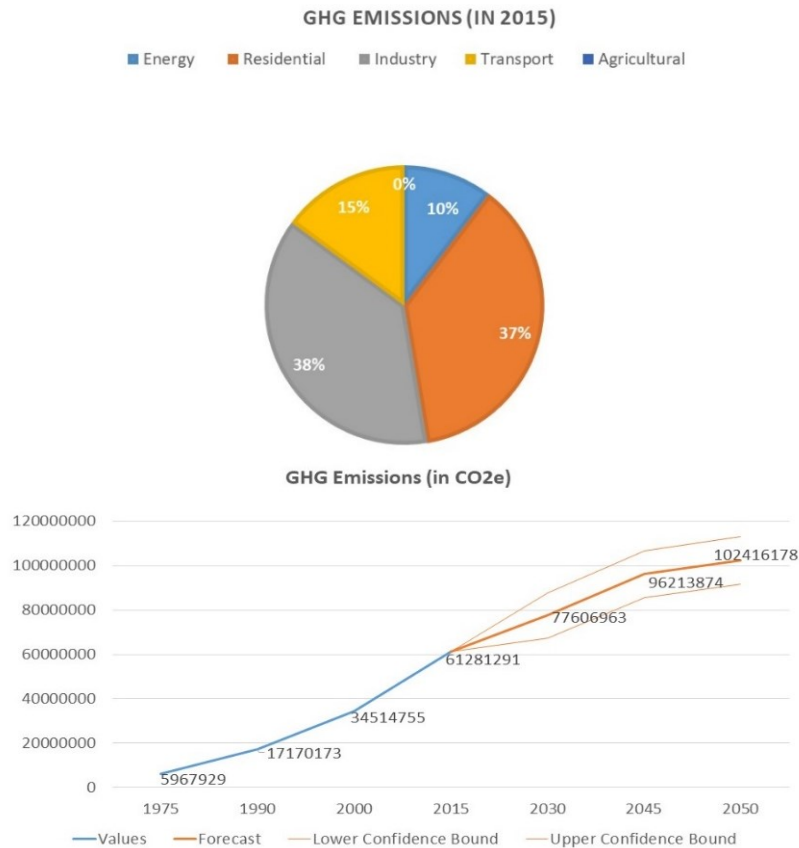


### 8.3.2 Tehran

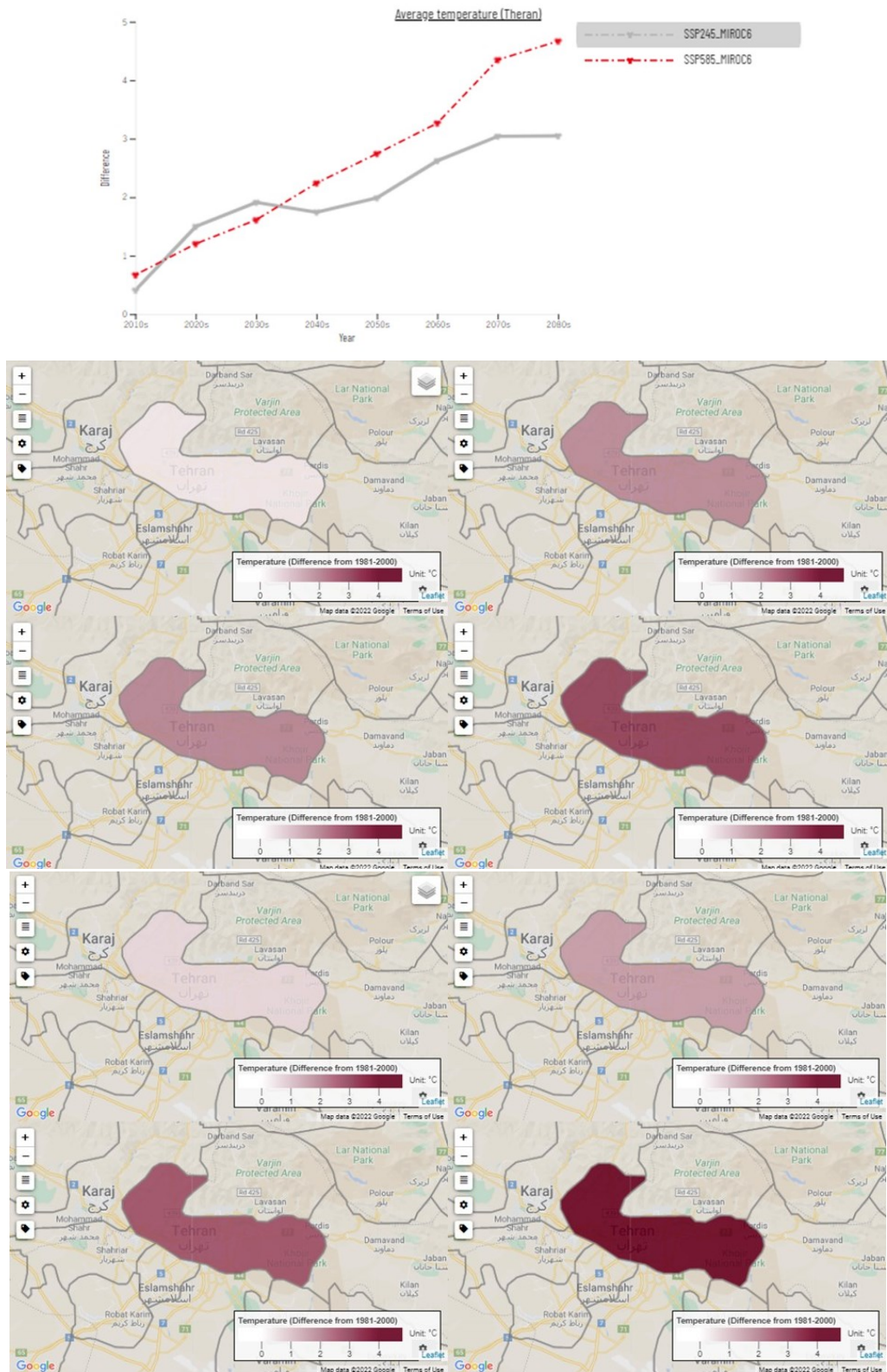
The GHG emissions of Tehran was 5.9 MtCO<sub>2e</sub> in 1975, that escalated to 17.1 MtCO<sub>2e</sub> in 1990 and 61.2 MtCO<sub>2e</sub> in 2015. A majority of the GHG emissions in 2015 (Figure 8.34 top) were contributed by the industry sector (38%) and residential sector (37%), followed by transport sector (15%) and energy sector (10%). As per the ICLAP model estimates (Figure 8.34, below), there would be an increase in emissions at 6% per annum, leading to 77.6 MtCO<sub>2e</sub> in 2030 and 102.4 MtCO<sub>2e</sub> in 2050.



