ExpatRide

Driving Sustainability:
The Case for Eco-Conscious Assignments in Global Mobility

WHITE PAPER

Contents

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Founder & CEO Letter

As the founder of ExpatRide International, a company deeply embedded in the Global Mobility industry, I have embarked on a personal journey of discovery and responsibility toward sustainability. Facilitating thousands of transportation services worldwide for hundreds of the world's largest corporations has heightened my awareness of our environmental impact. **It's undeniable that we are contributors to the problem. Which I am not proud of.**

Yet, acknowledging our role in the challenge of climate change is only the first step. It's not enough to simply point out the issues at hand; we must actively seek solutions. At ExpatRide, we've made it our mission to confront the environmental implications of short- and long-term assignments head-on and lead the charge in adopting greener practices and sustainable habits.

This White Paper represents a culmination of our research to understand the complexities of sustainable relocation and provide actionable strategies for reducing CO_2 emissions associated with relocating employees. We recognize that the key to overcoming climate challenges and pollution lies in knowledge-sharing, motivation, and determination to overcome obstacles. In addition to calculating the employee's relocation impact, we also delved into **the environmental footprint of life during assignments, recognizing its potentially more significant climate impact.**

Our research reveals the profound opportunity within the Global Mobility industry. Not only can we enhance our practices and, more significantly, positively influence the countless assignees we aid each year. **This influence has the potential to multiply tenfold or even a hundredfold for each of us!**

With the proper education, encouragement, and assistance, **we can offset the CO_2 emissions caused by an overseas relocation**. This white paper will show you how.

This document aims to empower you, your employees, and your clients with the insights and planning necessary to make meaningful changes in how we approach global mobility, especially transportation. From holistic planning and practical solutions to sustainability policies, our goal is **to educate and inspire assignees to begin or continue their sustainable journey.**

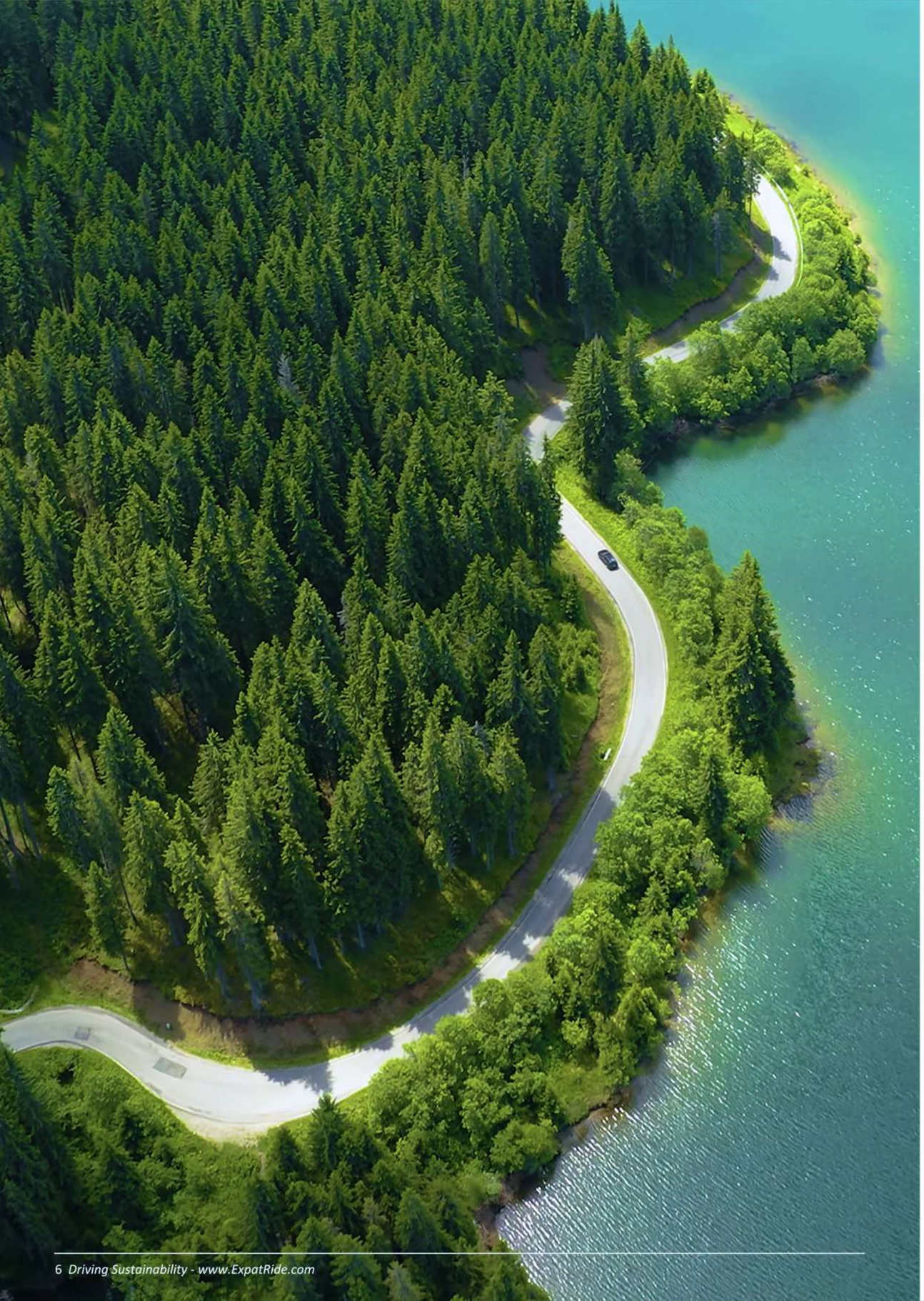
Please view this document as our initial attempt to strive for improvement. As our understanding, capabilities, and collaboration evolve in the months and years ahead, this document will undergo updates and be shared again. **This is our attempt at starting to crawl…**

A sustainable tomorrow demands collective action. I welcome your input and ideas on seizing our mutual opportunities.

Green regards,

Jesper Løvendahl
Founder & CEO
ExpatRide International

The all-electric Porsche Taycan Sport Turismo



Global Mobility's Role in Sustainability

Climate change has been a topic of discussion for decades, but recently, the urgency has intensified. Alarming signs of a warming planet are coming from every continent, leading to stricter government regulations and stronger corporate governance. This powerful shift is hard to ignore and leaves many of us uneasy, yet we know we must take more action.

> The greatest threat to our planet is the belief that someone else will save it.
>
> Robert Swan, Polar Explorer

The potential to lead with the environment in mind has never been more critical, and with the advantage of new technologies and supportive legislation, doing so is more possible than ever before. There is a growing sense of momentum helping us to envision a future where every corporate relocation contributes to fostering a sustainable world.

Dear HR and mobility professionals, your ability to shape assignees' choices toward sustainability while aligning the company's trajectory is substantial. We hope that this white paper will serve you as a strategic guide, outlining actual steps you can take now to create a more ecologically responsible future.

Global Mobility's Role in Sustainability: Understanding the Impact

The relocation industry is the backbone of corporate global mobility, enabling the seamless transition of individuals and their belongings across borders. As a multi-billion-dollar sector, it supports the global economy. It significantly impacts the lives and career paths of the employees it helps to relocate.

The global corporate relocation service market is expected to hit US$ 28 billion by 2030. This growth brings an urgent question: How can the industry pivot towards sustainability?[1]

The Challenge

Every year, corporations of varying sizes relocate hundreds of thousands of individuals worldwide. While these relocations drive economic expansion, they also generate carbon emissions through travel, shipping, transportation, the manufacturing of moving supplies, and other associated activities. Consequently, the global relocation industry is accountable for emitting several million metric tons of CO_2 annually.

The Opportunity

We have yet to consider the emissions generated over the entire length of the assignment. The relocation process spans only a few weeks or months. The assignment, on the other hand, extends over years. Remarkably, even minor choices like deciding on transportation modes during the assignment can mitigate the CO_2 emissions from the relocation. With this white paper, we want to uncover the vast potential for reducing the CO_2 footprint associated with international assignments. Building upon extensive research and insights, this paper reveals a pathway towards reducing emissions significantly.

By adopting a broader perspective that goes beyond the logistics of moving, we also identify low-hanging fruit ripe for sustainable transformation, from transportation strategies to fostering eco-conscious living habits.

Embracing Holistic Relocation Practices

We recognize the potential for significant positive change by extending our focus beyond relocation to include entire assignment durations, pinpointing areas where strategic choices can meaningfully reduce carbon footprints.

As of 2024, corporate relocations have evolved beyond packing and travel logistics. They now embrace experience-driven strategies, emphasizing innovation, talent attraction, cultural alignment, technological integration, flexible work policies, diversity initiatives, and sustainability practices. Relocation companies serve as vital facilitators, enriching experiences while ensuring regulatory compliance.

Adopting a “full assignment lifecycle approach” to relocation services, our initiative proposed the integration of electric vehicles (EVs), hybrids, and other eco-friendly transportation modes to mitigate environmental impact. By identifying opportunities throughout an individual's relocation journey, we focus on minimizing corporate environmental footprints and aligning relocation policy with global sustainability objectives.

Moreover, our efforts have the potential to strengthen brand reputation, attract eco-conscious consumers and employees, and contribute to broader global sustainability goals—focusing on a tangible element of an assignee's new life: their vehicle.

The Talents Dictate Sustainability

Responding to market shifts and environmental directives, the relocation industry is pivoting towards sustainability, partly influenced by the preferences of younger generations, particularly Millennials and Gen Z. Statistics reveal that individuals aged 25-34 (37.25%) and 35-44 (23.78%) are more willing to relocate for work[(2)], underscoring the importance of sustainability in decision-making processes.

Separate from concerns for the planet, companies that understand changing values recognize that embracing sustainability is not an option but a requirement for being relevant to younger and future generations. A recent Deloitte survey highlights that "Gen Z and millennials seek employer support in making sustainable decisions and transitioning to a low-carbon economy.”[(3)] In fact, more than 40% of Gen Z and Millenials claim they would have changed jobs due to climate concerns.[(4)] With these demographic groups increasingly entering the workforce, their worries about climate change will inevitably shape corporate sustainability and relocation strategies.

