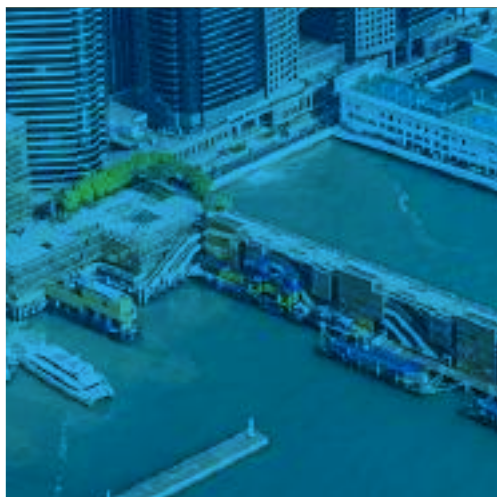




# CAN July 2020 - June 2021 Annual Report

Powering up Momentum from  
2020 and Beyond





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# Our Vision

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***“Our Air, Our Health!”***

Our vision is to preserve clean air in Hong Kong.

To achieve this vision, CAN is dedicated to driving policy and behavioral change to improve Hong Kong's air quality. Without losing sight of the long-term air pollution impact from regional activities, marine vessels and power plants, and our current immediate primary focus on roadside pollution and indoor air impact.

Our long-term goal is for Hong Kong to meet WHO standards for air quality and be ranked among the top Asian metropolises and global financial centers by 2030.

To accomplish this, we will educate and engage children, parents, and the larger community, as well as provide them with data and insights into the impact of air quality on human health and wellbeing, resulting in changes in decision-making, behavior change, and policy standards.

# Our Story

As a non-profit organisation with charitable status, Clean Air Network (CAN) has been dedicating our efforts relentlessly to improving Hong Kong's air quality since 2009.

Over the years, we knitted the fabric that connected the professionals with the community and worked hard to build a cross-disciplinary and intergenerational network that concerns clean air.

In the recent past, CAN has made some great achievements. Since 2014, in collaboration with relevant groups, we have contributed to landmark policy changes that reduced the concentration of the major air pollutants at ambient and roadside levels. Since 2016, we've campaigned for better transport demand management and successfully pushed for the first Government-led walkability study in Hong Kong in 2017. In 2017-18, we dived deep into a campaign to demand a review of Hong Kong's principal air pollution control ordinance and a tightening of the Air Quality Objectives.

At Clean Air Network, we are committed to the mindset that air pollution is a problem we can tackle together.

# Message from CEO



“ For Hong Kong people and global citizens, 2020 was a year filled with anxiety and unparalleled challenges. As of mid-2021, the Covid 19 pandemic has cost some four million lives around the globe. Many cities in the world were in lockdown and social distancing forced families and people to practice isolation to curb the spreading of the virus.

Faced with the obstacle of being unable to be in personal contact with the community due to the pandemic restrictions, CAN persisted in discovering new solutions to engage with our community. CAN is delighted to share with you the achievements that we've made during 2020-2021. We are particularly proud to see that the government acknowledged a range of our long-term policy advocacies and turned them into positive initiatives, for example, the government set up two new general air pollution monitoring stations in the North and Southern Districts in July 2020 which CAN have been actively lobbying for years. The launch of CAN's Citizen Clean Air Plan is one of our significant projects this year in which we presented a more complete roadmap to the government of what the public need to clean up Hong Kong air in the future.

A series of public engagement and empowerment online campaigns were launched to further our momentum, such as revamping our "Getting Ahead" website to share the latest development of electric vehicles with the public. Meanwhile, we actively engaged with our partner schools to consolidate students' air pollution knowledge further by demonstrating to them how to conduct air quality monitoring at their schools. We allocated particular resources and effort to organize a series of online panels and discussions with academics, chambers of commerce as well as advocates from local and abroad to study, research and exchange insights on the bigger picture of how to mitigate air pollution.

I would like to take this opportunity to thank you for all the support and advice from our community partners, collaborators from academics and professional sectors, the business community, and the funders, and the CAN team and board who have worked relentlessly to create, build and maintain a better city to live in for everyone.”