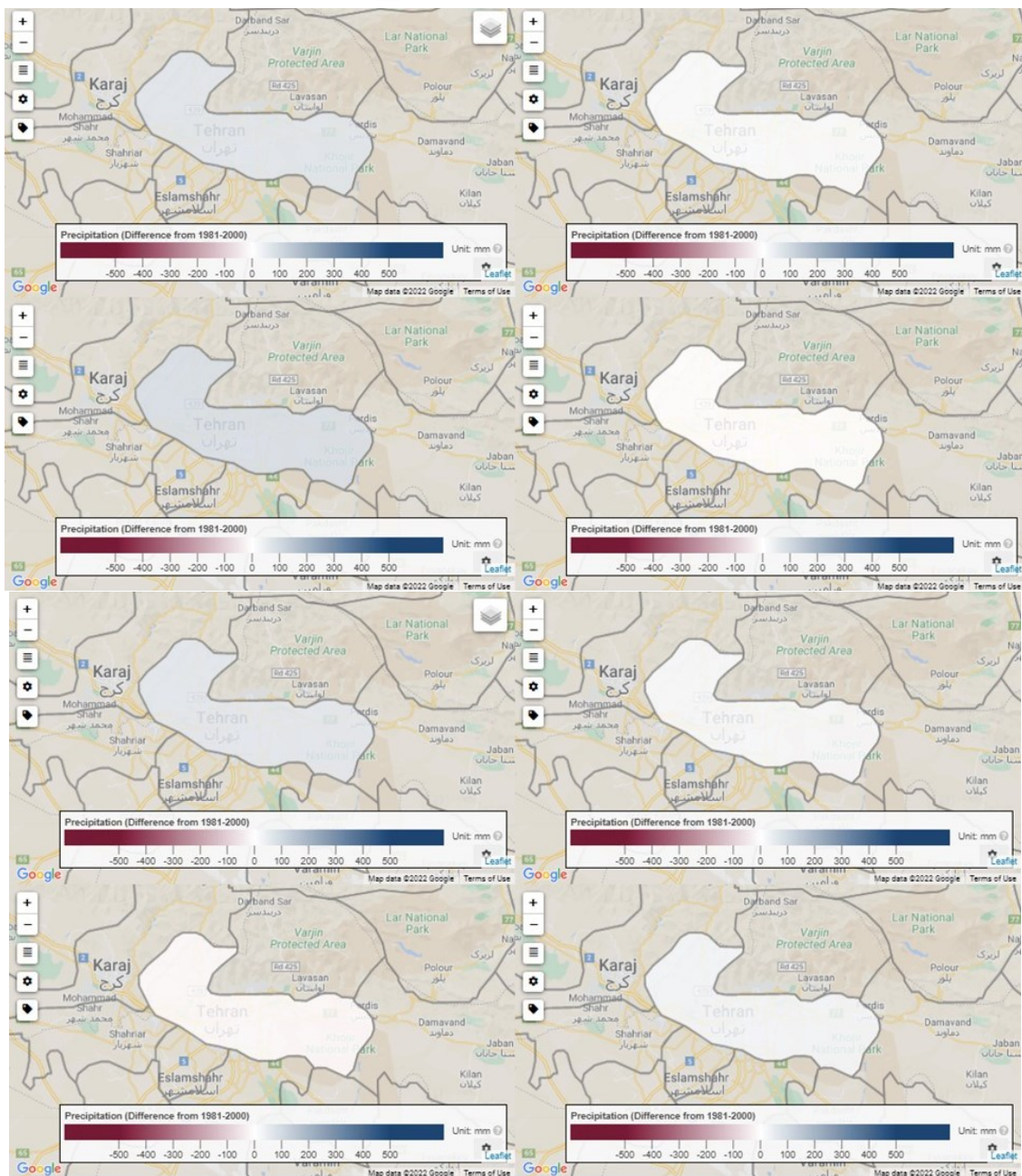
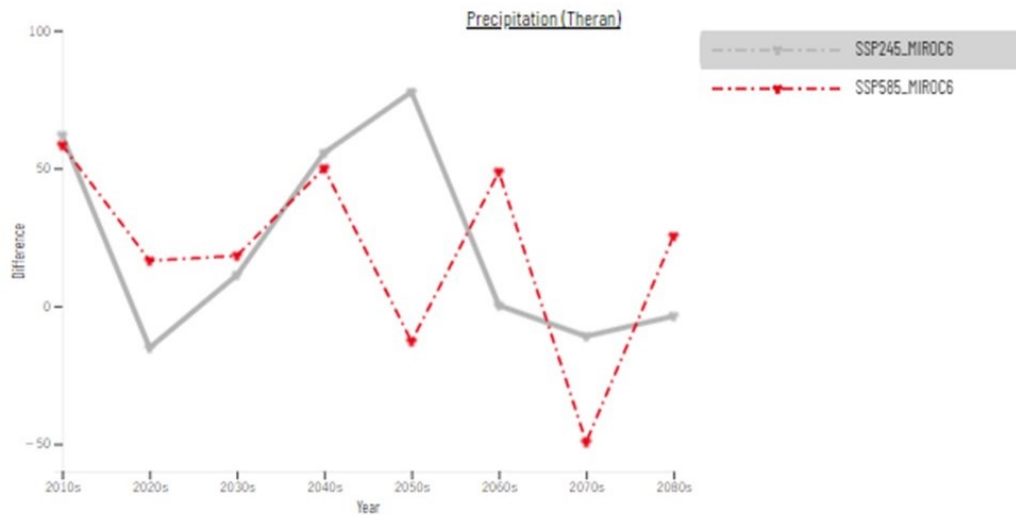
**Figure 8.34: GHG contributions from different sectors in Beijing (top); ICLAP model estimates for Tehran's GHG emissions till 2050 (bottom)**

