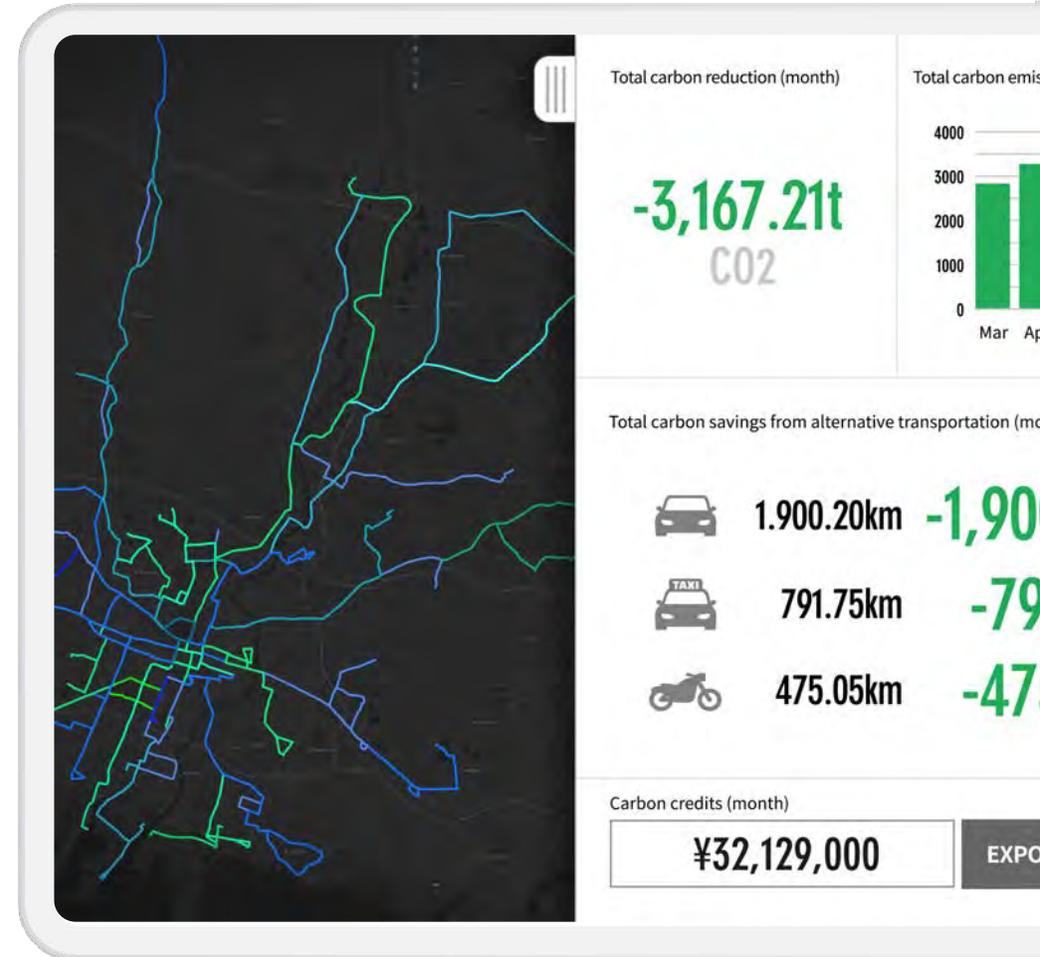


Data platform for **Decarbonizing** the transportation sector in City.

15 June 2023.

Proposal document for MRT Jakarta



Company Overview

Spatial Pleasure is a Tokyo-based start-up with investments from Digital Garage and DeepCore (AI division of Softbank investment). We are developing DMRV software for transportation sectors; measuring the environmental benefit of BRT, bus, or railways to certify carbon credit.

Company name	Spatial Pleasure Inc.
Date of establishment	24 May 2019
Location of the company	Orbit 302, 4-10-4 Daizawa, Setagaya-ku, Tokyo 155-0032, Japan
Representative	Soma Suzuki
Business activities	DMRV software for transportation sector
Law firm	Uchida & Samejima Law Firm
Number of employees	15

Investors



Spatial Pleasure is a group of professionals with backgrounds in urban planning, finance and mathematics.

CEO



Soma Suzuki

He graduated from Kyoto University with a bachelor's degree in physical engineering and a master's degree in urban spatial analysis from the Institute of Spatial Analysis, University of London, and is the author of the "Cultivating The CityOS" series for Wired Japan.

CTO



Kazuyuki Morishita

After graduating from the University of Melbourne with a degree in Mathematics, Kazuyuki worked in the business analysis department of a U.S. insurance company. He has expertise in MLOps and GIS analysis. Currently, Kazuyuki is responsible for research and development at Spatial Pleasure.

Business Development



Kotaro Takekata

He joined ITOCHU Corporation which is one of the biggest conglomerates in Japan. Engaged in business development and startup investment in IT and communication related fields. In 2023, joined Spatial Pleasure and lead Business Development and General Corporate Planning.

Data Scientist



Alex Van-brunt

Doctor in Mathematics from Oxford University passionate about sustainability. He is currently working on fuel cells in Silicon Valley. While studying abroad at Kyoto University, Suzuki and he shared a dorm room next to each other.

VP of Carbon Development



Santonu Kashyap

Santonu has worked as an external CDM registration and issuance expert for the UNFCCC (UN) and is currently a methodology expert for the UNFCCC Article 6.4 mechanism. He advised the Government of Maldives on the preparation of the INDC submitted to the Paris Agreement negotiations.

Advisory



Osamu Koyanagi

After joining Development Bank of Japan, he was involved in the management of Japan's first carbon credit investment fund, Japan Carbon Finance(JCF), as the main investor. And later became a board member of Development Bank of Japan.

Advisory



Takashi Oguchi

He is engaged as a professor at the University of Tokyo, where he is the Director of the Advanced Mobility Research Center. He has received Minister of Land, Infrastructure, Transport and Tourism Award of the Industry, Academia and Government Cooperation Contribution.

