June 9, 2023

Statement on the Transition to Zero Emission Commercial Vehicles

JCLP calls for enhanced government leadership and support to address market uncertainties and operational issues

Background

Japan Climate Leaders' Partnership (JCLP) welcomes the progress made in the EV-related policies as demonstrated by the inclusion of the commercial fleet electrification targets[1] and measures to promote EV uptake in the "GX Roadmap"[2] announced in February this year. The implementation of the "Revised Energy Conservation Act"[3] to facilitate corporate adoption of non-fossil fuel-powered vehicles, along with the expansion of the budgets for related subsidies[4], also mark significant steps forward.

However, the latest report from the Intergovernmental Panel on Climate Change (IPCC) underscores the increasingly limited time to avert severe and irreversible climate change and emphasizes the urgent need for more rapid and extensive emission reduction efforts to achieve the 1.5°C goal[5]. Also, the 1.5°C-aligned scenario of the International Energy Agency (IEA) recognizes the shift to zero emissions vehicles (referred to as ZEVs, excluding internal-combustion engine cars such as hybrid cars) as a highly essential and effective measure to reduce emissions[6].

With governments around the world intensifying their efforts to develop and implement ZEV-related policies[7] and automotive manufacturers increasing their investments in ZEVs, it has become imperative for Japan to further accelerate the transition to ZEVs. These vehicles currently contribute approximately 20% of the country's total national CO2 emissions, with commercial fleets being a significant source.[8] Should Japan fall behind the global ZEV trend, the automotive industry is likely to experience a downturn in competitiveness and cause broader economic repercussions for Japan, as highlighted by various analyses[9].

With this in mind, JCLP presents the following statements in the hope that we, as user companies, can actively contribute to the ZEV transition by supporting the government and automotive companies.

1. **We call on the government to demonstrate a clear commitment to ZEV roll-out, articulate concrete investment plans, and create a policy environment that provides favorable incentives and advantages for ZEVs.**

   ZEV adoption in Japan has faced stagnation due to challenges faced by automotive manufacturers, infrastructure companies, and user companies in planning their investments amidst the lack of market foreseeability. In order to address this situation, JCLP requests that the following measures be taken[10].

   - **Setting more ambitious ZEV roll-out targets:** Many user companies committed to achieving the 1.5°C goal have serious concerns about the continued development and utilization of internal combustion engine vehicles (ICEVs). While synthetic fuels are seen by some as a potential solution for decarbonizing hybrid cars and ICEVs, several issues have been pointed out in terms of their actual impact on emissions reduction, economic viability, and other factors[11]. Therefore, JCLP calls on the government to set an ambitious target exclusively dedicated to the ZEV transition. This target should clearly outline the required shares of ZEVs in sales of new passenger, medium- and heavy-duty vehicles[12], and replace the current target that allows the use of various types of vehicles including ICEVs such as hybrid cars as an option.

   - **Development of infrastructure roadmaps and investment plans:** To achieve the expansion of ZEVs, it is essential to first unlock investment in infrastructure[13]. Therefore, JCLP requests that the government clearly present a roadmap for charging and fueling infrastructure development. This

roadmap should incorporate specific numerical targets, similar to the approach taken by the United States, which aims to establish "one station (with at least four charging ports) to be located every 50 miles (80 km) of motorway by 2030[14]". It should also carefully consider distinctive roles that battery electric vehicles (BEVs) and fuel cell vehicles (FCVs) play respectively[15]and adopt a back-casting approach based on the target shares of new ZEV sales mentioned earlier, so as to ensure the alignment between the infrastructure development and ZEV roll-out. The roadmap should also comprehensively outline government investment plans, encompassing subsidies and tax incentives, while specifying the timing and scale of these investments.

- **Stimulating ZEV demand:** Implementing measures that provide disincentives for the use of gas- or diesel-powered vehicles and preferential treatment to ZEV users (e.g. substantial carbon tax), will effectively stimulate corporate demand for ZEVs.

2. **Further government support, including subsidies for the development and roll-out of ZEVs and charging and fueling infrastructure, is needed.**

   Government-backed market expansion and price-reduction initiatives will play a crucial role in accelerating the transition to ZEVs. In addition to the creation of the aforementioned roadmap, JCLP urges the government to implement the following support measures to further facilitate this transition.

