With the prevailing high oil prices around 100 dollars and the technology innovations in production area EOR projects are gathering spotlights throughout the world. If successful in implementation the project will be able to procure additional recoverable reserve, lengthen field life further and improve the value of the field.

Of many recovery methods based on reservoir conditions two technologies utilizing CO2 and polymer are widely applied worldwide. These are because flow efficiency can be maximized by increasing oil swelling and decreasing interfacial forces between oil and injecting fluid with the injection of CO2, and because much recovery can be expected by increasing sweep efficiency with the injection of polymer solutions.

On the projects survey for case study much attention was paid on the CO2 projects in Permian Basin in Texas, United States and the polymer projects in Daqing field in China.

For successful projects the most important element is the EOR methods screening based on reservoir characteristics. New EOR screening systems, preliminary and expert systems, were developed for screening, establishing fundamental screening systems. Using the newly developed tools KNOC's 6 participation fields including Captain were evaluated qualitatively and quantitatively.

In 2007 a polymer flood predictive model(PFPM) was developed as the method can be applied to small fields easily. Predictive model can produce the results much faster with fewer input parameters compared with the equivalent simulator and the economic indices can be obtained as well. The model was made with user-friendly GUI as well as AI(artificial intelligence) and is switch-selectable either for waterflooding and polymer flooding, making possible the comparison

between waterflooding and polymer flooding as well as the effect of polymer flood after waterflooding. In modelling the PFPM, stream tube method was used with the assumption of pseudo 3D, 5 spot, 2 phase and the number of tubes can be selected among 1, 4, 8 tube options.

From the calculation result on producing field validation was made and the chance for EOR applicability water addressed for KNOC participation field.

This year 2008, newly developed tools will be used for the practical research with the Daqing Oilfield Company.