# Mobility: Vehicle Manufacturers and Suppliers

## Sustainable Development Analysis Framework

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**Sectors:** Vehicle manufacturers and vehicle equipment manufacturers (road vehicles, trains, ships, aircraft)

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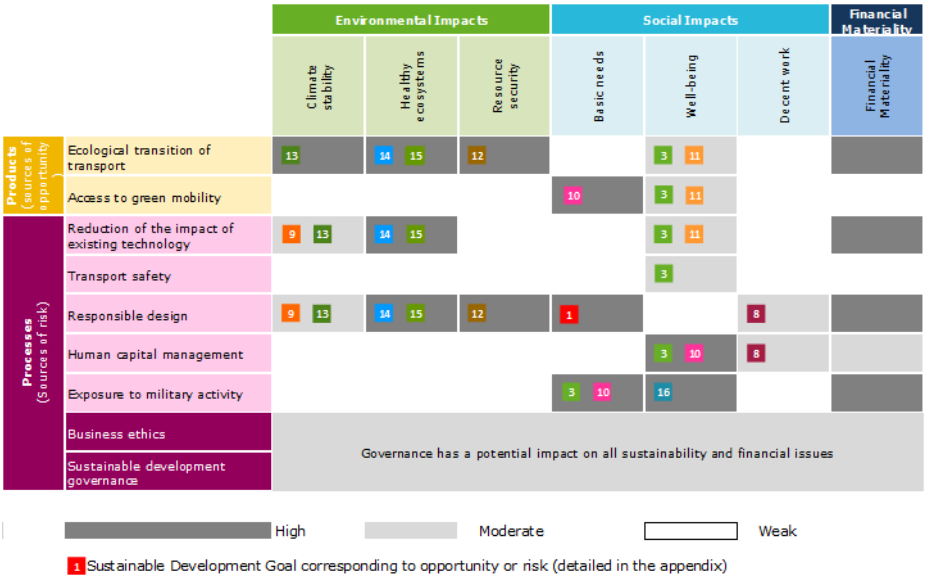
Mobility is a crucial aspect of human development. Moving goods and people facilitates access to goods and services, particularly housing, work, healthcare, education, culture, etc. However, this has an impact on climate change, air quality, fossil resource consumption, biodiversity and people's health. Mobility is currently a privilege unevenly distributed among communities and across the world. Projections for transport growth predict that the number of air passengers will double by 2040 and that there will be nearly 2 billion vehicles in circulation by 2050. Vehicle manufacturers and suppliers must propose technological solutions to help provide access to mobility for the greatest number of people while at the same time reducing the environmental and social impacts linked to transport.

*Major Sustainability Challenges for the Sector*



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# Sustainability Opportunities

## E/S Ecological Transport Transition

***The transport sector represents:***

*14 % of global greenhouse gas emissions, or 7.1 Gte$CO_2$*

*(IPPC, 2014)*

*19% of primary energy used*

*(IEA, OCDE, 2015)*

*> 50% of the final demand for petroleum products to ensure 97% of the energy demand for transport*

*Mirova*

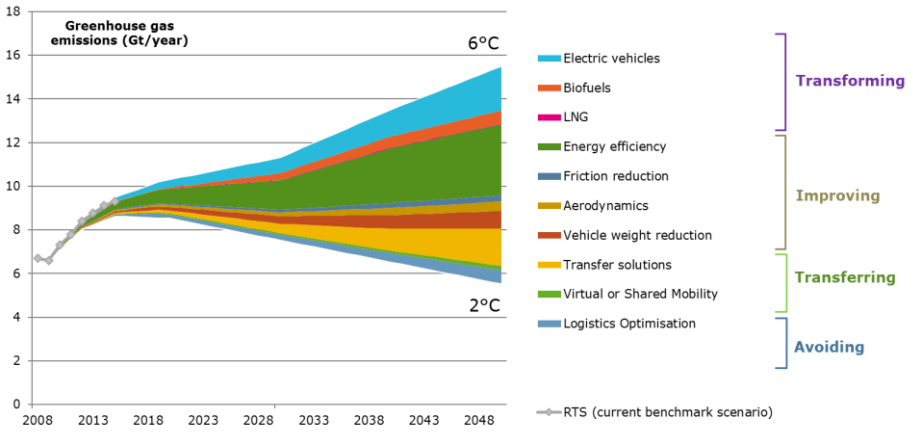
Current transport generates emissions ($CO_2$, NOx, fine particles, SOx) that have a negative impact on climate, the environment and people's health (users, urban dwellers).

