



AI and IAGEN Application Use Case

Site Assessment, Planning and Site Feasibility Reporting in

Vaca Muerta, Neuquén

Executive Summary – IAGEN Application for Site Assessment, Planning and Reports on Viability in Vaca Muerta

This executive summary presents an application of Generative Artificial Intelligence (IAGEN) in the site assessment, planning and reporting process feasibility study for the exploration and exploitation of hydrocarbons in Vaca Muerta, Neuquén. This technological innovation constitutes a strategic opportunity for the energy industry, enabling faster, more accurate and sustainable decisions on the well location and development.

The use case is classified according to four axes:

- 1) Main resource: oil (with gas as secondary).
- 2) Activity: information management and strategic decision-making.
- 3) Technology: use of generative models (GAN, DNN), language processing natural and artificial vision.
- 4) Strategic impact: improved data analysis, risk assessment, and reduction of uncertainty in investment and operating decisions.

1. Specific opportunities to use AI and IAGEN.

The use of IAGEN allows the integration of geological, environmental, infrastructure and production to model the viability of a site with high precision. Among its Main opportunities include well productivity prediction, optimizing your location, simulating environmental impacts, and planning of efficient development strategies.

2. Benefits without percentages.

Key benefits include: reduced analysis time and cost, Improved simulation accuracy, early risk detection, automation of technical reports, improved operational safety and greater sustainability environmental. In addition, it promotes more informed decision-making and collaborative, with less subjectivity.

3. Application of AI.

The solution combines deep neural network algorithms, generative models, artificial vision, NLP and big data, applied to satellite images, sensors in real-time and technical records. Predictive geological maps are developed, operational simulations and automated reports that inform site design and reduce uncertainty.

4. Proposed IAGEN agent and its main function.

The system is composed of seven agents that act in an orchestrated manner: collection data processing, geological analysis, environmental modeling, generation of reporting, resource optimization, and scenario simulation. Its main function is comprehensively assess the technical, economic and environmental viability of each site, Generating reports that guide strategic decisions with agility and support technical. Its main benefit is to reduce the risks and costs associated with the exploration, ensuring safer, more efficient and sustainable interventions.

5. Conclusion.

The application of IAGEN in the evaluation of sites in Vaca Muerta represents a breakthrough key to a more intelligent exploitation of hydrocarbon resources. Its ability to integrate large volumes of data, generate reliable models and Automating strategic decisions positions this technology as an enabler essential for efficiency, profitability and sustainability in the Argentine energy industry.