

SGS INVESTOR DAYS 2019

ENVIRONMENT, HEALTH AND SAFETY (EHS)

Peter Possemiers

EVP, Environment, Health & Safety

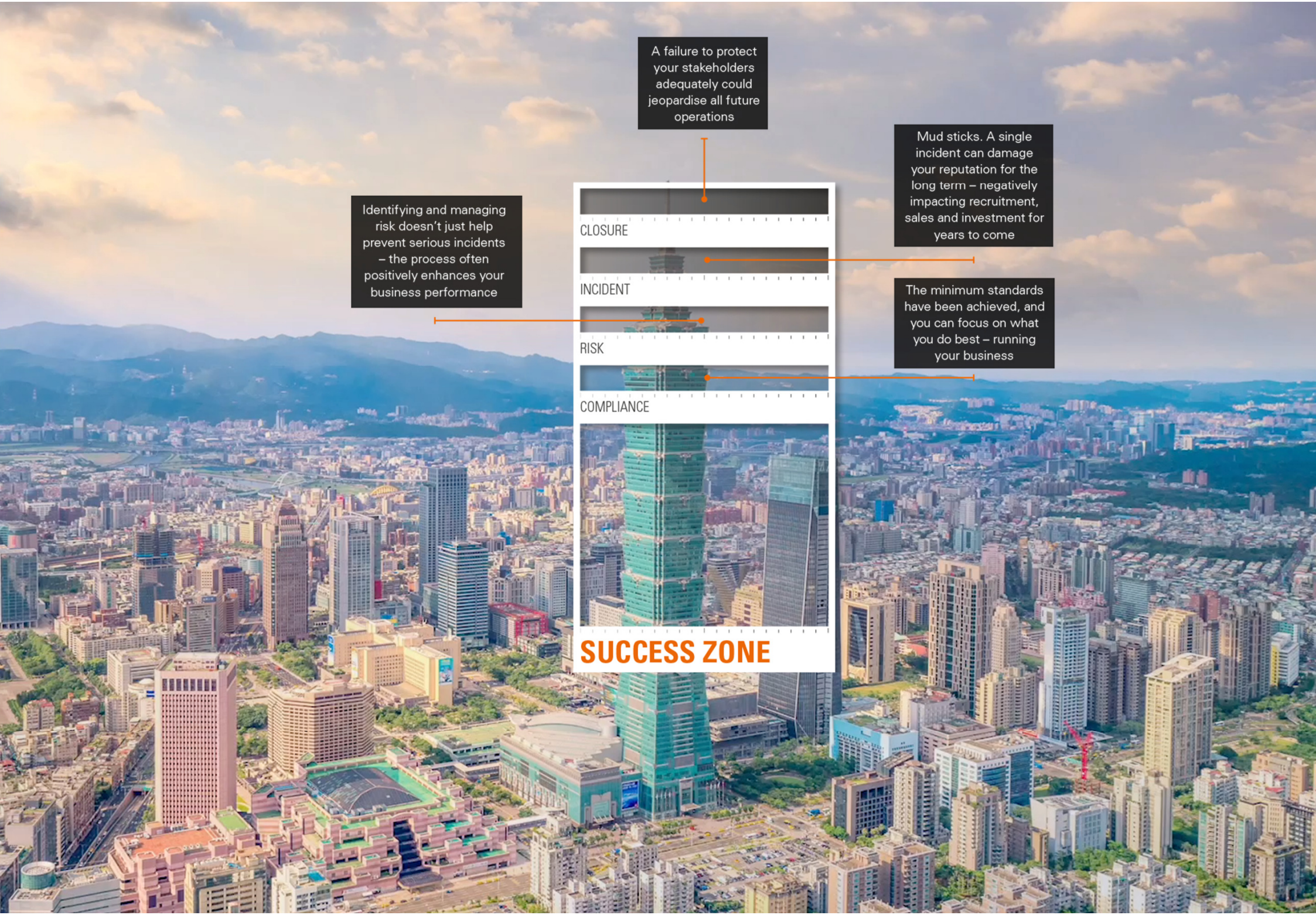
7-9 November 2019



SGS ENVIRONMENT, HEALTH AND SAFETY (EHS)