> We do not inherit the Earth from our ancestors; we borrow it from our children.
>
> - Chief Seattle

The Impact of Global Transportation

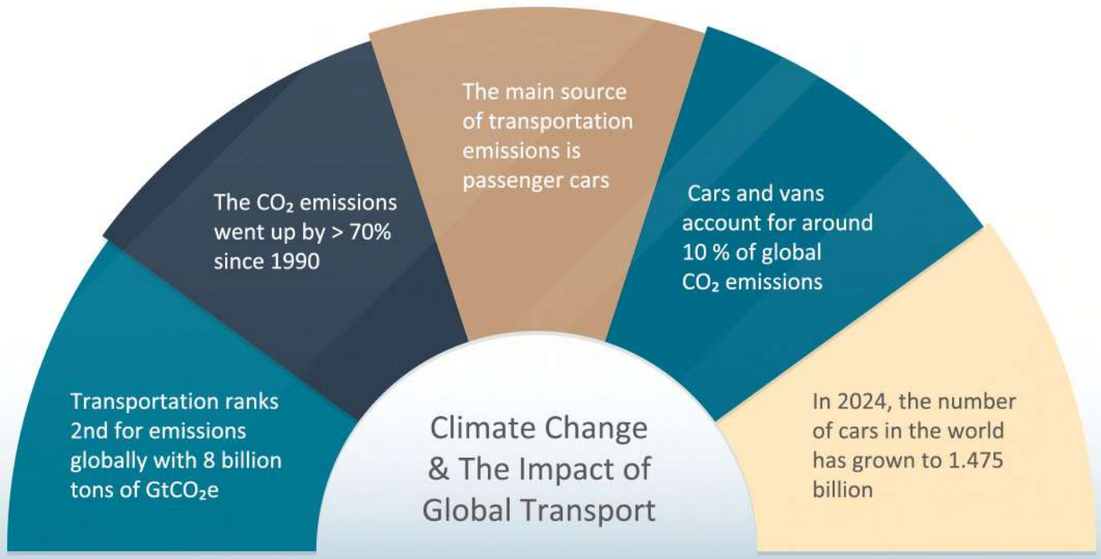
Transportation by car has a substantial negative impact on the environment, contributing significantly to air pollution, greenhouse gas emissions, and climate change. The combustion of fossil fuels in vehicles releases carbon dioxide (CO_2) and other pollutants into the atmosphere, exacerbating global warming and posing serious health risks to human populations.

For the first time in decades, residents of Jalandhar, India, could see the majestic Himalayas from the city. A thick pollution cloud previously obscured this view. [6]

When discussing the benefits of sustainable transportation, one immediate impact is on air quality. The increasing levels of pollutants emitted by cars have been directly linked to public health issues, such as cardiovascular and respiratory diseases.[5] A striking example of this occurred during the COVID-19 pandemic in 2020, when many people, particularly in heavily industrialized and traffic-congested areas, witnessed a remarkable change in air quality due to a significant drop in traffic.

According to the United Nations, transportation is one of the most significant global contributors to greenhouse gas emissions. This includes car, truck, train, ship, and airplane emissions. Addressing the environmental impact of transportation is critical to achieving the United Nations Sustainable Development Goals (SDGs).

The recent state of CO_2 emissions related to global transport



The United Nations Sustainable Development Goals

The SDGs promote sustainable development across various sectors, including transportation, by addressing critical environmental challenges such as climate change, air pollution, and resource depletion. Goal 13 of the SDGs explicitly targets climate action, urging countries to take urgent measures to combat climate change and its impacts. This includes reducing greenhouse gas emissions from transportation and transitioning to more sustainable modes of travel.

Furthermore, Goal 11 emphasizes the importance of sustainable cities and communities, advocating for improved urban planning, public transportation systems, and reduced reliance on private cars. By promoting more efficient and environmentally friendly transportation options, such as electric vehicles (EVs), public transit, and cycling infrastructure, cities can mitigate the negative impacts of transportation on the environment and public health.

> Who are businesses really responsible to? Their customers? Shareholders? Employees? We would argue that it's none of the above. Fundamentally, businesses are responsible to their resource base. Without a healthy environment, there are no shareholders, no employees, no customers, and no business.
>
> - Yvon Chouinard

In addition to Goals 11 and 13, Goals 7 and 3 are also relevant to addressing the impact of global transportation. Goal 7 ensures access to affordable, reliable, sustainable, and modern energy for all. This includes promoting the use of renewable energy sources in transportation, such as solar and wind power for electric vehicles.

Goal 3 aims to ensure healthy lives and promote well-being for all ages. Reducing air pollution and greenhouse gas emissions from transportation can improve air quality and protect public health, leading to healthier and more sustainable communities.

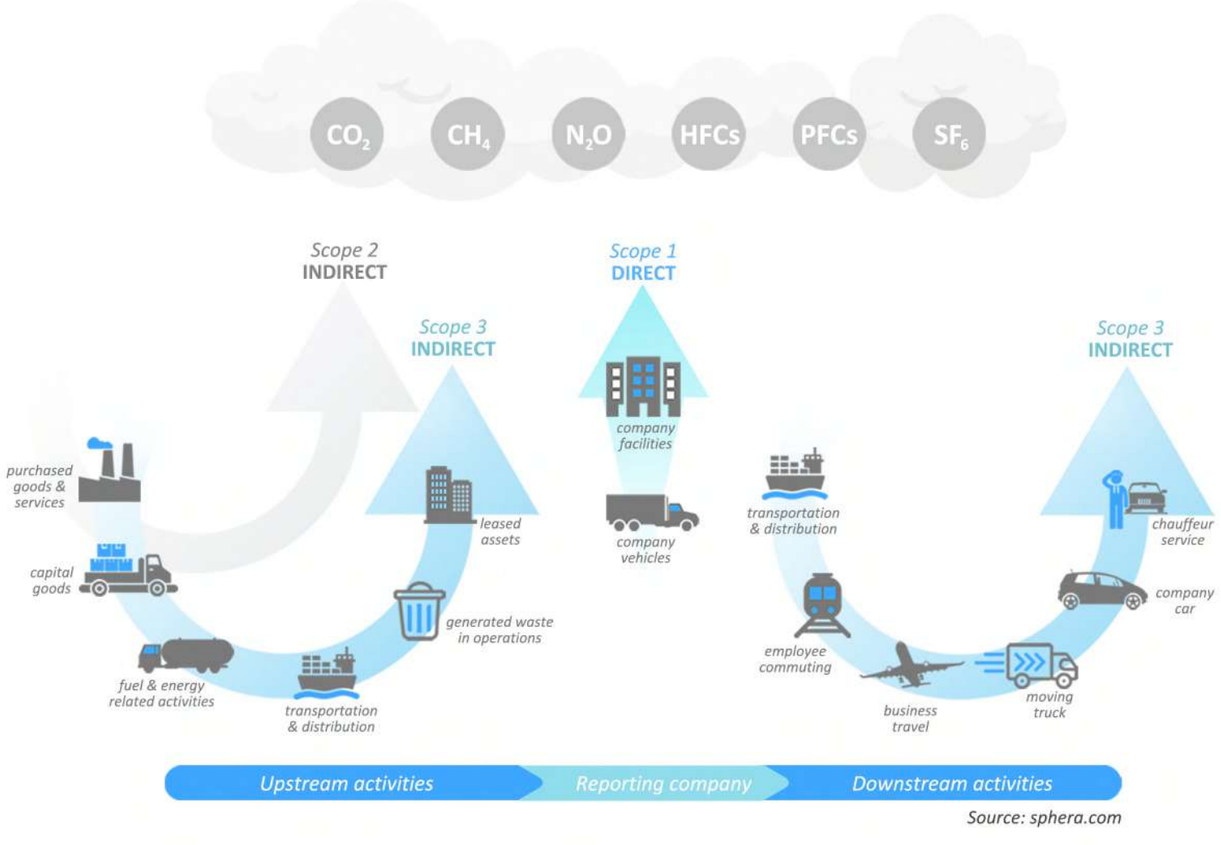
In conclusion, the negative environmental impact of global transportation underscores the urgent need for sustainable solutions. By aligning with the United Nations Sustainable Development Goals and implementing measures to reduce emissions and promote eco-friendly transportation alternatives, we can work towards a cleaner, greener future for all.

UN SDG Impacted by Transportation

Navigating Regulatory Terrain for Sustainability

Forward-thinking companies have embraced various ESG initiatives, but regulatory pressures are mounting for reluctant businesses. Commencing in 2025, the EU's Corporate Sustainability Reporting Directive (CSRD) mandates over 11,700 large companies to report greenhouse gas emissions, extending to companies with more than 250 workers, €40 million in turnover, or €20 million in assets by 2028. This directive compels detailed, data-intensive reporting, with sustainability becoming a core financial pillar alongside capital, revenue, and costs.[9]

A critical aspect of emissions reporting is the Greenhouse Gas Protocol (GHG), which categorizes emissions into three scopes. Scope 1 covers direct emissions, such as onsite energy consumption and company-owned vehicle fuel. Scope 2 encompasses indirect emissions from purchased electricity, steam, heat, or cooling. Scope 3 presents unique challenges as it addresses emissions beyond the reporting company's boundaries, involving the entire supply chain.



Source: sphera.com

Navigating Scope 3 in Supply Chains

Scope 3 emissions bring high complexity into the tracking process, particularly for businesses that track complex, extensive supply chains. Take the example of a car manufacturer, where vehicles comprise up to 30,000 components sourced from numerous suppliers. These suppliers' activities influence emission data accuracy and transparency, which is crucial for comprehensive reporting. Similarly, managing Scope 3 emissions in the relocation industry involves coordinating with hundreds of suppliers, spanning real estate agencies, temporary housing providers, and moving companies.