Sales



Kazuki Fukumoto

Specialized in new proposals, implementation support, operation, and maintenance of systems for local governments. Currently he engaged in the operation and planning of public transport services such as taxis, local buses, and demand limo taxis.

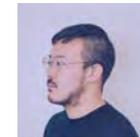
PR Manager



Ikumi Juliana Shiba

She worked as a public relations and cultural officer at the Embassy of Japan in Lithuania, head of PR, marketing and HR/CCO executive officer at Monster Labs Inc, and head of PR and organizational culture at IDOM Corporation's Overseas Corporate Strategy Office.

Writer



Shunta Ishigami

He worked at an advertising production company before joining the editorial department of the Japanese edition of WIRED. In 2017, he became independent and has been involved in editing various magazines and web media, as well as producing corporate content and research.

Social Problem

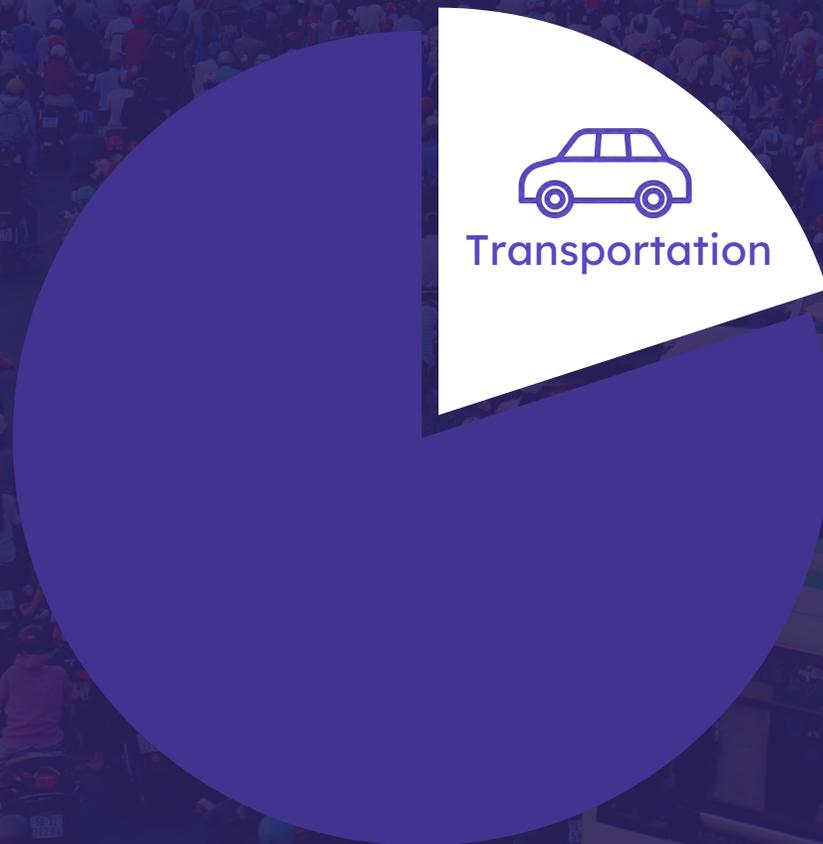
Spatial Pleasure operates mainly in South-East Asia, where transport challenges are severe.

Urban space should be used for humans and living organism, where currently 40% of the total space is being used as traffic infrastructure.



Carbon Emission and Transportation

Transportation accounts for 20% of the global carbon emissions, so optimizing this sector is a very very important step for decarbonizing the planet.



Global Carbon Emissions
Transportation Domain

20%

Two Types of Shift in Transportation Domain

To reduce carbon dioxide emissions in the transport domain, both Energy Shift and Modal Shift need to take place. Energy Shift has received a lot of attention recently, but there has not been much focus on Modal Shift. We focus on the latter.

Energy Shift



Tesla's Carbon Credit Sales

\$1.78 Billion

(year 2022)



