HUB TECH IA

Deliverable report 54

AI and IAGEN Application Use Case

AI for optimizing water use in hydraulic fracturing in Dead Cow

Classification of report deliverable 54: "AI for water use optimization in hydraulic fracturing in Vaca Muerta":

ÿ Classification 1: By Main Resource

Water + energy

- The report focuses entirely on water consumption, monitoring and recycling in hydraulic fracturing, including the impact on costs, environment and operational efficiency.

Classification 2: By Activity within Vaca Muerta

Energy Efficiency and Sustainability

- AI is applied to reduce the volume of water used, optimize processes fracturing, increasing the yield per liter, and minimizing the use of fresh water and volume of waste. This directly impacts the sustainability and energy efficiency of the process.

Classification 3: Type of AI Technology Used

- 1ÿÿGenerative AI models (for scenario simulation, optimized fracture design)

- 2ÿÿMachine Learning Algorithms (for consumption prediction, adjustment dynamic injection)

- 3ÿÿNatural Language Processing (NLP) (automation of regulatory reports and recommendations)

- 5ÿÿAI Systems Based on Intelligent Agents (autonomous monitoring, real-time adjustment)

- 6ÿÿAI Platforms for Data Integration and Big Data (data management) sensors, water volume, efficiency per well)

Classification 4: By Strategic Impact on the Industry

AI for Sustainability and Environmental Impact Reduction

- Benefits described include: 10–15% water savings per well, reduction of logistics and environmental costs, increase in productivity water (more hydrocarbons per liter), and simplification of logistics post-fracture. All of this contributes to the sustainable and competitive development of the unconventional in Vaca Muerta.