The results for climate variability in Tehran indicate that depending on the emission scenarios, there would be a temperature increase of 1.7–4.8 degC from 2030-80s (Figure 8.35, top). The scenario corresponding to the pathway with moderate GHGs (SSP245\_MIROC6) exhibits an increase of 2.0 degC in 2030s (above the 1980 baseline temperature) as well as in 2050s, peaking to 2.9 degC in 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.35 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585\_MIROC6) exhibits an increase of 1.7 degC during 2030s (above the 1980 baseline temperature), 2.8 degC in 2050s further rising sharply to 4.7 degC above normal up to 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.35 (bottom). Meanwhile, the precipitation change for Tehran shows variability in the long run, ranging from -52 to 75 mm from the normal (Figure 8.36, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245\_MIROC6) exhibits an increase of about 10 mm in 2030s (above the 1980 baseline rainfall), rising to 75 mm in 2050s, declining to -10 mm (2070s) and -4 mm (2080s). The spatial results for moderate

scenario over 2010-80s are mapped in Figure 8.36 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585\_MIROC6) shows Tehran's city rainfall increase to around 20 mm (above the 1980 baseline rainfall) in 2030s, declining to -20 mm in 2050s, rising to 45 mm in 2060s, to stabilize around 25 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.36 (bottom).



**Figure 8.35: Temperature increase in Tehran under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)**



**Figure 8.36: Precipitation variation in Tehran under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)**