

Oil shale technology cost review for project planning

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Oil shale projects are solely driven by cost due to the increasingly limited project capital budget in the current global financial situation and force management to make effective, early decisions regarding investments in technology selection, strategic process design, intermedium oil/gas assets and strategic assets for final end user products. This article reviews the current oil shale technology with focus on cost elements include mining, oil shale processing, retorting, gas/oil recovery, oil/gas downstream processing and utility. Cost occurred in previous project is relied on available published data for technologies of ATP, Galoter, Enefit, Kiviter, PetroSix, Paroho, Union B, Tosco II Fushun retort, Maoming retort, SJ retort and In situ technology. Oil shale processes are very different from conventional chemical process. Capacity factor estimation method commonly used in conventional chemical process is discussed and need to be integrated with factors of oil shale feed complexity, location effect, currency exchange rate depended on funding stages, information available, end use of estimate and the accuracy required. Methodologies used in project cost estimation through different project phases are discussed. This article provides a summary of cost of previous oil shale projects published in public domain, summary of cost elements in oil shale project planning, and could be used as a supporting tool in oil projects planning, oil shale project cost estimation through conceptual study, financial planning, pilot and commercial plant scale up stages.