



SONAR 2020 New emerging risk insights

Sustainability, Political and Emerging Risk Management

Table of Contents

SONAR 2020 overview	03
<hr/>	
SONAR 2020 special features	05
<hr/>	
0 – 3 years emerging risks themes	16
<hr/>	
> 3 years emerging risk themes	24
<hr/>	
Emerging trend spotlights	27
<hr/>	
Leveraging SONAR	34
<hr/>	
Appendix	35

SONAR 2020 overview

Emerging risk themes by potential impact and timeframe

0–3 years



Computing at the edge – cybersecurity overstretched?



Tipping the scale? – Intergenerational imbalances on the rise



Global pharmaceutical supplies – breaks in the chain?



Standards – into the unknown



Burning question – risky lithium-ion batteries



Deepfakes – the creeping devaluation of truth?



Grey accountability – product liability in the era of smart everything



The sorcerer's apprentice – DIY synthetic bio hazards

> 3 years



Locking it up – carbon removal and insurance **(Special feature)**



Vaping and e-cigarettes – a new wave of addicts? **(Special feature)**



Green buildings – will they pass the test of time?



Out of sight, out of mind – mental health issues among the young



Hydrogen fuel cells – propelling the future?



Teeny weeny high-tech – smart dust



Swiss Re Institute

Swiss Re SONAR
New emerging risk insights

June 2020

Most affected business areas

for Property

for Casualty

for Life & Health

for Financial markets – incl. insurer's assets

for Operations – incl. regulatory changes

Potential impact

High

Medium

Low

SONAR 2020 overview

Trend spotlights by potential impact

Moving to a low carbon future
(Special feature)

A sea change in app usage?

The fragility of healthcare systems

Sustainable supply chain management
just as crucial in financial services



SONAR 2020 special features

- Vaping and e-cigarettes – a new wave of addicts?
- Trend spotlight – moving to a low carbon future
- Locking it up – carbon removal and insurance



Vaping and e-cigarettes – a new wave of addicts?

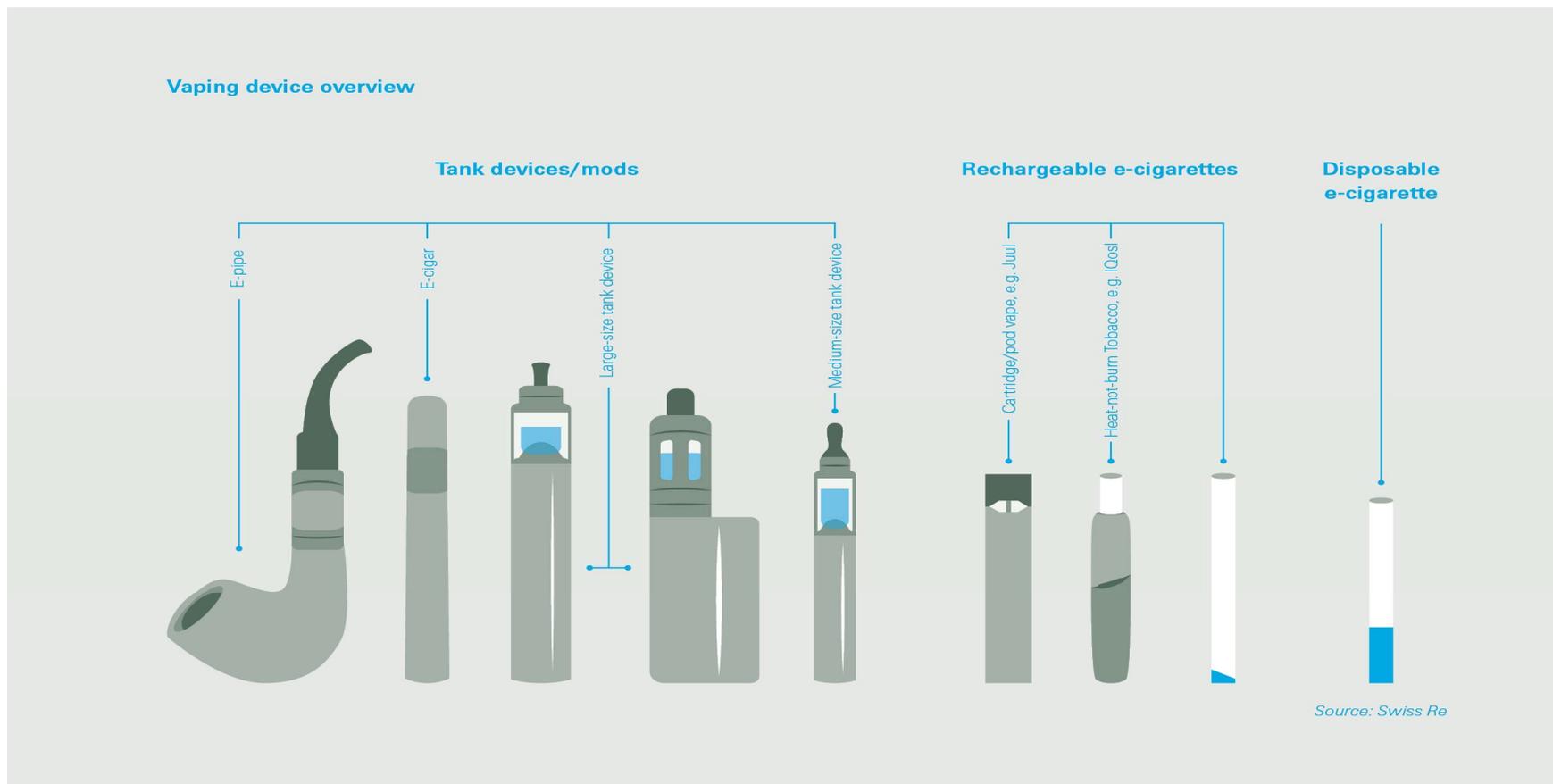
Special feature

Vaping and e-cigarettes

- The range of materials/ingredients consumed is increasing. Some of the ingredients used (like nicotine) are highly addictive, and some (vitamin E acetate) can be harmful.
- Data regarding the long-term health risks from many of the chemicals vaped is lacking.
- Regulation varies across jurisdictions for nicotine. Many flavorings are not regulated at all in certain markets.