The significance of sustainable procurement is acknowledged by travel purchasers, according to the GBTA Foundation. By adding or preparing to include sustainability clauses to supplier contracts (60%) and choosing or planning to choose suppliers based on sustainability factors (63%), RFPs (76%), and supplier contracts (65%) will incorporate sustainability questions.[10]

Strategic Procurement for Sustainability

Managing Scope 3 emissions calls for robust procurement strategies aligned with sustainability criteria. Streamlining procurement activities and collaborating with eco-conscious suppliers help mitigate regulatory risks and maximize emission reduction opportunities. Amidst the 2020 pandemic, sustainable procurement programs have shifted their focus from risk reduction to leveraging procurement to deliver on their sustainability goals.

A recent survey conducted by EcoVadis also reveals a shift towards sustainable procurement. 63% of businesses prioritize corporate sustainability goals in procurement programs—a significant increase from previous years. This trend highlights a global commitment to combatting climate change. It emphasizes the crucial role of sustainable supply chains in achieving environmental objectives.

> Namely, value chain decarbonization remains a high priority. Nearly 90% of leaders report that Scope 3 reductions and net-zero targets are the top three drivers of their program.[11]

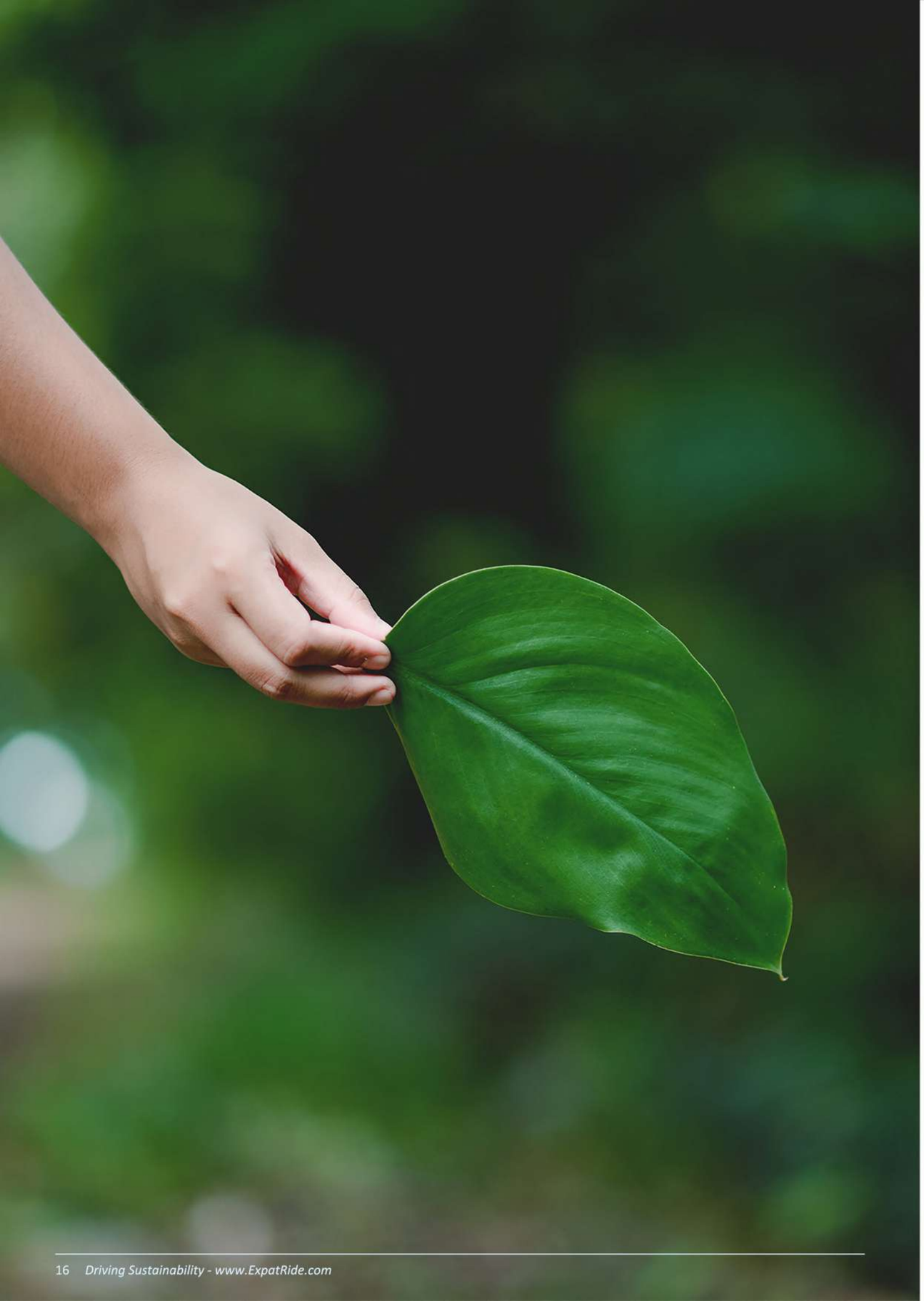
Navigating Procurement Challenges

The landscape of regulations, emission protocols, and standards in sustainable procurement is a dynamic one, presenting ongoing challenges for companies. However, these frequent changes also bring opportunities for growth and innovation. Companies that can adapt swiftly, replacing legacy processes and developing new workflows and diligence procedures, can redesign their operations to align with evolving regulations and their commitment to emissions reduction and potentially gain a competitive edge.

The emergence of sustainability-oriented positions within companies also plays a pivotal role in navigating this complex terrain. Personnel dedicated to ensuring compliance and shaping internal policy are invaluable assets. Last year, 43% of Fortune 500 companies reported having a Chief Sustainability Officer or a dedicated sustainability role.[12]

Measuring and tracking emissions is one of the first and most critical stages in helping businesses understand the ecological effect of their activities. Because "You simply can't manage what you don't measure." Measuring will help your business to:

- Make informed decisions
- Minimize the risk of regulatory failure
- Identify the areas with the highest impact, with untapped opportunities, and with the highest gap for improvement



Sustainability & Cultural Awareness Training

The research paper "*Empowering interventions to promote sustainable lifestyles*" by Professor Bas Verplanken concludes that change interventions are more effective when applied to life course changes, specifically after relocating. (29)

Verplanken studied the behaviors of 800 people, half of whom had recently relocated and half of whom had lived in the same place for years. Participants responded to questions on 25 environment-related behaviors, including water and energy use, commuting choices, and waste (food waste, recycling).

Verplanken's research showed that those who had recently relocated reported more change. The changes were consistent, regardless of the strength of the previous habits.

Educating assignees is critical to ensuring a smooth transition and the well-being of those involved. Education helps individuals understand their new environment, cultural nuances, legal, and administrative requirements. This is the moment when the company can assist with the transition, reinforce its sustainability initiatives, and support the assignees in their sustainability decisions.

Awareness training could include the following:

1. **Company Sustainability Initiatives:** Educate assignees about the company's sustainability goals, such as reducing carbon emissions, conserving resources, and supporting local communities. This fosters a sense of purpose and aligns employees' actions with company values.

2. **Personal Carbon Footprint:** Encourage assignees to minimize their carbon footprint by using public transportation, reducing energy consumption, and choosing eco-friendly accommodation.

3. **Local Sustainability Practices:** Provide information on local recycling programs, water conservation efforts, and renewable energy initiatives. This helps assignees integrate responsibly and contribute positively to their new communities.

4. **Geographical Impacts:** Inform expatriates about the environmental challenges in their host location, such as deforestation, pollution, and habitat destruction. Understanding these issues enables them to make informed decisions and reduce their environmental impact.

5. **Cultural Sensitivity:** Educate assignees about the cultural significance of environmental practices in their host country. Learning about traditional conservation methods, indigenous knowledge, and local attitudes towards nature helps foster cross-cultural understanding.

By understanding these issues in the respective geographical context and respecting local customs, assignees can make informed decisions, deepen cross-cultural understanding, and take proactive steps to minimize their environmental footprint during relocation or assignment.

> "Changing your habits is very difficult, including finding the right moment to make a change. Moving home disrupts the stability that reinforces old habits, creating an opportunity for new behaviors."
>
> - Professor Bas Verplanken
> Head of Psychology at University of Bath

Empowering Assignees for Environmental Impact

In the field of sustainability, it's easy to focus solely on businesses as the primary polluters. However, the reality underscores the significant influence of individual emissions. This presents a unique opportunity for Procurement and Global HR to empower their employees to take action for the planet's benefit, particularly during a relocation.

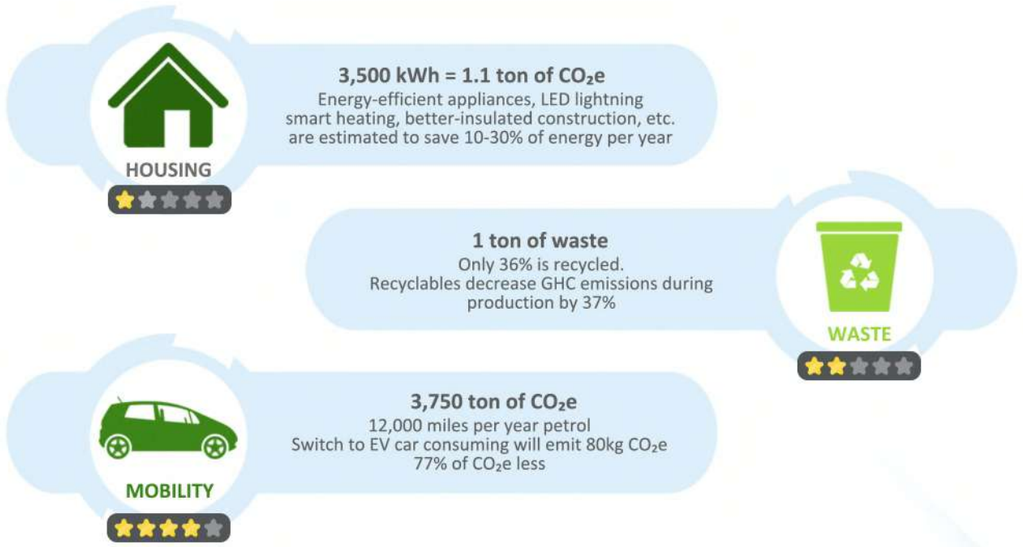
Moving to a new place or going through a life transition is generally a significant opportunity to change routines and habits. According to research, people are more receptive to new ideas, proposals, and information during significant life transitions like moving homes or employment.[13] Encouraging and educating the assignee about sustainable options during the process could positively impact Scope 3 company emissions and help the assignee develop longer-term, more sustainable habits beyond the assignment period.

