



PERILS

10 YEARS

for the industry,  
by the industry

SINCE 2009

10  
years

OF PERILS

Founded in 2009 as a non-profit industry initiative, PERILS has always focused on its mission to increase the availability of insurance data. Over the last 10 years, we have expanded our geographical coverage of market exposure data to 16 countries, captured more than 40 significant natural catastrophe events and facilitated over 270 PERILS-based risk transfer transactions representing limits of USD 17bn. All of this makes PERILS a perfect example of a successful industry initiative.

## MISSION

# Independent Benchmark

Since the very beginning, the mission for PERILS was to provide independent benchmark data for the benefit of risk assessment and risk transfer. This mission has received broad support over the years. PERILS is now backed by more than 180 data-providing insurers and database subscribers. As such it truly is for the industry by the industry.

## MARKET SUPPORT

68%

**SUPPORT**

PERILS is supported by more than 150 national insurance companies which provide natural catastrophe exposure and event loss data. They represent 68% of the primary insurance industry in the 16 countries covered by PERILS.

## MARKET COVERAGE



# 16

**COUNTRIES**

PERILS currently covers 16 countries: Australia, Austria, Belgium, Canada, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, Turkey, and the United Kingdom.

**USERS**

**185**

**FIRMS**

PERILS data are being used by some 185 companies across the globe. These include primary insurance companies, reinsurance intermediaries, reinsurance companies, ILS investment funds, modelling firms, regulators and academic organisations.

## INDUSTRY LOSS

# 16m

## CLAIMS

Over the last ten years, PERILS has produced 44 industry loss footprints based on actual claims data collected from insurance companies. In total, these represent 15.6 million claims and a total industry loss of USD 33.1bn.

## INDUSTRY EXPOSURE

# 75tn

**SUM INSURED**

Since 2009, PERILS has produced more than 100 market exposure portfolios based on actual sums insured information collected from insurance companies. In its most recent update, the industry exposure for 2019 represented USD 74.7tn of Cat-exposed sums insured from 219 million insurance policies.



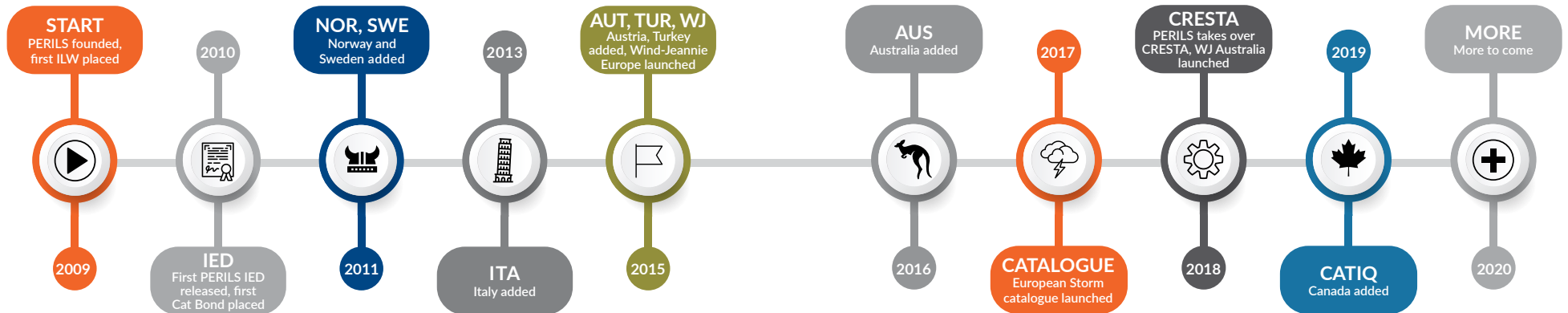
## RISK TRANSFER

# 17bn

**LIMITS**

PERILS data are being used as triggers in industry-loss-based risk transfer products. To date, PERILS data have facilitated more than USD 17bn of Cat limits.

FOR THE INDUSTRY,  
BY THE INDUSTRY



## MILESTONES

PERILS continuously strives to add new territories and products to its offering, consistent with its mission to increase the availability of natural catastrophe information for a better understanding and management of Cat risk.