There are a wide range of solutions that could reduce the negative impacts of transport. These can be divided into four categories:

- **Transforming** vehicles from combustion to electric engines and replacing diesel/petrol with alternative fuels;
- **Improving** the energy efficiency of internal combustion vehicles and reducing polluting emissions from existing means of transport;
- **Modal shifting** to means of transport with a high energy efficiency and low pollution per unit transported;
- **Avoiding** the need for and/or the distance of transport.

The way in which these solutions contribute to moving from a 6°C climate scenario to a 2°C scenario by 2050 is modelled in the graph below. As an indication, since 2008, the trend in $CO_2$ emissions from transport has been close to the 6°C scenario (IEA, 2017).

*Figure 1: The potential for the reduction of greenhouse gas emissions by solution*




*Sources: Mirova / IEA (2011) for emissions savings from retrofit and transformation solutions; Mirova / ICCT (2012) for avoidance and transfer solutions; Mirova / (Global e-Sustainability Initiative (GeSI), 2008) for the relationship between avoidance solutions; (IEA, 2017)*

Vehicle manufacturers and vehicle equipment manufacturers (road vehicles, trains, aircraft, ships) can use these four levers. However, the long-term growth opportunities they can benefit from are mainly driven by transformation and transfer solutions that meet the demands of the transport energy transition; retrofitting solutions are more likely to reduce the risks of existing business models[1] (cf. section Reducing the impact of existing technologies) while avoidance solutions, linked to technologies for optimising journeys or avoiding travel, are to be developed mainly by the information and communication technologies sector.

[1] *"Improving solutions" are linked to sustainable development opportunities for equipment suppliers and to risks management for vehicle manufactures.*

## Transform

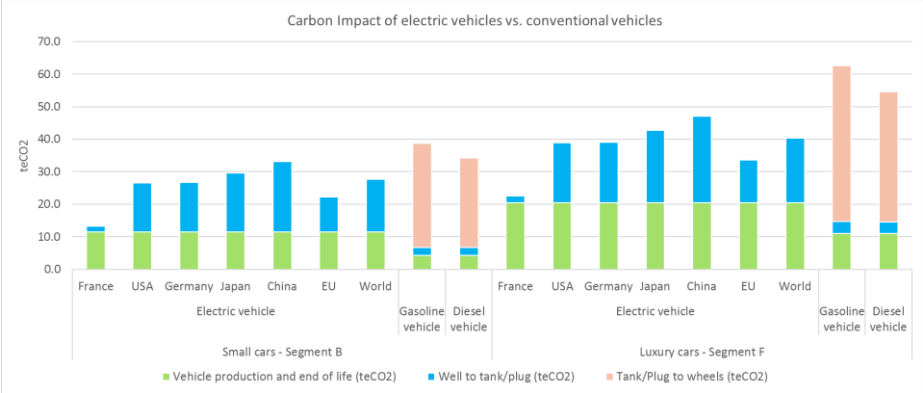
Transformation solutions are mainly based on the development of electric vehicles in the broadest sense[2] in road transport and on the integration of 2nd and 3rd generation biofuels in aviation and maritime transport.

Whatever the scenario adopted by 2050, road transport retains an important place in the transport mix. Battery-powered electric vehicles, for which manufacturers have strong ambitions, will be essential in reducing the sector's environmental impact. Taking into account the entire life cycle in countries with a high carbon mix, this type of vehicle currently still emits $CO_2$. However, it nonetheless breaks the dependency on oil and should allow the sector to reduce its climate impact as the carbon factor of electric energy mixes is reduced. It also fully addresses local pollution issues.

*Using the lifecycle approach, the carbon footprint of an electric vehicle in Europe represents ~55 % of the carbon footprint of a combustion vehicle*

*Mirova*

*Figure 2: Carbon impact of electric vehicles over 180 000 km*[3]




*Sources: Mirova,* (Ager-Wick Ellingsen, Singh, & Hammer Strømman, 20016) *for vehicle production,* (Peters, Baumann, Zimmermann, Braun, & Weil, 2017)/ (Transport & Environment, 2017) *for the production of lithium-ion batteries,* (JEC - Joint Research Centre-EUCAR-CONCAWE collaboration, 2013) *for carbon footprints of fuel vehicles in use phase,* (U.S. Department of energy, 2018) *for vehicle EPA consumption,* (IEA, 2015) *for the electric energy mixes of different countries,*