Vaping device diversity



Smoked/vaped products and potential issues

Product to be consumed	Processed for consumption	Distinctive contents	Potential downside	Potential benefits	Potential health risks
Tobacco	Burnt and smoked (ie, regular cigarettes)	Tobacco (herbal) Nicotine	Smoke contains tar and high amounts of other harmful chemicals	–	Cancer, Cardiovascular diseases, addiction
	Tobacco in heating system (heat-not-burn products) Aerosol is created from		Additional chemicals are released not present in regular cigarettes	Fewer amounts of harmful ingredients present in smoke from regular cigarettes	Addiction, cancer
Liquid	Heated and vapourised (vaped)	Volatile organic compounds	Contains additives, ultrafine particles; heavy metals (nickel, tin, lead etc.)	No tar etc.	Cancer
		Flavour	Some flavours can have negative health effects, eg diacetyl	No tar and fewer amounts of other harmful chemicals present in tobacco smoke	Lung and cardiovascular diseases
		Nicotine	High dosage	–	Increased addiction risk
		Cannabis/ Tetrahydrocannabinol (THC)	– Vitamin E acetate (used as thickening agent) related to lung illness – Cannabis is illegal in some jurisdictions	–	Severe lung illness
		Hemp/CBD	CBD is illegal in some jurisdictions	–	–

A large-scale offshore wind farm is shown in a clear blue sea under a bright sky. The wind turbines are white with yellow bases. The perspective is from a low angle, looking across the water towards the horizon where several more turbines are visible.

Trend spotlight – moving to a low carbon future

Special feature

Opportunities and risks in transitioning to a low-carbon economy

Reaching net-zero emissions requires

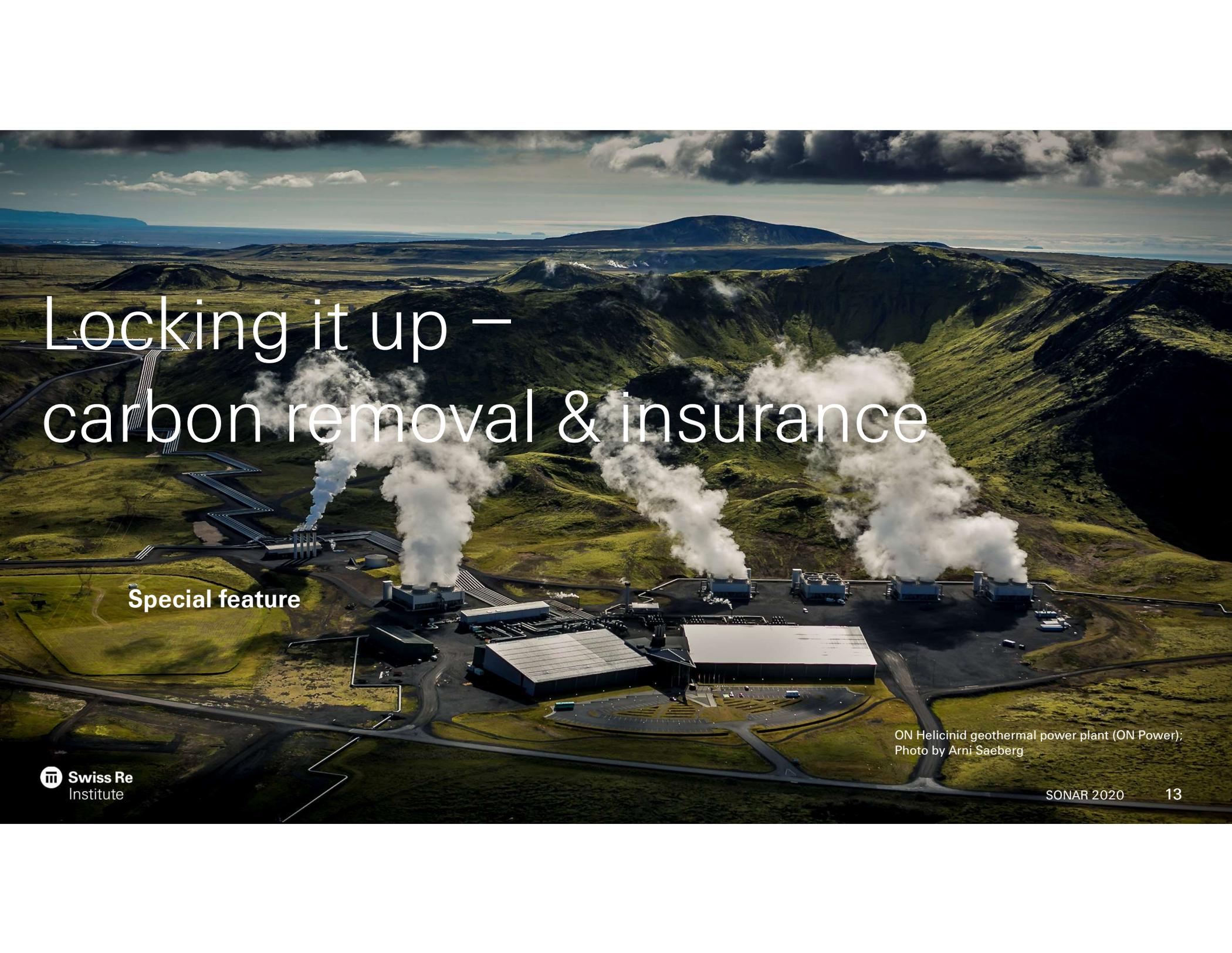
1. reducing and limiting emissions in all sectors
2. removing remaining emissions from the atmosphere