## MARKET SUPPORT IN DETAIL

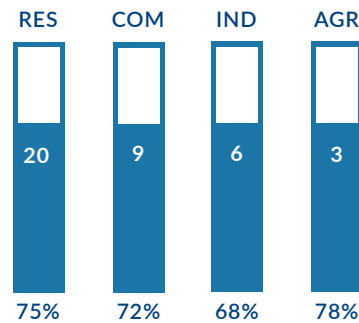
Market	< 50%	50-60%	60-100%
Australia			
Austria			
Belgium-Lux			
Canada			
Denmark			
France			
Germany			
Ireland			
Italy			
Netherlands			
Norway			
Sweden			
Switzerland			
Turkey			
United Kingdom			
Total			68%

PERILS data providers represent 68% of the property insurance premium written in the countries covered by PERILS. The provided exposure and event loss information forms the basis for the extrapolation calculations underpinning the PERILS Industry Exposure & Event Loss Database.

# METHODOLOGY IN DETAIL

PERILS extrapolates collected exposure and event loss data to 100% industry (market) level. Extrapolation is done per CRESTA zone and property line of business by distributing the collected company premiums per LOB to CRESTA zones in proportion to the collected company TSI. Market premiums per LOB are distributed to CRESTA zones via proxy data (e.g. population). The resulting market coverage per CRESTA and LOB is used to extrapolate the collected TSI & Event Loss Data to 100% industry level.

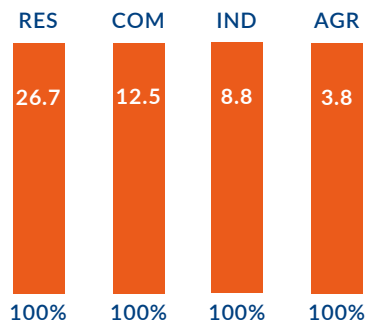
## Aggregated Company TSI & Event Loss



Market Coverage per CRESTA Zone



## Industry TSI & Event Loss



Industry per CRESTA Zone

# INDUSTRY EXPOSURE IN DETAIL

PERILS provides annual updates of its Industry Exposure Database for each covered country. Combined with the PERILS event loss database, these provide an ideal source for market benchmarking and for assessing market loss potentials. All PERILS Industry Exposure data are based on sums insured collected from insurance companies writing business in the covered countries, grossed up to 100% market. As such, PERILS industry exposures reflect the “ground-truth” as accurately as possible.

AUS



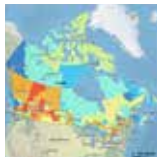
AUT



BEL



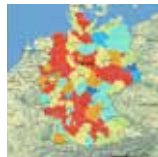
CAN



CHE



DEU



DNK



FRA



GBR



IRL



ITA



NLD



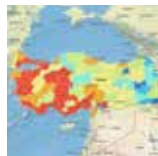
NOR



SWE



TUR





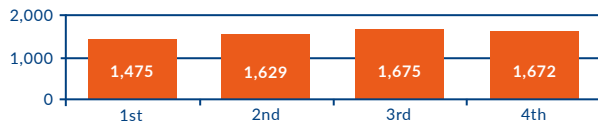
# INDUSTRY LOSS IN DETAIL



\* Per country  
\*\* Per CRESTA  
Zone and  
Property LOB



Storm "Frederike", 17 Jan 2018, in EUR m



PERILS makes available a minimum of four industry loss reports for each qualifying event. Starting with the 3rd report, industry loss footprints are provided in LOB and CRESTA resolutions. PERILS does not apply any kind of Cat loss modelling. Instead, all PERILS event loss numbers are based on claims data collected from affected insurance companies, grossed up to 100% market. As such PERILS industry losses reflect the "ground-truth" as accurately as possible.

## CATIQ OF CANADA



### FORT MCMURRAY WILDFIRE: CAD 3.8BN INDUSTRY LOSS

PERILS is the owner of Toronto-based Catastrophe Indices & Quantification Inc. (CatIQ). Established in 2014, CatIQ is widely recognised as the most reliable source of catastrophe loss and exposure information in Canada. The firm collects event loss and exposure data from the vast majority of the Canadian market and works closely with industry bodies such as the Insurance Bureau of Canada or the Canadian Institute for Catastrophic Loss Reduction.



