



IndianOil leads in India's pursuit of green fuel alternatives

As India turns its focus to digitalization, IndianOil adopts cognitive search, artificial intelligence and natural language processing to advance its alternative fuel goals.

Overview

The Challenge:

- IndianOil needs to identify and build innovative, cost effective carbon capture technologies for its refineries in order to meet India's green energy objectives.
- The project team is given an extremely aggressive timeline to meet.
- The capture method must adhere to the right cost economics and chemical conditions.
- Management expected a "Made in India" product.

Result

- Time spent in surveying literature and research planning was reduced by ~ 30 - 40%.
- A shortlist for molecules on the basis of literature inputs was quickly and efficiently achieved, meeting cost expectations and conditions for the project.
- Potential molecules efficiency is currently being validated with laboratory results.
- The team met innovation and Aatma Nirbhar Bharat mandates.



IndianOil, India's flagship Maharatna national oil and Global Fortune 500 company, has business interests that straddle the entire hydrocarbon value chain - from refining, pipeline transportation & marketing, to exploration & production of crude oil & gas, petrochemicals, gas marketing, alternative energy sources and globalization of downstream operations. IndianOil is fully aligned to India's aspirations to transit to clean energy and has planned large investments in alternative energy and sustainable development projects.

Being "The Energy of India", IndianOil is always thinking of "what's next" for the country's oil and energy systems. Finding an effective way to source and use energy sustainably could unlock opportunities for the country, but of course, it's no easy task. As India aims to reduce their oil imports and achieve a \$5T economy, the IndianOil leadership team has increasingly turned their attention to and invested in green and sustainable technologies – especially in alternatives, carbon capture & utilization, biofuels, and nanotechnology.

To do so, IndianOil which operates one of Asia's most innovative downstream petrochemical and refining R&D centers, conducts critical research in both existing solutions and novel innovations to help understand and meet increasingly challenging green energy targets. The group focused on quickly researching, identifying, and developing the right carbon capture technology for the company's refinery with an extremely aggressive timeline, a very conservative price point to adhere to and a mandate to 'Innovate and be Aatma Nirbhar Bharat (self-reliant India)'.

Enter Goldfire & Engineering Workbench

Despite having already conducted substantial research into the topic, the group found it challenging to pull critical high-quality insights quickly. So, they turned to Goldfire and Engineering Workbench, two of IHS Markit's engineering intelligence platforms utilizing cognitive search, natural language processing, and other AI to reduce rework, speed up innovation, and boost productivity. Leveraging these platforms, the project team was able to complete their research objectives within 12 weeks – a 30 - 40% decrease in time the group would have spent without them.

Goldfire not only cut our research planning time substantially but allowed us to pinpoint valuable insights and create a shortlist of molecules to test – This tool has helped us structure the research process, accelerating problem solving and innovations.

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