Depending on usage, fuel cell vehicles are also one of the possibilities to be explored in order to meet the sector's environmental challenges. Fuel cells and hydrogen are also part of the scope of solutions in the maritime sector, and are now at test phase. Whatever the option chosen, there are still many challenges ahead in order to make each of these solutions affordable and technologically mature, as well as ensuring that they are secure, have a socially responsible supply chain, and are clean in terms of both $CO_2$ emissions and polluting emissions. Companies that help to remove these obstacles will be central to a radical transformation. These are companies positioned on the value chain of storage batteries, electric motors, semiconductors for battery-powered electric vehicles; equipment

[2] *Battery-powered electric vehicles, rechargeable hybrids, electric vehicles with extended range, fuel cell (hydrogen) vehicles, two-wheelers and electric buses.*

[3] *Hypotheses: The graph shows the carbon footprint of two electric vehicles, a B-segment city car and an F-segment luxury saloon car over 180,000 km. These vehicles are compared with combustion engines of equivalent segments. The consumption of the vehicles selected are those of the EPA standard, estimated as close to actual consumption. The carbon footprint of electric vehicle production includes $CO_2$ emissions from battery production, vehicle manufacture and end-of-life emissions. Here, the battery life is the same as the life of the vehicle; although it probably requires more than one battery to cover 180,000 km, the old battery should be reused in new uses and/or recycled afterwards.*

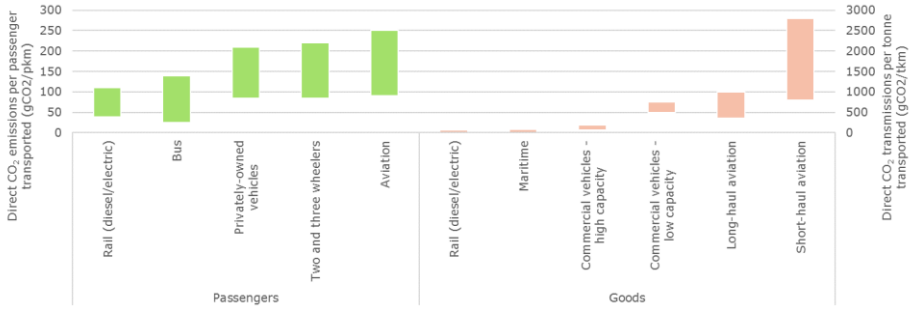
manufacturers of efficient and affordable on-board hydrogen tanks; and industrial companies offering low-carbon hydrogen production for fuel cell vehicles.

The 2nd and 3rd generation biofuel industries will also be essential in helping reach the climate objectives of the aviation and maritime industries by 2050.

### Transfer

Maritime and rail transport emit less $CO_2$ than road and air transport.

*Figure 3: Direct $CO_2$ emissions per passenger/km and ton/km for the main modes of transport*




*Source: (IPCC, 2014)*

Therefore, the transfer solutions consist in making these modes of transport attractive in terms of efficiency, speed and cost, to offer a strong alternative to more polluting transport. Another transfer solution is the development of the cycle market, accelerated in Europe by the emergence of electric bicyles.

Regulatory requirements, as well as changes in the behaviour and desires of users with regard to climate considerations, have important financial implications for those involved in the sector, both positively for those who are well-positioned to take advantage of these changes and negatively for less advanced companies.

**We favour companies well-positioned to take advantage of the transport transition towards much greener forms of mobility.**

**This transition brings a wealth of environmental and financial opportunities along the entire value chain.**

**Key indicators**

- Quantitative data on low-carbon solutions: share of associated revenues and R&D investment, growth targets
- Low carbon transportation solutions portfolio

*~10% of the world's population accounts for 80% of motor vehicle users*

*(IPCC, 2014)*

## S Access to Green Mobility

The development of transport promotes access to mobility for all. Some sparsely populated areas remain remote and difficult to reach. Mobility is a privilege unevenly distributed across society, whether in the suburbs of developed countries or in developing countries without infrastructure and means of transport. However, access to mobility for the most disadvantaged people should not come at the expense of responding to environmental challenges: the aim is not to increase the impact of transport on climate change and/or pollution. Here, the term "green mobility" refers to low-carbon, pollution-free mobility. It is for this reason that the rise of electric two-wheelers in China (OECD/IEA, 2017), electric buses and low-carbon electric vehicles are useful solutions that help to make mobility more accessible without damaging the climate or increasing air pollution in cities.

