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ExxonMobil and Synthetic Genomics Algae Biofuels Program Targets 10,000 Barrels Per Day by 2025

- Program advances to outdoor testing in California of naturally occurring algae strains
- Will inform fundamental engineering necessary for scaling up technology
- Outdoor testing phase critical step in determining path toward commercial production

IRVING, Texas & LA JOLLA, Calif.--(BUSINESS WIRE)-- ExxonMobil and Synthetic Genomics Inc. today announced a new phase in their joint algae biofuel research program that could lead to the technical ability to produce 10,000 barrels of algae biofuel per day by 2025.

This press release features multimedia. View the full release here: http://www.businesswire.com/news/home/20180306005178/en/

The new phase of research includes an outdoor field study that will grow naturally occurring algae in several contained ponds in California. The research will enable ExxonMobil and Synthetic Genomics to better understand fundamental engineering parameters including viscosity and flow, which cannot easily be replicated in a lab. The results of this work are important to understand how to scale the technology for potential commercial deployment.

Additional work will be required to advance larger-scale production. Both companies are continuing with fundamental research on algae biology in their laboratories as the field study advances. ExxonMobil anticipates that 10,000 barrels of algae biofuel per day could be produced by 2025 based on research conducted to date and emerging technical capability.

“Our work with Synthetic Genomics on algae biofuels continues to be an important part of our broader research into lower-emission technologies to help reduce the risk of climate change,” said Vijay Swarup, vice president for research and development at ExxonMobil Research and Engineering Company. “The new outdoor phase is a critical next step in determining a path toward large-scale, commercial production.”

This outdoor research follows the companies’ years of fundamental biological research into understanding and improving algae oil production.

“We are excited to take this next significant step as we journey together toward a renewable, scalable, and low-carbon biofuel,” said Oliver Fetzer, Ph.D., chief executive officer at Synthetic Genomics. “The progress we are making in the lab toward engineering highly efficient algae strains that convert sunlight and CO_2 into renewable high energy density biofuel is exciting and warrants continued research about how our technology will scale. Our outdoor algal facility creates a perfect stepping stone from our labs to the greenhouse and to

the outdoors to lay the foundation for a large scale commercial deployment of our technology in the future."

Since 2009, ExxonMobil and Synthetic Genomics have been partners in researching and developing oil from algae to be used as a renewable, lower-emission alternative to traditional transportation fuels.

ExxonMobil is engaged in a wide range of research on advanced biofuels, partnering with universities, government laboratories, and other companies.

In 2017, ExxonMobil and Synthetic Genomics announced breakthrough research published in *Nature Biotechnology* that resulted in a modified algae strain that more than doubled oil content without significantly inhibiting growth, a key challenge along the path to commercial scalability.

Global demand for transportation-related energy is projected to increase by about 25 percent through 2040, and accelerating the reduction in emissions from the transportation sector will play a critical role in reducing global greenhouse gas emissions.

ExxonMobil is also actively researching other emission-reducing technologies, including carbon capture and sequestration. In 2016, ExxonMobil announced its partnership with Connecticut-based FuelCell Energy, Inc. to advance the use of carbonate fuel cells to economically capture carbon emissions from power plants while generating hydrogen and additional electricity. Since 2000, ExxonMobil has spent about $8 billion to develop and deploy lower-emission energy solutions across its operations.

About ExxonMobil

ExxonMobil, the largest publicly traded international energy company, uses technology and innovation to help meet the world's growing energy needs. ExxonMobil holds an industry-leading inventory of resources, is one of the largest refiners and marketers of petroleum products and its chemical company is one of the largest in the world. For more information, visit www.exxonmobil.com or follow us on Twitter www.twitter.com/exxonmobil.

Cautionary Statement: Statements of future events or conditions in this release are forward-looking statements. Actual future results, including the timing, results and impact of new technologies, could differ significantly depending on the outcome of further research and testing; the development and competitiveness of alternative technologies; the ability to develop and scale pilot projects on a cost-effective basis; political and regulatory developments; and other factors discussed in this release and under the heading "Factors Affecting Future Results" on the Investors page of ExxonMobil's website at exxonmobil.com.

About Synthetic Genomics

Synthetic Genomics is programming the operating system of life to create sustainable solutions for humankind's most pressing issues, from the wellbeing of our population to the health of our planet. With an unmatched understanding of how DNA drives the function of cells — the basic biological units of all living organisms — Synthetic Genomics modifies and writes genomes to enable transformative products in the areas of vaccines, medicines, and biotechnology research. In addition to designing novel organisms that overcome

fundamental hurdles of scientific research and medicine, Synthetic Genomics pursues partnerships with organizations seeking to dramatically improve upon existing products in health care, energy, and other sectors. Continuing its legacy of scientific firsts in genomics and synthetic biology, Synthetic Genomics is harnessing the power of nature to improve quality of life. More information is available at www.syntheticgenomics.com.

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