



Climate Change – How to prepare an organisation for the challenges that lie ahead?

Dr.Torolf Hamm, Head of Catastrophe & Climate Risk Management

Climate Change Impact – Context

Physical

- Acute
 - Flood
 - Wind
- Chronic
 - Sea Level Rise
 - Heat Stress



Transition

- Policy & Legal
- Reputation
- Technology
- Market



Fighting climate change

The world urgently needs to expand its use of carbon prices



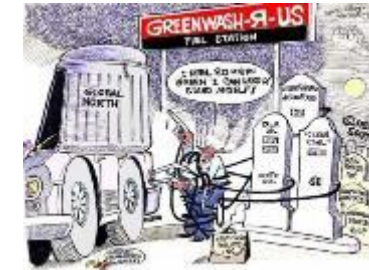
Credit rating agencies focus on rising green risks **FT**

BlackRock C.E.O. Larry Fink: Climate Crisis Will Reshape Finance

The New York Times

Liability

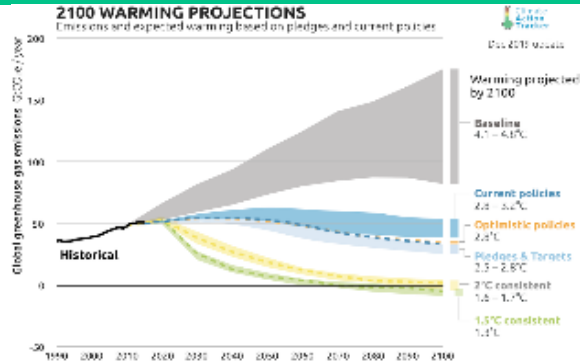
- Product liability
- Third party liability
- Misrepresentation & Fraud
- Greenwashing



Why companies asking for help? - Significant Investor Interest, Regulatory and Reputational Pressures

Climate related financial disclosure is ever more important

Climate Change is Observable and Fuelled by Industry



Increasing Regulatory Attention



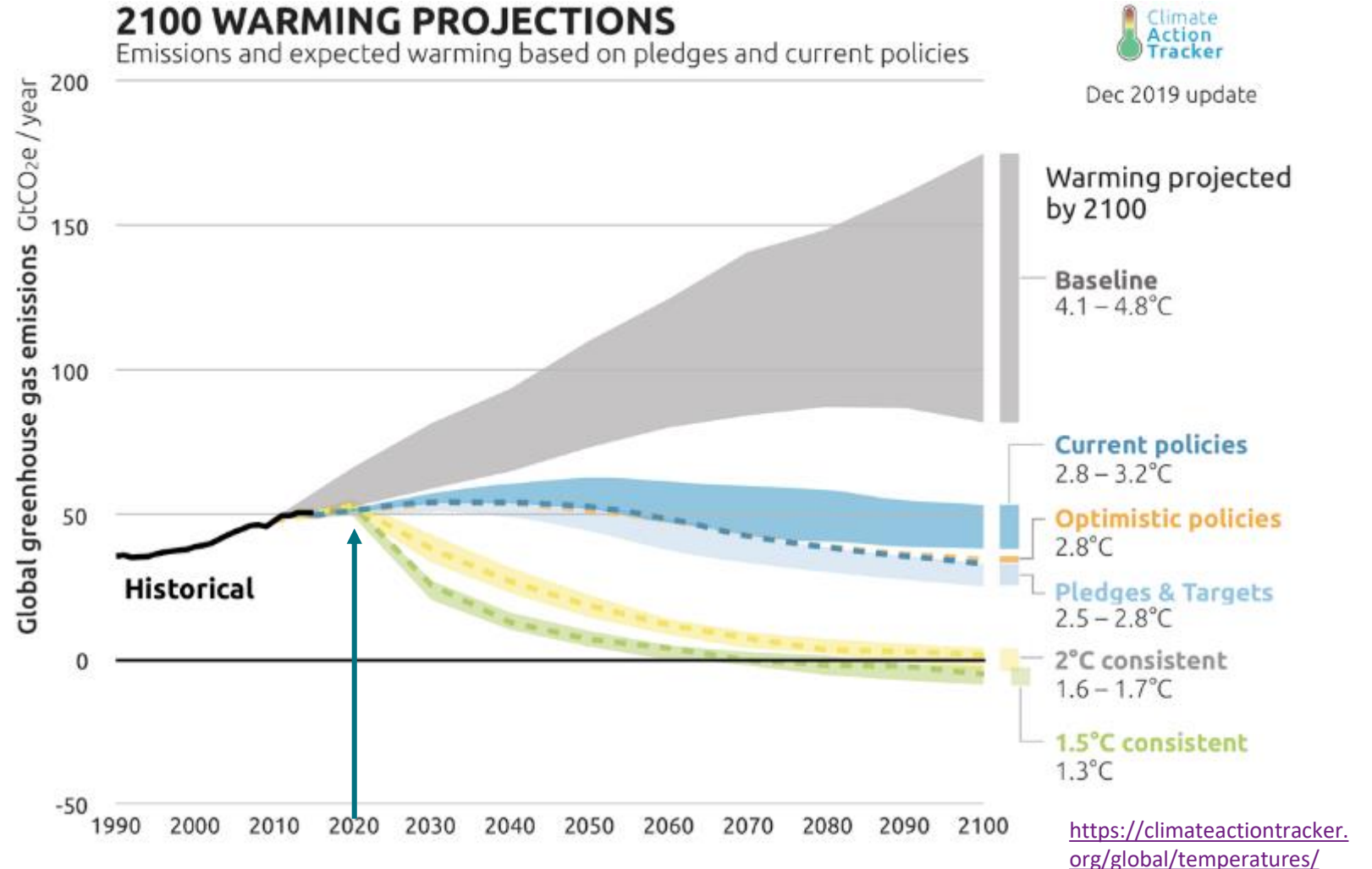
Collective International Multi-Industry Shift