WHEN YOU NEED TO BE SURE

SGS

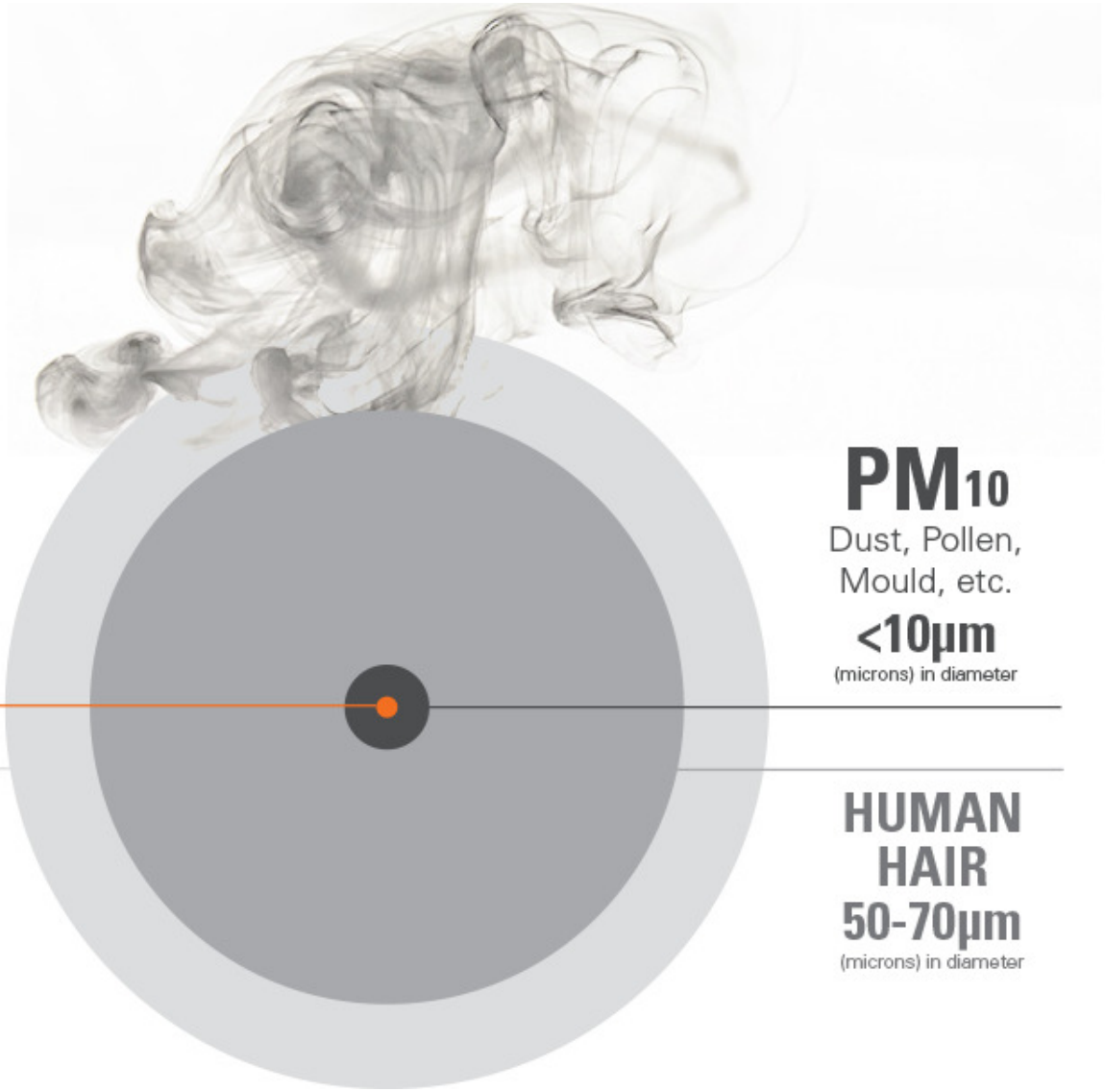

A failure to protect your stakeholders adequately could jeopardise all future operations
Mud sticks. A single incident can damage your reputation for the long term – negatively impacting recruitment, sales and investment for years to come
Identifying and managing risk doesn't just help prevent serious incidents – the process often positively enhances your business performance
The minimum standards have been achieved, and you can focus on what you do best – running your business
CLOSURE
INCIDENT
RISK
COMPLIANCE
SUCCESS ZONE

WE ARE ALL SMOKERS

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07-09 NOVEMBER

Long-term exposure to air pollution, especially ground-level ozone, **is like smoking about a pack of cigarettes a day**

One cigarette per day is equivalent of a PM2.5 level of 22 µg/m^3



EHS IN SOCIETY



Two-thirds of extreme weather events in the last 20 years were influenced by humans

+1B

people worldwide don't have access to safe drinking water

Shanghai, Bangkok, Manila, and Jakarta will be

SCUBA-DIVING DESTINATIONS IN 80 YEARS

THERE ARE MORE MICROPLASTICS IN OUR OCEANS THAN STARS IN THE MILKY WAY

5000

people die every day as a result of drinking unclean water

NOT EVEN 1%

of Earth's freshwater is readily available to use

About 80% of the items buried in landfills

COULD BE RECYCLED.

