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DEPARTMENT OF MINES
SOUTH AUSTRALIA

LURGI HIGH-PRESSURE GASIFICATION

Record of Interview with Hon. the Premier - April 27, 1948

PRESENT: DR. R. DANULAT
MR. E. BRUGGERMAN
MR. A. HOETTE
MR. S.B. DICKINSON, Director of Mines

Dr. Danulat stated in regard to Moorlands that he did not consider the present seams could be worked economically for gas production, and that he believed that dried and briquetted Moorlands brown coal fuel could be used for gas making, although there were some problems associated with even that due to the high pyrite content.

The Doctor considered that further exploration was warranted to see if a seam could be found which might provide mining costs at something in the nature of 4s. per ton with a minimum quantity of 200,000 tons per year. That amount would be required for gas production.

Regarding Leigh Creek, the Doctor said the coal is suitable for gasification and there are only two points to consider:-

1. The moisture content,
and
2. The ash content.

both of which should not exceed a certain upper limit.

Dr. Danulat and Mr. Bruggerman have prepared an estimate showing the cost of gas at Port Augusta based on actual delivery at 15s. per ton of coal, Port Augusta, assuming a moisture content of 32% and an ash content of 17.1%.

Assuming a plant capacity of:-

1. 7 million cubic feet per day
2. 14 " " " " "

the production cost for the smaller plant at Port Augusta would be 27/8 per thousand cubic feet and for the larger plant 24/9. The costs at Adelaide would be, for the smaller plant, 33/6 and for the larger, 29/9 per thousand cubic feet.

The quantity of coal required for the 7 million cubic feet plant is 265 tons per day, and for the 14 million cubic ft./plant, 530 tons per day.

The smaller plant would cost £600,000 and the larger plant roughly £1 million. These figures are all approximate..

£850,000 would be involved in a pipeline of 10" diameter for 180 miles length for the smaller plant, and for the larger, £1,390,000 for a pipeline 14" diameter.

These prices would compare with Melbourne prices:-

a 15 million cu.ft. plant would probably be able to deliver for 23d. and a 40 million cu.ft. plant for 19d. (only for personal information).

The calorific value of gas made from Leigh Creek coal would be 430 B.T.U. as compared with the present standard of 550 B.T.U.

In the event of electricity being made available for manufacturing the gas at Port Augusta, at .5d instead of .9d, the cost of the manufacture of gas would be reduced by 2/5 for the larger plant, and 2/3 saving would be made for the smaller plant.

Any coal in excess of 1/10th of an inch could be used.

With production in Adelaide from Leigh Creek coal at 27/6 per ton no saving in production costs would be effected by eliminating the pipeline from Port Augusta. The pipeline would have the advantage of serving Port Augusta and Port Pirie, and the gas would be suitable for Port Pirie, which could develop into a very large user of gas. Port Pirie burns oil at the rate of 25,000 tons per year for industrial purposes.

Calculated at 550 B.T.U. the production price for the 7 million cu.ft. capacity at .5d per kilowatt hour for electricity would be 40/0 at Adelaide, and 35/2 for the bigger plant.

At Port Augusta the corresponding figures are 32/7 and 29/1 respectively.

The advantages in gas production from Leigh Creek coal are that it can be used direct, as raw coal, into the generator, whereas the Moorlands coal would have to be dried, pulverised and briquetted prior to its use. This is the procedure that

will probably be followed in Victoria. This means that briquettes from Yallourn brown coal would cost 20/- per ton at Yallourn compared with Leigh Creek coal at 15/- per ton at Port Augusta.

The relative heat values are 9,500 for Yallourn briquettes, and 6,000 B.T.U. for Leigh Creek coal.