Technical Assistance Request:

A key energy savings component in the FO system is the draw solution composition and use. The proposed UCST draw solution for this phase is heated to around 60-70^{o}C prior to being applied to a Forward Osmosis membrane. This high temperature creates challenges for existing thin film composite (TFC) membranes and a new membrane will need to be developed for the trial. Several National Laboratories, including Sandia and Oak Ridge, have published papers on high temperature PBI membranes for CO2 extraction from flue gas stacks where operation at several hundred degrees is required. The technologies developed there would be easily transferred to FO membranes operating at greatly reduced temperatures, but still well above what is commercially available.

Trevi would like to hold discussions with a view to licensing the technology developed in this area, specifically the use of PBI or other high temperature polymers for membrane separation.