WE NOW BUY A MILLION PLASTIC BOTTLES A MINUTE

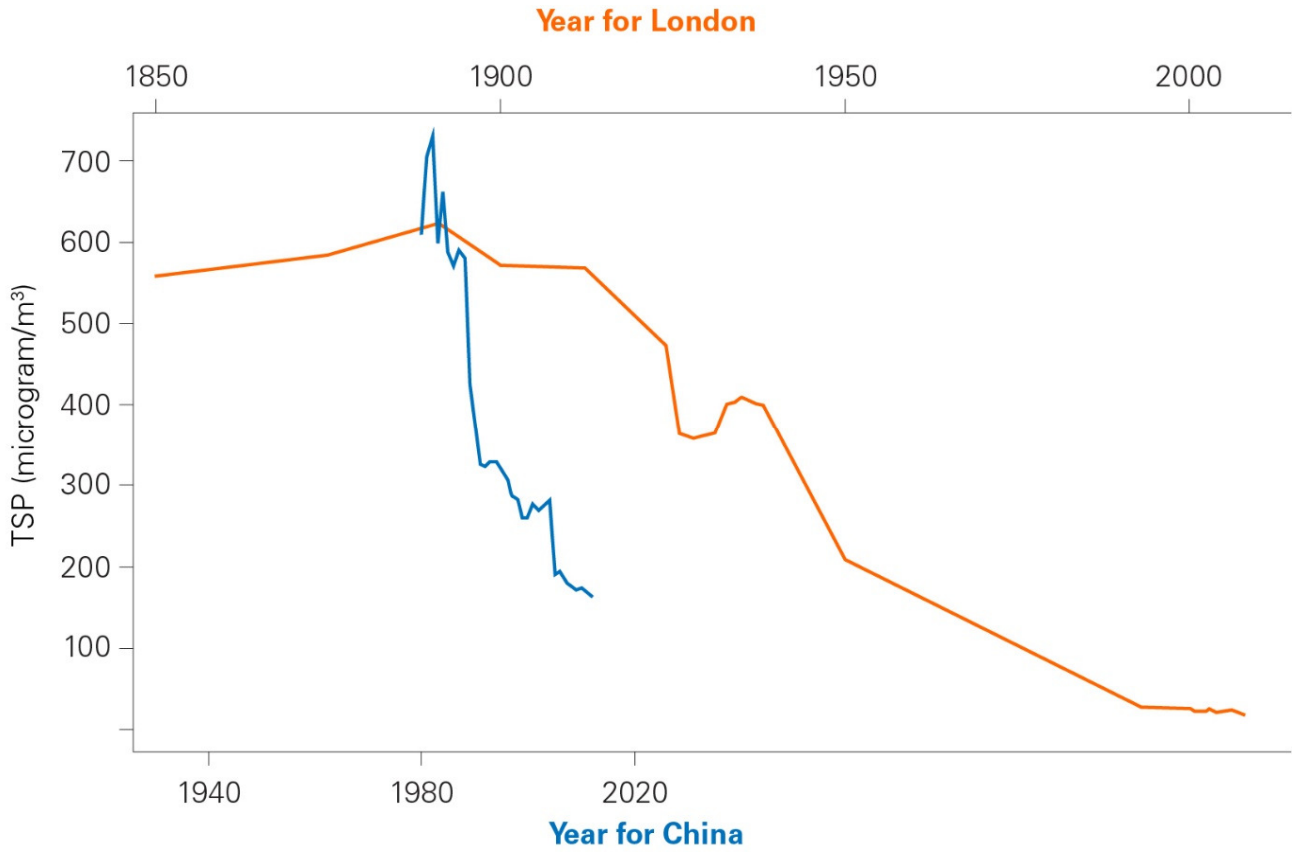
A COMMON PERCEPTION

"China's economic growth has come at a high price"

