An aerial photograph of a city street grid. In the center, there is a large, multi-lane roundabout with a central landscaped area featuring greenery and a circular structure. The surrounding area is densely packed with buildings and houses, with various colored roofs and walls. The overall scene is a vibrant, high-angle view of an urban environment.

Let's Make Our Cities Breathable

BECAUSE CLEAN AIR
BELONGS TO EVERYONE.

VAISALA



Clean Air is a Human Right that Everyone Should be Entitled to

Making cities more breathable starts by measuring, analyzing and understanding the data of air pollution.

The world around us is a beautiful place. But this 4.5 billion-year old planet that we all call home is also quite sick. We don't always see the symptoms but unquestionably they are there. Floating in the air. Being invisible. Making the air in many places unbreathable. Causing a great deal of damage to both the environment and the people.

According to the WHO 80 % of the world's population lives in the areas where the quality of air is below acceptable. Every single year millions of people lose their lives as a result of air pollution exposure. The situation is most severe in some of the Asia's most rapidly developing nations but there is no place – or no one – on this Earth that is immune to the symptoms.

The on-going urbanization brings even more challenges to all of us. Solving those won't be easy but as long as we work together it can be done. It all begins by measuring,

analyzing and understanding the data of air pollution. Luckily we at Vaisala do just that. In the past we have done measurements in the most extreme conditions – including space – and now we are bringing our knowledge to local, supplemental, spatial air quality monitoring.

Data Allows Us to Transform the Cities

Cost-effective and reliable long-term data collected from multiple measurement points truly is a wonderful thing. Thanks to that we can identify both the air quality and local pollution sources that makes it possible for us to find remedies to create healthier micro-atmospheres inside the cities and even within city blocks.

Data is a friend that allows us to determine the best locations for new roads, schools, hospitals, kindergartens and elderly care facilities as well as for parks, bike

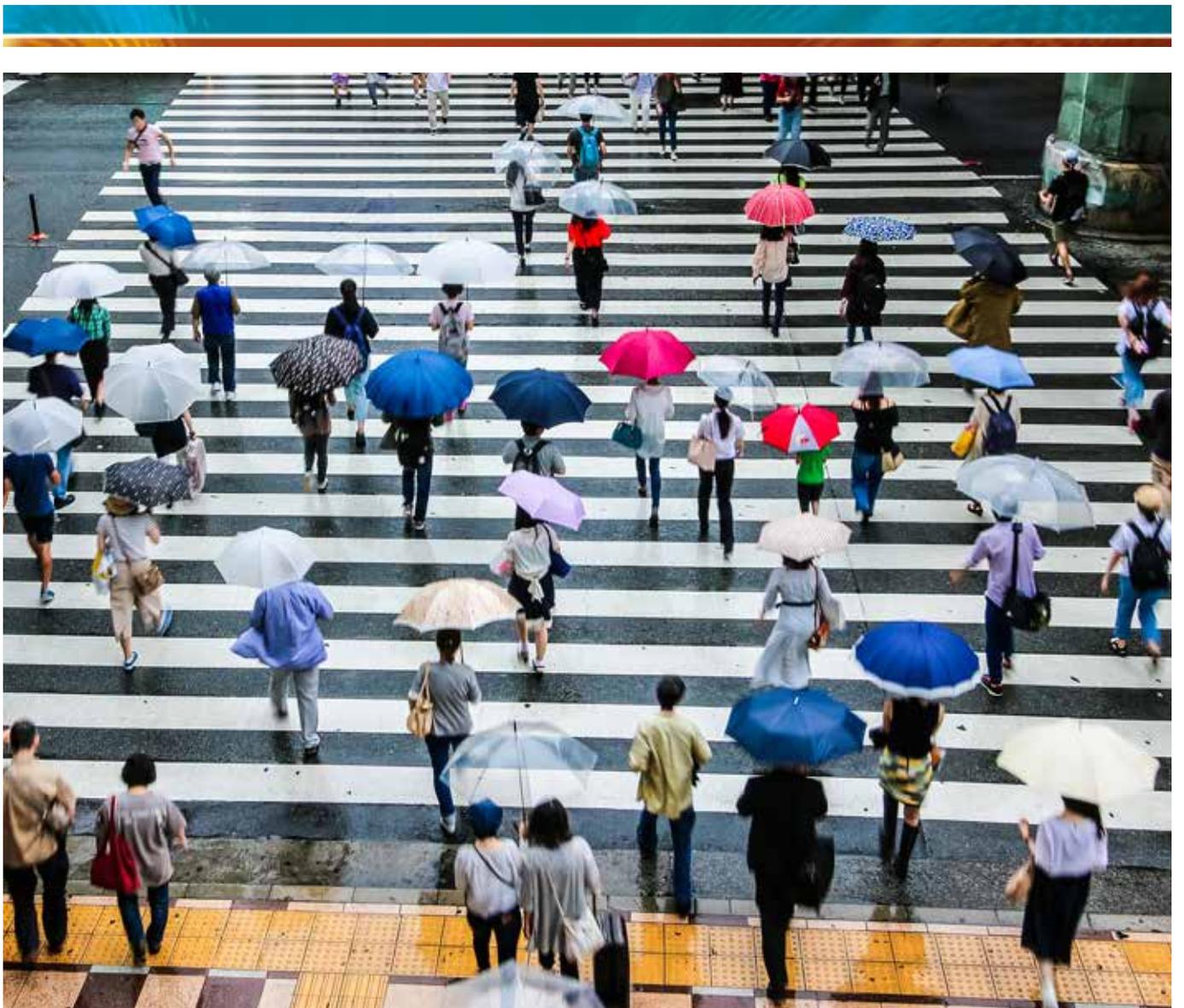
lanes, jogging paths and other open areas for every day urban life.