How to tackle the transition

-  **Electricity and Heat Production**
~25% of global GHG emissions
-  **Industry**
~ 21% global GHG emissions
-  **Transport**
~ 15% global GHG emissions
-  **Forestry & Agriculture**
~ 24% global GHG emissions
-  **Buildings**
~ 6% global GHG emissions
-  **Carbon Removal**
-  **Insurance Industry**





Locking it up – carbon removal & insurance

Special feature

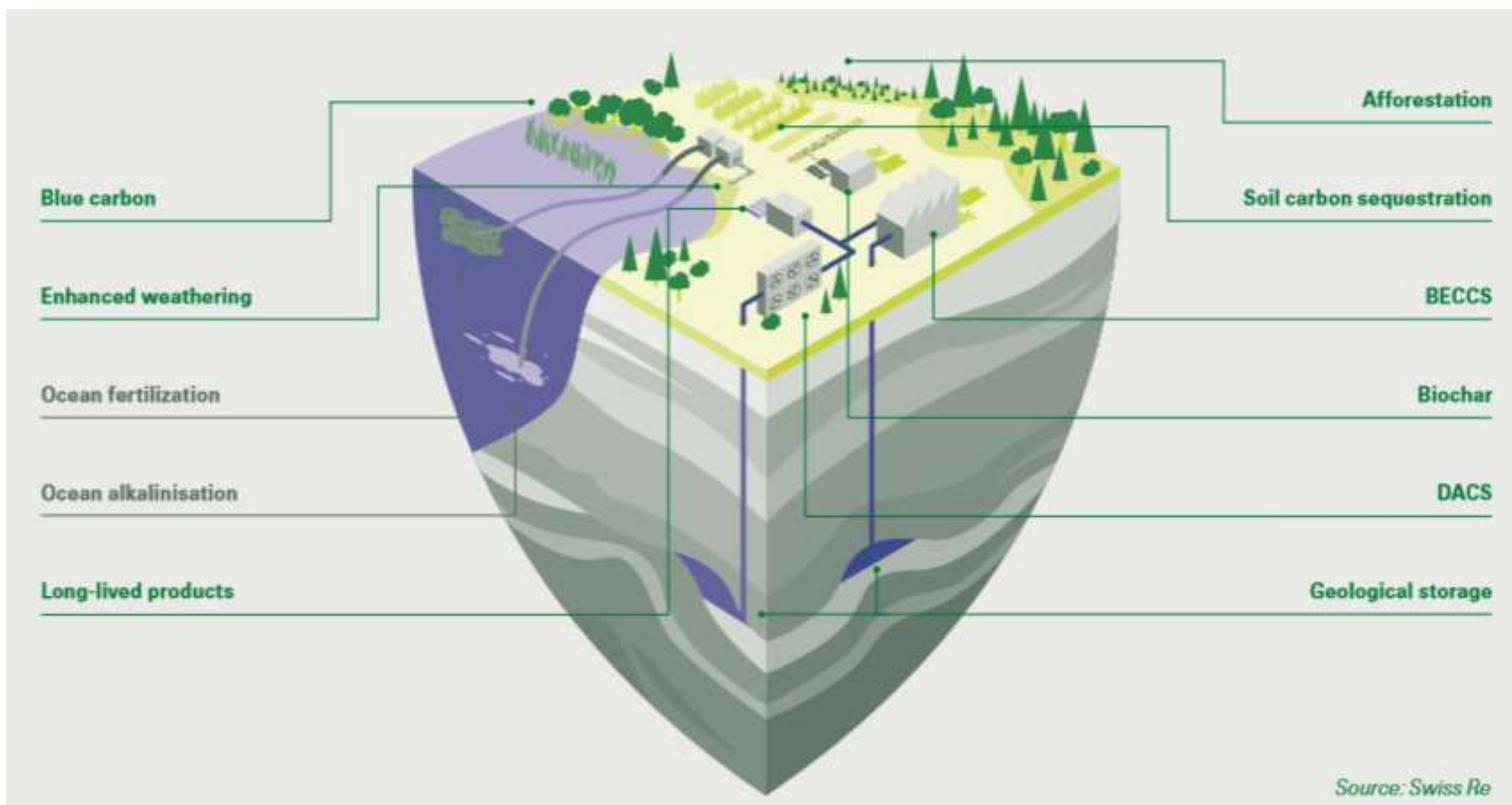
ON Helicid geothermal power plant (ON Power);
Photo by Arni Saeberg

Carbon removal solutions

Nature-based processes that use plants to capture CO2 from the air

Technological processes that use engineering tools

Hybrid approaches



Opportunities and risks in carbon removal

By 2050, billions of tons of CO2 will need to be stored.

