

Helping people, cities
and economies thrive

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joins the Steer
North American
team

Climate change

Key takeaways
from our Net
Zero: Making it
happen series

Interview

Carbon is not a
local
transportation
problem

The Review

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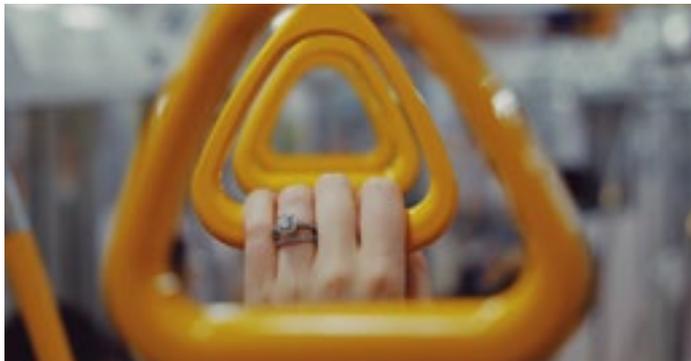
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Steer investing for further growth

Steer's forward plans and strategy build on a period of growth and sets out clear ambitions for further sustainable and material growth to a company with strengthened and new skills, a turnover of £100m.

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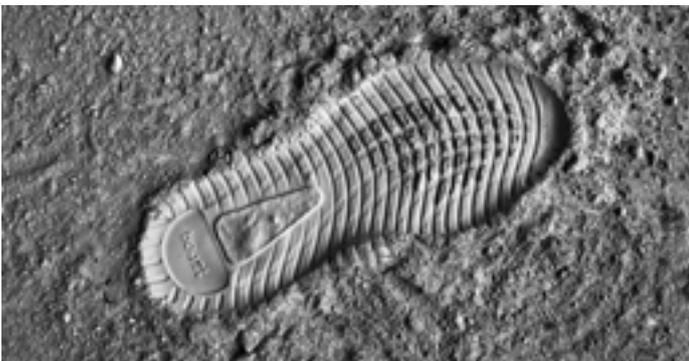


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Steer investing for further growth

International consultancy Steer has announced a new global role within its leadership structure. Mike Goggin assumes the role of Managing Director Transformation and Growth to help the business achieve its visionary strategy for growth. Mike will continue to sit on the Company's global executive team working alongside Executive and Regional Directors.

Steer's forward plans and strategy build on a period of growth and sets out clear ambitions for further sustainable and material growth to a company with strengthened and new skills, a turnover of £100m - meeting its global goals to help people, places and economies thrive across cities, infrastructure, and transport.

In recent years, Steer has grown significantly establishing an economic development practice (Steer Economic Development) in the UK while also acquiring a similar business in the USA (Fourth Economy) and made numerous significant appointments in financial advisory, electric vehicles and sustainability and decarbonisation disciplines across its global business.

"Steer has proven to be an agile and resilient business centred on delivering trusted advice that is grounded in impartiality and ingenuity. We are now incredibly well placed to deliver transformative growth and have the ambition to evolve and develop how our business exists and delivers to clients throughout our global network of offices. - Hugh Jones, CEO

"After three successful years leading the UK business, I am incredibly excited to be working with colleagues across the globe to help Steer evolve and grow on our mission to help people, places and economies thrive. I'm particularly enthusiastic to be supporting the growth of our financial advisory, electric vehicles, sustainability and decarbonisation disciplines. - Mike Goggin



Mike Goggin returned to Steer in 2011 and for the last three years has been leading the UK business as UK Managing Director. He is an award-winning MBA executive surpassing three decades of experience in transport with over 15 years in consultancy for Steer in the UK and overseas. Mike set up Steer's first office in the USA in 2008. Between 2010 and 2012, Mike left Steer to take up a senior role with Network Rail and his previous experience includes working for a UK Train Operator and Franchise Bid Director for MTR.

Steer has started the process for identifying the next UK Managing Director.



alternatives available to most of their users. More recently, providing targeted subsidies such as the Delhi experiment of free public transport for women has shown interesting results by encouraging specific segments of society to gain more mobility freedom.

But as the German experiment shows, subsidising public transport too much, especially through fare reductions, doesn't necessarily produce the desired results of modal shift and lower emissions. Moreover, the regular users tend to lose out through overcrowding and overexploitation of extra subsidies being offered. At Steer, over the last four decades, we've had the opportunity to consider well over 100 urban transit projects in detail. Despite their differing contexts and continents, there has been a rough observation that we are able to draw. Our rule of thumb when looking at any new public transport investment shows that nearly a third of users of the new service come from existing public transport modes, another third come from walking or cycling modes, and less than a third come from car passenger or driver modes, with a small proportion coming from new trips.

It is very clear from both our experience and the recent evidence that just by reducing fares, environmental and modal shift goals can't be achieved. There needs to be more clear policy objectives of the subsidies being offered so that they can be measured and evaluated at regular intervals.

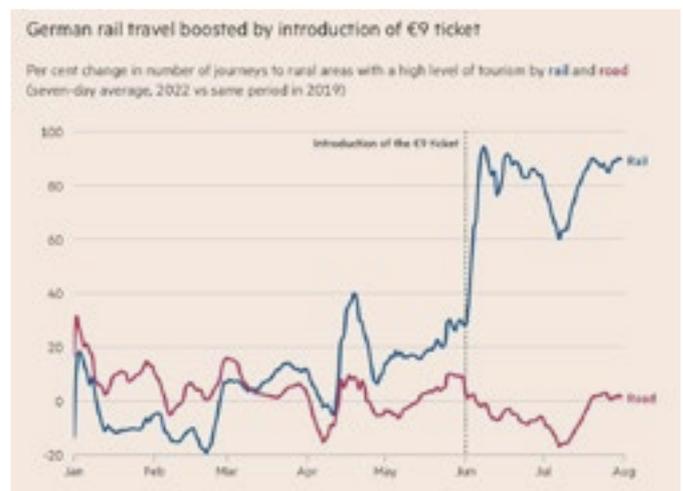
Free/cheap public transportation, who are the winners and losers?

By Serbjeet Kohli

One of the largest public transport fare reduction experiments comes to an end in Germany. The scheme introduced a €9-a-month (USD\$9, INR720) ticket for local trains and other public transport that has proved a massive hit with voters, with a large increase [over 80% jump] in public transport patronage, particularly on the inter-city rail network. However, very little shift was observed from road.

As to what has been observed in Germany very recently, reducing or removing fares from public transport does not necessarily result in a major modal shift away from cars. The need for subsidising or removing fares on public transport has been apparent across the world, but a nationwide experiment of this scale has brought forward some very clear policy options. What is the purpose of public transport and how should it be paid for - by taxpayers money or by users who pay?

