



DOING BUSINESS WITH RECYCLING SECTOR IN EUROPE

LEVERAGE ON SKYMINDER SOLUTIONS

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Recycling Sector Overview



The Recycling Market: Turning Waste into Opportunity

The recycling market is more than just an environmental initiative it's a thriving economic system that transforms discarded materials like paper, plastic, glass, and metals into valuable commodities. These materials are collected, processed, and sold to manufacturers, fueling the circular economy and reducing landfill waste while conserving resources.

How It Works

- **Collection & Sorting:** Recycling facilities gather waste and separate it into specific grades (e.g., different plastics or paper types).
- **Processing:** Materials are refined into usable raw forms such as plastic pellets or metal scrap.
- **Trading:** Brokers and traders buy and sell these commodities globally, influencing prices and distribution.
- **Manufacturing:** End markets purchase recycled materials to create new products closing the loop.

Why It Matters

- **Resource Conservation:** Cuts reliance on virgin raw materials.
- **Energy Savings:** Producing goods from recycled inputs often uses less energy.
- **Economic Impact:** Creates jobs, drives global trade, and turns waste into value.
- **Environmental Benefits:** Reduces landfill use and lowers greenhouse gas emissions.

Key Players

1. Collection & Sorting Facilities

- Municipal programs, private companies, and material recovery facilities (MRFs) gather and separate recyclables into specific grades (e.g., PET vs. HDPE plastics, cardboard vs. mixed paper).

2. Processors

- These businesses clean, shred, melt, or otherwise refine materials into usable forms, like plastic pellets, aluminum ingots, or paper pulp.

3. Brokers & Traders

- They connect processors with manufacturers, often operating globally. Commodity prices fluctuate based on supply, demand, and quality standards.

4. End Markets (Manufacturers)

- Companies purchase recycled materials to produce new goods, closing the loop and reducing reliance on virgin resources.

Economic Drivers

- **Commodity Prices:** Recycled materials compete with virgin materials. When oil prices drop, virgin plastic becomes cheaper, challenging recycled plastic demand.
- **Global Trade:** Countries import/export recyclables. For example, China's 2018 "National Sword" policy drastically reduced imports of contaminated recyclables, reshaping global flows.
- **Regulations & Incentives:** Government mandates for recycled content and bans on landfilling certain materials boost market demand.

Benefits

- **Resource Conservation:** Less mining, drilling, and deforestation.
- **Energy Savings:** Recycling aluminum saves up to 95% of the energy compared to producing it from ore.
- **Job Creation:** From collection to processing and trading.
- **Environmental Impact:** Lower greenhouse gas emissions and reduced landfill waste.

Challenges

- **Contamination:** Mixed or dirty recyclables reduce quality and increase costs.
- **Market Volatility:** Prices for recycled commodities can swing dramatically.
- **Infrastructure Gaps:** Not all regions have robust recycling systems.
- **Consumer Behavior:** Participation and proper sorting are critical.

Future Trends

- **Advanced Sorting Technologies:** AI and robotics for cleaner streams.
- **Chemical Recycling:** Breaking plastics down to molecular level for reuse.
- **Circular Design:** Products designed for easier recycling.
- **Extended Producer Responsibility (EPR):** Manufacturers take responsibility for end-of-life products.

In short, the recycling market is the business side of sustainability, where environmental responsibility meets economic opportunity. By making recycled content a viable input for industry, it helps build a greener, more resilient future.



Facts and Figures: Europe

Europe's recycling industry is leading the transition toward a climate-neutral and circular economy. By replacing extracted raw materials with recycled alternatives, the sector saves vast amounts of energy and water while preventing significant CO₂ emissions.

Using advanced technologies, European recyclers process a wide range of materials: metals, plastics, paper, textiles, vehicles, tyres, and electronic waste such as mobile phones and batteries. The ambition goes beyond simply closing the loop: the goal is to ensure that every product placed on the market is designed for continuous recycling, regardless of its material composition.

Europe is recognized globally for its state-of-the-art recycling facilities and leadership in sustainable practices. However, challenges remain. Today, only 12% of materials used in EU production come from recycling. With supportive policies that stimulate demand for recycled materials and encourage investment in innovative technologies, the industry can accelerate progress and achieve the highest possible recycling rates.

