HUB TECH IA

AI and IAGEN Application Use Case

Energy optimization activities - energy efficiency - protocols and guides for energy optimization

Classification of deliverable report 14: "Application of Artificial Intelligence" Generative (IAGEN) in energy optimization activities - efficiency energy - protocols and guides for energy optimization in Vaca Muerta".

Classification 1: By Main Resource

- Selected option: Water + energy (main), Oil and Gas (secondary).
- Justification:

  The central focus of the report is on the optimization and energy efficiency of operational processes in Vaca Muerta. Energy, along with management efficient use of associated resources such as water, is clearly the resource main topic discussed in the document. Oil and gas, although they are resources important endings, they occupy a secondary position with respect to the objective main energy optimization report.

Classification 2: By Activity within Vaca Muerta

- Selected option: Energy Efficiency and Sustainability
- Justification:

  The core business of the report is to apply advanced generative AI (IAGEN) technologies to significantly optimize energy consumption, improve operational efficiency, and reduce environmental impacts.
  details how dynamic protocols are created for energy management,

focused on reducing operational costs and achieving long-term sustainability term.

Classification 3: Type of AI Technology Used

• Main selected option:

1ÿÿGenerative AI Models,

2ÿÿMachine Learning Algorithms,

6ÿÿAI Platforms for Data Integration and Big Data.

• Justification:

The report specifically highlights the use of Generative AI (IAGEN) to develop predictive models and dynamic protocols that allow identify energy consumption patterns and optimize industrial equipment. Advanced machine learning is used to analyze large volumes real-time data from IoT sensors and SCADA systems, and generate predictive energy efficiency strategies.

Classification 4: By Strategic Impact on the Industry

• Selected option: AI for Sustainability and Impact Reduction Environmental

• Justification:

The report emphasizes the positive environmental impact of optimization energy, explicitly mentioning the significant reduction of energy consumption (up to 20%), reduction of waste, improvements in operational safety, and optimization of predictive maintenance. These measures are directly aimed at achieving more sustainable operations and environmentally responsible in Vaca Muerta.