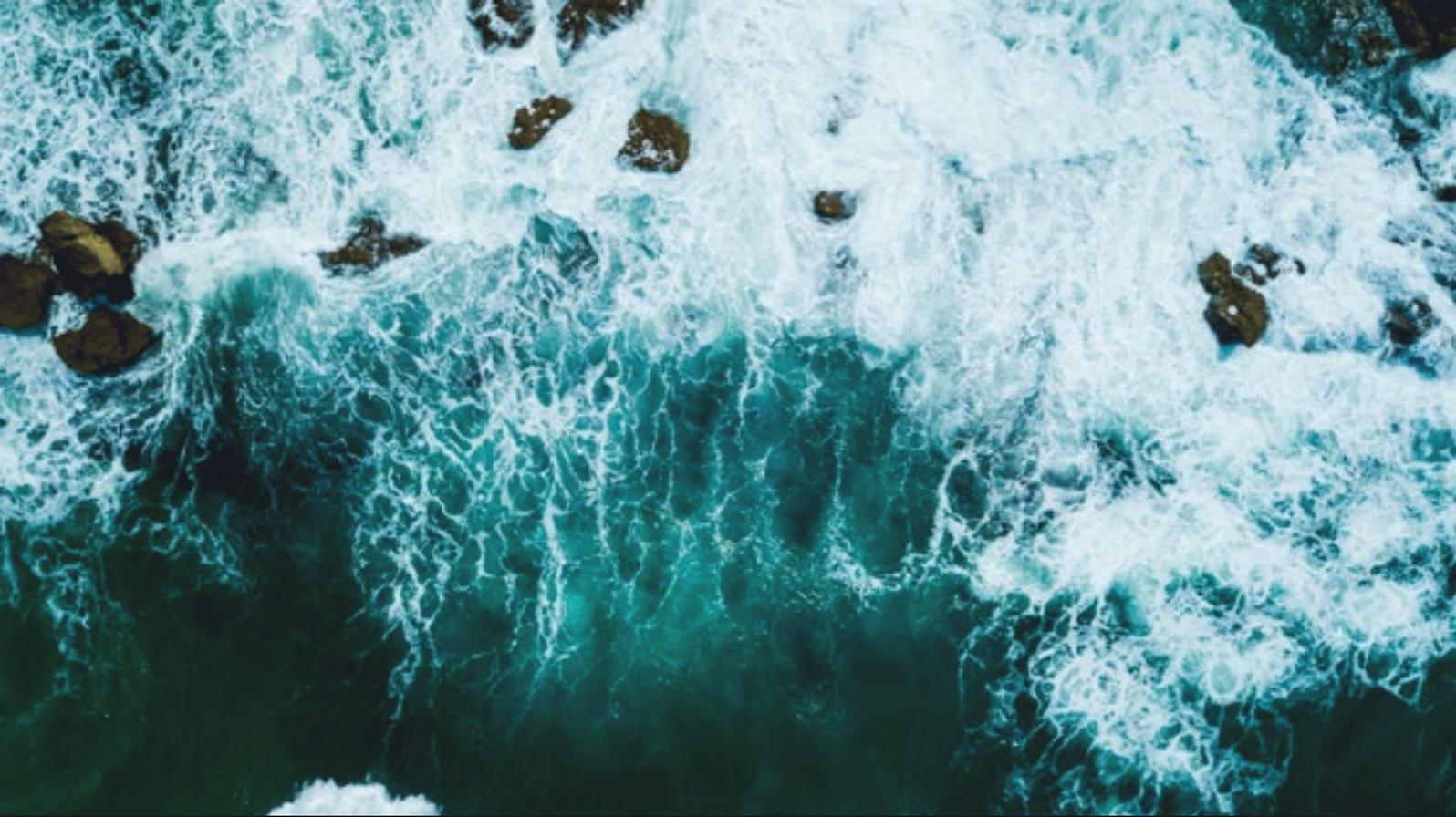
The concept of users pay [or more appropriately, polluters pay] has long been prevalent in the road sector, with good quality toll roads across the world from Mexico, USA, France, Australia, and India charging users pay to use such facilities. Public transport modes, on the other hand, receive material subsidies from various government sources, which is considered to be fair given the relative lack of



Source: <https://twitter.com/wessiedutoit/status/1563839487452626945>



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Steer investing for further growth

During the last few years hurricanes, earthquakes and the COVID-19 pandemic have created significant challenges for Puerto Rico. These periods of uncertainty helped us to develop our resilience as individuals and as a company. Undoubtedly, these events brought adverse effects to the Puerto Rico office where our most regular clients also suffered changes and interruptions in their projects.

Our team was affected by voluntary resignations and staff cutbacks as a contingency to the crisis. This left Liza Rios as the sole employee of the office for almost a year, during this time she supported projects across the company, while strengthening market relationships with our clients and identifying how and when new opportunities might arise.

These adversities led us to adapt to a new reality, including moving to a smaller office and relying on the invaluable support from team members at Steer across the world. **During this period, the office never ceased to operate and continued to generate proposals aligned with emerging needs, mainly with assistance and support of the US and LATAM teams. Today, a year after seeking the best way to be resilient, we can enjoy the results of this work.**

Results

We have a favorable work won in the last year with close to \$ 3 million and we continue to be leaders in the transportation consulting industry leading most

of the emblematic projects of the island among them: **Multimodal Long-Term Plan 2050, Strategic Highway Safety Plan of Puerto Rico and several municipal strategic plans.** Due to the increase work won we have grown to a team comprising 5 consultants

Our team in San Juan

Liza Rios Berríos – Office Leader

Liza joined Steer 11 years ago as an assistant consultant in the Puerto Rico office. During this time, she has had the opportunity to work on several local and international projects, actively supporting the teams in North and Latin America, including a secondment in Bogota where she had the opportunity to strengthen her technical skills in traffic simulation. She has worked on projects focused on transportation plans, such as mobility master plans, non-motorized modes and strategic plans. She also has vast experience in infrastructure projects, delivering demand forecasts and supervising large data collection processes. She has led modeling, design and road impact analysis, traffic congestion management and mass transit related projects.

During the last few years Liza has been increasingly involved in office management tasks and in building and strengthening client relationships. Currently Liza is the office and market leader for Puerto Rico, collaborating in the development of the local and regional strategy.

Gabriel Quiñones Zambrana – Senior Consultant

Gabriel has over 7 years of experience in transportation planning and urban planning projects. His areas of expertise include planning and consulting services in issues related to

transportation, mass transit, mobility of people, citizen participation and urban planning. In July 2021, Gabriel returned to Steer as a Senior Consultant after working in the public sector, he currently has management responsibilities, including being the project manager for most of the planning projects, however given the structure of the office he participates in all active opportunities in the office.

Michelle Sánchez – Consultant

Has a bachelor's degree in Civil Engineering from UPR, Mayagüez Campus and recently completed a master's degree in Planning from UPR, Río Piedras Campus. Since high school she has been involved in transportation work and initiatives, especially in pedestrian, bicycle, and complete streets issues. For the past 6 years she has been working in consulting firms in the areas of market analysis, economics, planning and historic preservation, especially supporting the areas of GIS and data analysis. She is excited to begin her career at Steer and is confident that she has a lot to learn and contribute to the projects in Puerto Rico and the other offices in the region.

Andrea Iguina – Consultant

Andrea started working as a Consultant and holds a master's degree in Planning with a concentration in Urban and Territorial Planning from the University of Puerto Rico and a bachelor's degree in Political Science from the same university. She began her professional life as Project Coordinator for the Agenda Ciudadana Foundation; where she coordinated over 30 participatory dialogue sessions on the topics of Environment, Economy, Energy, Families, Early Childhood and among others. In 2018 she was part of TFEC, a community foundation located in Harrisburg, Pennsylvania, where she worked as a Program Officer distributing over one million dollars in grants to non-profit organizations in the area.

