

Insurance risks and considerations when planning for EV's in your fleet



ABOUT KMRD

PURPOSE

Risk & Human Capital Solutions
Insurance is only 1 tool to managing risk

Leverage data
to generate superior results

Talented Professionals
We hire great employees and provide them with better tools

**Holistic Outsourced
Risk Management Solutions**

Superior alternative
to our larger competitors

FOCUS

Clients with...

- a lean risk management team
- a need for sophisticated risk solutions to manage and mitigate lawsuits, employee injuries, and damage to properties
- a desire to improve their risk profile
- an appreciation for transparency, attention to detail, and real results beyond just premium pricing

Reach

USA - 110 Cities | 20 States
2,300 Professionals Nationwide

Global Reach – Over 100 Countries
150+ member firms spanning 6 continents,
generating >\$10B in annual revenues

W B N



We work as one



We make it easy



We share values and service standards



We have in-country choices



We are independent



We are united by culture of care



We offer smart technology and insight

KMRD

FOUNDATION
RISK PARTNERS 2

TOPICS

- What data is reviewed to underwrite EV's vs ICE and Hybrids?
- Potential risks to the vehicle and passengers and how do those risks affect the cost of insurance?
- Are there any insurable risks passed to the driver for the charger installation?
- Are the risks different for fast vs standard charging, indoor vs outdoor charging?

Underwriting EV's vs ICE and Hybrids?

COST TO REPAIR

The average small non-luxury EV model costs \$4,041 to fix — about 27% more than the average for roughly comparable non-EV models

EVs have lower maintenance costs but cost more if they're damaged in a car crash or by bad weather.

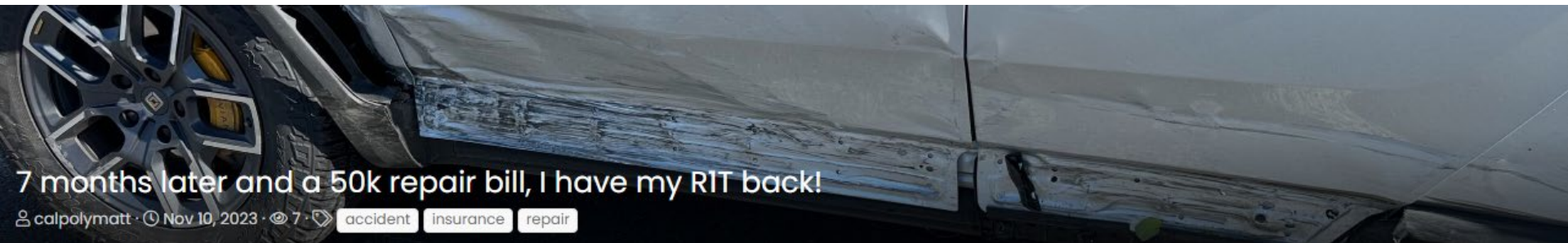
Among mid-size luxury SUVs, the difference was even more pronounced: \$8,037 versus \$5,242 (53%) for internal combustion engine (ICE) vehicles, according to CCC.

-CCC Intelligent Solutions | <https://www.cccis.com/>

A Kelley Blue Book assessment of the total cost to own an EV versus an internal-combustion engine vehicle estimated EV maintenance costs of \$4,246 on average over five years of ownership, lower than the \$4,583 estimate for gas-powered cars

Underwriting EV's vs ICE and Hybrids?

COST TO REPAIR



EV vehicle risks and passengers and how do those risks affect the cost of insurance?

- Battery related fires
- Electric shock hazards
- Limited repair infrastructure
- Theft of battery and charging equipment
- Damage from charging infrastructure
- Cyber Security Risks
- Range anxiety and accidents

Australia's Department of Defense funded EV FireSafe to look into the battery fire question. It found there was a 0.0012% chance of a passenger electric vehicle battery catching fire, compared with a 0.1% chance for internal combustion engine cars. (The Home Office said it was unable to provide data for the UK.)

Underwriting EV's vs ICE and Hybrids?