"China – the world's biggest polluter"

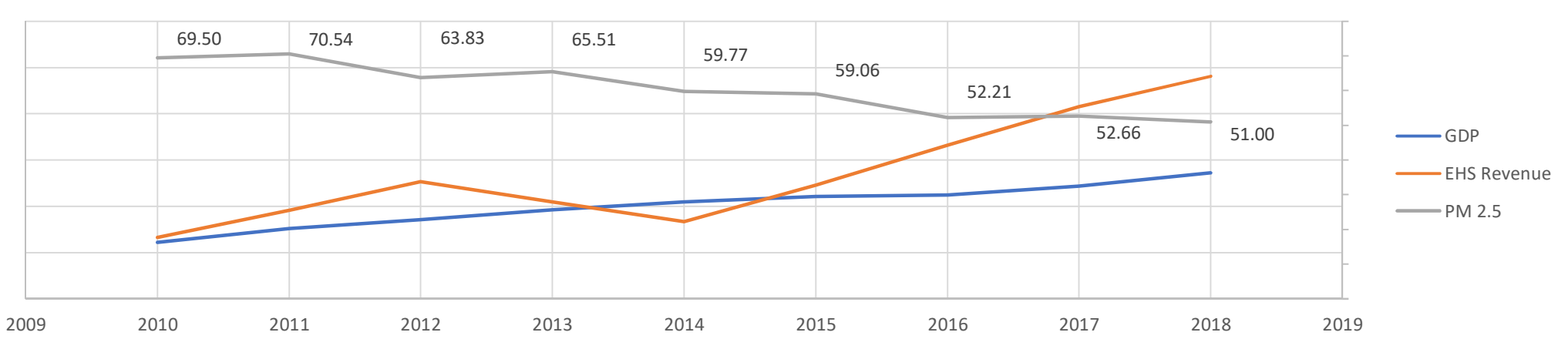
"Taiwan has one of the highest recycling rates in the world"

"London's turning green"



What London achieved in 100 years - China managed in 30

CHINA – GDP/EHS/PM2.5



2009
Air pollution index **first published** and raises national discussion

2012
Cadmium contamination of rice drive legislative process

2014-2016
First regulation for action plan of air pollution and control law published

2014
COLLAPSE OF CLEAN DEVELOPMENT MECHANISM (CDM)

2014
Soil remediation added to environmental protection law

2014
Leak detection and Repair (LDAR) for chemical sites launched – "ONE PLAN FOR EVERY SINGLE SITE"

2015
Pollution event at Changzhou school leads push for Indoor environment Quality (IEQ) – Formaldehyde kit leading to real time monitoring