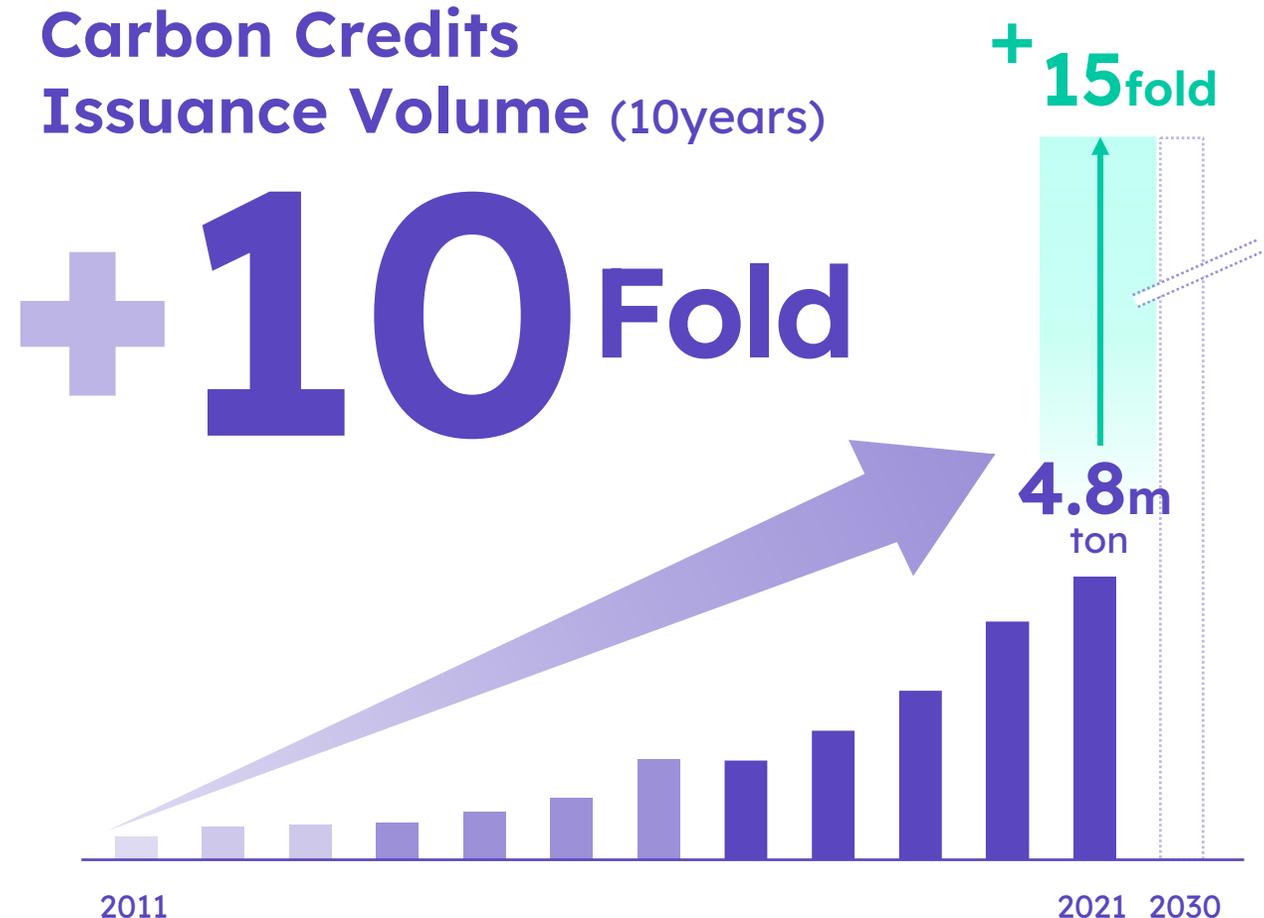
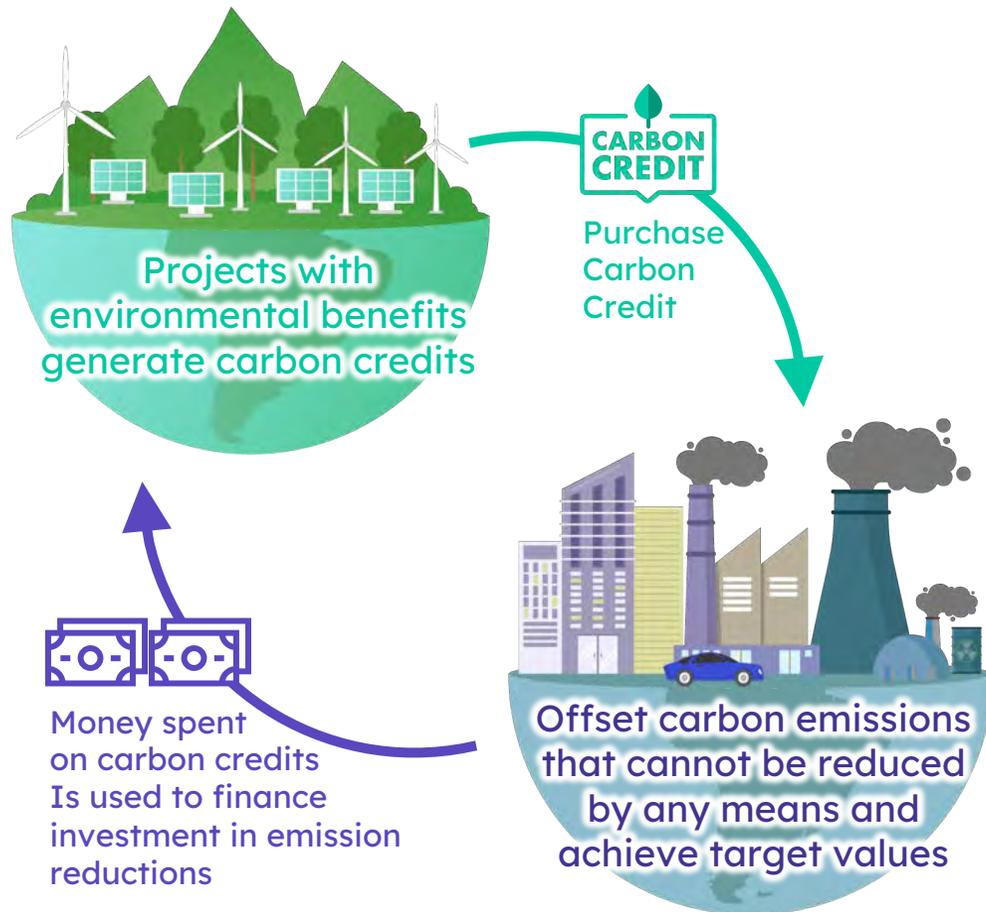
Modal Shift



World economic forums target 75% global reduction of cars by 2050 but not much effort has put in the area.

Overview of Carbon Credit

Carbon credits are measurable, verifiable emission reductions from certified climate action projects. These projects reduce, remove or avoid greenhouse gas (GHG) emissions. The volume has increased 10 times in the past decade, and it is expected to increase 15-times more by 2030.



Previous Carbon Credit Project in Transportation Domain.

Carbon credit generation in modal shift is not an idea we invented for the first time, there are already registered projects and large amounts of carbon credits have been issued.



375M USD Carbon Credit
Guatemala City
2012



143M USD Carbon Credit
Zhengzhou, China
2011



172M USD Carbon Credit
Bogota, Colombia
2008

Percentage of transport carbon credit projects

The overall number of transport carbon credit projects is currently only 0.2%.

The overall number of
transport carbon credit projects

0.2%

Problem

The small number of carbon credit projects is due to the difficulty of quantitatively proving modal shift effects and the huge survey costs.

Questionnaires alone also made it difficult to prove the transparency of the credits, and the operational costs of credit certification were also significant.



Overall carbon credit issuance process

After the huge traffic study costs, and in addition, there are lengthy negotiations with government agencies and third-party organisations before credits could be issued, which was difficult for transport operators to deal with.