   - **Vehicle-related support:** While the prices of BEVs are rapidly decreasing and the lifespan of BEV batteries is increasing, the lifetime of EVs is currently shorter than that of diesel cars, and the cost of battery replacement after reaching the end of its lifespan remains high. Thus, it is still necessary to provide subsidies that consider the lifecycle costs of EVs. In addition, there is a need for streamlined procedures for subsidy application specifically for leasing commercial BEVs. The current process requires companies to go through an overly stringent verification procedure to prove that drivers are their employees[16], which has proven to be a barrier to the adoption of BEVs in commercial fleets.

   - **Infrastructure-related support:** To encourage ZEV uptake, it is crucial to prioritize the development and expansion of charging and fueling infrastructure. However, ZEV-related infrastructure businesses face an issue of low operating rates and unprofitability until the ZEV adoption rate reaches a certain level. Therefore, JCLP calls on the government to provide support, such as temporary financial assistance for infrastructure installation, until these businesses become self-sustained. From a decarbonization standpoint, such financial assistance should be provided on the condition that renewable energy and green hydrogen are utilized. In addition, we suggest authorizing the start of construction before subsidies are granted. This approach will make it possible for companies to invest in infrastructure without delays, thereby accelerating their ZEV uptake. Such efficient policy designs are key to the achievement of Japan's 2030 emission reduction target.

   - **Flexible implementation of subsidies programs for ZEVs and related infrastructure:** The need for ZEVs and related infrastructure can arise anytime during a fiscal year, such as when companies have a better outlook on procuring vehicles depending on market supply conditions and internal adjustments. Therefore, user companies regularly review their investment plans. However, under the current system, where the government stops offering subsidies when the number of applications reaches a specified limit even before the end of the fiscal year, companies have difficulties developing their investment plans because subsidies may not be available especially in the second half of the fiscal year. Thus, we call for flexible implementation of subsidies programs that provide subsidies multiple times a year, for example, on a quarterly basis, to stimulate corporate investment throughout the entire fiscal year.

3. **Regulatory frameworks should be flexible to encourage ZEV transition.**
   To accelerate ZEV transition, flexibility in the regulatory frameworks, along with other supportive measures as described below, are necessary.

   - **Relaxing regulations for charger installations:** Companies are encountering difficulty securing space for EV chargers due to restrictions imposed by local government regulations aimed at conserving green areas[17]. Such regulations should be implemented in a flexible manner so as not to hinder efforts to promote ZEVs. For example, when EV chargers need to be installed in a space designated as a green area, the installation should be permitted by recognizing part of the surface space where the chargers stand as a green area. In addition, it is important for the national government to compile a collection of best practices across the country to encourage local governments to actively address regulatory issues of this nature.

   - **Putting an efficient vehicle operation management system in place:** Minimizing charging/fueling time and achieving a stable and efficient operation management are key to a successful ZEV transition of freight vehicles. For this, it is necessary to build a vehicle operation management system providing user companies with open-sourced and real-time information including locations of vehicles, residual amount of battery and hydrogen, and surrounding infrastructure such as the availability of charging/fueling equipment. JCLP requests that the government take the lead in setting up a forum for discussion so that all stakeholders including freight companies and cargo owners can keep in step with each other and design a useful system structure.

   - **Examining the usability of battery-swap EVs:** EVs with swappable batteries can play a role in easing the risk associated with an electricity crunch that may be triggered by BEV proliferation, and integrating EV charging into the grid to support the growth of renewable energy, because they have an independent battery that can be removed from a car body and used as a storage battery. In addition, battery swapping allows drivers to replace their used-up battery with fully charged one more quickly than when BEVs are charged in a conventional way; therefore, this technology can be a great contributor to the success of the abovementioned efficient operation management system. Considering all the advantages battery-swap EVs have, JCLP hopes that the government will examine the usability of the technology and promptly offer a clear direction on the support for battery-swap EVs.

   - **Developing human resources:** JCLP hopes for the development of a reliable environment where businesses can accelerate their ZEV transition with confidence. This includes the training of ZEV engineers so that necessary services will be available nationwide.

