Term of Reference

International Seminar

Electric Vehicles: The Quest to Increase Climate Change Ambition

Jakarta, March 17, 2020

Background

Various climate change impacts can be avoided by limiting the increase to 1.5°C above pre-industrial levels according to the IPCC Special Report 1.5°C[1]. It is found that the global greenhouse gas (GHG) emission must reach the peak level in 2030 and then dramatically decrease to net-zero emission in 2050. The prerequisites to meet the target as follows: 1) global emission must be decreased by 2030, and it is equivalent to 45% of the 2010 emission level (20 GtCO2eq); 2) coal consumption must be cut as much as 59 – 78% from the 2010 level and no more coal after 2050; 3) oil consumption must be lessened as much as 32 – 87% from the 2010 level; 4) 85% of the world's electricity supply by 2050 comes from renewable energy; 5) net-zero global emission by 2050.

In Indonesia, emissions from the transportation sector make up almost 30% of total CO2 emissions[2]. The highest emissions come from road transport (mainly private vehicles) which is accounting for 88% of total emissions in the sector (IEA, 2015). The domestic car market has expanded almost twice for the last 15 years (from 483,148 in 2003 to 856,439 in 2018)[3]. There is a possibility of increased use of cars in the future; thus, the transportation sector will continue to be one of the main emitters in the country. The government, however, limits the mitigation plan of the transportation sector in the existing pledge to only fuel shifting to biofuel and natural gas refueling station expansion[4]. Meanwhile, electric vehicles' role (including hybrid, plug-in hybrid, and battery electric vehicles), which many see as a key in reducing GHG emissions in the sector[5], is still missing in the NDC.

Indonesia must take dramatically climate change mitigation action in the transportation sector. According to the projections of the Climate Action Tracker[6], total Indonesia's emission (excluding LULUCF) is equivalent to 3.75 – 4% of total global emissions in 2030. In order to be in line with the 1.5°C, the proportion of low-carbon fuels in the transport fuel mix must increase to about 60% by 2050[7].

The Climate Action Tracker outlined a 1.5°C compatible scenario for Indonesia, which curbs the emissions from the transportation sector to 2 MtCO2e by 2050. This scenario includes an increase in public transport use, fuel economy improvement of conventional vehicles, and 100% electrification of passenger road vehicles (cars, motorcycles, and buses) by 2050. To achieve 100% electrification by 2050, Indonesia needs to ban sales of fossil-fuelled vehicles between 2035-2040, assuming vehicles' lifetime of 15 years[8]. As the current market penetration of the electric vehicle is virtually zero, it is necessary to establish supportive policies to achieve this target.

However, with the current electricity mix, electric vehicle penetration will increase carbon emissions in Indonesia[9]. The increased emission is mostly related to power generation from fossil fuel sources. More emissions are coming from the production of special components in electric vehicles (e.g.

[1] http://www.ipcc.ch/report/sr15/
[2] http://iesr.or.id/pustaka/laporan-brown-to-green-2019-profil-indonesia/
[3] https://www.gaikindo.or.id/data-interaktif/
[4] http://ditjenppi.menlhk.go.id/reddplus/images/resources/ndc/terjemahan_NDC.pdf
[5] https://www.iea.org/reports/energy-technology-perspectives-2017
[6] https://climateactiontracker.org/countries/indonesia/
[7] http://iesr.or.id/pustaka/b2greport-2019/
[8] https://climateactiontracker.org/documents/658/CAT_2019-10-10_ScalingUp_INDONESIA_FullReport_ENG.pdf
[9] http://iesr.or.id/pustaka/iceo2020/#

electric motor and controller), additional materials needed for electric vehicle body and chassis to support the battery, and the battery itself. However, if Indonesia reaches a 23% renewable power mix in 2025, the electric cars will show roughly 2.6% carbon emission reduction. In that scenario, the extra emissions from the vehicle manufacturing process are compensated by fewer emissions from the electricity generation to fuel electric vehicles. The electric vehicle utilization will be optimized in reducing greenhouse gas emission as if the renewable electricity share in the power sector is higher.

Institute for Essential Services Reform, together with other partners under the Climate Transparency partnership, conducted a study in the decarbonizing transport sector. This study aims to analyze how decarbonization in the transportation sector could boost the country's ambition to meet the Paris Agreement to align with 2/1.5°C.

Participants

About 100 people from the governmental organization, business, academic, non-governmental organization, media, and relevant association.

Objectives

The objectives of this seminar are:

1. To share the results of the "Decarbonizing Transport Sector" study.
2. Facilitate active learning opportunities and knowledge exchange among countries in decarbonization in transportation sector

Date and Venue

Details of the event as follows:

Day/Date : Monday, March 17, 2020
Time : 08.30 – 16.45 WIB
Location : Hotel Morrissey, Jl. KH. Wahid Hasyim No.70, Menteng, Jakarta Pusat