Data tells us when to open our windows, informs us what streets to avoid in the rush hours, and alarms us when the air quality drops below normal in specific areas of city. Data helps us to make buildings smarter and traffic smoother and less polluting.

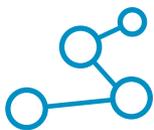
Information that data gives us is also critical to predicting a potential air quality crisis and taking immediate preventive actions even before those crises occur.

The Importance of Working Together

This all may sound complex but it is not. In the end of the day we are simply talking about three things: A quality of life, human rights and a more breathable air that everyone on this Earth should be entitled to. With co-operation this can be achieved. Please join us.



This Is How We Can Help



Supplementary Air Quality networks

provide a real time situational awareness on local air quality at a reasonable cost and unprecedented spatial density.



Real time boundary layer measurement

using Vaisala's world leading ceilometer products and associated BL-View software will complement the picture on atmospheric conditions and processes relevant for air quality.



Weather observations

using Vaisala suite of meteorological sensors support air quality observations and air quality modelling.



Understanding Air Quality Starts with Understanding the Weather

Vaisala combines data from high performing air quality sensor networks with important weather parameters. That allows us to forecast the air pollution.

What Does Air Quality Monitoring Actually Mean?

The amount of air pollution also depends on meteorological conditions. To a certain extent nature's own air conditioning can keep the air clean. Wind mixes the gases and dilutes them and rain washes the dust and other substances to the ground. But when strong winds can move pollutants hundreds of kilometers away, under weak wind circumstances they can accumulate to certain location causing increased air pollution. Rain can also pollute the environment if acidic components, such as sulfuric or nitric acid fall to the ground from the atmosphere. That is why simply measuring air pollution alone does not tell us very much. To be able to understand why air quality can vary from day to day, we must measure meteorological conditions as well, such as temperature, rain and humidity.

Our story

For more than 80 years

Vaisala has provided reliable environmental observations and solutions. Today we are global experts of meteorological measurement and monitoring technology with the mind of a curious startup and we work closely with the leading MET offices around the world. We are big enough to make great things happen but small enough to be agile and reactive when needed.

Our Services

Vaisala provides the latest technology for air quality monitoring, as well as measuring atmospheric weather conditions relevant to monitoring, estimating, and forecasting air quality.

