



**Supplementary Fig. S2. Impacts of considering the logistics in investment and labor on the pathway of mitigation.** (a–c) Temporal trends in the fraction of investment in the energy sector allocated to produce renewable energy (a), and the fraction of labor in the energy sector allocated to produce renewable energy (b), the share of renewable energy in global energy supply (c) when initiating mitigation in 2050. In the sensitivity tests, the fraction of the investment entering a new sector used to train workers ( $\lambda$ ) varies from 100% to 90, 50, and 10%, while the time taken to train workers in job displacement ( $\tau$ ) varies from 0 to 5, 10, and 15 years, respectively. (d–f) Impacts of delaying the year to initiate mitigation from 2025 to 2100 on the share of renewable energy in global energy supply by 2150 (d), global warming by 2150 relative to the pre-industrial levels (e), and the social cost of carbon in the year when initiating mitigation (f). The impact of considering the logistics in investment and labor is examined while keeping other parameters unchanged ( $L_R=10\%$ ,  $\tau_L=400$  years,  $\tau_R=10$  years,  $T_{50}=2^{\circ}\text{C}$ ,  $d_c=50\%$ ,  $\sigma_Y=0.5$ ,  $\sigma_E=2$ ,  $k_p=1\% \text{ y}^{-1}$ ,  $B_S=0$ , and  $k_u=1\% \text{ y}^{-1}$ ).