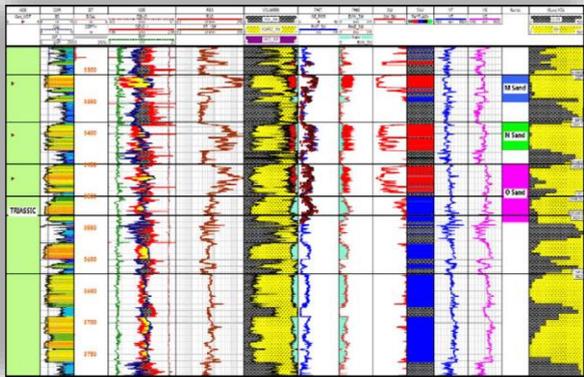


INTEGRATED GEOSCIENCE, ENGINEERING AND FINANCIAL
SERVICES FOR THE OIL & GAS SECTOR
SERVICES BROCHURE

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www.kareda.ro



COMPANY BACKGROUND

KAREDA, by its full official name “**Karpathian Energy Development Agency S.A.**”, is a start-up incorporated as a research and development consultancy business in the sphere of geoscience, natural resources and engineering. We are a group of oil and gas professionals (consultants and project developers) from Romania who, after practicing our skills and offering design solutions both for the domestic and international markets, have decided to establish an independent entity to preserve and pass down to the next generation the know-how and contacts that we’ve garnered.

THE KAREDA PROPOSAL

We set up this company for the next stage of the E&P industry, i.e. the revival period.

That could be characterized by the need of efficiency at each level and segment of activity, including optimization of project costs, implementation of latest IT solutions for geoscientific modelling and engineering, and unconventional development approaches.

Besides the engineering expertise we are bringing, we have figured out that there are relatively few firms offering support for oil&gas companies to raise capital, especially at early stage. As such, our team has integrated a group of engineers that got specialized in financial evaluations and project management.

By partnering with us, we aim at solving this problem by saving you the time of searching for financing sources, as well as maximizing your case’s attractiveness.

Moreover, we’ve conceived our business model in such a way that one of our services (see [*Access to capital*](#)) is essentially free-of-charge for the client we are serving. It is our interest to offer you solutions that will increase your output and help you win the financial support of the investment bankers and funds.

EXPLORATION AND APPRAISAL

Whether we are carrying out exploration and appraisal activities for ourselves or on behalf of a client, the centerpiece will be an **Integrated Reservoir Study** for the purpose of field evaluation and reserves classification.

1. Geophysics, Geology, Petrophysics

- Pre-feasibility study and planning of seismic survey shooting programs:
 1. Risk assessment of the exploration prospect
 2. Review of available data for regional studies about tectonic regime, depositional environment, fault systems, sequence stratigraphy, magnetic and gravity surveying,
 3. Regional 2D/3D seismic processing and interpretation

- Interpretation and re-interpretation of subsurface seismic response:
 1. Velocity models, TWT maps and time-to-depth conversion for horizons
 2. AVO screening and analysis
 3. Amplitude and seismic attributes analysis
 4. Correlation of borehole seismic data with surface seismic responses (well tying)
 5. Fault picking on 2D lines and 3D volumes, generate fault planes and fault polygons
 6. Field mapping and digitization of maps
 7. Setting up the project database
 8. In the case of bidding rounds: Preparation of the application dossier

- Design and coordination of all drilling activities, both exploratory and for development

- Sedimentological, sequence stratigraphic and petrographic description of the extracted core samples

- Petrophysical interpretation of the well logs:
 1. Core-log relationships
 2. Zonations and identifications of lithologies and strata
 3. Derivation of petrophysical properties
 4. Image log interpretation

- Reservoir characterization (porosity, permeability, fluid contacts and saturations, NTG, capillary pressure, rock typing, facies analysis)



- Reservoir modelling:
 1. Structural and stratigraphic modelling
 2. Facies modelling
 3. Petrophysical properties modelling (stochastic)
 4. Multi-realizations of subsurface reservoir models
 5. Comparison to other analogs
 6. Dual porosity systems modeling (fractures)
- Determination of fluids in place:
 1. Deterministic
 2. Probabilistic
- Uncertainty analysis