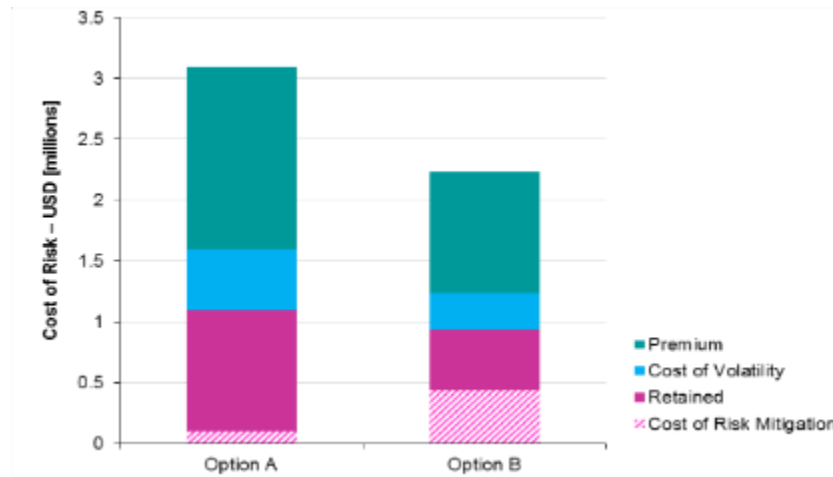
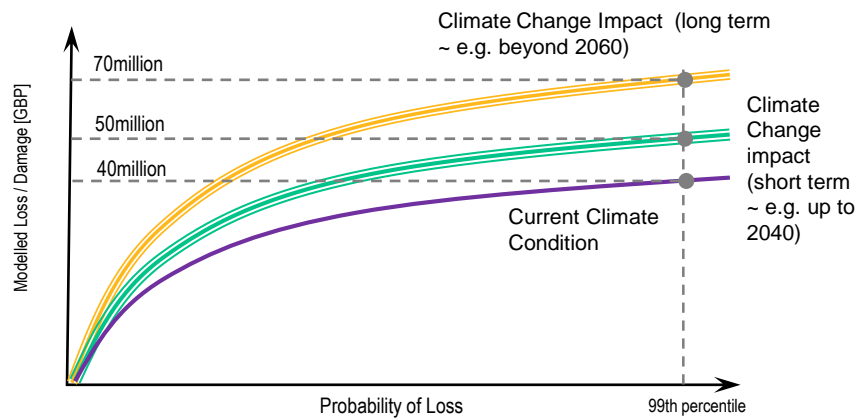
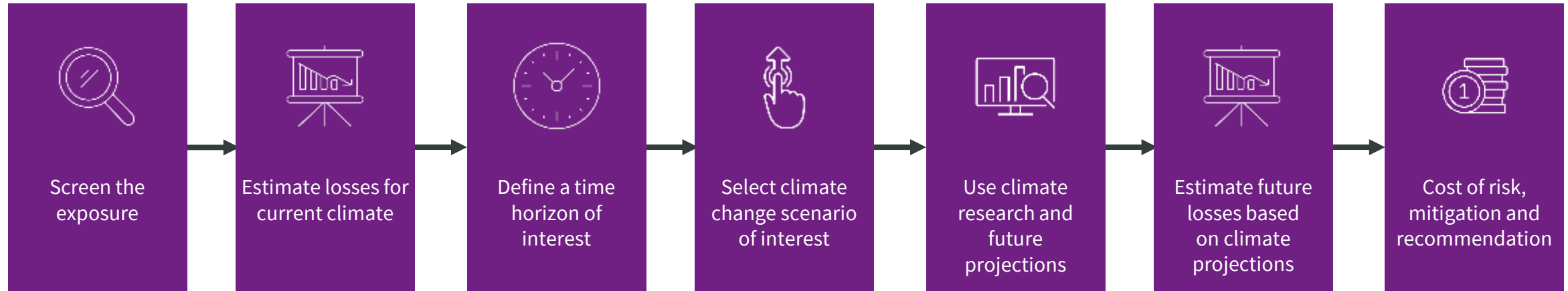
- ✓ Many of the biggest investors in infrastructure worldwide are signed up to TCFD as they require transparency around their investments exposure to climate change risk
- ✓ Encourages a strategic approach to managing climate change risk, identifying both risks and opportunities to shape future strategy and build resilience using climate change scenarios
- ✓ Understanding the impact of Climate Change on organisation enables more informed decision making
- ✓ To remain competitive with their peers who are disclosing
- ✓ Positive reputational impacts of disclosure

