

# MANAGING RISK THROUGH UNCERTAINTY ROMANIAN SOLAR SUMMIT

November 19<sup>th</sup> 2013

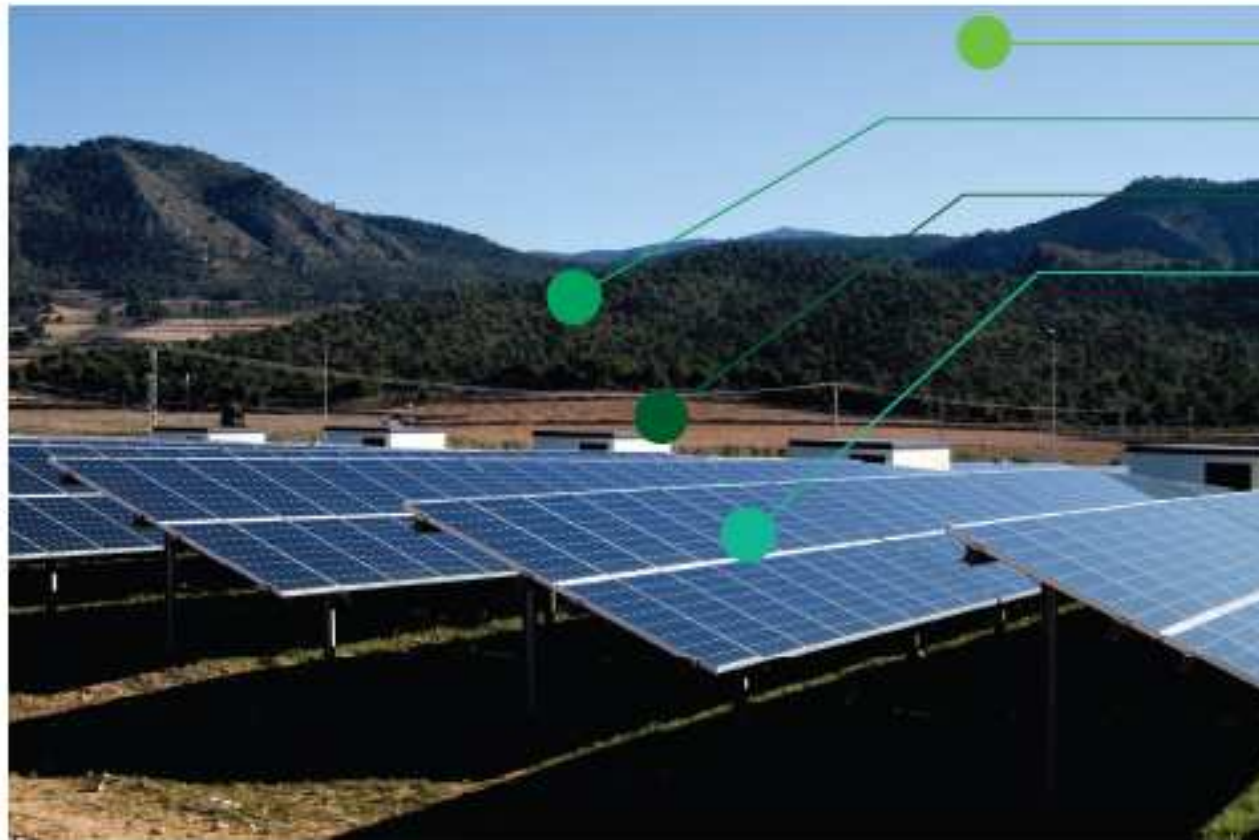