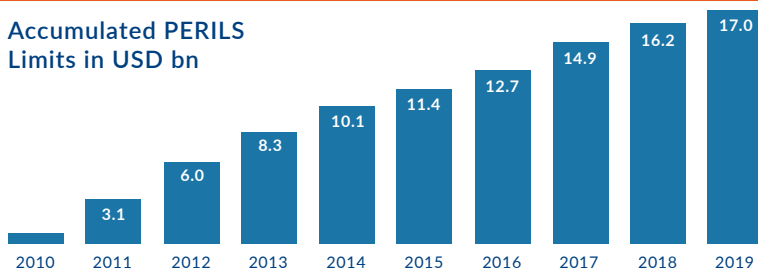
### MODEL VS. GROUND TRUTH

The PERILS Industry Exposure & Loss Database serves as an excellent source for validating catastrophe risk models. In addition, by comparing the PERILS event loss data with the PERILS industry exposure, it is possible to derive damage degrees and to correlate them with physical event intensities. This enables the validation of the damageability assumptions in catastrophe risk models.

## RISK ASSESSMENT

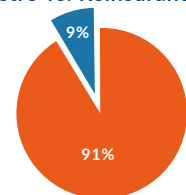
## RISK TRANSFER

Accumulated PERILS  
Limits in USD bn



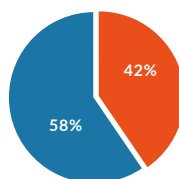
PERILS data are being used as triggers and for risk assessment in the industry loss risk transfer market. The risk transfer instruments that typically use PERILS are industry loss warranty and Cat bond transactions. To date, more than 270 transactions have used PERILS as the industry loss reporting agency. Together these represent USD 17bn in limits.

Retro vs. Reinsurance



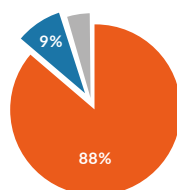
■ Retro ■ Reinsurance

ILS vs. ILW



■ ILS ■ ILW

Territories



■ EUR ■ AUS ■ OTHER

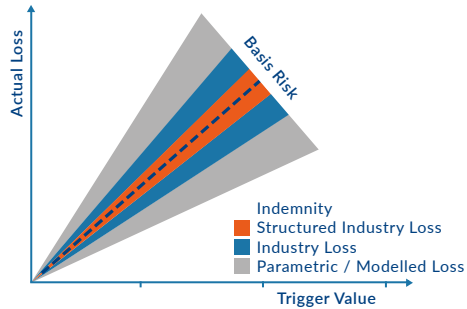
Over the last 10 years, PERILS-based industry loss risk transfer has been used most widely for retrocession. Two markets operate in this space, the traditional reinsurance market via industry loss warranty products (ILW) and the capital markets via insurance-linked securities investments (ILS / Cat bonds). The majority of PERILS-based limits covered Europe, followed by Australia, Turkey and Canada.

## RISK TRANSFER IN DETAIL

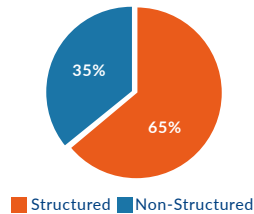


# STRUCTURED INDUSTRY LOSS TRIGGER

PERILS industry losses enable structured industry loss triggers. These custom-made triggers represent an effective means of reducing basis risk. PERILS industry loss data allow for geo- as well as for LOB-structured triggers. These reduce the uncertainty for both the protection buyer and protection seller by tailoring the simple concept of industry loss to the specific risk transfer needs.



