OIL INDIA LIMITED
(A Govt. of India Enterprise)
P.O. Duliajan-786602, Assam.
Fax No. 91-374-2800533, E-mail:material@oilindia.in

Tender No. & Date : DFD2415L12/08 20.06.2011

Bid Security Amount : INR 0.00 OR USD 0.00
(or equivalent Amount in any currency)

Bidding Type : Single Bid (Composite Bid)

Bid Closing On : 10.08.2011 at 13:00 hrs. (IST)
Bid Opening On : 10.08.2011 at 13:00 hrs. (IST)

Performance Guarantee : Not Applicable

OIL INDIA LIMITED have issued Limited tenders to following parties for items detailed below. For General Terms & Conditions, please refer to Document No. MM/GLOBAL/01/2005 available in OIL's web site:

Item No./ Mat. Code	Material Description	Quantity	UOM
10 0C000525	**Basin Modelling Software with following Specifications** The package should comprise both 1-D modelling capability focussed on thermal and maturity calibration and grid-based maturity and migration mapping with 2.5-D or full 3-D capability. Necessary tools should be provided so that 1-D software can communicate with the 3-D software. In addition, it be possible to transfer calibration data directly from p:IGI-3 geochemical data interpretation sofware of IGI Ltd, UK to 1-D modelling software. The software must be PC based and run under the current release of Microsoft Windows operating system operating on high specification hardware. **1-D modelling package** The 1-D modelling package should be compatible (integrated) with the 2.5-D or 3-D grid based model. If more than one 1-D model exists in the project (and coordinates are entered), the models should be visualised and accessed via a simple map-based interface. The 1-D package should handle the following inputs, calculations and outputs: Stratigraphy shall be entered in terms of name, top or base depth (and/or thickness), and top or base age (millions of years). For offshore wells, palaeo-water depth may be defined and related to sediment-water interface palaeo-temperatures. There should be an option to ascribe each defined unit to one element of a Petroleum System (e.g. source, reservoir, seal, overburden, etc). Stratigraphy input should be able to handle fault blocks (thrust slices with repeated strat and normal faults with missing strat), and intrusions (±heat) and salt. Lithology should be based on default pick-list of end member lithologies and allow mixes to be created. Explicit poro/perm, thermal and mineral matrix properties should be editable and saved to create new lithologies. Lithologies should be displayed graphically (colour +symbols) on depth and age plots. A range of compaction methods should be available to include exponential and reciprocal methods together with pressure-related compaction.	1	NO

