Dissolved Gas Analysis (DGA) is the single most widely used and most effective test to determine transformer's operation conditions. The detection of gases generated in the transformer is the first available indication of the transformer malfunction. Several methods used to interpret of DGA results but not single method will necessarily give a true indication. In this project, the samples from energise transformers are extracted and analysis of gases evolved from oil degradation due to thermal and electrical faults. Several DGA interpretation schemes will be propose and applied for fault diagnostics. Some of the applied interpretation techniques are IEC 60599, Rogers and Durenburg Ratio, Duval Method and Key Gas analysis. Also, a case study on actual transformer faults is taken into account in this interpretation. The results of the interpretation will represent the condition of the power transformers and needs to quantify into a condition-based DGA index with a purpose to carry out necessary prevention action