Grace Delgado Navarro – Assistant Consultant

Grace has a bachelor's degree in Business Administration with a concentration in International Trade from the University of Puerto Rico, Humacao Campus and recently completed her master's degree in Planning with a concentration in Economic and Community from the University of Puerto Rico, Río Piedras Campus. Within her professional development she has worked as a logistics coordinator exporting wagons to different countries, was a statistics tutor, has participated in data collection through ArcGis Pro for the creation of an environmental risk mitigation plan and has participated in the planning for the creation of a linear park within the city. She is excited to be able to support, learn and help Steer and the communities through our projects.

Steer expands presence in California

Steer, a global independent consultancy, is announcing the expansion of its United States offices with two new locations in Oakland and Sacramento, California. The new locations add to the presence in the United States with local offices in Boston, Los Angeles, New York, Pittsburgh, and Washington. Steer now has 26 offices globally across Europe, North America, Latin America and India.

The new offices in Northern California are part of an ongoing commitment to clients and the communities served by Steer in the mega-region. Through investing in spaces that enable creativity and ingenuity, Steer seeks to attract more people to its growing team. Being close to clients and adding more local insight is a primary aim for the consultancy.

Importantly, Steer remains committed to bringing the best to clients anywhere in the world. The new locations will help channel expertise locally and continue to solve complex problems for clientele in the mega-region such as California High Speed Rail Bay, Caltrans, Sacramento Area Council of Governments and California Air Resources Board, Caltrain, Metropolitan Transportation Commission and Bay Area Rapid Transit.

"This is a natural step for a growing business to take," said Alasdair Dawson, Regional Director for Steer in North America. "We are fortunate to be involved in some of the Bay Area's most intractable problems and our teams enjoy those unique challenges. We also recognize that professionals here have experience and expertise that applies to our other clients nationally and internationally. We see our additional locations as conduits to bring more of Steer to our clients in interesting and creative ways."

Focused on sustainability and operating as a Net Zero Carbon company by 2025, Steer's new offices provide:

- Fantastic, centralized locations with modern, mixed-use spaces
- Excellent transport connections to light rail and bus services
- Workspaces development by companies embracing sustainable strategies
- Greener and more eco-friendly environments

For a listing of current openings in our new offices please visit the Careers section of our website:
<https://apply.workable.com/steer-group/#jobs>

Canada's uneven economic recovery

By Eldar Sehic

The COVID-19 pandemic was a global reminder of how economically vulnerable and interdependent we are. The pandemic struck Canada largely in March 2020, creating an uneven shock on Canada's economy and its labour market, which is still being felt today, roughly two and half years later. Shutdowns and uncertainties had significant negative impacts on industries dependent on in-person interactions, wage-earners in lower-paying jobs, and those in rural regions. Canada continues to face potential challenges related to productivity, debt, and inequality as it strives to nurture a diversified, resilient, and innovative economy.

Looking at Canada's monthly real industry output, as captured by the Gross Domestic Product [available in Statistics Canada Table 36-10-0434-01, released on October 28, 2022], the uneven nature of Canada's economic recovery across industries becomes disturbingly clear. Using the pre-pandemic month [February 2020] as a reference point when the majority of Canada's industries reached their peaks,



we can then see where those industries were in the latest month of data available (August 2022). Some industries were able to adjust and recover relatively quickly, even within a few months. Meanwhile, there are some industries that were hit hard, such that they still have not recovered.

The economy on aggregate recovered and surpassed its pre-pandemic high in November 2021. Canada's economy has been pushing ahead on aggregate, such that the total real output was up 2.6 per cent in August 2022 relative to February 2020. The highest relative gains were posted by industries that were less dependent on in-person interactions: agriculture, forestry, fishing and hunting (+11.9 per cent), and professional, technical and scientific services (+8.7 per cent).

Aggregates and averages can often be deceptively optimistic. Despite Canada's total economy rejoicing in its recovery, some industries are far from it. Most notably, industries that are highly

dependent on economic interactions continue to struggle, thus posting the highest relative losses: transportation and warehousing (-8.3 per cent), and arts, entertainment and recreation (-8.0 per cent). These two struggling industries are highly dependent on healthy economic activity, revealing how Canada's economic recovery is alarmingly uneven and unhealthy.

Once we dig deeper into the transportation and warehousing industry, we see that it is, in fact, the transportation sector that is significantly down (-9.2 per cent), while the smaller warehousing sector has considerably recovered (+10.9 per cent). And even within the struggling transportation sector, some sectors are down more than others. Since February 2020, air transportation has suffered the biggest relative blow (-36.0 per cent), followed by transit, ground passenger, scenic and sightseeing transportation (-26.5 per cent). On the other hand, some transportation sectors were able to recover, such as water transportation (+19.6 per cent) and rail transportation (+0.1 per cent). The differences in economic paths highlight the complexities of economic recovery.

The uneven impacts over the past two years spilled to earnings, with wage-earners in lower-paying jobs disproportionately more burdened by the pandemic than salary-earners in higher-paying jobs, intensifying wealth inequality and housing unaffordability. Furthermore, regional differences were deepened by the pandemic, with Canada's diversified urban regions recovering and experiencing job gains while the resource-focused rural regions continue to struggle.

Given all the stimulative fiscal and monetary policies over the past two years, the inevitable expected result was inflation, intensified by the ongoing global supply issues. In response to global inflation, central banks around the world, including the Bank of Canada, proceeded to raise interest rates. Since the interest rate is the price of money, then anything that depends on it becomes more expensive. This tends to restrain economic activity and cool down the economy. This is unfortunate for many of the industries that have still not recovered, as their recovery consequently becomes more costly and more elusive. This is especially true for sectors that require financing for investments and infrastructure projects. Meanwhile, the highly indebted Canadian households just hope that the shaky economic engine, which is being doubtfully tamed will spur some earnings to lessen the huge burden.



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Key takeaways from our Net Zero: making it happen series

Common sense dictates developing a coherent and well-thought-through strategy before undertaking any sizeable or complex activity.

It is a tried and tested path to achieving desired outcomes.

However, when it comes to achieving our global net zero ambitions, the vehicle designed to develop and then deliver this strategy - namely, the series of COP meetings - appears to have accidentally achieved the opposite.

Hard-won and highly praised though COP goals are, delivering global sustainability and climate change goals continues to present an insurmountable challenge to governments and organisations worldwide.

Net Zero: making it happen

In [our series of webinars](#) hosted a week after COP27, Steer took an alternative approach to discuss and debate the challenges.

We believe in the power of storytelling and that, by amplifying net zero success stories from around the world, we can inspire leaders in all sectors to start taking steps to 'make net zero happen'.

For Steer, the zero-emissions vehicle (ZEV) sector is one we have helped to champion and grow. It is now leading the way in delivering real-world projects that achieve tangible sustainability results. We believe the hard-won insights and game-changing successes the sector has seen can inspire others worldwide, no matter their geography or industry.

Starting at the beginning, behaviours and numbers

The series deliberately took a broad approach which mirrors the challenge of achieving net zero goals.

Our first webinar, "[Implementation](#)", saw a lively discussion on how the global challenge of changing billions of individual behaviour patterns is at the heart of how we will ultimately achieve our sustainability goals. Using the example of how she introduced a new electric bus system in Santiago, Chile, **Gloria Hutt**, President of Evópoli and former Minister of Transportation and Telecommunications, Chile, illustrated how delivering on user (or in this case 'passenger') experience was critical to ensuring the long-term success of a net zero transportation system.

She also highlighted another critical success factor when delivering ambitious but local net zero projects: local context. For example, Chile's lack of a domestic automobile industry allowed them to pivot more quickly to a public e-bus scheme and probably more rapidly than other nations may be able to do.