**Access to sustainable mobility for suppliers and manufacturers of transport solutions consists in multiplying alternatives that are less polluting for everyone. This mainly concerns actors offering low-carbon solutions (vehicles, two-wheelers, electric or fuel cell buses) with low-cost variants or active mobility (bicycle markets).**

**Key indicators**

- Services that are low-cost, low-carbon and/or low-polluting

## Exposure to Opportunities

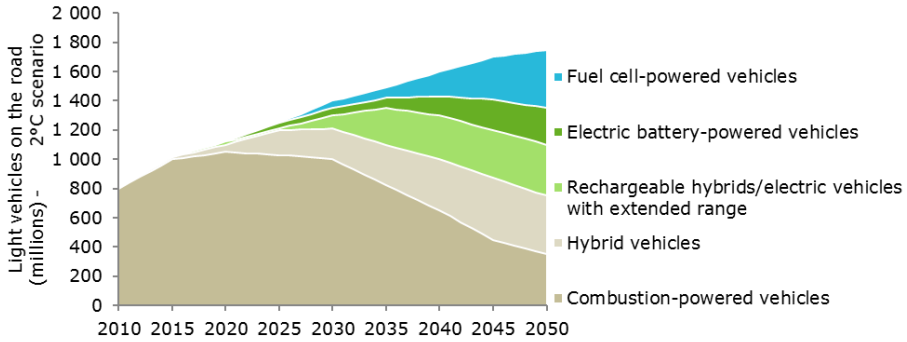
| | **Indicator considered:** current performance or goals for transfer or avoidance solutions (revenue from and/or percentage of investments in these solutions) | |
|---|---|---|
| High exposure | >50% | Analysis of investments directed towards transfer or avoidance solutions complements the quantitative, revenue-based analysis. |
| Significant exposure | - Between 10% and 50%<br>- Significant non-quantitative contribution (strategy and marketed products) | |
| Weak or no exposure | <10% of products available with stated solutions | |
| Negative exposure | No companies in this sector are currently considered to have negative exposure | |

# Environmental and Social Risk

## E/S Reducing the Impact of Existing Technologies

Transport, and more specifically road transport, is undergoing an unprecedented phase of transition with electric motors (cf. section Energy transition of transport). However, combustion vehicles remain present in all projections for 2050. This is all the more true for commercial vehicles.

*Figure 4: Changes in the number of vehicles in circulation*




*Source: (OECD, 2013)*

Improvement solutions for vehicles with combustion engines are useful tools that companies in the sector can use to reduce the risks inherent in their activities. This type of activity causes various air and water pollution, noise pollution, adverse effects on biodiversity, on people's health and quality of life, and damage to buildings.

### Reduction of emissions

As far as $CO_2$ is concerned, these solutions focus on the energy efficiency of vehicles (more efficient engines and heat recovery) and the reduction of resistance forces (aerodynamics, rolling resistance, friction and internal friction, lightening).

Maritime and rail transport have less impact on the climate than road and air transport. Several improvement solutions remain to be deployed:

- Expanding the size of ships, improving their design (hull, engine, propeller, energy recovery), using renewable energies to cover consumption on board (ICCT, 2011) for the maritime sector;
- Optimizing the energy performance of propulsion, reducing train weight, optimizing aerodynamics or adding low-energy auxiliary equipment for railways.

Concerning pollution, although the automobile sector has made significant progress in recent years, combustion engines remain sources of emissions ($NO_X$, $SO_X$ and fine particles) which are becoming less and less compressible. The level of strictness and rigour of regulations is increasing, while the awareness of city-dwellers is also on the rise, placing greater demands on manufacturers of light and heavy goods vehicles. Threats to manufacturers selling polluting vehicles are tangible and can have serious financial and reputational negative impacts (fines, marketing bans by governments, traffic bans by certain conurbations, mistrust of consumers). In this respect, improvement solutions are mainly found in the field of anti-pollution

*50% of NOx emissions and more than 20% of $PM_{10}$ and $PM_{2.5}$ emissions in Europe are due to transport*

(EEA, 2013; EEA, 2012)

technologies: NOx traps, selective catalytic reduction (SCR), exhaust gas recirculation (EGR).

