

Play Analysis as a Tool in the Petroleum Resource Management in Norway

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The Norwegian Petroleum Directorate (NPD) uses play analysis for estimating undiscovered resources and for guiding the development of regional exploration strategies. The geological discussion around play mapping is thus a key element in the petroleum resource management of Norway.

The play is a geographically delimited area where a specific set of geological factors exist so that petroleum may be present in commercial quantities. All fields, discoveries, prospects and leads that share these factors belong to the same play, and they provide important input to the estimation of the undiscovered resources. Most important for this calculation is the number of discoveries expected to be made and their size. This is estimated based on the size and properties of the existing discoveries. Statistical uncertainty is taken account of by probability distributions for the various parameters. The minimum economic cut-off size is also taken account of.

In unconfirmed plays the input to the resource calculations are based on the mapped prospects, on geological analogues and on the regional models for how the geological and reservoir elements are distributed. Unconfirmed plays are also given a probability of success for the play to actually work. This is an important factor when resource estimates for the plays are aggregated to total resource estimates but also very important for strategic decisions and the development of exploration policies.

This paper presents the NPD methodology and gives some examples of the pitfalls and the successful uses of play analysis for resource estimation and as a strategic tool.