

but also at sea and in the air. That is why Dutch companies are now working on satellite applications for more efficient shipping routes and safer aviation.

# NL SPACE FOR CLIMATE AND ENVIRONMENT

Each and every day satellites are collecting valuable data about the health of our planet. Data that we can use to address our global climate problem. The Netherlands has developed the best sensors and satellite instruments for atmospheric research, making it possible to conduct science of the highest quality. Dutch companies are also working on applications to detect illegal logging in rainforests.

#### **O** NL SPACE FOR ENERGY

The demand for energy is increasing worldwide. More and more energy comes from renewable sources such as wind and Sun. But fossil fuels will remain a significant source of energy into the next decades. Satellite data are important in the discovery of new oil and gas resources. They are also used by Dutch companies in the construction of offshore wind farms.

Astronaut André Kuipers

"From space, I saw a world without borders. There are no borders to the possibilities that space can offer us here on Earth."



The Netherlands offers the world unique space technologies and applications. Researchers, entrepreneurs and government work together closely to apply the technology and data acquired in space, here on Earth. Helping to make society safer, our food supply more efficient, improve our environment and give us a more sustainable energy supply in both developed and developing countries.

**NL** SPACE

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# The Netherlands and space

Science, technology development and exploration are all part of Dutch DNA.

These competences have come in handy for exploring the world's oceans, in the eternal battle against water and in unlocking the secrets of the Universe. Along with traditional Dutch expertise in water management, agriculture, environment and mobility, this DNA forms the basis for space in the Netherlands. With their sound business acumen and the need to always push the boundaries of science and technology, Dutch space companies and institutes offer solutions wherever they are needed in the world. Global challenges, NL Space solutions.









## Technology

The Netherlands is a hightech country. It is also a melting pot of European space technology, thanks to the establishment of ESTEC, the technical heart of the European Space Agency. Many European space missions would not exist without Dutch rocket technology, they are also powered by Dutch solar panels. Sensors and optical systems from the Netherlands are world-renowned. Meanwhile, Dutch engineers are working on a new generation of small cooperative smart satellites.

### Science

How did the Universe form after the Big Bang? Where do stars and planets come from? What makes our planet habitable? And are we alone in the Universe? Worldrenowned Dutch scientists are using the latest technology to search for answers to the big questions about our origins. They have delivered ground-breaking discoveries about planet formation at other stars, about extreme explosions on the edge of the Universe, but also about the impact of humans on the ozone layer. Dutch scientists play a leading role in international space missions that unravel the mysteries of the Universe and lead to a better understanding of Earth.

# NL SPACE FOR AGRICULTURE AND FOOD

By 2050 an estimated nine billion people will be living on our planet. An efficient and sustainable food production is crucial to feed all those mouths. The Netherlands is a pioneer in the field of new farming methods, in particular those using satellite applications. Better information on weather, climate, soil and vegetation leads to a better harvest. In our own country, but also in vast agricultural areas elsewhere in the world.

## NL SPACE FOR WATER AND THE DELTA

The Dutch are specialists in water management. After all, for centuries we have both lived with water and offered it resistance. We have learnt that satellite applications are of great value in water management. Whether it is in managing the risks of subsidence, floods, and prolonged droughts or to monitor dikes.

#### NL SPACE FOR MOBILITY

The Netherlands is a transit country for goods and trade is part of our inheritance. It is no wonder a Dutch company developed the first commercial application of GPS satellites: road navigation. There are still many opportunities for solutions on land,