

22/05/2019,

Claim statistic on roof-based solar photovoltaic facilities in France



Gothaer is a German insurance group. We from the French branch act mainly in the domain of Renewable Energies. The most important business comes from

- Wind Farms
- Solar plants

Regarding Solar Plants, we mainly insure :

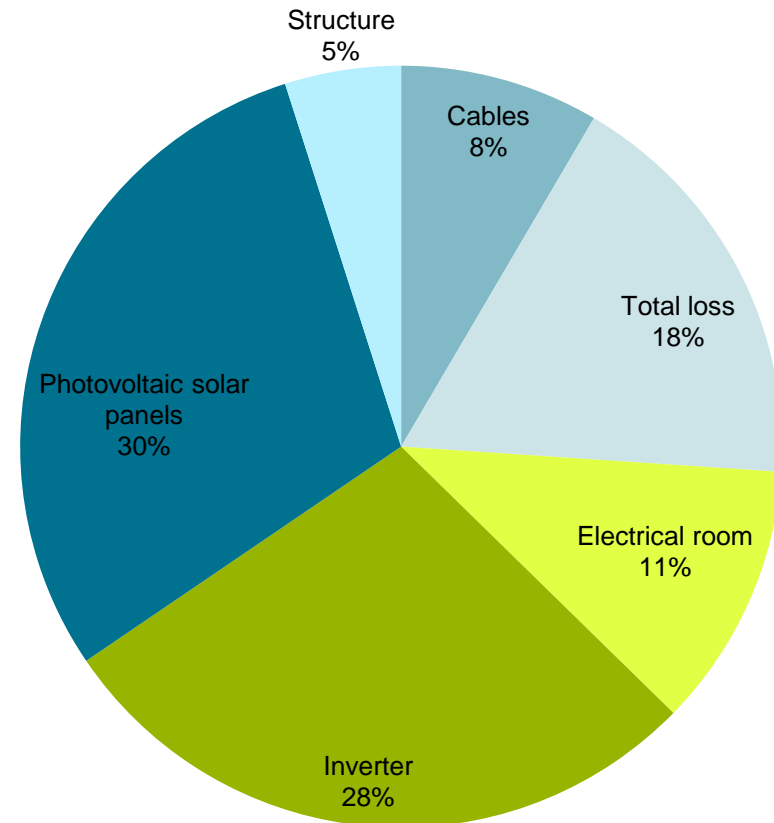
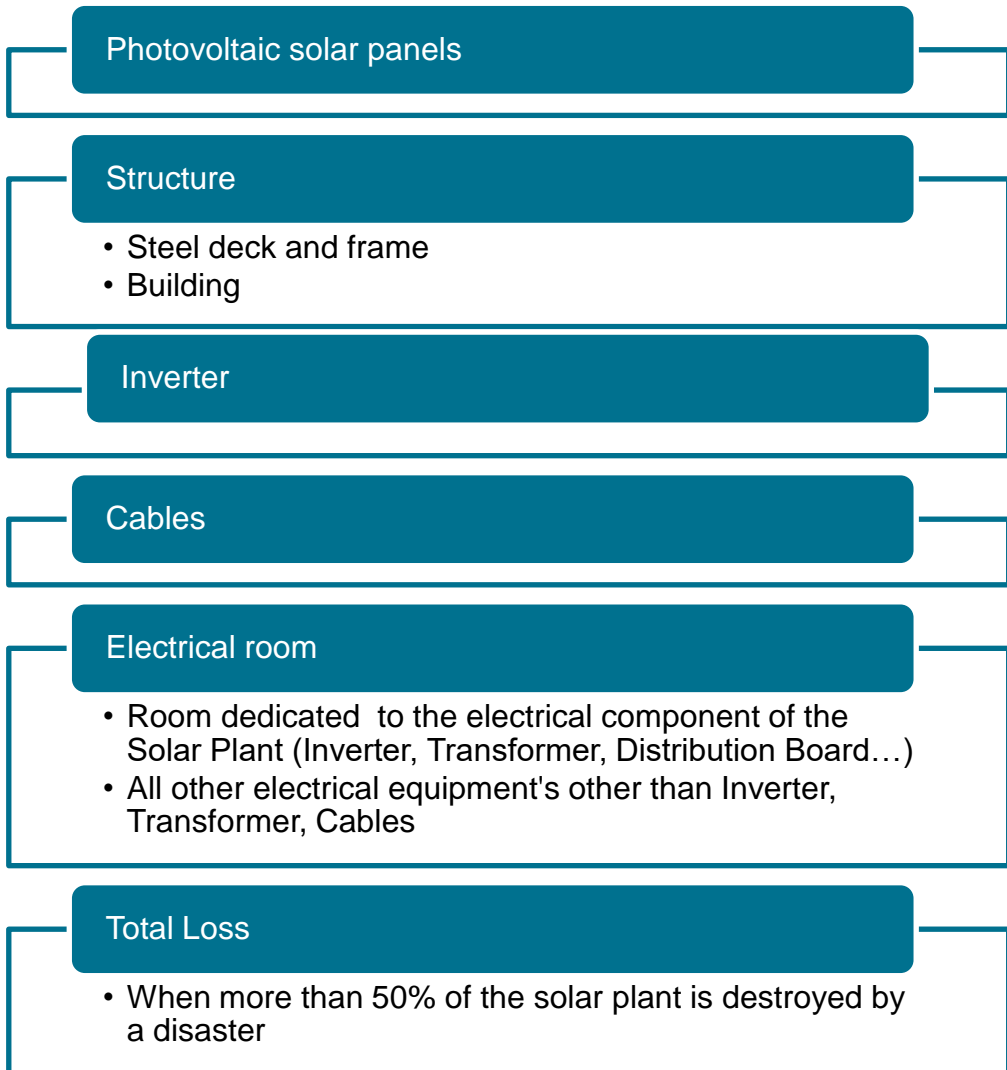
- Ground-based photovoltaic Plants
- Roof-based photovoltaic Plants (>100kWc) :
 - Agricultural Buildings
 - Commercial buildings