Gloria, in her role as Minister of Transport, was able to understand the ambition of COP and translate broad, grand climate goals into immediate action on the ground. The project more than took local conditions into account; it leveraged the region's unique character to 'tailor-make' a relevant public

transportation solution and was far more successful than a globally mandated strategy.

In other words, to coin a phrase, she listened globally but acted locally.

Turning to another key enabler of sustainable change, **Jane Stevensen**, CEO of JS Global Advisors, highlighted the successes that are being made in establishing globally recognised disclosures and standards for climate-related reporting. Whilst not having the PR attractiveness of a new e-bus fleet or sustainable e-mobility scheme, data and measuring progress against ambitious goals yield vital information that helps tackle stubborn infrastructural challenges. It highlights both successes and failures of past initiatives and, presented well, can inspire effective change.

Time for the elephant

Tuesday's webinar, "**Finance**", addressed the elephant in the room: how to present projects as low-risk investments that will deliver a commercial return and unlock both public and private investment.

Lauren Pamma, from the Green Finance Institute, along with **Daniel Pulido** from the IFC, **Christian Velasco** from AMP Capital and **Luis Andres Alandia** from Proparco (the private banking arm of the AFD) looked at investing in early-stage decarbonisation and net zero projects from both a public and private sector perspective. The role that development banks need to play in this arena is significant; as well as supporting countries to develop the necessary legal and regulatory frameworks, development banks can help increase the bankability of net zero projects.

There is, however, a 'sustainable' finance market, which is becoming increasingly synonymous with the finance market. Again, looking at behaviours, investors putting pressure upon funds to make the links between emissions and investments more explicit will help to accelerate this change, and yet again calls on the need for globally recognised independent standards and reporting criteria.

Using ZEV as an illustrative example, the panel explained how the unknowns around technology could obstruct capital mobilisation. Some areas, including public bus infrastructure, deliver more attractive projects to investors, whilst others, including charging infrastructure for private cars, may still require significant public sector support ongoing.

Sharing stories of success around projects of this type, involving both new and unknown technologies and investment profiles, is vital in creating the momentum we need to see to create a shift in global investment behaviours.

Accessibility and equality: our watchwords

As with many complex and ambitious change programmes throughout history, the successes seen are only universally and fairly accessed by some communities.

Alia Verloes, North American New Mobility Market Lead at Steer, hosted Wednesday's session, "**Communities**", in which highly experienced practitioners from the US, **Bree Swenson** from the California Air Resources Board, **Caitlin Vargas** from the Lane Transit District in Oregon and **Michelle Go** from the Metropolitan Transportation Commission, San Francisco Bay Area, shared their real-world experience and hard-won insights from projects they have run aimed at removing the hurdles that often prevent people from disadvantaged communities from accessing greener, low carbon forms of transportation.



Continuing the theme of taking a local approach to solving global net zero challenges, the panel discussed the importance of identifying net zero solutions tailored to the local community's needs. The panellists gave examples of this achieved in e-mobility – public outreach campaigns, mass education, and engaging local community influencers who became early adopters.

Yet again, the importance of individual behaviours as a critical success factor in achieving long-term, sustainable net zero outcomes was emphasised. The panel urged those agencies responsible for delivering local, sustainable transportation solutions to recognise that changes to people's everyday lifestyles and mobility, combined with new technologies, will require them to be flexible and agile in their long-term responses.

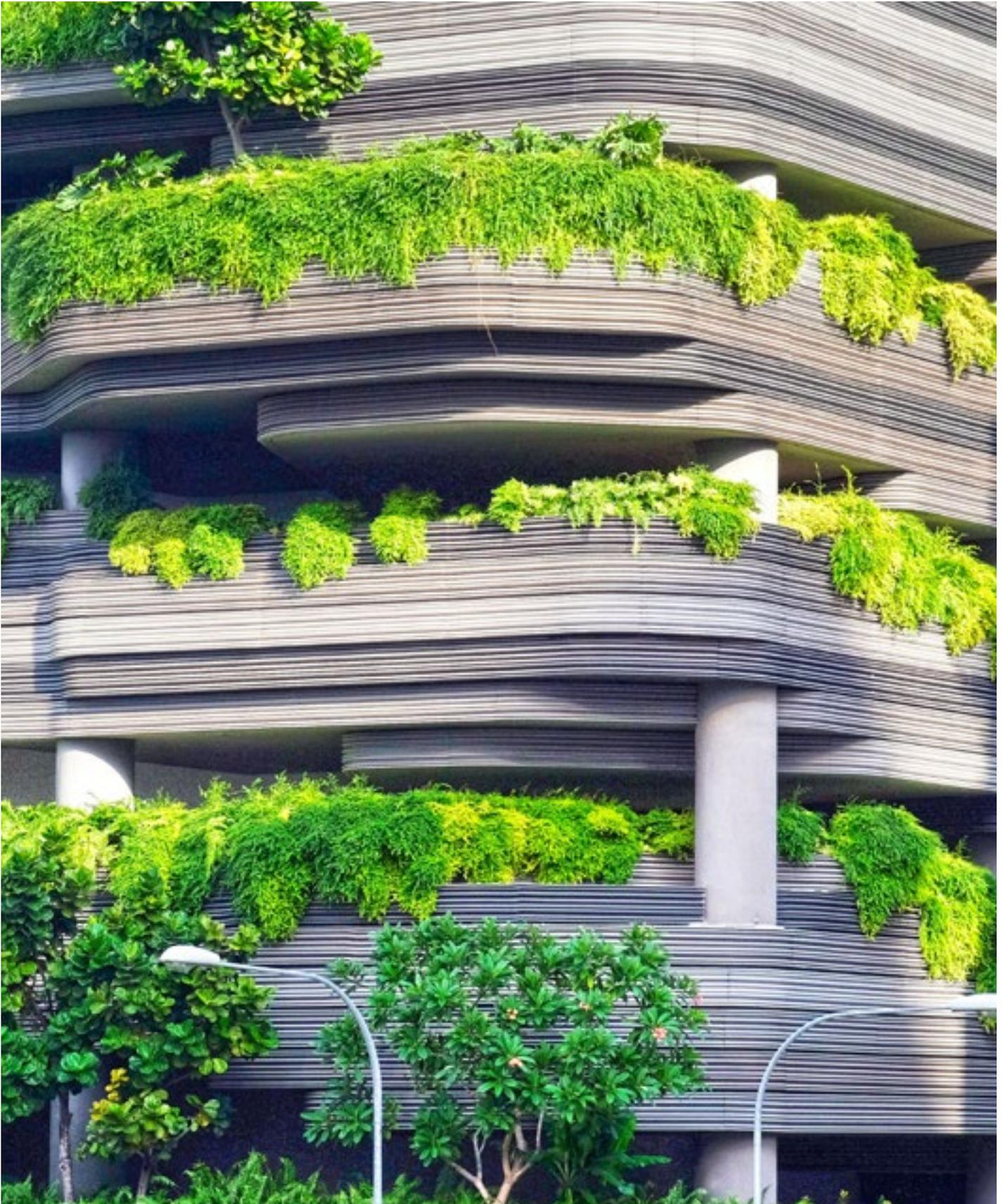
Put simply; there needs to be an acceptance that achieving net zero, whilst sounding finite, will never be an end state.

And in the real world

By the time the final session took place, the complex interplay between multiple agencies, data standards, finance, technology, and behaviours was becoming evident and understood.