Three Initiatives for Individual Impact While on Assignment:

1. **Sustainable Property:** Recognising the substantial energy consumption of the property sector, more management companies are offering green-certified accommodations. These properties feature energy-efficient systems, contributing to reduced environmental impact.

2. **Waste Reduction and Recycling:** Offering waste reduction and recycling options within assignees' private homes provides a tangible opportunity for sustainability. Simple strategies can make a significant difference in minimizing environmental impact.

3. **Sustainable Transportation:** Encouraging the adoption of electric vehicles, hybrids, or other low-emission modes of transportation can significantly reduce carbon footprint. Promoting public transit, cycling, or walking further enhances sustainability efforts.



Adopt a Flexible Policy According to Availability

Companies with a globally mobile workforce can reduce Scope 3 emissions by shifting their relocation policy to encourage employees to choose more sustainable alternatives. While such companies have limited control over the availability of green housing options or the reach of recycling programs in a given destination, sustainable transportation options (public transit, hybrids, EVs) are available across the developed world. Options are expanding rapidly in almost all destinations. With businesses shifting their focus to Scope 3 emissions, choosing a sustainable form of local transportation is a simple, practical step they can take toward achieving their sustainability goals.

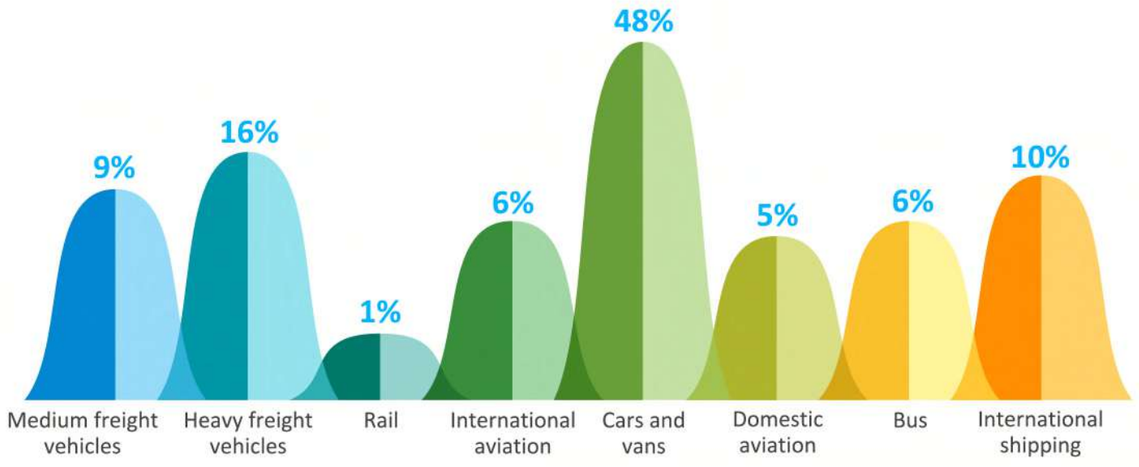
Sustainability & Transportation Services - A Closer Examination

Air and International Shipping

Land, air, and sea transportation accounted for approximately 8 billion metric tons of CO_2 missions in 2022, constituting about 14% of global greenhouse gas (GHG) emissions that year.[7] Transportation is the second-largest source of emissions worldwide, and international aviation emissions alone more than doubled between 1990 and 2019, representing roughly 6% of global transportation CO_2 emissions in 2022. International shipping, medium-weight, and heavy-weight freight vehicles contribute 35% of global CO_2 emissions. These forms of shipment are crucial components within the corporate relocation cycle.

Reducing the carbon footprint of transportation for assignees via planes or vessels remains challenging. However, the opportunity to mitigate emissions by selecting sustainable transportation options during assignments is real and achievable.

Distribution of CO_2 emissions produced by the transportation sector worldwide in 2022, by sub sector[14]



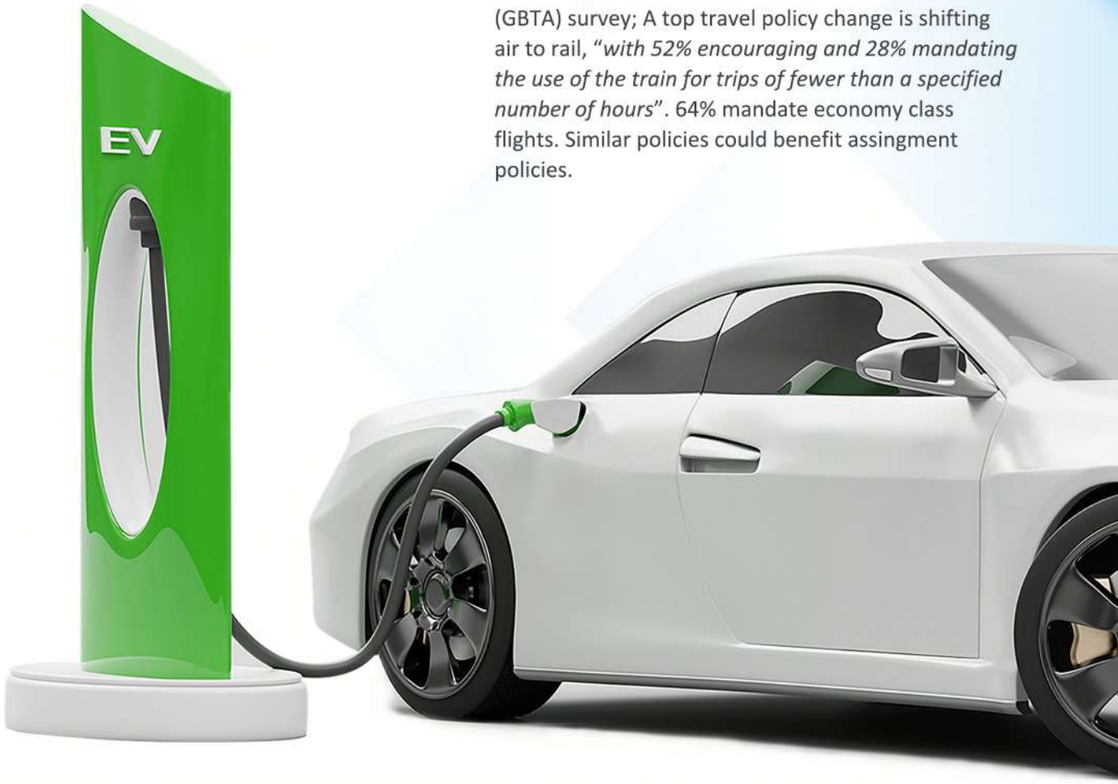
Incentivizing Individual Environmental Responsibility

Various factors, including cost, convenience, timing, assignee preferences, cultural norms, and sustainability, are typically considered when choosing household goods relocation and transportation methods. Similar factors influence the choice of transportation mode during an assignment.

Transportation choices heavily rely on the location. Cities like Brussels, Madrid, and Singapore have implemented environmental measures such as congestion charges and restricted traffic zones, prompting individuals to opt for eco-friendly alternatives like public transport, which can be faster, cheaper, and more convenient. Hybrid or electric cars present impactful solutions to reduce carbon emissions in regions with well-developed charging infrastructure or shorter driving distances. We talk not only about the charging points on the road but, more importantly, about the charging stations in hotels, accommodation units, and offices where the assignees spend most of their time. Companies renting office space consider EV charging stations a top priority. More than 40% are looking to include EV charging stations in future leases in the Americas and EMEA, according to JLL's 2023 Responsible Real Estate study.[15] Hospitality giant Hilton Hotels announced that it would join forces with Tesla to power the future of eco-friendly hospitality, promising to install 20,000 EV charging stations across North America.[16]

Interesting fact:
At the end of 2022, there were 2.7 million public charging points worldwide, more than 900,000 of which were installed in 2022. This figure represents a 55% increase on the 2021 stock. At the end of 2022, China was home to more than half of the global stock of public slow chargers. China also accounted for the highest number of public fast chargers followed by Europe. The countries with the largest fast charger stock in Europe are Germany (over 12,000), France (9,700) and Norway (9,000).[17]

Across the EU, governmental programs in countries like Austria, Belgium, and Finland incentivize EV adoption through financial grants, tax benefits, and subsidies, recognizing EVs as vital for decarbonizing the transportation sector due to lower lifecycle emissions than internal combustion engines.



Governmental incentives are one of the ways to motivate people to make more sustainable decisions in their lives. However, a truly sustainable future can only be shaped by educating people about sustainability in schools, the public sector, and the commercial sector.

Sustainability calls for changes in how we think, work, and operate in our daily lives, in addition to technological and scientific innovation. Many of us have to adjust to what we have been used to and learn how to develop the abilities, attitudes, and values required to help build and maintain a sustainable future. By offering eco-friendly options, companies can foster the motivation of employees and assignees to adopt behaviors that positively impact the environment. These habits may persist beyond the assignment period, contributing to long-term sustainability efforts. While relocation and expatriate packages vary in generosity, the opportunity to encourage lower-emission choices remains significant.

Travel Policies: From Nudges to Mandates

According to a Global Business Travel Association (GBTA) survey; A top travel policy change is shifting air to rail, "*with 52% encouraging and 28% mandating the use of the train for trips of fewer than a specified number of hours*". 64% mandate economy class flights. Similar policies could benefit assingment policies.

Sustainable Transportation Options

Navigating the landscape of sustainable light vehicle mobility can sometimes be confusing due to the array of available technologies. Among the most prevalent options are hybrids and electric vehicles.

BEV = Battery Electric Vehicle (or EV)

A Battery Electric Vehicle (BEV), commonly called an EV, runs solely on electric power from a battery-powered motor. BEVs rely entirely on electric propulsion and need regular recharging from charging stations.