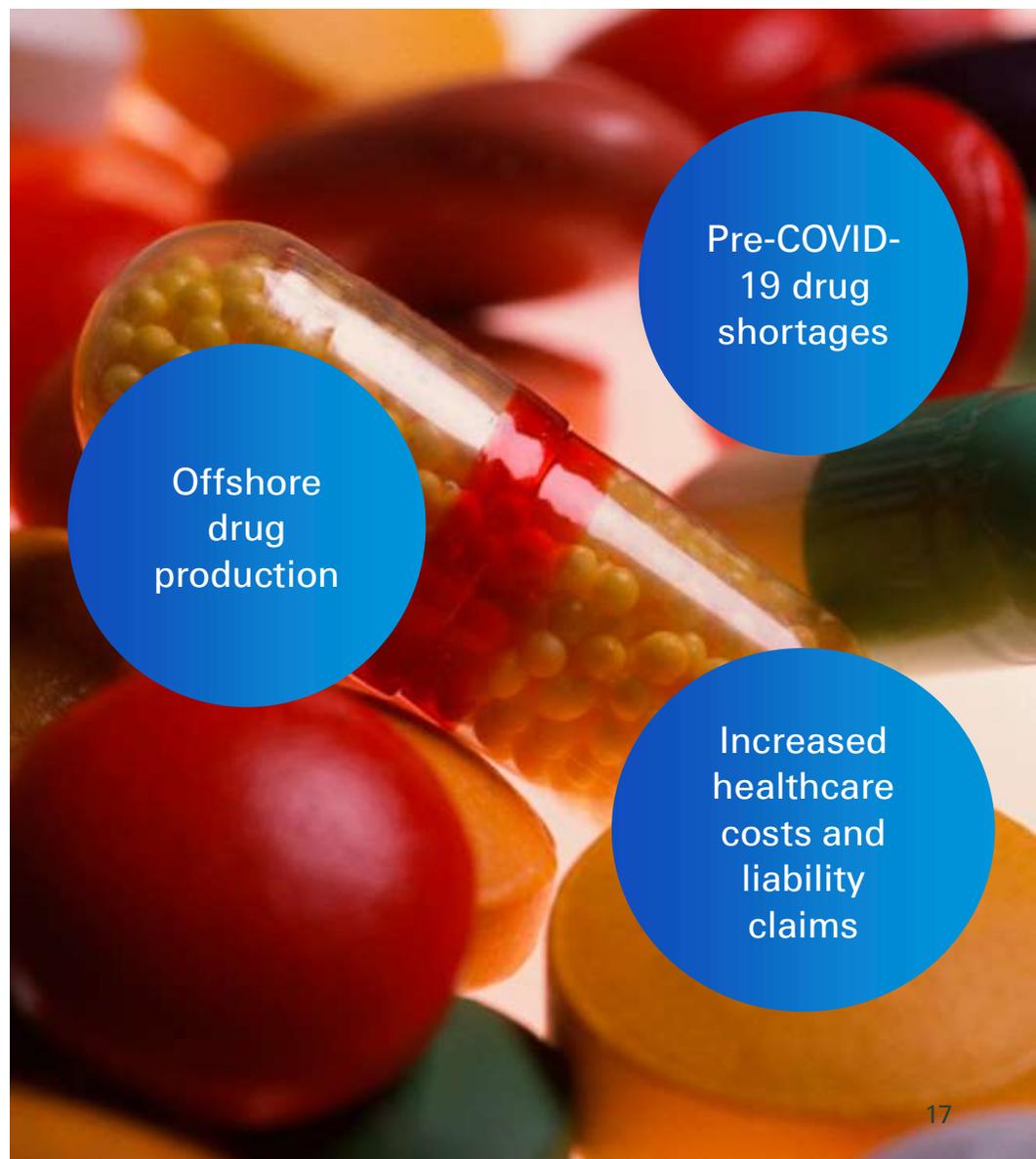
Frontrunners will profit from experience gathered over the next decade.



0 – 3 years emerging risks themes

Global pharmaceutical supplies – breaks in the chain?

- A very large percentage of the active ingredients in everyday pharmaceutical products are manufactured in China and India.
- Healthcare systems in Europe have similar dependency on foreign suppliers.
- The offshoring of drug production to emerging markets is one part of the risk story. The other is that foreign producers have themselves become increasingly concentrated to achieve economies of scale.



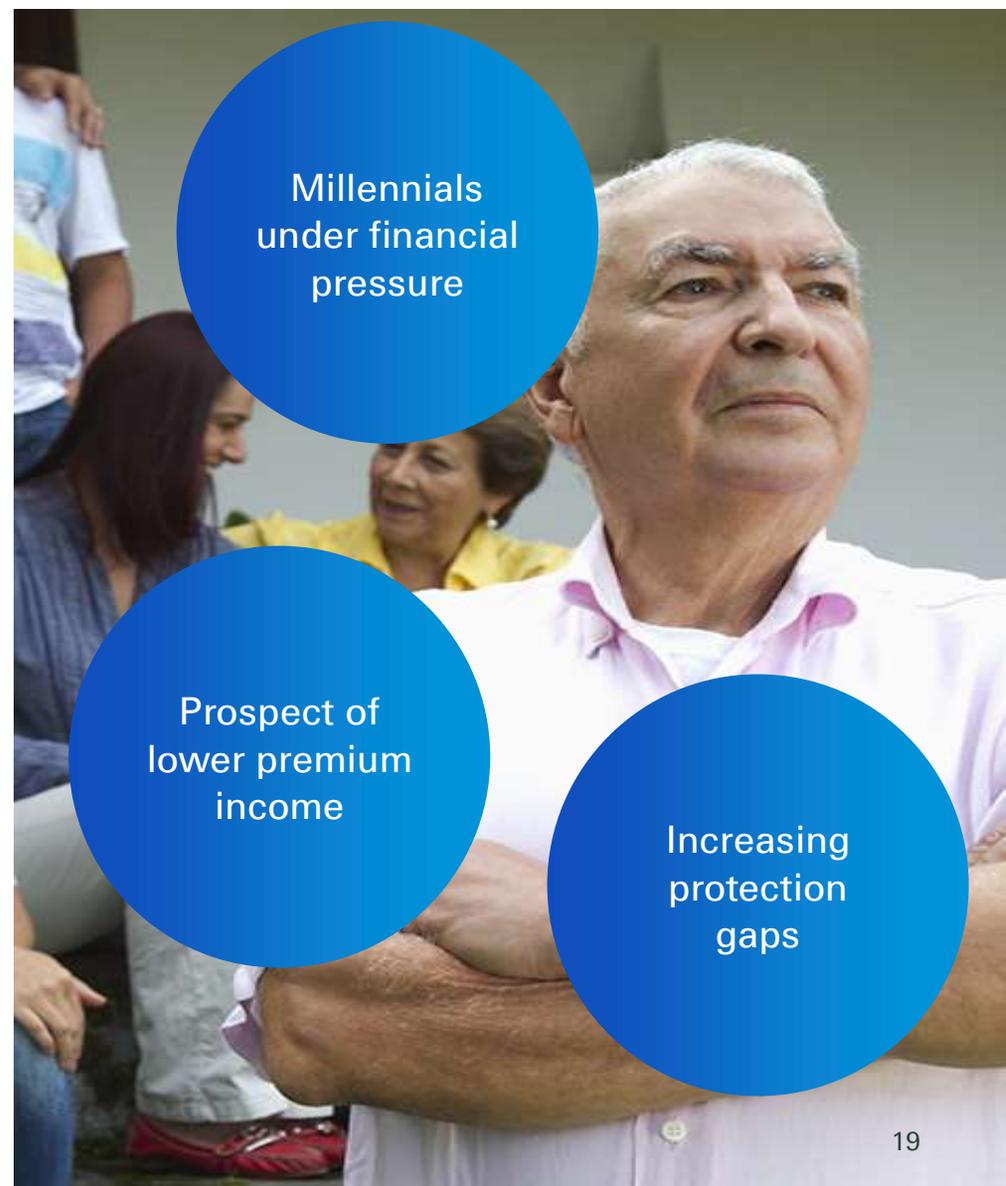
Out of sight, out of mind – mental health issues among the young

