Because the Arctic Ocean is largely surrounded by land masses, sea ice mechanics significantly affects the outflow of ice from the Arctic Basin. With proper simulation of the plastic scaling of sea ice flow thru narrow channels, dynamic-thermodynamic sea ice models have the potential to yield multiple equilibrium flow and thickness states of the Arctic sea ice cover. We find that with pre-industrial atmospheric forcing such multiple states are possible. To provide realistic sea ice dynamics in these simulations, daily wind forcing from recent years was used in conjunction with monthly pre-industrial thermodynamic forcing. In this presentation a series of numerical simulations using ‘pre-industrial’ and ‘present’ atmospheric forcing are carried out and analysed demonstrating the potential and characteristics of such multiple states. The decay time scales between pre-industrial low flow high thickness ice states and present high flow low thickness states is also examined via long term simulations. Forcing data reported in this work are adequate to test the capability of other dynamic thermodynamic sea ice models to yield multiple flow states due to ice mechanics.