

# Your Trusted Partner to Maximize the Value of Your CDM Projects



## AXIS

Environment Services



GRUE & HORNSTRUP

# Who are Grue & Hornstrup and AXIS?



- G&H is a 26 year old Danish engineering consultancy company with a AAA financial rating (D&B)
- AXIS is a Pakistani consultancy company specializing in opportunities in the environment and energy sectors, and technology transfer
- G&H has been active internationally since 1990, and started CDM/JI project efforts with the Danish Governments first project in 2001
- AXIS management possess over 15 years of business experience in Pakistan



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# Carbon Market Experience



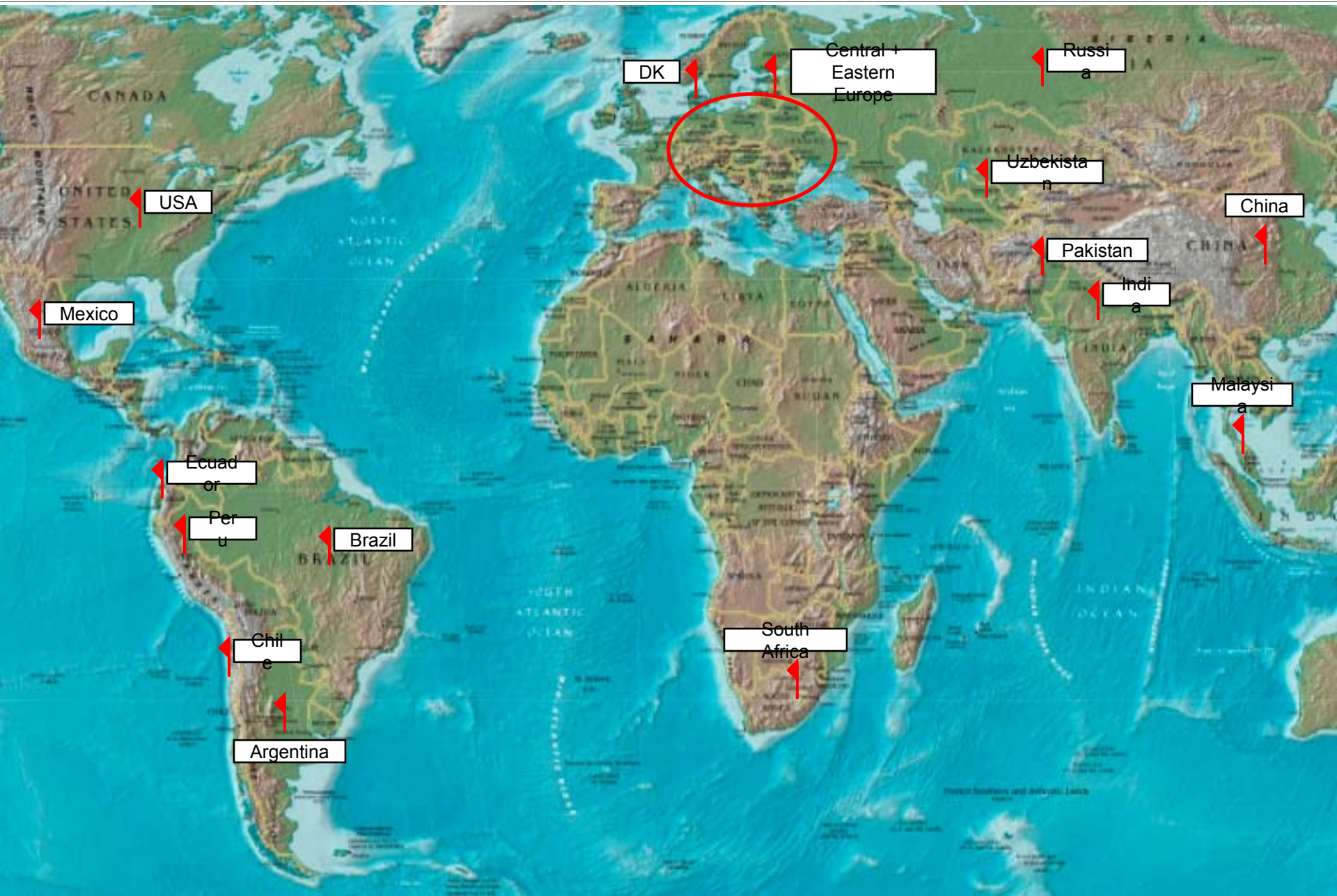
- Investigation of 60 potential CDM/JI projects for development, and 40 for procurement of Carbon Credits
- Completion of sets 11 PDDs/BSs/MPs
- Developed and supporting operational CDM/JI projects at 10 locations
- Supporting over 25 new CDM/JI projects worldwide for various clients
- Have full project life-cycle experience
- Assisted in contracting over 7 million tCO<sub>2</sub>e (12 ERPAs)
- Providing services to procure over 10 million tCO<sub>2</sub>e