END

About Japan Climate Leaders' Partnership (JCLP):

JCLP is a coalition of Japanese companies formed in 2009 on the idea that business communities need to take proactive action with a sound sense of urgency. The coalition's membership has grown to 240 companies including Japan's leading corporations from diverse industries (as of June 9, 2023). Its total sales stands at about 145 trillion JPY and the total electricity consumption (including the consumption needed for overseas operations) amounts to approximately 74 TWh. Since the time of the foundation, JCLP has been committed to decarbonization initiatives, policy engagements, collaborations with various stakeholders, aiming to become a business group that takes the lead in achieving the 1.5°C goal at a transitional period towards a decarbonized society. For more information, please visit our website: https://www.japan-clp.jp/

EV100 expresses its support for this statement

A message from Ms. Sandra Roling, Director of Transport, Head of EV100

"The commitments of companies participating in the international EV100 initiative show that businesses understand their climate responsibility and are already investing in electric vehicles. They need a supportive policy environment to achieve their EV ambitions. This paper is worthwhile because it highlights the crucial measures required to support corporate fleets and achieve a rapid EV transition in Japan, based on practical challenges faced by companies."

About EV100:

EV100 is a global corporate leadership initiative run by the Climate Group – and supported by JCLP as local engagement partner in Japan – bringing together international businesses committed to the transition to electric road transport. Member companies are leading the way by switching their own fleets to electric vehicles by 2030.

EV100's 129 international members have committed to transition 5.75 million vehicles to electric by 2030, of which over 400,000 are already electric today. EV100 includes seven members headquartered in Japan, as well as ten international companies who have significant fleet operations in Japan. Together, they have committed to transition around 19,500 vehicles to electric by 2030, of which around 2,500 are already electric today. Businesses are ready to lead, but they require ambitious policy frameworks to support their ambition. For more information, please visit EV100 website: www.theclimategroup.org/ev100

Supported by CLIMATE GROUP EV100

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References

1 A commercial vehicle is a car used by companies for business purposes. The term in this statement includes trucks and vans to transport goods, buses and taxis to carry passengers, and other cars used for sales activities.

2 The Ministry of Economy, Trade, and Industry (2023)
- 'GX 実現に向けた基本方針～今後 10 年を見据えたロードマップ～'
- 'GX 実現に向けた基本方針参考資料'

3 The revised act implemented in April 2023 emphasies an obligation for specific transportation companies and cargo owners to create medium-and long-term plans for the shift to non-fossil fuel-powered vehicles, and provides guideline numerical targets for the transition. It aims to switch 5% of trucks and buses weighing 8 tonnes or less, and 8% of taxies to non-fossil fuel-powered vehicles (e.g. EVs, FCVs, PHEVs, and vehicles using biofuels and synthetic fuels).
- The Ministry of Economy, Trade, and Industry (2023) 'エネルギー需要サイドにおける今後の省エネルギー・非化石転換政策について' (p.9)

4 Details for the FY 2023 initial budget are as follows,
- Projects to promote a commercial ZEV transition: Approx. ¥ 13.6 billion (Ref. FY2022: ¥0)
- Subsidies to promote clean energy vehicle uptake: ¥20 billion (Ref. FY2022: ¥15.5 billion + a supplementary budget worth ¥70 billion)
- Subsidies to promote charging and fueling infrastructure roll-out to boost clean energy vehicle uptake: ¥10 billion (Ref. Subsidies to install hydrogen stations to promote FCV uptake for FY2022: ¥9 billion + a supplementary budget worth ¥20 billion)

5 The IPCC report clearly suggests that CO_2 and GHG emissions should be cut by 65% and 60% respectively by 2035 from the 2019 levels to achieve the 1.5°C goal. In addition, while Japan's Nationally Determined Contribution (NDC) aims to reduce its GHG emissions by 46% in FY2030 from its FY 2013 levels, some analyses indicate that the country needs to cut 62% to meet the 1.5°C goal. Furthermore, following the release of the IPCC report, UN Secretary-General, António Guterres expressed his concern saying "the climate time-bomb is ticking."
- IPCC (2023) 'AR6 Synthesis Report Climate Change 2023'
- The Ministry of Environment (2021) 'Japan's Nationally Determined Contribution (NDC)'
- Climate Action Tracker (2021) '1.5°C -consistent benchmarks for enhancing Japan's 2030 climate target'
- The United Nations (2023) 'Secretary-General calls on State to Tackle Climate Change 'Time Bomb' through New Solidarity Pact, Acceleration Agenda, at Launch of Intergovernmental Panel Report'