To prove the modal shift effect,

We need to ask: "Without this mode of transport, what would you have taken?" is the most common method of surveying people.

This is because this methodology was certified in the Kyoto Protocol era, when GPS and IOT data were not available.

ANNEX
 Appendix 5. Default questionnaire for modal split survey

Interviewer: _____
 Date: _____
 Time: _____

Bus identification (Yes): _____

*Assuming that the bus system you are currently using would not exist: What mode of transport would you have used for this specific trip you are taking currently?

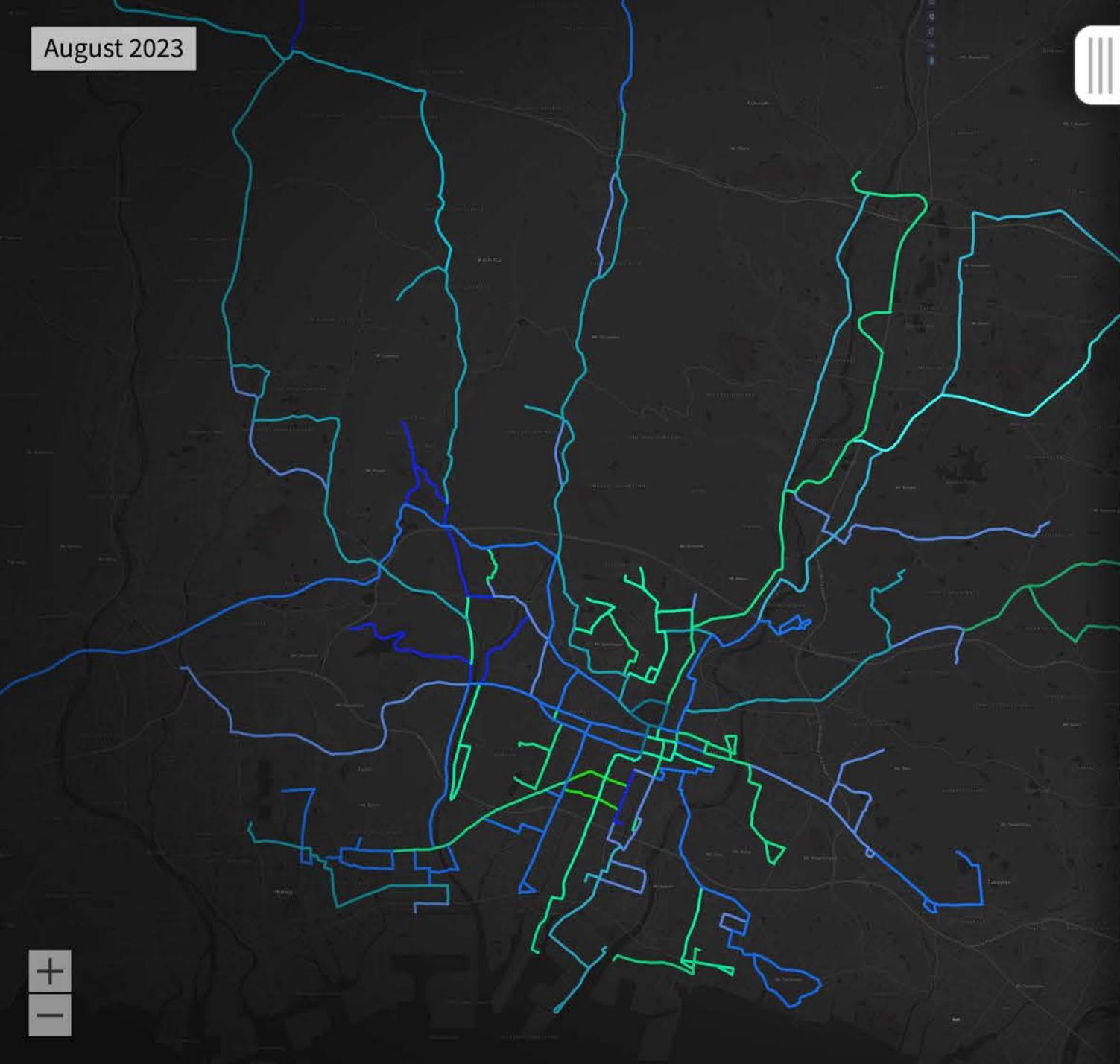
For the interviewer:
 The question is related to this specific trip and not to the trips realized by the person during the whole journey.
 To clarify mention that you are comparing the system he/she is using currently to the one which would have been requested (assuming no project) continues to exist in other parts of the city not served by the BRT system.
 Persons which report mode 4 in any mode of transport are better as indirect traffic (non-representative individual parameters).

Multiple choice answers
 (Only tick one, if the passenger would have used more than one transport mode for the trip he/she is making currently then tick the mode, which involves the longest distance)

- Conventional bus based public transport (this mode, normally still as BRT systems, are implemented gradually; otherwise a description can be given of the former existing system including priority of former buses)
- Passenger car → please go to 2A.
- Taxi if relevant in the project → please go to 2A.
- Motorcycle (if relevant in the project) → please go to 2A.
- Rail based urban transit.
- MET (on foot or bicycle).
- I would not have made the trip (included traffic).

If the passenger responds with the answer 2 then ask:
 2A. Do you or your family own a car or do you have access to a car (e.g. car sharing)?
 NO YES
 If the passenger responds with NO, this specific questionnaire is deemed as non-compliant and removed from the final counting.