SAFETY & SECURITY OPTIONS

Accident-Avoidance Systems

- Airbags
- Antilock brakes
- Electronic stability control
- Brake assist
- Blind spot detection
- Forward-collision warning (FCW)
- Automatic emergency braking (AEB)
- Pedestrian detection
- Adaptive cruise control
- Blind-spot warning (BSW)
- Rear cross-traffic alert
- Lane-departure warning (LDW)
- Lane-keeping assist (LKA)
- Active head restraints
- Backup camera
- Parking assist systems
- Automatic high beams
- Tire-pressure monitors
- Telematics

EV vehicle risks and passengers and how do those risks affect the cost of insurance?

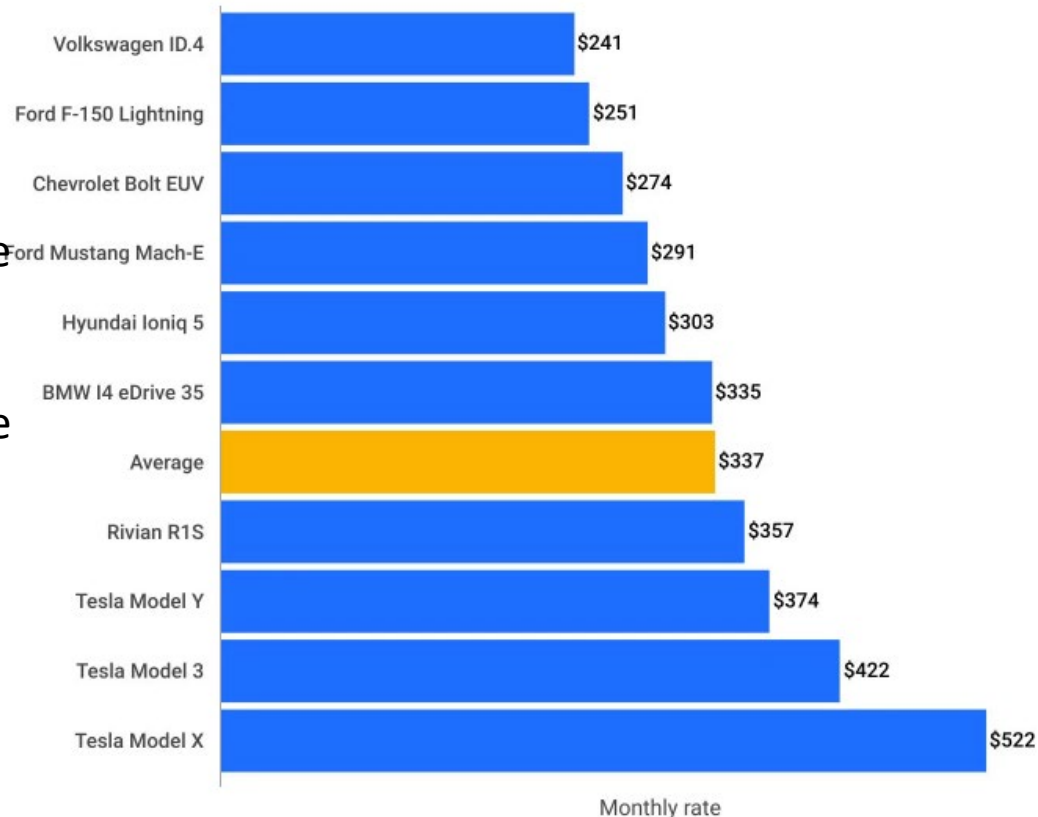
On average, car insurance for an electric car is about \$337 per month, or \$4,043 per year.

It costs about 20% more to insure an electric vehicle (EV) than a gas vehicle, mostly because EVs cost more to buy and repair.

The cheapest electric vehicle to insure is the Volkswagen ID.4, while the most expensive is the Tesla Model X.

It's cheaper to insure EVs made by companies that also sell gas cars, like Ford and Volkswagen. Rates for EV-only companies like Tesla and Rivian are much higher.

The cheapest EV's to Insure



Are there any insurable risks passed to the driver for the charger installation?

EV Charging Infrastructure Risks

Fire Hazards: Lithium-ion batteries, commonly used in EVs and charging stations, can pose fire risks if damaged, overheated, or improperly maintained. Property owners must ensure that charging stations are installed and maintained according to safety standards to mitigate these risks.

Electrical Overloads: Installing multiple charging stations in one location may strain the electrical system of a commercial property. Property owners should conduct load assessments and potentially upgrade electrical infrastructure to accommodate the increased demand.

