



# Inherent risk list for the green fuels and energy industry

Level 1 ID	Level 1	Level 2 ID	Level 2
1	<b>Materials and process errors</b>	101	Wrong dimensioning of equipment
		102	Insufficient maintenance
		103	Malfunction due to corrosion
		104	Malfunction due to wear and tear
		105	Malfunction due to friction
		106	Malfunction due to process changes
		107	Malfunction due to change in raw materials
		108	Produced products out of specifications
		109	Processes with a known potential for fire hazard or other hazards
		110	Wrong or missing labelling of pipes and equipment
		111	Malfunction of supply systems or installations
		112	Failure of wires, pulleys and other lifting equipment
		113	Failure of engines and moving parts
		114	Unsafe manual override
		115	Failure of safety equipment
		116	Damage during transport or storage
		117	Contamination
2	<b>IT security, system, and data failure</b>	201	System failure
		202	Loss of access to data
		203	Loss of data integrity
		204	Network failure
		205	Unsecure communication
		206	AI and automatisisation failure in processes
3	<b>Fraud, Internal and external</b>	301	Intentional compliance breach
		302	Bribery or kick back deals
		303	Invoice fraud (internal and external)
		304	Forgery of certificates or other documents
		305	Personel, assets or data kidnapped or held hostage
		306	Theft of assets or data
		307	Industrial espionage
		308	Arson or other acts of vandalism
		309	Forgery of data
		310	Technical hacking (exploiting vulnerabilities)

Level 1 ID	Level 1	Level 2 ID	Level 2
3	<b>Fraud, internal and external</b>	311	Human hacking (social engineering)
		312	Physical intrusion
		313	Illegal use of intellectual property (internal and external)
		314	Price fixing or other illegal trade agreements
		315	Violation of trade agreements or embargos
		316	Tax, deposit and government aid fraud
4	<b>Human aspects and work place safety</b>	401	Missing or outdated instructions and education
		402	Key resource or people dependency
		403	Sharing of critical or sensitive data
		404	Personal items in workspace posing a danger
		405	Human error in operational execution
		406	Misconfiguration during installation and operation
		407	Insufficient design, test, or quality control
		408	Error during changes or insufficient change management
		409	Untidy workspace
		410	Insecure access pathways (stairs, manholes)
		411	Heavy lifting or repetitive manual tasks
		412	Psychological distress
		413	Exposure to vibrations, noise, smell, temperature or light
		414	Insufficient management supervision or control monitoring
		415	Missing documentation of work done
		416	Poor communication during critical operations
		417	Exceeding operational thresholds or limits
		418	Operating while influenced by drugs, medication or alcohol
419	Dangerous work situations		
5	<b>External factors and influences</b>	501	Terror in surroundings
		502	Damage due to extreme weather
		503	Fire or explosion in surroundings
		504	Damage caused by conditions in the soil or water/ocean
		505	Damage caused by vegetation
		506	Pollution from previous work or previous owners
		507	Pests
		508	Influence exerted by neighbouring communities
		509	Critical changes in fundamental assumptions
		510	Damage caused by 3rd party e.g. damage to assets
		511	Weather change challenging operational parameters
		512	Damage caused by visitors and guests
6	<b>Errors at customers, suppliers and in internal interfaces</b>	601	Delivery of wrong or out of spec raw material
		602	Goods and raw materials damaged at delivery
		603	Delivery of wrong components (pipes, sensors, machinery)
		604	Process failure at supplier
		605	Breach of contract by suppliers
		606	Errors in contract
		607	Conflicting interests between two external parts
		608	Wrong or misleading data supplied by third party
		609	Equipment and system failure of third party
		610	Lack of compatibility between third party equipment and site equipment
		611	Blindly delegating responsibility to suppliers
		612	Regulated supplier failure
		613	Equipment or processes capable of causing cascade events
		614	Hacking or exploits via third parties
7	<b>Physical, chemical, and toxicological properties of substances</b>	701	Unintended emission (gas, vapor, liquid, dust)
		702	Corrosive or aggressive properties
		703	Spontaneous chemical reaction
		704	Toxicity and harmful exposure
		705	Radioactive decay or emission
		706	Stored electrical energy or potential
		707	Biological contamination (biohazard)
		708	Flammability or explosiveness
		709	Persistent environmental toxicity

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