Air Monitoring Stations

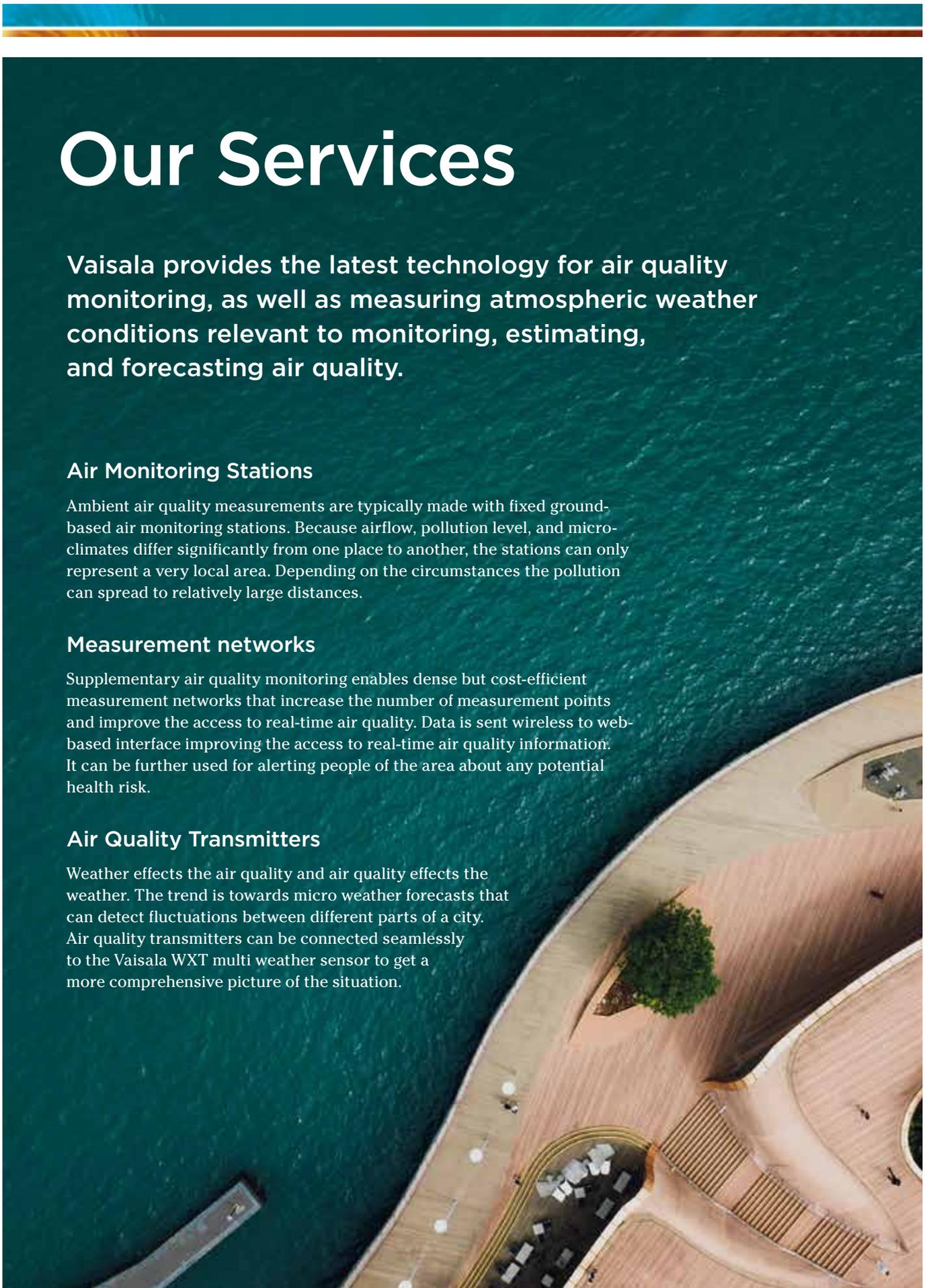
Ambient air quality measurements are typically made with fixed ground-based air monitoring stations. Because airflow, pollution level, and microclimates differ significantly from one place to another, the stations can only represent a very local area. Depending on the circumstances the pollution can spread to relatively large distances.