However, the experience of the ZEV sector also showed that these relationships could be known, specified and successful.

In the last webinar on "[Adoption](#)", we looked at more real-world examples – specifically, how existing structures and facilities can adapt to support and enable net zero transportation solutions.



[Stephen Van Beek](#), Director of NA Aviation at Steer, hosted the “Planes, Buses and Automobiles” session (to coin a phrase!). **Katherine Ward** from Beacon Rail, **Alessio Tizzanini** from Enel X, and **Ivar Satero** from San Francisco International Airport illustrated in each of their respective sectors the need for a flexible approach to respond to fast-moving technology and changing consumer demands.

Local, regional, and national contexts must be considered to achieve net zero. For example, a rail initiative will likely have more traction and success in Europe than North America. However, the illustrative points that can be extrapolated from successes in local projects can be applied to communities across the globe.

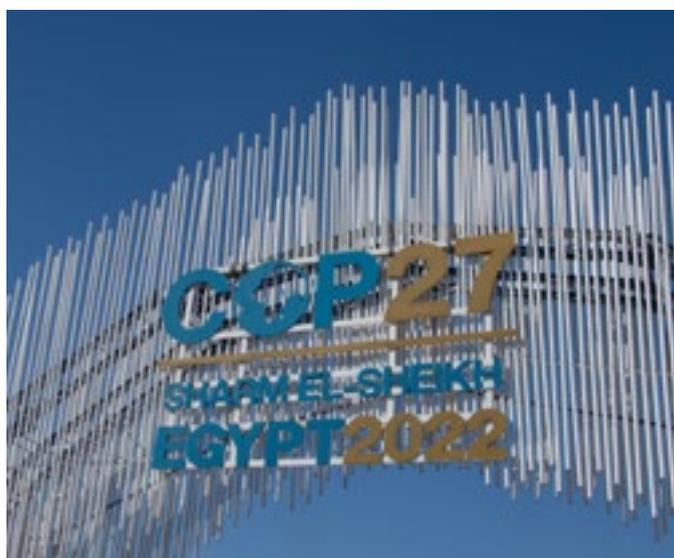
The time is now

Local or regional initiatives that deliver clear consumer benefits have the energy and momentum required to convene and mobilise multiple agencies, trigger innovative finance, and generate new technologies. For example, keeping consumer behaviour at the heart of all ZEV projects has been a driver of success in that industry; by ensuring that standardised reporting and standards are in the DNA of each project, projects will become both sustainable and prosperous.

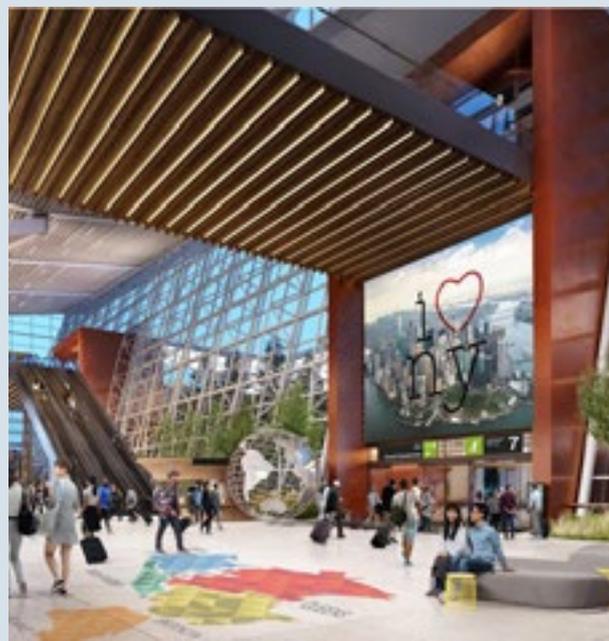
And ultimately more attractive to investors – public or private.

A final word

Throughout history, storytelling has been how our society has learned lessons from the past, understood what is possible in the future, and gained the confidence to take those first steps forward. Steer’s Movement Matters webinar series on [Net Zero: making it happen](#) is our contribution to this narrative and, hopefully, a key driver.



Finance approved for John F. Kennedy International Airport's (JFK) New Terminal One (NTO)



The construction of John F. Kennedy International Airport's (JFK) New Terminal One (NTO), a project Steer has supported since 2017, will begin this summer after reaching a successful financial close last week.

NTO will be a transformational project for JFK and the New York region, providing a new, 2.5 million square foot terminal building and creating 10,000 new jobs in the region.

Steer is proud to have supported the development team for what will be JFK's largest international terminal, and congratulates the entire project team on a successful financial close.

Steer has been lead traffic and business plan advisor to the developer consortium since 2017, working with a world-class group that includes The Carlyle Group, JLC Infrastructure, Ullico, and, most recently, Ferrovial.

NTO is a part of the Port Authority of New York and New Jersey's vision for transforming JFK and Steer's support for the project is in line with our core mission of helping people, places and economies thrive.

The first phase, which will include a new arrivals and departures hall and the first set of new gates, is scheduled to open in 2026.





Liliana Pereira joins the Steer North American team

Steer is delighted to welcome Liliana Pereira to our North American Advisory team.

Liliana has been with Steer for over 14 years. She is an experienced consultant with 20 years of experience in strategic infrastructure planning and transport projects, including policy, public transport, rail, and toll roads.

Before joining Steer, she worked for the Transport Research Programme at the National University in Colombia and was a vital member of the transport planning team at Transmilenio (Bogota's BRT).

Liliana was the Leader of our office in Mexico for eight years, leading to significant growth in the market. She then went on to lead our Operations for Latin America in 2019; working with the Regional Director, she led the delivery of Company, regional, country and office-wide operational and strategic plans for the region for Mexico, Panama, Puerto Rico, Colombia, and Chile, including 100 staff members. In addition, Liliana won an award as an International Inspiration at the 2020 Amazon everywoman transport & logistics awards.

Since 2021 Liliana has been the Equity and Inclusion leader for Steer, in charge of mainstreaming these aspects and developing E&I-focused technical projects, coordinating an international team in all regions.

She continues leading the Equity and Inclusion Practice for the Company and will support project leaders in various sectors for our North American clients including being one of our leaders for the Link21 project in the Bay Area.



Views on COP27: Optimism Bias?

By Victoria Johnson

Even before delegates began to arrive at COP27 in the resort town of Sharm el-Sheikh, the conference was already overshadowed by the very questionable human rights record of the Egyptian regime, put into the global spotlight by hunger-striking British-Egyptian political prisoner Alaa Abd el-Fattah. [Note: the likes of Amnesty International have been reporting on Abd el-Fattah and the plight of other pro-democracy activists for years].

Then there was the corporate conference sponsorship that smacked of green-washing, record numbers of fossil fuel lobbyists registered to attend the event, and the growing scientific consensus that carbon budgets in place to maintain a 'reasonable chance' [this is a flip-of-a-coin probability of 50%] of stabilising global average temperature rises at or below 1.5°C are potentially less than previously thought. Environmentalist and author Bill McKibben quipped in a post [last year](#), 'Faster Than Expected is probably the right title for a history of climate change so far.'