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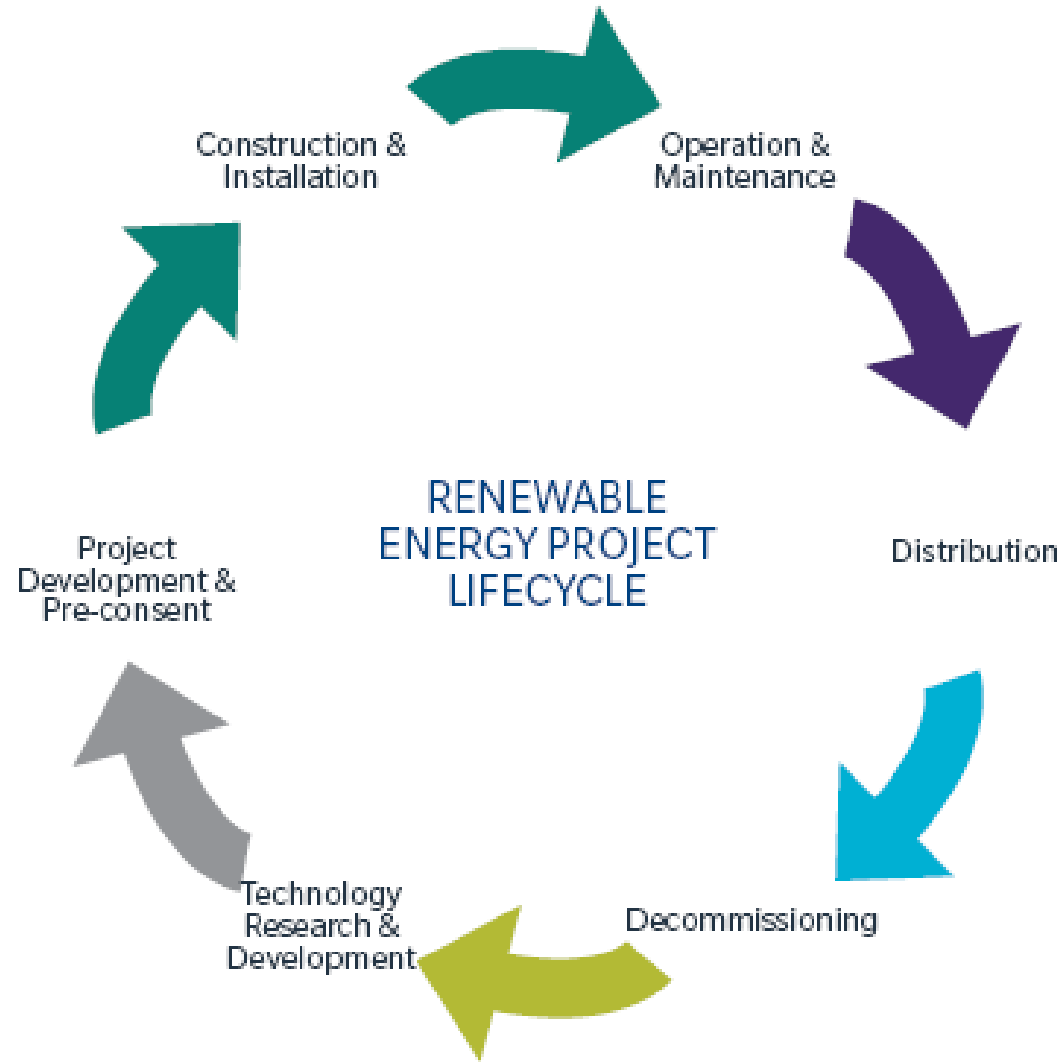
# SOLAR PV Projects TYPICAL RISKS