This risks are situated in :

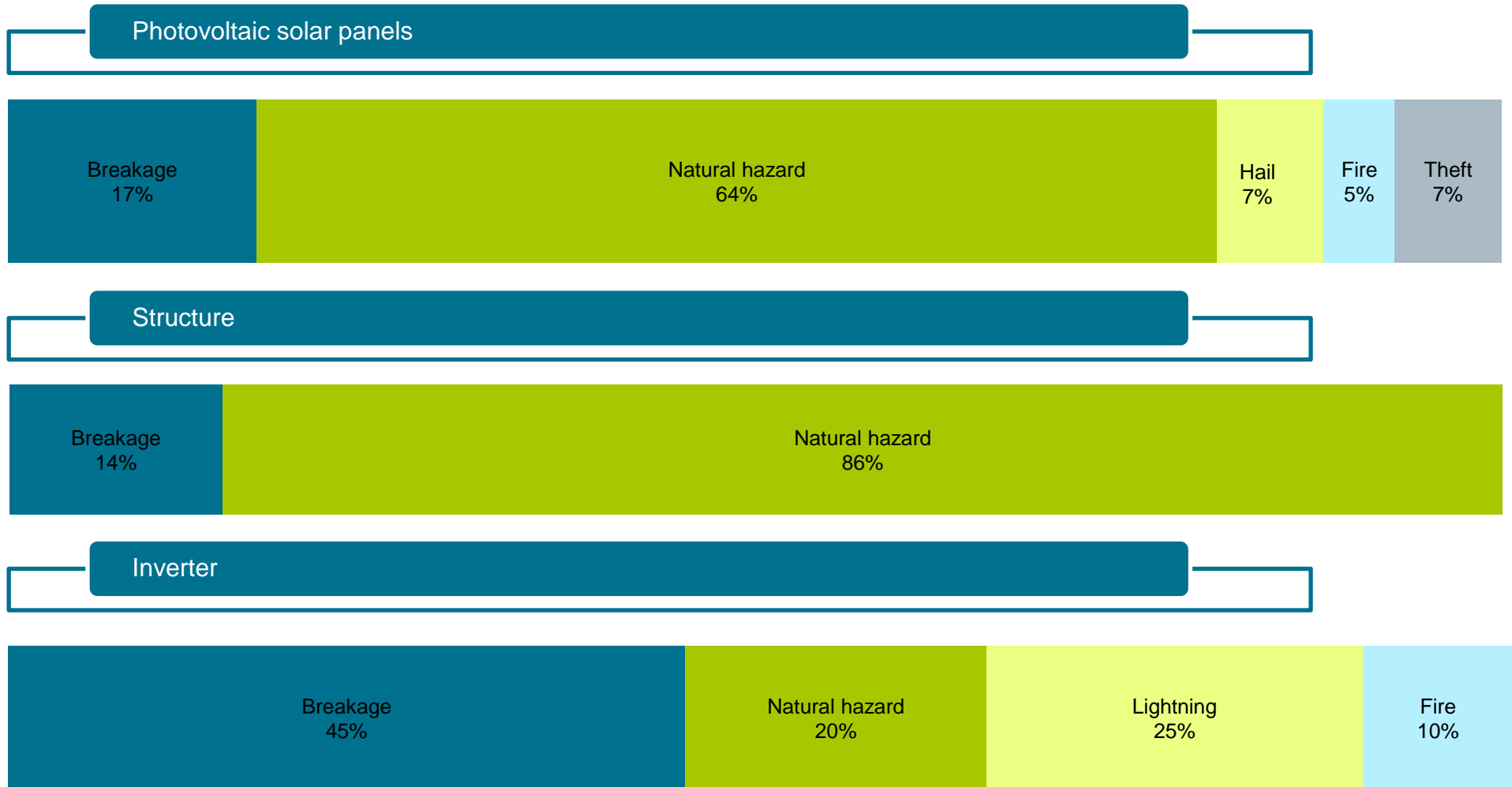
- Metropolitan France
- In the French overseas

The following statistics are based on our