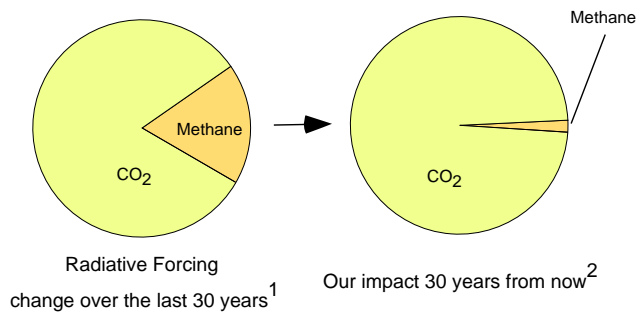
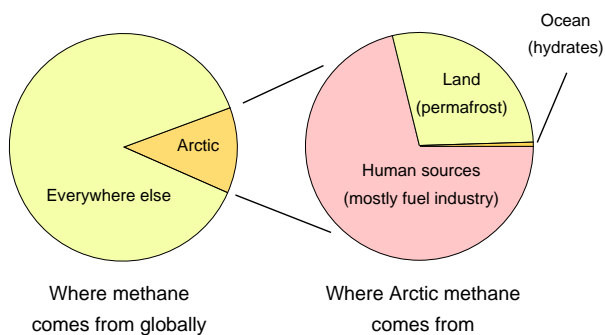


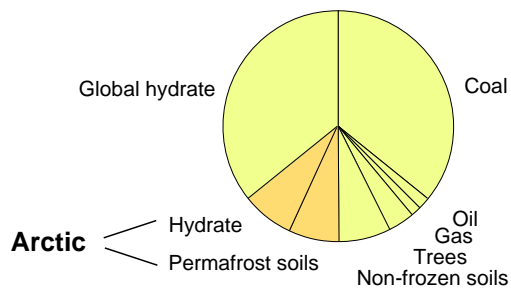
The importance of methane in the climate system today



The importance of Arctic Ocean hydrates in the global methane cycle today³



Long-term potential climate impact from Arctic carbon⁴



¹ In the last 20 years, carbon dioxide rose from 350 to 400 ppm, and methane from 1.8 to 1.9 ppm. Radiative forcings were estimated using Modtran. Efficacy of 1.4 assumed for methane, due to ozone and water vapor feedbacks. Radiative forcings from other gases and human impacts are not shown.

² The radiative forcing that our current emissions have committed us to, 20 years from now, is based on a 300-year initial drawdown time scale for carbon dioxide, and 12 years for methane.

³ Atmospheric methane is well mixed, so its concentration depends on the global emission rate of methane. The relative rates of methane emission reflect the proportional impacts on climate.

⁴ All of the carbon we or the biosphere releases ends up as carbon dioxide, some of which persists in the atmosphere for hundreds of thousands of years. The relative sizes of the carbon reservoirs reflect the proportional potential impact on the long-term evolution of Earth's climate.