Although ships have low $CO_2$ emissions per tonne transported, they still emit significant quantities of nitrogen oxides (NOx), sulphur oxides (SOx) and fine particles, with a negative impact on marine ecosystems. The MARPOL International Convention, drawn up by the International Maritime Organisation (IMO), reinforces technological constraints in shipbuilding and encourages the integration of solutions such as the use of low sulphur fuel oil, EGR, SCR, gas or water vapour scrubbers in combustion. The use of liquefied natural gas also reduces SOx emissions because it contains no sulphur.

*3 million*

*premature deaths per year are caused by outdoor air pollution*

*(WHO, 2016)*

Finally, nearly 70% of railways are not electrified (IEA / UIC, 2017). This means that diesel locomotives are also responsible for polluting emissions (CO, $NO_X$, $SO_X$ and fine particles).

### Other pollution

In addition to emissions, transport generates other types of pollution. For example, maritime transport generates pollution from ballast water, which has a negative impact on biodiversity (acidification of the oceans, disturbance of marine chemistry, degradation of natural environments, modification of fish reproduction cycles, etc.) (UNCTAD, 2014)

Noise pollution is another significant transport issue. In cities, noise emitted by urban traffic is a strong detriment to quality of life. Noise pollution from aircraft is also an issue for people living close to airports. In aviation, however, noise emission has been reduced by 75% since the first airliners, thanks to technical progress on engines, gradual withdrawals of the noisiest aircraft and new landing and take-off procedures. (IATA, 2013). The European Council on Aeronautics (ACARE) aims at a 65% reduction in perceived noise by 2050 compared to 2000 and new standards are regularly set by the ICAO to reduce the noise of new types of aircraft for which an application for certification is made, which means pressure is put on the sector to continue to reduce noise pollution.

*3 000 times more sulphur is found in marine fuels than in road transport fuels*

*(Transport & Environment, 2012)*

**We encourage companies to integrate energy efficiency solutions to reduce the climate and energy impacts of their products, but also to use or develop technologies to clean up transportation.**

**Key indicators**

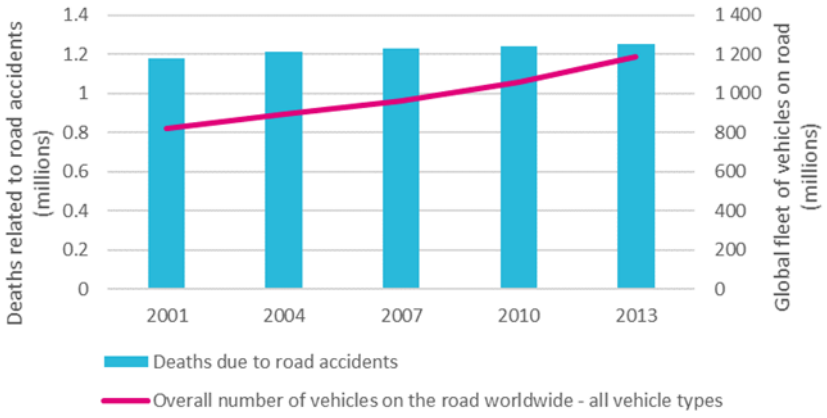
- Exposure to pollution risks
- Improving the energy efficiency of vehicles
- Solutions implemented
- Existence of controversies

## S Transport Safety

Access to mobility has social benefits but also presents risks for the health and safety of users and urban dwellers (pollution, noise, stress, accidents). Target 3.6 of the UN's Sustainable Development Goals (UN, 2015) is to halve the number of deaths and injuries caused by road traffic accidents by 2020 (cf. Appendix: sustainable development goals) vs 2013.

Since 2007, the number of deaths due to road accidents has stagnated at ~1.25 million, while the population and the number of vehicles in circulation have increased.

*Figure 5: Number of deaths due to road traffic accidents worldwide*




*Source: (WHO, 2015)*

Traffic accidents are the **leading** cause of death for people aged 15 to 29

*(WHO, 2015)*

***1.25 million***

deaths per year are caused by road traffic accidents

*(IPCC, 2014)*

Many effective measures such as reducing speed (WHO, 2017), fighting drink-driving, improving the quality of helmets and their use, and wearing seat belts have been deployed in different parts of the world and are now making roads safer. However, efforts still need to be made to achieve the United Nations target, both in terms of behaviour and vehicle-integrated technologies, particularly in the least developed regions (WHO, 2015).