6 ZEV is primarily BEV and FCEV. The IEA net-zero scenario says about 60% of new passenger car sales must be ZEVs (or BEVs, FCEVs, PHEVs), reaching 100% ZEVs sales by 2035 with higher ratios of BEVs and FCEVs. PHEVs are expected to account for almost zero percent of ZEV sales in 2050.
- IEA (2021) 'Net Zero by 2050'

7 A new partnership, Accelerating to Zero Coalition, was launched at COP27 in 2022 at the initiative of the UK government to ensure that all new car and van sales be zero emission in leading markets by 2035 and globally by 2040. Currently, there are over 200 signatories to the coalition including governments (e.g. Canada, France, Spain), automotive manufacturers, cities, states, and regional governments. Also, at

COP27, the United States signed a memorandum of understanding setting a target for 30% of new medium- and heavy-duty vehicles to be zero-emission by 2030 and 100% by 2040.

8 While the entire transport sector accounted for 17.7% of the total CO_2 emissions in Japan, road transport contributed 15.5% (commercial fleets contributed 7%) in FY 2020.

- The Ministry of Land, Infrastructure, Transport and Tourism (2022) '運輸部門における二酸化炭素排出量'
- National Institute for Environmental Studies (2022) 'GHG Inventories'

9 An analysis estimates that if ZEV transition is too slow in Japan, the Japanese automotive industry will experience a reduction in employees from 5.52 million (2020) to 4.82 million (2030) and a loss of about 65% of earnings (14.1% loss of GDP).

- The Climate Group (2022) 'Japan and the global transition to zero emission vehicles report'

10 JCLP conducted interviews with stakeholders and learnt that they are facing the following challenges.

- Automotive manufacturers cannot make their investment plan without a good prospect for ZEV demand and infrastructure roll-out.
- Infrastructure companies cannot make their investment plan if they do not foresee a growth in ZEV demand,
- User companies cannot make their ZEV purchase plan without substantial progress in ZEV and infrastructure development.

11 For example, some critics estimate that

- ICEVs using synthetic fuels will be four times less energy efficient than EVs even in 2050.
- ICEVs using synthetic fuels require about five times more renewable energy than EVs.
- Even when using green hydrogen-derived synthetic fuels, ICEVs emit about 1.8 times more CO_2 than EVs throughout their life cycle.
  - Transport & Environemnt (2020) 'Electrofuels? Yes, we can … if we're efficient'
  - Nature Climate Change (2021) 'Potential and risks of hydrogen-based e-fuels in climate change mitigation'
  - Transport & Environment (2022) 'T&E's analysis of electric car lifecycle CO_2 emissions'

12 Please refer to Reference 6 for detailed examples.

13 In many countries where EV uptake is accelerating, infrastructure roll has preceded the growth of EVs. However, even if infrastructure is proactively introduced, the business will not be economically feasible without decent ZEV proliferation. Therefore, ZEV uptake needs to be accelerated, keeping pace with infrastructure roll-out.

- IEA (2023) 'Global EV Outlook 2023'

14 The US government has announced a new set of standards to install more than 500,000 EV chargers across the nation with a total budget of $ 5 billion (approx. ¥700 billion) in a time span of five years. Under the updated standards, each state will be mandated to make a plan for placing EV chargers with some conditions; for example, states should install 1. at least 4 chargers in one station, 2. every 50 miles (approx.80 km) along interstate highways, 3. within one mile (approx.1.6 km) of highways.

- US Department of Transportation (2022) 'National Electric Vehicle Infrastructure Formula Program, Bipartisan Infrastructure Law'

15 One of the ways to use FCEVs and BEVs differently based on their features will be to use FCEVs for a

long-distance driving on highways by large buses and trucks, for which EVs are not well-suited, and to use BEVs for last-mile delivery.

16 The current system requires companies to submit drivers' withholding certificates to prove that the drivers of the leased BEVs are their employees in order to receive subsidies. However, if drivers are non-regular or mid-career workers that are not directly employed by companies, they cannot be a beneficiary of the subsidy system as they cannot submit drivers' withholding certificates.

17 The Greenery Area System based on the Article 34 in the Urban Green Area Conservation Law stipulates that municipalities must designate urban areas that need to promote greening to preserve a comfortable living environment as the greenery district in their urban planning, making it compulsory to secure a certain ratio of green space in the property where new construction or extension of buildings above a certain size is being planned. Specific rules and regulations are stipulated in ordinances of local governments.