

# **Integrating Costs From a Financial System Into P6 for an Oil & Gas Program in the Republic of Chad**

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## **Abstract**

Caracal Energy Inc. is a Canadian based international oil exploration and development company active in the Republic of Chad. The multi-billion, multi-year fast tracked Capital Program to explore and develop reserves and resources in Southern Chad. Caracal's success depends on balancing complex logistics and significant social transformation while providing financial ROI to the local economy and shareholder investors. The Project Services team, led by Stephen Airey, selected P6-EPPM as the key project management software tool. With the implementation expertise of Emerald Associates, P6-EPPM is being used for planning, scheduling, cost control and resource management for the civil construction, drilling, pipeline and facilities portfolio. The planning of fiscal year budgets, spending plans and authorizations for expenditures to release funds for ongoing work performance are done in P6 to the asset and department levels. Integration of actual and forecast costs to the General Ledger, Purchase Order and task level from Caracal's Sun Financial System into P6 on a nightly basis, allows real-time earned value portfolio management for the remote management team in Calgary, Alberta.

## **Initial Situation & Challenges**

In 2011 the Company signed three production sharing contracts with the government of the Republic of Chad providing exclusive rights to explore and develop reserves and resources in southern Chad. These three contracts cover a combined area greater than 23,000 km<sup>2</sup> (approximately 5,800,000 acres).

Republic of Chad is a landlocked country in Central Africa, bordered by Libya, Sudan, the Central African Republic, Cameroon, Nigeria and Niger. Due to their geographic location the logistics of these contracts are challenging. Ocean freight to Cameroon lasts 6 to 8 weeks, and inland transportation approximately 5 weeks. In addition to the logistics challenges with getting major drilling and facilities equipment to the work site, Chad does not have the basic infrastructure needed for a project of this magnitude, requiring the Caracal team to first invest in building roads, bridges, communications and facilities while developing the oil resources. With the magnitude of the Capital Program, it is essential to have an accurate Planning & Cost Control System.

In the spring of 2013, Caracal Energy Inc. approached Emerald Associates to assist with implementing the integrated Planning and Cost Control system in P6-EPPM throughout the organization.

## **Structural Standardization**

The first step in setting up P6 to support Caracal's complex fast-tracked program was to establish project level coding structures for the overall multi-year portfolio. The project structures include areas, responsibilities, AFE types and cost rollups to provide the Caracal team with scenario analysis by fiscal year and priority assets. Spending plan analysis, and logistics coordination can also be performed to develop long term cost savings through project bundling. With 32 multi-asset projects planned for 2014 and 40 more planned for 2015, the need for efficiency in project/asset creation, consistency in department reporting, usability for site team members and non-scheduling project contributors has brought immediate benefits in drilling and rig planning and infrastructure prioritization.

The second step in setting up P6 was the development of asset type templates. The assets include wells, facilities, pipelines, and infrastructure works to develop the sites. The templates also include the general services, contracting and logistics required to be performed to support the onsite works. The asset templates include holistic asset lifecycle coding structures. This includes consistent WBS elements for phase and department and operations tracking with tasks detailed to level 2-3 with deliverable milestones. The activities are heavily coded or "tagged and bagged" to ensure robust reporting by work type, phase, responsibility, department, AFE number, AFE type, location etc. Reporting examples include rig tracking by well, Lease Construction schedules or Authorization for Expenditure approvals.

## **Cost Integration**

Once the project and asset structures were in place, the financial integration design was carried out. The financials include long range asset spending plans using high level estimates. Fiscal year budgets were then loaded onto the assets and approved for go forward planning. AFEs creation and approvals then release funds allowing contracts and work scopes to be refined and fully planned in P6. Purchase Orders are issued and tasks are updated by the contributing department with actual field/office status including incurred costs. These are input into P6 and compared to the actual accounting costs from vendor invoicing recorded in the SunSystems. Incurred field costs, actual accounting costs and forecast at completion costs allow for Earned Value analysis by phase, responsibility, asset and AFE. Weighted AFE splitting was also put in place for those occasions where an AFE crossed multiple projects. The information flow is from the bottom up using the expense area of P6. Tangible and intangible cost account coding structures are used at a detailed general ledger account matching SunSystems. This ensures reporting at all levels of detail required. Error handling for miscoded information has been developed.

Several specialty Emerald add-on tools were used to assist with the complex cost modelling required by Caracal. The AFEPushdown tool allows the user to code the AFE number and cost say for drilling, and the tool automatically pushes those values onto the right activities in the schedule. The CostElector calculates the P6 actual cost based on the field estimated actual cost and accounting actual cost (ITD) and last updated dates and selects the one to use in the P6 actual cost field. The UDFRollup tool pushes UDFs from expenses, to activities, to WBS and up to the project and EPS levels automatically without additional programming by Caracal. The UDFRollup also matches AFE Type fields to ensure management reporting at all levels. Emerald's EP-datawarehouse is being used to snapshot all levels of data and spreads to allow granular reporting by day, week, month and comparisons to be made from the P6 information.

## **Making it Happen**

With the Capital Program already underway during the P6 implementation there was no time to lose in the software design and setup. Caracal had thousands of line items of financial information from numerous sources including SunSystems for actuals, NAVA for AFEs and Excel spreadsheets for spending plans, fiscal year budgets and draft AFEs. Emerald's P6-Loader was instrumental in the iteration of data loads, reviewing, recoding and reloading the various cost information. It was also a tremendous time saver in setting up the EPS and projects/assets and coding structures while the team decided how to best structure the system. Project codes, udfs and EPS structures were literally restructured in a matter of minutes between meetings giving the team tremendous flexibility to design the best P6 system.

This project makes use of Primavera P6 to its full potential, merging data from financial system spread on the activities performance.