Measurement networks

Supplementary air quality monitoring enables dense but cost-efficient measurement networks that increase the number of measurement points and improve the access to real-time air quality. Data is sent wireless to web-based interface improving the access to real-time air quality information. It can be further used for alerting people of the area about any potential health risk.

Air Quality Transmitters

Weather effects the air quality and air quality effects the weather. The trend is towards micro weather forecasts that can detect fluctuations between different parts of a city. Air quality transmitters can be connected seamlessly to the Vaisala WXT multi weather sensor to get a more comprehensive picture of the situation.



Vaisala Air Quality Solutions

Our offering in air quality ranges from turnkey networks with network management and air quality modelling to individual sensors and instruments for measuring gases and particulates, meteorological parameters and boundary layer height.

Network of
air quality
and weather
sensors

Vaisala Network
Manager NM10

- Data acquisition
- Network operation and maintenance management

AIR QUALITY
MODELLING
SYSTEM

Dissemination
for air quality
modelling and
forecast
web
interfaces

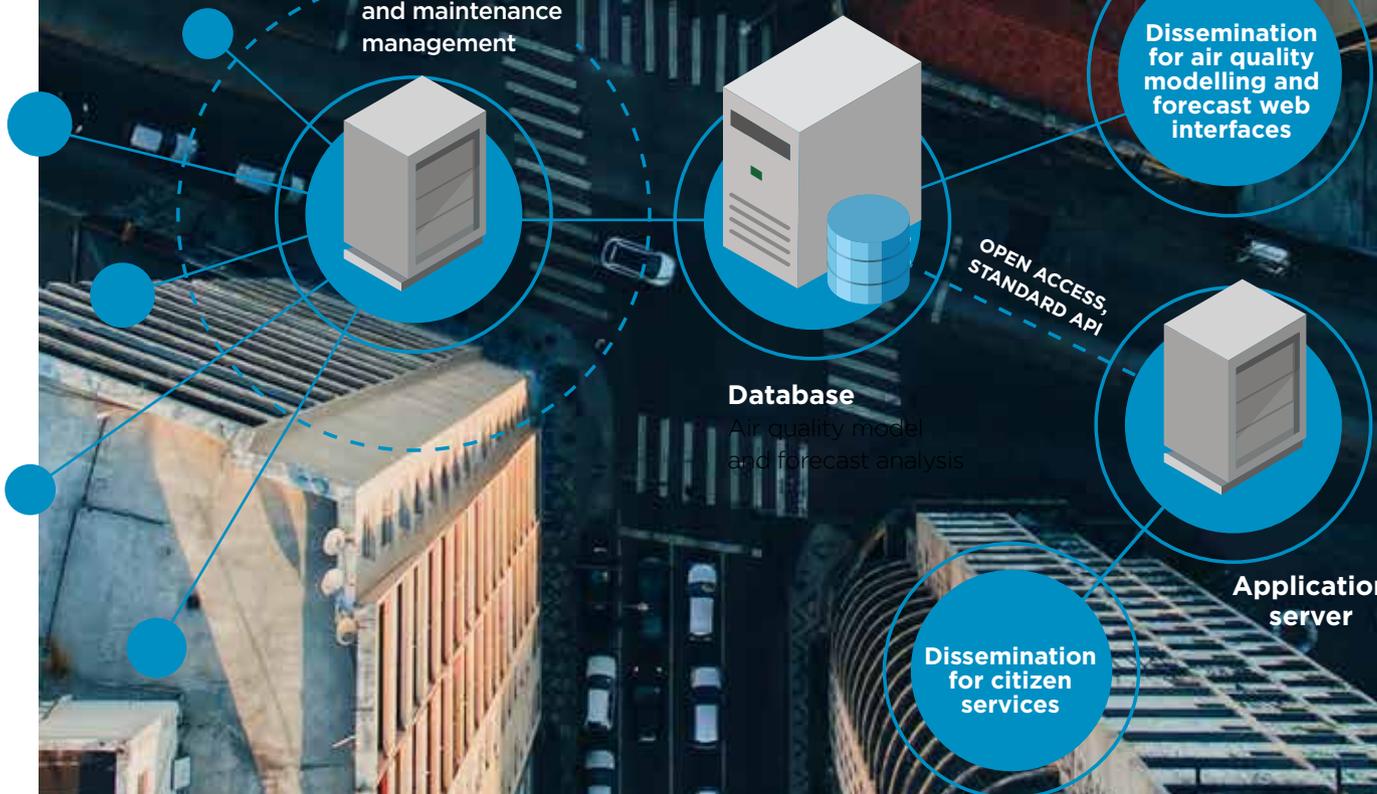
OPEN ACCESS,
STANDARD API

Database

Air quality model
and forecast analysis

Application
server

Dissemination
for citizen
services



The world is beautiful.

LET'S MAKE OUR CITIES MORE BREATHABLE.

More than 80 Years of Environmental Observations

 300

Projects delivered

globally by Vaisala project and Customer Services organisation every year

 100

Airport weather systems

delivered over 100 countries since 2010

 4

Vaisala service centers

for local service access in Americas, China, Europe and Japan

The Global Significance of Air Quality



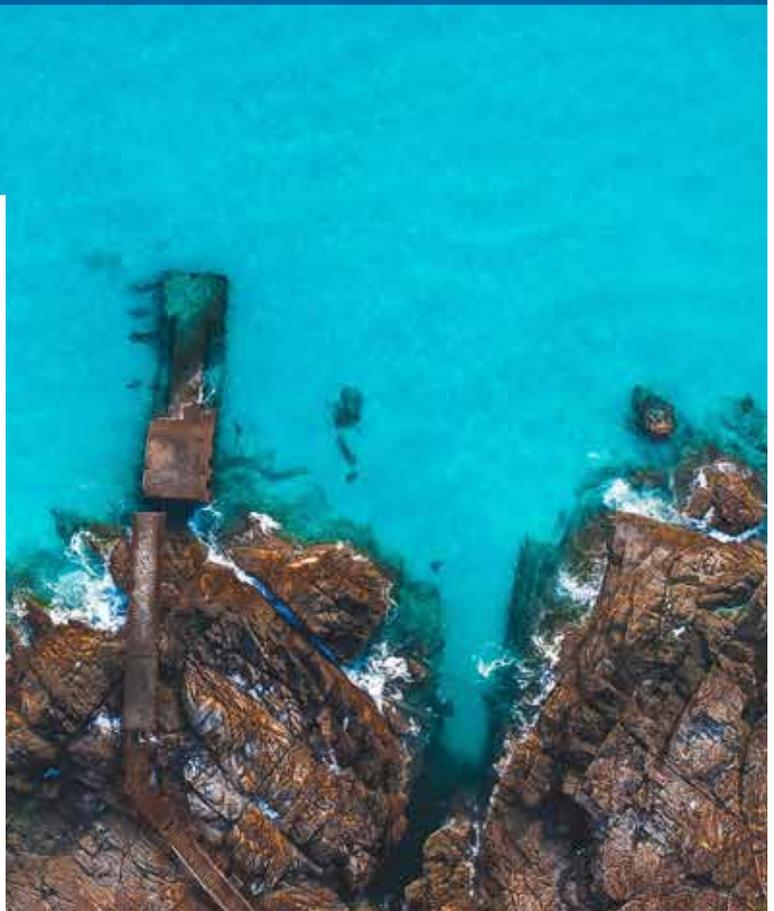
Global economic losses due to air pollution are estimated to be **\$225 billion**



Fine particulate matter (PM2.5) in air has been estimated to reduce **life expectancy** in the EU by more than **eight months**



The Beijing smog episode first week of 2017 is the **longest heavy pollution episode** seen in Beijing **this century**





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