Deliverable 3
2016 Carbon Footprint Report
(Mae Fah Luang Chiang Rai International Airport)
Executive summary

Airports of Thailand Public Company Limited (AOT) has awarded a contract to To70 Aviation Consultants (Thailand) Company Limited (To70) to collect the necessary input and assist Mae Fah Luang Chiang Rai International Airport (CEI) in carbon footprint reporting in accordance with International Organization for Standardization (ISO) 14064-1 standard.

After CEI was accredited at Level 1 ‘Mapping’ in 2014, Airports Council International Europe (ACI EUROPE) confirmed in 2015 that CEI met all the necessary Airport Carbon Accreditation requirements to upgrade to Level 2 ‘Reduction’, including setting a carbon reduction target of 20% for carbon dioxide (CO₂) emissions per passenger from controlled sources by 2023 compared to 2013 level. The airport was renewed at Level 2 ‘Reduction’ in 2016. The airport is currently preparing for Level 3 ‘Optimisation’.

Airport Carbon Accreditation utilises the Greenhouse Gas Protocol (GHG Protocol) concept of Scope 1, Scope 2, and Scope 3 for defining emissions sources, with suitable adaptation for airport activities and operations. To be accredited at Level 3 ‘Optimisation’, the airport should engage stakeholders to create awareness and reduce carbon emissions through collaboration and partnership. Furthermore, the airport should expand the scope of the carbon footprint to take into account not only the emissions from sources that an airport can control (Scope 1 and Scope 2 emissions), but also those from sources that the airport can only guide and influence (Scope 3 emissions).

An overview of the 2016 CEI carbon footprint for all three scopes of emissions is presented in the following table. The total emissions for all three scopes was 31,493 tonnes of carbon dioxide equivalent (tCO₂e). Scope 3 emissions were 28,873 tCO₂e or 91.7% of total emissions, which are obviously the largest contributors of airport carbon footprint. Around 93% of Scope 3 emissions come from airport surface access and Landing and Take-Off (LTO) cycle. Scope 1 and Scope 2 emissions were 137 tCO₂e and 2,483 tCO₂e, respectively. Although Scope 1 and Scope 2 emissions account for only 7.9% of total emissions, they should be closely monitored, because they can be directly controlled and reduced by the airport through the implementation of carbon reduction measures outlined in the Carbon Management Plan.

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1 The GHG Protocol categorises emissions into three scopes:

Scope 1 (Direct emissions): Activities owned or controlled by the organisation that releases emissions straight into the atmosphere.

Scope 2 (Energy indirect emissions): Emissions being released into the atmosphere associated with the consumption of purchased electricity, heat, steam, and cooling. These emissions are a consequence of the organisation’s activities, but occur at sources that are not owned nor controlled by the organisation.

Scope 3 (Other indirect emissions): Emissions that are a consequence of actions which occur at sources which the organisation does not own nor control and which are not classed as Scope 2 emissions.
The table below summarises carbon emissions from CEI activities for 2016 on the 3-year rolling average (R-Average), which allows CEI to compare their performance in 2016 against the previous three years. Note that Scope 3 emissions comparison is not available because this is the first year that CEI calculates Scope 3 emissions. However, the result shall be the baseline, which allows CEI to gain better understanding of Scope 3 emissions and to plan strategies on how to engage stakeholders to reduce carbon emissions in the years to come.

In 2016, Scope 1 and Scope 2 emissions increased 13.5 and 19.1%, respectively. This resulted in an overall increase in carbon emissions from controlled sources of 18.8%. Despite this overall increase, both the intensity emissions per passenger movement and per aircraft movement decreased 20.3% and 18%, respectively. This shows that CEI has used less energy per passenger and per aircraft movement over the years.

In 2016, the carbon emissions per passenger movement and per aircraft movement were 1.29 kilogrammes of carbon dioxide equivalent (kgCO₂e) and 181.55 kgCO₂e, respectively. Although the carbon emissions per passenger in 2016 is still lower than the interim reduction target of 1.80 kgCO₂e per passenger, CEI will still closely monitor and implement additional measures to effectively manage and reduce CO₂ emissions to achieve the interim target of 1.76 kgCO₂e per passenger for the 2017 reporting period according to Carbon Management Plan.