- Stigma around mental health means many sufferers are not open about their condition, and do not seek help.
- The stigma can be more prevalent in different cultures, and the number of people across the world living with mental health issues is very likely to be much higher than known.
- Poor mental health among the young does not stem only from the changes that happen during puberty.



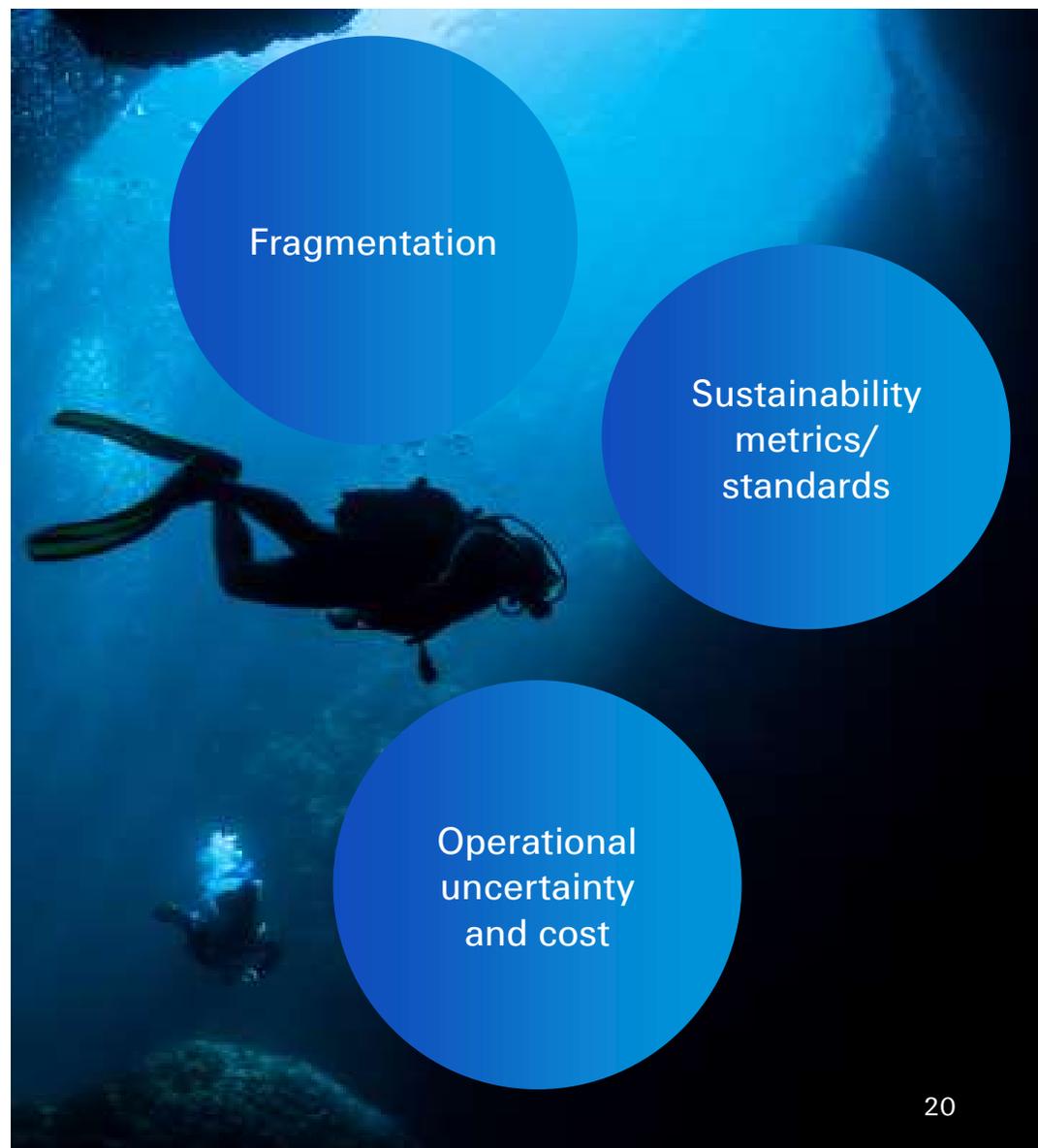
Tipping the scale? – intergenerational imbalances on the rise

- The pandemic shock and its economic consequences (recession) has accentuated longer-term structural problems in many markets. Younger generations, in particular Millennials, will be impacted negatively for years to come.
- This will increase pressures on intergenerational social contracts.
- Frustrated expectations regarding income, job security and wealth building may translate into political tensions and social unrest.



Standards – into the unknown

- Standards – established norms – have been a fundamental driver of globalisation.
- They unify the handling or design of products and services, and allow exchangeability of parts and tasks across production entities and countries.
- For insurers, fragmentation in standards and regulation means less scalable market conduct given variance in governance requirements, and increased uncertainty and downside risk.