The future is clear: a strong European recycling sector is essential for resource efficiency, climate neutrality, and a truly circular economy.

40%: increase in the amount of waste collected and processed i.e., recovered in the EU since 2004

39.2%: of waste was recycled in the EU

32.3%: of waste was landfilled or incinerated in the EU that could otherwise have been recycled

The European Recycling Industry in numbers:

- **5,500 recycling industries, 300,000 green and local jobs**
- **95 billion turnover (2024)**

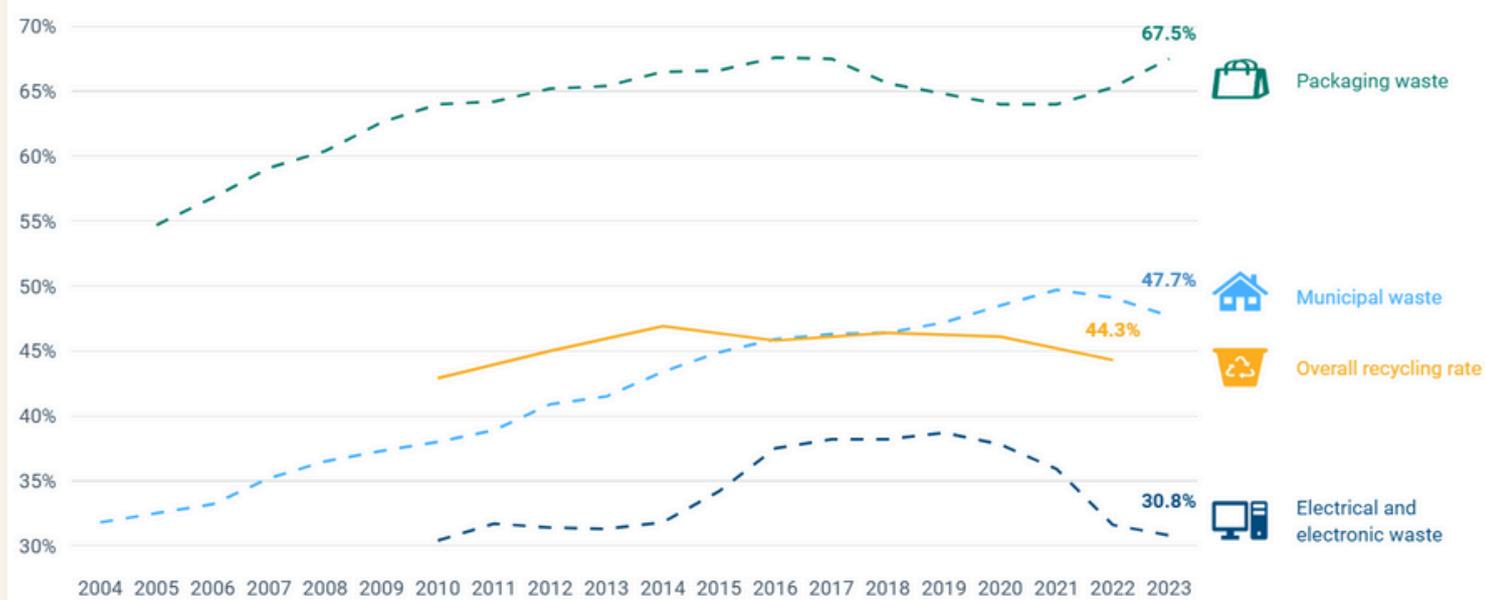
Source: Recycling Europe (EuRIC)



The recycling rate in Europe has grown significantly thanks to binding EU targets, marking progress toward using waste as a resource and advancing the circular economy. However, recent trends show stagnation—and in some cases, decline with overall recycling rates in 2022 falling below levels seen a decade ago. Most waste continues to be disposed of through incineration or landfilling.

To achieve true circularity and reduce environmental impacts from natural resource use, Europe needs continuous and ambitious waste management policies. These must incentivize recycling while discouraging landfilling and incineration, ensuring that waste becomes a valuable resource rather than a burden.

Figure 1. Recycling rates in Europe by waste stream



Rising demand for primary resources is weakening the EU's material self-sufficiency and placing increasing pressure on the environment. Recycling remains the only mainstream waste management solution that preserves valuable resources instead of destroying them. By using recycled materials in manufacturing, Europe can avoid the significant environmental impacts linked to extracting and processing virgin raw materials. Expanding the use of recycled content is essential for sustainability, resource security, and the benefits of a circular economy.

