

## Essar Oil Ltd. Optimizes Crude Evaluation with Advanced Optimization and Visualization

Aspen PIMS-Advanced Optimization and aspenONE® PIMS Platinum help drive better decision-making through enhanced performance, visualization, and evaluation.

Essar is engaged in the exploration and production of oil and natural gas, refining of crude oil, and marketing of petroleum products. The company operates several refineries in multiple countries with a global crude-refining capacity of 750,000 barrels per stream day.

For their 296,000-bbl-per-day refinery in Stanlow, UK, Essar sought to achieve the highest profitability by upgrading the use of Aspen PIMS to Aspen PIMS-AO, as well as rolling out aspenONE PIMS Platinum.

Refiners worldwide are faced with challenging market conditions and Europe is no exception. Refining margins are razor thin as crude costs continue to rise, demand weakens, and refinery capacity expands. It's now more critical than ever to maximize solutions by choosing the most profitable crudes as quickly and efficiently as possible.

This is just one of the multiple reasons Essar chose Aspen PIMS-AO and aspenONE PIMS Platinum for their refinery needs. Of the many possible benefits, dramatically reduced run times for crude cases has vastly improved. With Aspen PIMS-AO, what used to take 48 hours, now only takes about four hours.

With AspenTech solutions, Essar now has the power to be more selective with their crude slate—choosing the most robust crudes with more optionality, flexibility, and ultimately more confidence to meet the refinery plan.

*“The powerful combination of Aspen PIMS-AO and aspenONE PIMS Platinum is helping us to run and evaluate more cases quickly—driving better results.”*

— Shinoj Bhaskar, Economist, Essar Oil UK

## Customer Profile

**Essar Oil Ltd.**  
Petroleum

### Challenge:

Quickly and efficiently increase profitability by selecting a global optimum for crude selection

### Solution:

The combination of Aspen PIMS-AO and aspenONE PIMS Platinum provides a robust planning solution that improves crude selection and provides an efficient method of communicating the solution to stakeholders

### Benefits:

- Faster run times
- Virtual elimination of local optimum
- More effective communication with stakeholders and better understanding of the model behavior and constraints
- Faster results generation, sharing, and analysis with MS SQL Server
- More easily use and visualize the planning model in a flowsheet



## Inherent Case Run Complexities

Prior to Essar's acquisition of the Stanlow refinery in 2011, Aspen PIMS had been the solution of choice at the refinery, but Essar was worried about performance and wanted to better understand its solution. They turned to Aspen PIMS-AO to utilize the latest technology to drive even better results. Not only are runs time-consuming, but time-bound—Essar had to quickly identify the constraints and changes involving numerous runs and make them more clear. Additionally, the analysis of the runs needed to be faster and easier to communicate to the stakeholders.

## More Efficient Case Runs and Solution Dissemination

Essar upgraded to Aspen PIMS-AO and aspenONE PIMS Platinum to achieve faster, more reliable results. With Aspen PIMS-AO's parallel processing, the company was able to evaluate multiple scenarios simultaneously in a fraction of the time used by traditional methods. Paired with the multi-start function, a planner can now easily achieve global optimum with ease. The company also upgraded to aspenONE PIMS Platinum to identify constraints, hasten crude run analysis, and easily communicate the results to stakeholders.

## Benefits Gained

Aspen PIMS-AO's outstanding performance and Global Optimization capabilities enabled Essar to greatly reduce local optima, thereby improving reliability in the plan. The multi-start option provided a robust tool for determining global optimums and is now a standard for all new releases and model updates. Additionally, because of Aspen PIMS-AO's parallel processing, the company can now run cases for their 150+ crudes in a fraction of the time. Total time for indifference is now less than a half-day end-to-end versus the previous two or more working days.

Essar also levered the intuitive interface of aspenONE PIMS Platinum to improve its crude selection. With aspenONE PIMS Platinum, the company was able to quickly identify the constraints and changes across a large number of runs as they became more visible and understandable. The aspenONE PIMS Platinum flowsheet not only provided them a list of all constraints, but also highlighted the important ones based on tolerance limits set by the user. The easy-to-use interface also enabled faster analysis and simpler dissemination of the results to key stakeholders.

The company also upgraded to the Microsoft SQL Server database. Running aspenONE PIMS Platinum on the SQL Server provided unmatched scalability and performance, supporting large databases and making it possible for numerous concurrent users to access planning models and share real-time enterprise data across the organization for significantly faster results generation, and analysis.

AspenTech is a leading supplier of software that optimizes process manufacturing—for energy, chemicals, engineering and construction, and other industries that manufacture and produce products from a chemical process. With integrated aspenONE® solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing, and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs, and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit [www.aspentech.com](http://www.aspentech.com).



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