Climate Change Impact Assessments lean on the concept of scenario stress testing but a meaningful approach needs to be adopted

- Strategic relevance of time horizons / scenarios - Interaction **between transition impact (short term) & physical impact (medium & long term)**
- **Low-carbon world (< 2°C)** – this group of scenarios could be disruptive in terms of transition impact in the short term because industries and in particular high carbon emitting industries have to adjust quickly.
- **Hot House World (> 3°C)** – For this group of scenarios society continues to increase emissions doing very little if anything to avert physical impact. The world's temperature continues to increase significantly with catastrophic consequences and the associated 'chronic change' of climate becoming the 'New Normal'



Possible assessment process – Example Physical Climate Change Impact Assessment

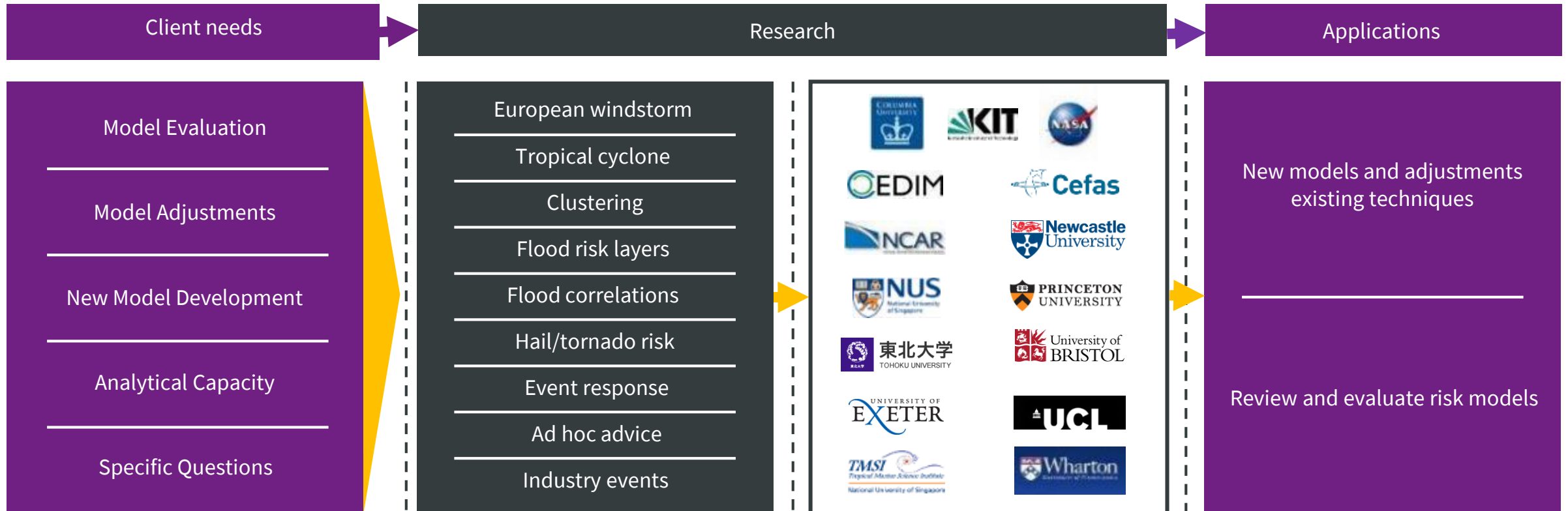


MODELLED LOSSES			
Coastal Storm Surge 1 in 100 years return period [%]	Flood 1 in 100 years return period [%]	Combined Loss 1 in 100 years return period [%]	Combined Loss (Accumulative) 1 in 100 years return period [%]
2.92%	6.99%	7.19%	7%
5.06%	5.95%	5.21%	12%
1.41%	3.55%	3.72%	16%
2.57%	4.12%	3.71%	20%
3.43%	3.45%	3.40%	23%
2.38%	0.10%	3.33%	27%
2.78%	0.30%	3.18%	30%
6.80%	4.34%	3.01%	33%
1.76%	3.32%	2.98%	36%
2.13%	3.17%	2.58%	38%
1.77%	3.01%	2.42%	41%
1.45%	2.42%	2.40%	43%
1.45%	2.34%	2.23%	45%
1.27%	0.06%	1.62%	47%
0.21%	1.80%	1.49%	48%

Leverage climate science to inform climate strategy

- Independent validation or adjustment of existing models
- Build robust and credible climate scenarios
- Risk register stress testing by multi-disciplinary teams

Example of science integration



Willis Research Network
WillisTowersWatson

Emerging climate change induced risks may not arise in isolation

A plausible case study



Engineers were contracted by a utilities infrastructure firm to design and build a dam



Local rainfall exceeds design specifications, dam fails and floods 1000+ homes and businesses



Higher rainfall is attributed to climate change