2016
Dioxins detected in fresh water crabs as a result of legislation introduction in 2008

2017
13th five year plan on environmental protection issued

2018
President Xi proposed **"7 BATTLES AGAINST POLLUTION"** including protection of the Blue Sky



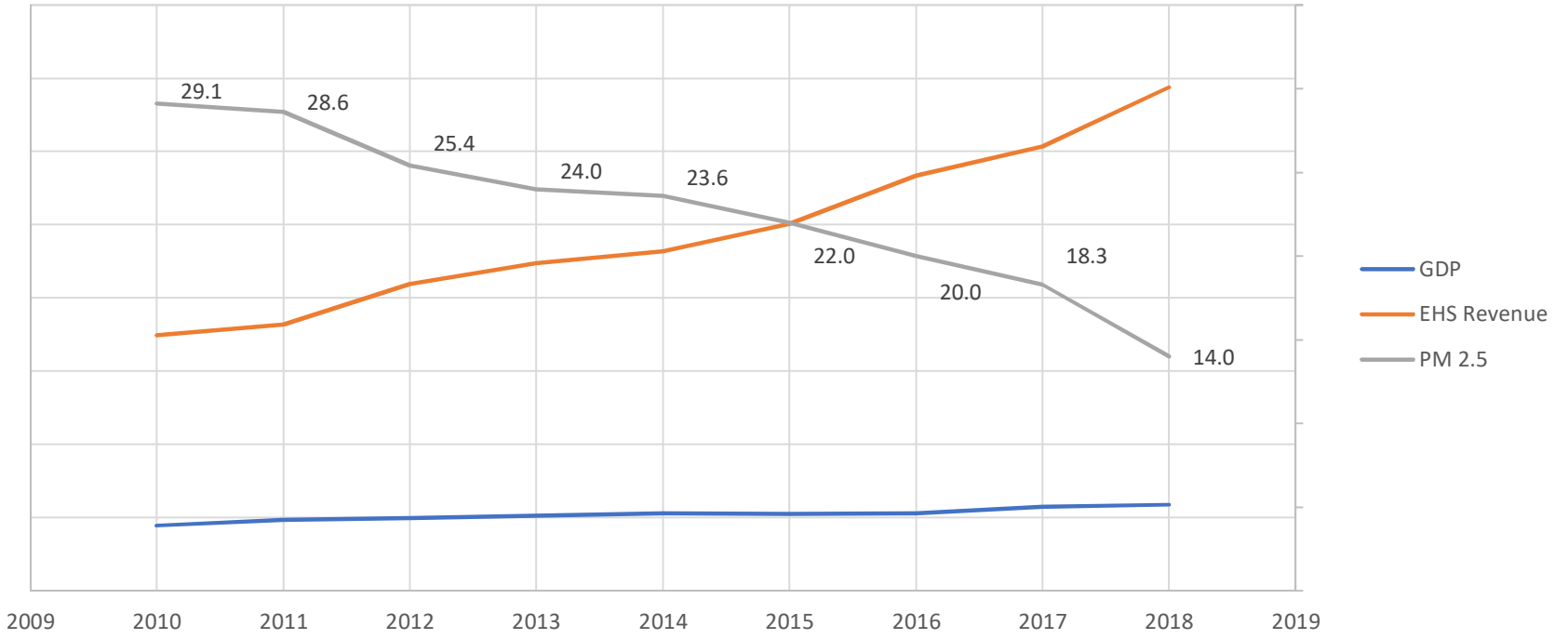
2019
Soil pollution prevention and control law becomes effective

TAIWAN – GDP/EHS/PM2.5

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2001-2009
6 major standards
RELEASED RELATED TO SOIL, GROUNDWATER, AIR POLLUTION AND NOISE CONTROL

2010
Soil and Groundwater Pollution Act revised and increased



2011
Gas station prevention of groundwater pollution and management measures

2012
Air quality standard update and Indoor Air Quality enforcement released

2013
Land transportation, noise control standards

2014
Air Quality Act comes in force, buffer zones and air quality monitoring enforced

2014
Chemical industry affluent standard;
DRINKING WATER QUALITY STANDARD REVISED

2017
Second batch of Air Quality Act
ENFORCED

LEADING EHS SERVICES IN CHINA





HEALTH & SAFETY

- Industrial Hygiene
- Indoor Environmental Quality (IEQ)
- Safety audits, training and related services

LABORATORY SERVICES

- Traditional Environmental analysis
- Soil and water testing
- Solid Waste and hazardous waste identification and testing
- Ambient air testing
- Dioxins

FIELD & MONITORING

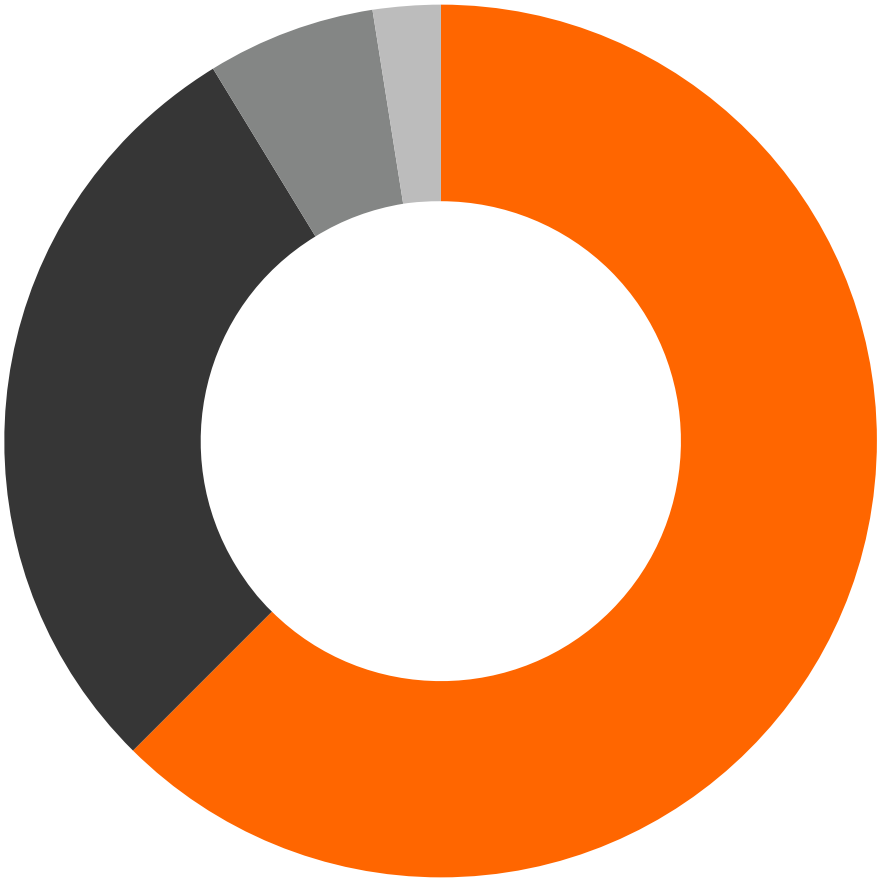
- Leak Detection and Repair (LDAR) and Volatile Organic compounds (VoCs) for factories and industrial parks
- Stack sampling
- Marine services