Patrick Fung,  
Chief Executive Officer

# CAN Board Members

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Throughout the past decade, CAN has developed into one of the most influential NGOs in Hong Kong advocating air quality improvement measures to the government. Our strong network reaching across multilevel sectors in society is the paramount factor contributing to our success. The Board of CAN, including the directors and advisors, is one of the significant contributors to helping the organization build up this strong network and capacity.

## Board Chair

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**Ms. Tong Zhao**

## Board Director

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**Ms. Chun May**  
**Mr. Williamson, Richard**  
**Ms. Yip, Yan Yan**

## Board Advisor

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**Ms. Chang, Feng**  
**Dr. Hung, Wing Tat**  
**Dr. Ng, Daniel**  
**Dr. Ng, Anthony**  
**Mr. Poon, Joseph**  
**Mr. Tang, Po**  
**Ms. Wright, Sally**

# Significant accomplishments of the year

We understand changes can't be made in one stroke, hence, CAN has devoted itself to long-term policy lobbying ever since. We've continuously submitted our positive and sustainable solutions to the government on air pollution issues. This year, we are pleased to see that the HKSAR government has taken up some of our major advocacies and made them possible for us to have better air quality in Hong Kong.

## On long-term policy measures

In 2013, the HKSAR government published its Clean Air Plan, which laid out the roadmap to clean up Hong Kong Air. CAN has been closely following the development of the plan and suggested a range of possible actions to the government during the past years.

- In April 2021, CAN issued our Citizen Clean Air Plan with clear identification of issues that the government and stakeholders should pay more attention to as well as be actionable.
- Meanwhile, ENB set up two new general air pollution monitoring stations in the North and Southern Districts in July 2020. CAN welcomes that the government responded to our recommendations regarding the air quality monitoring mechanisms

## On electric Vehicles

In order to significantly reduce roadside pollution in Hong Kong, phasing out diesel vehicles and moving to zero-emission or electric vehicles is a technologically sound way forward, CAN has been advocating for the government and the franchised bus fleets companies for a notable number of years to speed up their trials and deploy EV buses on the road as soon as possible. A series of measures on promoting electric vehicles (EV) have taken shape during 2020-2021. Last year (April 2020), **CAN launched a campaign called "Getting Ahead"** to promote public knowledge on EV including the world trend of EV development, and challenges that Hong Kong is facing such as infrastructure and possible solutions.

- We are delighted to see the first hybrid (diesel-electric) local ferry was launched in July 2020.
- In the fourth quarter of 2020, the government reviewed the Pilot Green Transport Fund and expanded the scope to cover Non-road mobile machinery or NRMMs and working vehicles used in specified activities and locations including construction sites, container terminals, the airport, designated waste disposal facilities, and specified processes.
- In March 2021, the Financial Secretary and Environmental Protection Department, or EPD announced the Hong Kong Roadmap on Popularization of Electric Vehicles and set out the long-term policy objectives and plans to promote the adoption of EVs in the city.

## On regional collaborations

The EPD commenced a three-year study project to study ozone formation and PM2.5 pollution in the Greater Bay Area in the second quarter of 2020.

- **Throughout the years, CAN has advocated for collaboration and synergy as part of our core strategy**, and we believe regional air pollution issues can be better addressed with comprehensive measures by authorities in both Hong Kong and Mainland.

# Our Focus Areas



Citizen Clean Air Plan for Hong Kong



Transform Franchised Bus Fleet to Zero-Emission



Strengthen Exposure Control to Mitigate Health Risk

# Citizen Clean Air Plan for Hong Kong

“ All big changes begin with small steps. Be part of the Clean Air Movement. ”

“Our Air, Our Health” is not only the mission of CAN, but it also serves as a constant beacon for the government and the public that by having better air quality in this city, we can also increase our resilience toward Covid 19 as well as facilitate the prevention of premature deaths and economic loss. **In April 2021, CAN published a Citizen Clean Air Plan**, containing a series of recommendations for the government to formulate a comprehensive plan spanning across different areas to tackle air pollution and achieve carbon neutrality by 2050.