Rebuilding the dam to new specifications costs more than the dam was insured for



Homeowners take legal action against utilities infrastructure firm for not considering the impact of climate change in their dam design



Key benefits of an analytically and SME driven approach to assess Climate Change Impact

Climate risk assessment findings can inform business and resilience strategy



✓ Manage climate related risk

Identify the areas and perils which are driving the climate risk with focus on expected future climate impact exposure

Quantify the financial risks and opportunities associated with climate change

Increase climate change resilience using targeted mitigation actions to reduce cost of climate change impact



✓ Inform disclosure

Enhance informed disclosure in frameworks such as TCFD

Demonstrate awareness of climate impact, supporting a positive reputation

Build a robust analytically driven framework around annual disclosure



✓ Support strategy

Identify the implementation of strategic opportunities relating to climate change

Gain better understanding of the impact of Climate Change on the organisation to inform longer term forward looking strategic planning

Base action on analytically informed tailored climate risk and investment options

Recap of key messages



- Rapidly evolving policy landscape is leading to climate risk becoming mainstream
- Climate change presents financial risks through physical, transition and liability channels. These channels are interconnected.
- Quantifying physical climate risk is an important first step – the insurance industry is well placed to help
- Risk managers can also play a strategic role, working the board to consider current and future risks

Doing nothing is no longer a viable option – start now!

Contacts

Torolf Hamm

Ph.D., D.I.C. Dipl. Geol.

Global Head, Catastrophe & Climate Risk Management

Risk & Analytics | Strategic Risk Consulting

torolf.hamm@willistowerswatson.com

Pietro Andreotti

Associate Director

Catastrophe & Climate Risk Management

Risk & Analytics | Strategic Risk Consulting

AndreottiPi@WillisTowersWatson.com



Thank You!