Liability: In the event of an accident or fire involving an EV or charging station on the property, liability concerns may arise. Property owners should have appropriate insurance coverage and consider safety measures such as fire suppression systems and emergency protocols.

Are there any insurable risks passed to the driver for the charger installation?

EV Charging Infrastructure Risks

Battery Storage Risks

Apart from charging infrastructure, the growing popularity of EVs also leads to an increase in the number of EV batteries. These batteries have the potential to serve as energy storage solutions for commercial properties, but they also carry their own set of risks:

Battery Degradation: Over time, lithium-ion batteries degrade, reducing their capacity and efficiency. Property owners need to plan for the eventual replacement and recycling of these batteries to prevent environmental hazards.

Environmental Impact: Improper disposal or recycling of EV batteries can lead to environmental contamination. Property owners should consider sustainable disposal and recycling methods to minimize these risks.

Are the risks different for fast vs standard charging, indoor vs outdoor charging?

Fast Charging vs. Standard Charging

Fast Charging: Fast charging typically involves higher voltages and currents compared to standard charging. While fast charging can significantly reduce charging times, it can also generate more heat within the battery pack, potentially increasing the risk of overheating or battery degradation over time. As a result, there may be a slightly higher risk of battery-related issues or malfunctions with fast charging, which could impact insurance considerations.

Standard Charging: Standard charging typically involves lower voltages and currents, resulting in slower charging times but potentially less stress on the battery pack. While standard charging may pose a lower risk of immediate battery-related issues, it's important to consider factors such as charging infrastructure quality and compatibility, as these can still impact the safety and reliability of the charging process.

Are the risks different for fast vs standard charging, indoor vs outdoor charging?

Indoor Charging vs. Outdoor Charging

Indoor Charging: Charging indoors can provide greater protection from environmental factors such as extreme temperatures, precipitation, and potential vandalism. Indoor charging may also reduce the risk of accidents or damage from other vehicles. However, there may be a slightly higher risk of fire-related hazards indoors due to factors like ventilation and proximity to flammable materials. Insurers may take into account the safety measures in place for indoor charging, such as fire suppression systems or secure charging stations, when assessing insurance premiums.

Outdoor Charging: Outdoor charging exposes the vehicle and charging equipment to a range of environmental conditions, including temperature fluctuations, moisture, and potential exposure to vandalism or theft. While outdoor charging may be more convenient in some cases, it may also increase the risk of damage to the vehicle or charging infrastructure. Insurers may consider factors such as the frequency of extreme weather events or crime rates in the area when determining insurance costs for outdoor charging.

Ultimately, both fast and standard charging methods can be safe and reliable when implemented properly, and the choice between indoor and outdoor charging depends on factors such as convenience, accessibility, and personal preference. Insurers may evaluate the specific charging setup and location to assess associated risks and adjust insurance premiums accordingly. Additionally, EV owners can take steps to mitigate risks associated with charging, such as using reputable charging stations, following manufacturer recommendations for charging procedures, and implementing security measures to protect against theft or vandalism.