HEV - Hybrid Electric Vehicle

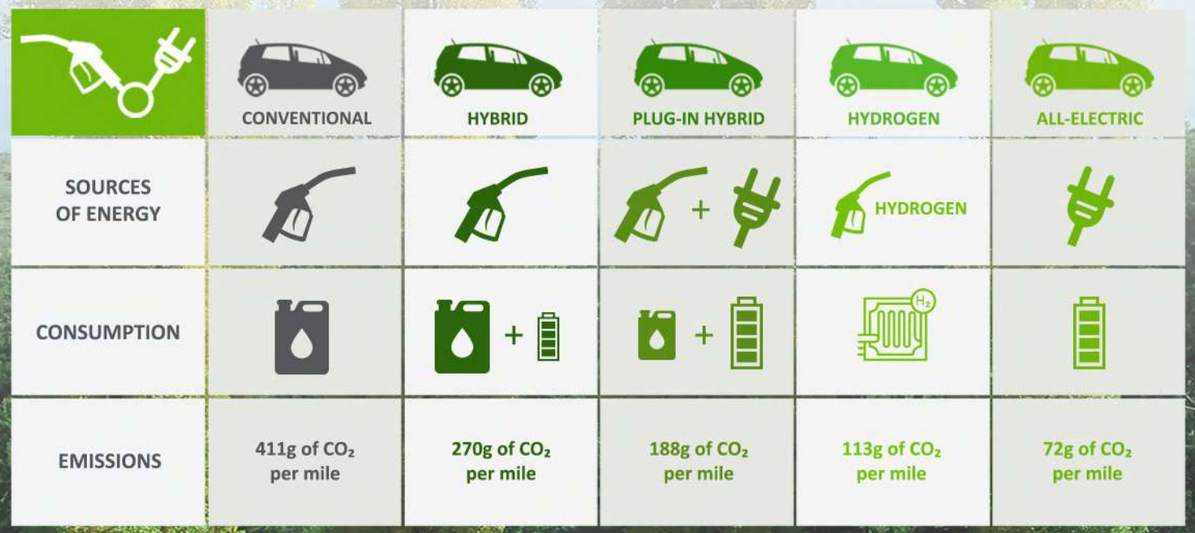
Combine a gasoline engine with electric power for enhanced efficiency. HEVs recharge their batteries through the vehicle's gasoline engine and regenerative braking, eliminating the need for external charging.

PHEV = Plug-in Hybrid Electric Vehicles

Integrates a traditional gasoline engine with an electric motor and rechargeable battery. They offer electric-only operation for a limited distance before switching to gasoline power. PHEVs can be charged externally.

FCEV - Fuel Cell Electric Vehicle

Create electricity from hydrogen reacting with oxygen, eliminating the need for rechargeable batteries. They refuel at hydrogen charging stations like you would refuel a petrol car, making the process quicker than EVs.[18]



Debunking the Myths about EVs

Myth: EVs are Not Really Environmentally Friendly

Fact: According to the European Federation for Transport and Environment, an EV with a Chinese battery driven in Poland emits 37% less CO_2 than petrol, while one made and used in Sweden can reduce CO_2 by 83%.[19]

Myth: Charging Infrastructure is Inadequate

Fact: Charging infrastructure is rapidly expanding globally, with a 55% increase in 2022 reaching 2.7 million points. In the U.S., over 51,000 public stations are available, compatible with standard outlets.[20]

Myth: EV Batteries Degrade Too Quickly

Fact: Battery lifespan varies by maker and age, yet new ones may outlast traditional car parts. Governments mandate an 8-year or 100,000-mile warranty, with California offering 10 years or 150,000 miles.[21]

Myth: EVs Don't Have Enough Range

Fact: EV ranges almost tripled in the last decade, with modern EVs averaging nearly 300 miles per charge in 2023, comfortably covering most daily needs.[22,23]

Myth: EVs Are Not Sustainable Because of Battery Manufacturing

Fact: Despite the environmental impact of EV battery manufacturing being valid, the long-term sustainability of driving an electric vehicle remains favorable compared to traditional gasoline cars, and the carbon debt from manufacturing an EV typically pays off within two years of driving the EV.[24]

Myth: EVs are Worse Because of Power Plant Emissions.

Fact: Electric vehicles typically have a smaller carbon footprint than gasoline cars, even when accounting for the electricity used for charging.

Myth: Buying a Pre-Owned Car is More Environmentally Friendly than Buying a New Model

Fact: Despite the bump in CO_2 from manufacturing an electric car and its battery, a new EV would start cutting emissions after 20,000-32,000 miles (32,000-50,000 km). Therefore its better to retire petrol cars and buy a new EV.[28]

Myth: Electric Vehicles Can Explode and are More Dangerous than Petrol Cars

Fact: Figures from Norway, where more than a fifth of cars on the road are electric, show that standard combustion engine vehicles catch fire around five or six times more often than EVs. Emergency services were called to around 30 fires per 100,000 standard cars on the road per year during 2018-2022, compared with around five EV fires per 100,000 vehicles.[28]

Offsetting a 40-Foot Container During a Two-Year International Assignment

This case study explores the carbon emissions associated with relocating an assignee overseas and how the assignee's choice of transportation while on assignment can offset the move.

Case Study: Mr. Smith's Two-Year Assignment

A large finance firm has relocated Mr. Smith from its U.S. headquarters in New Orleans to a subsidiary in the UK, Birmingham, for a two-year assignment. The relocation involved moving Mr. Smith and his family together with his household goods in a 40-foot container. Relocating the family's household goods to the U.K. and back to the U.S. will result in an estimated 4.1 tons of CO_2 emissions.

Mr. Smith plans to lease a car and drive approximately 12,000 miles annually. With an average fuel consumption of 29.4 miles per gallon, his carbon footprint from driving a standard petrol-fueled car will total 7.5 tons of CO_2e during his two-year assignment. Both numbers above show how the relocation and transportation choice during the assignment substantially impacts Mr. Smith's environmental footprint.

What would happen if Mr. Smith would decide to drive an electric vehicle instead during his two-year assignment?

Driving the same mileage, with an average consumption of 17kWh/100km, Mr. Smith can save up to 5.8t of CO_2e when opting for an electric car.

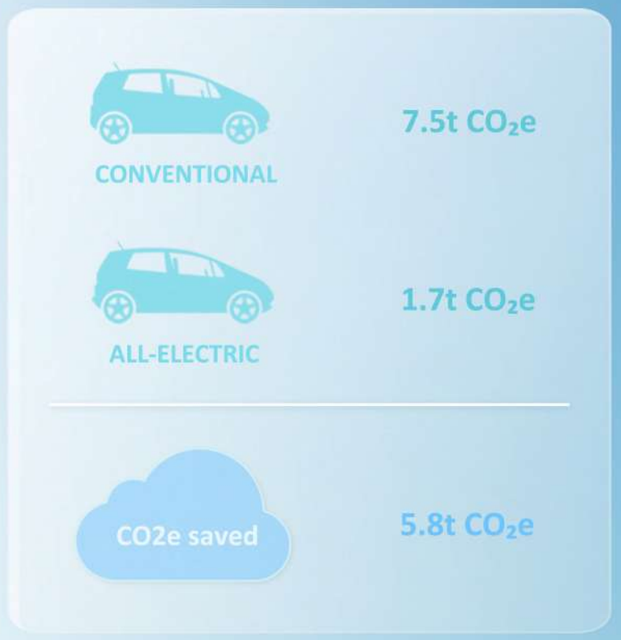
Offset the emissions from the relocation process

Conclusion

This case study highlights the significant impact of transportation choices on the carbon emissions associated with international assignments. Mr. Smith's relocation from the U.S. to the U.K. and his transportation choices during his two-year assignment illustrate the carbon footprint of such moves.

By comparing the carbon emissions from driving a petrol-fueled car to those from an electric vehicle, the study shows the potential for emissions reduction through sustainable transportation. Opting for an electric vehicle, especially when powered by green energy, can offset emissions from the relocation process.

This underscores the importance of considering sustainability in decisions related to international assignments. It offers opportunities for individuals and organizations to minimize their environmental impact and contribute to climate change mitigation efforts.



Together We Can Save Millions of Trees

How big is the impact?

Imagine relocating 1,000 assignees with similar driving habits, each renting or leasing a petrol-fueled car for the time of the assignment. Over a two-year assignment cycle, the total carbon emissions for the whole group would be 75,000 tons of CO_2e.

But what if only every fifth assignee out of 1,000 drove an electric vehicle?

The impact would still be huge as the emissions savings would still be ~ 1160 tons of CO_2, equating to a 15% reduction.

These are opportunities to make an impact that demand serious considerations. Incorporating EVs into corporate mobility plans during international assignments can lead to substantial reductions in carbon emissions, aligning with global sustainability goals. The shift from traditional internal combustion vehicles to EVs represents a positive step towards a cleaner and more sustainable future for companies and their employees.

Planting the trees:

Many companies are choosing tree planting CO_2 offsetting initiatives as part of their environmental efforts. Trees play a pivotal role in the Earth's carbon and oxygen cycles through photosynthesis, converting carbon dioxide, sunlight, and water into oxygen. The CO_2 absorption levels of a tree reach their full potential once the tree matures, which can take 20-30 years on average. The maturity levels and absorption ability depend not only on the tree's age and type but also on its condition, leaf area, season, and other factors.[30]

One million Trees

We need to cut fewer trees and plant more to sustain the natural ecosystem, support biodiversity, and mitigate climate change. Reducing our overall carbon footprint should start at an individual level by cutting emissions at their source. Planting trees to justify continued emissions will not help us achieve net zero in time.

Switching to electric vehicles would significantly lower CO_2 emissions compared to petrol-fueled vehicles. For example, **3,500 assignees using electric vehicles would "save" 1 million trees** from being needed to photosynthesize the CO_2 into oxygen. This is just one of many initiatives that companies or individuals can adopt to decrease the carbon footprint and reduce the burden on trees for carbon offsetting.