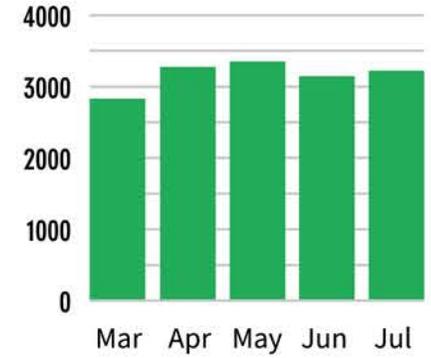
August 2023



Total carbon reduction (month)

-3,167.21t
CO₂

Total carbon emissions (month)



Total carbon savings from alternative transportation (month)



1.900.20km

-1,900.20t



791.75km

-791.75t



475.05km

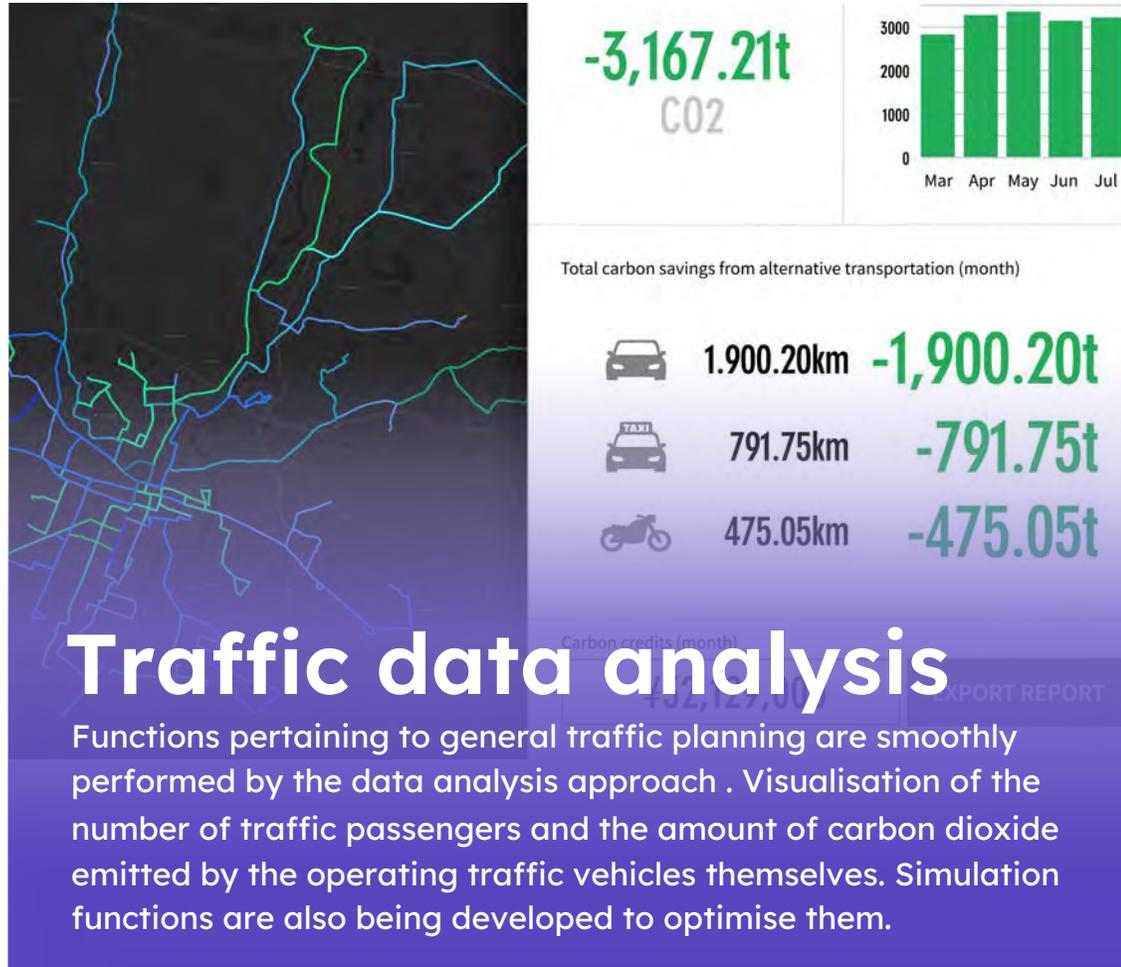
-475.05t

Carbon credits (month)

¥32,129,000

EXPORT REPORT

Our service (DMRV Software*) has two value propositions : traffic data analysis and carbon credit certification.



The dashboard features a map on the left showing traffic routes in green and blue. On the right, a large green number displays a total carbon saving of -3,167.21t CO2. Below this, a bar chart shows monthly savings from March to July, with values ranging from approximately 2,800 to 3,100 tons. A table lists savings for different vehicle types: cars (1,900.20km, -1,900.20t), taxis (791.75km, -791.75t), and motorcycles (475.05km, -475.05t). The text 'Carbon credits (month)' is visible above the table.

Traffic data analysis

Functions pertaining to general traffic planning are smoothly performed by the data analysis approach . Visualisation of the number of traffic passengers and the amount of carbon dioxide emitted by the operating traffic vehicles themselves. Simulation functions are also being developed to optimise them.



The graphic shows a hand holding a globe with a bar chart in the background. A cloud with 'CO2' and downward arrows is positioned above the hand. The text 'Carbon credit' is written in blue. Below the graphic, the text 'Carbon Credit Certification' is displayed in white, followed by a paragraph explaining the process. At the bottom, a white box contains the text 'DMRV software = Digital, Monitor, Report, Verify Software'.