The Citizen Clean Air Plan is supported by the CHEST delegation of Hong Kong and Macau Limited, Hong Kong Lung Foundation, Hong Kong Society Pediatric Respiriology, and Allergy, Hong Kong Thoracic Society and the Hong Kong Medical Association.

## We advocate to

- make Hong Kong become the best air quality city among first-tier global cities by 2030 and achieve the World Health Organization Air Quality Guideline by 2035.
- ensure Hong Kong is a place with a better knowledge of exposure management.
- shape Hong Kong and the Greater Bay Area into a livable region with clean air and low carbon.
- foster an informed and mobilized citizenry on air pollution issues.



In March 2013, the Environment Bureau, or ENB published a Clean Air Plan for Hong Kong. The bureau hopes by setting out clear targets to clean up Hong Kong air so that public health can be improved subsequently.

Five focus areas have been laid down in the plan: Air quality management system, roadside air quality, marine emissions, power generation, and non-road mobile machinery.

The bureau delivered a progress report in 2017 as a review of the air quality improvements in the city and proposed some actions to be taken moving forward.

In June 2021, the bureau published an updated Clean Air Plan with six major areas of action.

## Our Analysis

Given our analysis, we observed some shortfalls in the government's Clean Air Plan as listed below:

- Based on our observations, roadside pollution particularly in areas near kindergartens, primary, and secondary schools haven't been addressed properly in the plan.
- The Air Pollution Control Ordinance was updated in 2014 which mandated the government to conduct one review every five years. However, public engagement throughout the review is inadequate.
- The air-pollution monitoring at the street level is inadequate in the city as currently, there are only three monitoring stations installed at the street level in Causeway Bay, Mong Kok and Central.

## CAN Recommendations



Identify pollution and exposure hotspots in our society, especially areas near kindergartens, primary, and secondary schools to protect children's health.



Urge the government to create an open, transparent, and independent AQOs review mechanism for Hong Kong.



Facilitate departmental collaboration to speed up the pace of installing street-level air pollution monitoring stations.

## Actions



### Citizen Clean Air Pledge

To make a change in our city's air quality, involving our citizens during the process is one of the keys to achieving the goal.

**CAN has invited the public to participate in the Citizen Clean Air Pledge**, to promote public knowledge on air pollution issues by listing out possible options that people can do to contribute to cleaner air on a daily basis, including taking the public transport instead of driving for long journeys; switching to EVs; planting trees; and buying local food instead of imported goods.

# Transform Franchised Bus Fleet to Zero-Emission

“ We will work together to persuade the government and key stakeholders to take on the responsibility of cleaning up Hong Kong's bus fleet. ”

For several years, electric bus trials have been conducted in Hong Kong. The progress is unsatisfactory. There are only less than 1% of total franchised buses powered by electricity (36 buses among the total 6,000). Latest HKSAR government data reveal that franchised buses account for nearly one-fifth of key pollutants emissions in Hong Kong including Respirable Suspended Particulates (19%), Fine Suspended Particulates (19%), and Nitrogen Oxides (18%). The general public is exposed to the pollution emitted by buses at bus stops, public transport interchanges, roadsides, and in-bus compartments.

## We advocate to

- Establish a time-bound Target.
- Strengthen leadership and engagement with stakeholders.
- Formulate an EV action plan.
- Establish short/medium & long-term objectives.

In March 2021, the government announced its Hong Kong Roadmap on the Popularization of Electric Vehicles (“The Roadmap”), setting out policy objectives to promote the adoption of EVs and their associated supporting facilities. The roadmap laid out six key areas to phase out diesel vehicles to achieve zero carbon emissions before 2050.

## Our Analysis

The roadmap ignored and omitted to address several long-standing issues:

- Lacking innovative thinking to address the existing challenges.
- Lacking a holistic plan of how to prioritize the adoption of e-buses on the road.
- Having lost sight of how to improve existing E-commercial vehicle trail design and a time-bound target for phasing out fossil fuel commercial and private vehicles.

