Japan position on the Low Temperature test procedure

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Scope

- ICE, NOVC-HEV, OVC-HEV and EV

Testing Temperature

- −7℃ to 38℃

(Justification)

- Considering environmental situation in Japan, the testing temperature should be set between −2℃ to 38℃.
- On the other hand, we understand that some CPs need the lower testing temperature because their average temperature is lower than Japan.
- For the harmonized testing procedure, it is preferred to cover the CP ‘s environmental situation as much as possible, and it is better to set the testing temperature from −7℃ to 38℃.
- Therefore, if each CP can agree the concept above and 38℃ for the high testing temperature, which Japan needs, then Japan can support −7℃ for the low testing temperature.

Testing Cycle

- L+M+H

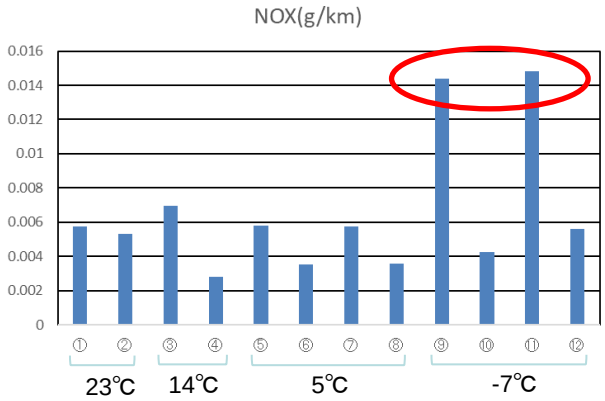
The value to be measured

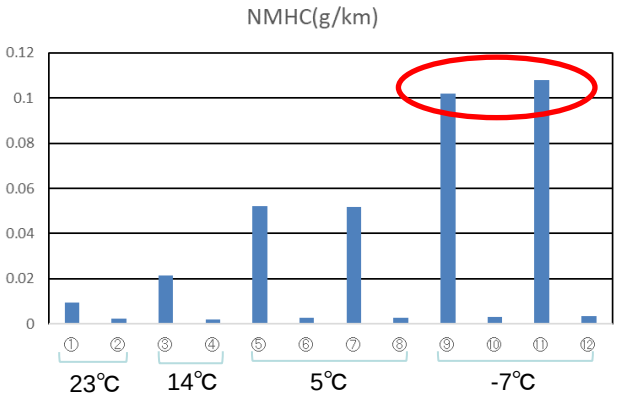
- CO, NMHC, NOx, PM, Fuel Consumption, Electric Energy Consumption and Range

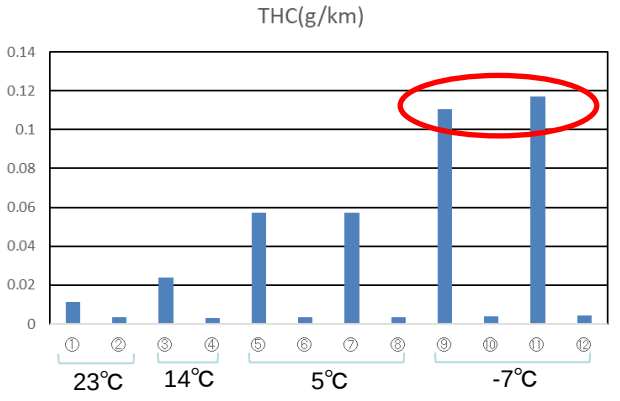
Purpose

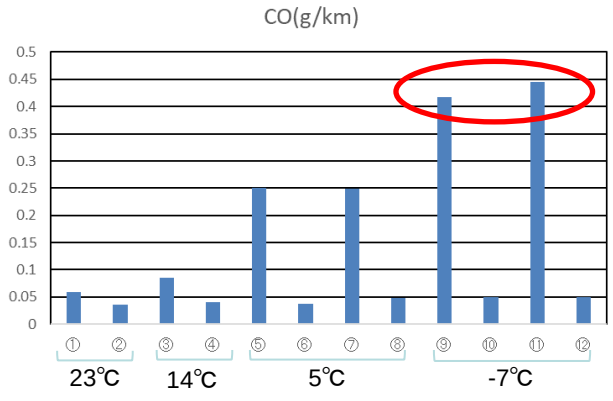
- “To regulate” and “to use for customer information” at Low Temperature

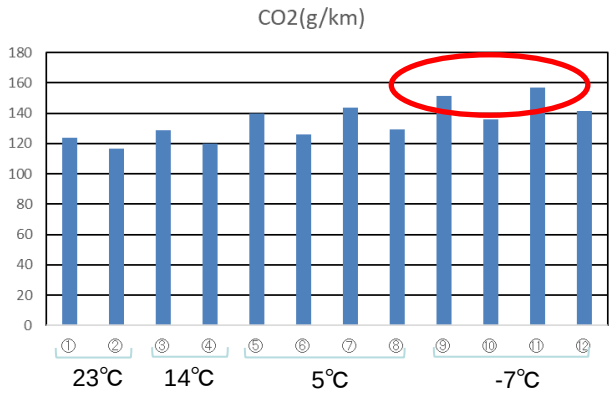
(ref.) Emission results at Low Temperature –4 Phase