Carbon Credit Certification

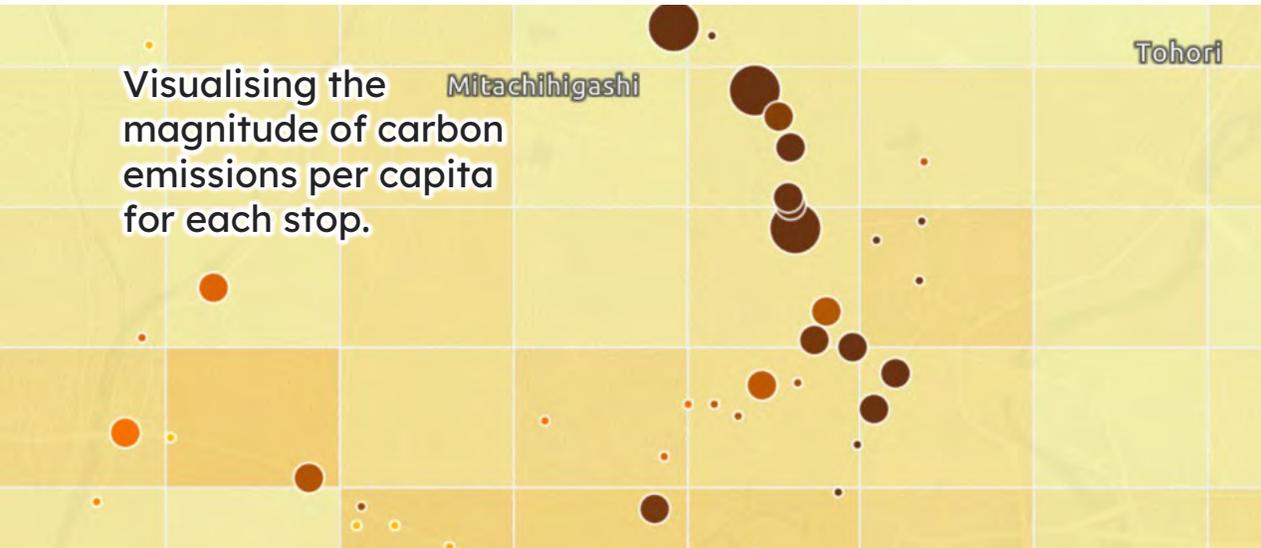
It quantifies the environmental value generated by the transport projects it operates and supports the carbon credit certification process. In addition to revenue from passenger numbers, new revenue streams can be generated based on environmental value.

DMRV software = Digital, Monitor, Report, Verify Software

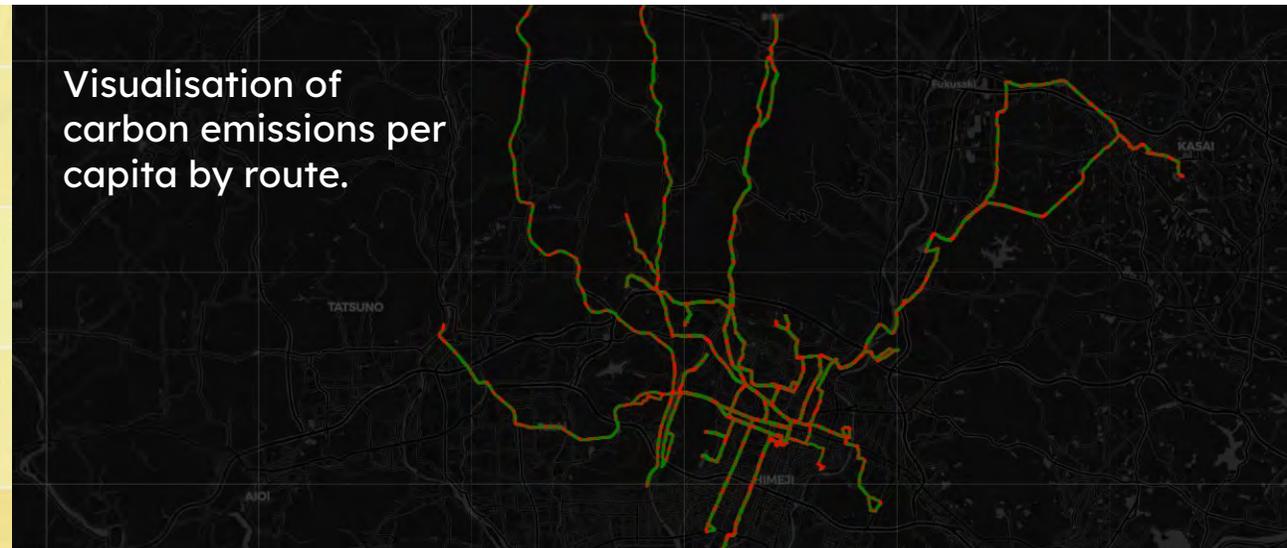
Analysis Module

In addition to earning carbon credits, it can provide visualisation of carbon dioxide emissions from vehicles and simulation of reduction measures.

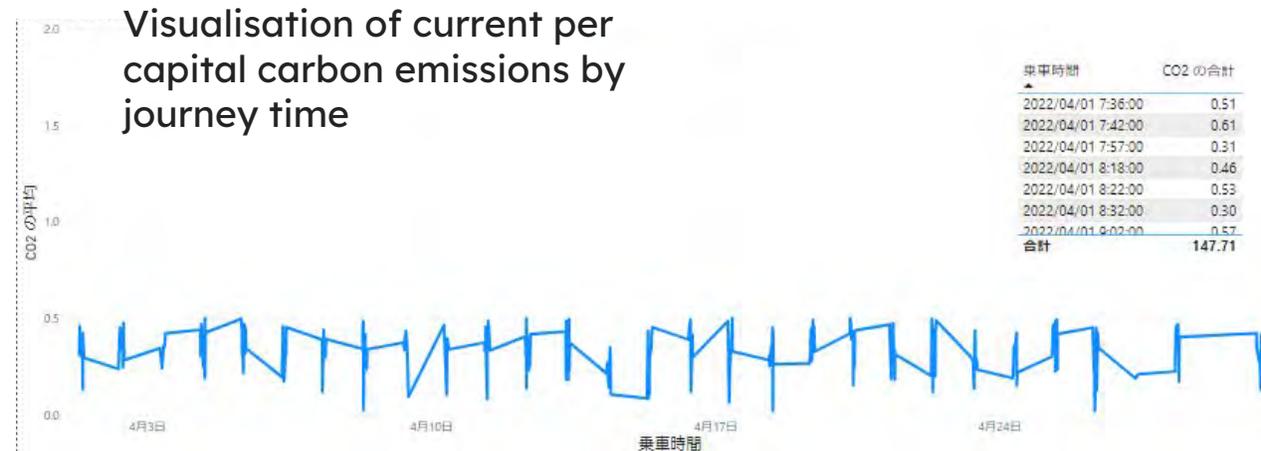
Visualising the magnitude of carbon emissions per capita for each stop.