claims feed-back between 2013 and 2018

What can break on roof-based solar photovoltaic facilities ?



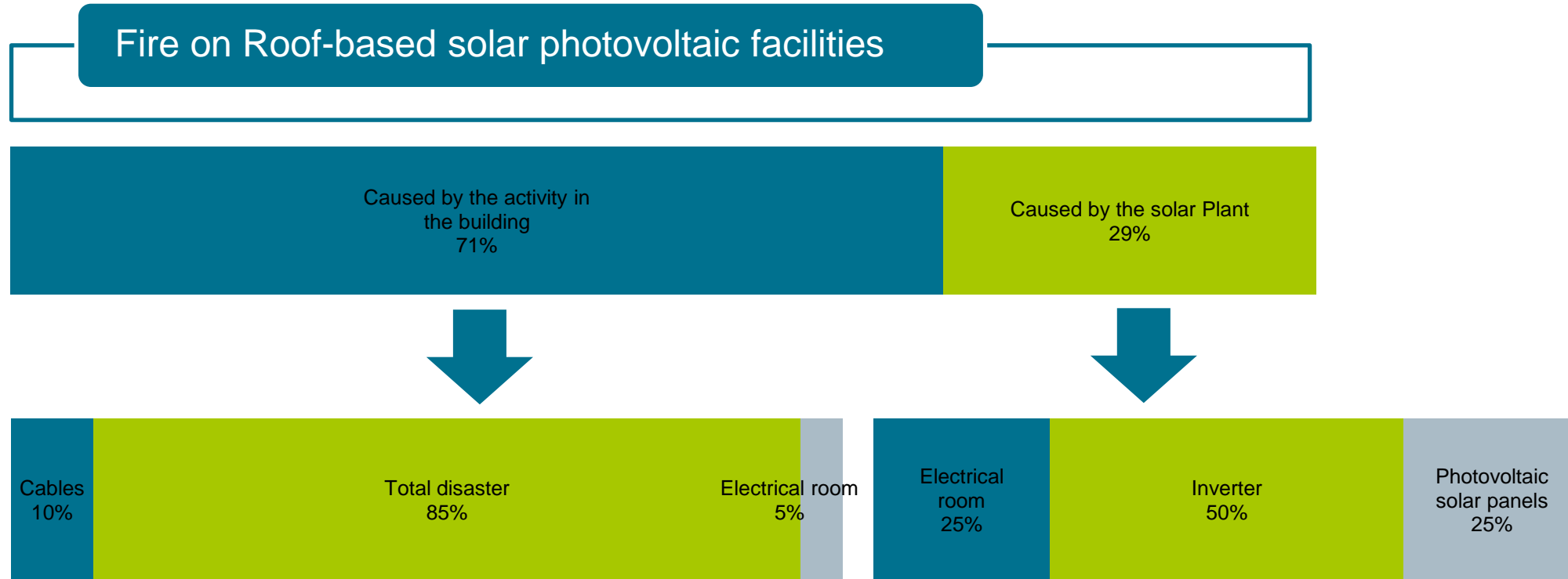
Why does it Break ?