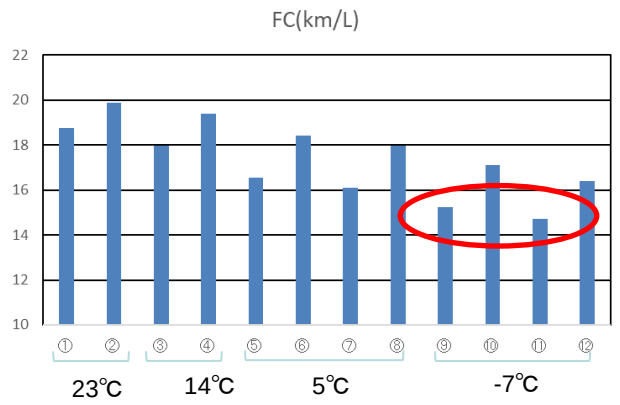










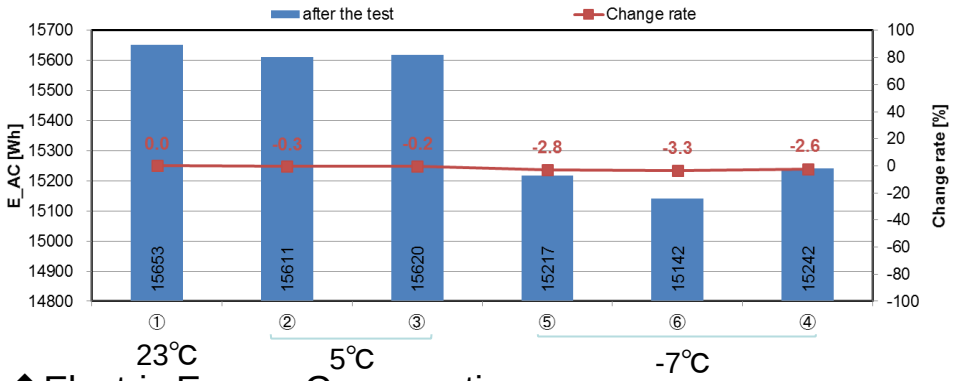


At low temperature, the emission results are almost 10 times (at maximum) higher compared to results at 23℃.

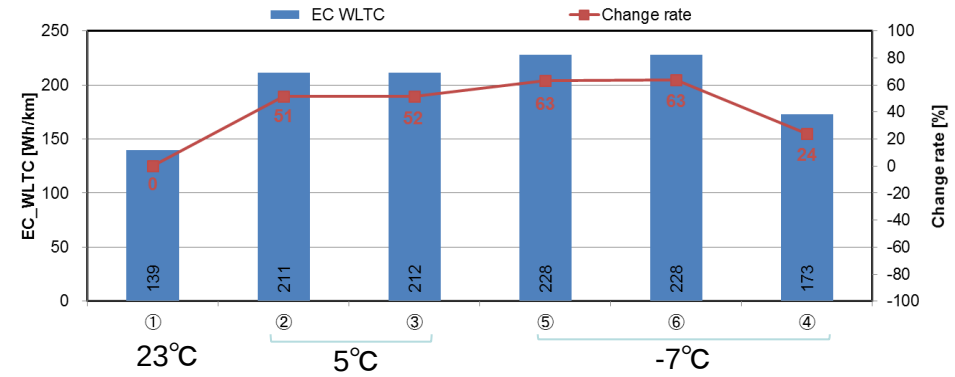
①23℃-A/C OFF-Cold	⑦5℃-A/C ON-Cold
②23℃-A/C OFF-Hot	⑧5℃-A/C ON-Hot
③14℃-A/C OFF-Cold	⑨**-7℃-A/C OFF-Cold**
④14℃-A/C OFF-Hot	⑩-7℃-A/C OFF-Hot
⑤5℃-A/C OFF-Cold	⑪**-7℃-A/C ON-Cold**
⑥5℃-A/C OFF-Hot	⑫-7℃-A/C ON-Hot

(ref.) Results of PEVs at Low Temperature

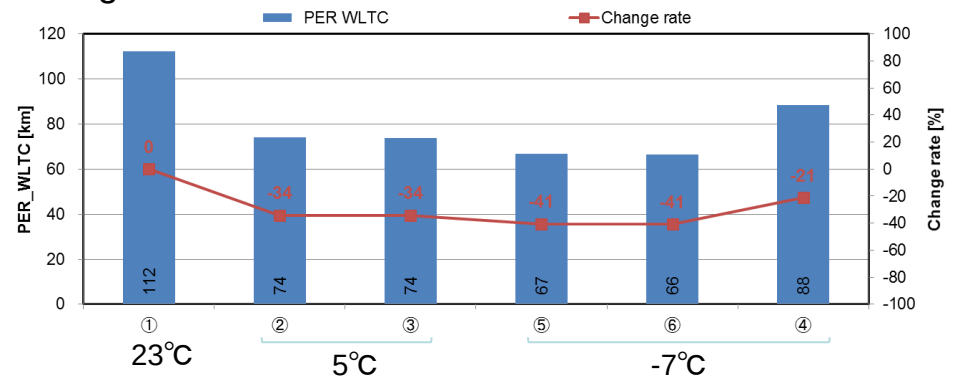
◆E_AC



◆Electric Energy Consumption



◆Range



The vehicle performance gets worse, compared to 23℃ testing.
e.g.) Range decreases to 60% of 23℃ result

①23℃-A/C OFF-without soaking
②5℃-A/C ON-without soaking
③5℃-A/C ON-with soaking
⑤-7℃-A/C ON-without soaking
⑥-7℃-A/C ON-with soaking
④-7℃-A/C OFF-with soaking