Against the backdrop of Lord Stern's [estimation](#) of the sheer scale of the funding to help developing countries reduce their emissions and cope with the impacts of climate change that are already occurring [\$2 trillion per year by 2030 in the Global South alone (excluding China)], the escalation of climate disasters globally, the 'less than we thought'

global carbon budget, and a potential [reneging](#) of the Glasgow Pact, are there any reasons to be optimistic? Or by keeping the 1.5°C target in view, are we simply guilty of reinforcing a collective and catastrophic optimism bias, and neglecting the woefully small mitigation, adaptation, and [loss and damage](#) compensation funds available to the Global South, who are already suffering the worst impacts of climate change?

In 2008, my colleague Andrew Simms and I launched the 100 Months Campaign whilst working at the independent think tank, The New Economics Foundation. We argued that [if we are lucky, and based on a quite conservative estimate, in 100 months, we could reach a tipping point for the beginnings of runaway climate change](#) unless global greenhouse gas emissions rapidly declined. That was 171 months ago.

Reflecting on where we are now compared to 2008 [putting dwindling carbon budgets and the escalation in scale and magnitude of climate-related disasters to one side for the moment - more on this tomorrow], yes, there are huge successes.

Take renewable energy, for example.

There has been a spectacular fall in the cost of renewable energy and the battery technology to store



Despite recent [supply chain issues](#), Bloomberg recently [reported](#) that the supply chain for solar PV needed to reach net zero by 2050 is already under construction.

Electric vehicles (EVs) are another success story.

EVs are a key technology to decarbonise the 'hard to abate' road transport sector, and there has been exponential growth in uptake in recent years. The costs of lithium-ion cells have [fallen by more than 97% since 1991](#), and [the IEA now estimate](#) that 13% of new cars sold in 2022 will be electric. If the growth experienced in the past two years is sustained, CO2 emissions from cars can be put on a path in line with the net zero emissions by 2050 Scenario. They do note, however, that electric vehicles are not yet a global phenomenon, with developing and emerging economies lagging due to higher purchase costs and a lack of charging infrastructure availability.

Despite often contradictory media reports, Carbon Brief found that in both the US and Europe, EVs represent a [substantial reduction in the lifecycle greenhouse gases compared to the average conventional vehicle](#), but the extent of decarbonisation depends on the carbon intensity of the energy used to manufacture and charge them.

A second concern regarding the widespread deployment of EVs is the wider environmental impact of lithium-ion batteries. [Metals in batteries are scarce, expensive, and their mining carries significant environmental and social costs](#). However, battery recycling capabilities are rapidly increasing. This is coupled with a move towards 'servitisation' business models such as leasing, renting, or sharing, and pay-per-use. Servitisation means that manufacturers retain the ownership of the product, enhancing product-life extension through activities such as repair, maintenance, and remanufacturing at the end of the product's life. Circular economy models have the potential to decouple growth and resource use and further the decarbonisation of products, including EVs.

Materials research is also uncovering unlikely substitutes for lithium-ion batteries, with the [University of Maryland](#) developing a zinc battery that is two-thirds biodegradable and made from chitosan found in crustacean shells and the cell walls of fungi.

But electricity, heat generation, and road transport only account for ~42% of global emissions. So, whilst there may be reasons for optimism and the foundations of a rapid transition is evident across some sectors, how fast can these technologies be deployed in practice? Can their current rates of deployment be sustained? And, what about the other 58% of global emissions?

The pace of the transition to zero-emission vehicles, the decarbonisation of the power sector, and energy efficiency improvements all need to increase by

it. Oxford University's Institute for New Economic Thinking published a [report last year](#) concluding that there is a pathway to 1.5°C that is cheap and quick. This contradicts the received wisdom that a green energy transition will be expensive (and a major driver of footdragging in response to climate change over the past 40 years). And they aren't the only research team arriving at this conclusion.

According to the [International Energy Agency \(IEA\)](#), more people are now employed in clean energy [renewables, electric vehicles, energy efficiency measures, and nuclear power] than in the fossil fuel industry. Optimistically, the staggering number of fossil fuel lobbyists at COP27 could simply be the last-ditch attempt of a crumbling industry desperate to survive. Although pessimistically, it could be viewed as an attempt at an African '[gas grab](#)' and to thwart discussions on ending the circa \$700bn in public subsidies the industry still enjoys. According to [DeSmog](#), at least nine gas deals have been struck so far on the side-lines of negotiations as European firms look for alternatives to Russian supplies.

Clean energy investment continues to grow, with the [IEA reporting](#) record growth of 12% in 2020. Spending on solar PV, batteries, and electric vehicles is now growing at rates consistent with reaching global net zero emissions by 2050.

two to fourfold. Furthermore, [recent research](#) has highlighted that four critical sectors – aviation, shipping, road freight, and industry—cannot cut their CO2 emissions to zero rapidly with technological supply-side options alone.

After three decades of international climate talks, it now seems almost inevitable that the carbon budgets required to keep global warming below the critical 1.5°C threshold will be overshot [without widespread deployment of greenhouse gas removal technologies](#). Although putting faith in technologies that are still in the early stages of research and development and are unproven at scale is a huge gamble to take given what is at stake.

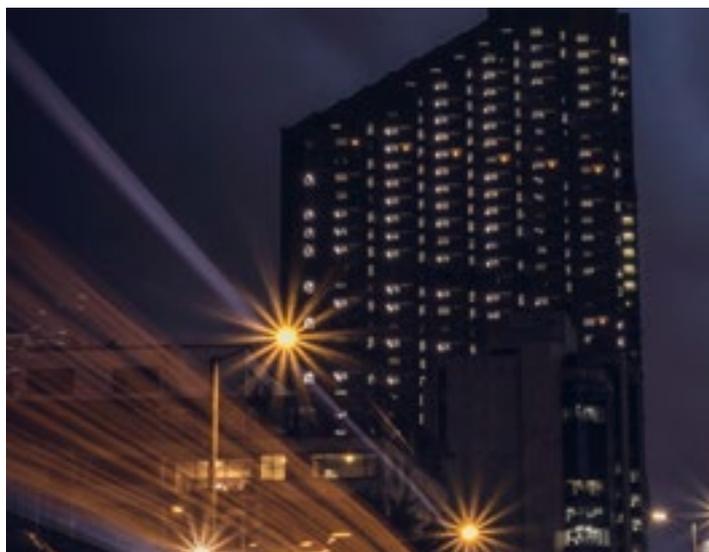
Economy-wide decarbonisation scenarios tend to place great emphasis on the deployment of technological supply-side solutions that displace their higher-carbon counterparts – EVs displacing internal combustion engine vehicles, for example. But this is only one part of the equation. Widespread deployment of low-carbon technologies needs to go hand in hand with demand-side measures: strategies that target technological choices, consumption, behaviour, coupled production-consumption infrastructure systems, and service provision.

An example of this would be integrating the concept of 'envirogenic environments' within climate and planning policy. Public health research has developed the concept of '[obesogenic environments](#)', used to highlight the role of infrastructures, cultures, and institutions in the Global North's obesity epidemic. So why not something similar for climate change, argues Professor Elizabeth Shove, a sociologist at the University of Lancaster. 'What is to stop social scientists and policy makers paying close attention to the making and the erosion of 'envirogenic' environments, these being ones that favour the reproduction of variously sustainable ways of life?' writes Shove in her seminal paper '[Beyond the ABC: Climate Change Policy and Theories of Social Change](#)'

Giving up is not an option, and every effort to reduce emissions urgently increases the likelihood of avoiding catastrophic climate change. But there is an optimism bias towards technological magic bullets, allowing current patterns of consumption, particularly by the highest earners, to remain unchallenged. Not only does this increase the risk of overshooting, but it also makes the task of achieving net zero more difficult and costly in the long run and fails to address long-standing structural inequalities.



