BioSpectrum
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ASIA EDITION

Lessons from Singapore's Success

02 October 2024 | Opinion | By Chen Pengfei, Vice President, Healthcare, Singapore Economic Development Board

Sustainability has been a growing focus within the biopharmaceutical sector

The Biomedical Sciences industry, which comprises the biopharmaceutical and medical technology sectors, is a key contributor to Singapore's economy. In 2022, the industry accounted for 2.3 per cent of Singapore's Gross Domestic Product and manufactured close to S$39 billion worth of products for the global market.

Singapore's pro-business environment, skilled talent, strong manufacturing capabilities and thriving research ecosystem have drawn global biopharmaceutical and medical technology firms here. These companies have significant innovation, manufacturing, and commercial presence in Singapore to serve global patients.

Biopharmaceutical manufacturing hub

Singapore hosts best-in-class manufacturing facilities from seven out of the top 10 pharmaceutical companies. In 2022, the biopharmaceutical sector produced more than S$19 billion worth of products for global markets - a threefold increase over the past 20 years. There are over 60 biopharmaceutical manufacturing facilities in Singapore across diverse modalities – from Active Pharmaceutical Ingredients to Biologics (Therapeutics and Vaccines) and Cell Therapies. These facilities hire more than 9,000 workers, 70 per cent growth over the past 10 years.

In the first half of 2024, several leading biopharmaceutical companies have announced manufacturing investments in Singapore.

Building biopharmaceutical manufacturing capabilities

Singapore welcomes biopharmaceutical companies to tap our ecosystem to develop, manufacture and commercialise products and solutions that can contribute to better healthcare outcomes not just in the region, but also globally. We are continuing efforts to strengthen our biopharmaceutical manufacturing capabilities in several ways:

Growing our Talent Pool

The availability of talent with the right capabilities and skill sets is critical so that companies can undertake process innovation and manufacture different modalities in Singapore. Besides ensuring a steady flow of STEM talent in our Institutes of Higher Learning, the Singapore Government supports companies' in-house upskilling of existing workers in new capabilities and re-training of mid-career talent from adjacent manufacturing industries. One example is the Career Conversion Programme for Biomedical Manufacturing Industry, which supports the training of workers to take on new job roles in the industry.

Encouraging Technology Innovation and Adoption

To ensure the continued best-in-class standing of manufacturing facilities in Singapore, companies will need to innovate and adopt new technologies continuously to enhance productivity and efficiency. Singapore has set up enablers in private-public pre-competitive consortiums, such as the Pharma Innovation Programme (PIPS) and Biologics Pharma Innovation Programme (BioPIPS), led by the Agency for Science, Technology and Research and supported by the Singapore Economic Development Board.

PIPS focuses on small molecules manufacturing and brings together leading pharmaceutical companies such as GSK, MSD and Pfizer, to partner local research institutes and universities to develop and implement new technologies such as biocatalysis, continuous manufacturing, particle engineering and digital twins for process operations. Such technologies will improve manufacturing processes and boost efficiency of manufacturing facilities in Singapore.

BioPIPS focuses on improving the productivity and sustainability of biologics manufacturing, and was launched in March this year with workstreams focusing on sensing and modelling, sustainability and compliant agility. Initial participating companies include GSK, Sanofi and BioNTech.

Sustainability in Manufacturing

Sustainability has been a growing focus within the biopharmaceutical sector. To support these companies in their decarbonisation journey, Singapore is helping companies to improve energy efficiency and reduce emissions, in line with the Singapore Green Plan 2030 and our national target to achieve net zero emissions by 2050. We are also facilitating access to cleaner, low-carbon sources of energy. For example, GSK recently announced that it has signed a 10-year energy deal with Sembcorp, which will enable the company to achieve 100 per cent renewable electricity at all three of GSK's global manufacturing sites in Singapore from 2025.

Biopharmaceutical companies in Singapore are also investing in their local operations to be more sustainable. Amgen for instance has three dedicated plants for water recycling on site that will help the company save 35,000 cubic metres of water each year, enough to fill 14 Olympic-sized swimming pools. Novartis is also working on various initiatives such as the installation of a solar farm and a planned biomass plant to achieve their sustainability goals.

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