Cloud-based statistical analysis software to digitalize, simplify, and standardize how production forecasts are generated and utilized

pForecast

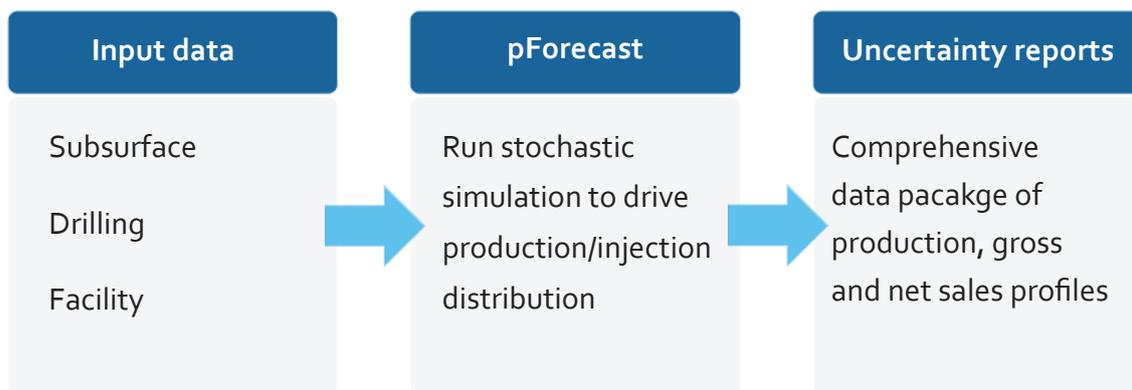# Considering uncertainties as an integral part of production forecasting

Considering uncertainties as an integral part of production forecasting

Oil price volatility over the past few years has made oil and gas companies more short-term focused than ever. This approach has arisen the necessity for a method that considers all the uncertainties involved in production forecasting both for long and short-term forecasting.

It is also a common fallacy that forecasting is a subsurface-centric task. To provide consolidated forecasting, other elements such as drilling, and facility operation input data and their associated uncertainty should also be considered.

The pForecast software uses Monte Carlo simulations, integrating input from three main domains:

- Subsurface such as well potentials, injection/voidage dependencies, etc.

- Drilling including drilling availability, non-drilling periods, etc.

- Facility operations with constraints, production efficiencies, etc.

Input data	pForecast	Uncertainty reports
Subsurface Drilling Facility	Run stochastic simulation to drive production/injection distribution	Comprehensive data pacakge of production, gross and net sales profiles

In pForecast the subsurface input data is represented by well potentials in stream day rates and without considering the downtime.

To assign uncertainties, low, high, and mid values for well potentials can be provided and there are different distribution types that can be selected such as, triangular distribution, Pert, normal, and log-normal.

The drilling input data includes drilling schedules with low, high, and mid values for drilling time per well.

The facility operation covers a wide range of input data, including planned periods for maintenance campaigns, unplanned and short downtimes, represented by production efficiencies (PE), and flow constraints, such as pipeline capacities and separator capacities.

pForecast performs both deterministic and stochastic analyses and generates unbiased production forecasts.

The extensive and powerful reporting functionality in pForecast allows users to create the reports they need, from the yearly national reporting to the government agencies through the internal forecasts.

Project Example:

pForecast has been tested on the Gullfaks oil and gas field, which is one of the largest fields in the Norwegian sector of the North Sea. The reason for choosing Gullfaks was to ensure that the pForecast can handle all challenges faced when doing production forecasts.

These results demonstrate the robustness of pForecast.

pForecast has also been used for other oil and gas fields, such as Alvheim, Valhall, and Johan Sverdrup.

Today there are more than 100 satisfied pForecast users across oil companies.

About us

We help our petroleum industry generate the best possible forecasts for the most complex reservoirs.

pForecast is a cloud-based statistical analysis software to digitalize, simplify, and standardize how production forecasts are generated and utilized. pForecast performs a full life-time simulation of the production and injection forecast, including historical data, in keeping with the industry's ever-increasing need for agility.

Powersim Software is the software company and developers behind the pForecast solution. Powersim Software will with pForecast take production forecasting to a future-oriented, cloud-native Software as a Service solution.

Powersim Software AS

Litleåsvegen 79,

Bergen, Norway

pForecast@powersim.no

Phone: +47 55 60 65 00

www.pforecast.com

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