In addition to regulatory requirements, passive safety (safety belts, airbags, child restraint systems, head restraints, etc.) has been complemented for a number of years by active safety on board new vehicles (driving aids, steering assistance, automatic gearboxes, perception safety, etc.). By 2030, a technological and behavioural breakthrough could come via autonomous vehicles that may provide major safety gains, whether for private vehicles or for the transportation of goods by HGVs. Accident frequency could drop by 80% by 2040, once full automation mode is deployed in vehicles put into service (KPMG, 2015).

In addition to road transport, accidents are also an issue for rail transport (deaths of passengers and employees, potential leakages dangerous to the environment in the transport of goods), air transport (deaths following crashes) and maritime transport (marine pollution). However, the responsibility for these types of safety issue is more widely borne by operators of these kinds of transport.

**Solutions include all technologies related to active safety and autonomous vehicles, which enable a significant improvement in safety.**

**The exposure to these risks is assessed on the basis of the number of accidents, repeated recalls or other signals of serious malfunctions linked to the companies concerned.**

**Key indicators**

- Revenue/investment generated on active safety solutions or the development of autonomous vehicles
- Solutions for accident control
- Number of accidents recorded
- Number of recalls

E/S

## Responsible Design

The "Responsible Design" covers issues related to resources (energy, materials), the climate (carbon emissions), pollution, and social issues linked to the supply of materials.

In Europe, for the automotive sector, regulations require 85% of end-of-life vehicles to be recycled and 95% recovered. However, certain components present in vehicles pose recycling problems, such as rubber, plastics and textiles. These difficulties will be accentuated with the gradual integration of new materials such as composites, carbon fibre or rechargeable batteries for electric vehicles. This is an important issue for all modes of transport. For example, current aircraft models include more than 50% carbon fibre composites.

This means that, whether for regulatory or economic reasons, ecodesign and recycling are important themes for manufacturers and equipment manufacturers. In addition, although the carbon footprint of the use phase is more substantial for combustion vehicles, the production of a vehicle should not be neglected. Design and recycling are all the more difficult to master with the development of electric vehicles (cf. section Transform).

For some sub-sectors, such as the tyre industry, finding alternative sources of supply for natural or synthetic rubber is a necessity to reduce exposure to market risks and reduce the use of fossil resources in the case of synthetic rubber.

The emergence of electric vehicles also comes with new challenges on responsible procurement. For example, lithium-ion technologies require cobalt for the manufacture of cathodes. The accelerated deployment of these batteries is hampered by the fact that nearly half of cobalt reserves come from the Democratic Republic of Congo (DRC). This supply from the DRC raises issues of violations of International Labour Organization (ILO) conventions and support for armed conflicts in the country. These issues, which are already at the heart of the automotive industry's preoccupations, could eventually have serious financial consequences for companies that have invested heavily in supporting lithium-ion technology.

**We support companies that integrate all the environmental and social risks associated with materials and their procurement into their strategic thinking, provide solutions to circumvent them and revise the design of their products.**

**Key indicators**

- Percentage of recycled materials used in products
- Material end-of-life management
- Existence of a procurement policy (objectives and performance monitoring)
- Carbon objective, strategy and performance (scopes 1,2 and 3)

## S Human Resources

As it is highly sensitive to fluctuations in the economy, the automotive sector is confronted with the need to adapt its workforce to demand. This leads to human resources management issues, including restructuring, job security and short-term employment. Moreover, the sector is highly competitive and is undergoing technological changes linked to the energy transition. The expertise required changes, forcing companies to adjust employees' skills. The attractiveness of companies has become a determining factor in maintaining competitiveness.

Faced with difficult circumstances in mature economies, it should be remembered that the annual growth rate of car ownership is 7% in India and 10% in China, compared to 0.6% in OECD countries. Therefore, whether it is to move production areas closer to sales areas or to reduce costs, manufacturers tend to develop their industrial tools in emerging countries where social practices may be less strict in terms of respect for labour law and human rights.

Aeronautical manufacturers are also faced with social challenges such as attracting and retaining highly qualified employees, but also with restructuring needs in the face of fluctuating civil and military demand. In addition, in a 2°C climate scenario, air traffic growth is expected to be moderate in OECD countries (+1.3%/year) or even low in Europe (+0.7%/year) by 2050, putting additional pressure on the sector and on human capital management.