RENEWABLE POWER AND CLEAN TECH PRACTICE



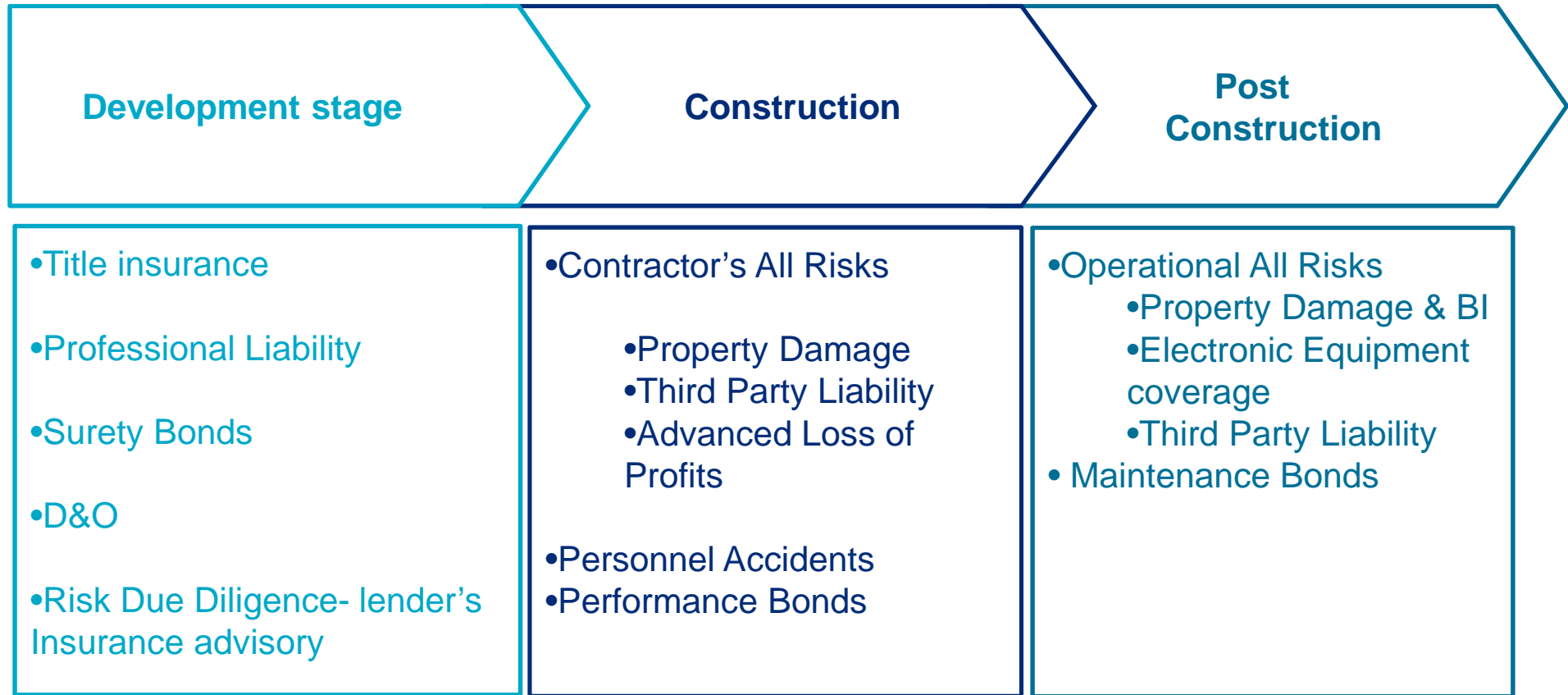
<b>Lack of Sunlight</b> Revenue Loss / Hedging Options
<b>Natural Perils</b> Storm, Flood, Earthquake, Ice, Landslip / Subsidence, Hail
<b>Business Interruption Risks</b> Critical Items (e.g. Sub-stations), Grid Connection
<b>Faulty Inverters</b> Design / Manufacturing Issues
<b>Liabilities</b> Third Parties, Employees, Contractors, Environmental
<b>Physical Damage Risks</b>
<b>Professional Design Risks and Others</b>
<b>Regulatory Risk</b> (e.g. Change in Tariff Support Regime)
<b>Terrorism and Political Risks</b>
<b>Theft</b> (e.g. PV Panels from Temporary Construction Storage Area)
<b>Transportation Logistics</b> Construction Phase O & M Activities
<b>Warranty Coverages</b> Period / breadth of cover? Financial Strength of provider?

# Understanding the lifecycle of REN Projects



# PV Projects – Solution Timeline & Structure





## Focus on Risk Profiling

A highly qualified, multi-disciplined risk evaluation / engineering team drawing on global experience to develop

- Risk analytics
- Benchmarking
- Risk engineering
- Risk evaluation
- Cost of risk modeling
- Strategic, operational, hazard risk mitigation
- Interface with lenders

## Focus on Placement

A dedicated placement network driving established relationships with insurers, delivering:

- Deductibles and limits analysis
- Captive solutions
- Carrier reviews
- Contract reviews
- Placement structuring

## Focus on Claims

Complete support throughout the life of a claim:

- Dedicated expertise and experience in energy, power generation and project claims
- Claims advocacy to add value to the claims process
- Access to Forensic Accounting and Claims Services (FACS) to assist in claims preparation and quantification



# Risk management solutions in aggregate



## Claims examples – storm & snow load



Storm damaged modules - demonstrate that many plants were not capable of withstanding the occurring exposure.