## Actions

### Getting Ahead Website Revamp

CAN launched a campaign "Getting Ahead" in April 2020 to promote the benefits of replacing diesel buses with electric buses (e-bus). **This year, we updated the global showcases on the Getting Ahead website.**



### Global Progress

According to the International Energy Agency or IEA's report on Global EV Outlook 2021, there were 10 million electric cars on the world's roads at the end of 2020, following a decade of rapid growth. Electric bus and truck registrations also expanded in major markets, reaching global stocks of 600 000 and 31 000 resp



In our website **Getting Ahead**, we introduce some successful examples of adopting EVs on the road.



### Singapore

Singapore launched its Master Plan 2040 to envision how a transport system should be designed to support a healthier and cleaner country.



### Shenzhen- A pioneer on e-bus.

The city operates the largest electric bus fleet in the world with more than 16,000 buses.



### Japan

Japan set out a hydrogen dream to respond to the emerging threats to energy security and carbon emission restriction.



### London

London is the city with the largest e-bus fleet operating in Europe.

### Launch of video "Electric Buddies"

CAN launched the **Electric Buddies video in October 2020** to raise public awareness of e-buses. We've invited former Financial Secretary, John Tsang, and media veteran Luke Tsang to a discussion about the benefits of converting franchised bus fleets to zero-emission fleets. According to Tsang, to make this happen, the government must take the lead and collaborate with relevant departments as well as stakeholders to develop a visionary plan. After all, EVs will become mainstream vehicles in the twenty-first century, and Hong Kong must maintain the pace and momentum with policy incentives and related measures.



# Strengthen Exposure Control to Mitigate Health Risks

“ Environmental problems can make us vulnerable to diseases and disasters if we don't make a change to manage pollution. ”

Human exposure to air pollution has been associated with a variety of adverse health effects such as respiratory and cardiovascular effects attributed to short- and long-term impacts. From academic research and Environmental Protection Department figures, districts such as Shum Shui Po, Kwai Chung, and Tuen Mun are generally associated with a higher number of socially deprived groups exposed to a higher level of air pollutants such as Nitrogen Dioxide (NO<sub>2</sub>) and Fine Suspended Particulates (PM<sub>2.5</sub>).

# Reality Check

No. of Clear Days in Hong Kong						
Year	2016	2017	2018	2019	2020	2021
No. of Clear Days	109	150	153	169	241	205

As we can see Hong Kong enjoyed more clean air days in 2020 than in 2019, partly due to the Covid-19 pandemic spin-off effect, where a series of social distancing restrictions have been implemented to curb the spreading of the virus, such as work from home policy for civil servants as well as some private companies' staff, as a result, a lot of human activities and traf-fics both on the road, in the sea and up in the air were significantly reduced. Following that, the quality of the surrounding air was improved. **However, we anticipated a downturn in 2021 and beyond, when human activity and traffic return to a more normal state and level.**

### What is a Clear Day?

A clear day is a day in which all **five** criteria pollutants at all 13 urban rooftop stations complied with the short-term World Health Organization (WHO) Air Quality Guidelines. The five criteria pollutants are: PM2.5, PM10, SO2, NO2 and O3.

## We advocate to

- Define exposure hotspots including top exposure hotspots in districts officially.
- Establish territory-wide exposure-based targets as the success indicator of policy measures.
- Implement district-specific policy measures, including extending the Low Emission Zones to cover highly affected districts.
- Tighten the emission standards of Low Emission Zones to allow only Euro VI, hybrid or electric buses to operate.

**CAN conducted a study for 2 weeks in October 2020**, with the purpose to identify the levels of air pollution concentration (Nitrogen Dioxide, NO2) at nine bus stops located in Kowloon West District.

## We need to know

- Air pollution (NO2) level recorded at nine bus stops exceeded the annual safe level recommended by the World Health Organization.
- The average air pollution (NO2) concentration for eight bus stops is 84.33 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), two times higher than the recommended annual safe level.

