

## **Analysis of Physical Risks of Climate Change**

Based on the Task Force on Climate-related Financial Disclosures (TCFD) framework, Chunghwa Telecom has established a baseline and 2°C scenario for identifying and analyzing the short, medium, and long-term climate change risks and opportunities related to CHT's business operations, our upstream suppliers and downstream customers, and our assets during their useful lives.

With regard to transition risks, Chunghwa Telecom's baseline and 2°C scenario utilized the RCP 8.5 and RCP 2.6 climate scenarios respectively, developed by the United Nation's Intergovernmental Panel on Climate Change (IPCC), to conduct a risk assessment on both acute and chronic risks.

### **Immediate Physical Risk: Facility/equipment damages arising from an increased frequency and severity of severe typhoons**

An increase to the frequency and severity of major typhoons can lead to risks of Chunghwa Telecom business locations, and even our data centers or base stations, sustaining damage. CHT would be required to repair any broken equipment, leading to higher operating expenses. If CHT data centers or base stations become unable to function, our communications service quality would also be impacted, negatively affecting customer satisfaction and leading to a drop in revenues.

According to IPCC reports, both the 1.5 to 2°C warming scenario and the greater than 2°C warming scenario would similarly lead to a scenario where tropical cyclones (typhoons) form. The IPCC predicts that tropical cyclones (typhoons) would overall occur less frequently, but the strongest category 4 (where wind speed reaches 58-70 meters per second, equivalent to a major typhoon) and category 5 (where wind speed exceeds 70 meters per second, equivalent to a major typhoon) cyclones would occur more frequently. The Taiwan Climate Change Projection and Information Platform (TCCIP) also points out that rainfall intensity during a typhoon would increase by 20-40%. This means that some regions, in particular the central and central-north mountain areas, might experience flooding. CHT assets may be damaged in the event of regional flooding, or if a typhoon triggers a landslide which causes damage to Chunghwa Telecom business locations, data centers, or base stations. Funds would need to be allocated towards repairs, and CHT business operations may be interrupted. Flooding or landslides may also damage the foundations of our base stations, cutting transmission lines or leading to the collapse of the station, indirectly affecting the operation of our communications system and disrupting communications transmissions. At the same time, Chunghwa Telecom may also be affected if natural disasters impact our suppliers' business locations or cause traffic disruptions, both of which can affect our suppliers' ability to supply and ship goods. According to our own internal estimates, major typhoons and heavy rainfall pose potential financial risks of NT\$149 million to CHT each year in terms of operating costs.

### **Long-term Physical Risk: Increased energy consumption due to rising average temperature**

According to data from the Taiwanese Bureau of Energy, an air-conditioning unit uses 6% more electricity to lower temperatures by 1 extra degree. As Chunghwa Telecom relies on air-conditioning systems to keep our data centers operational, higher temperatures across Taiwan would cause our operating costs to rise.

Under the RCP 8.5 scenario, TCCIP research indicates that temperatures in Taiwan would be higher by 0.90°C from 2021 to 2040, 1.65°C from 2041 to 2060, 2.53°C from 2061 to 2080, and 3.37°C from 2081 to 2100. This research thus clearly shows that temperatures in Taiwan would rise continuously. Assuming that Chunghwa Telecom's demand for electricity remains unchanged and we continue consuming as much electricity as we did in 2021, that our electricity consumption would increase by 6% when average temperatures in Taiwan rise by 1 degree, and that the cost of electricity is kept at NT\$2.7 per kilowatt-hour, our operating costs would be higher by NT\$208 million in 2040, NT\$382 million in 2060, NT\$585 million in 2080, and NT\$780 million in 2100.

Under the RCP 2.6 scenario, TCCIP research indicates that temperatures in Taiwan would increase by 1.02°C from 2021 to 2040, 1.35°C from 2041 to 2060, 1.31°C from 2061 to 2080, and 1.2°C from 2081 to 2100. This research thus clearly shows that temperatures in Taiwan would peak between 2041 and 2060, before dropping continuously afterwards. Assuming that Chunghwa Telecom's demand for electricity remains unchanged and we continue consuming as much electricity as we did in 2021, that electricity consumption would increase by 6% when average temperatures in Taiwan rise by 1 degree, and that the cost of electricity is kept at NT\$2.7 per kilowatt-hour, our operating costs would be higher by NT\$236 million in 2040, NT\$312 million in 2060, NT\$303 million in 2080, and NT\$278 million in 2100. Additionally, TCCIP research also indicates that temperatures increases would be higher in the summer by 0.6 to 1 degrees compared to the average temperature increase. We thus predict that increases to electricity expenses would also be larger in the summer.