

CHAMALANG-LUNDA-NOSHAM COALFIELDS OF BALOCHISTAN, PAKISTAN: FORESIGHT STRATEGY AND POLICY

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Abstract

A good quality high calorific value coal has been found in Chamalang-Lunda-Nosham coalfields. These coalfields include Chamalang, Bala Dhaka, Lunda, Surghari, Nosham, Bahlol and Kali Chapri areas in Loralai, Barkhan and Kohlu districts of Balochistan. The Chamalang coalfields are eastern continuation of the Duki-Anambar coal fields of Early Eocene Chamalang (Ghazij) Group in the Sulaiman (Middle Indus) Basin and are another good addition to the coal fields of Balochistan. The rocks exposed in the coal bearing area are sedimentary rocks ranging in age from Jurassic to Pleistocene along with Subrecent and Recent surficial deposits. The coal bearing Chamalang Group comprised of thick sequence of shale/claystone, interbedded sandstone, limestone, marl, gypsum, with beds of coal are assigned in to five units/formations i.e. Shaheed Ghat Formation (lower Chamalang), Toi Formation (middle Chamalang), and Kingri, Drug and Baska formations (Upper Chamalang). Coal is developed in the Middle Chamalang (Toi Formation) with more than 20 coal seams; however the main coal seams are confined to 3 to 4 in number. The coal seams are generally lenticular and range in thickness from 1 to 6.5 feet. However, the fault systems and overturning of strata have also affected the normal behaviour of many significant coalseams. According to present investigation, the coals of these areas are generally medium to high in sulphur and ash contents. The sulphur content ranges from 3.44 to 6.93%, while ash in these coals ranges from 5.35 to 84.96%. The heating values of these coals are generally higher as compared to other coals of Balochistan which ranges from 1818 to 13569 BTU/lb. According to international ASTM classification, these coals could be ranked as lignite C to high volatile bituminous B coal. The present work has enhanced the proved reserves upto 5 million tons, and inferred reserves along with indicated and hypothetical reserves upto 25 million tons of 1 foot and more than 1 foot coal seams. The reserves (other resources) of more than 6 inches to less than 1 foot coal seams are estimated to be 70 million tons. In this way total reserve of Chamalang-Lunda-Nosham coalfields are estimated to be 100 million tons. The depositional environments of coal bearing Toi Formation were deltaic. The northern Lunda, southern Lunda and Nosham areas seems to be promising for further mining and drillings. Particularly the Nosham coalfields were abandoned and now started again, however previously (as in 1982) more than two decades of years ago its mining was in operation. The best coal seams pattern in Chamalang-Lunda-Nosham-Surghari shows the existence of some coal seams in the Lunda and further east in Nosham area which may extends eastward into Kali Chapri area. However, the size, thickness, extension and dimensions of Lunda and Nosham coalfields can be revealed by deep drillings. At least 3-5 drill holes of shallow depth of about 400-500 meter at specified sites of Lunda and Nosham can provide general idea of coal seams behavior and reserves. Drilling is recommended for evaluation of Lunda-Nosham coalfields. Further, the centre and also southern part of Lunda may have very significant coal seams but little bit more in depth. So deep drilling (about 500 meter) may reveal the good promising coal seams. The Lunda-Nosham coalfields are parts of the eastern continuation of Chamalang coalfields in the Sulaiman (Middle Indus) Basin and are another good addition to the coal fields of Balochistan.