AUDITING & COMPLIANCE

- Environmental Site Assessment
- Risk Audits

LEADING EHS SERVICES IN TAIWAN





LABORATORY SERVICES

- Routine testing
  - Water testing
  - Soil, Sediment, waste
  - Ambient air, stack emission, indoor air quality
  - VoCs
  - Semi VoCs
- High End testing
  - Furans, PCBs, Dioxins

FIELD & MONITORING

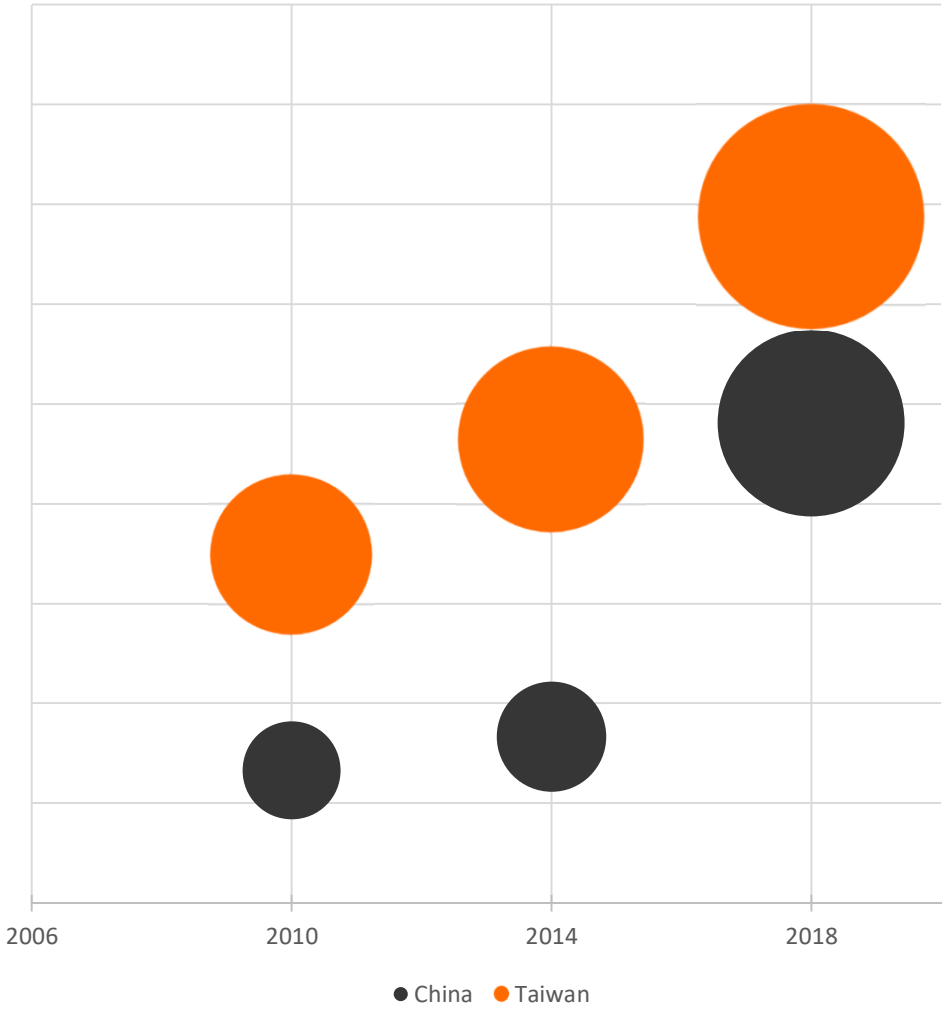
- Sampling: Air emission, water, industrial waste
- Monitoring: IEQ, Ambient air, leak detection, noise and vibration
- Inspection: Contaminated soil (Land), Water Quality and Hydrogeological Investigation