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# World Wide Business Efforts



# Technology Focus Areas

Energy production and Fuel Switch  
(renewable and conventional)



Energy efficiency improvement  
(production, distribution and demand side)



Industrial gases and fugitive emissions  
(CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O)



Landfill gas and solid waste management



Oil and gas sector



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# Carbon Procurement

G&H assists Compliance and Governmental programs in Carbon Credit Procurement on the worldwide market by:



- Identification and screening of projects
- Project portfolio structuring
- Marketing of carbon credit programs
- Project and portfolio due diligence and risk assessment
- Contracting, negotiations and purchasing



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# Project Development and Implementation



- Initial project screening and identification
- Preparation of documentation PDD/BS/MP
- Development of new baseline- and monitoring methodologies
- Assistance in obtaining validation, approvals, and registration
- Obtain, evaluate, and negotiate offers for Carbon Credit trading
- Project engineering
- Project supervision and management



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# Project Post-Implementation



## Maximizing performance and returns

- Project performance assessment
- Monitoring review & enhancement
- Technical review & enhancement
- Monitoring and technical training
- Verification assistance
- Commercial and trading assistance

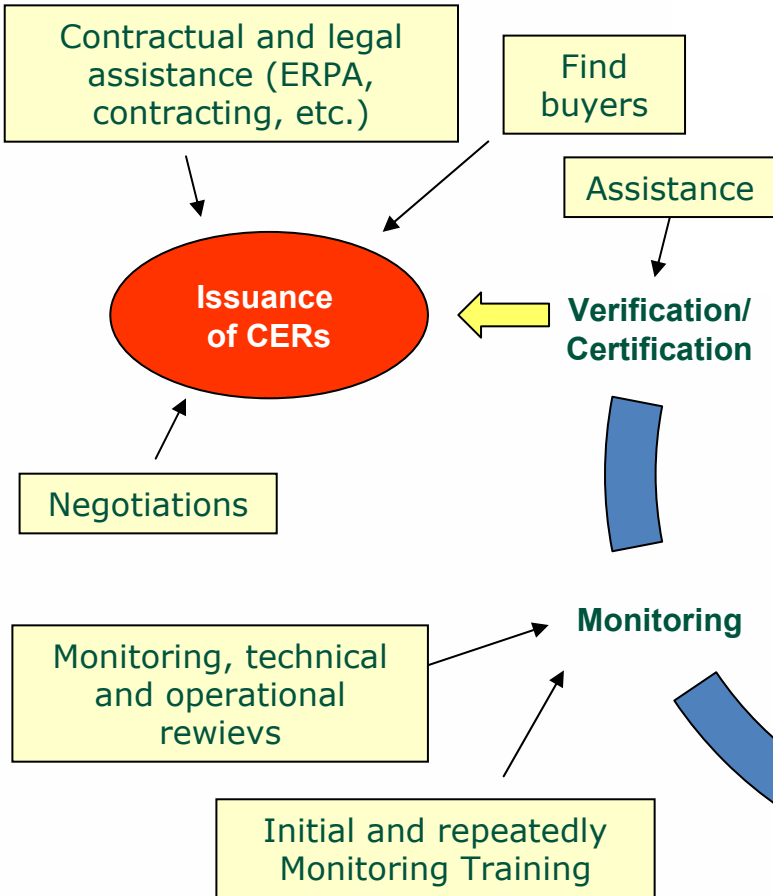


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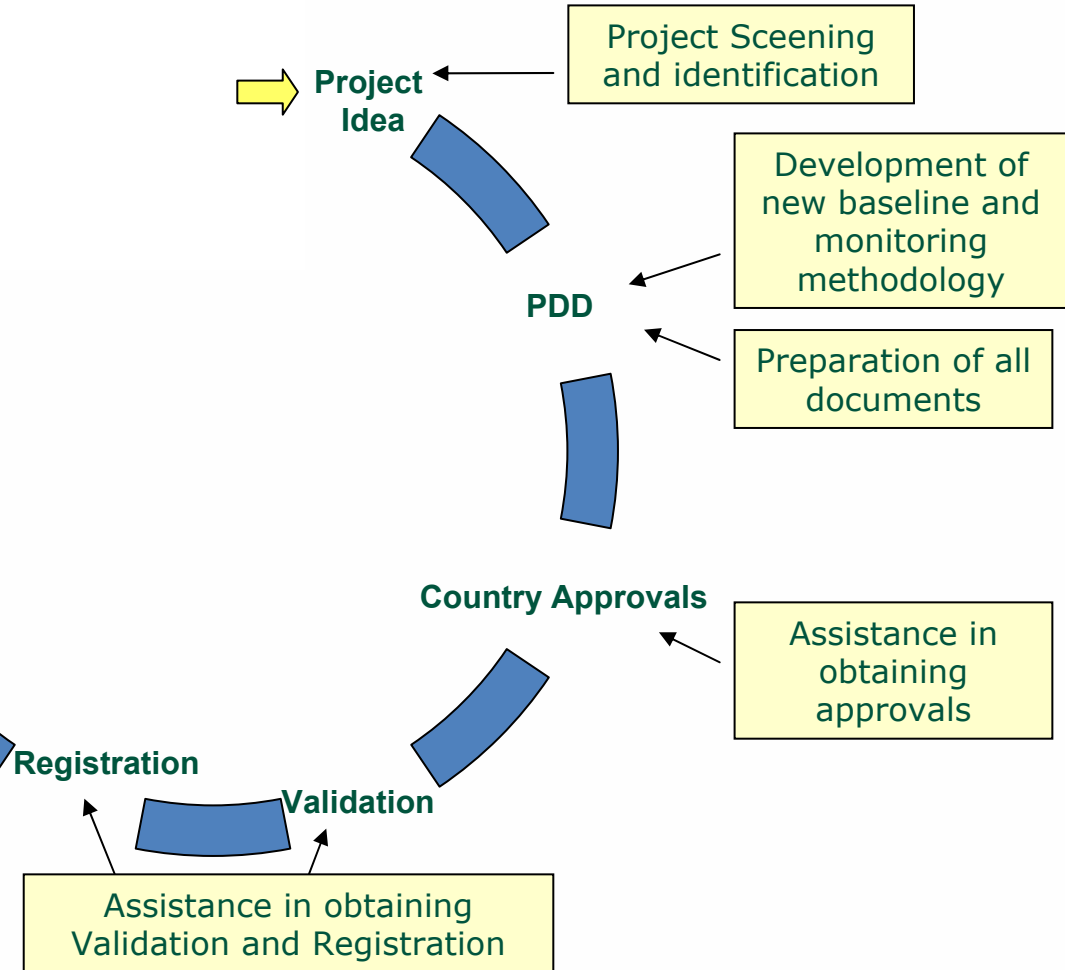
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# Our Services

## Post Implementation Services



## Project Implementation Phase



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# CDM Opportunities in Oil and Gas Sector

## IT'S NOT JUST OIL AND GAS



### **Energy Efficiency**

- Energy efficiency/optimization strategies
- Facility process optimization
- Oil refineries and petrochemical plants
- Steam optimization
- Waste heat recovery