Why does it Break ?



Roof-based solar photovoltaic facilities and Fire-claims



Gothaer Allgemeine Versicherung AG

- solutions for Green Energy -



**Claims experience on
Urban PV**

**OFATE / Paris
22 May 2019**

Gothaer Group

An Outline

Gothaer is one of the largest insurance companies in Germany with

- **over 4.4 billion EUR premium income**
- **approx. 3.5 million insured members/ customers**
- **over 28 billion EUR invested in assets**



We've been shaping the insurance market by delivering innovative insurance solutions since 1820.

It makes us the oldest still operating mutual insurance group in Germany.

,Renewable Energy Team‘ as part of Gothaer Corporate Division

Gothaer started to write wind energy business over 25 years ago.

We dedicate ourselves to the growth of sustainable industry and support by our operations the development of renewable resources focussed on energy generation of our clients and within our company.

We follow our clients from Europe to all parts of the world. The geographical scope ranges from Austria to Uruguay.

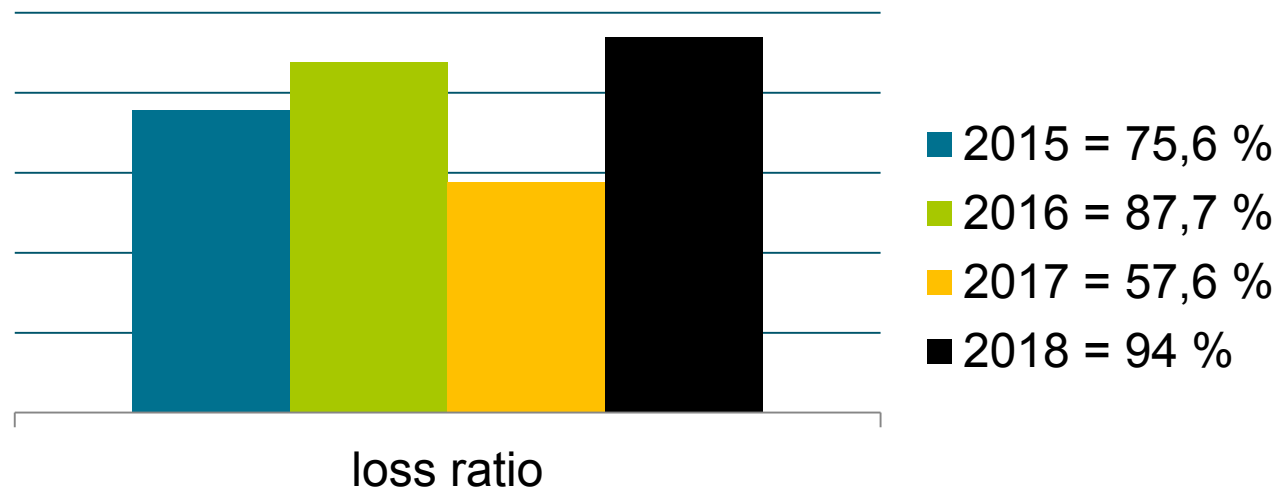
Gothaer Group acts as investor, risk manager and insurer in regards of renewable energy power generation.