KMRD's Core Competencies

RISK CONTROL SUPPORT

Enterprise Risk Management Approach
practical | impactful solutions

CLAIMS ADVOCACY

Design & Implement
claims management programs

ACCOUNT MANAGEMENT

Service Plan
Define and monitor actions

Trend Analysis

to establish risk management initiatives

Report Claims

claims with carriers to trigger coverage

CREATE COMPETITION

For your business

Document & Monitor

initiatives and accomplishments

Benchmarking & Analytics

Easy to read management reports

Provide options

Simplify your decision-making

Inspect

Mock OSHA Inspections

Developing Strategies

periodic strategy meetings

Coordinate

team strategies and initiatives

Training

Online & in-person

Communication

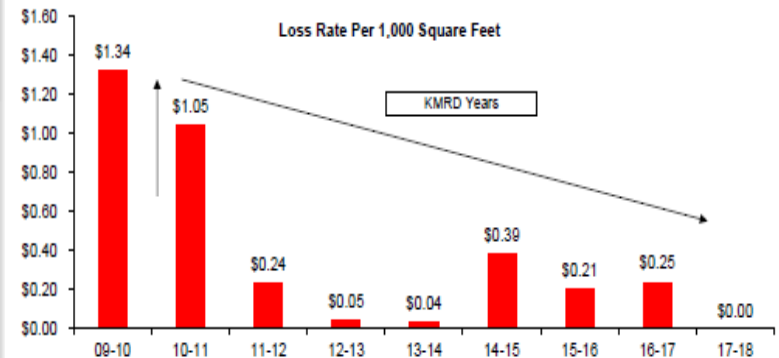
Understanding the facts & next steps

Budget

Projections / M&A Due Diligence

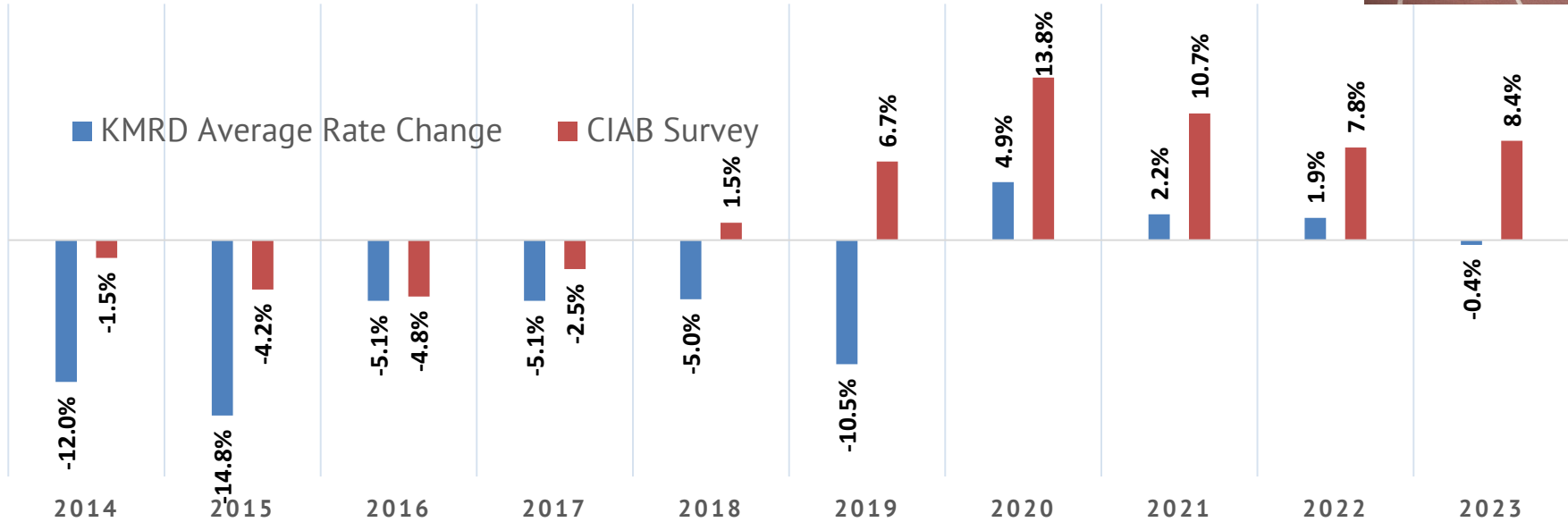
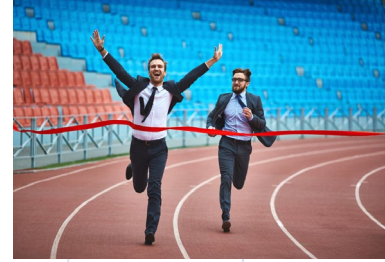
#	Initiatives	Completion Goal	Person Accountable for Next Step	Follow-Up Date	ROI Notes	Notes on Status / Assignments / Delivery Commitments
1.	Training Track™ this application is a risk management solution that provides an easy way for you to develop, deliver, and document organization-specific safety training courses. This ensures that your employee training process becomes the cornerstone of your risk management process.	10/1/20	Megan Chatham-Brown	11/30/20		2020 Megan & Cathy at KMRD will work to set up and train Megan

#	Accomplishments	Date of Completion	Person(s) Accountable	ROI Notes	Notes on Status / Assignments / Delivery Commitments
74	Infra-Red Testing at the Youth Center and Juvenile Probation Center	2/8/18	Joe Myers of CNA		Joe met with Roger Daviduk, Maintenance supervisor at this location for the purposes of The areas of concentration were electrical disconnects and circuit breaker panel boxes with voltage ratings less than 600 volts. This report contains only those images of electrical equipment with apparent potential fault areas. Equipment that was imaged that did not appear to have faults at the time of the survey is not included in the report but is included on the Inspection Routing and Equipment Directory page. NO serious or critical faults were found. See Joe's report dated 2-27-18 for complete detail of the visit



Winning the Race!