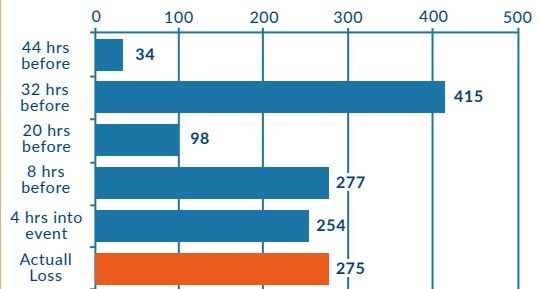
Trigger Types



# WIND-JEANNIE

PERILS introduced the first-ever industry loss forecasting platform. Similar to weather forecasting websites, Wind-Jeannie provides forecasts of the wind impact on the insurance industry. The platform runs on smartphones, tablets and personal computers. Industry loss forecasts are updated in real-time twice a day. It takes less than 15 seconds to check a forecast. Wind-Jeannie is available for Europe and Australia.

Industry Loss Forecasts in EUR m



# CRESTA

PERILS took over the management of CRESTA from Munich Re and Swiss Re in 2018. Together with the CRESTA Advisory Board, which includes representatives from key industry stakeholders, PERILS ensures that the CRESTA standards is kept up-to-date.

CRESTA aims to increase the efficiency and interoperability within the global insurance markets. It was set up by the industry in 1977 as an independent organisation for the technical management of natural catastrophe insurance. CRESTA provides data aggregation standards used by the global insurance industry to manage natural catastrophe risks.



## THE FUTURE OF PERILS

To insure natural catastrophes effectively, you must be able to understand and measure the risk generated by perils such as windstorms, earthquakes and floods.

One fundamental pillar of this risk understanding is knowledge of the past. Without reliable historical exposure and loss information, natural catastrophe risk assessment is largely based on educated guesses and assumptions, with a large margin of error.

This is why we at PERILS believe our work will remain relevant in the future. We also believe that many more countries can benefit from the work we do. We are open to expand our territorial scope and in fact are working on several fronts to include additional geographies in the PERILS Exposure & Loss Database. And of course, we are open to any suggestions the industry may have.

We are convinced that reliable industry exposure and event loss information benefits everyone in the risk transfer chain, from individual policy holders through to capital markets investors. This benefit is not limited to large insurance markets only. On the contrary, emerging insurance markets with large natural catastrophe protections gaps can benefit too by making the risks more insurable. With this in mind, PERILS is highly motivated for the future and is committed to making the next 10 years as dynamic and valuable to the industry as the first 10 years.



# PERILS

## INTERVIEW

### TAKING THE INITIATIVE:

10 years on from the launch of PERILS, Luzi Hitz considers the journey that the industry initiative has been on.