## What we've discovered

Even though the government painted a picture for the public in which concentrations at the roadside were reduced by 43 percent to 82 percent from their peak levels between 1999 and 2020. The figures only represent a portion of the reality, as the EPD's air monitor stations in each district are above the ground level ranging from 14.7 meters to 27.5 meters. In other words, the air quality samples collected by the government differ greatly from what the general public actually inhale on the roadside.

## Actions

### Air quality monitoring program with schools in Tuen Mun 2021

**In February 2021, CAN conducted a comparative study with four schools in Tuen Mun** to determine whether the air quality at the two schools closest to busy traffic is less than satisfactory compared to the other two schools further away from busy roads. The 13 sensors were installed to monitor the levels of PM2.5, NO2, and PM10

The findings tell us:

- 10.67% of students who are studying at schools located in high-traffic areas suffer from shortness of breath during poor air quality days.
- 22% of the students would show symptoms like having a headache and dizziness when the air quality is poor.

We'd like to acknowledge our appreciation for the great support from the Tuen Mun District Council which funded this project as well as offered us a lot of support during the process. We are also very pleased to see the students who participated in this program have gained a lot of knowledge and awareness about air pollution and the damage that it might bring to our health.



## Air Quality Review 2020

As Hong Kong's air pollution watchdog, CAN is responsible for informing the public about whether the situation has improved and whether there are any unresolved issues that need to be addressed by the government and stakeholders. Most importantly, we must make candid recommendations to the government in order to clean up Hong Kong's air. **CAN compiled the 2020 Air Quality Review in February 2021** and discovered that NO<sub>2</sub> and Ozone levels remained high despite the city's improved air quality. CAN requests that the government:

- **Expand and improve the low emission zone:** the minimum emission requirement of the low emission zone should be tightened to Euro VI or above emission standard.
- **Convert franchised buses fleet to zero-emission**
- **Set up more roadside air quality monitoring stations.**

# Staying in touch with our Community

“ To defeat this pandemic, we must strengthen our citizens' resilience by improving air quality and increasing public awareness of air pollution. ”

Due to the Covid 19 pandemic, Hong Kong and the rest of the world faced unprecedented social and economic challenges in 2020 and onwards. Social isolation has become the new normal in our city, as well as in other global cities. Though we couldn't interact with people as much as we used to, we can never stop looking for new ways to continue our community work and projects to raise public awareness of air pollution issues.



## Furry Friends Air Researcher (Oct-Dec 2020)

The first Pet Air Investigator was conducted by CAN and Paws Hero, a non-profit organization dedicated to bettering the lives of animals. 10 selected animal air investigators measured and collected air quality data with volunteers from Paws Hero on different walking paths. We are glad that Kelena Poon Kit Ning, the famous Hong Kong TV Host, and Pippi, Kelena's Golden Retriever were part of the group with us, and shared their point of view by comparing air quality between Hong Kong and London.



## Let Our Children Breathe

**Funding supported by Tuen Mun District Council Climate Change and Sustainable Development Committee for two of the air monitoring initiatives to raise the concern of children's health by air pollution.**

### 1.1 Air Monitoring for four schools -

Installed air monitoring devices for four identified schools (two primary and two secondary schools) in the Tuen Mun District and monitored air quality surrounding these schools for one month. Three major roadside air pollutants PM2.5, PM10, and NO2 were recorded during Feb - Mar 2021 and lasted for one month's monitoring. Constructive dialogue with these school principals to exchange thoughts in the debriefing session and to deliver the program message on mitigating the health risk for the students' health.



### 1.2 NO2 Data Collection for Tuen Mun District -

Collected and analyzed roadside air data at locations frequently visited by school children in Tuen Mun district, to understand the actual situation of roadside air quality. To strengthen communication between the society, all the NO2 Data collection tubes were installed and removed by teams of secondary school students and the elderly.



## 2. Educating the General Public

Invented an AirSpot air monitoring device with an app, supported by a few enthusiastic volunteers and CAN. Invited Polly (RedisPolly) as an angel user to Tuen Mun collecting air data and sharing the air quality result to her channel.



