Climate change is one of the greatest threats of this generation due to its potential to affect humans and the environment globally. The majority of scientists agree that climate change is caused by human activities that release carbon dioxide into the atmosphere such as oil production, transportation, and chemical production. This thesis proposes the development of a direct air capture facility that uses the captured carbon dioxide to produce methanol for industry use. While creating an essential product for the chemical industry, this facility would be primarily using carbon dioxide from the atmosphere, thus helping to reverse climate change caused by pollution. Ambient carbon dioxide is captured in an ambient sorbent solution and a calcium caustic loop and calcium carbonate regeneration system. Then it is sent through a reverse water-gas shift reactor, hydrogenation reactor, and distillation column to be converted in methanol. Every civilization that has ever or will ever exist on this planet, relies on the climate to survive. Reversing the effects of climate change is essential to our survival as a species.

If climate change is not reversed or mitigated, the planet will begin to see dramatic shifts in weather patterns and mass extinctions. Planets and animals will not be able to survive the changing climate. One of the species that will be affected by the changing climate is the coffee plant. The Western world, specifically the United States, relies heavily on coffee for the maintenance of its economic prosperity. Coffee is used by different people in the United States to give them energy to work for longer hours than they normally would be able to. The socio-technical part of this thesis uses Susan Star's "Ethnography of Infrastructure," to analyze how the coffee industry is an infrastructure of the Western world and predict how large corporations and small businesses will react to declining coffee production because of climate change. Mainly, this thesis observes how unethical production practices used by large corporations are forcing smaller businesses to replicate those practices during times of economic strain and how climate change will make these issues worse.