KMRD P&C Rate changes versus the marketplace



OUTPERFORMING THE MARKET

KMRD

8% ↓

← The past 5 years →

Marketplace

4% ↑

10% ↓

← The past 10 years →

10% ↑

*The Council of Insurance Agents & Brokers P&C market survey dates to the year 2000 and is the oldest source for financial analysts, news media, policymakers and consumers interested in market trends. It is one of the most often quoted surveys in the industry by both consumer and trade media.

First Year Impact Examples

Description	Coverage Impact	Market Avg. Rate Change*	KMRD's Result	Diff
\$100+M Industrial Manufacturing Firms in 9 Countries	<ul style="list-style-type: none"> ✓ Liability Limit \$10M ↑ ✓ Eliminated redundant policies, added blanket limits, crime, and consistency of coverages 	2.1% ↑	62% ↓	64.1% ↓
\$70M Commercial HVAC Contractor	<ul style="list-style-type: none"> ✓ 45 Improvements ✓ Added contract review, claims advocacy and risk control support 	1% ↓	7% ↓	6% ↓
Publicly Held Manufacturer of Testing and Training Equipment	<ul style="list-style-type: none"> ✓ 50 Improvements ✓ Added Support in Kuala Lumpur 	8.1% ↑	57% ↓	65.1% ↓
\$28M Chain of Italian Restaurants	<ul style="list-style-type: none"> ✓ 16 Improvements ✓ Aligned and consolidated programs, Added Insureds, & \$3M of Liquor Liability 	8.1% ↑	33% ↓	41.1% ↓
Social Services Entity including 3 Charter Schools and Various Inner-city Programs supporting the Latin American Community	<ul style="list-style-type: none"> ✓ 27 Improvements ✓ Consolidated Programs to Est. Scale, Blanket Limits, Fiduciary & Crime Coverages 	8.1% ↑	33% ↓	51.2% ↓
Housing Authority with 3,000 units and \$285M in insured value	<ul style="list-style-type: none"> ✓ 20 Improvements ✓ Added order and efficiency to their processes 	8.1% ↑	11% ↓	19.1% ↓
\$100M Recycling Company	<ul style="list-style-type: none"> ✓ 20+ Improvements ✓ Improved schedules, contractual compliance, & Timeliness of renewal options 	13.7% ↑	6% ↓	19.7% ↓
\$100M Liquor Manufacturer	<ul style="list-style-type: none"> ✓ 20+ Improvements ✓ Restructured property program to address areas of exposure 	5.6% ↓	23% ↓	28.6% ↓
\$60M Manufacturer of Amplifiers	<ul style="list-style-type: none"> ✓ 15 Improvements 	13.7% ↑	10% ↓	23.7% ↓
\$100M Meat Packing Plant in Florida	<ul style="list-style-type: none"> ✓ Added EQ, Wind, Flood, Spoilage coverages along with blanket limits in Florida ✓ Enhanced coverage. claims and risk control programs & overall response to service needs 	8.9% ↑	3% ↓	11.9% ↓
\$80M Hat Manufacturer	<ul style="list-style-type: none"> ✓ 9 Improvements ✓ Added products recall, doubled crime limits, & 3-year rate lock 	10.4% ↑	6% ↓	16.4% ↓
\$120M Global Pipe Distributor	<ul style="list-style-type: none"> ✓ 25 Improvements ✓ Added products pollution coverage, blanket limits, contractual compliance for additional insureds 	9% ↓	11% ↓	2% ↓
\$500M Municipality	<ul style="list-style-type: none"> ✓ 31 Improvements ✓ Eliminated redundant/ unnecessary policies, added claims advocacy & risk control support 	4% ↑	3% ↓	7% ↓
\$650M Commercial Property Manager	<ul style="list-style-type: none"> ✓ 16 Improvements ✓ Eliminated coinsurance, added contingency coverage, contractual risk transfer program, claims advocacy 	7% ↓	34% ↓	27% ↓