Until recently, recycling rates for municipal waste, packaging, and e-waste key sources of critical raw materials were steadily increasing, signaling progress toward circularity. In 2022, the overall recycling rate stood at 44.3%, while packaging achieved 67.5%, municipal waste 47.7%, and e-waste 30.8% in 2023.

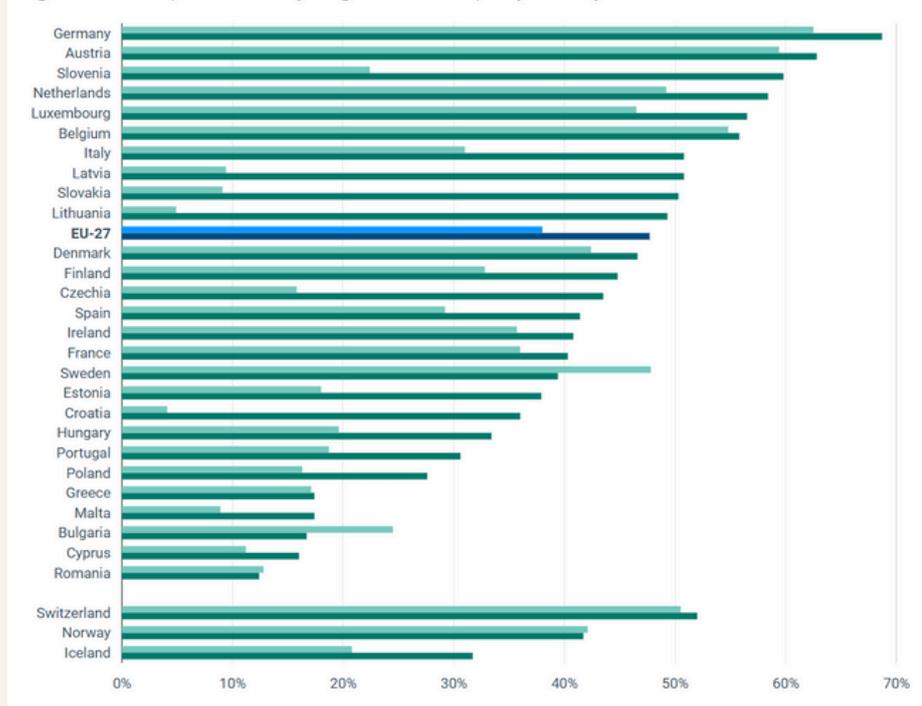
EU legislation has been a major driver of these improvements, with more than 30 binding targets for 2015–2030, including:

- WEEE Directive: Targets for collection and recycling of electronic waste.
- Waste Framework Directive: Goals for recycling and reuse of municipal waste.
- Packaging and Packaging Waste Regulation: Recycling targets for packaging materials.

These policies have delivered significant progress for key waste streams. However, recent years show stagnation, and even decline, with overall recycling rates dropping since 2018 and remaining below 50%. This means most waste still ends up in landfills or incineration plants.

To sustain progress toward a circular economy, the EU must preserve and strengthen its ambition. Recycling needs stronger support, while landfilling and incineration must be discouraged. Only through continuous and ambitious policies can Europe achieve higher recycling rates, resource efficiency, and climate neutrality.

Figure 2. Municipal waste recycling rates in Europe by country



All countries considered, except for Bulgaria and Sweden, have increased their municipal waste recycling rates since 2010, which clearly indicates improvements in waste management. Some countries (Lithuania, Latvia and Slovakia) have achieved remarkable improvements, registering increases of more than 40 percentage points.

The difference in municipal waste recycling performance between the countries with the highest and lowest recycling rates is large. In 2023, rates ranged from 69% in Germany to 12% in Romania. Ten countries, namely Germany, Austria, Slovenia, the Netherlands, Luxembourg, Belgium, Switzerland, Italy, Latvia and Slovakia achieved recycling rates of 50% or higher. Five countries (Romania, Cyprus, Bulgaria, Malta and Greece) recycled less than 20% of municipal waste.