## Claims examples



OVERVOLTAGE: short circuit in one electrical panel.

Source:

bad connection on one power cable

lightning

Estimated claim: 45.000 EUR + BI



## Claims example



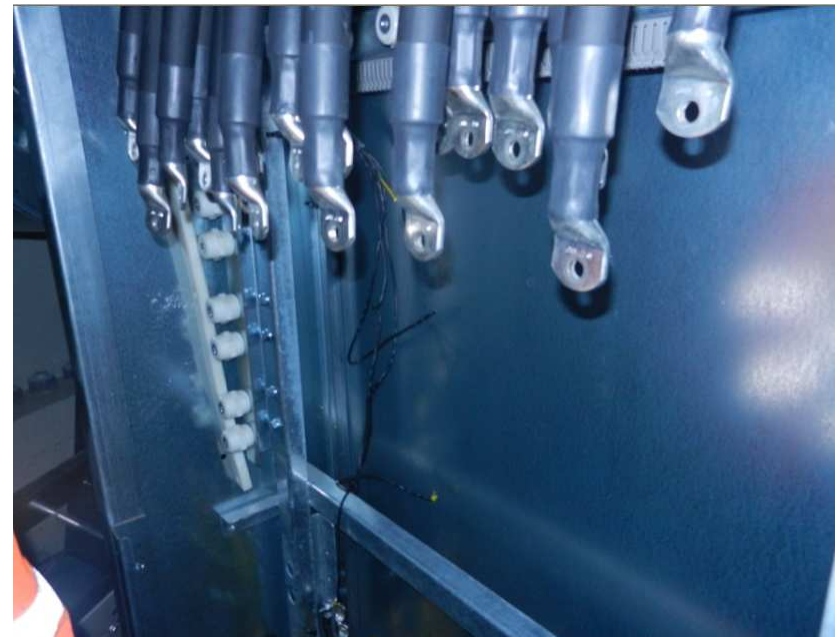
- MACHINERY BREAKDOWN: lack of lubrication/grease in between the axel and ball bearing. 1 MW generator
- Estimated claim: 145.000 EUR + BI

## Claims examples - theft



- Adequate security fencing and CCTV shall be provided for ground mounted PV plants.
- SCADA monitoring

- Product should be securely installed against theft (also roof mounted PV plants).
- Theft proof screw connection should always be used.



## Claims examples – rodent bites



- Not completely avoidable, still, security measures for preventing rodent bites need to be in force.