Urban solar is a wide range of installations – small private ones starting with sums insured of approx. 5.000 Euros to professional installations on industry complexes

In Germany most installations are mounted on roofs, not integrated into the roof structures. Specially on flat roofs this can be a challenge in fixing the installations appropriate and avoid later damage.

Loss ratios yrs. 2015 till 2018 I

With the help of my colleagues we evaluated the last 4 years from 2015 till 2018. Seen on our total portfolio in the EU (w/o France) the loss ratios look as:

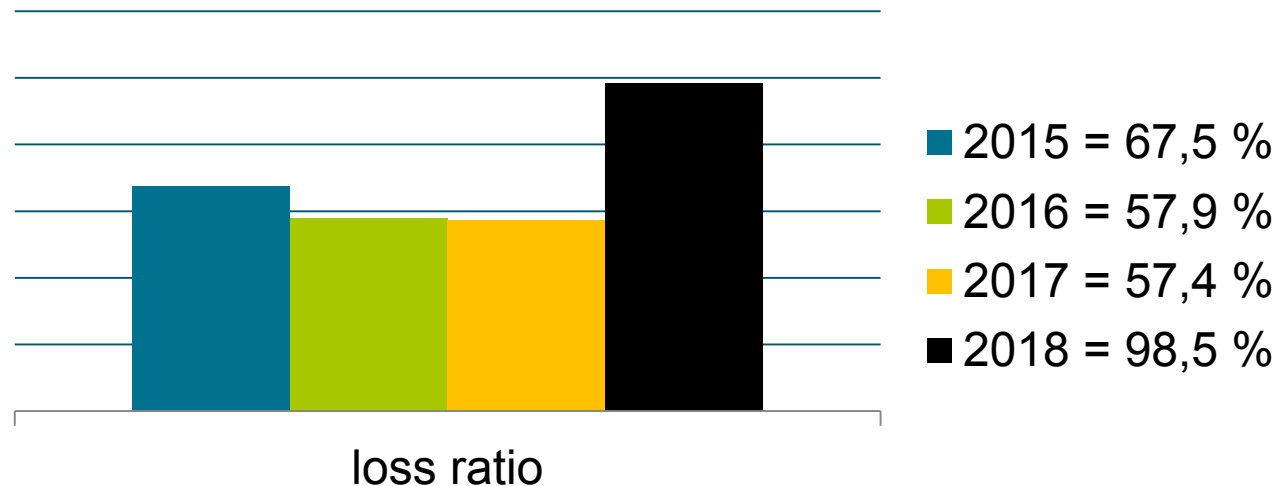


That's a bit nasty for us as these figures give just the bare payments, not including our costs etc.

The premium income over these four years increased from 5,7 to 7,3 mEUR.

Loss ratios yrs. 2015 till 2018 II

So if you look in the details for roof top installations and Germany only one finds that the sums insured do not exceed sums insured of 500 tEUR in general.



The loss ratio of 2018 is dominated by a total loss, an installation on a wood yard. Otherwise the year's loss ratio would have ended at 68%.

Reasons of Damage

on modules, cables, joints, inverters, batteries, fixing materials

Incorrect planning

- weight carrying capacity of the roof, slope of roof, snow loads, wind pressure

Defects of manufacturing

- inadequate materials, lack of UV resistance or waterproofness

Defects of installation

- incorrect placing, fixing, final inspections, general negligence

Damage by natural hazards

- wind / storm, heat, hail, snow, heavy rain

Damage by 'ageing'

- lack of maintenance (!), UV radiation, end of life time

Damage from 'outside'

- theft, external fire, vandalism, rats, martens etc.











Bothner

solutions for green energy