However, several countries with relatively low recycling rates made little progress over the past 15 years. In 2023, 18 EU Member States were identified as being at risk of not meeting the recycling target for 2025 set in the Waste Framework Directive (recycling 55% of municipal waste in 2025).

Source: European Environment Agency



Recycled Materials

METALS

Metals recycling delivers major environmental and economic benefits. It saves significant amounts of CO₂ and energy while reducing dependence on extracting virgin raw materials. By closing the loop in the value chain, recycling prevents valuable critical raw materials from ending up in landfills or incinerators avoiding pollution of natural waters and other harmful impacts on ecosystems and human health.

The benefits are substantial: **recycling metals saves 60–95% of the energy compared to mining new resources. Using recycled metals in production reduces air pollution by 80%, water pollution by 76%, and cuts water use by 40%.**

Despite these advantages, the EU currently produces only around 3% of the raw materials needed to meet growing demand for metals. Yet, regulatory and market gaps mean recyclers do not compete on a level playing field with producers of virgin materials even though recycling offers unmatched energy and CO₂ savings.

To unlock the full potential of metals recycling, Europe needs stronger policies and fair market conditions that reward sustainability and resource efficiency.

- **73%: less energy is consumed when recycling steel compared to primary production**
- **58%: less CO₂ from using recycled steel instead of raw steel**
- **95%: less energy is consumed when recycling aluminium compared to primary production**
- **92%: less CO₂ from using recycled aluminium instead of raw steel**

PLASTICS

Plastics are made of polymers—compounds formed from many small molecules—and most are derived from oil. Common types of plastics include:

- PET (Polyethylene Terephthalate): Highly recyclable, used in bottles and textiles.
- HDPE (High-Density Polyethylene): Durable and resistant, found in bags and toys.
- PVC (Polyvinyl Chloride): Rigid and corrosion-resistant, used in packaging and cables.
- LDPE (Low-Density Polyethylene): Flexible, often used for food wrapping.
- PP (Polypropylene): Common in food containers and plant pots.
- PS (Polystyrene) & EPS (Expanded Polystyrene): Used for trays, foam cups, and plates.

In 2020, Europe sent over 10 million tonnes of post-consumer plastic waste for recycling. Yet, only 35% was recycled, while 42% was used for energy recovery and 23% was landfilled. For plastic packaging, the recycling rate reached 46%, up 9.5% since 2018, but significant volumes still go to incineration or landfill.

Recycling plastics is essential to move away from a linear economy and achieve circularity by reintroducing high-quality recycled plastics into new products. To make this possible, EuRIC advocates for a strong policy framework, including:

- Mandatory recycled content targets to boost demand for recycled plastics.
- Improved collection systems aligned with advanced recycling technologies.
- Restrictions on plastic waste exports to keep resources within Europe.
- Design-for-recycling criteria ensuring products can be mechanically recycled without altering their chemical structure.
- Better alignment between waste and chemical legislation and active contribution to EU standardization efforts.

A robust policy environment will accelerate innovation, reduce environmental impact, and ensure plastics remain a valuable resource in a truly circular economy.

- **Only 10% of recycled plastics are used by the plastic sector**
- **2.5 tonnes of CO₂ are saved for each tonne of plastics recycled compared to producing new plastics from oil** (This is equivalent to charging more than 300,000 smartphones)

PAPER

Paper is a versatile material used in countless applications: from food packaging and newspapers to insulation. The recycling industry plays a vital role in keeping paper in circulation by collecting and processing it into standardized quality grades in line with EN 643 recycling standards.

Recovered paper can be used as a substitute for virgin pulp or combined with it to produce new paper products. This process not only conserves resources but also supports a global supply chain that extends far beyond Europe, making recovered paper a key commodity in international trade.

Paper recycling is essential for reducing environmental impact, saving energy, and advancing the circular economy—ensuring that valuable fibers are reused rather than wasted.

Benefits of Paper Recycling

- **Energy Savings:** Recycling paper uses up to 60% less energy than producing paper from virgin pulp.
- **Water Conservation:** It reduces water consumption by up to 50%, helping preserve vital resources.
- **CO₂ Reduction:** Recycling significantly lowers greenhouse gas emissions compared to manufacturing from raw materials.
- **Landfill Diversion:** Keeps valuable fibers out of landfills, reducing waste and environmental impact.
- **Resource Efficiency:** Extends the life of wood fibers, reducing pressure on forests.
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Paper recycling is essential for reducing environmental impact, saving energy, and advancing the circular economy—ensuring that valuable fibers are reused rather than wasted.