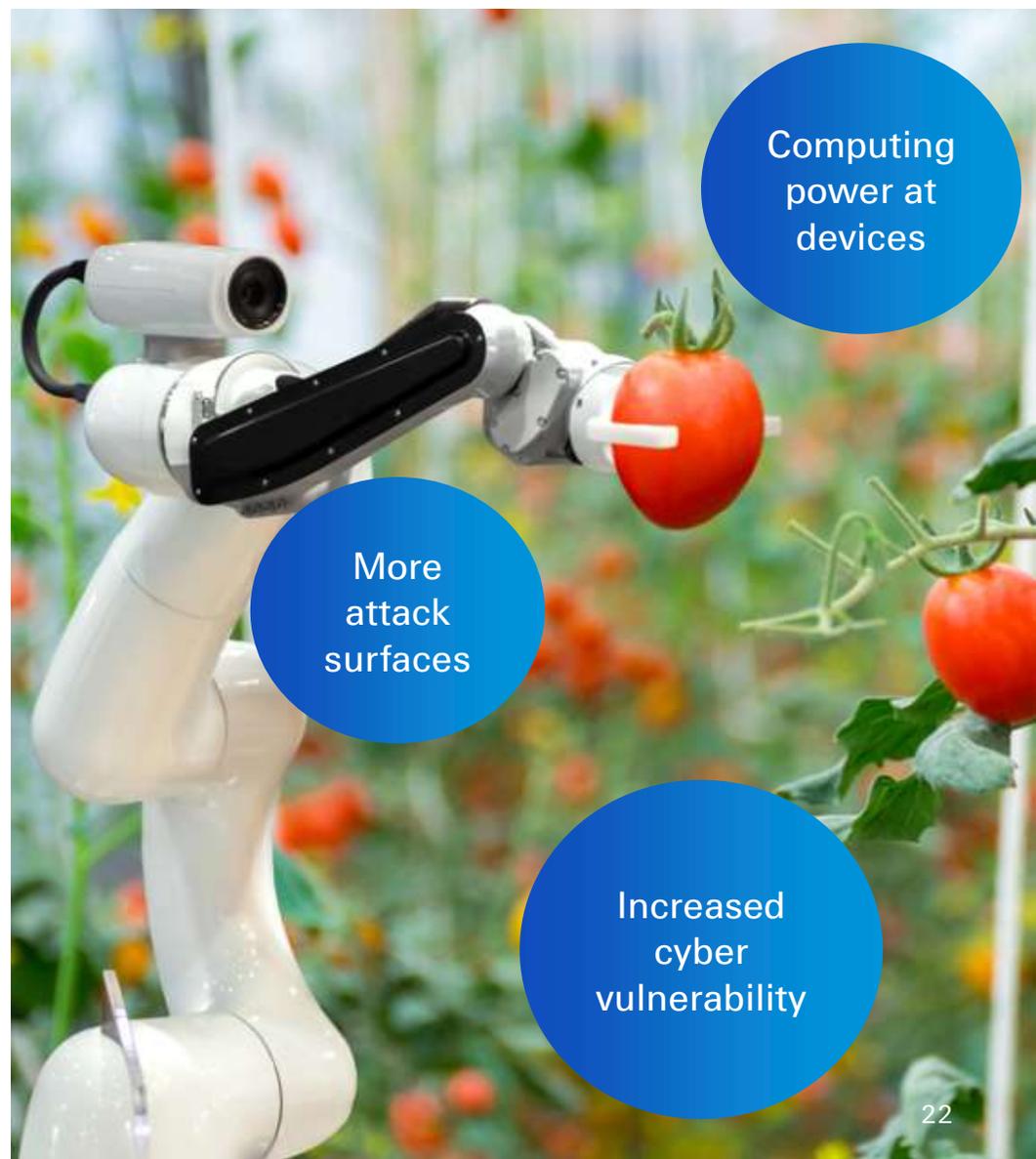
Burning question – risky lithium-ion batteries

- Since 2010, the price of lithium-ion batteries (LIBs) has fallen by more than 80%.
- LIBs have become the most widely used type of rechargeable batteries – their application ranges from mobile devices to vehicles and energy storage systems.
- There are risks along the entire value chain.



Computing at the edge – cybersecurity overstretched?

- Edge computing can supercharge data exchange, but also lead to more cybersecurity breaches.
- Rapid transfer and process of massive amounts of information on the data highway is available to us now.
- With the Internet of Things (IoT), data needs to be transferred and processed not just more quickly, but instantaneously.