HEALTH & SAFETY AND AUDITING & COMPLIANCE

- Industrial Hygiene and safety
- Indoor Environmental Quality

CHINA & TAIWAN EVOLUTION





The FUTURE IS BRIGHT

Indoor Air Quality + Indoor Environment Quality – China and Taiwan

Growth in Industrial Hygiene testing;

BECOME CLASS A IN CHINA (NATIONAL)

MONITORING of Industrial Parks in China

Take advantage of the push on **WASTE INVENTORY** for solid waste identification and on site auditing in China

AIR MONITORING OPPORTUNITIES AS ENTERING 2ND YEAR OF THE "THREE YEAR ACTION PLAN TO WIN BATTLE ON PROTECTION OF BLUE SKY" IN CHINA

Large project for establishing **noise monitoring under sea** at major ports in Taiwan

Develop Health & Safety activities in Taiwan

OUR COMPETITION



CHINA ACCESSIBLE EHS MARKET **CHF 1.4B**.

Our focus is on international clients, government agencies and large state enterprises that value total solution, data quality, technical leadership and service at a strong margin.

MAIN COMPETITION:

CENTRE TESTING INTERNATIONAL (CTI)

market share estimated 12%

significant player 30 env labs, multi region, local focus, good growth, improving margin

GUANGZHOU GRT METROLOGY AND TEST (GRGT)

state owned, 8% market share

32 labs, multi region, rapid growth, local focus, improving margin

TAIWAN ACCESSIBLE EHS MARKET **CHF 160M**.

As market leader our focus is to be first to market with new accredited products based on changing or new regulations, being the technical expert and delivery quality results at a good margin.

MAIN COMPETITION:

SUN DREAM GROUP

17% MARKET SHARE

TSING HAU TECHNOLOGY

9% MARKET SHARE

TAWAN ASAHI

8% MARKET SHARE

CENPRO

6% MARKET SHARE

DIGITAL STRATEGY



SMART SENSORS & IoT

Real-time monitoring

Smart Cities entry

LEBT sensors with MESH network

SECTORS: REAL ESTATE, RETAIL, MANUFACTURING & HOSPITALITY

WEB PORTAL & CLOUD STORAGE

Engage , E-Data – data management and visualization

SGS Nubia – audit access and sharing

SECTORS: MULTIPLE

AUGMENTED VIRTUAL REALITY

Training & marketing

Virtual Inspections

Support to audit programs

ADDED VALUE: MARKETING

CLIENTS: CONSTRUCTION, REAL ESTATE, ARCHITECTS

DIGITAL MARKETING

Chatbots

Video & 3D Immersion

Social Networks

ADDED VALUE: INCREASED VISIBILTY

SECTORS: MULTIPLE

AI & MACHINE LEARNING

Asbestos fiber recognition

Automated reporting

Digitalization of audits

ADDED VALUE: EFFICIENCY, OPTIMZATION OF EXISTING DATA TO GENERATE SALES

CLIENTS: MULTIPLE

E-COMMERCE

B2C market access

Digitalization of customer interaction & payments

CLIENTS: HOUSEHOLDS, HOTELS, CONSULTANTS

CROWDSOURCING

Hotel guest participation – Legionella sampling by SGS crowd – Remote places sampling

BIG DATA & ANALYTICS

Sensor data trending, benchmarking and predictive modeling – Enhancement of audit data with publicly available datasets

ROBOTIC PROCESS AUTOMATION

Field work & audit scheduling – Laboratory tasks automation

BLOCKCHAIN TECHNOLOGY

Provision of legally defensible data by EHS laboratories

SERVICES AVAILABLE

SERVICES CURRENTLY UNDER DEVELOPMENT

SERVICES UNDER CONSIDERATION


OUR FUTURE IS BRIGHT IN THE SUCCESS ZONE

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