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Felipe Ramirez
Ex CEO,
TRANSMILENIO S.A.

Mobility initiatives impacting positively on the environment

Climate change is a reality that is becoming increasingly important. Countries, companies and human beings must pay close attention as they are responsible for causing great damage to the environment. Becoming carbon-friendly must be a shared commitment to mitigate pollutants, improve people's quality of life, and have a better place to live.

Companies must prepare and implement strategies to reduce their emissions and for this we interviewed **Felipe Ramirez**, Ex CEO of TRANSMILENIO S.A., who shared with us the bus pool renewal projects initiated by the Public Transport System Managing Entity in recent years, and how Steer in temporary association with KPMG and Pose Herrera Ruiz supported them throughout the process and also the challenges he has faced.

Felipe worked for TRANSMILENIO S.A. since 2016, where he began his work as a Management Advisor, then became Deputy Technical Manager and ended his work as CEO. He recently took office as District Secretary for Mobility, where he will continue to implement public policies on public transport, as the transport authority of the Capital District.

In early 2016, TRANSMILENIO S.A. had the challenge of structuring the bus pool renewal of the Phase I and II trunk operating concessions of the system that

began operations between 1999 and 2000 and ended in 2018. The bus pool with about 18 years of operation generated great operational and environmental issues, due to the natural obsolescence of that vehicle technology, resulting in high levels of pollution for the city. One of the big challenges was implementing a clean bus pool without users noticing it. In order to achieve this, TRANSMILENIO S.A. with the support of FDN hired Steer, KPMG and Pose Herrera Ruiz with the aim of structuring the bus pool renewal, whose main recommendation was a change in the business model for service provision, and where a change of technology would become part of the bus pool to reduce gas emissions and reduce the environmental impact. The support provided by Steer, KPMG and PHR resulted in the award of the contract to make the change of technology for the trunk bus pool after helping to respond better to the observations during the tender and award stage, answering the doubts of the market and assuring that the structuring would come to a successful conclusion under the technical, economic and legal standards.

In the market, a very good response was obtained from the banks, investment banking and other external players because they understood that it was a new way of seeing the business model, and today this has become a model of success that other countries have adopted because it shares some risks that cannot be in a single contract, as it was handled before and additionally it has been an opportunity to find or approach new players (financial sector, investment banking, etc.).

According to Felipe, some determining factors that allowed technological advance are:

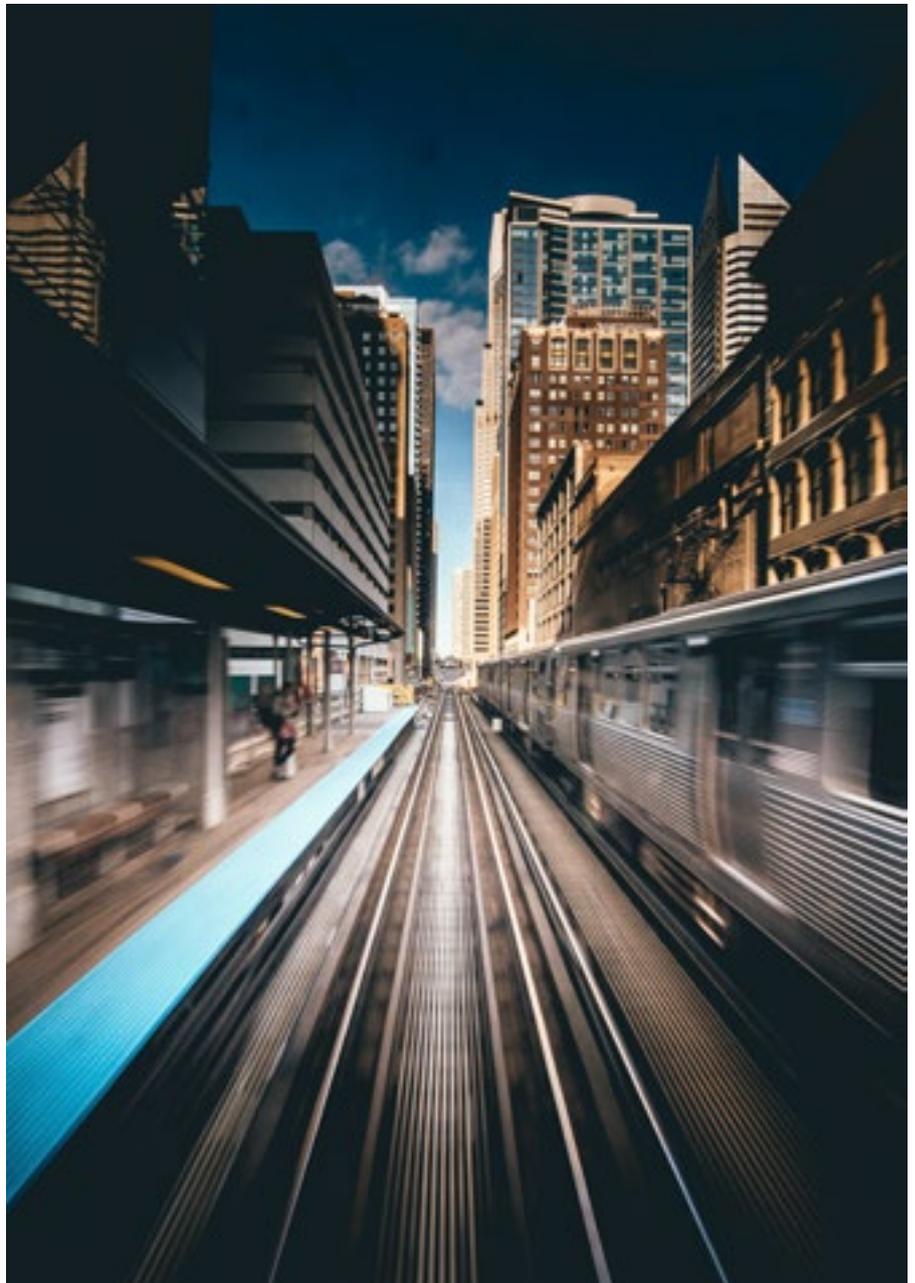
- Political will, meaning that the final objective of improvement for society translates into public policies to move all the players involved in the process.
- New technologies. Implementing them implies higher costs and cities must assume those costs as part of their financial costs, but they must be aware that this is reflected in improvements for citizenship and in the quality of service.

Thanks to the implementation of this technology change in the trunk bus pool, the benefits for citizens have been very positive. On the one hand, air quality was improved by reducing particulate matter by 80% and this was evidenced in a study made by Ecopetrol in conjunction with Universidad de Los Andes. On the other hand, reduction of the emissions of greenhouse gases, such as CO₂, are

very close to zero with electric buses, contributing to the reduction of the carbon footprint of mobile sources in climate change.

The model applied to the trunk system was replicated in the zonal component of the SITP, specifically in the Fontibon, Suba and Perdomo Zones, where the tenders for linking and operating the electric bus pool were structured, to complete the 100% implementation of the system and eliminate the Provisional SITP, which are mostly buses with a service life of more than 15 years. Although there is still a lot to work on and buses that need to be substituted, the impact that has been generated to date has been quite positive. The city currently has an awarded bus pool of 1,485 100% electric buses in the zonal component, making it the city with the greatest bus pool with this technology in Latin America.

