaceutical R&D. Montavit is another GMP-certified manufacturer focusing on sensitive plant extracts as well as developing and producing their own line of medicines.

At the very end of the pharmaceutical value chain, when products are ready to be positioned for the market, are companies such as Stoelzle Oberglass. The company's goal is to work with customers to produce innovative packaging solutions for current market trends that meet customer demands, whether it be for lightweight glass bottles, or demanding shapes, as well as specific sealing solutions. In close cooperation with Stoelzle, Tubex is one of the leading companies in the packaging industry and specialises in the production of aluminium-aerosol cans, aluminium tubes and plastic tubes. The Austrian site is one of the most modern aluminium tube plants in the world. Over 140 highly-motivated members of staff bring in all their know-how to manufacture aluminium tubes in different sizes and makes for the pharmaceutical market.

Advancing Life Science at the Heart of Europe

The life science industry in Austria is fully diversified with companies



large and small as well as a number of multinational companies headquartered in or with facilities here - though it is small to medium-sized companies that predominate across a whole range of disciplines. The truly remarkable factor in the Austrian life science scene is the degree of cooperation between producers, networks of suppliers and service providers all within a short distance, meaning that the results are truly "Made in Austria!"

Austria has over 210 life science companies employing approximately 11,500 people. Over 90% of these are small and medium-sized companies.

Additionally, there are around 600 companies acting as suppliers to the industry for components and services, meaning that in many cases the value chain is entirely Austrian. In addition to well-known large multinationals (including Sandoz, Roche, Greiner Bio-One, Med-EL, Baxter and Otto Bock, Boehringer-Ingelheim), many of the other companies are themselves market leaders and are well known to global industry experts. For a small country with a population of just over 8 million, that marks a very significant contribution to life science in Europe. It is also a key component of the Austrian economy and one that is

REGULATORY & MARKET PLACE

valued and supported by the national and regional governments.

This thriving environment of successful and innovative companies has put Austria firmly on the European life science map. The combination of global players with research facilities in Austria and young, dynamic start-ups in close cooperation with excellent universities creates an ideal environment for the development, growth and prosperity of the Austrian life science industry. The average Austrian biotechnology company is just seven years old, yet the industry has reached a critical mass within a very short time period and has grown into a major economic force.

Austria – the Place to do Business

In recent years, the strength of the growing life science sector has been reflected in the increasing interest shown by international business in doing deals with companies in Austria. And it is not just the proliferation of corporate deals that shows Austria in a good light; the country is also proving to be an attractive location for operations and significant inward investment for a number of multinational companies.

Since 1982, the American group Baxter has been running its biggest subsidiary outside the US and its most important research site worldwide in Austria, with over 4000 employees. More than 900 scientists from home and abroad are currently working on the discovery of new drugs as well as the enhancement of medications that are already on the market. Baxter's biosciences division in Austria focuses on developing and manufacturing biotechnological and biopharmaceutical therapeutics, of which 90 per cent are being exported. The German prosthetics manufacturer Otto Bock has also located a key facility in Austria, improving and restoring the lives of patients all over the world.

These investments come on top of a whole series of international venture capital investments in Austrian life science companies. In 2010, funding of the Austrian life science sector totalled around €79 million from venture capitalists, private investors, grants, loans and other contributions.

A further €37 million was invested in Austrian medical technology companies.

So why does Austria have such a great reputation for life science investment? The New York-based Reputation Institute has conducted a study that shows Austria is ranked ninth out of 50 countries in terms of trust, reputation, admiration and positive image. Also, the Mercer Study 2011 ranked Vienna as the city with the highest standard of living in the world. Austria's extensive infrastructure and its enviable location at the geographic heart of Europe are also significant reasons. Add in additional factors such as the excellence of the Austrian workforce, the renowned quality of its education system and the top-tier status of its research institutions, and it is easy to see how many companies find Austria a compelling location for doing business.

Infrastructure

Great infrastructure is a key driver of the life science industry in Austria. Across Austria, a succession of science parks, incubators and tech transfer initiatives has ensured the growth of the indigenous industry as well as attracting a plethora of established multinational concerns. This is an ongoing process with a constant stream of new initiatives and investments being added to the existing ones.

Austria's World-Class Research Base

Austrian medical universities focus on state-of-the-art R&D for new therapeutic substances with more than 55,000 people involved in medical research. Besides the medical universities, there are also renowned academic bodies that significantly contribute to life sciences research in Austria and that have generated many successful life science spin-offs. BOKU, for instance, is the main university in the country for natural resources and life sciences, while the Graz and Vienna Universities of Technology play an important role in life science research and in the training of skilled engineers.

