

# PV-Module Power Loss Insurance



**ASTRONERGY**

Thomas Koerner – June 2011  
Head of Marketing / Product Management

- Who is MuRe?
- Who is Chint and Astronergy?
- What is a Power-Loss Re-Insurance?
- Why has Astronergy such an insurance?
- How does the insurance work?
- What products are insured?
- Other helpful information



- Founded in April 1880 in Germany
- With a Premium Income of EUR 45.5 billion (2010), the Munich Rueck is one of the worldwide largest and financially most stable insurance groups
- More than 47,000 employees acting in all insurance areas
- Active Areas:
  - Reinsurance
  - Primary Insurance (ERGO insurance with more than 40 million clients)
  - Health insurance
  - Asset management (EUR 193 billion managed by MEAG). Total MEAG asset management of EUR 207 billion.

# Who is Chint?

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**CHNT**  
MORE THAN POWER

- Founded in July 1984 in Wenzhou, China
- Business focus: Development and production of low- and high-voltage electrical transmission and distribution equipment as well as
  - instruments / meters
  - construction electrics
  - switchgears, fuses and cables
  - DC/DC converter, DC/AC inverter
  - transformer
- Revenue (2010): > US\$ 3.4 billion
- Assets: (2010): > US\$ 2.7 billion
- Employees (2010): > 30,000
- 4<sup>th</sup> largest private enterprise in China

- Founded in October 2006
- Business Focus:
  - production of monocrystalline and polycrystalline PV cells
  - production of mono- and polycrystalline PV modules
  - production of high efficient microcrystalline thin-film PV modules
- Headquarter in Hangzhou, manufacturing plants in Hangzhou, Shanghai and Wanzhou
- Manufacturing capacity: 600 MWp both c-Si cells and modules, 275 MWp thin-film (end of 2011)
- Revenue expectation 2011: > US\$ 650 Mio.





- The most important function of a PV module is to produce electricity – the kWh output is directly dependent on the power of the module ( $W_p$ )
- A power loss over time is a known and understood process of a crystalline PV module. Typically a PV module reduces its maximum power (at STC) not more than 20% of its original nominal power within 25 years of operation. This maximum power degradation is guaranteed by the module manufacturer (direct insurance).
- A power loss re-insurance backs the promises of the module manufacturer in order to reduce the potential risk for investors and users of PV systems (reinsurance).

# Why has Astronergy such an insurance?

- Astronergy – as part of the Chint Group – is one of the worldwide largest and most stable cell and module manufacturer. With a group revenue of US\$ 3.4 billion and a broad and diversified product portfolio, Chint is one of the dominant players in the electronic and PV industry.
- Due to its size in revenue, assets and product diversification, Chint is capable to financially support theoretical module power warranty requirements. However, in order to validate its strength, product quality and balance sheet, Chint has asked MuRe to reinsure the power warranty of its PV modules and to support / underline the bankability of all Astronergy / Chint PV modules.



## PORTRÄT Rückversicherung



- Insurance (MuRe) analysis the technical quality and production processes as well as the financial capability and stability of the respective manufacturer.
- An insurance agreement between manufacturer and insurance is negotiated and signed.
- In case of a excessive power loss (greater than the respective calculated yearly power degradation), the manufacturer has to cover such warranty claims.
- In case the manufacturer is not able to cover those warranty claims or exceeding the financial capabilities, the reinsurance provides the respective financial support and coverage (up to 25 years)

# What products are insured?

- All crystalline (mono- and polycrystalline) PV modules manufactured by Chint Solar (Astronergy) and its related manufacturing entities.
- All c-Si modules manufactured by Chint Solar (Astronergy) within 2011 and 2012. Each module is insured for the next 25 years from its invoice date (Chint Solar / Astronergy invoice date to its customer.
- Product coverage:
  - CHSM 5409M
  - CHSM 5611M
  - CHSM 5612M
  - CHSM 5612M BL
  - CHSM 6609M
  - CHSM 6610M
  - CHSM 6609P
  - CHSM 6610P
  - CHSM 6611P
  - CHSM 6612P



- MuRe has evaluated Chint Solar technically (product quality, production process, used materials and vendors, power tolerance) and financially (balance sheet, revenue, assets).
- Chint Solar is the first Chinese manufacturer accepted by MuRe to fulfill all related criteria's in order to receive a full production module power reinsurance for c-Si modules. This confirms the high product quality of Chint Solar as a worldwide Tier 1 manufacturer.
- Thin film module reinsurance is in preparation and will be released in June 2011.
- All c-Si modules covered by this insurance have a positive power tolerance and provides additional performance and safety for the investor.

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## Thank you for your attention

### Contact Us:

1335 Bin'an Road  
Binjiang District  
Hangzhou, Zhejiang 310053  
People's Republic of China

Main: +86 571 5603 2340  
Fax: +86 571 5603 2316  
E-mail: [sales@astronergy.com](mailto:sales@astronergy.com)  
Website: [www.astronergy.com](http://www.astronergy.com)