Bogota has been a pioneer worldwide in implementing this type of initiative, this is something that should makes us pride, and the city will continue to progress towards it.





Carbon is not a local transportation problem

By Simon Statham

Carbon emissions and their influence on climate change are now one of the transportation planning community's most important issues. Simon Statham looks into what needs to be done in order to think differently about transportation carbon emissions and why they need to be understood in detail if we are to put forward successful strategies to reach net-zero.

Know your problem

I've always believed that to develop solutions to a problem, you need to know the detail of what the problem really is. Simon Statham - Voices of the industry

Today's big 'problem' for transportation planning to solve is carbon emissions and their impact on climate change. I started looking at this while working at Midlands Connect around 2018. Before that, Midlands Connect only had one core agenda – the economy.

It seems funny to look only about seven years back when we started work on our original 2017 strategy, but carbon emissions weren't a standalone issue then. If we solved all the other problems, carbon emissions would be dealt with naturally.

The feeling was that if you've got policies and programs that target modal shift, particularly in cities where there are lots of short-distance trips

to go after with active modes and public transport interventions, then reducing carbon emissions will be a nice by-product of that strategy, won't it?

How naïve we all were!

When Midlands Connect started to take on the issue, I wanted to properly understand the problem in the lead-up to a planned refresh of our strategy. I knew from national statistics that carbon from domestic transport was around 27% of all UK emissions, over 90% of that came from road-based vehicles, and almost 60% of that was from cars.

I wasn't satisfied with this; knowing that car journeys were the offender wasn't surprising or helpful. Instead, I wanted to know what types of trips or activities were the key drivers and what policy or interventions would have the most significant impact.

We embarked on a project to paint a detailed picture of where carbon emissions came from.

The outputs of this were stark and startling.

Local car journeys don't burn much fuel

The first and most crucial point is that we cannot assume that significant decarbonisation will be an add-on benefit to traditional local policymaking.



Traditionally Local Transport Plans (LTPs) rightly focus on improving the lives of residents by trying to provide a better environment for people to walk/cycle/e-scooter or catch public transport for their everyday trip making. Sometimes this might require a demand-side policy to give the last little nudge, but the theory is certainly sound. After all, we know from National Travel Survey statistics that almost 60% of all car journeys are less than 5 miles in length.

However, these short-distance trips don't burn much petrol or diesel, so they are only a small proportion of where carbon truly comes from. Our estimates showed that trips of less than 5 miles only contribute around 18% of all emissions from cars, which tallied nicely with the National Travel Survey showing that these trips only contribute 15% to all miles driven.

So, our estimates of carbon emissions were backed up by national statistics about how people use their cars.

We may make dozens of trips a week to the shops, school and work; but we also travel to see family and friends in the next town over; or up the motorway to the away match to follow our life-long team; go on a business trip to complete that big sale, or on holiday to the coast or uplands of Britain. Indeed, our research suggested that trips over 25 miles in length contribute 46% of car carbon emissions.

Added to this issue of the trip lengths of car journeys, there are other aspects that previously LTPs were only focused on activities that generated just a small proportion of emissions. For example, around 15% of emissions come from vans and around a fifth come from heavy goods vehicles (17% nationally but 21% in the Midlands).

So, if we remove emissions from longer-distance car trips [anything over 10 miles], vans and HGVs, then we found that, in the Midlands at least, the emissions' market' that a traditional LTP might have the most direct influence over, is only around 27%.

If the plans and policies of an LTP managed to reduce this by as much as, say, 10 to 20% over a 5-to-10-year period, then that would be considered a huge success. But that would mean that well over 90% of all transport carbon emissions would remain.

LTPs are indeed a force for good; they have a huge role to play in improving the lives of residents and enabling them to live more sustainably. LTPs can lead to healthier lifestyles, fantastic places to live, safer streets etc. However, the evidence tells us that even if they are hugely ambitious and ultimately highly successful in what they set out to do, it is still unfair to expect they will be the magic bullet to drop transportation carbon emissions dramatically.

So, that's the bad news.

But what can we do about it?

Try to widen the scope of emissions an LTP tries to influence

I've used the word 'traditional' a lot here to describe LTPs. If the primary objective is to decarbonise, perhaps they ought to be 'Local Transport Decarbonisation Plans', which would give them a much broader scope. For example, Oxfordshire CC and Cambridgeshire & Peterborough CA have been developing 'Local Transport & Connectivity Plans' - recognising the need to incorporate digital and energy/hydrogen networks into transport policy making.

Influence resident and business vehicle choice

It's perhaps obvious to say that we must decarbonise the fleet at an accelerated rate. Local authorities must ask themselves what they can do to influence the take up of zero or ultra-low emissions vehicles. For example, the difference in the pace of electric vehicle charging infrastructure rollout is massive. Some authorities are charging ahead (excuse the pun!) and have ambitious delivery plans. Still, there are many who are more passive and leave the private sector to deliver where the private sector wants to.

Towns and cities have significant proportions of housing stock with no off-street parking, so the availability of public charging will be vital to support the shift away from petrol and diesel. For example, Coventry now has around 400 publicly available charge points with ambitions for hundreds more, and per head of the population is one of the most densely covered places in the UK.

In another example, Nottingham City has a scheme running which purchases and leases out (at a reasonable rate!) electric vans to small businesses to help them understand how they can operate without petrol or diesel vehicle. It's an exciting approach, albeit still small at this stage, but it shows the influence councils can have in areas they've not traditionally been active in.

Target longer-distance journeys

Although there has always been a requirement to collaborate across borders, LTPs have tended (rightly) to focus on improving things for residents making relatively short trips.

From the Midlands Connect research, we found that around two-thirds of emissions come from trips which cross at least one boundary (either in/out or through). However, there was a difference between city and shire authorities, where the figure is 75% for more rural areas (influenced heavily by the presence of the strategic road network); but even for cities, around 50% of emissions come from trips which cross their

boundary.

This shows that there is an opportunity for LTPs to widen the scope of emissions they can influence by close working with their neighbours to collaborate on initiatives outside of their boundaries. This is where first and last mile initiatives play a part, particularly accessing and egressing the rail network. There is a decisive role for sub-national transport bodies to play here, but ultimately the initiatives will need to be driven by their inclusion in LTPs.

Behavior change is vital – on all scales.

Our research at Midlands Connect suggested that even using an assumption which accelerated the take up of ultra-low or zero-emission vehicles at a highly ambitious rate (perhaps even slightly on the implausible side!), the decarbonisation trajectory to 2050 was still both too slow and ultimately did not reach zero. Therefore, there is a gap to fill, either extensive (if alternative fuels are not taken up quickly enough) or, at best, one which still requires substantial changes in the way we move and how much we move.

Therefore, local authorities will require comprehensive policies and plans to influence travel behaviour and manage demand for short and, importantly, longer-distance journeys.

Nothing in the DfT's Transport Decarbonisation Plan suggests a national policy is on the horizon. So local authorities may need to fill this gap and consider making potentially tricky political decisions to use fiscal measures to reduce travel demand.

I am not trying to be evangelical here. We live in the countryside in a two-car household, neither of which is electric (I promise that our next car will be!) and although we work from home when we can, we still drive a lot. But, like a lot of households, we can do more.

With new thinking, LTPs can do more

Although the evidence tells us that carbon emissions are predominantly not a 'local' transport problem, there are ways that authorities can widen the scope of emissions that their LTPs are trying to influence.

The first thing to do is to understand the problem properly!



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