# WHY MARSH?

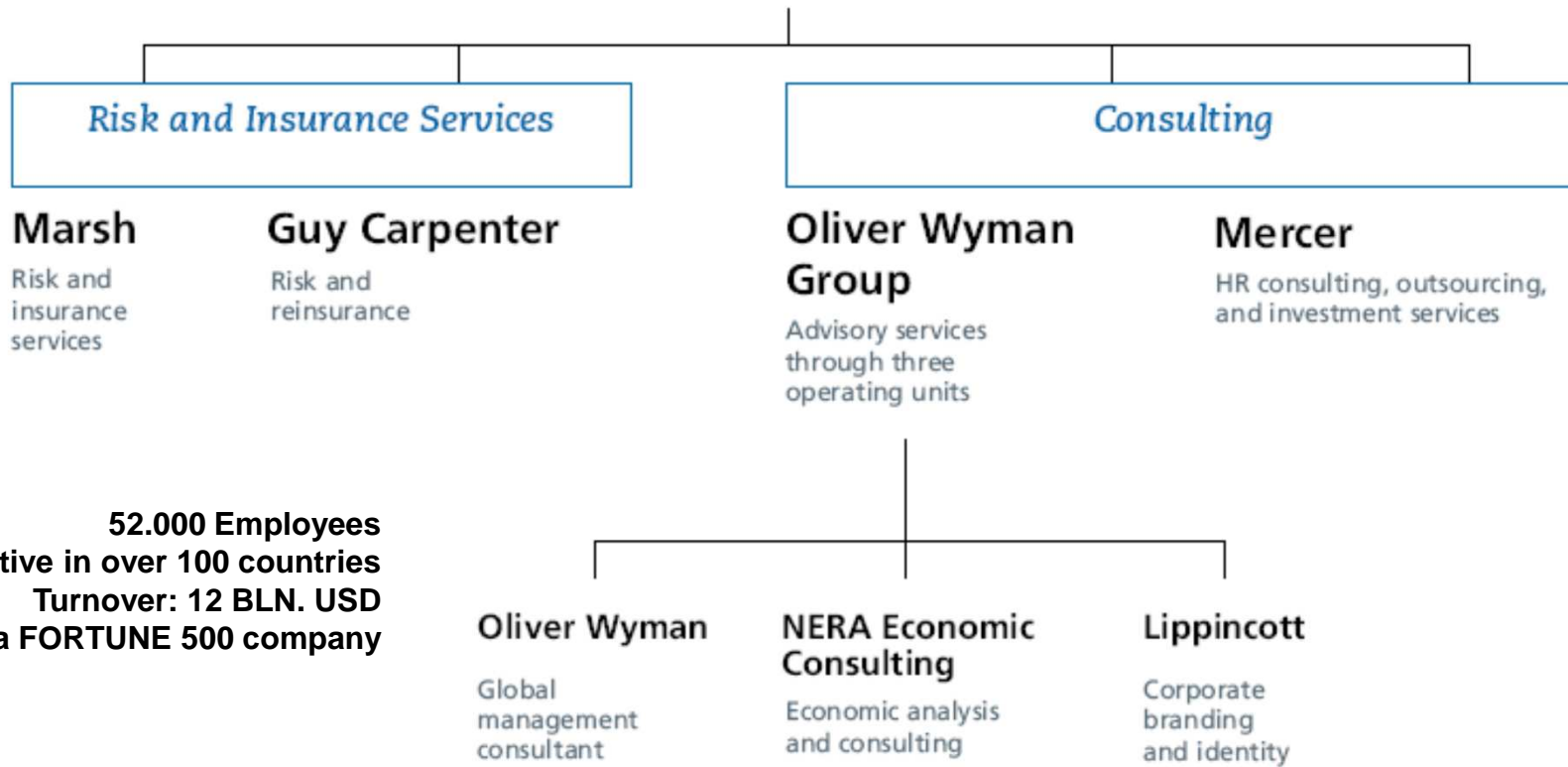


## Why MARSH?

- Global capabilities, local actions
- Market leader in Romania in the field of risk management for over a decade
- The best available local expertise with proven experience for renewable energy
- Industry wide, in depth understanding of renewable energy trends and challenges
- Access to top international insurance companies and risk management solutions
- Multiple connexions in the renewable energy sphere:
  - Developers
  - EPC and subcontractors
  - Financiers and lenders
  - Suppliers
  - Consultants, etc.



# About Marsh & McLennan Companies



**52.000 Employees**  
**Active in over 100 countries**  
**Turnover: 12 BLN. USD**  
**MMC is a FORTUNE 500 company**

## Marsh Romania - Overview

- Marsh Broker de Asigurare-Reasigurare ([www.marsh.ro](http://www.marsh.ro)) is the Romanian subsidiary of Marsh Inc. ([www.marsh.com](http://www.marsh.com)), New York, world-wide risk specialist and insurance broker
- Leader of the insurance brokerage and risk consulting market in Romania
- Offices in Bucharest, Cluj and Timisoara
- 90 employees, specialized on industries and insurance lines
- 15 dedicated claims consultants



## Marsh Romania - Overview

- Approx. **US\$ 8 million turnover** and over US\$ 60 million premiums placed (2012)
- Over **600 clients**, 50% multinational companies
- Easy access to **MMC network's resources** and expertise
- Founding member of **UNSICAR** - Romanian National Association of Insurance Brokers and Consultants
- Authorised by **CSA** - Insurance Supervisory Commission, according to the current legislation



THANK YOU!

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J40/3767/1995, CUI 7381700

Autorizata prin Decizia CSA nr. 8/17.10.2001

Registrul Brokerilor nr. RBK-008/10.04.2003

Capital social 100.000 RON

Operator de date cu caracter personal nr. 16514