*9 million direct jobs and 45 million indirect jobs are generated by the construction of 60 million road vehicles*

*(OICA, 2016)*

**We assess the transparency of companies regarding their social practices, whether in developed or emerging countries. In particular, we expect companies to manage restructuring in a responsible manner.**

**Beyond regulatory constraints that vary from one country to another, we support companies with a rigorous and uniform human resources policy in these areas, regardless of their geographical area and throughout their entire production cycle.**

**Key indicators**

- Adjusting the workforce to meet demand
- Adapting the workforce to technological change (training)
- Compliance with ILO conventions throughout the entire production cycle (risk mapping, social audits, integration of environmental and social criteria in the selection of suppliers, etc.).

## S Exposure to Military Activities

A company is considered to be active in the military sector if it participates in the production of a key component integrated in a product designed for aggressive military use. Taking into consideration the need for democratic regimes to have an arms industry to ensure the security of their people, these companies are not excluded a priori from socially responsible funds. Nevertheless, it is the joint responsibility of governments and companies to ensure that the arms trade does not seriously undermine universal respect for and observance of human rights. Companies in the sector must guarantee the non-export or re-export of products for military use to non-democratic states, or whose democratic practices are deemed to be deficient, since weapons may be used against civilian populations.

**At this stage, no defence company in the investment universe applies sufficient practices to guarantee such non-exports.**

**Key indicators**

- Share of revenue linked to aggressive military products
- Governance bodies for export control

## G Business Ethics

As with all sectors, business ethics is an important issue and transport companies must be able to prevent the risks of bad practices (corruption, fraud, practices lacking in transparency, etc.).

For example, manufacturers and equipment manufacturers are forced to comply with increasingly stringent regulations on $CO_2$ emissions and polluting emissions. Although progress has been made, improvements have recently been questioned and criticised, particularly in the automotive sector. Whether it is related to limited and imprecise testing or deliberate manipulation, controversies have shown that products or vehicles in use do not achieve the same results during testing and in actual conditions.

These failures illustrate serious weaknesses in the business ethics of automotive companies, which voluntarily or through lax behaviour, market products that do not comply with regulations and commitments to consumers.

With regard to aerospace and defence companies, the nature of their activities implies special links with governments, sometimes undemocratic or insufficiently democratic. The sector is highly exposed to issues around corruption. Most companies in the sector are implementing measures to reduce these risks, such as compliance programmes, rationalisation of intermediaries, codes of ethics, training and support systems for employees and whistleblowing systems. However, controversies remain.

**We encourage companies to demonstrate a high level of transparency around their practices and products.**

**In aerospace and defence, we ensure that control measures are in place, and we also rely on past controversies to assess the effectiveness of these control measures.**

**Key indicators**

- Anti-corruption policy: deployment, control measures
- Significant controversies and company responses

## G Sustainable Development Governance

The integration of sustainability strategy into governance structure is essential for the industry, which has the potential to support the transition towards a sustainable development model for our societies, but is also affected by serious risks relating to social and governance aspects.

**We encourage companies to set up governance bodies dedicated to implementing corporate responsibility and mechanisms for integrating the interests of all stakeholders, as well as aligning the interests of executives with the long-term development of the company.**

**We also pay close attention to the company's approach to value distribution, which should be done in a way that is fair to all of the company's stakeholders.**

**Key indicators**

- Quality of the sustainable development approach
- A director or board committee specifically in charge of CSR topics
- Integration of sustainability criteria into the executives' variable compensation
- Equity in value distribution

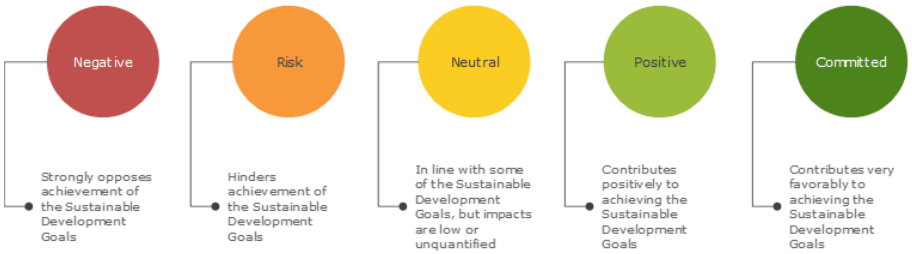
## Risk Assessment

| | Criteria |
|---|---|
| Positive | - Strong policy including a strategy, indicators and performance evaluations for one of the key issues mentioned in the risk review<br>- Absence of serious controversies regarding other key issues |
| Neutral | All other cases |
| Risk | -Exposure to the armament sub-sector and lack of adequate practices on exportation and reexportation OR<br>-Repeated ethical controversies with inadequate or insufficient company response OR<br>- Inadequate or insufficient company response to a labour law controversy in production factories or the supply chain OR<br>- Repeated restructuration or work conditions controversies with inadequate or insufficient company response OR<br>- Inadequate or insufficient company response to a transport pollution controversy OR<br>- Product safety controversy |