Tender No. & Date : DFD2415L12/08 20.06.2011

Item No./ Mat. Code	Material Description	Quantity	UOM
	Thermal input should include the entry of measured temperatures, allow temperature correction (e.g. Horner Correction with plot) and offer the calculation of a present day heat flow (steady state or transient) if lithologies are entered. Palaeo-heat flow should be definable from a table or derivative graphic, or be calculated from crustal stretching (McKenzie beta-factor). For offshore wells, sediment-water interface palaeo-temperatures may be defined and related to palaeo-water depth and onshore related to palaeo-latitude. Modelling should be based on heat flow values at the sediment surface, base of model, or lithosphere-asthenosphere boundary (~1330°C isotherm), and offer editable defaults for crustal crustal radioactivity. It should be possible to introduce heat (e.g. a hydrothermal flux in W/m^3) into a given formation over a specified time interval. A thermal scenario should be simply copied from one model to another or to all models in the project. Units should include SI (metres, °C, etc.) and imperial (°F. feet, etc) and offer automatic inter-conversions. Calculations shall be controlled in terms of time steps (10^3 to 10^10 years) and depth steps (0.1-1,000m), with typical values as defaults. Data may be entered and results output using depth below KB, MSL and SSF datum levels. Kerogen kinetics should be available from a pick-list of standard kerogens or organofacies, together with the ability of the user to create their own kerogens based on distributions of both activation energy and pre-exponential factor. The software should offer the ability to create kerogen mixes from default or custom end members (graphical interface desirable), and editable yield values (kg/tonne or derived from HI x TOC). The kinetic pick-list might usefully include biomarker reaction, illite/smectite ratios, etc. Maturity calibration should be against vitrinite reflectance (%Ro), Spore Colour Index (SCI), Thermal Alteration Index (TAI) and Rock-Eval Tmax with the entry of measured data being compatible with use of clipboard from a spreadsheet (e.g. Excel). It should be possible to import (or copy-paste) appropriately tabulated maturity data into the 1-D model. Kerogen kinetics should allow calibration against a range of ratios (sterane isomerisation, aromatisation, methyl phenanthrene indices, and other proprietary ratios). Calibration plots must show both measured and modelled data against depth. Graphical output should allow standard burial history and geohistory plots with overlays for isotherms, generation (%Ro) windows and Transformation Ratio windows. In addition, general plots of all calculated data against geological time for one or more horizon and depth in the well for all or selected horizons. Essential are Calibration plots (Maturity vs Depth) and Generation-related plots (Generated and/or Expelled oil and gas vs Age). Font, line and symbol colour together with symbols type should be selectable. Graphs should be transferable by clipboard in at least one bitmap and one rigorously applied vector format while maintaining font and colour integrity if ungrouped. Saving (exporting) individual graphic files in these formats is desirable. Calculated results should include maturity (LLNL, Easy Ro, VR-Suzuki, %Ro proprietary, and TTI), and Transformation Ratio; amount and rate of generated/expelled/retained oil & gas in volume and mass ratios and		

Tender No. & Date : DFD2415L12/08 20.06.2011

Item No./ Mat. Code	Material Description	Quantity	UOM
	normalised to TOC, and gas/oil ratios; rock density, porosity, permeability, pressure (hydrostatic, lithostatic, pore and excess), sedimentation rate; temperature, surface temperature, geothermal gradient and heat flow. The above should also be available for output as tables for depth and time and as a 'data only' option for copying data from graphs. Tables must maintain integrity in spreadsheets such as Excel. Modules or additional functionality should include the interpretation of Apatite Fission Track data (AFTA, etc); the calculation of kinetics predictions of yield (amount and phase) based on kerogen type and heating rate; or run risking or 'Monte Carlo' simulations; flash calculation based on bringing generated petroleum to surface. Licences: The software should be capable of running under software licence manager allowing one or more concurrent executions from a central server or via a hardware dongle; functions such as the ability to 'check out' a licence (e.g. onto a laptop) for a variable duration would be highly desirable. Purchase of 'one concurrent execution' should allow multiple executions for a single user. **2.5-D or 3-D modelling package** The grid-based modelling package shall be compatible (integrated) with the 1-D modelling program described above. The 2.5-D or 3-D grid-based package should handle the following inputs: Surfaces should be generated from a group of internally consistent geo-referenced 1-D wells or pseudowells including surfaces for kerogen type/kinetics; from imported seismically-derived depth grids in common industry formats (ASCII, CPS-3, GeoQuest, ArcView Z-map+, ER-rapper, IRAP, PetroSys, Surfer, etc). It should be possible to display cultural data on separate layers. A flexible capability for grid-grid manipulation, duplication and the calculation of isopachytes from surfaces is desirable. New surfaces should be generatable at a constant distance relative to an overlying or underlying grid. Thermal control on the model shall allow spatial and/or temporal variation of heat flow and ideally sediment surface temperature should be related to present and palaeo water depth or latidude-longitude. Lithologies/rock properties shall be defined from lithofacies or GDE (general depositional environment) maps, which will control porosity and permeability of the rock units. Kerogens should be as with the 1-D models defined above, and organofacies maps should be creatable to show lateral variation for each unit. Faults should be defined from fault polygon maps or be hand drawn, and may have attributes such as up-fault and cross-fault permeabilities definable Missing section at unconformities shall be defined by an uplift map, which should be editable manually, or by introduction of new 1-D models, or derived		