Alongside the universities, the

Austrian Academy of Sciences (AAS) is the leading organisation promoting non-university-based academic research institutions in Austria. The AAS's life science research portfolio is conducted in institutions including the Research Centre for Molecular Medicine (CeMM), the Gregor Mendel Institute of Molecular Plant Biology (GMI), the Institute for Biomedical Aging Research (IBA) and the Institute of Molecular Biotechnology (IMBA). It is also worth noting the Institute of Science and Technology Austria (IST Austria), a PhD-granting institution located in the Vienna Woods and one of the principle locations of research in the natural sciences including bioscience and the Austrian Institute of Technology (AIT), Austria's largest non-university research institute with a research focus on grand societal challenges. Research at the Institute of Molecular Pathology (IMP) spans a wide range of topics. The common goal in all of these areas is to elucidate the mechanisms and principles that underlie complex biological processes.

From Bench to Boardroom

Arguably, much of the recent investment success would not have been possible without a government that backs innovation and supports outstanding academic research. The resulting cutting-edge research at Austrian universities is the source of technology transfer to the many start-up companies proliferating in the Austrian life science scene.

The Austrian government is committed to this burgeoning sector and is helping to foster a business environment that allows these young spin-off companies to thrive. With R&D investment in 2011 at an all-time high of 2.79% of GDP, Austria already invests far more into R&D than the EU average. The government's new strategy for research, development and innovation aims even higher: to make Austria an innovation leader within the European Union and to raise the share of R&D investment to 3.76% of GDP by 2020. There is also a very supportive and attractive tax regime, an R&D cash premium of 10% and a maximum corporate income tax of 25%.

REGULATORY & MARKET PLACE

Sources of Finance

The most innovative ideas in life sciences only make a difference once they've survived the journey from the laboratory bench to commercial launch. However, that journey requires careful nurturing in a supportive funding environment. Austria has developed a wide range of national and regional funding schemes to back new companies embarking on this journey towards business success. Focusing on start-up ideas in biotechnology and medical devices, *austria wirtschaftsservice*, the Austrian government promotional bank, provides financial support through two custom-designed funding programmes: "PreSeed LISA" and "LISA Seedfinancing".

PreSeed LISA provides funding for the critical phase before a life science company is actually set up. Costs relating to the implementation of the science and the development of a business plan for a project can be funded with non-refundable awards of up to €200,000.

Setting up an innovative, internationally competitive high-tech company needs significant know-how, courage and capital. LISA Seedfinancing supports this start-up phase by providing up to €1 million, combined with business advice. This seed financing is then refunded to *austria wirtschaftsservice* at the point a company is making a profit or is sold. Importantly, in contrast to bank or other more traditional loans, there is no requirement for customary securities. However to qualify for this funding a company must be partly and suitably funded through private capital.

Other *austria wirtschaftsservice* initiatives to support life sciences include guarantees and loans. In addition there is also a wide range of regional funding available.

A Country of Many Parts

Region by region, the life science industry is spread across Austria from the capital Vienna to the powerhouses of Styria, Tyrol and Upper and Lower Austria. Each region has its own special culture and particular strengths that are reflected in the industries located there. Organised

through regional life science clusters, LISA represents companies in the therapeutic, medical technology and diagnostic sectors as well as providers of enabling technologies and related service companies located in the following regions:

Committed to the Prosperity of the Austrian Life Sciences

The national body Life Science Austria (LISA) promotes the Austrian life science sector on the international stage and is the first point of call for enquiries relating to it. Organised through the regional life science clusters, the organisation represents companies in the therapeutic, medical technology and diagnostic sectors as well as providers of enabling technologies and related service companies located in the following regions:

- Lower Austria (*ecoplus*),
- Styria (*human.technology.styria*),
- Tyrol (Cluster Life Sciences Tyrol),
- Upper Austria (Health Technology Cluster),
- Vienna (LISAVienna)

LISA is run by *austria wirtschaftsservice* on behalf of the Federal Ministry of Economy, Family and Youth. The organisation is committed to the development, growth and prosperity of the Austrian life science industries as a leading component of the Austrian economy. On the international front, they work towards Austria becoming known worldwide for the excellence of its life science sector.

In the home market, LISA is a resource for all life science companies within, and all companies wishing to relocate to, Austria. They support companies in making connections locally and further afield. They also play a big part in helping new companies get started through their Preseed and Seed financing funding programmes. Every two years, LISA runs a life science business plan competition BOB Best of Biotech as our way of fostering a culture of excellence.

For more information, please visit: www.lifescienceaustria.at



Sonja Polan

is International Marketing Manager of LISA - Life Science Austria.



Previously she worked as Account Manager at the European Commission, mainly in charge of marketing telecommunications policies to the European public. The most important campaigns were for the newly established roaming regulation and telecom reform. Before the European Commission, she worked for a major Brussels-based European public affairs consultancy, and also had short stints with the European Parliament and with trade federations. She speaks German, English and French.

Email: s.polan@awsq.at