## Opinion Breakdown

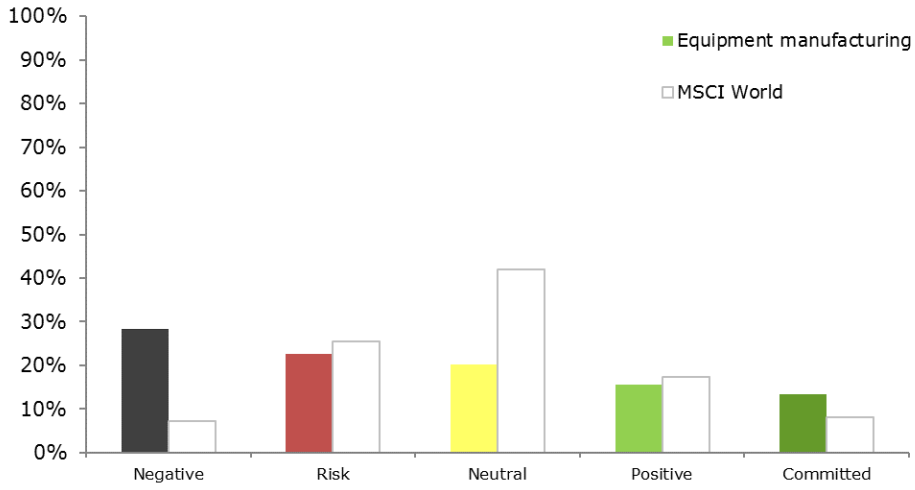
A sustainable development opinion is defined for each entity on a six-level scale.

*Figure 6: Scale of sustainability opinions*




The following graph illustrates the distribution of sustainable development opinions for companies in the mobility sector included in the MSCI World Index.

*Figure 7: Sustainable development opinions for manufacturers and equipment manufacturers vs. MSCI World Index*




*Source: Mirova, 2017*

This distribution shows that companies in the mobility sector contribute to sustainable development issues and have very different CSR approaches. As the sector is marked by both strong environmental and social risks and opportunities for green growth, the graph shows that some companies seize the opportunities associated with the ecological transition of transport while others find this difficult.

Almost 30% of companies are rated as "negative". Most of this is due to their exposure to military activities without the existence of sufficient governance bodies to avoid export risks (cf. section Exposure to military activities).

# Conclusion

Manufacturers and equipment manufacturers are subject to increasingly stringent regulations concerning energy efficiency and pollution. In addition, there is growing consumer pressure on the sector. Whether the motives are economic, environmental or social and whether they come from a professional customer base or private individuals, there is a strong demand from users for sustainable mobility solutions. Many technological solutions exist and investments are growing to deploy them.

Fully affected by the energy transition, the transport sector is undergoing major changes and offers a significant range of sustainable development opportunities. However, some of them are facing new environmental and social challenges that are increasing the constraints on the industry.

In addition to their provision of solutions, companies are also assessed on their environmental and social risk management. Transport pollution is one of the strongest sources of pressure in the sector. From a social point of view, these companies create many direct and indirect jobs, but are also confronted with the vagaries of a fluctuating economic context. The quality of employment must be questioned. Insecurity, pressure on production rates and the growth of factories in countries with weaker regulations in terms of labour law are all risks for the manufacturing base of companies in the sector, which must seek to adapt to demand while maintaining responsible practices towards employees.

# Sustainable Development Goals


1. End poverty in all its forms everywhere


2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture


3. Ensure healthy lives and promote well-being for all at all ages


4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all


5. Achieve gender equality and empower all women and girls


6. Ensure availability and sustainable management of water and sanitation for all


7. Ensure access to affordable, reliable, sustainable and modern energy for all


8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all


9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation


10. Reduce inequality within and among countries


11. Make cities and human settlements inclusive, safe, resilient and sustainable


12. Ensure sustainable consumption and production patterns


13. Take urgent action to combat climate change and its impacts


14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development


15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss


16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels


17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

http://www.un.org/sustainabledevelopment/sustainable-development-goals/



mirova Responsible Investing

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