Grey accountability – product liability in the era of smart everything

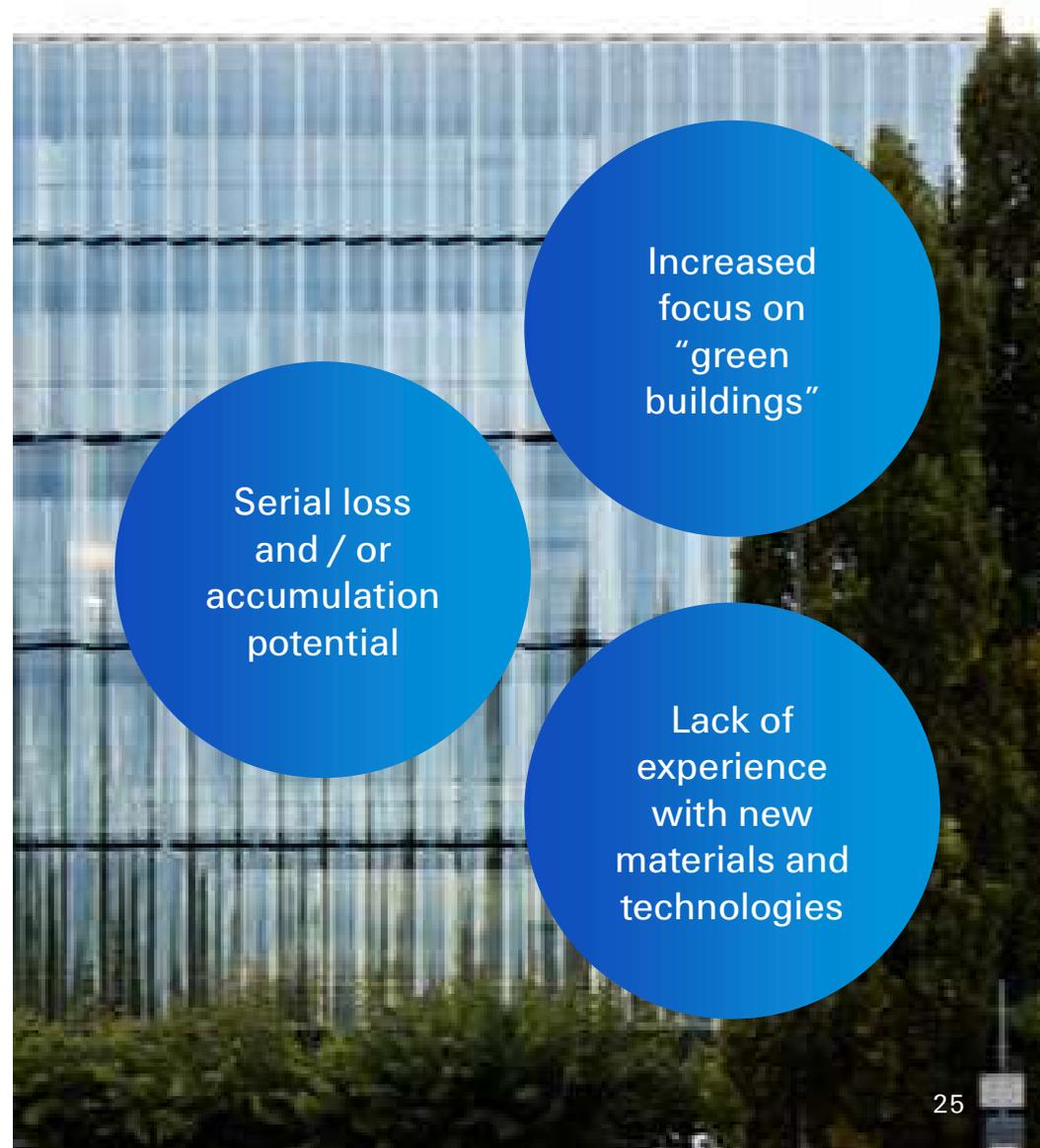
- More and more, products are becoming services that are dependent on a relationship with a provider (eg, software updates).
- It is more challenging to assign liability in these cases than with a stand-alone physical product.
- Traditional insurance covers for product liability will need to be revisited and likely re-designed.



> 3 years emerging risk themes

Green buildings – will they pass the test of time?

- Building requirements are continually amended to minimise the impact of the built environment on the planet.
- World-wide market of green construction materials is expected to grow from USD 171bn in 2015 to more than USD 377bn by 2022.
- There is a flood of labels which make it at times difficult to determine the relevant standard.



Hydrogen fuel cells – propelling the future?

- Hydrogen fuel cell technology is developing rapidly, and enables energy storage and emission-free mobility.
- It is promising for use as fuel for larger vehicles, and for the transition to a low-carbon economy.
- However, scaling up the technology for sustainable, wider adoption brings significant risks, potentially triggering property and product liability claims.



Emerging trend spotlights

- The fragility of healthcare systems
- A sea change in app usage?
- Sustainable supply chain management in financial services

The fragility of healthcare systems

Preparedness to cope with the pandemic appears to have been insufficient in most places locally, nationally and internationally.

However, some public health systems responded faster to the COVID-19 outbreak than others.

Most experts agree on some “positives” for preparedness from the COVID-19 experience.

The insurance industry can provide risk expertise and financial risk transfer solutions.

Insurers can also engage in prevention and collaborative approaches.



A sea change in app usage?

The lockdowns in response to the COVID-19 crisis have triggered an unprecedented upsurge in remote service consumption.

We have changed not only how much, but also what we consume online.

Is the increased usage of online services here to stay?

Are traditional insurers able to meet the demand for online offerings?

What will relaxed data provisions and laws mean for insurers?

Sustainable supply chain management in financial services

There is an increased focus on corporate responsibility and ESG criteria in the financial services sector.

Knowing the entire supply chain – not just a direct supplier – is key to managing sustainability risks.

How can the environmental footprint of the entire supply chain be reduced?

At the same time, supply chains need to be resilient to shocks.