1,000

Petrol vehicles

376,000

mature trees would offset this carbon footprint for a year

3,760t CO_2

VS

1,000

Electric vehicles

87,000

mature trees would offset this carbon footprint for a year

870t CO_2

The Future of Mobility - A Look Ahead to 2035

As we look into the future of transportation, the landscape is heading toward shifts driven by changing consumer choices, technological improvements, and environmental demands. When it comes to personal transportation while on assignment, the tide of change, driven by regulations, corporate governance, and consumer demand among the younger generations entering the workforce, will eventually drag even the most reluctant players into the future.

Ownership vs. Shared Mobility

Contrary to popular belief, shared mobility may not dominate the transportation sector as anticipated. While car-sharing services have gained momentum in recent years, the reality suggests that traditional ownership models will persist, particularly among affluent individuals and professionals. Also, when an individual reaches certain milestones throughout their life, car ownership usually plays a more critical role in his/her daily life—whether due to family responsibilities, work reasons, or simply a lack of transportation alternatives in the area.

Greening the Fleet: Rise of Electric and Hydrogen Vehicles

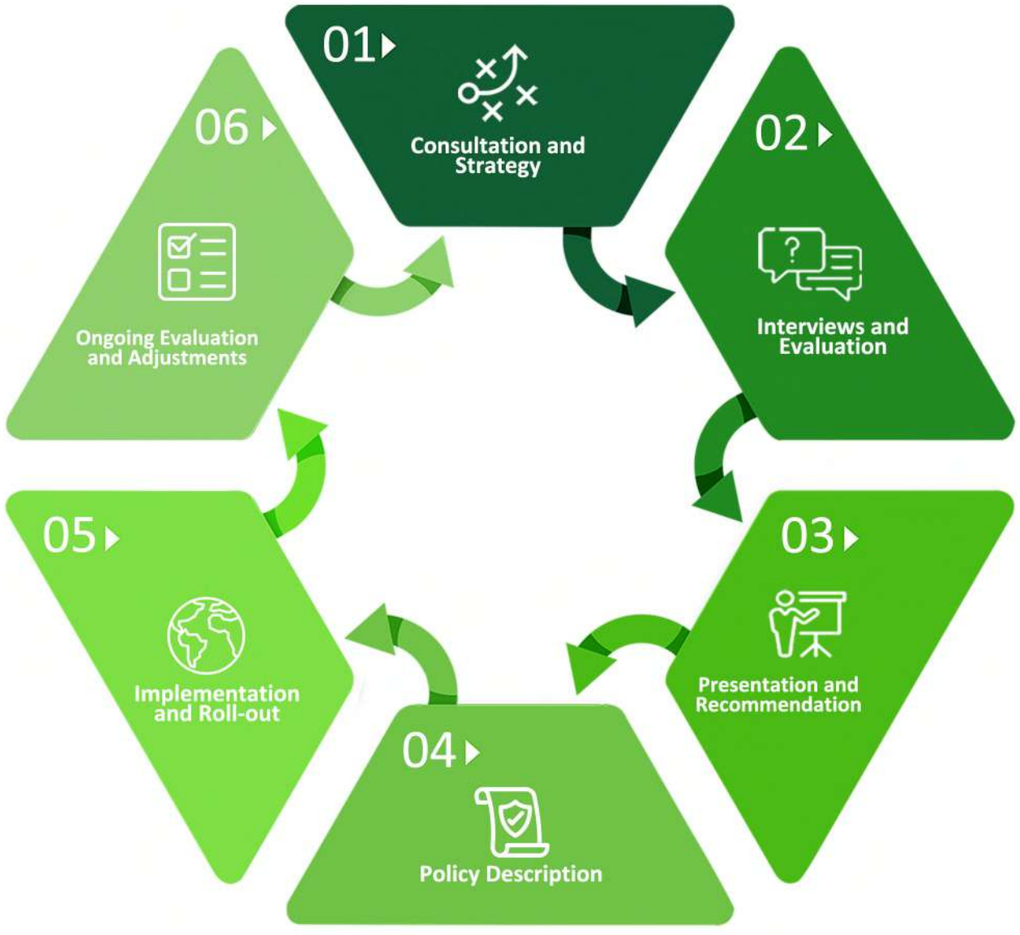
The growth of eco-friendly automobiles is a significant change in mobility, indicating a transition towards cleaner and more sustainable transportation solutions. Electric vehicles (EVs) powered by batteries are expected to make substantial inroads into the automobile sector. According to IEA, in 2023, electric vehicles made up about 18% of all cars sold, an increase from 14% in 2022 and just 2% in 2018.[25] These patterns show that growth is still strong as the markets for electric cars get older. This trend is also supported by S&P Global Mobility, which projects that the global EV share of LV sales will reach 39% - 50% in 2030.[26]

Hydrogen fuel cell vehicles represent another frontier in sustainable mobility. These vehicles utilize hydrogen gas to generate electricity, emitting only water vapor as a byproduct. While currently a niche market, hydrogen vehicles hold promise for long-range travel and heavy-duty applications. The market for automotive fuel cells is expected to increase at a CAGR of 48%, from US$ 200 million in 2024 to US$ 2.1 billion by 2030. This growth is particularly significant in commercial transportation sectors such as freight and public transit.[27]

A Sustainable Transportation Solution Provider

At ExpatRide, we're dedicated to leveraging our extensive experience in global mobility solutions to drive sustainability initiatives within the relocation industry. We offer comprehensive services tailored to meet all the transportation challenges and opportunities described in this report.

You can use our Transportation Plan below to create your own global plan. Please see Appendix A for more details.



The customized transportation plan evaluates the mobility possibilities best suited to individual and corporate needs and recommends best options.

Sustainable Procurement

Since 2022, we have evaluated more than one hundred suppliers of various mobility services worldwide to ensure their ability to deliver sustainable options. We continuously dialogue with them to stay informed of new sustainability services or location changes.

The EcoRide Choice Program

Driven by client mandates, our EcoRide Choice Program prioritizes eco-friendly options for international assignees worldwide. Parameters and budgets are aligned with the client's Transportation Plan to ensure adherence to sustainability goals.

Scope 3 Reporting

We are implementing carbon emission calculations for our services using the Greenhouse Gas Protocol Scope 3 reporting guidelines and methodology. By the end of 2024, we will provide our partners and clients with quarterly CO_2 reports detailing estimated emissions and reductions achieved through sustainable transportation.

Sustainability Department

At ExpatRide, we have established a dedicated Sustainability Department led by a full-time manager to drive our initiatives forward across our departments and in collaboration with clients, partners and suppliers.

The department will actively share relevant information, participate in industry forums, and support the relocation industry.

About ExpatRide

We were founded to provide transportation solutions for expats. We focus 100% on the Global Mobility industry and have grown over the past decade due to the challenges our clients have entrusted with us.

Our services are available via most RMCs, making implementation efficient for corporate clients.

Worldwide Services

- Airport Transfer
- Rental Cars
- Expat Car Leasing
- Daily Chauffeur Services
- Bus & Coach Services
- Armored Vehicles
- VIP Services

Conclusion

In our pursuit of sustainable global mobility, collective effort is paramount. This requires active engagement from relocation services providers, HR departments, the broader corporate community, and individual employees on assignment. Success hinges on strategic planning, swift adaptation to policy guidelines, and promoting sustainable practices across the supply chain. Leveraging the contributions of assignees and their decisions during assignments represents a significant opportunity—a "low-hanging fruit" that can vastly amplify our positive environmental impact.

We can showcase tangible progress and ensure alignment with global sustainability objectives by diligently monitoring and transparently reporting environmental footprints, especially concerning transportation and accommodation choices. Collaboration is vital for sharing best practices, particularly given the growing significance of sustainability in today's landscape.

Embracing sustainable assignment strategies is not just about environmental responsibility, it's about attracting and nurturing top talent. By championing sustainability, companies can appeal to the growing pool of individuals who prioritize environmental responsibility. Moreover, by instilling sustainable habits among assignees, the global mobility industry can expand its positive impact beyond assignment durations, shaping long-term behaviors toward greater sustainability. This is not just a strategy, it's a pathway to personal and professional growth.

Indefinite offsetting is not a solution; action is needed now. The time for change is upon us. Let's seize the opportunity presented by sustainable assignment strategies. Together, let's transition from being part of the problem to becoming champions of the solution.

Appendices

Appendix A - A Global Assignee Transportation Plan

Choosing the most sustainable and effective transportation services for assignees is like solving a puzzle. The considerations include different locations, standards, and the assignees' diverse needs while managing many suppliers across these locations.

Many HR global mobility teams and relocation companies are new to setting policies, sourcing suppliers, and creating a globally uniform approach to assignee transportation.

To make it easier for companies to get started, we at ExpatRide have created an all-inclusive Transportation Plan. This plan provides a step-by-step guide to implementing an assignee transportation solution that meets your organization's unique requirements. The ExpatRide Transportation Plan focuses on the transportation options available in most locations:

- Airport Transfer
- Car Rental
- Car Leasing
- Daily Chauffeur Service

The plan will provide the following:

- A global overview of all car transportation services needed for each expat location.
- An overview of suitable eco-friendly car transportation options for each location.
- Location-level cost estimates for each car transportation option, time frames, insurance, and local requirements.
- Policies for the use of the different eco-friendly vehicles at each location.
- Benefits and compensation models across employee tiers and locations.
- Implementation, educational, service delivery, and support flow processes
- Roll out plans covering each location and service.

To achieve the above, we created a six-step guide to assist with the process

1) Strategy and Consultation

The first step is to write the goals you want to achieve with the Transportation Plan. Ask all the questions about what, how, who, where, and when to provide an overview of the variables, needs, and scope. Below are a few questions to get you started:

- What are your goals for implementing a transportation strategy?
- What are your current car transportation solutions?
- What are current and past challenges with car transportation?
- What locations do you want to offer assignees car transportation options?
- Should you handle the services in-house or outsource them to a relocation management company?

2) Interviews and Evaluation (Suppliers)

To meet the goals in step 1, we need suitable suppliers to deliver in-location car transportation options. Aggregate a list of all current suppliers you have:

- All car service providers in your supplier network
- Ask all local offices for a list of their local suppliers.
- Ask your relocation company how and where they can assist.

With a complete list of current options, you should interview and evaluate all the suppliers according to your goals.