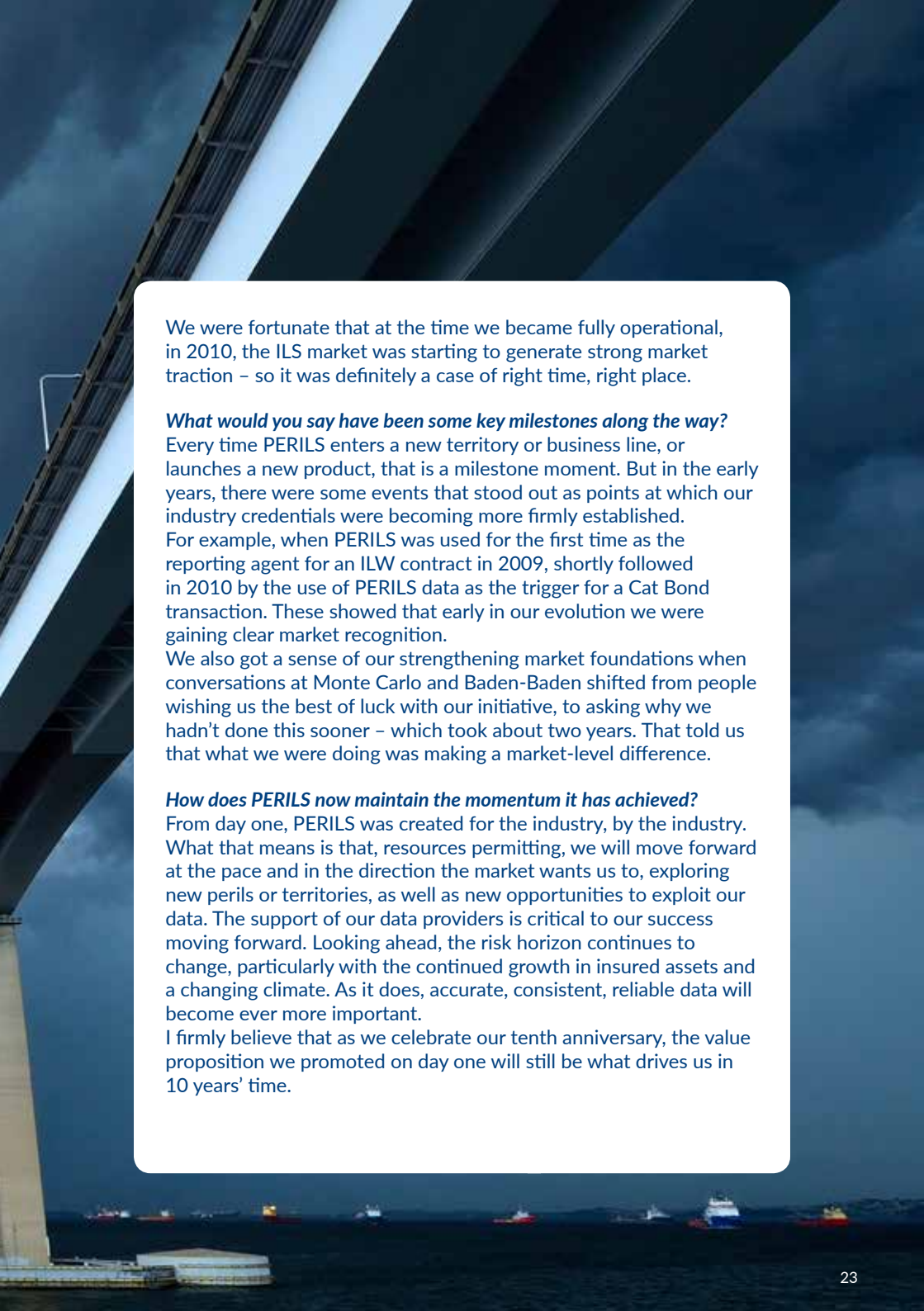
***How would you describe the data environment for European windstorm prior to the launch of PERILS?***

Information on storm events was limited primarily to global loss figures provided by a handful of national insurance associations, as well Munich Re and Swiss Re. There was no granularity of information or data consistency which made model calibration and industry-loss-based risk transfer of European windstorm risk virtually impossible. It was clear to all industry practitioners that what was needed was an independent body that could fill this information gap for European windstorm and increase the availability of insurance market data.

***How challenging was it to gain momentum following the launch of PERILS?***

We were extremely fortunate to have the backing of nine major (re)insurers at the time of launch. That sent a clear message to the wider market that this was a credible initiative with a defined mission and strong support. Onboarding data providing insurance companies was always going to be challenging, particularly given the level of trust required in our ability to handle proprietary data and our methodology to extrapolate that data up to market level. Our target initially was to ensure our data providers represented between 40%-50% of the property insurance premium written in the countries we covered. Within a relatively short period of time, however, we were hitting and exceeding these targets which perhaps shows the industry-wide recognition of our value proposition. I would also add that when launching a new operation one factor you can rarely influence to any great degree is timing.





We were fortunate that at the time we became fully operational, in 2010, the ILS market was starting to generate strong market traction – so it was definitely a case of right time, right place.

***What would you say have been some key milestones along the way?***

Every time PERILS enters a new territory or business line, or launches a new product, that is a milestone moment. But in the early years, there were some events that stood out as points at which our industry credentials were becoming more firmly established. For example, when PERILS was used for the first time as the reporting agent for an ILW contract in 2009, shortly followed in 2010 by the use of PERILS data as the trigger for a Cat Bond transaction. These showed that early in our evolution we were gaining clear market recognition.

We also got a sense of our strengthening market foundations when conversations at Monte Carlo and Baden-Baden shifted from people wishing us the best of luck with our initiative, to asking why we hadn't done this sooner – which took about two years. That told us that what we were doing was making a market-level difference.