Leveraging SONAR

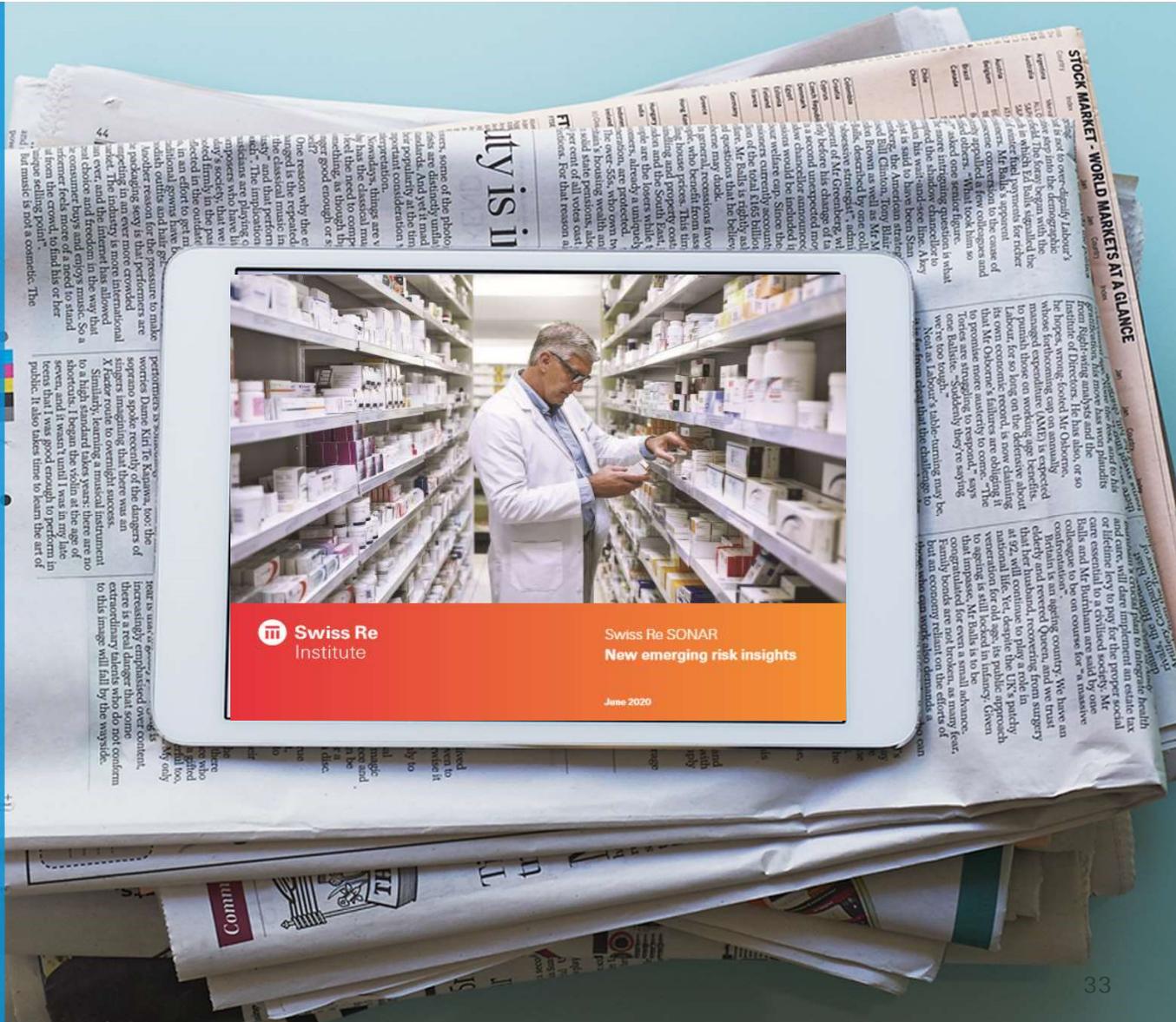
With Swiss Re Institute's SONAR report, we share emerging risk information with our clients and partners

- Swiss Re Institute flagship publication
- Published annually since 2013 (Swiss Re internal format since 2007)
- High-level review of emerging risk themes as collected through the SONAR system over the course of a year
- Widely shared within Swiss Re and beyond (clients, regulators, media, public)
- The 2020 edition was launched on 4 June



SONAR report

www.swissre.com/sonar



Contacts in case of questions

Maren Bodenschatz

Maren_Bodenschatz@swissre.com

+41 43 285 99 71

Transition to a low carbon economy and carbon removal

Rainer Egloff

Rainer_Egloff@swissre.com

+41 43 285 97 51

Overall questions and EMEA

Clément Guitton

Clement_Guitton@swissre.com

+41 43 285 18 62

Political and cyber risk questions

Ésa Kasper

Esa_Kasper@swissre.com

+41 43 285 18 64

Overall questions and Asia

Martin Weymann

Martin_Weymann@swissre.com

+41 43 285 95 55

Overall questions, client interactions and media

Bernd Wilke

Bernd_Wilke@swissre.com

+41 43 285 70 77

Overall questions and Americas

Follow us



Appendix

Terms and definitions

What are emerging risks?

We define emerging risks as newly developing or changing risks that are difficult to quantify and could have a major impact on society and industry.

What is SONAR?

SONAR stands for systematic observation of notions associated with risk. It is Swiss Re's tool for identifying, assessing and managing emerging risks. Experts across the company use a web-based platform to collect early signals of emerging risks. All signals are assessed and prioritised by an emerging risk management team which closely interacts with topical experts from Swiss Re's various business areas. The findings are regularly shared internally and summarised for external audiences here.

What are emerging risk insights?

Emerging risk insights illustrate potential new threats for the insurance industry. They are mainly derived from SONAR but also draw on other sources. All insights have been assessed and edited by Swiss Re's emerging risk management experts. The SONAR report features only new emerging risk insights, i.e. topics covered in previous editions are not listed again. Prior reports can be retrieved from our webpage:

<https://www.swissre.com/institute/research/sonar.html>

What is meant by overall impact?

The overall impact is an indicator of the potential financial, reputational and/or regulatory impact associated with an emerging risk topic. It is assessed on a scale from high to low.

What is meant by timeframe?

We divide themes into those likely to occur in less than three years and those likely to occur later. This should not be used as an indicator of when action is needed, as some themes likely to occur in the more distant future may, nonetheless, require immediate action to prepare.

Foresight is key to prepare for future challenges

- Today's **dynamic risk landscape presents the re/insurance industry with new challenges and opportunities** at ever faster pace and in increasingly unexpected ways. Changes in our environment modify known risks, create new ones and open new opportunities for insurers to reduce, mitigate and transfer risk.
- To this end, Swiss Re facilitates development of a comprehensive understanding of emerging risks, their **integration into Enterprise Risk Management** and the **design of associated risk-protection solutions** through open dialogue with our clients and wider stakeholders.
- The insurance industry needs to demonstrate foresight and make use of sound future intelligence.
- Swiss Re's SONAR report, which has been published annually since 2013, provides a **forward-looking perspective to further promote and engage with such risk dialogue**.



Legal notice

©2020 Swiss Re. All rights reserved. You are not permitted to create any modifications or derivative works of this presentation or to use it for commercial or other public purposes without the prior written permission of Swiss Re.

The information and opinions contained in the presentation are provided as at the date of the presentation and are subject to change without notice. Although the information used was taken from reliable sources, Swiss Re does not accept any responsibility for the accuracy or comprehensiveness of the details given. All liability for the accuracy and completeness thereof or for any damage or loss resulting from the use of the information contained in this presentation is expressly excluded. Under no circumstances shall Swiss Re or its Group companies be liable for any financial or consequential loss relating to this presentation.