



"Implementation of Generative Artificial Intelligence (IAGEN) for Automated Monitoring at Power Plants in Neuquén, Vaca "Dead"

Classification of deliverable report 25: Use Case. "Implementation of Generative Artificial Intelligence (IAGEN) for Automated Monitoring in Plants Energy in Neuquén, Vaca Muerta"

Classification 1: By Main Resource

- Selected option: Oil, y Gas and Water + energy (focus

comprehensive)

- Justification:

This report has a comprehensive approach oriented towards optimizing the automated monitoring in power plants related to hydrocarbons (oil and gas), explicitly including efficient management of resources such as water and energy. The classification clearly integrates the three resources given the operational scope of the monitoring planned in the plants energetic.

Classification 2: By Activity within Vaca Muerta

- Selected option: Energy Efficiency and Sustainability

- Justification:

The focus of the paper is explicitly directed towards optimizing the automated monitoring in power plants with the aim of maximizing operational efficiency, reducing emissions, optimizing resource use and promote environmental sustainability. Particular emphasis is placed on importance of proactive and predictive monitoring to contribute to the sustainable development goals in Vaca Muerta.

Classification 3: Type of AI Technology Used

- Main selected option: 1) Generative

AI Models, 2) Machine

Learning Algorithms, 4) Computer Vision

and Image Analysis Systems, 3) Natural Language

Processing (NLP) Systems, 6) AI Platforms for Data

Integration and Big Data.

- Justification:

The use of generative technologies such as GPT-4 is clearly specified, advanced machine learning and deep learning algorithms for Failure prediction, machine vision systems for visual inspections automated, advanced natural language processing for analysis Reporting and integration technician with SCADA systems, ERPs, and IoT sensors for remote and automated monitoring of operations.

Classification 4: By Strategic Impact on the Industry

1. Selected option: AI for Production and Optimization

Infrastructure

2. Justification:

The report particularly highlights the strategic optimization of the energy production, substantial improvement in operational efficiency, significant reduction in costs and downtime through early detection of anomalies, and improved operational safety.

emphasizes how automated monitoring directly contributes to improving critical energy infrastructure and optimize key operational processes in Dead Cow.