## Clear Air Neighborhood Nov 2020

CAN launched the Clean Air Neighborhood program in November 2020 with a deep dive model in Tuen Mun. With the support of our collaborators, the Institute for the Environment of the Hong Kong University of Science and Technology (HKUST-IENV) and The Robert H.N.Ho Family Foundation. This year-round program has successfully recruited neighbours in Tuen Mun District and a group of secondary school students from CCC Tam Lee Lai Fun Memorial Secondary School to identify the reasons of poor air quality on street and find out solutions in district level. A town hall meeting and data visualization presentation were held to showcase individual efforts that could be crucial to clean air.



### Impact

- Help our youngsters to build air quality literacy and issue-solving capabilities.
- Nurture youngsters' personal growth.
- Enrich public awareness regarding the relationship between air pollution and their community.
- Empower the community to advocate social initiatives, especially on air pollution issues.
- Promote a healthier and more sustainable lifestyle.

## Young voices on Clean Air

“The pandemic showed us that there are more environmentally friendly ways of going about our daily lifestyles to improve the environment and the air around us.”

“Some people might think that individual action is not enough, but I think it’s more about the attitude of the person. Through individual action, however small or big it could ignite bigger change and ignite the bigger movement that can make a more widespread impact.”

— Jaime

### Appreciation

We appreciate the generous support from Mira and Zada. They are grade 8 and grade 7 students from the Canadian International School of Hong Kong and members of Scouts. They started a fundraising project by selling succulents to their peers.

Mira and Zada said, “We hope we can spread (air pollution) awareness to others and help create a bigger impact in cleaning the air we breathe in. Changes start small.”

Putting succulents at home is an excellent way to bring greenery and help clean the air in the indoor environment. More than 50 succulents were sold and donated to CAN.

We are happy to see two young changemakers taking part in fighting the dirty air. Their actions encourage more people to enjoy green living and tackle air pollution.



## Earth Day 2021 Air Monitoring Campaign April 2021

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The Earth Day 2021 (22 April) air monitoring campaign is a citizen science project organized by CAN in collaboration with the Clean Air Students' Council, a student group focusing on educating the message of air pollution to different schools and peer groups in Hong Kong. The campaign was to assess traffic-related air pollution at different locations around the city, where students would spend their time the most like schools, residences, parks, and different routes that they walk every day. The participants measured nitrogen dioxide gas in the air, a principal pollutant associated with vehicle emissions by using a tool called a NO<sub>2</sub> diffusion tube.



### Impact

- Promote public awareness of air pollution issues.
- Collect accurate data that can be used in students' study projects.
- Share knowledge with school communities.

### Established Clean Air Committee

The first "Clean Air Committee" was conducted by a group of enthusiastic students of ESP Island School to voice their opinions on the air quality of Hong Kong around their school and community.

## Toward a systemic and coordinated change in climate and clean air action in June 2021

Echoing the launch of CAN's Citizen Clean Air Plan in April 2021, we've arranged a joint chamber event that connects interested parties from the business community in an effort to further our climate actions for cleaner air and a healthier environment. This event showcased the positive energy from the business community of tackling climate change where six-chambers of commerce participated and support this online seminar including:

The American Chamber of Commerce in Hong Kong; The Hong Kong General Chamber of Commerce;  
 The British Chamber of Commerce in Hong Kong; The Italian Chamber of Commerce in HK & Macau; &  
 The European Chamber in Hong Kong; The Swedish Chamber of Commerce in Hong Kong.



### Impact

- Engage business decision-makers to better understand their commitments to environmental governance.
- Share perspective of system-thinking on data sharing, individual experience of walking across-sectoral decision-making process.
- Exchange local and international experiences.

## Connecting knowledge and action in June 2021

CAN, in collaboration with the Jockey Club School of Public Health and Primary Care at the Chinese University and the School of Nursing and Health Studies at the Open University of Hong Kong, hosted an online panel to discuss what the university community can do to promote cleaner air. CAN and the speakers at the event shared their perspectives on the elements needed to achieve breakthroughs in two critical areas: research and people.



### Impact

- Engage the university community.
- Increase awareness of air pollution issues of future medical practitioners.
- Share perspectives on how to transform knowledge into actions.



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