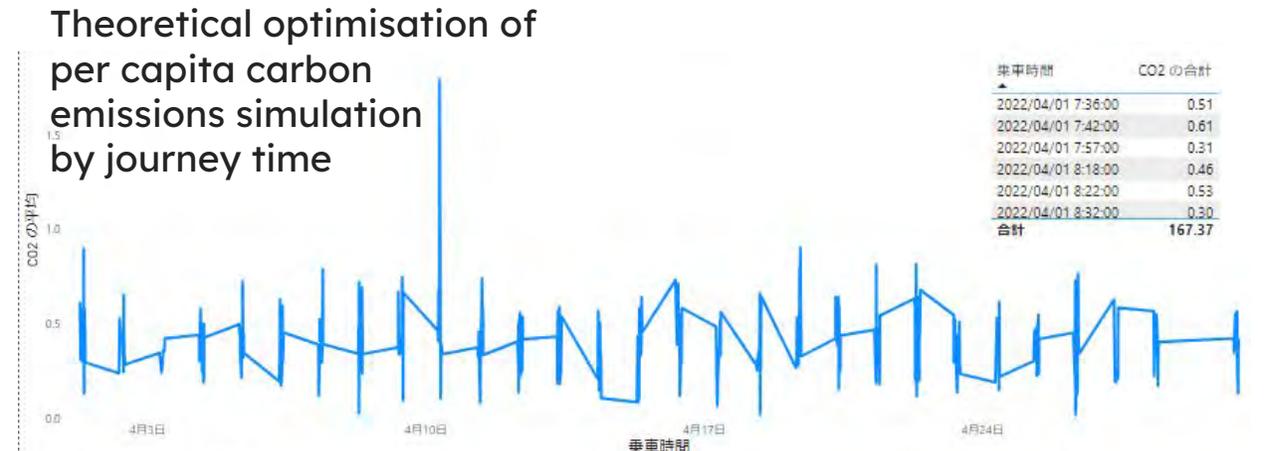
Visualisation of carbon emissions per capita by route.



Visualisation of current per capital carbon emissions by journey time



Theoretical optimisation of per capita carbon emissions simulation by journey time



Climate Targets & Transportation in Indonesia

Indonesia has also set targets for carbon reduction, and has made it clear that some of these will be implemented through support from outside the country.

01

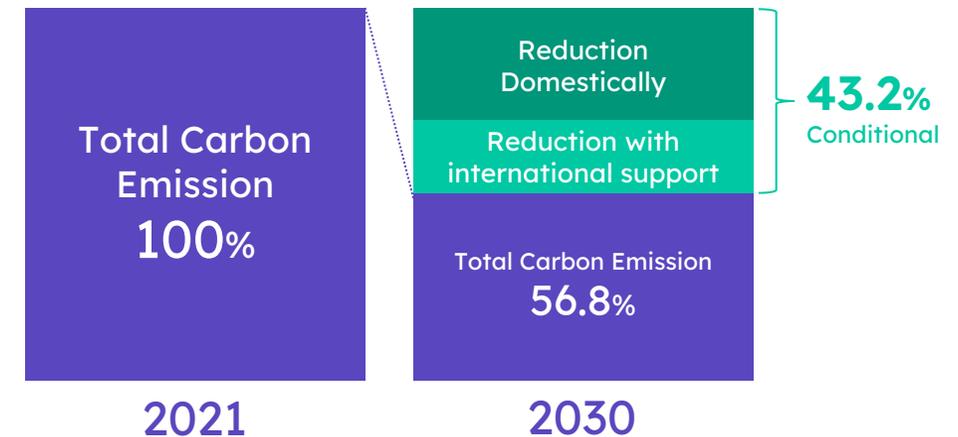
Indonesia has set a new and ambitious target to cut emission levels by **31.89%** (unconditional) or **43.2%** (conditional) by 2030.

02

Further, the conditional reduction is subject to availability of international support for finance, technology transfer, development and capacity building.