***How does PERILS now maintain the momentum it has achieved?***

From day one, PERILS was created for the industry, by the industry. What that means is that, resources permitting, we will move forward at the pace and in the direction the market wants us to, exploring new perils or territories, as well as new opportunities to exploit our data. The support of our data providers is critical to our success moving forward. Looking ahead, the risk horizon continues to change, particularly with the continued growth in insured assets and a changing climate. As it does, accurate, consistent, reliable data will become ever more important.

I firmly believe that as we celebrate our tenth anniversary, the value proposition we promoted on day one will still be what drives us in 10 years' time.

## PERILS PROFILE

PERILS is an independent, not-for-profit organization based in Zurich Switzerland. Established in January 2009 on the initiative of the CRO Forum, PERILS was founded by: Allianz SE, AXA, Assicurazioni Generali, Groupama, Guy Carpenter, Insurance Australia Group, Munich Re, Partner Re, Swiss Re and Zurich Insurance. The purpose of PERILS is to provide market-wide exposure and event loss data for natural catastrophe perils.

PERILS market data can be used in a number of different ways. Firstly, proprietary exposure or event loss data can be benchmarked against the market. The new insight this offers enables a better definition of market positions per aggregation zone (CRESTA) and property line of business. In addition, after a big Cat event, the comparison of the exposure market shares with the event loss market shares can help reveal strong and weak spots in a given portfolio and can contribute significantly to portfolio optimisation and claims management.

The PERILS Industry Exposure & Loss Database also serves as an excellent means of validating catastrophe risk models. Post-event risk model calibration, which is often carried out using a variety of sources resulting in varying event loss estimates and industry exposure portfolios, may be performed using the PERILS benchmark data. In addition, by comparing the PERILS event loss data with the PERILS industry exposure, it is possible to derive damage degrees and to correlate them with physical event intensities. This enables the validation of the damageability assumptions in catastrophe risk models. As a result, risk models will become more realistic and robust over time.

The transparent and independent nature of the PERILS market loss estimates also facilitates the development of risk transfer products such as industry-loss based insurance linked securities (ILS) and industry loss warranty re/insurance contracts (ILW). In turn, the liquidity and stability of the Cat market is enhanced which is of benefit to reinsurance and retrocession buyers alike.

PERILS collects data in a standardised format directly from insurance companies writing property business in the covered territories. Data are made anonymous upon receipt. Data confidentiality is assured by means of a contract between the data provider (the insurance company) and PERILS, and by a purpose-built IT infrastructure. After compiling the provided exposure and loss data on a CRESTA and lines of business level, aggregates are extrapolated to 100% market level.

Reverse engineering of PERILS market data is not possible, i.e. the original company data cannot be reconstructed and the anonymity of data providing insurers is assured. The PERILS data collection and data processing approach has been acknowledged by national and supra-national competition authorities.

In addition to its Industry Exposure & Loss Database, PERILS also offers a European windstorm catalogue covering the last 40 years of storm activity, as well as “live” industry loss forecasts from windstorms in Europe and Australia ([www.wind-jeannie.org](http://www.wind-jeannie.org)). Furthermore, PERILS is the manager of the CRESTA industry standard ([www.cresta.org](http://www.cresta.org)).

All PERILS products are open-access. Subscription fees vary according to the size of the subscribing company.

The PERILS initiative has strong backing from the insurance industry. More than 150 national insurance companies are currently providing PERILS with data and more than USD 17bn of risk capital has been placed using PERILS as the industry loss reporting agency. This figure reflects the broad acceptance which the initiative has received. By improving the transparency and understanding of risk in the industry, PERILS is making an important contribution to a more robust and cost-effective catastrophe insurance market.

For further information about PERILS please call +41 44 256 8100, write to [contact@perils.org](mailto:contact@perils.org) or visit [www.perils.org](http://www.perils.org).



## CONTACT

### **PERILS AG**

Marktgasse 3, 8001 Zurich  
Switzerland  
contact@perils.org,  
+41 44 256 8100

### **PERILS Australia Pty Ltd**

9 Harris Street, Pyrmont,  
Sydney, NSW 2009  
Australia  
contact@perils.org  
+61 438 704 098

**WWW.PERILS.ORG**

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Thank You  
All for  
Making  
PERILS  
a Success