

# Part II: Impacts of Wind Turbine Fires



## Meet the Panel



### **JP Conkwright - Panelist**

Professor of Fire Protection and Safety  
Engineering Technology  
*Eastern Kentucky University*



### **Angela Krcmar - Panelist**

Global Sales Manager - Wind  
*Firetrace*



### **Sally Wright - Panelist**

Principal Wind Turbine Engineer  
*DNV GL - Renewables*



### **Steve Mulhall - Moderator**

Business Development Manager - Wind  
*Firetrace*





## ***Questions from last session***

- Some OEM's claim that fire's no longer a risk - discuss
  - Why is fire protection not included by the OEM?
  - Owners' motivation to retrofit fire suppression/ protection?



## ***Questions from last session***

- Industry data gathering - challenges
- User groups:
  - ESIG (Energy Systems Integration Group)
  - EPRI (Electric Power Research Institute)
  - AWEA → Clean Power



# Part II: Impacts of Wind Turbine Fires Agenda

## Emergency Response Plan

- *Identification*
- *Mitigation*
- Preparedness
- Response
- Recovery

# Regulations & Requirements

- Recommended Practices / Guidelines
  - NFPA 850 - Recommended Practices
  - CFPA - Guidelines following VdS
  - VdS 3523 - Guidelines
  - DNV GL - Turbine certification
- Regulations: Local / U.S. State / National / International examples
  - Authority Having Jurisdiction (AHJ's) - Permitting based on risk
  - California and New Hampshire
  - Ontario and Germany
  - UK Safety Case



# Preparedness

- Electrical isolation
- Access
- Landscaping
- Engage local fire services
  - Water supply
- Develop a response plan





# Response

- Remote locations present challenges
- Volunteer fire service is typical
- Risk of wildfire
- Drought prone/ forested areas
- Examples
  - Klickitat County, WA - July 2019
    - 350 acres - evacuations
  - Nolan County, TX - July 2020
    - 3,200 acres burned







## Recovery

- Loss of production
- Costs

... and everything that goes along with it



## Downtime: Loss of Production

- 1 year is common
  - Investigation / disputes
  - Crane delays
  - Replacement delivery time
- Business interruption (BI) coverage ?
  - How much time? What does it cover?
- Owner/operator staff time

# Costs of a Fire

- Replacement
- Investigation
  - Personnel costs
- Dismantling
  - Cranes costs
- Environmental penalties and other liabilities



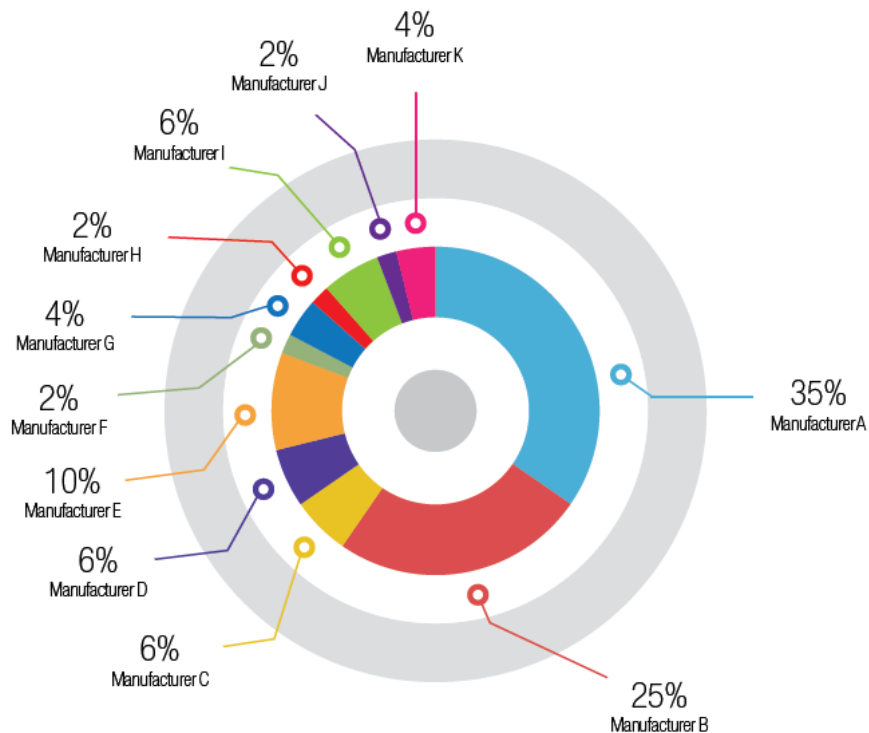


## Handling the Aftermath

- Media, employees
  - Public relations
- Investigations
  - Managing the scene
  - Chain of evidence
  - Data
- Industrial hygiene / safety

# Insurance Impacts

## GCUBE FIRE CLAIMS BY MANUFACTURER 2008-2015



# Questions & Answers?



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