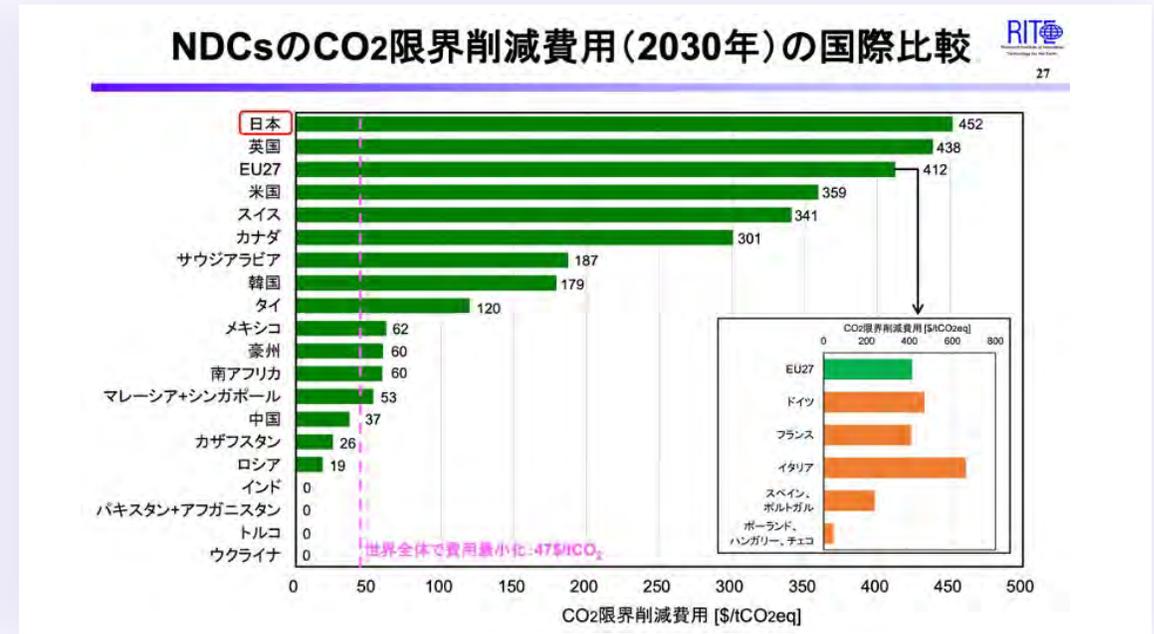
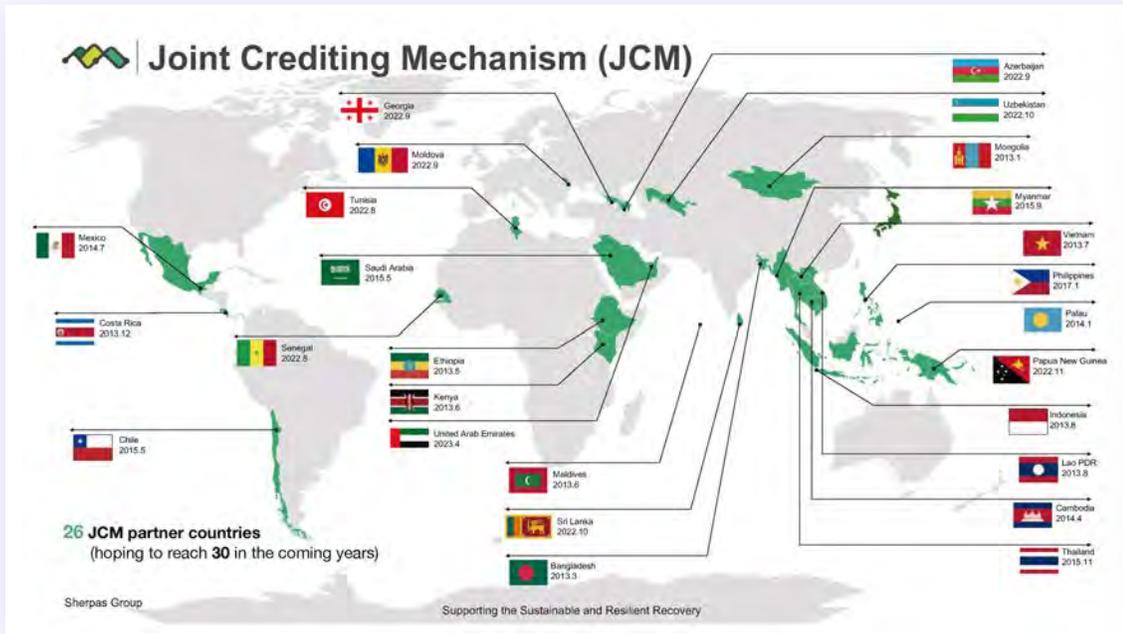
03

Effective land use and spatial planning have been specifically outlined as some of the key measures to achieve the NDC.



Japanese JCM Scheme (Joint Crediting Mechanism)

It is national policy for Japan, which has the highest marginal abatement costs and is the most difficult country in the world to reduce carbon dioxide emissions, to export technology outside the country and to conduct carbon reduction projects outside the country to obtain credits.



Japan has been in consultations on JCM since 2011, and has so far signed agreements with 26 countries - Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Vietnam, Laos, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand, the Philippines. The JCM has been established with Senegal, Tunisia, Azerbaijan, Moldova, Georgia, Sri Lanka, Uzbekistan, Papua New Guinea and the United Arab Emirates (UAE)

The advantage of issuing carbon credits under the JCM is that carbon credits can be sold under the Japanese GX-ETS, where carbon credit prices are expected to rise. With Japan's very strict target of 46% reduction by 2030, with **large marginal abatement costs and the high cost of domestic carbon reduction**, the unit price of carbon credits is expected to soar.

Merit for conducting the project

Structuring a carbon credit project has multiple benefits in addition to the profit from the sale of credits.



01 Carbon finance

Revenue from carbon will help in making the project more viable/attractive. In addition compliance markets, like the JCM, are expected to value carbon at higher levels.



02 Technology/Finance: dMRV

Services in the transport sector for carbon markets have limited credible players. Spatial Pleasure is able to provide the know-how in combination with the JCM services to this project.



03 Government relations

This could be an opportunity to engage in the compliance markets and with a JCM enhance stronger collaboration between Japan and Indonesia



04 Green Branding

A carbon credit project increases the brand value by the way of enhanced contribution to the environment

Collaboration with Jakarta Smart City

A memorandum of understanding has been signed with Jakarta Smart City, Jakarta Provincial Government, on joint analysis for solving traffic congestion.



On 24 May 2023, Spatial Pleasure Corporation signed MOU with Jakarta Smart City for a joint analysis of traffic congestion. The MOU was signed in the presence of Mr. Yudhistira Nugraha, Head, of Jakarta Smart City, Jakarta Smart City is a government-led organization set up in 2015 under the Jakarta Provincial Government's Communication, Information, and Statistics Department with the aim of solving urban problems by overseeing data across multiple administrative departments. It is a government-led organization launched in 2015 with the aim of

In order to solve traffic congestion, Jakarta has recently been working intensively on TOD (Transit Oriented Development), mainly through the development of BRTs and LRTs, etc. Spatial Pleasure assesses the environmental benefits of transport modes, such as buses and shared cycles, and issues carbon credits. Spatial Pleasure is developing DMRV software to issue carbon credits by assessing the environmental benefits of transport modes such as buses and shared cycles. Through this collaboration with Jakarta Smart City, Spatial Pleasure will enter the simulation and environmental benefit assessment of large urban developments in the context of TOD.