Tender No. & Date : DFD2415L12/08 20.06.2011

Item No./ Mat. Code	Material Description	Quantity	UOM
	from existing surfaces or isopachytes. Repeated sections at thrusts or reverse faults should be handled in terms of thrust lithology, timing (of movement, not deposition) and thickness and accomplished by an explicit workflow or mapping option. Thickness changes as in salt or shale diapirism shall be accomplished by an explicit workflow or mapping option Generation should be defined by source rock kitchen polygons of maturity at any surfaces, and generation (Transformation Ratio) polygons for intervals with kerogens defined. Migration should be defined by buoyancy driven migration map for both oil (green) and gas (red), with the flux vectors driven by basin palaeo- and present day geometry, porosity gradients and hydrodynamic flux. Entrapment (including accumulations along the migration path) should be defined by the topography of the top surface of the migration/reservoir interval with top-seal defined either in terms of oil/gas column height or from the poro-perm properties of the cap-rock. Accumulations should be interrogatable in terms of the volumes of oil and gas trapped, the column height and the composition and phase behaviour of the petroleum if bought back to the surface (flash calculation). Graphics shall be transferable by clipboard in at least one bitmap and one vector format while maintaining font and colour integrity. Saving (exporting) individual graphic files in both these formats is desirable.		

Special Notes : 1. The items shall be brand new, unused & of prime quality. Bidder shall warrant (in the event of an order) that the product supplied will be free from all defects & fault in material, workmanship & manufacture and shall be in full conformity with ordered specifications. This clause shall be valid for 18 months from date of receipt or 12 months from date of commissioning of the items. The defective materials, if any, rejected by us shall be replaced by the supplier at their own expense. Bidders must confirm the same while quoting.

2. The minimum FOB/FCA charges in case of partial order for reduced quantity/ items shall have to be indicated by the bidder. In case this is not indicated specifically, the charges quoted would be prorata calculated and the same will be binding on the bidder.

3. Performance Bank Guarantee :

Successful bidder will be required to furnish a Performance Bank Guarantee @10% of the order value in prescribed format. The Performance Bank Guarantee must be valid for one year from the date of successful commissioning of the equipment or 18 months from the date of shipment whichever is earlier. Bidder must confirm the same in their Bid. Offers not complying with this clause shall be rejected.

4. Validity of the offers should be 120 days. (Please refer clause 1.2 of Section 'D' of

MM/GLOBAL/01/2005). Bids with lesser validity shall be rejected.

5. Quotation must be submitted in **triplicate.**

6. The items covered by this tender shall be used by Oil India Limited in the PEL/ML areas which are issued/renewed after 01/04/99 and hence Nil Customs Duty during import will be applicable. Indigenous bidder shall be eligible for Deemed Export Benefit against this purchase. Details of Deemed Export are furnished vide Addendum to MM/GLOBAL/01/2005 enclosed.

Tender No. : **DFD2415L12/08**
Tender Date : **20.06.2011**
Bid Closing On : **10.08.2011 at 13:00 hrs.(IST)**
Bid Opening On : **10.08.2011 at 13:00 hrs.(IST)**

Tender issued to following parties only:

Slno	V_Code	Vendor Name	City/Country
1	101212	INTEGRATED GEOCHEMICAL INTERPRETATI	DEVON EX 39 5HE
2	101468	GEOQUEST SYSTEMS B V	
3	102642	PRA ASSOCIATES	
4	102643	IES GmbH	
5	102644	ZETAWARE, INC	
6	201129	TATA CONSULTANCY SERVICES,	KOLKATA - 700 071
7	201861	LABINDIA INSTRUMENTS PVT LTD	KOLKATA - 700 026
8	207736	WIPRO TECHNOLOGIES	KOLKOTA