### **Fugitive emissions**

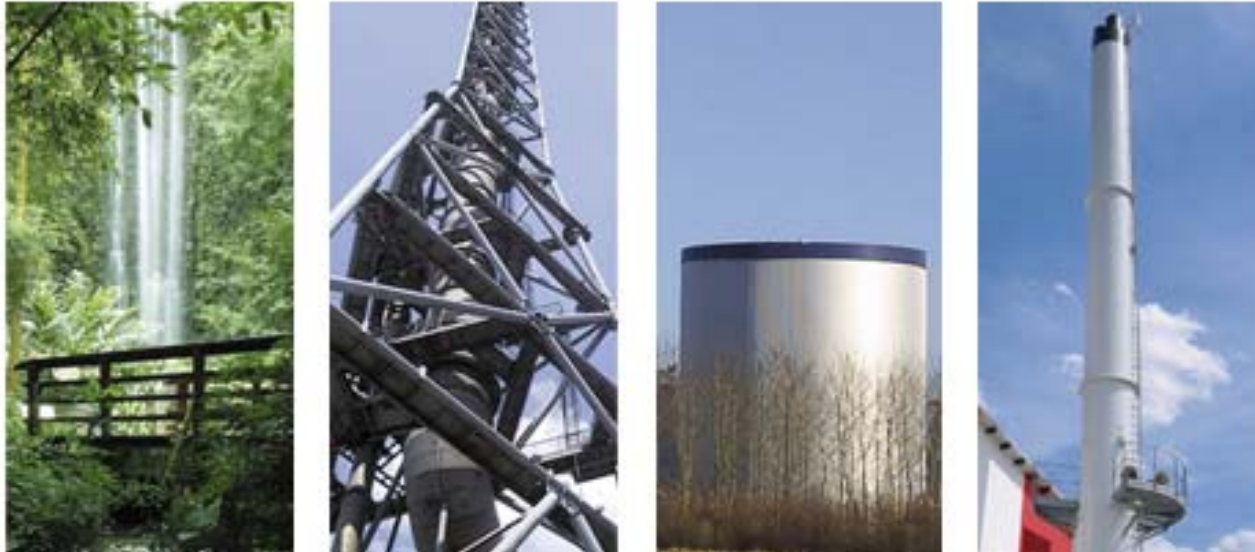
- Flare / Vent gas reduction /utilization
- Fugitive leak reduction
- Oil and gas transmission
- Carbon Capture and Storage



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# *CDM Project Examples*



Existing projects and actual status

# Gas/ Oil Exploration, Processing, and Transportation



Flare reduction and gas utilization at oil and gas processing facilities (**AM0037**)

1 project requesting registration → 2,263,165 tCO<sub>2</sub>e/yr.

1 project rejected

Recovery and utilization of gas from oil wells that would otherwise be flared (**AM0009**)

3 registered projects → 677,000 to 2,499,649 tCO<sub>2</sub>e/yr.



Leak reduction from natural gas distribution grid by replacing old cast iron pipes with polyethylene pipes (**AM0043**)

Leak reduction from natural gas pipeline compressor or gate stations (**AM0023**)

Baseline and monitoring methodology for the recovery and utilization of waste gas in refinery facilities (**AM0055**)



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# Energy efficiency



Boiler rehabilitation or replacement in industrial and district heating sectors (**AM0044**)

No project registered yet

Efficiency improvement by boiler replacement or rehabilitation and optional fuel switch in fossil fuel fired steam boiler systems (**AM0056**)

No project registered yet

Baseline methodology for steam optimization systems (**AM0018**)

7 projects registered → 22,587 to 295,308 tCO<sub>2</sub>e/yr.

1 project requesting registration → 32,800 tCO<sub>2</sub>e/yr



Steam system efficiency improvements by replacing steam traps and returning condensate (**AM0017**)

No project registered yet

Energy efficiency improvement of a boiler by introducing oil/water emulsion technology (**AM0054**)

No project registered yet

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# GH/AXIS Efforts in Pakistan

|                             |  |
|-----------------------------|--|
| <b>Client:</b>              | Engro Pakistan Chemical Limited  |
| <b>Project Name:</b>        | Permeate gas utilization at Engro Chemical Pakistan Limited  |
| <b>Location:</b>            | Daharki, District Ghotki   |
| <b>Emission reductions:</b> | 500,000 – 700,000 tCO <sub>2</sub> /yr   |
| <b>Project description:</b> | The project utilizes permeate gas from gas processing plant at the OGDCL gas field, previously flared in a new grid connected combined cycle power plant, replacing electricity produced in the absence of the project by other means. |
| <b>Services:</b>            | <ul style="list-style-type: none"><li>- CDM Development and implementation activities</li><li>- CER Marketing and Contract</li><li>- Annual Project Monitoring and Operation Oversight</li></ul>                                       |



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# Contact

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