- Does the supplier have eco-friendly options in their fleet, or are they planning on adding?
- Does the supplier's fleet size match your ongoing needs?
- Can the supplier provide the needed data reporting?
- Can the supplier meet your billing needs?
- Have the supplier estimate the cost for all relevant services, time frames, and vehicle options.

Create a matrix with the results exposing all the locations where new or additional suppliers must be sourced.

3) Presentation and Recommendations

The goals and supplier options are aligned to present globally available sustainable options, estimated costs, time frames, local requirements, insurance policies, and centralized billing options.

Considering the above, provide recommendations describing opportunities, benefits, and considerations. These should give you a solid basis for making further decisions.

ExpatRide Support: We provide an overview of all available car transportation options, estimated costs, local requirements, etc., and our recommendations are based on a decade of servicing corporate assignees worldwide. Global centralized billing is included in our services. All recommendations are tailored to the client's requirements and international office locations.

4) Policy Description

Considering the above, describe the most suitable assignee transportation benefits and compensation models according to the location, focusing on available sustainability options.

Policies can be guided by family size, employment tier, and location of customary transportation. Incentives for eco-friendly options or mandated by location should be considered.

ExpatRide Support: We work closely with our clients and partners to establish the EcoRide program for all aspects of greener car transportation. We are aligning customary transportation across continents, budgets, allowances, self-pay, approved vehicles, individually tailored solutions, and centralized direct billing arrangements across all services.

According to the client's policies, we will ensure the correct vehicle options are provided in alignment with budget and sustainability.

5) Implementation & Roll-out

The plan is finalized with detailed communication, support flow, and a roll-out strategy.

1. Officially launch the sustainable transportation policy featuring presentations from leadership and how the initiative aligns with the company's environmental goals.
2. 2. Distribute goals, policies, and the support flow of the transportation plan to all stakeholders. Every link in the chain shall be synced to deliver seamless service. A clear understanding of where, who, what, how, and why is essential.
3. Launch in well-known locations with good support infrastructure first. If all goes well, go full scale.

6) Ongoing evaluation and Adjustments

As your sustainable car Transportation Plan is implemented and rolled out, prioritize ongoing evaluation and adjustment to ensure its effectiveness.

Evaluation Methods: You can utilize surveys, feedback mechanisms, and data analysis to assess performance and gather stakeholder insights.

Key Metrics: Monitor sustainability indicators, operational efficiency, employer satisfaction, and stakeholder engagement.

Feedback Integration: Stakeholder feedback should be actively sought to inform decision-making and address concerns.

Adaptation: Remain agile, making adjustments based on evaluation findings. The sustainability field is ever-evolving, including new research and opportunities to adopt new technologies and methodologies.

In essence, ongoing evaluation and adaptation are integral to realizing the full potential of your sustainable transportation plan, ensuring it remains responsive and impactful in driving positive change.

Appendices

Appendix B - Calculations and data sources for infographics

B1 - The recent state of CO_2 emissions related to global transport

1. The transportation sector is the 2nd most significant source of emissions globally. Mobility from land, air, and sea produced roughly 8 bil tons of $GtCO_2e$ in 2022.[7]

2. The CO_2 transportation emissions have increased by more than 70% since 1990 and represent more than 20% of CO_2 emissions from burning fossil fuels. The US is the biggest carbon polluter in this sector globally.[7]

3. The primary source of transportation emissions is light-duty vehicles (passenger cars), whose emissions have increased to more than 3.5 $GtCO_2$.[7]

4. Cars and vans account for around 12 % of total global GHG emissions in 2021.[7]

5. Emissions in the light-duty vehicle sector need to reduce by ~ 6 % per year to 2030 to meet the Net Zero Scenario.[8]

6. According to Hedges & Company, the number of cars on earth in 2023-2024 is estimated to be close to 1.5 billion.

B2 - Infographics on energy savings activities and their carbon emission impact in a model household

The model use case is projected on an average Anglo-Saxon household of 3 using the following data sources from the UK and the US.

B2.1 Energy saving on housing and its operations

According to the Department for Business, Energy & Industrial Strategy (BEIS), the average household in the UK used 3,509 kWh per year in 2021.[B211]

With primary sources of energy consumption in:

- In North America, heating and AC, water heating comprises 60% of the total energy consumption.
- appliances and electronics ~ 17% of energy consumption
- lightning - 9%[B212]

An estimated yearly energy savings of 10–30% can be achieved with sustainable household practices like LED lighting, smart heating, energy-efficient appliances, better-insulated construction, etc. The amount of savings, however, varies depending on the specific practice, condition of the house, changing seasonal conditions, cards, and other elements.[B213]

B2.2 Waste reduction

In 2021, the average UK household produced almost 1 tonne of waste. Although 80% of household waste is recyclable, only 45% of the total household waste is recycled.[B221, B222]

The power of recyclation lies in the fact that GHG emissions from producing recycled materials are 37% lower than those from producing new “virgin” materials.[B223]

B2.3 Regular commuting

The majority of UK citizens own one car.[B231] Assuming driving 12000 miles (cca 20 000km) with an average car consumption of 8l/100km, the carbon footprint will represent 3.75t of CO2. When switching to an EV car with 17kWh consumption and the same mileage driven, the carbon footprint decreases by almost 77% to 0,87t of CO_2e.

B3 Adoption and availability of the initiatives on a global level

This white paper presents data collected from a variety of sources and methodologies. While every effort has been made to ensure the accuracy and reliability of the information provided, variations in data collection methods, sources, and interpretation may lead to discrepancies. The data and insights shared in this paper are intended for inspiration and informational purposes only. Readers are encouraged to conduct further research and analysis before making decisions or drawing definitive conclusions based on the data presented here. The white paper's contents do not constitute professional advice, and the authors, publishers, and contributors cannot be held liable for any errors, omissions, or damages arising from its use. Readers should independently verify the data and consult appropriate professionals for specific circumstances.

North America Recycling

Report Shows 21% of U.S. Residential Recyclables are Captured.[B311]

North America Green Mobility

In 2021, hybrids accounted for 5.5% of the light vehicle market whereas BEVs accounted for 3.2%.[B312] In 2023 the combined sales of BEV, HEV, PHEV rose to ~16.3%.[B313]

South America Recycling

The recycling rate reached 4,5 % in 2018.[B321]

South America Green Mobility

In 2023, the BEV/PHEV shares on total sales were rather low, with most countries oscillating around 1%. The exception is Costa Rica, with more than 11,6% shares in electric vehicle sales.[B322]

Europe Recycling

The overall recycling rate was 46% in 2020.[B331]

Europe Green Mobility

The all-electric car segment noted a 16% market share (compared to 14% in 2022 and 10% in 2021).[B322]

Africa Recycling

Africa recycled 4% in 2023.[B341]

Africa Green Mobility

About 1.2% of car imported into Africa were (PEV), and ~ 7% of these imports were battery electric vehicles (BEV).[B342]

Asia Recycling

Recycling rates in Asia vary significantly. Only 47% of the waste in the ASEAN region is estimated to be collected, and 1/4 of the amount collected is recycled.[B351]

Less than 25 % of plastics were recycled in Malaysia, the Philippines, and Thailand.[B352]

Asia Green Mobility

EV sales were slightly above 2 % of total vehicle sales in SEA and India in 2022, compared to 29% in China.[B353]

Australia Recycling

Australia’s recycling rate remains at 60% in 2021.[B361]

Australia Green Mobility

EVs represent about 1% of light vehicles in Australia.[B362]

Appendices

B4 Data on emissions according to fuel car type

Please note that while the data provided below is sourced from credible references, the time stamp and methodology of the data points may vary. Different values enter the methodologies (ranging from the car consumption level to the car's weight and type, driving conditions, energy mix, battery size, and many other factors). As such, take these numbers to illustrate and better understand the concepts rather than to provide precise or absolute values. Always refer to the most recent and authoritative sources for exact figures.

B4.1 Conventional petrol fuelled car
8,887g CO_2e/gallon[B411]= 2,348g CO_2/l
→ 411g CO_2e/mile. Assumed consumption of 22,2mpg consumption = 10.6l/100km

B4.2 Conventional petrol fuelled car
Assuming BEV-Petrol hybrid vehicle, according to MIT The hybrid vehicle versions score at ~ 260g/per mile of carbon dioxide.[B421,B422] however other studies report, that hybrid car like a Toyota Prius reaches 135g CO_2/km which is cca 217g CO_2e/mile.[B431]

B4.3 Plug-in-hybrid car
The CO_2 emissions from a typical PHEV are ranging from 85g/km to about 117g CO_2/km on the road (188gCO_2e/mile).[B431,B432]

B4.4 Hydrogen powered car
Based on the university research data points,[B441]the average gCO_2/kWh is 242g and was calculated out of 7 types of power plants generating electricity. The average energy consumption of a hydrogen powered car is ~ 29kWh/100km[B442] which is 7,018g of CO_2 per 100km. That represents 113g of CO_2e per mile driven.

B4.5 Electric car
Based on the study reported by FuelsEurope, the average carbon footprint of the electric car is ~ 43 - 51 grams of CO_2/km. (69-82 g/mile).[B451]

B5 Table for calculating CO2 car emissions based on the mileage

B5.1 Shipping of 40-foot container from New Orleans to Liverpool and then to Birmingham by truck
a) Using the pledge.io platform to calculate the emissions incurred from shipping the container. b) Cargo type - lightweight (6 tons per TEU) c) Distance traveled - 8,925.21km (one way) d) CO_2 equivalent (CO_2e) = 2.070t CO_2e with emission intensity of 0.0193kg CO_2e/t-km
e) The return shipment was calculated as a 2x multiplication of the outbound journey. The total CO_2e = 4.140t CO_2e

B5.2 Driving a petrol-fueled vehicle for 2 years vs driving an EV car for 2 years during the assignment
Based on the data points in the table below, the case study assumes an assignee driving|
20 000km per year (cca 12 000 miles) in an average petrol fueled car with the average consumption of 8l/100km. During the 2 year assignment the total carbon footprint of a petrol car usage reaches ~ 7.5 tons of CO_2e. When switching to an electric powered vehicle, with the consumption of 17kWh, the CO2e produced during the same 2year assignment will reach ~ 1.74 tons of CO_2e, which is just 1/4 of the petrol fueled car emissions.

