

Renewable Energy Services

Sigma 7 – Paragon Risk Engineering’s team of renewable energy and power generation specialists provides specialist consulting and risk engineering services for insurance company clients and renewable energy owners throughout the world. Our expert knowledge covers a broad range of renewable installations from all sectors including renewable generation and manufacturing.

SERVICES AND OFFERINGS

- Power Gen Renewable risk surveys to assess fire, machinery equipment, and natural hazards exposures to operations, and business continuity exposures.
- Project management and plan review to help ensure proper incorporation of risk management measures in new renewable development, or modification/expansion to existing operations.
- Loss prevention program assessment, development, and management.
- Opinion of Risk Reports, Desktop Review Reports and Prospect Reports.
- Development and consultation on risk improvement programs to help ensure continuity of operations and deliver the lowest cost of risk.

FOR FURTHER INFORMATION CONTACT :

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RENEWABLE SECTORS

- **Solar** – ground mounted and concentrated solar.
- **Hydro-electric** – run of the river, impoundment, and pumped storage.
- **Wind** – Onshore and Offshore
- **Battery Energy Storage Systems** – Renewable generation support, grid stabilization, peak shaving, using Lithium, Sodium, Vanadium, etc.
- **Hydrogen Fuel Cell** – Energy Storage and fuel cell power generation.
- **Tidal, Wave, and Geothermal, High Voltage DC**

SOLAR POWER PLANTS

Our engineers review the arrangement of the solar field, maintenance on electrical components, including inverters, switchgear, and transformers, and will focus on common natural hazards, such as hail, wind, and tornados; that may expose the site. For more complex sites including concentrated solar plants, we review common hazards with the heat transfer fluid systems, boilers, and steam turbine/generator systems, including fire and equipment risks.



HYDROELECTRIC PLANTS

Our engineers review the type of hydro power plant and the associated hazards. The primary risks at hydro plants are flooding and equipment breakdown. We will review flood exposures based on pluvial and fluvial flood exposures. We will also look at equipment maintenance for the hydro turbine, generator, penstocks, runners, and transformers, as well as any associated dams. Fire is a limited exposure as most locations are non-combustible or fire resistive construction, but we also review fire risks from combustible construction and hydraulic/lubrication systems.



WIND POWER PLANTS

Our engineers review the layout and electrical arrangement and connections of the wind turbines including turbine generators, generator step up transformers, underground or above ground power cables, and wind turbine installation substation transformers, switchgear, and grid control equipment. Critical spare parts, including gearboxes, blades, etc. are reviewed, and we also focus on critical natural hazard exposures including windstorm, tornados, and hail.



- Sigma7 – Paragon Risk Engineering’s power generation team is a global team with an average of 20+ years of experience.
- We can provide economical quality risk engineering services to renewable energy operations around the world.
- All our work is peer-reviewed by a member of the Paragon power generation/renewable’s team, ensuring the highest of technical quality standards.

