

## AMGEN IN SINGAPORE

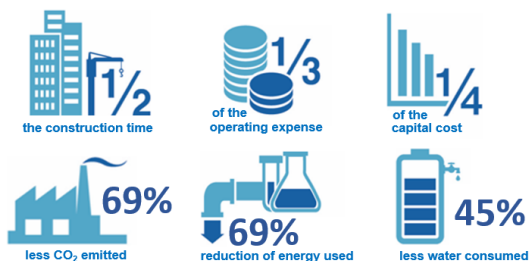
*Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.*

Amgen focuses on areas of high unmet medical need and leverages its biologics manufacturing expertise to uncover solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer for more than 35 years, Amgen has grown to be one of the world's leading biotechnology companies and has reached millions of patients around the world with a pipeline of medicines with breakaway potential. Amgen Singapore opened its groundbreaking Next-Generation Biomanufacturing facility in 2014 and a second Large Molecule Chemical Synthesis Manufacturing (API) facility at the Tuas Biomedical Park. A third Manufacturing Support building is currently underway and will be ready in 2018. Amgen also opened a commercial affiliate in December 2015 and has 10 innovative medicines now marketed in Singapore for patients suffering from serious illnesses.

## A REVOLUTIONARY APPROACH TO BIOMANUFACTURING

In November 2014, Amgen opened its revolutionary Next-Generation Biomanufacturing facility in Singapore. The plant is Amgen's first manufacturing site in Asia and its most innovative to-date. Incorporating multiple innovative technologies into a single facility, the Singapore plant is smaller, cheaper, more flexible and greener to build and operate when compared to conventional plants. Built in half the construction time, at approximately one quarter of the capital cost and one third of the operating cost required, the facility boosts a smaller manufacturing footprint and higher environmental efficiencies including reduced consumption of water and energy and lower levels of carbon emissions.

Compared to conventional manufacturing, Next-Generation Biomanufacturing requires:



The benefits of next-generation biomanufacturing are immense. Amgen's facility adopts a highly flexible, modular design which can be replicated in future facilities, enabling Amgen to increase production capabilities reliably with greater speed, productivity and flexibility. By enabling it to easily switch between different types of equipment to produce different drug substances, this eliminates costly and complex retrofitting inherent in standard facilities and allows Amgen to respond to changing demands with greater agility, ultimately impacting the speed at which a drug is available for patients.

### AMGEN MISSION

To serve patients

### AMGEN QUICK FACTS

Global Headquarters  
Thousand Oaks, California

#### Staff

Approximately 20,000 worldwide  
More than 300 staff in Singapore

#### Stock Listing

NASDAQ: AMGN

#### 2017 Financial Highlights

Total revenue: \$22.8 billion  
Product sales: \$21.8 billion  
R&D expense: \$3.6 billion

#### Amgen Singapore Leadership

Arleen Paulino, Vice President  
Site Operations, Manufacturing

Raphael Ho, General Manager  
Amgen Singapore Affiliate

#### Amgen Singapore Manufacturing Address and Phone

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Singapore 637026  
Tel: +65 66750600

#### Amgen Singapore Affiliate Address and Phone

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DUO Tower, Singapore 189352  
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Yielding the same outputs as a conventional plant, its modular single-use bioreactors are likewise capable in accelerating technology transfer to greatly reduce the time and expense needed to scale up new processes for transference from smaller pilot plants to commercial manufacturing plants.

The facility's modular, compact design and the use of single-use technologies in its operations equally reduces environmental impact significantly when compared to a conventional facility. With a footprint of just 120,000 square feet (16 percent the size of a conventional facility), this facility is more than 80% smaller and is able to reduce carbon emissions and energy consumption by 69%. The facility also consumes 45% less water due to reductions in the amount of water needed to clean and sterilize equipment. 21 months after its opening, the Next-Generation Biomanufacturing facility in Singapore received its first Good Manufacturing Practice certification from Singapore's Health Sciences Authority (HSA). Facility and product licensure was obtained within 30 months of opening from major international regulators including the U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA), Health Canada and ANVISA (Brazil).

Amgen's second manufacturing facility in Singapore and its first commercial Active Pharmaceutical Plant (API) in Asia - the Chemical Synthesis Manufacturing facility – is undergoing product validation. To support both its manufacturing facilities, Amgen launched its NextGen Workplace Building in May 2018 to further inspire innovation, enhance productivity and to build a vibrant work culture to support its growth in Singapore.

## TALENT DEVELOPMENT AND COMMITMENT TO IMPROVE THE HEALTHCARE INDUSTRY IN SINGAPORE

The investment of the Next-Generation Biomanufacturing facility in Singapore is strategically aligned with Singapore's Economic Development Board (EDB)'s focus on developing higher-value-added sectors that can provide quality careers for the Singapore workforce, especially within the biomedical industry. Amgen Singapore supports the building of a pipeline of skilled manpower for Singapore's biologics manufacturing industry through the Local Biologics Skills Training (LBST), a talent development program, done in collaboration with the Singapore Economic Development Board, SkillsFuture Singapore (SSG), Workforce Singapore (WSG) and Singapore Polytechnic (SP).

Amgen's entry into Singapore is in keeping with the Company's growth plans in important markets around the world and reflects its commitment to increasing patient access to its medicines, in support of Amgen's mission to serve patients. Amgen's unique expertise and capabilities in pioneering biotechnologies and advanced science demonstrates our commitment to deliver high quality innovative, sustainable manufacturing solutions and in supporting a highly-skilled workforce. Amgen continues to be an active member in the local healthcare industry and to partner with the government, industry organizations and academia to encourage mutual growth and to create a positive environment that meets the needs of patients.

## AMGEN FOUNDATION

The Amgen Foundation seeks to advance excellence in science education to inspire the next generation of innovators, and invest in strengthening communities where Amgen staff members live and work. In 2017, Amgen Foundation launched the Amgen Biotech Experience in Singapore in collaboration with the Singapore Science Center to provide local mainstream secondary teachers and students with professional development research-grade equipment and hands-on curriculum to transform biology education and to spark students' love for science and discovery. The Amgen Scholars program was also launched in 2016 to provide undergraduates with the opportunity to engage in cutting-edge research experiences at world-leading institutions to learn about biotechnology. Amgen Foundation remains highly committed to invest in meaningful, evidence-based initiatives that will make a difference at the local, national, and international level.

### Investment in Singapore

- Next-Generation Biomanufacturing Facility
- Chemical Synthesis API Manufacturing Facility
- Manufacturing Support Building
- Commercial Affiliate

### 10 Products Approved in Singapore

- AIMOVIG™ (erenumab)
- BLINCYTO® (blinatumomab)
- KYPROLIS® (carfilzomib)
- NEULASTIM® (pegfilgrastim)
- NEUPOGEN® (filgrastim)
- PARSABIV™ (etelcalcetide)
- PROLIA® (denosumab)
- REPATHA® (evolocumab)
- VECTIBIX® (panitumumab)
- XGEVA® (denosumab)

**AIMOVIG™ is developed in collaboration with Novartis**

For more information on our pipeline and therapies, visit [www.amgen.com](http://www.amgen.com)

For more information on Amgen Singapore, visit [www.amgen.com.sg](http://www.amgen.com.sg)

For information on Amgen's Next Generation Biomanufacturing: [The Next Generation of Biomanufacturing](#)