2. Reservoir Engineering & Simulation, Production Technology, Management, Economics

- Incorporation of PVT, fluid characteristics, RCAL&SCAL into the static geological model (relative permeabilities, Archie parameters, capillary pressure), hysteresis modelling
- Pressure transient analysis (PTA) and assessment of inter-well and cross-fault fluid communications
- Reservoir performance analysis: including identification of drive mechanism, material balance calculations, decline curve analysis
- Assessment of cap rock integrity, fault sealing capacity and reservoir connectivity



- Reservoir simulation, forecasts, reserves evaluation:
 1. Black oil
 2. Compositional
 3. Thermal
 4. Dry gas
- Simulation, design, engineering and management of IOR/EOR processes for:
 1. Waterflooding
 2. Thermal (SAGD, CSS, SF)
 3. Miscible and immiscible displacement
 4. Polymer injection
 5. Water-alternating-gas (WAG)
- Economic performance analysis and feasibility studies

- Production technology advisory
- History matching
- Database creation

3. Project Management of Exploration and Appraisal Activities

4. Reserves / Resource Classification



Fees: negotiable, monthly rate

FIELD DEVELOPMENT PLANNING



- Well designs (both drilling program and completions)
- Optimization of well placements
- Planning of experimental exploitation programs
- Planning of the transition from experimental into permanent exploitation
- Workover portfolio supervision
- Organization and sizing of surface facilities and related workflows for the processing of fluids
- Delivery options planning
- Negotiating delivery contracts
- Environmental impact assessment
- Economic evaluation
- Planning of abandonment stage for wells and surface facilities



Fees: negotiable, monthly rate

INTEGRATED ASSET MANAGEMENT



- IOR Surveillance and Optimization
- Flow Assurance Management
- Field Re-Development
 - Identifying infill drilling spots

- Proposing workover operations at existing wells (operations which will be designed entirely by us, upon expectations of the client)
- Selecting and implementing pumps and artificial lift systems
- Production System Performance Analysis (Well simulation flow)
- Surface Network Modelling
- Database updating
- Fluid allocation per well / sector / bloc
- Workflow optimization
- Due diligence and reserves reporting
- History matching
- Production log (PLT) analysis for petrophysical re-modeling purposes and production allocation



Fees: negotiable, monthly rate

FINANCIAL SERVICES

Access to Capital



- Discussion of financing options
- Preliminary analysis of client company's financial situation
- Feasibility studies
- Technical evaluation of the intended project
- Public and private equity raising procedure, including preparation of full documentation, identification of financing sources, pitching the offer, presentation
- Loan application
- Negotiation, management and arbitration of setting up the new capital structure under the deal terms
- Risk sharing scheme concepts



Fees: free-of-charge for client company, costs to be incurred by the financing party as a percentage of the total deal value

International Oil & Gas Activity Expansion



- Developing international partnerships, joint ventures

- Regulatory considerations and advisory
- Advice & Management of foreign activity expansion and kick-start
- Human resources recruitment



Fees: negotiable, monthly rate

International Petroleum Exploration Private Equity Consultancy

Despite the solid demand for hydrocarbons, the exploration branch of the O&G industry is having reduced activity. Finding financing sources for early-stage projects is critical, and although not impossible, specific challenges have to be overcome. We will leverage our own experience with searching for investment bankers, funds and multi-national organizations willing to venture into high –risk high-reward prospects.

KAREDA proposes the following project definition and implementation, which will be carried out together with our technical team, local partners and financing parties:



- Approaching national petroleum agencies for demanding information on new exploratory perimeters, either completely new or in the appraisal stage
- Preparing documentation and elaboration of the technical data pack for financing sources, *together with GRED**
- Project management and activity coordination, *GRED + OPERATIONS **
- Field Evaluation Project, *GRED*, see [Integrated Reservoir Studies](#)

In case that the project is labelled commercially-feasible:



- Field Development Plan
- Project financing: see [Access to Capital](#)

Depending on the significance of the field, commercial potential, special know-how and interests of KAREDA, and if both parties agree:



- Take-over bid and negotiation of operatorship transfer

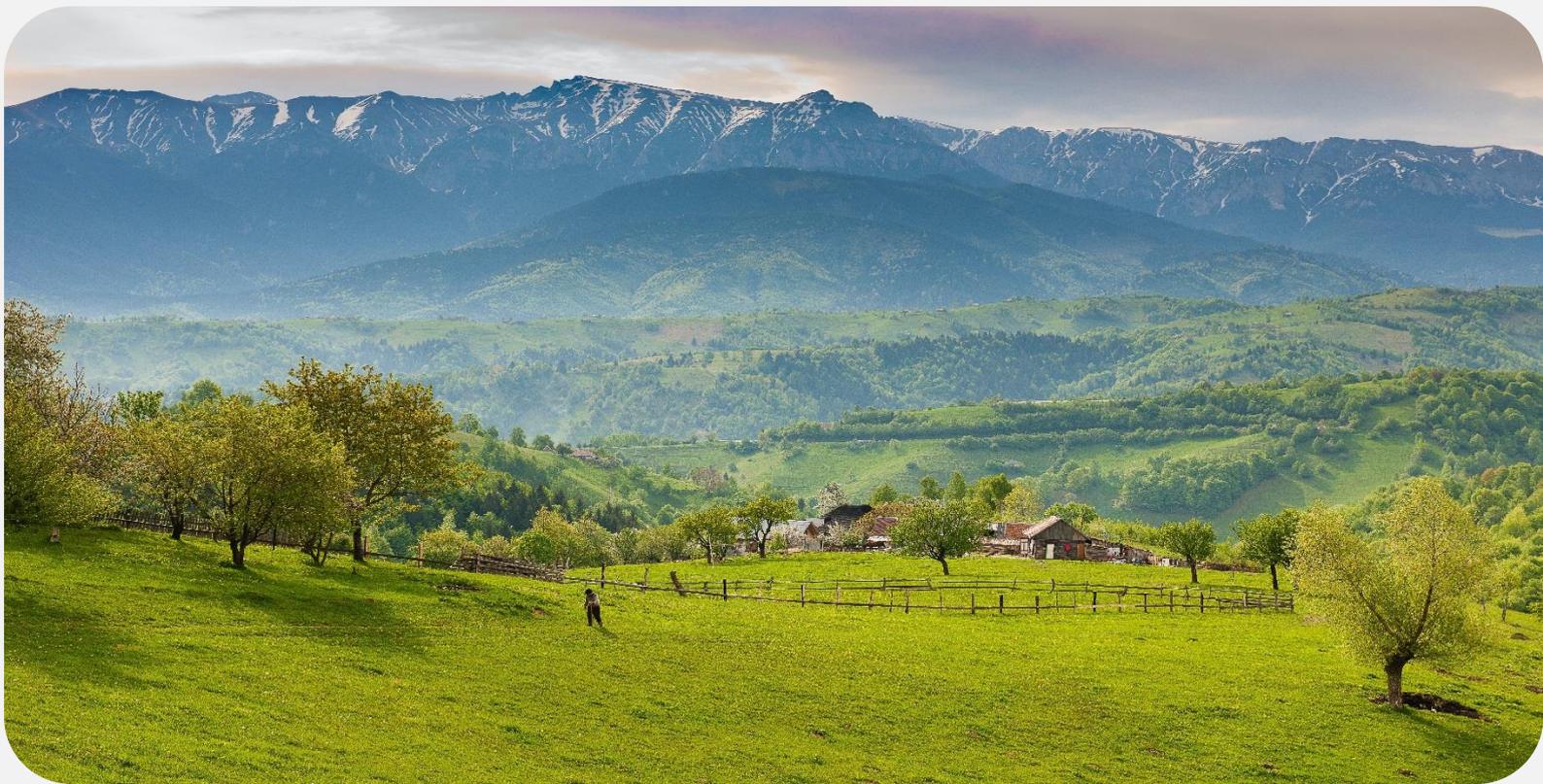


Fees: fee structure and payment schedule negotiable depending on project's characteristics

***Explanations:**

GREED = Geoscience and Reservoir Engineering Department, KAREDA's core team

OPERATIONS = KAREDA's oil & gas operations department, external team



Looking forward to hearing from you!

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