- **4000 kWh of energy is saved by recycling one tonne of paper**
- **56.5% of recovered paper is used in the new paper production**

E-WASTE

E-waste, otherwise referred to as waste electrical and electronic equipment (WEEE), is mainly composed of non-ferrous metals (nickel, copper, lead, etc. E-waste typically encompasses everyday large appliances (professional/household) and small devices e.g., mobile phones, tablets, etc. According to the UN, the world generated a massive 57.4 million tons of e-waste in 2021. Unfortunately, only 18% of e-waste is properly collected and recycled. This means that a plethora of valuable materials such as silver, copper, gold, platinum, and others are incinerated or landfilled. E-waste recycling enables the recovery of these valuable materials, alleviates our dependency on extracting new resources and reduces the dangers that improper disposal poses to the environment and human health.

- **Less than 40% of e-waste is recycled in the EU, the rest is unsorted**
- **> 36 million tonnes of e-waste is generated globally on an annual basis** (that's equivalent to disposing of 800 laptops every second)

BATTERIES

Batteries convert chemical energy into electricity and are essential for modern life, powering appliances, vehicles, and storing energy. They come in two main types: rechargeable and non-rechargeable, and contain a mix of valuable minerals such as lithium, zinc, nickel, sodium, and lead.

Demand for batteries has surged by 30% annually in recent years, and meeting this growth could require extracting around 10 million tons of new raw materials. This makes efficient battery recycling critical to reducing environmental impacts and conserving resources.

Closing the loop will:

- Reduce energy consumption and greenhouse gas emissions
- Recover critical raw materials for reuse
- Lower dependency on virgin resource extraction

To achieve a truly circular economy for batteries, eco-design and end-of-life management must be better connected. Designing batteries for recyclability and ensuring efficient recovery processes will help Europe meet sustainability goals while securing essential resources for the future.

- **750 million tonnes of mineral-rich brine are saved from extraction for every tonne of lithium recycled**
- **250 million tonnes of mineral ore (spodumene) are saved from extraction for every tonne of lithium recycled**

TYRES

Tyres are made of valuable materials: rubber (75%), steel (15%), and textile fibers (10%). When tyres reach the end of their life, they become End-of-Life Tyres (ELTs). In the EU, around 50% of ELTs are mechanically recycled, recovering high-value materials. By breaking down rubber into granules, recycled material can be used in diverse applications across sectors such as sports, construction, agriculture, and automotive.

However, the absence of strong regulatory incentives to boost existing and create new end-markets means a significant share of tyres is still incinerated. In fact, for every tyre recycled in Europe, another is burned for energy recovery—wasting valuable resources.

EuRIC calls for a robust policy framework to change this, including:

- Ban on exporting unprocessed waste tyres outside the EU
- Mandatory design-for-recycling criteria to ensure rubber and steel can be recovered
- Measures to prevent imports of non-REACH-compliant tyres
- Green public procurement and mandatory recycled content targets for rubber products in automotive (e.g., tyres, OEM applications) and construction (e.g., asphalt, road paving)
- Traceability and compliance with high-quality standards along the value chain
- Harmonized EU-wide End-of-Waste (EoW) criteria to stimulate the use of recycled materials from ELTs

With the right policies, tyre recycling can maximize resource recovery, reduce environmental impact, and accelerate Europe's transition to a circular economy.

- **½ of the 3 Mt of ELTs produced in the EU are recycled**
- **371,000 tonnes of CO2 are saved by recycling ELTs into materials for sports pitches**

TEXTILES

Textiles and clothing are an essential part of daily life, yet their environmental footprint is significant. Global textile fibre production has almost tripled since 1975, driven largely by synthetic fibres, which account for 60% of production, polyester being the most common. Natural fibres like cotton make up 37%, but their cultivation also requires substantial resources.

Textiles are the fourth largest contributor to resource use in Europe (1,321 kg per person) and greenhouse gas emissions (654 kg CO₂-equivalent per person). This makes textile reuse and recycling critical for sustainability.