Average CO_2e Production by Vehicle Type

		consumption	kms driven	miles driven	total fuel consuption in liters	total fuel consuption in gallons	g CO2/ 1 l fuel	total kg CO2	trees (whole tree life)	trees per year
PETROL	low consumption vehicle	6 l/100 km	20,000	12,428	1,200	317,04	2348	2,818	3	282
		6 l/100 km	30,000	18,642	1,800	475,56	2348	4,226	4	423
	standard vehicle	8 l/100 km	20,000	12,428	1,600	422,72	2348	3,757	4	376
		8 l/100 km	30,000	18,642	2,400	634,08	2348	5,635	6	564
	SUV	10 l/100 km	20,000	12,428	2,000	528,4	2348	4,696	5	470
		10 l/100 km	30,000	18,642	3,000	792,6	2348	7,044	7	704
	sports car	20 l/100 km	20,300	12,428	4,000	1056,8	2348	9,392	9	939
		20 l/100 km	30,000	18,642	6,000	1585,2	2348	14,088	14	1,409
DIESEL	low consumption vehicle	4 l/100 km	20,000	12,428	800	211,36	2689	2,151	2	215
		4 l/100 km	30,000	18,642	1,200	317,04	2689	3,227	3	323
	standard vehicle	6 l/100 km	20,000	12,428	1,200	317,04	2689	3,227	3	323
		6 l/100 km	30,000	18,642	1,800	475,56	2689	4,840	5	484
	SUV	8 l/100 km	20,000	12,428	1,600	422,72	2689	4,302	4	430
		8 l/100 km	30,000	18,642	2,400	634,08	2689	6,454	6	645
	sports car	10 l/100 km	20,300	12,428	2,000	528,4	2689	5,378	5	538
		10 l/100 km	30,000	18,642	3,000	792,6	2689	8,067	8	807
ELEKTRO MIX	standard vehicle	17 kWh/100 km	20,000	12,428	3,400	898,28	256	870	1	87
	standard vehicle	17 kWh/100 km	30,000	18,642	5,100	1347,42	256	1,306	1	131
	SUV	30 kWh/100 km	20,000	12,428	6,000	1585,2	256	1,536	2	154
	SUV	30 kWh/100 km	30,000	18,642	9,000	2377,8	256	2,304	2	230
ELEKTRO ONLY GREEN/SOLAR ENERGY	standard vehicle	17 kWh/100 km	20,000	12,428	3,400	898,28	65	221	0	22
	standard vehicle	17 kWh/100 km	30,000	18,642	5,100	1347,42	65	332	0	33
	SUV	30 kWh/100 km	20,000	12,428	6,000	1585,2	65	390	0	39
	SUV	30 kWh/100 km	30,000	18,642	9,000	2377,8	65	585	1	59

Data sources: United States Environmental Protecion agency, European Environmnet agency, and Smart Green Scan.

CO_2 absorption of a tree
The case of CO_2 absorption by a tree serves as an example to illustrate how many mature trees are needed to offset certain amount of CO_2 For the purpose of this White paper we assume an average tree to absorb 10kg of CO_2e/year, meaning 1000kg of CO2 during an expected 100 years lifetime of a tree. Please consider that defining an “average tree" several factors have to be taken into consideration, such as tree type, tree age and size, its condition, quantity of "leaves" and other factors. Moreover, a tree absorbs different amounts of CO_2 in different stages of its life based on maturity and conditions, thus the CO_2 absorption levels may differ in real life.

Disclaimer: The data used from the above sources are intended for inspiration and informational purposes only. Readers are encouraged to conduct further research and analysis before making any decisions or drawing definitive conclusions based on the data presented here. The white paper's contents do not constitute professional advice, and the authors, publishers, and contributors cannot be held liable for any errors, omissions, or damages arising from its use. Readers should independently verify the data and consult appropriate professionals for guidance specific to their circumstances.

Appendices

Appendix C - Sources and references

1. *Coherent Market Insights. Corporate Relocation Market Analysis 2023.*
https://www.coherentmarketinsights.com/market-insight/corporate-relocation-service-market-6203

2. *Gitnux. Gitnux Market Data Report 2024. Must-Know Job Relocation Statistics.*
https://gitnux.org/job-relocation-statistics/

3. *Deloitte. Gen Z and Millennial Survey 2023.*
https://www.deloitte.com/global/en/issues/work/content/genzmillennialsurvey.html

4. *ESG Today, 2023. Over 40% of Gen Z, Millennials Would Switch Jobs Over Climate Concerns: Deloitte Survey.*
https://www.esgtoday.com/over-40-of-gen-z-millennials-would-switch-jobs-over-climate-concerns-deloitte-survey/

5. *World Health Organisation. Climate impacts of air pollution.*
https://www.who.int/teams/environment-climate-change-and-health/air-quality-energy-and-health/health-impacts/climate-impacts-of-air-pollution

6. *CNN, 2020. People in India can see the Himalayas for the first time in 'decades,' as the lockdown eases air pollution.*
https://edition.cnn.com/travel/article/himalayas-visible-lockdown-india-scli-intl/index.html

7. *Statista, 2024. Transportation emissions worldwide - statistics & facts.*
https://www.statista.com/topics/7476/transportation-emissions-worldwide/#topicOverview

8. *International Energy Agency, 2024. Global EV Outlook 2024. Cars and Vans.*
https://www.iea.org/energy-system/transport/cars-and-vans

9. *Oliver Wyman. What you need to know about carbon accounting in Europe. Understanding the CSRD and ESRS sustainability regulations.*
https://www.oliverwyman.com/our-expertise/insights/2023/aug/carbon-accounting-europe.html

10. *A Global Business Travel Association, 2023. The State of Climate Action in Business Travel. Global Industry Barometer 2023.*

11. *EcoVadis, 2024. Sustainable Procurement Barometer 2024.*
https://resources.ecovadis.com/sp-barometer/sustainable-procurement-barometer-2024

12. *Climate Impact Partners, 2023. Commitment Issues. Markers of Real Climate Action in the Fortune Global 500.*
https://info.climateimpact.com/hubfs/ClimateImpactPartners_FortuneGlobal500_2023_FINAL.pdf

13. *University of Bath, 2019. Capitalise on life transitions to instil change.*
https://www.bath.ac.uk/announcements/capitalise-on-life-transitions-to-instil-change/

14. *Statista, 2024. Distribution of carbon dioxide emissions produced by the transportation sector worldwide in 2022, by sub sector. https://www.statista.com/statistics/1185535/transport-carbon-dioxide-emissions-breakdown/*

15. *Jones Lang LaSalle (JLL), 2023. Responsible Real Estate Study. Green Leasing. Bridging the owner-occupier divide to deliver shared ESG value.*
https://www.us.jll.com/en/trends-and-insights/research/green-leasing-to-deliver-shared-esg-value-for-owners-and-occupiers

16. *Hilton, 2023. Hilton to Install Up to 20,000 Tesla Universal Wall Connectors at 2,000 Hotels, Creating Largest Overnight Electric Vehicle Charging Network within Hospitality Industry.*
https://stories.hilton.com/releases/hilton-to-install-up-to-20000-tesla-universal-wall-connectors-at-2000-hotels

17. *International Energy Agency, 2023. Global EV Outlook 2023. Trends in charging infrastructure.*
https://www.iea.org/reports/global-ev-outlook-2023/trends-in-charging-infrastructure

18. *Lifewire - Tech for humans, 2021. EV (BEV) vs PHEV vs FCEV vs Hybrid: What's the Difference?*
https://www.lifewire.com/ev-phev-fcev-hybrid-compared-5201137

19. *How clean are electric cars?, Gimbert, Y. 2022.*
https://www.transportenvironment.org/articles/how-clean-are-electric-cars

20. *International Energy Agency, 2024. Electric vehicle myths.*
https://www.epa.gov/greenvehicles/electric-vehicle-myths

21. *EVconnect, 2023. How Long Does an Electric Car Battery Last?*
https://www.evconnect.com/blog/how-long-does-an-electric-car-battery-last

22. *Visualizing the Range of Electric Cars vs. Gas-Powered Cars, Bhutada, G. 2022.*
https://elements.visualcapitalist.com/range-of-electric-cars-vs-gas/

23. *Electric vehicles have trippled their driving range within 10 years, Billington, J., 2022.*
https://www.electrichybridvehicletechnology.com/news/industry-news/electric-vehicles-have-tripled-their-driving-range-within-10-years.html

24. *The Guardian. Do electric cars really produce fewer carbon emissions than petrol or diesel vehicles? Jolly, J., 2023.*
https://www.theguardian.com/business/2023/dec/23/do-electric-cars-really-produce-fewer-carbon-emissions-than-petrol-or-diesel-vehicles

25. *International Energy Agency, 2024. Global EV Outlook 2024. Trends in electric cars.*
https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars

26. *S&P Global, 2024. The journey to further EV adoption.*
https://www.spglobal.com/en/research-insights/featured/special-editorial/look-forward/the-journey-to-further-ev-adoption

27. *Globe News Wire, 2024. Global Automotive Fuel Cell Market Outlook 2024-2030.*
https://www.globenewswire.com/news-release/2024/03/14/2846111/0/en/Global-Automotive-Fuel-Cell-Market-Outlook-2024-2030-Analysis-of-Drivers-Patents-Supply-Chain-Ecosystem-Pricing-Hydrogen-Deployment-Roadmap-Business-Models-and-More.html

28. *21 Misleading Myths About Electric Cars, by Simon Evans, 2023*
https://www.carbonbrief.org/factcheck-21-misleading-myths-about-electric-vehicles/

29. *Empowering interventions to promote sustainable lifestyles, Bas Verplanken, 2015*
https://www.sciencedirect.com/science/article/pii/S0272494415300487

30. *How Long Does It Take for a Tree To Grow?*
https://8billiontrees.com/gardening/how-long-does-it-take-for-a-tree-to-grow/

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www.ExpatRide.com