**The Council of Insurance Agents & Brokers P&C market survey dates to the year 2000 and is the oldest source for financial analysts, news media, policymakers and consumers interested in market trends. It is one of the most often quoted surveys in the industry by both consumer and trade media.*

KMRD's Core Competencies

COVERAGE EXPERTISE

Intense quality control process
reviewing over 1,000 coverage points per client every year

Coverage Database
Over 28,000 policy reviews in our growing proprietary database

BENCHMARKING

Coverages available with the incumbent carrier and in the larger marketplace

Pricing
versus like risks in the same or similar industries or risk elements

Loss experience
versus others with similar risk profiles

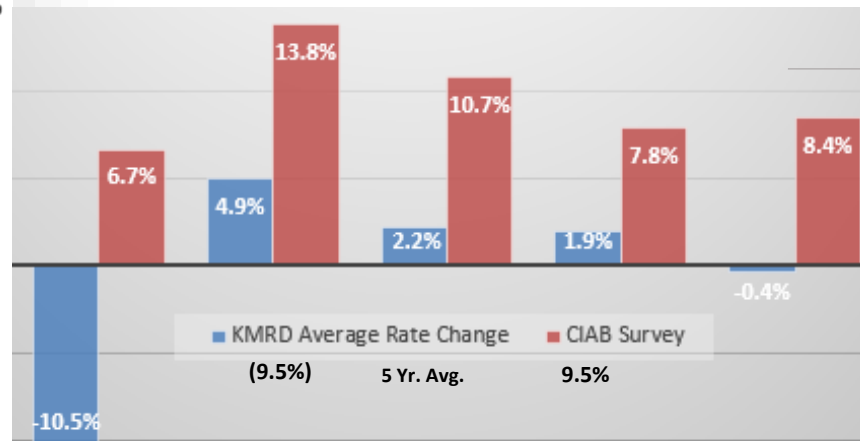
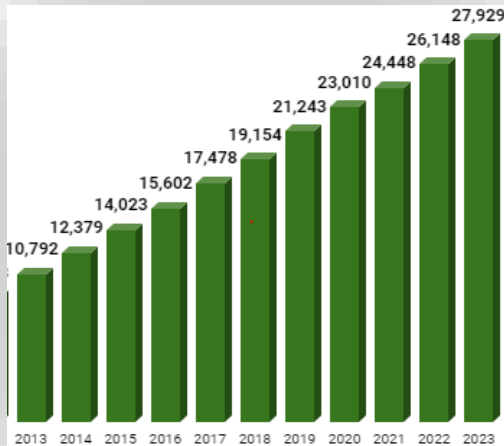
M&A Support

Due diligence support
for both buy and sell sides including...

- Coverage quality
- Pricing competitiveness | sustainability
- Historical loss experience and cost impact
- Reserve quality | adequacy
- Risk & safety Program evaluations
- Claim management program evaluations

Purchase agreement reviews
advice and support

Integration
strategies and support



Our proven process has quantitatively generated significantly better results than the industry in the past 5 years

KMRD

A FOUNDATION RISK PARTNERS COMPANY

WHEN WAS THE LAST TIME YOU HAD AN INDEPENDENT REVIEW OF YOUR RISK & INSURANCE PROGRAMS?

Using analytics to measure the effectiveness, competitiveness and **value** of your risk management program, our process will eliminate gaps in coverage and improve your risk profile.



Detailed property & casualty coverage assessment

Using a proprietary database of over 28,000 policies to reveal gaps in coverage



Review of Contracts

The least expensive way to transfer risk and ensure compliance with customers / suppliers



Global reach to over 100 countries

Knowledge of local regulations - staying compliant by country



Claims Advocacy, Risk Control Support & Analytics

Getting Results & Revealing trends to improve safety and claims management



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Discover an atmosphere distinguished by
COLLABORATION, EXCELLENCE and client-focused **PARTNERSHIPS**.

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KMRD – Risk & Human Capital Solutions

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