Why Textile Recycling Matters

- Preserves valuable fibres within the circular economy.
- Reduces environmental impact: Recycling textiles can save up to 98% of CO₂ emissions compared to using virgin materials.
- Conserves resources: Less water, energy, and chemicals are needed when fibres are reused.
- Supports innovation: Enables new business models for sustainable fashion and material recovery.

By prioritizing textile reuse and recycling, Europe can significantly cut emissions, reduce resource consumption, and move closer to a truly circular economy.

- **1.7 - 2.1 million tonnes of used textiles are collected annually in the EU**
- **2.2 million tonnes of textile waste will be available for recycling in 2030**

CONSTRUCTION AND DEMOLITION

Construction and demolition (C&D) waste represents a significant share of global waste generation. Recycling this material offers major environmental, economic, and social benefits. By diverting C&D waste from landfills, we reduce pressure on limited landfill capacity and prevent harmful substances from contaminating soil and water.

Recycling also supports sustainable building practices. Many certification programs, such as LEED (Leadership in Energy and Environmental Design), encourage the use of recycled materials. Incorporating recycled content into new projects lowers environmental impact and promotes a circular economy. Proper management of C&D waste enhances public health and safety by ensuring hazardous materials, such as asbestos or lead-based paint are safely removed and disposed of. This reduces pollution risks and protects communities.

Key Benefits

- Preserves natural resources by reusing valuable materials
- Reduces waste and landfill use
- Conserves energy compared to producing virgin materials
- Supports the economy through job creation and resource recovery
- Promotes sustainability and resilience in the construction sector
- Improves public health and safety by managing hazardous substances

Embracing recycling practices in construction is essential for a more sustainable, resource-efficient, and resilient future.

- **450 – 500 Mt of CDW are generated annually in the EU**
- **<10% to 90% of CDW recovered and recycled in the EU**

Source: Recycling Europe (EuRIC)



Focus on Recycling Europe Association (EuRic)

Recycling Europe is the voice of Europe's recycling industries. Here vision:

- Promoting conditions that allow recycling and waste management sectors to remain competitive, grow, and reinvest in innovation.
- Facilitating connections between European recycling industries and other stakeholders in the circular economy.
- Serving as a reliable partner between the recycling value chain and policymakers.
- Highlighting the socio-economic, climate, and environmental benefits of recycling.
- Providing expertise across a wide range of materials through both sector-specific and cross-sectoral knowledge.
 - Metals (ferrous and non-ferrous)
 - Plastics
 - Paper
 - Textiles
 - Tyres
 - End-of-life vehicles (ELVs)
 - E-waste including batteries
 - Construction & Demolition waste

Source: Recycling Europe (EuRIC)

SKYMINDER AT A GLANCE FOR RECYCLING SECTOR

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and jurisdictions

Best in class information thanks to more than **40**
providers, both local and global

13 available products and solutions

Web and **API** integration



SKYMINDER SOLUTIONS

SkyMinder is the worldwide CRIF platform helping you to take decisions based on high-quality information. If you are required to evaluate a business partner in Recycling Sector, a customer or a supplier, in a risk evaluation process or for compliance requirements or a cyber risk assessment, SkyMinder is the right solution.

Requirement	SkyMinder Solution	Description
Know business partners and risk level - have on board new suppliers - understand in depth customers creditworthiness	Executive Report, Full Report, Quick Report, Slim Report	Information, with different level of details, related to all companies in the world, including AI summary, firmographics, credit limit, risk indicator, management, shareholders, negative events etc.
Receive immediate notification with related details if a change affects a company	Full Monitoring	Detailed information about changes affecting a company as soon as happened. Combined possibility to request for free updated report.
Be alerted if there is change in company's information	Alert	Information related to the area involved by a change as soon as an event happened.
Periodically checks if there are changes involving companies	Planned Revision	Scheduled revision with updated report including company's changes if applicable
Obtain documents from Official Registry and LEI repository	Official Registry and LEI	Product range including documents coming from public sources or from LEI Registry
Company ownership overview	Verification Report	List of shareholders to understand company's structure
Compliance requirements and fraud checks	Compliance Report and Extended Check Report	Anti-Bribery and Money Laundering lists checks related to financial crimes.
Risk of Cyber attack	Cyber Risk Report	Assess the level of risk related to a business partner in being involved in a cyber attack